# Technical Specifications Task Force Improved Standard Technical Specifications Change Traveler

<b>Revise Ventilation</b>	Syste	em Acti	ions		
		1 4 2 0		1 4 2 1	1 4 2 2

NUREGs Affected:	$\checkmark$	1430	$\checkmark$	1431	$\checkmark$	1432	✓	1433	$\checkmark$	1434		2194
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Classification: 1) Technical Change

Correction or Improvement: Improvement Benefit: Provides Longer Completion Time

PWROG RISD & PA (if applicable): LSC-1995

Recommended for CLIIP?: Yes NRC Fee Status: Not Exempt Changes Marked on ISTS Rev: 5.0

See attached.

#### **Revision History**

TSTF Revisio	n 0 Revision Status: Active
Revision	Proposed by: TSTF
Revision Original	Description: Issue
Owner	s Group Review Information
Date Or	ginated by OG: 20-Mar-24
Owners Owners should b determin	Group Comments Group comments have been resolved. There is an outstanding question on whether NUREG-2194 e included in the traveler due to the differences in the design from the other plant types. The TSTH ted that NUREG-2194 should not be included.

Owners Group Resolution: Approved Date: 04-Apr-24

### **TSTF Review Information**

TSTF Received Date: 27-May-24 Date Distributed for Review 27-May-24 TSTF Comments: (No Comments) TSTF Resolution: Approved Date: 11-Jun-24

### **Affected Technical Specifications**

Action 3.7.10.A	CREVS		NUREG(s)- 1430 Only
Action 3.7.10.B	CREVS		NUREG(s)- 1430 Only
	Change Description:	Renamed C	
Action 3.7.10.B	CREVS		NUREG(s)- 1430 Only
	Change Description:	New Action	

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13-Jun-24

Action 3.7.10.B Bases	CREVS		NUREG(s)- 1430 Only
	Change Description:	New Action	
Action 3.7.10.B Bases	CREVS		NUREG(s)- 1430 Only
	Change Description:	Renamed C	
Action 3.7.10.C	CREVS		NUREG(s)- 1430 Only
	Change Description:	Renamed D	
Action 3.7.10.C Bases	CREVS		NUREG(s)- 1430 Only
	Change Description:	Renamed D	
Action 3.7.10.D	CREVS		NUREG(s)- 1430 Only
	Change Description:	Renamed E	
Action 3.7.10.D Bases	CREVS		NUREG(s)- 1430 Only
	Change Description:	Renamed E	
Action 3.7.10.E	CREVS		NUREG(s)- 1430 Only
	Change Description:	Renamed F	
Action 3.7.10.E Bases	CREVS		NUREG(s)- 1430 Only
	Change Description:	Renamed F	
Action 3.7.10.F	CREVS		NUREG(s)- 1430 Only
	Change Description:	Deleted	
Action 3.7.10.F Bases	CREVS		NUREG(s)- 1430 Only
	Change Description:	Deleted	
SR 3.7.10.4 Bases	CREVS		NUREG(s)- 1430 Only
Action 3.7.12.B	FVS		NI IREG(s)- 1430 Only
	Change Description	New Action	
Action 3.7.12.B	EVS		
	Change Description	Renamed C	
Action 3712 B Bases	EVS		
	Change Description	New Action	
Action 3712 B Bases	EVS		
	Change Description:	Renamed C	
Action 3712C	EVS	Hondined O	
	Change Description	Renamed D	NOREG(S)- 1430 Only
Action 3712C Bases			
	EVO	Renamed D	NUCEG(5)- 1430 Olly
Action 3713B			
AGAGH 0.7.10.D	Change Description:	Renamed C	NOREG(S)- 1430 Only
	Change Description:		

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

Action 3.7.10.E	CREFS		NUREG(s)- 1431 Only
	Change Description:	Renamed F	
Action 3.7.10.E Bases	CREFS		NUREG(s)- 1431 Only
	Change Description:	Renamed F	
Action 3.7.10.F	CREFS		NUREG(s)- 1431 Only
	Change Description:	Deleted	
Action 3.7.10.F Bases	CREFS		NUREG(s)- 1431 Only
	Change Description:	Deleted	
SR 3.7.10.4 Bases	CREFS		NUREG(s)- 1431 Only
Action 3.7.12.B	ECCS PREACS		NUREG(s)- 1431 Only
	Change Description:	New Action	
Action 3.7.12.B	ECCS PREACS		NUREG(s)- 1431 Only
	Change Description:	Renamed C	
Action 3.7.12.B Bases	ECCS PREACS		NUREG(s)- 1431 Only
	Change Description:	New Action	
Action 3.7.12.B Bases	ECCS PREACS		NUREG(s)- 1431 Only
	Change Description:	Renamed C	
Action 3.7.12.C	ECCS PREACS		NUREG(s)- 1431 Only
	Change Description:	Renamed D	
Action 3.7.12.C Bases	ECCS PREACS		NUREG(s)- 1431 Only
	Change Description:	Renamed D	
Action 3.7.13.B	FBACS		NUREG(s)- 1431 Only
	Change Description:	Renamed C	
Action 3.7.13.B	FBACS		NUREG(s)- 1431 Only
	Change Description:	New Action	
Action 3.7.13.B Bases	FBACS		NUREG(s)- 1431 Only
	Change Description:	Renamed C	
Action 3.7.13.B Bases	FBACS		NUREG(s)- 1431 Only
	Change Description:	New Action	
Action 3.7.13.C	FBACS		NUREG(s)- 1431 Only
	Change Description:	Renamed D	
Action 3.7.13.C Bases	FBACS		NUREG(s)- 1431 Only
	Change Description:	Renamed D	
Action 3.7.13.D	FBACS		NUREG(s)- 1431 Only
	Change Description:	Renamed E	

13-Jun-24

Action 3.7.13.D Bases	FBACS		NUREG(s)- 1431 Only
	Change Description:	Renamed E	
Action 3.7.13.E	FBACS		NUREG(s)- 1431 Only
	Change Description:	Renamed F	
Action 3.7.13.E Bases	FBACS		NUREG(s)- 1431 Only
	Change Description:	Renamed F	
Action 3.7.14.B	PREACS		NUREG(s)- 1431 Only
	Change Description:	New Action	
Action 3.7.14.B	PREACS		NUREG(s)- 1431 Only
	Change Description:	Renamed C	
Action 3.7.14.B Bases	PREACS		NUREG(s)- 1431 Only
	Change Description:	Renamed C	
Action 3.7.14.B Bases	PREACS		NUREG(s)- 1431 Only
	Change Description:	New Action	
Action 3.7.14.C	PREACS		NUREG(s)- 1431 Only
	Change Description:	Renamed D	
Action 3.7.14.C Bases	PREACS		NUREG(s)- 1431 Only
	Change Description:	Renamed D	
Action 3.7.14.B	FBACS		NUREG(s)- 1432 Only
	Change Description:	New Action	
Action 3.7.14.B	FBACS		NUREG(s)- 1432 Only
	Change Description:	Renamed C	
Action 3.7.14.B Bases	FBACS		NUREG(s)- 1432 Only
	Change Description:	Renamed C	
Action 3.7.14.B Bases	FBACS		NUREG(s)- 1432 Only
	Change Description:	New Action	
Action 3.7.14.C	FBACS		NUREG(s)- 1432 Only
	Change Description:	Renamed D	
Action 3.7.14.C Bases	FBACS		NUREG(s)- 1432 Only
	Change Description:	Renamed D	
Action 3.7.14.D	FBACS		NUREG(s)- 1432 Only
	Change Description:	Renamed E	
Action 3.7.14.D Bases	FBACS		NUREG(s)- 1432 Only
	Change Description:	Renamed E	
Action 3.7.14.E	FBACS		NUREG(s)- 1432 Only
	Change Description:	Renamed F	

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Action 3.7.14.E Bases	FBACS		NUREG(s)- 1432 Only
	Change Description:	Renamed F	
Action 3.7.4.B	[MCREC] System		NUREG(s)- 1433 Only
	Change Description:	New Action	
Action 3.7.4.B	[MCREC] System		NUREG(s)- 1433 Only
	Change Description:	Renamed C	
Action 3.7.4.B Bases	[MCREC] System		NUREG(s)- 1433 Only
	Change Description:	Renamed C	
Action 3.7.4.B Bases	[MCREC] System		NUREG(s)- 1433 Only
	Change Description:	New Action	
Action 3.7.4.C	[MCREC] System		NUREG(s)- 1433 Only
	Change Description:	Renamed D	
Action 3.7.4.C Bases	[MCREC] System		NUREG(s)- 1433 Only
	Change Description:	Renamed D	
Action 3.7.4.D	[MCREC] System		NUREG(s)- 1433 Only
	Change Description:	Renamed E	
Action 3.7.4.D Bases	[MCREC] System		NUREG(s)- 1433 Only
	Change Description:	Renamed E	
Action 3.7.4.E	[MCREC] System		NUREG(s)- 1433 Only
	Change Description:	Deleted	
Action 3.7.4.E Bases	[MCREC] System		NUREG(s)- 1433 Only
	Change Description:	Deleted	
SR 3.7.4.4 Bases	[MCREC] System		NUREG(s)- 1433 Only
Action 3.7.3.B	[CRFA] System		NUREG(s)- 1434 Only
	Change Description:	New Action	
Action 3.7.3.B	[CRFA] System		NUREG(s)- 1434 Only
	Change Description:	Renamed C	
Action 3.7.3.B	[CRFA] System		NUREG(s)- 1434 Only
	Change Description:	New Action	
Action 3.7.3.B Bases	[CRFA] System		NUREG(s)- 1434 Only
	Change Description:	Renamed C	
Action 3.7.3.C	[CRFA] Svstem		NUREG(s)- 1434 Only
	Change Description:	Renamed D	
Action 3.7.3.C Bases	[CRFA] Svstem		NUREG(s)- 1434 Only
	Change Description:	Renamed D	

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13-Jun-24

[CRFA] System		NUREG(s)- 1434 Only
Change Description:	Renamed E	
ases [CRFA] System		NUREG(s)- 1434 Only
Change Description:	Renamed E	
[CRFA] System		NUREG(s)- 1434 Only
Change Description:	Deleted	
ases [CRFA] System		NUREG(s)- 1434 Only
Change Description:	Deleted	
[CRFA] System		NUREG(s)- 1434 Only
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# **Table of Contents**

1.	SUMMARY DESCRIPTION	.2
2.	DETAILED DESCRIPTION	. 2
2.1.	Background	2
2.2.	Current Technical Specifications Requirements	3
2.3.	Reason for the Proposed Change	5
2.4.	Description of the Proposed Change	5
3.	TECHNICAL EVALUATION	.6
3.1.	Control Room	6
3.2.	Fuel Building and Other Areas	7
3.3.	Applicability Modified End-States	8
4.	REGULATORY EVALUATION	.8
5.	REFERENCES	.9
Model Appli	ication	

### 1. SUMMARY DESCRIPTION

The proposed change revises the Technical Specifications (TS) Actions on ventilation systems to treat an inoperable system consistently. The proposed change affects the Standard Technical Specifications (STS) in NUREG-1430, NUREG-1431, NUREG-1432, NUREG-1433, and NUREG-1434<sup>1</sup>.

### 2. DETAILED DESCRIPTION

### 2.1. Background

The TS contain requirements on ventilation systems that service different areas of the plant, such as the control room, the Auxiliary Building, the spent fuel pool area, and rooms containing Emergency Core Cooling System (ECCS) pumps. The control room ventilation system protects the control room occupants from radioactivity, hazardous chemicals, and smoke. The other ventilation systems limit any unfiltered radioactive release to the environment following an accident. These TS require two redundant mechanical systems<sup>2</sup> (filters, fans, ductwork, valves or dampers, instrumentation, etc.) and an intact boundary around the serviced area. The redundant mechanical systems are necessary to ensure that the system can perform its function following a single failure. An intact boundary around the serviced areas is necessary to ensure that air is directed to the mechanical ventilation systems. Both the redundant mechanical systems and the boundary are required to perform the safety function.

On March 16, 2000, the NRC approved traveler TSTF-287, Revision 5, "Ventilation System Envelope Allowed Outage Time." TSTF-287 added Conditions and Required Actions to the ventilation system TS for an inoperable barrier. A Completion Time of 24 hours was provided to restore an inoperable barrier in the operating modes. The 24-hour Completion Time was considered reasonable based on the low probability of an accident occurring during that time and the use of compensatory measures that were described in the TS Bases. It was also viewed as a reasonable time to diagnose, plan, possibly repair, and test most problems with the boundary. TSTF-287 was incorporated into Revision 2 of the STS that was issued in 2001.

On January 17, 2007, the NRC approved traveler TSTF-448, Revision 3, "Control Room Habitability." TSTF-448 was written to address the issues discussed in NRC Generic Letter 2003-01, "Control Room Habitability," dated June 12, 2003. TSTF-448 revised the control room ventilation system TS Action when the control room boundary is inoperable. TSTF-448 required immediately initiating action to implement mitigating actions, within 24 hours verifying that the mitigating actions will ensure the control room occupants are protected from radiological,

<sup>&</sup>lt;sup>1</sup> NUREG-1430 provides the STS for Babcock & Wilcox plant designs.

NUREG-1431 provides the STS for Westinghouse plant designs.

NUREG-1432 provides the STS for Combustion Engineering plant designs.

NUREG-1433 provides the STS for BWR/4 plant designs, but is also representative of the BWR/2, BWR/3, and, in this case, of the BWR/5 plant design.

NUREG-1434 provides the STS for BWR/6 plant designs, but is also representative in some cases of the BWR/5 plant design.

<sup>&</sup>lt;sup>2</sup> The redundant mechanical systems are referred to as "trains" in NUREG-1430, NUREG-1431, and NUREG-1432, and as "subsystems" in NUREG-1433 and NUREG-1434.

chemical, and smoke hazards, and within 90 days restoring the control room boundary to operable status. TSTF-448 was incorporated into Revision 4 of NUREG-1430 through -1434.

As a result of these travelers, the current STS for ventilation systems provide the following Actions:

- A single inoperable mechanical ventilation system must be restored to operable status within 7 days;
- An inoperable boundary enclosing an area serviced by the ventilation system must be restored within 24 hours. For the control room, if it is verified within 24 hours that the control room occupants are protected, the boundary must be restored to operable status within 90 days. Otherwise, a shutdown is required by following Actions to exit the Applicability of the TS.
- Two inoperable mechanical ventilation systems require an immediate plant shutdown either by entry into LCO 3.0.3 or by following Actions to exit the Applicability of the TS.

An exception to the last bullet is in NUREG-1432 for Combustion Engineering plants. TSTF-426, Revision 5, "Revise or Add Actions to Preclude Entry into LCO 3.0.3 - RITSTF Initiatives 6b & 6c," was approved by the NRC on May 30, 2013<sup>3</sup>. If both control room, penetration room, or ECCS pump room ventilation trains are inoperable, 24 hours is provided to restore at least one ventilation train. However, the Fuel Building Air Cleanup System TS was not included in TSTF-426. That system is only credited to mitigate a fuel handling accident and is not modeled in the Probabilistic Risk Assessment (PRA) tools used to justify TSTF-426. TSTF-426 has been adopted by four of the six Combustion Engineering plants and was incorporated into Revision 5 of NUREG-1432, which was issued in 2021.

# 2.2. <u>Current Technical Specifications Requirements</u>

The proposed changes only affect the TS Actions in the operating modes (Modes 1, 2, 3, and 4 for pressurized water reactors (PWRs), and Modes 1, 2, and 3 for boiling water reactors (BWRs)). Actions in the shutdown modes (Modes 5 and 6 for PWRs and Modes 4 and 5 for BWRs), and during movement of [recently] irradiated fuel are not affected by the proposed change and are not discussed.

# Control Room

The Control Room ventilation requirements are described in the following specifications:

NUREG-1430, TS 3.7.10, "Control Room Emergency Ventilation System (CREVS)" NUREG-1431, TS 3.7.10, "Control Room Emergency Filtration System (CREFS)" NUREG-1433, TS 3.7.4, "[Main Control Room Environmental Control (MCREC)] System" NUREG-1434, TS 3.7.3, "[Control Room Fresh Air (CRFA)] System"

<sup>&</sup>lt;sup>3</sup> Federal Register Volume 78, page 32476, May 30, 2013, "Models for Plant-Specific Adoption of Technical Specifications Task Force Traveler TSTF–426, Revision 5, 'Revise or Add Actions to Preclude Entry into LCO 3.0.3—RITSTF Initiatives 6B & 6C', Using the Consolidated Line-Item Improvement Process."

As discussed above, the proposed change to the control room ventilation system TS is not applicable to NUREG-1432.

These specifications require two ventilation trains or subsystems to be operable, and the control room boundary to be operable.

If one ventilation train or subsystem is inoperable in the operating modes for reasons other than an inoperable barrier, it must be restored to operable status within 7 days, or a plant shutdown is required.

If two ventilation trains or subsystems are inoperable for reasons other than an inoperable barrier in the operating modes, a plant shutdown is required. The PWR STS requires entering LCO 3.0.3 immediately. The BWR STS requires being in Mode 3 within 12 hours.

If the control room boundary is inoperable in the operating modes:

- Actions must be initiated immediately to implement mitigating actions.
- Within 24 hours, the licensee must verify that the mitigating actions ensure control room occupant exposures to radiological, chemical, and smoke hazards will not exceed the licensing basis limits. Otherwise, a plant shutdown is required.
- If the occupants are protected, the boundary must be restored to operable status within 90 days.

### Fuel Building

The fuel building ventilation requirements are described in the following specifications:

NUREG-1430, TS 3.7.13, "Fuel Storage Pool Ventilation System (FSPVS)" NUREG-1431, TS 3.7.13, "Fuel Building Air Cleanup System (FBACS)" NUREG-1432, TS 3.7.14, "Fuel Building Air Cleanup System (FBACS)"

In each of these specifications, two ventilation trains are required to be operable, and the fuel building boundary is required to be operable.

If one ventilation train is inoperable in the operating modes, it must be restored to operable status within 7 days, or a plant shutdown is required.

If two ventilation trains are inoperable due to an inoperable barrier in the operating modes, the boundary must be restored to operable status within 24 hours.

If two ventilation trains are inoperable for reasons other than an inoperable barrier in the operating modes, a plant shutdown is required. The TS require being in Mode 3 within 6 hours.

### Other Ventilation Systems

The other ventilation system requirements are described in the following specifications:

NUREG-1430, TS 3.7.12, "Emergency Ventilation System (EVS)"

### NUREG-1431, TS 3.7.12, "Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System (PREACS)" NUREG-1431, TS 3.7.14, "Penetration Room Exhaust Air Cleanup System (PREACS)"

In each of these specifications, two ventilation trains are required to be operable, and the area boundary is required to be operable.

If one ventilation train is inoperable in the operating modes, it must be restored to operable status within 7 days, or a plant shutdown is required.

If two ventilation trains are inoperable due to an inoperable barrier in the operating modes, the boundary must be restored to operable status within 24 hours.

If two ventilation trains are inoperable for reasons other than an inoperable barrier in the operating modes, a plant shutdown is required. No TS Action is provided and LCO 3.0.3 must be entered immediately.

# 2.3. <u>Reason for the Proposed Change</u>

The control room TS Bases state that in order for the control room ventilation trains to be operable, the control room envelope (CRE) boundary must be maintained such that the CRE occupant dose from a large radioactive release does not exceed the calculated dose in the licensing basis consequence analyses for design basis accidents (DBAs), and that CRE occupants are protected from hazardous chemicals and smoke. The TS Bases also state that with both control room ventilation trains or subsystems inoperable, the ventilation system may not be capable of performing the intended function. In both situations, the system cannot perform its specified safety function. However, the TS permit 24 hours to correct the situation if the barrier is inoperable but require an immediate plant shutdown if both mechanical systems are inoperable. This difference in the requirements is inconsistent given the equivalent safety significance of the conditions.

Another reason for the proposed change is to avoid the operational challenges of a dual unit shutdown. Many plants have two or more units with a common control room or common fuel building. A failure that results in both ventilation trains or subsystems being inoperable can require an immediate shutdown of both units. While licensed operators are trained to safely accomplish a dual unit shutdown, it places an unnecessary burden on the operators that is not commensurate with the safety significance of the condition.

# 2.4. Description of the Proposed Change

The proposed change revises the TS listed in Section 2.2, "Current Technical Specifications Requirements," to add an Action for two inoperable ventilation trains or subsystems in the operating modes. The control room Required Actions are to immediately initiate action to implement mitigating actions and restore of one ventilation train or subsystem within 24 hours. The Required Action for the other areas is to restore one ventilation train or subsystem within 24 hours, and the TS Bases discuss the need to implement compensatory actions. This difference in presentation is based on safety significance of the control room protections versus those for other areas and is consistent with the current TS requirements. The mitigating actions are the

same as those currently required by the TS or discussed in the TS Bases. Any existing Actions applicable to two inoperable ventilation trains or subsystems that require an immediate shutdown or entry into LCO 3.0.3 are replaced by the new Actions.

The TS Bases are revised to reflect the revised requirements.

A model application is attached. The model should be used by licensees desiring to adopt the traveler following NRC approval.

# 3. TECHNICAL EVALUATION

### 3.1. Control Room

The control room ventilation system provides a protected environment from which occupants can control the unit following an uncontrolled release of radioactivity, hazardous chemicals, or smoke. The control room envelope is the area within the confines of the control room envelope boundary that contains the spaces that control room occupants inhabit to control the unit during normal and accident conditions. This area encompasses the control room, and may encompass other non-critical areas to which frequent personnel access or continuous occupancy is not necessary in the event of an accident. The boundary is the combination of walls, floor, roof, ducting, doors, penetrations, and equipment that physically form the control room envelope.

In order for the control room ventilation system to be operable, the control room boundary must be maintained such that the control room occupant dose from a large radioactive release does not exceed the calculated dose in the licensing basis consequence analyses for design basis accidents, and that the control room occupants are protected from hazardous chemicals and smoke. Total system failure, such as from a loss of both ventilation trains or from an inoperable control room envelope boundary, could result in exceeding the dose limits to the control room occupants in the event of a large radioactive release.

The 24-hour Completion Time to restore an inoperable control room boundary was justified in TSTF-287 due to the low probability of a design basis accident during the period and the use of compensatory measures. The TS Bases for the Action state that during the period that the control room boundary is inoperable, appropriate compensatory measures (consistent with the intent of General Design Criteria (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. The TS Bases state that preplanned measures should be available to address these concerns for intentional and unintentional entry into the condition. TSTF-448 revised the control room TS Actions to require immediate action to implement mitigating actions instead of the TS Bases discussion of compensatory measures. TSTF-448 also required verification that the mitigating actions ensure CRE occupant exposures to radiological, chemical, and smoke hazards will not exceed limits. If the licensee can verify that the mitigating actions protect the control room occupants within 24 hours, 90-days is provided to restore the boundary. If the licensee cannot verify within 24 hours that the occupants are protected, a plant shutdown is required.

During the 24-hour period following declaring the control room boundary inoperable, the boundary may be incapable of protecting the control room occupants. If both control room

ventilation trains or subsystems are inoperable, it's also possible that the control room occupants are not protected, but there are a number of ways that the ventilation trains or subsystems may be inoperable while still providing protection to the control room occupants. Implementing mitigating actions will provide additional protection in the same way as if the barrier was inoperable. The mitigating actions are discussed in Regulatory Guide 1.196<sup>4</sup>, Section C.2.7.3, which endorses, with exceptions, NEI 99-03<sup>5</sup>, Section 8.4 and Appendix F.

The proposed change does not request a 90-day Completion Time to restore the mechanical ventilation trains or subsystems as provided for an inoperable control room boundary. Repair of one of the inoperable control room ventilation systems may be performed within 24 hours, while repairs to the boundary require locating and repairing a leak and leak testing the system. This may require specialized testing equipment supplied by outside vendors. Hence, the NRC approved an extended Completion Time for this condition.

Therefore, adding a TS Action applicable when both control room ventilation trains or subsystems are inoperable that requires immediately initiating action to implement mitigating actions and restoration of at least one train within 24 hours establishes consistency within the TS, provides improved protection to the control room occupants during the Completion Time, and reduces the potential for a dual-unit shutdown.

### 3.2. Fuel Building and Other Areas

The fuel building ventilation system provides negative pressure in the fuel storage area, and filters airborne radioactive particulates from the area of the fuel pool following a fuel handling accident. The other ventilation systems, such as the Emergency Ventilation System, the ECCS PREACS, and the PREACS, filter air from the area of the active ECCS components or from the penetration area between the containment and the auxiliary building to limit any radioactive release following an accident.

If the served area boundary is inoperable in the operating modes, the ventilation trains cannot perform their intended functions. If the ventilation trains are inoperable, the area boundary cannot perform its intended function. Under the proposed change, during the period that the ventilation trains are inoperable (as well as when the area boundary is inoperable), appropriate compensatory measures consistent with the intent, as applicable, of GDC 19, 63, 64, 10 CFR 100, and 10 CFR 50.67, are used to protect plant personnel from potential hazards such as radioactive contamination, toxic chemicals, smoke, temperature, and relative humidity<sup>6</sup>. Preplanned measures will be available to address these concerns for intentional and unintentional entry into the conditions. 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 area boundary or the ventilation trains.

<sup>&</sup>lt;sup>4</sup> Regulatory Guide 1.196, "Control Room Habitability at Light-Water Nuclear Power Reactors," January 2007.

<sup>&</sup>lt;sup>5</sup> NEI 99-03, "Control Room Habitability Assessment," June 2001.

<sup>&</sup>lt;sup>6</sup> The TS Action Bases for an inoperable boundary also list "physical security." That is a valid concern for an inoperable area boundary, but not for inoperable mechanical ventilation trains.

# 3.3. <u>Applicability Modified End-States</u>

Several of the affected TS Required Actions require the plant to shut down to a Mode that is within the Applicability of the Specification. For example, the TS is applicable in Modes 1, 2, 3, and 4, and the final action is to be in Mode 4 instead of the typical requirement to exit the Applicability and be in Mode 5. These modified end-states were approved by the NRC as part of Risk-Informed TS Initiative 1, "Technical Specification Required Actions Preferred End States." The approved travelers are:

- TSTF-431, Revision 3, "Change in Technical Specifications End States (BAW-2441)," approved on December 6, 2010 (75 FRN 75705);
- TSTF-432, Revision 1, "Change in Technical Specifications End States (WCAP-16294)," approved on May 11, 2012 (77 FRN 27814); and
- TSTF-423, Revision 1, "Technical Specifications End States, NEDC-32988-A," approved on February 18, 2011 (76 FRN 9614).

Modified end-states appear in the control room ventilation TS (NUREG-1430 TS 3.7.10, NUREG-1431 TS 3.7.10, NUREG-1433 TS 3.7.4, and NUREG-1434 TS 3.7.3), and in the other NUREG-1431 area ventilation TS (TS 3.7.12, TS 3.7.13, and TS 3.7.14). In these specifications, the modified end-state is applicable to single inoperable ventilation train or subsystem, or area boundary not restored within the Completion Time. The modified end-state is equally applicable to two inoperable mechanical ventilation trains or subsystems. The justification for the modified end-states is based on the plant risk in PWR MODE 4 being similar to or lower than the risk in PWR MODE 5, and in BWR Mode 3 versus BWR Mode 4. The justification is not based on why the ventilation system is inoperable, but on a comparison of the plant conditions. For example, TSTF-423, Revision 1, states:

The changes described in the Topical Report [NEDC-32988-A] and the Safety Evaluation are based on Revision 1 of NUREG-1434. In Revision 2, there is an additional Action (Action B). This Action applies when two CRFA subsystems are inoperable due to an inoperable control room boundary in MODE 1, 2, or 3. <u>Since the Topical Report and the Safety Evaluation justify remaining in MODE 3 when two CRFA subsystems are inoperable for any reason, the MODE 3 end state is applied to not meeting the Required Action and associated Completion Times of Condition B. (emphasis added)</u>

The other modified end-state travelers and supporting topical reports used similar justifications for the ventilation system TS changes. As such, the modified end-state is equally applicable to the proposed Conditions, and the modified end-state is also applied to the proposed Action applicable when both ventilation trains or subsystems are inoperable.

# 4. REGULATORY EVALUATION

The regulation at Title 10 of the Code of Federal Regulations (10 CFR) Section 50.36(b) requires:

Each license authorizing operation of a ... utilization facility ... will include technical specifications. The technical specifications will be derived from the analyses and

evaluation included in the safety analysis report, and amendments thereto, submitted pursuant to [10 CFR] 50.34 ["Contents of applications; technical information"]. The Commission may include such additional technical specifications as the Commission finds appropriate.

Regulation 10 CFR 50.36(c), Paragraph (2), states that when a limiting condition for operation of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the technical specifications until the condition can be met. The proposed change provides a remedial action to be taken when the limiting condition for operation is not met and is in compliance with 10 CFR 50.36(c)(2).

Per 10 CFR 50.90, whenever a holder of a license desires to amend the license, application for an amendment must be filed with the Commission, fully describing the changes desired, and following as far as applicable, the form prescribed for original applications.

Per 10 CFR 50.92(a), in determining whether an amendment to a license will be issued to the applicant, the Commission will be guided by the considerations which govern the issuance of initial licenses to the extent applicable and appropriate.

Section IV, "The Commission Policy," of the "Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors" (58FR39132), dated July 22, 1993, states in part that improved STS have been developed and will be maintained for each NSSS owners group. The Commission Policy encourages licensees to use the improved STS as the basis for plant-specific Technical Specifications." The industry's proposal of travelers and the NRC's approval of travelers is the method used to maintain the improved STS as described in the Commission's Policy. Following NRC approval, licensees adopt travelers into their plant-specific technical specifications following the requirements of 10 CFR 50.90. Therefore, the traveler process facilitates the Commission's policy while satisfying the requirements of the applicable regulations.

The regulation at 10 CFR 50.36(a)(1) also requires the application to include a "summary statement of the bases or reasons for such specifications, other than those covering administrative controls." The proposed traveler revises the Bases to be consistent with the changes to the TS, and therefore, complies with 10 CFR 50.36(a)(1).

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

# 5. REFERENCES

None.

TSTF-604, Rev. 0

**Model Application** 

TSTF-604, Rev. 0

[DATE]

10 CFR 50.90

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

PLANT NAME DOCKET NO. [50]-[xxx] SUBJECT: Application to Revise Technical Specifications to Adopt TSTF-604, "Revise Ventilation System Actions"

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

[LICENSEE] requests adoption of TSTF-604, "Revise Ventilation System Actions," which is an approved change to the Standard Technical Specifications (STS), into the [PLANT NAME, UNIT NOS] TS. TSTF-604 revises the TS Actions on ventilation systems to treat an inoperable system consistently.

The enclosure provides a description and assessment of the proposed changes. Attachment 1 provides the existing TS pages marked to show the proposed changes. [Attachment 2 provides revised (clean) TS pages.] Attachment [3] provides the existing TS Bases pages marked to show revised text associated with the proposed TS changes and is provided for information only.

[LICENSEE] requests that the amendment be reviewed under the Consolidated Line Item Improvement Process (CLIIP). Approval of the proposed amendment is requested within 6 months of completion of the NRC's acceptance review. Once approved, the amendment shall be implemented within [90] days.

There are no regulatory commitments in this letter.

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

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

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

Sincerely,

[Name, Title]

Enclosure [1]: Description and Assessment [Enclosure 2: Justification for Additional RICTs]

Attachments: 1. Proposed Technical Specification Changes (Mark-Up)

- 2. [Revised Technical Specification Pages]
- [3]. Proposed Technical Specification Bases Changes (Mark-Up) For Information Only

[The attachments are to be provided by the licensee and are not included in the model application.]

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

# ENCLOSURE [1]

### DESCRIPTION AND ASSESSMENT

### 1.0 DESCRIPTION

[LICENSEE] requests adoption of TSTF-604, "Revise Ventilation System Actions," which is an approved change to the Standard Technical Specifications (STS), into the [PLANT NAME, UNIT NOS] TS. TSTF-604 revises the Technical Specifications (TS) Actions on ventilation systems to treat an inoperable system consistently.

### 2.0 ASSESSMENT

### 2.1 Applicability of Safety Evaluation

[LICENSEE] has reviewed the safety evaluation for TSTF-604 provided to the Technical Specifications Task Force in a letter dated [DATE]. This review included the NRC staff's evaluation, as well as the information provided in TSTF-604. [LICENSEE] has concluded that the justifications presented in TSTF-604 and the safety evaluation prepared by the NRC staff are applicable to [PLANT, UNIT NOS.] and justify this amendment for the incorporation of the changes to the [PLANT] TS.

### 2.2 Variations

[LICENSEE is not proposing any variations from the TS changes described in TSTF-604 or the applicable parts of the NRC staff's safety evaluation.] [LICENSEE is proposing the following variations from the TS changes described in TSTF-604 or the applicable parts of the NRC staff's safety evaluation:]

[The [PLANT] TS utilize different [numbering][and][titles] than the STS on which TSTF-604 was based. Specifically, [describe differences between the plant-specific TS numbering and/or titles and the TSTF-604 numbering and titles.] These differences are administrative and do not affect the applicability of TSTF-604 to the [PLANT] TS.]

[The [PLANT] TS contain requirements that differ from the STS on which TSTF-604 was based but are encompassed in the TSTF-604 justification. [Describe the differences and why TSTF-604 is still applicable.]

### 3.0 REGULATORY ANALYSIS

3.1 No Significant Hazards Consideration Analysis

[LICENSEE] requests adoption of TSTF-604, "Revise Ventilation System Actions," which is an approved change to the Standard Technical Specifications (STS), into the [PLANT NAME, UNIT NOS] TS. TSTF-604 revises the Technical Specifications (TS) Actions on ventilation systems to treat an inoperable system consistently.

[LICENSEE] has evaluated if a significant hazards consideration is involved with the proposed amendment(s) by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

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

Response: No

The proposed change revises the TS Actions on ventilation systems to treat an inoperable system consistently. The affected ventilation systems are not an initiator of any accident previously evaluated. The design of the ventilation systems is not affected by the proposed change. As a result, the probability of any accident previously evaluated is not affected.

The proposed change provides a 24-hour Completion Time when both mechanical trains of an affected ventilation system are inoperable. The TS currently provide a 24-hour Completion Time for an inoperable boundary, and in both cases, the safety function cannot be performed. Therefore, the consequences of a previously evaluated accident under the proposed change are no different than the consequences of the same accident with an inoperable boundary and, as a result, the consequences of an accident during this 24-hour period with an inoperable ventilation system are not significantly increased.

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

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

# Response: No

The proposed change revises the TS Actions on ventilation systems to treat an inoperable system consistently. The proposed change does not alter the design function or operation of the affected ventilation systems. The affected ventilation systems are accident mitigation systems and cannot initiate an accident. The proposed change applies when the mechanical trains of the ventilation system are inoperable and, consequently, it does not create any new credible failure mechanisms, malfunctions, accident initiators not considered in the design and licensing bases.

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

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

### Response: No

The proposed change revises the TS Actions on ventilation systems to treat an inoperable system consistently. The proposed change only affects the TS Actions when the

ventilation system is inoperable. The proposed change does not alter a design basis or safety limit (i.e., the controlling numerical value for a parameter established in the UFSAR or the license). The proposed change provides a 24-hour Completion Time when the mechanical ventilation system is inoperable, which is the same Completion Time applied when the boundary around the area serviced by the ventilation system is inoperable. In both cases, the system is inoperable and so applying the same Completion Time to both inoperabilities does not significantly affect the margin of safety.

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

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

### 3.2 Conclusion

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

### 4.0 ENVIRONMENTAL CONSIDERATION

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

TSTF-604, Rev. 0

**Technical Specifications Changes** 

CREVS 3.7.10

### 3.7 PLANT SYSTEMS

3.7.10 Control Room Emergency Ventilation System (CREVS)

LCO 3.7.10 Two CREVS trains shall be OPERABLE.

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

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

#### ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One CREVS train inoperable for reasons other than Condition CB.	A.1	Restore CREVS train to OPERABLE status.	7 days
B. Two CREVS trains inoperable for reasons other than Condition C in MODE 1, 2, 3, or 4.	B.1 <u>AND</u>	Initiate action to implement mitigating actions.	Immediately
	B.2	Restore one CREVS train to OPERABLE status.	24 hours
<b>CB</b> .One or more CREVS trains inoperable due to inoperable CRE boundary in MODE 1, 2,	<b>C</b> ₿.1 <u>AND</u>	Initiate action to implement mitigating actions.	Immediately
3, 01 4.	<b>C</b> ₿.2	Verify mitigating actions ensure CRE occupant exposures to radiological, chemical, and smoke hazards will not exceed limits.	24 hours
	AND		

CREVS 3.7.10

REQUIRED ACTION		COMPLETION TIME
<b>C</b> ₿.3	Restore CRE boundary to OPERABLE status.	90 days
	REQUIRED ACTION	COMPLETION TIME
DC.1 AND DC.2	Be in MODE 3.	6 hours
	Be in MODE 4.	12 hours
ED.1	<ul> <li>NOTE</li> <li>Place in emergency mode if automatic transfer to emergency mode is inoperable.</li> <li>Place OPERABLE CREVS train in emergency mode.</li> </ul>	Immediately
<u>OR</u>		
<b>E</b> ₽.2	Suspend movement of [recently] irradiated fuel assemblies.	Immediately ]
	CB.3 DC.1 AND DC.2 ED.1	REQUIRED ACTIONCB.3Restore CRE boundary to OPERABLE status.DC.1REQUIRED ACTIONDC.1Be in MODE 3.ANDImage: Colspan="2">OPERABLE StatusDC.1Be in MODE 4.DC.2Image: Colspan="2">NOTE

CREVS 3.7.10

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
FE. [ Two CREVS trains inoperable [in MODE 5 or 6, or] during movement of [recently] irradiated fuel assemblies.	FE.1 Suspend movement of [recently] irradiated fuel assemblies.	Immediately ]
<u>OR</u>		
One or more CREVS trains inoperable due to an inoperable CRE boundary [in MODE 5 or 6, or] during movement of [recently] irradiated fuel assemblies.		
F. Two CREVS trains inoperable in MODE 1, 2, 3, or 4 for reasons other than Condition B.	F.1 Enter LCO 3.0.3.	Immediately

### SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.10.1 Operate each CREVS train for ≥ 15 continuous minutes [with heaters operating].	[ 31 days <u>OR</u> In accordance with the Surveillance Frequency Control Program ]

EVS 3.7.12

### 3.7 PLANT SYSTEMS

3.7.12 Emergency Ventilation System (EVS)

LCO 3.7.12 Two EVS trains shall be OPERABLE.

-----NOTE-----NOTE The auxiliary building negative pressure area boundary may be opened intermittently under administrative control.

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. Two EVS trains inoperable for reasons other than Condition C.	B.1	Restore one EVS train to OPERABLE status.	24 hours
<b>CB</b> . Two EVS trains inoperable due to inoperable auxiliary building negative pressure area boundary.	<b>C</b> B.1	Restore auxiliary building negative pressure area boundary to OPERABLE status.	24 hours
DC. Required Action and associated Completion Time not met.	<b>D</b> <del>C</del> .1 <u>AND</u>	Be in MODE 3.	6 hours
	<b>D</b> <del>C</del> .2	Be in MODE 5.	36 hours

#### 3.7 PLANT SYSTEMS

3.7.13 Fuel Storage Pool Ventilation System (FSPVS)

LCO 3.7.13 [Two] FSPVS trains shall be OPERABLE.

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

APPLICABILITY: [MODES 1, 2, 3, and 4,] During movement of [recently] 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
<ul> <li>B. Two FSPVS trains inoperable in MODE 1, 2, 3, or 4 for reasons other than Condition C.</li> </ul>	B.1	Restore one FSPVS train to OPERABLE status.	24 hours
<b>CB</b> .Two FSPVS trains inoperable due to inoperable fuel building boundary in MODE 1, 2, 3, or 4.	<b>С</b> В.1	Restore fuel building boundary to OPERABLE status.	24 hours

FSPVS 3.7.13

ACTIONS (continued)

CONDITION		REQUIRED ACTION	COMPLETION TIME
D <del>C</del> . [Required Action and associated Completion Time of Condition A, <b>B</b> , or C <del>B</del>	<b>DC</b> .1 <u>AND</u>	Be in MODE 3.	6 hours
not met in MODE 1, 2, 3, or 4.	<b>D</b> <del>G</del> .2	Be in MODE 5.	36 hours ]
<u> </u>			
Two FSPVs trains inoperable in MODE 1, 2, 3, or 4 for reasons other than Condition B.			
ED.Required Action and associated Completion Time of Condition A not met during movement of [recently] irradiated fuel assemblies in the fuel building.	<b>Е</b> <del>.</del> 1	Place OPERABLE FSPVS train in operation.	Immediately
	<u>OR</u>		
	<del>Е</del> .2	Suspend movement of [recently] irradiated fuel assemblies in the fuel building.	Immediately
FE. Two FSPVS trains inoperable during movement of [recently] irradiated fuel assemblies in the fuel building.	<b>F</b> €.1	Suspend movement of [recently] irradiated fuel assemblies in the fuel building.	Immediately

CREVS B 3.7.10

BASES
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LCO (continued)	
	The LCO is modified by a Note allowing the CRE boundary to be opened intermittently under administrative controls. This Note only applies to openings in the CRE boundary that can be rapidly restored to the design condition, such as doors, hatches, floor plugs, and access panels. 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 should be proceduralized and consist of stationing a dedicated individual at the opening who is in continuous communication with the operators in the CRE. This individual will have a method to rapidly close the opening and to restore the CRE boundary to a condition equivalent to the design condition when a need for CRE isolation is indicated.
APPLICABILITY	In MODES 1, 2, 3, 4, [5, and 6,] and during movement of [recently] irradiated fuel assemblies, the CREVS must be OPERABLE to ensure that the CRE will remain habitable during and following a DBA.
	In MODES [5 and 6], the CREVS is required to cope with the release from a rupture of an outside waste gas tank.
	During movement of [recently] irradiated fuel assemblies, the CREVS must be OPERABLE to cope with a release due to a fuel handling accident [involving handling recently irradiated fuel. Due to radioactive decay, the CREVS is only required to mitigate fuel handling accidents involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous [X] days)].
ACTIONS	<u>A.1</u>
	With one CREVS train inoperable, for reasons other than an inoperable CRE boundary, action must be taken to restore OPERABLE status within 7 days. In this Condition, the remaining OPERABLE CREVS train is adequate to perform the CRE occupant 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.
	B.1 and B.2
	If both CREVS trains are inoperable in MODE 1, 2, 3, or 4 for reasons other than an inoperable CRE boundary (i.e., Condition C), the CREVS may not be capable of performing the intended function. Therefore, immediate action must be initiated to implement mitigating actions to lessen the effect on the CRE occupants from

CREVS B 3.7.10

potential hazards such as radioactive contamination, toxic chemicals, smoke, temperature, relative humidity, and temperature. Preplanned measures should be available to address these concerns. At least one CREVS train must be restored to OPERABLE status within 24 hours. The 24 hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, and the use of mitigating actions.

### <u>CB.1, CB.2, and CB.3</u>

If the unfiltered inleakage of potentially contaminated air past the CRE boundary and into the CRE can result in CRE occupant radiological dose greater than the calculated dose of the licensing basis analyses of DBA consequences (allowed to be up to [5 rem whole body or its equivalent to

CREVS B 3.7.10

#### BASES

#### ACTIONS (continued)

any part of the body] [5 rem TEDE]), or inadequate protection of CRE occupants from hazardous chemicals or smoke, the CRE boundary is inoperable. Actions must be taken to restore an OPERABLE CRE boundary within 90 days.

During the period that the CRE boundary is considered inoperable, action must be initiated to implement mitigating actions to lessen the effect on CRE occupants from the potential hazards of a radiological or chemical event or a challenge from smoke. Actions must be taken within 24 hours to verify that in the event of a DBA, the mitigating actions will ensure that CRE occupant radiological exposures will not exceed the calculated dose of the licensing basis analyses of DBA consequences, and that CRE occupants are protected from hazardous chemicals and smoke. These mitigating actions (i.e., actions that are taken to offset the consequences of the inoperable CRE boundary) should be preplanned for implementation upon entry into the condition, regardless of whether entry is intentional or unintentional. The 24 hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, and the use of mitigating actions. The 90 day Completion Time is reasonable based on the determination that the mitigating actions will ensure protection of CRE occupants within analyzed limits while limiting the probability that CRE occupants will have to implement protective measures that may adversely affect their ability to control the reactor and maintain it in a safe shutdown condition in the event of a DBA. In addition, the 90 day Completion Time is a reasonable time to diagnose, plan and possibly repair, and test most problems with the CRE boundary.

### **D<u>C</u>.1 and <b>D**<u><u>C</u>.2</u>

In MODE 1, 2, 3, or 4, if the inoperable CREVS train or the CRE boundary cannot be restored to OPERABLE status within the required Completion Time, the unit must be placed in a MODE overall plant risk is minimized. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 4 within 12 hours.

Remaining within the Applicability of the LCO is acceptable because the plant risk in MODE 4 is similar to or lower than MODE 5 (Ref. 5). The control room is isolated and the CREVS is utilized in the event of an accident, such as a loss of coolant accident, to reduce or eliminate the ingress of radioactive material released during the event into the control room. Because of the reduction in RCS pressure and temperature in MODE 4, the likelihood of an accident is reduced. In addition, there are more accident mitigation systems available and there is more redundancy

CREVS B 3.7.10

#### BASES

### ACTIONS (continued)

and diversity in core heat removal mechanisms in MODE 4 than in MODE 5. However, voluntary entry into MODE 5 may be made as it is also an acceptable low-risk state.

Required Action **CD**.2 is modified by a Note that states that LCO 3.0.4.a is not applicable when entering MODE 4. This Note prohibits the use of LCO 3.0.4.a to enter MODE 4 during startup with the LCO not met. However, there is no restriction on the use of LCO 3.0.4.b, if applicable, because LCO 3.0.4.b requires performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering MODE 4, and establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

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.

### [ **E**<u>D</u>.1 and **E**<u>D</u>.2

[In MODE 5 or 6, or] during movement of [recently] irradiated fuel assemblies, 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.

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

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

CREVS B 3.7.10

BASES

# ACTIONS (continued)

# 

	[In MODE 5 or 6, or] during movement of [recently] irradiated fuel assemblies, when two CREVS trains are inoperable or with one or more CREVS trains inoperable, action must be taken immediately to suspend activities that could result in a release of radioactivity that might require isolation of the CRE. This places the unit in a condition that minimizes the accident risk. This does not preclude the movement of fuel to a safe position. ]
	<u>F.1</u>
	If both CREVS trains are inoperable in MODE 1, 2, 3, or 4 for reasons other than an inoperable CRE boundary (i.e., Condition B), 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	<u>SR 3.7.10.1</u>
	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. Operation [with the heaters on] for $\geq$ 15 continuous minutes demonstrates OPERABILITY of the system. Periodic operation ensures that [heater failure,] blockage, fan or motor failure, or excessive vibration can be detected for corrective action. [The 31 day Frequency is based on the known reliability of the equipment and the two train redundancy available.
	OR
	The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.
	REVIEWER'S NOTE Plants controlling Surveillance Frequencies under a Surveillance Frequency Control Program should utilize the appropriate Frequency description, given above, and the appropriate choice of Frequency in the Surveillance Requirement.

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CREVS B 3.7.10

#### BASES

#### SURVEILLANCE REQUIREMENTS (continued)

<u>SR 3.7.10.4</u>

This SR verifies the OPERABILITY of the CRE boundary by testing for unfiltered air inleakage past the CRE boundary and into the CRE. The details of the testing are specified in the Control Room Envelope Habitability Program.

The CRE is considered habitable when the radiological dose to CRE occupants calculated in the licensing basis analyses of DBA consequences is no more than [5 rem whole body or its equivalent to any part of the body] [5 rem TEDE] and the CRE occupants are protected from hazardous chemicals and smoke. This SR verifies that the unfiltered air inleakage into the CRE is no greater than the flow rate assumed in the licensing basis analyses of DBA consequences. When unfiltered air inleakage is greater than the assumed flow rate. Condition **CB** must be entered. Required Action **CB**.3 allows time to restore the CRE boundary to OPERABLE status provided mitigating actions can ensure that the CRE remains within the licensing basis habitability limits for the occupants following an accident. Compensatory measures are discussed in Regulatory Guide 1.196, Section C.2.7.3, (Ref. 6) which endorses, with exceptions, NEI 99-03, Section 8.4 and Appendix F (Ref. 7). These compensatory measures may also be used as mitigating actions as required by Required Action **CB**.2. Temporary analytical methods may also be used as compensatory measures to restore OPERABILITY (Ref. 8). Options for restoring the CRE boundary to OPERABLE status include changing the licensing basis DBA consequence analysis, repairing the CRE boundary, or a combination of these actions. Depending upon the nature of the problem and the corrective action, a full scope inleakage test may not be necessary to establish that the CRE boundary has been restored to OPERABLE status.

#### SR 3.7.10.5

This SR verifies the CREVS can supply the CRE with outside air to meet the design requirement. [The Frequency of [18] months is consistent with industry practice and other filtration SRs.

#### OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

#### BASES

### ACTIONS (continued)

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.

# <u>B.1</u>

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.

With two EVS trains inoperable for reasons other than an inoperable auxiliary building negative pressure area boundary, the EVS cannot perform its intended functions. Actions must be taken to restore an EVS train within 24 hours. During the period that the EVS trains are inoperable, appropriate compensatory measures [consistent with the intent, as applicable, of GDC 19, 63, 64 and 10 CFR Part 100] should be utilized to protect plant personnel from potential hazards such as radioactive contamination, toxic chemicals, smoke, temperature, and relative humidity. Preplanned measures should be available to address these concerns. 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.

### <u>BC 1</u>

------REVIEWER'S NOTE-------Adoption of Condition CB 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 BC.

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 [consistent with the intent, as applicable, of GDC 19, 63, 64 and 10 CFR Part 100] should be utilized to protect plant
EVS B 3.7.12

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.

# **D<u>C</u>.1 and <b>D**<u><u>C</u>.2</u>

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

FSPVS B 3.7.13

### BASES

### APPLICABILITY (continued)

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

ACTIONS LCO 3.0.3 is not applicable while in MODE 5 or 6. However, since irradiated fuel assembly movement can occur in MODE 1, 2, 3, or 4, the ACTIONS have been modified by a Note stating that LCO 3.0.3 is not applicable. If moving irradiated fuel assemblies while in MODE 5 or 6, LCO 3.0.3 would not specify any action. If moving irradiated fuel assemblies while in MODE 1, 2, 3, or 4, the fuel movement is independent of reactor operations. Entering LCO 3.0.3, while in MODE 1, 2, 3, or 4 would require the unit to be shutdown unnecessarily.

### <u>A.1</u>

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.

### <u>B.1</u>

------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.

With two FSPVS trains inoperable for reasons other than an inoperable fuel building boundary, the FSPVS cannot perform its intended functions. Actions must be taken to restore an FSPVS train within 24 hours. During the period that the FSPVS trains are inoperable, appropriate compensatory measures [consistent with the intent, as applicable, of GDC 19, 63, 64 and 10 CFR Part 100] should be utilized to protect plant personnel from potential hazards such as radioactive contamination, toxic chemicals, smoke, temperature, and relative humidity. Preplanned measures should be available to address these concerns. 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.

FSPVS B 3.7.13

# <u>CB.1</u>

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

If the fuel building boundary is inoperable in MODE 1, 2, 3, or 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 [consistent with the intent, as applicable, of GDC 19, 60, 61, 63, 64 and 10 CFR 100] should be utilized to protect plant personnel from potential hazards such as radioactive contamination, toxic chemicals, smoke, temperature and relative humidity, and physical security. Preplanned measures should be available to address these concerns for intentional and unintentional entry into the condition. The 24 hour Completion Time is reasonable based on

FSPVS B 3.7.13

### BASES

# ACTIONS (continued)

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.

# [ D<u>C</u>.1 and DC.2

In MODE 1, 2, 3, or 4, when Required Action A.1, **B.1**, or **CB**.1 cannot be completed within the associated Completion Time, or when both FSPVS trains are inoperable for reasons other than an inoperable fuel building boundary (i.e., Condition B), 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. ]

### ED.1 and ED.2

If the inoperable FSPVS train cannot be restored to OPERABLE status within the required Completion Time, during movement of [recently] irradiated fuel assemblies in the fuel building the OPERABLE FSPVS train must be started immediately or [recently] irradiated 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 [recently] irradiated fuel movement, which precludes a fuel handling accident [involving handling recently irradiated fuel]. This action does not preclude the movement of fuel assemblies to a safe position.

### <u>F</u>.1

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

## 3.7 PLANT SYSTEMS

3.7.10 Control Room Emergency Filtration System (CREFS)

LCO 3.7.10 Two CREFS trains shall be OPERABLE.

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

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

### ACTIONS

CONDITION		REQUIRED ACTION	COMPLETION TIME
A. One CREFS train inoperable for reasons other than Condition CB.	A.1	Restore CREFS train to OPERABLE status.	7 days
B. Two CREFS trains inoperable for reasons other than Condition C in MODE 1, 2, 3, or 4.	B.1 <u>AND</u>	Initiate action to implement mitigating actions.	Immediately
	B.2	Restore one CREFS train to OPERABLE status.	24 hours
<b>CB</b> .One or more CREFS trains inoperable due to inoperable CRE boundary in MODE 1, 2,	<b>C</b> ₿.1 <u>AND</u>	Initiate action to implement mitigating actions.	Immediately
3, 01 4.	<b>C</b> ₿.2	Verify mitigating actions ensure CRE occupant exposures to radiological, chemical, and smoke hazards will not exceed limits.	24 hours
	AND		

CREFS 3.7.10

CONDITION	REQUIRED ACTION		COMPLETION TIME
	<b>C</b> ₿.3	Restore CRE boundary to OPERABLE status.	90 days
ACTIONS (continued)	1		
CONDITION		REQUIRED ACTION	COMPLETION TIME
DC. Required Action and associated Completion Time of Condition A, B, or CB not met in MODE 1, 2, 3, or 4.	DC.1 <u>AND</u> DC.2	Be in MODE 3. NOTE LCO 3.0.4.a is not applicable when entering MODE 4.	6 hours
		Be in MODE 4.	12 hours
ED.Required Action and associated Completion Time of Condition A not met [in MODE 5 or 6, or] during movement of [recently] irradiated fuel assemblies.	ED.1	NOTE [ Place in toxic gas protection mode if automatic transfer to toxic gas protection mode is inoperable. ]	
		Place OPERABLE CREFS train in emergency mode.	Immediately
	<u>OR</u>		
	<b>EÐ</b> .2	Suspend movement of [recently] irradiated fuel assemblies.	Immediately

CREFS 3.7.10

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
FE. Two CREFS trains inoperable [in MODE 5 or 6, or] during movement of [recently] irradiated fuel assemblies.	FE.1 Suspend movement of [recently] irradiated fuel assemblies.	Immediately
OR		
One or more CREFS trains inoperable due to an inoperable CRE boundary [in MODE 5 or 6, or] during movement of [recently] irradiated fuel assemblies.		
F. Two CREFS trains inoperable in MODE 1, 2, 3, or 4 for reasons other than Condition B.	F.1 Enter LCO 3.0.3.	Immediately

## SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.7.10.1	Operate each CREFS train for ≥ 15 continuous minutes [with heaters operating].	[ 31 days <u>OR</u> In accordance with the Surveillance Frequency Control Program ]

# 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.

-----NOTE-----NOTE opened intermittently under administrative control.

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

ACTIONS

CONDITION		REQUIRED ACTION	COMPLETION TIME
A. One ECCS PREACS train inoperable.	A.1	Restore ECCS PREACS train to OPERABLE status.	7 days
B. Two ECCS PREACS trains inoperable in MODE 1, 2, 3, or 4 for reasons other than Condition C.	B.1	Restore one ECCS PREACS train to OPERABLE status.	24 hours
CB.Two ECCS PREACS trains inoperable due to inoperable ECCS pump room boundary.	<b>C</b> ₿.1	Restore ECCS pump room boundary to OPERABLE status.	24 hours
DC. Required Action and associated Completion Time not met.	D <del>C</del> .1 <u>AND</u> D <del>C</del> .2	Be in MODE 3. NOTE LCO 3.0.4.a is not applicable when entering MODE 4.	6 hours
		Be in MODE 4.	12 hours

### 3.7 PLANT SYSTEMS

3.7.13 Fuel Building Air Cleanup System (FBACS)

LCO 3.7.13 Two FBACS trains shall be OPERABLE.

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

APPLICABILITY: [MODES 1, 2, 3, and 4, ] During movement of [recently] 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
<ul> <li>B. Two FBACS trains inoperable in MODE 1, 2, 3, or 4 for reasons other than Condition C.</li> </ul>	B.1	Restore one FBACS train to OPERABLE status.	24 hours
<b>CB</b> . Two FBACS trains inoperable due to inoperable fuel building boundary in MODE 1, 2, 3, or 4.	<b>C</b> ₿.1	Restore fuel building boundary to OPERABLE status.	24 hours

FBACS 3.7.13

ACTIONS (continued)

CONDITION		REQUIRED ACTION	COMPLETION TIME
<ul> <li>DC. [Required Action and associated Completion Time of Condition A, B, or CB not met in MODE 1, 2, 3, or 4.</li> <li>OR Two FBACS trains inoperable in MODE 1, 2, 3, or 4 for reasons other than Condition B.</li> </ul>	D <del>C</del> .1 <u>AND</u> D <del>C</del> .2	Be in MODE 3. NOTE LCO 3.0.4.a is not applicable when entering MODE 4. Be in MODE 4.	6 hours 12 hours ]
ED.Required Action and associated Completion Time [of Condition A] not met during movement of [recently] irradiated fuel assemblies in the fuel building.	E₽.1 <u>OR</u> E₽.2	Place OPERABLE FBACS train in operation. Suspend movement of [recently] irradiated fuel assemblies in the fuel building.	Immediately Immediately
FE. Two FBACS trains inoperable during movement of [recently] irradiated fuel assemblies in the fuel building.	<b>FE</b> .1	Suspend movement of [recently] irradiated fuel assemblies in the fuel building.	Immediately

PREACS 3.7.14

### 3.7 PLANT SYSTEMS

3.7.14 Penetration Room Exhaust Air Cleanup System (PREACS)

LCO 3.7.14 Two PREACS trains shall be OPERABLE.

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

### ACTIONS

CONDITION		REQUIRED ACTION	COMPLETION TIME
A. One PREACS train inoperable.	A.1	Restore PREACS train to OPERABLE status.	7 days
B. Two PREACS trains inoperable for reasons other than Condition C.	B.1	Restore one PREACS train to OPERABLE status.	24 hours
<b>CB</b> . Two PREACS trains inoperable due to inoperable penetration room boundary.	<b>C</b> ₿.1	Restore penetration room boundary to OPERABLE status.	24 hours
DC. Required Action and associated Completion Time not met.	D <del>C</del> .1 <u>AND</u> D <del>C</del> .2	Be in MODE 3. NOTE LCO 3.0.4.a is not applicable when entering MODE 4.	6 hours
		Be in MODE 4.	12 hours

Westinghouse STS

CREFS B 3.7.10

BASES
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LCO (continued)	
	The LCO is modified by a Note allowing the CRE boundary to be opened intermittently under administrative controls. This Note only applies to openings in the CRE boundary that can be rapidly restored to the design condition, such as doors, hatches, floor plugs, and access panels. 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 should be proceduralized and consist of stationing a dedicated individual at the opening who is in continuous communication with the operators in the CRE. This individual will have a method to rapidly close the opening and to restore the CRE boundary to a condition equivalent to the design condition when a need for CRE isolation is indicated.
APPLICABILITY	In MODES 1, 2, 3, 4, [5, and 6,] and during movement of [recently] irradiated fuel assemblies, the CREFS must be OPERABLE to ensure that the CRE will remain habitable during and following a DBA.
	In [MODES 5 and 6], the CREFS is required to cope with the release from the rupture of an outside waste gas tank.
	During movement of [recently] irradiated fuel assemblies, the CREFS must be OPERABLE to cope with the release from a fuel handling accident [involving handling recently irradiated fuel]. [The CREFS is only required to be OPERABLE during fuel handling involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous [X] days), due to radioactive decay.]
ACTIONS	<u>A.1</u>
	When one CREFS train is inoperable, for reasons other than an inoperable CRE boundary, action must be taken to restore OPERABLE status within 7 days. In this Condition, the remaining OPERABLE CREFS train is adequate to perform the CRE occupant protection function. However, the overall reliability is reduced because a 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.
	B.1 and B.2
	If both CREFS trains are inoperable in MODE 1, 2, 3, or 4 for reasons other than an inoperable CRE boundary (i.e., Condition C), the CREFS may not be capable of performing the intended function. Therefore, immediate action must be initiated to implement

CREFS B 3.7.10

mitigating actions to lessen the effect on the CRE occupants from potential hazards such as radioactive contamination, toxic chemicals, smoke, temperature, relative humidity, and temperature. Preplanned measures should be available to address these concerns. At least one CREFS train must be restored to OPERABLE status within 24 hours. The 24 hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, and the use of mitigating actions.

### <u>CB.1, CB.2, and CB.3</u>

If the unfiltered inleakage of potentially contaminated air past the CRE boundary and into the CRE can result in CRE occupant radiological dose greater than the calculated dose of the licensing basis analyses of DBA consequences (allowed to be up to [5 rem whole body or its equivalent to

CREFS B 3.7.10

### BASES

### ACTIONS (continued)

any part of the body] [5 rem TEDE]), or inadequate protection of CRE occupants from hazardous chemicals or smoke, the CRE boundary is inoperable. Actions must be taken to restore an OPERABLE CRE boundary within 90 days.

During the period that the CRE boundary is considered inoperable, action must be initiated to implement mitigating actions to lessen the effect on CRE occupants from the potential hazards of a radiological or chemical event or a challenge from smoke. Actions must be taken within 24 hours to verify that in the event of a DBA, the mitigating actions will ensure that CRE occupant radiological exposures will not exceed the calculated dose of the licensing basis analyses of DBA consequences, and that CRE occupants are protected from hazardous chemicals and smoke. These mitigating actions (i.e., actions that are taken to offset the consequences of the inoperable CRE boundary) should be preplanned for implementation upon entry into the condition, regardless of whether entry is intentional or unintentional. The 24 hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, and the use of mitigating actions. The 90 day Completion Time is reasonable based on the determination that the mitigating actions will ensure protection of CRE occupants within analyzed limits while limiting the probability that CRE occupants will have to implement protective measures that may adversely affect their ability to control the reactor and maintain it in a safe shutdown condition in the event of a DBA. In addition, the 90 day Completion Time is a reasonable time to diagnose, plan and possibly repair, and test most problems with the CRE boundary.

### **DC**.1 and **DC**.2

In MODE 1, 2, 3, or 4, if the inoperable CREFS train or the CRE boundary cannot be restored to OPERABLE status within the required Completion Time, the unit must be placed in a MODE in which the overall plant risk is reduced. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 4 within 12 hours.

Remaining within the Applicability of the LCO is acceptable to accomplish short duration repairs to restore inoperable equipment because the plant risk in MODE 4 is similar to or lower than MODE 5 (Ref. 5). In MODE 4 the steam generators and Residual Heat Removal System are available to remove decay heat, which provides diversity and defense in depth. As

# BASES

# ACTIONS (continued)

stated in Reference 5, the steam turbine driven auxiliary feedwater pump must be available to remain in MODE 4. Should steam generator cooling be lost while relying on this Required Action, there are preplanned actions to ensure long-term decay heat removal. Voluntary entry into MODE 5 may be made as it is also acceptable from a risk perspective.

Required Action **DC**.2 is modified by a Note that states that LCO 3.0.4.a is not applicable when entering MODE 4. This Note prohibits the use of LCO 3.0.4.a to enter MODE 4 during startup with the LCO not met. However, there is no restriction on the use of LCO 3.0.4.b, if applicable, because LCO 3.0.4.b requires performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering MODE 4, and establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

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.

# ED.1 and ED.2

[In MODE 5 or 6, or] during movement of [recently] irradiated fuel assemblies, 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 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 ED.1 is to immediately suspend activities that could result in a release of radioactivity that might require isolation of the CRE. This places the unit in a condition that minimizes the accident risk. This does not preclude the movement of fuel to a safe position.

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

CREFS B 3.7.10

BASES

# ACTIONS (continued)

# <u>F</u>€.1

[In MODE 5 or 6, or] during movement of [recently] irradiated fuel assemblies, with two CREFS trains inoperable or with one or more CREVS trains inoperable due to an inoperable CRE boundary, action must be taken immediately to suspend activities that could result in a release of radioactivity that might require isolation of the CRE. This places the unit in a condition that minimizes the accident risk. This does not preclude the movement of fuel to a safe position.
<u>F.1</u>
If both CREFS trains are inoperable in MODE 1, 2, 3, or 4 for reasons other than an inoperable CRE boundary (i.e., Condition B), 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

<u>SR 3.7.10.1</u>

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, testing each train once every month provides an adequate check of this system. Operation [with the heaters on] for  $\geq$  15 continuous minutes demonstrates OPERABILITY of the system. Periodic operation ensures that [heater failure,] blockage, fan or motor failure, or excessive vibration can be detected for corrective action. [ The 31 day Frequency is based on the reliability of the equipment and the two train redundancy.

### OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

CREFS B 3.7.10

#### BASES

### SURVEILLANCE REQUIREMENTS (continued)

<u>SR 3.7.10.4</u>

This SR verifies the OPERABILITY of the CRE boundary by testing for unfiltered air inleakage past the CRE boundary and into the CRE. The details of the testing are specified in the Control Room Envelope Habitability Program.

The CRE is considered habitable when the radiological dose to CRE occupants calculated in the licensing basis analyses of DBA consequences is no more than [5 rem whole body or its equivalent to any part of the body] [5 rem TEDE] and the CRE occupants are protected from hazardous chemicals and smoke. This SR verifies that the unfiltered air inleakage into the CRE is no greater than the flow rate assumed in the licensing basis analyses of DBA consequences. When unfiltered air inleakage is greater than the assumed flow rate. Condition **CB** must be entered. Required Action **CB**.3 allows time to restore the CRE boundary to OPERABLE status provided mitigating actions can ensure that the CRE remains within the licensing basis habitability limits for the occupants following an accident. Compensatory measures are discussed in Regulatory Guide 1.196, Section C.2.7.3, (Ref. 6) which endorses, with exceptions, NEI 99-03, Section 8.4 and Appendix F (Ref. 7). These compensatory measures may also be used as mitigating actions as required by Required Action **CB**.2. Temporary analytical methods may also be used as compensatory measures to restore OPERABILITY (Ref. 8). Options for restoring the CRE boundary to OPERABLE status include changing the licensing basis DBA consequence analysis, repairing the CRE boundary, or a combination of these actions. Depending upon the nature of the problem and the corrective action, a full scope inleakage test may not be necessary to establish that the CRE boundary has been restored to OPERABLE status.

- REFERENCES 1. FSAR, Section [9.4].
  - 2. FSAR, Chapter [15].
  - 3. FSAR, Section [6.4].
  - 4. FSAR, Section [9.5]
  - WCAP-16294-NP-A, Rev. 1, "Risk-Informed Evaluation of Changes to Technical Specification Required Action Endstates for Westinghouse NSSS PWRs," June 2010.

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 MODE 5 or 6, the ECCS PREACS is not required to be OPERABLE since the ECCS is not required to be OPERABLE.
ACTIONS	<u>A.1</u>
	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.
	<u>B.1</u>
	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.
	With two ECCS PREACS trains inoperable for reasons other than an inoperable ECCS pump room boundary, the ECCS PREACS cannot perform its intended functions. Actions must be taken to restore an ECCS PREACS train within 24 hours. During the period that the ECCS PREACS trains are inoperable, appropriate compensatory measures [consistent with the intent, as applicable, of GDC 19, 63, 64 and 10 CFR Part 100] should be utilized to protect plant personnel from potential hazards such as radioactive contamination, toxic chemicals, smoke, temperature, and relative humidity. Preplanned measures should be available to address these concerns. 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.
	<u>CB.1</u>

ECCS PREACS B 3.7.12

------REVIEWER'S NOTE------Adoption of Condition **CB** 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 **CB**.

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

ECCS PREACS B 3.7.12

#### BASES

ACTIONS (continued)

DC.1 and DC.2

If the one or more ECCS PREACS trains or ECCS pump room boundary cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE in which overall plant risk is reduced. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 4 within 12 hours.

Remaining within the Applicability of the LCO is acceptable to accomplish short duration repairs to restore inoperable equipment because the plant risk in MODE 4 is similar to or lower than MODE 5 (Ref. 6). In MODE 4 the steam generators and Residual Heat Removal System are available to remove decay heat, which provides diversity and defense in depth. As stated in Reference 6, the steam turbine driven auxiliary feedwater pump must be available to remain in MODE 4. Should steam generator cooling be lost while relying on this Required Action, there are preplanned actions to ensure long-term decay heat removal. Voluntary entry into MODE 5 may be made as it is also acceptable from a risk perspective.

Required Action **CD**.2 is modified by a Note that states that LCO 3.0.4.a is not applicable when entering MODE 4. This Note prohibits the use of LCO 3.0.4.a to enter MODE 4 during startup with the LCO not met. However, there is no restriction on the use of LCO 3.0.4.b, if applicable, because LCO 3.0.4.b requires performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering MODE 4, and establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

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 SR 3.7.12.1

REQUIREMENTS

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. Operation [with the heaters on] for  $\geq$  15 continuous minutes demonstrates OPERABILITY of the system. Periodic operation ensures that [heater failure,] blockage, fan or motor failure, or excessive vibration can be detected for corrective action. [The 31 day Frequency is based on the known reliability of equipment and the two train redundancy available.

BASES	
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 [recently] irradiated fuel in the fuel handling area, the FBACS is required to be OPERABLE to alleviate the consequences of a fuel handling accident.
ACTIONS	LCO 3.0.3 is not applicable while in MODE 5 or 6. However, since irradiated fuel assembly movement can occur in MODE 1, 2, 3, or 4, the ACTIONS have been modified by a Note stating that LCO 3.0.3 is not applicable. If moving irradiated fuel assemblies while in MODE 5 or 6, LCO 3.0.3 would not specify any action. If moving irradiated fuel assemblies while in MODE 1, 2, 3, or 4, the fuel movement is independent of reactor operations. Entering LCO 3.0.3, while in MODE 1, 2, 3, or 4 would require the unit to be shutdown unnecessarily.
	<u>A.1</u>
	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.
	<u>B.1</u>

------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.

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With two FBACS trains inoperable for reasons other than an inoperable fuel building boundary, the FBACS cannot perform its intended functions. Actions must be taken to restore an FBACS train within 24 hours. During the period that the FBACS trains are inoperable, appropriate compensatory measures [consistent with the intent, as applicable, of GDC 19, 63, 64 and 10 CFR Part 100] should be utilized to protect plant personnel from potential hazards such as radioactive contamination, toxic chemicals, smoke,

FBACS B 3.7.13

temperature, and relative humidity. Preplanned measures should be available to address these concerns. 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.

### <u>CB.1</u>

------REVIEWER'S NOTE------Adoption of Condition **CB** 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 **CB**.

If the fuel building boundary is inoperable in MODE 1, 2, 3, or 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 [consistent with the intent, as

FBACS B 3.7.13

#### BASES

### ACTIONS (continued)

applicable, of GDC 19, 60, 61, 63, 64 and 10 CFR Part 100] should be utilized to protect plant personnel from potential hazards such as radioactive contamination, toxic chemicals, smoke, temperature and relative humidity, and physical security. Preplanned measures should be available to address these concerns for intentional and unintentional entry into the condition. The 24 hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, and the use of compensatory measures. The 24 hour Completion Time is a typically reasonable time to diagnose, plan and possibly repair, and test most problems with the fuel building boundary.

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In MODE 1, 2, 3, or 4, when Required Action A.1, **B.1**, or **C**<del>B</del>.1 cannot be completed within the associated Completion Time, or when both FBACS trains are inoperable for reasons other than an inoperable fuel building boundary (i.e., Condition B), the unit must be placed in a MODE in which overall plant risk is reduced. To achieve this status, the unit must be placed in MODE 3 within 6 hours, and in MODE 4 within 12 hours.

Remaining within the Applicability of the LCO is acceptable to accomplish short duration repairs to restore inoperable equipment because the plant risk in MODE 4 is similar to or lower than MODE 5 (Ref. 6). In MODE 4 the steam generators and Residual Heat Removal System are available to remove decay heat, which provides diversity and defense in depth. As stated in Reference 6, the steam turbine driven auxiliary feedwater pump must be available to remain in MODE 4. Should steam generator cooling be lost while relying on this Required Action, there are preplanned actions to ensure long-term decay heat removal. Voluntary entry into MODE 5 may be made as it is also acceptable from a risk perspective.

Required Action **DC**.2 is modified by a Note that states that LCO 3.0.4.a is not applicable when entering MODE 4. This Note prohibits the use of LCO 3.0.4.a to enter MODE 4 during startup with the LCO not met. However, there is no restriction on the use of LCO 3.0.4.b, if applicable, because LCO 3.0.4.b requires performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering MODE 4, and establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

FBACS B 3.7.13

### BASES

# ACTIONS (continued)

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. ]

### **ED**.1 and **ED**.2

When Required Action A.1 cannot be completed within the required Completion Time, during movement of [recently] irradiated fuel assemblies in the fuel building, the OPERABLE FBACS train must be started immediately or [recently] irradiated 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.

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

### <u>F</u>€.1

When two trains of the FBACS are inoperable during movement of [recently] 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 [recently] irradiated fuel assemblies in the fuel building. This does not preclude the movement of fuel to a safe position.

#### SURVEILLANCE <u>SR 3.7.13.1</u> REQUIREMENTS

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.

Operation [with the heaters on] for  $\geq$  15 continuous minutes demonstrates OPERABILITY of the system. Periodic operation ensures that [heater failure,] blockage, fan or motor failure, or excessive vibration can be detected for corrective action. [The 31 day Frequency is based on the known reliability of the equipment and the two train redundancy available.

OR

PREACS B 3.7.14

BASES

# ACTIONS

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.

# <u>B.1</u>

A.1

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.

With two PREACS trains inoperable for reasons other than an inoperable penetration room boundary, the PREACS cannot perform its intended functions. Actions must be taken to restore a PREACS train within 24 hours. During the period that the PREACS trains are inoperable, appropriate compensatory measures [consistent with the intent, as applicable, of GDC 19, 63, 64 and 10 CFR Part 100] should be utilized to protect plant personnel from potential hazards such as radioactive contamination, toxic chemicals, smoke, temperature, and relative humidity. Preplanned measures should be available to address these concerns. 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.

### <u>CB.1</u>

------REVIEWER'S NOTE-------Adoption of Condition **CB** 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 **CB**.

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

PREACS B 3.7.14

period that the penetration room boundary is inoperable, appropriate compensatory measures [consistent with the intent, as applicable, of GDC 19, 60, 64 and 10 CFR Part 100] should be utilized to protect plant personnel from potential hazards such as radioactive contamination, toxic chemicals, smoke, temperature and relative humidity, and physical security. Preplanned measures should be available to address these concerns for intentional and unintentional entry into the condition. The 24 hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, and the use of compensatory measures. The 24 hour Completion Time is a typically reasonable time to diagnose, plan and possibly repair, and test most problems with the penetration room boundary.

# DC.1 and DC.2

If the one or more inoperable trains or penetration room boundary cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE in which overall plant risk is reduced. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 4 within 12 hours.

PREACS B 3.7.14

### BASES

### ACTIONS (continued)

Remaining within the Applicability of the LCO is acceptable to accomplish short duration repairs to restore inoperable equipment because the plant risk in MODE 4 is similar to or lower than MODE 5 (Ref. 5). In MODE 4 the steam generators and Residual Heat Removal System are available to remove decay heat, which provides diversity and defense in depth. As stated in Reference 5, the steam turbine driven auxiliary feedwater pump must be available to remain in MODE 4. Should steam generator cooling be lost while relying on this Required Action, there are preplanned actions to ensure long-term decay heat removal. Voluntary entry into MODE 5 may be made as it is also acceptable from a risk perspective.

Required Action **DC**.2 is modified by a Note that states that LCO 3.0.4.a is not applicable when entering MODE 4. This Note prohibits the use of LCO 3.0.4.a to enter MODE 4 during startup with the LCO not met. However, there is no restriction on the use of LCO 3.0.4.b, if applicable, because LCO 3.0.4.b requires performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering MODE 4, and establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

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 <u>SR 3.7.14.1</u> REQUIREMENTS

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. Operation [with the heaters on] for  $\geq$  15 continuous minutes demonstrates OPERABILITY of the system. Periodic operation ensures that [heater failure,] blockage, fan or motor failure, or excessive vibration can be detected for corrective action. [The 31 day Frequency is based on the known reliability of equipment and the two train redundancy available.

#### OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

FBACS 3.7.14

### 3.7 PLANT SYSTEMS

3.7.14 Fuel Building Air Cleanup System (FBACS)

LCO 3.7.14 Two FBACS trains shall be OPERABLE.

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

APPLICABILITY: [MODES 1, 2, 3, and 4,] During movement of [recently] 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
<ul> <li>B. Two FBACS trains inoperable in Mode 1, 2, 3, or 4 for reasons other than Condition C.</li> </ul>	B.1	Restore one FBACS train to OPERABLE status.	24 hours
<b>CB</b> .Two FBACS trains inoperable due to inoperable fuel building boundary in MODE 1, 2, 3, or 4.	<b>C</b> B.1	Restore fuel building boundary to OPERABLE status.	24 hours

FBACS 3.7.14

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
<ul> <li>DC. [Required Action and associated Completion Time of Condition A, B, or CB not met in MODE 1, 2, 3, or 4.</li> </ul>	D <del>C</del> .1 <u>AND</u> D <del>C</del> .2	Be in MODE 3. Be in MODE 5.	6 hours 36 hours ]
<ul> <li><u>OR</u></li> <li><u>Two FBACS trains</u></li> <li>inoperable in MODE 1,</li> <li>2, 3, or 4 for reasons</li> <li>other than Condition B.</li> </ul>			
ED.Required Action and Associated Completion Time [of Condition A] not met during movement of [recently] irradiated fuel assemblies in the fuel building.	EÐ.1 <u>OR</u>	Place OPERABLE FBACS train in operation.	Immediately
	E <del>D</del> .2	[recently] irradiated fuel assemblies in the fuel building.	mmediately
FE. Two FBACS trains inoperable during movement of [recently] irradiated fuel assemblies in the fuel building.	<b>FE</b> .1	Suspend movement of [recently] irradiated fuel assemblies in the fuel building.	Immediately

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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 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 [recently] irradiated fuel assemblies in the fuel building, the FBACS is required to be OPERABLE to mitigate the consequences of a fuel handling accident [involving handling recently irradiated fuel. Due to radioactive decay, FBACS is only required to mitigate fuel handling accidents involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous [X] days)].			
	In MODES 5 and 6, the FBACS is not required to be OPERABLE, since the ECCS is not required to be OPERABLE.			
ACTIONS	LCO 3.0.3 is not applicable while in MODE 5 or 6. However, since irradiated fuel assembly movement can occur in MODE 1, 2, 3, or 4, the ACTIONS have been modified by a Note stating that LCO 3.0.3 is not applicable. If moving irradiated fuel assemblies while in MODE 5 or 6, LCO 3.0.3 would not specify any action. If moving irradiated fuel assemblies while in MODE 1, 2, 3, or 4, the fuel movement is independent of reactor operations. Entering LCO 3.0.3, while in MODE 1, 2, 3, or 4 would require the unit to be shutdown unnecessarily.			
	<u>A.1</u>			
	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.			
	<u>B.1</u>			
	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.			

intended functions. Actions must be taken to restore an FBACS train within 24 hours. During the period that the FBACS trains are inoperable, appropriate compensatory measures [consistent with the intent, as applicable, of GDC 19, 63, 64 and 10 CFR Part 100] should be utilized to protect plant personnel from potential hazards such as radioactive contamination, toxic chemicals, smoke, temperature, and relative humidity. Preplanned measures should be available to address these concerns. 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.

# <u>CB</u>.1

------REVIEWER'S NOTE------Adoption of Condition **CB** 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 **CB**.

FBACS B 3.7.14

### BASES

### ACTIONS (continued)

If the fuel building boundary is inoperable in MODE 1, 2, 3, or 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 [consistent with the intent, as applicable, of GDC 19, 60, 61, 63, 64 and 10 CFR Part 100] should be utilized to protect plant personnel from potential hazards such as radioactive contamination, toxic chemicals, smoke, temperature and relative humidity, and physical security. Preplanned measures should be available to address these concerns for intentional and unintentional entry into the condition. The 24 hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, and the use of compensatory measures. The 24 hour Completion Time is a typically reasonable time to diagnose, plan and possibility repair, and test most problems with the fuel building boundary.

### 

In MODE 1, 2, 3, or 4, when Required Action A.1, **B.1**, or **CB**.1 cannot be completed within the Completion Time, or when both FBACS trains are inoperable for reasons other than an inoperable fuel building boundary (i.e., Condition B), 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. ]

#### ED.1 and ED.2

When Required Action A.1 cannot be completed within the required Completion Time during movement of [recently] 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, 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 [recently] irradiated fuel movement, which precludes a fuel handling accident. This does not preclude the movement of fuel to a safe position.

FBACS B 3.7.14

BASES
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ACTIONS	(continued)
	(

# <u>F</u>≣.1

When two trains of the FBACS are inoperable during movement of [recently] 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 [recently] irradiated fuel assemblies in the fuel building. This does not preclude the movement of fuel to a safe position.

#### SURVEILLANCE <u>SR 3.7.14.1</u> REQUIREMENTS

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. Operation [with the heaters on] for  $\geq$  15 continuous minutes demonstrates OPERABILITY of the system. Periodic operation ensures that [heater failure,] blockage, fan or motor failure, or excessive vibration can be detected for corrective action. [The 31 day Frequency is based on the known reliability of the equipment and the two train redundancy available.

OR

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

### <u>SR 3.7.14.2</u>

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

[MCREC] System 3.7.4

# 3.7 PLANT SYSTEMS

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

LCO 3.7.4 Two [MCREC] subsystems shall be OPERABLE.

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

APPLICABILITY: MODES 1, 2, and 3, During movement of [recently] irradiated fuel assemblies in the [secondary] containment.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One [MCREC] subsystem inoperable for reasons other than Condition <b>CB</b> .	A.1	Restore [MCREC] subsystem to OPERABLE status.	7 days
<ul> <li>B. Two [MCREC] subsystems inoperable in MODE 1, 2, or 3 for reasons other than Condition C</li> </ul>	B.1	Initiate action to implement mitigating actions.	Immediately
Condition C.	B.2	Restore one [MCREC] subsystem to operable status.	24 hours
<b>CB</b> .One or more [MCREC] subsystems inoperable due to inoperable CRE boundary in MODE 1, 2,	<b>CB</b> .1	Initiate action to implement mitigating actions.	Immediately
01 3.	<b>C</b> ₿.2	Verify mitigating actions ensure CRE occupant exposures to radiological,	24 hours

[MCREC] System 3.7.4

CONDITION	REQUIRED ACTION	COMPLETION TIME
	hazards will not exceed limits.	
	AND	90 days
	CB.3 Restore CRE boundary to OPERABLE status.	

[MCREC] System 3.7.4

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
DC. Required Action and associated Completion Time of Condition A, B, or CB not met in MODE 1, 2, or 3.	<b>D</b> <del>C</del> .1	NOTE LCO 3.0.4.a is not applicable when entering MODE 3. 	12 hours
ED.Required Action and associated Completion Time of Condition A not	 LCO 3	.0.3 is not applicable.	
met during movement of [recently] irradiated fuel assemblies in the [secondary] containment.	<b>E</b> ₽.1	NOTE [ Place in toxic gas protection mode if automatic transfer to toxic gas protection mode is inoperable. ]  Place OPERABLE [MCREC] subsystem in	Immediately
		[pressurization] mode.	
	<u>OR</u>		
	<b>E</b> <del>D</del> .2	Suspend movement of [recently] irradiated fuel assemblies in the [secondary] containment.	Immediately
E. Two [MCREC] subsystems inoperable in MODE 1, 2, or 3 for reasons other than Condition B.	E.1	LCO 3.0.4.a is not applicable when entering MODE 3.	
		Be in MODE 3.	<del>12 hours</del>
ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Two [MCREC] subsystems inoperable	NOTE LCO 3.0.3 is not applicable.	
[recently] irradiated fuel assemblies in the [secondary] containment.	F.1 Suspend movement of [recently] irradiated fuel assemblies in the [secondary] containment.	Immediately
One or more [MCREC] subsystems inoperable due to an inoperable CRE boundary during movement of [recently] irradiated fuel assemblies in the [secondary] containment.		

## SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.7.4.1	Operate each [MCREC] subsystem for ≥ 15 continuous minutes [with heaters operating].	[ 31 days <u>OR</u> In accordance with the Surveillance Frequency Control Program ]
SR 3.7.4.2	Perform required [MCREC] filter testing in accordance with the [Ventilation Filter Testing Program (VFTP)].	In accordance with the [VFTP]

BASES

ACTIONS

<u>A.1</u>

With one [MCREC] subsystem inoperable, for reasons other than an inoperable CRE boundary, 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 the CRE occupant protection function. However, the overall reliability is reduced because a failure in the OPERABLE subsystem could result in loss of the [MCREC] 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.

## **B.1 and B.2**

If both [MCREC] subsystems are inoperable in MODE 1, 2, or 3 for reasons other than an inoperable CRE boundary (i.e., Condition C), the [MCREC] System may not be capable of performing the intended function. Therefore, immediate action must be initiated to implement mitigating actions to lessen the effect on the CRE occupants from potential hazards such as radioactive contamination, toxic chemicals, smoke, temperature, relative humidity, and temperature. Preplanned measures should be available to address these concerns. At least one [MCREC] subsystem must be restored to OPERABLE status within 24 hours. The 24 hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, and the use of mitigating actions.

### <u>CB.1, CB.2, and CB.3</u>

If the unfiltered inleakage of potentially contaminated air past the CRE boundary and into the CRE can result in CRE occupant radiological dose greater than the calculated dose of the licensing basis analyses of DBA consequences (allowed to be up to [5 rem whole body or its equivalent to any part of the body] [5 rem TEDE]), or inadequate protection of CRE occupants from hazardous chemicals or smoke, the CRE boundary is inoperable. Actions must be taken to restore an OPERABLE CRE boundary within 90 days.

During the period that the CRE boundary is considered inoperable, action must be initiated to implement mitigating actions to lessen the effect on CRE occupants from the potential hazards of a radiological or chemical event or a challenge from smoke. Actions must be taken within 24 hours to verify that in the event of a DBA, the mitigating actions will ensure that CRE occupant radiological exposures will not exceed the calculated dose

[MCREC] System B 3.7.4

of the licensing basis analyses of DBA consequences, and that CRE occupants are protected from hazardous chemicals and smoke. These mitigating actions (i.e., actions that are taken to offset the consequences of the inoperable CRE boundary) should be preplanned for implementation upon entry into the condition, regardless of whether entry is intentional or unintentional. The 24 hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, and the use of mitigating actions. The 90 day Completion Time is reasonable based on the determination that the mitigating actions will ensure protection of CRE occupants within analyzed limits while limiting the probability that CRE occupants will have to implement protective measures that may adversely affect their ability to control the reactor and maintain it in a safe shutdown condition in the event of a DBA. In addition, the 90 day Completion Time is a reasonable time to diagnose, plan and possibly repair, and test most problems with the CRE boundary.

BASES

ACTIONS (continued)

### **D<del>C</del>.1**

- [Licensee] will follow the guidance established in Section 11 of NUMARC 93-01, "Industry Guidance for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Nuclear Management and Resource Council, Revision [4F].
- 2. [Licensee] will follow the guidance established in TSTF-IG-05-02, Implementation Guidance for TSTF-423, Revision 2, "Technical Specifications End States, NEDC-32988-A," November 2009.

In MODE 1, 2, or 3, if **the-one or more** inoperable [MCREC] subsystems or the CRE boundary cannot be restored to OPERABLE status within the required Completion Time, the unit must be placed in a MODE that minimizes overall plant risk. To achieve this status, the unit must be placed in at least MODE 3 within 12 hours.

Remaining in the Applicability of the LCO is acceptable because the plant risk in MODE 3 is similar to or lower than the risk in MODE 4 (Ref. 7) and because the time spent in MODE 3 to perform the necessary repairs to restore the system to OPERABLE status will be short. However, voluntary entry into MODE 4 may be made as it is also an acceptable low-risk state.

Required Action **DC**.1 is modified by a Note that states that LCO 3.0.4.a is not applicable when entering MODE 3. This Note prohibits the use of LCO 3.0.4.a to enter MODE 3 during startup with the LCO not met. However, there is no restriction on the use of LCO 3.0.4.b, if applicable, because LCO 3.0.4.b requires performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering MODE 3, and establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

The allowed Completion Time is reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

[MCREC] System B 3.7.4

#### BASES

ACTIONS (continued)

ED.1 and ED.2

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

During movement of [recently] irradiated fuel assemblies in the [secondary] containment, 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 ED.1 is modified by a Note alerting the operator to place the system in the toxic gas protection mode if the toxic gas protection mode automatic transfer capability is inoperable.]

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

If applicable, movement of [recently] 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.

### <u>E.1</u>

REVIEWER'S NOTE-

Adoption of a MODE 3 end state requires the licensee to make the following commitments:

1. [Licensee] will follow the guidance established in Section 11 of NUMARC 93-01, "Industry Guidance for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Nuclear Management and Resource Council, Revision [4F].

[MCREC] System B 3.7.4

#### BASES

#### ACTIONS (continued)

2. [Licensee] will follow the guidance established in TSTF-IG-05-02, Implementation Guidance for TSTF-423, Revision 2, "Technical Specifications End States, NEDC-32988-A," November 2009.

If both [MCREC] subsystems are inoperable in MODE 1, 2, or 3 for reasons other than an inoperable CRE boundary (i.e., Condition B), the [MCREC] System may not be capable of performing the intended function. Therefore, the plant must be brought to a MODE in which overall plant risk is minimized. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours.

Remaining in the Applicability of the LCO is acceptable because the plant risk in MODE 3 is similar to or lower than the risk in MODE 4 (Ref. 7) and because the time spent in MODE 3 to perform the necessary repairs to restore the system to OPERABLE status will be short. However, voluntary entry into MODE 4 may be made as it is also an acceptable low-risk state.

Required Action E.1 is modified by a Note that states that LCO 3.0.4.a is not applicable when entering MODE 3. This Note prohibits the use of LCO 3.0.4.a to enter MODE 3 during startup with the LCO not met. However, there is no restriction on the use of LCO 3.0.4.b, if applicable, because LCO 3.0.4.b requires performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering MODE 3, and establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

The allowed Completion Time is reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

### <u>F.1</u>

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

[CRFA] System 3.7.3

### 3.7 PLANT SYSTEMS

3.7.3 [Control Room Fresh Air (CRFA)] System

LCO 3.7.3 Two [CRFA] subsystems shall be OPERABLE.

-----NOTE-----NOTE------NOTE opened intermittently under administrative control.

APPLICABILITY: MODES 1, 2, and 3, During movement of [recently] irradiated fuel assemblies in the [primary or secondary containment].

ACTIONS

CONDITION		REQUIRED ACTION	COMPLETION TIME
A. One [CRFA] subsystem inoperable for reasons other than Condition CB.	A.1	Restore [CRFA] subsystem to OPERABLE status.	7 days
<ul> <li>B. Two [CRFA] subsystems inoperable in MODE 1, 2, or 3 for reasons other than Condition C</li> </ul>	B.1	Initiate action to implement mitigating actions.	Immediately
Condition C.	B.2	Restore one [CRFA] subsystem to operable status.	24 hours
CB.One or more [CRFA] subsystems inoperable due to inoperable CRE	<b>C</b> ₿.1	Initiate action to implement mitigating actions.	Immediately
boundary in MODE 1, 2, or 3	AND		
	<b>C</b> ₿.2	Verify mitigating actions ensure CRE occupant exposures to radiological, chemical, and smoke hazards will not exceed limits.	24 hours

[CRFA] System 3.7.3

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CONDITION	REQUIRED ACTION	COMPLETION TIME
	AND CB.3 Restore CRE boundary to OPERABLE status.	90 days

[CRFA] System 3.7.3

ACTIONS (continued)

CONDITION		REQUIRED ACTION	COMPLETION TIME
DC. Required Action and associated Completion Time of Condition A, B, or CB not met in MODE 1, 2, or 3.	D <del>C</del> .1	NOTE LCO 3.0.4.a is not applicable when entering MODE 3.  Be in MODE 3.	12 hours
ED.Required Action and associated Completion	LCO 3	.0.3 is not applicable.	
Time of Condition A not met during movement of [recently] irradiated fuel assemblies in the [primary or secondary containment].	E <del>D</del> .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
	<u>OR</u>		
	<b>E</b> ₽.2	Suspend movement of [recently] irradiated fuel assemblies in the [primary and secondary containment].	Immediately

[CRFA] System 3.7.3

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Two [CRFA] subsystems inoperable in MODE 1, 2, or 3 for reasons other than Condition B.	E.1NOTE LCO 3.0.4.a is not applicable when entering MODE 3.	
	Be in MODE 3.	<del>12 hours</del>
<ul> <li>F. Two [CRFA] subsystems inoperable during movement of [recently] irradiated fuel assemblies in the [primary or secondary containment].</li> <li>OR</li> <li>One or more [CRFA] subsystems inoperable due to inoperable CRE boundary during movement of [recently] irradiated fuel assemblies in the [primary or secondary containment].</li> </ul>	F.1 Suspend movement of [recently] irradiated fuel assemblies in the [primary and secondary containment].	Immediately

[CRFA] System B 3.7.3

## **B.1 and B.2**

If both [CRFA] subsystems are inoperable in MODE 1, 2, or 3 for reasons other than an inoperable CRE boundary (i.e., Condition C), the [CRFA] System may not be capable of performing the intended function. Therefore, immediate action must be initiated to implement mitigating actions to lessen the effect on the CRE occupants from potential hazards such as radioactive contamination, toxic chemicals, smoke, temperature, relative humidity, and temperature. Preplanned measures should be available to address these concerns. At least one [CRFA] subsystem must be restored to OPERABLE status within 24 hours. The 24 hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, and the use of mitigating actions.

[CRFA] System B 3.7.3

#### BASES

### ACTIONS (continued)

#### <u>CB.1, CB.2, and CB.3</u>

If the unfiltered inleakage of potentially contaminated air past the CRE boundary and into the CRE can result in CRE occupant radiological dose greater than the calculated dose of the licensing basis analyses of DBA consequences (allowed to be up to [5 rem whole body or its equivalent to any part of the body] [5 rem TEDE]), or inadequate protection of CRE occupants from hazardous chemicals or smoke, the CRE boundary is inoperable. Actions must be taken to restore an OPERABLE CRE boundary within 90 days.

During the period that the CRE boundary is considered inoperable, action must be initiated to implement mitigating actions to lessen the effect on CRE occupants from the potential hazards of a radiological or chemical event or a challenge from smoke. Actions must be taken within 24 hours to verify that in the event of a DBA, the mitigating actions will ensure that CRE occupant radiological exposures will not exceed the calculated dose of the licensing basis analyses of DBA consequences, and that CRE occupants are protected from hazardous chemicals and smoke. These mitigating actions (i.e., actions that are taken to offset the consequences of the inoperable CRE boundary) should be preplanned for implementation upon entry into the condition, regardless of whether entry is intentional or unintentional. The 24 hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, and the use of mitigating actions. The 90 day Completion Time is reasonable based on the determination that the mitigating actions will ensure protection of CRE occupants within analyzed limits while limiting the probability that CRE occupants will have to implement protective measures that may adversely affect their ability to control the reactor and maintain it in a safe shutdown condition in the event of a DBA. In addition, the 90 day Completion Time is a reasonable time to diagnose, plan and possibly repair, and test most problems with the CRE boundary.

### <u>DC</u>.1

------REVIEWER'S NOTE------Adoption of a MODE 3 end state requires the licensee to make the following commitments:

1. [Licensee] will follow the guidance established in Section 11 of NUMARC 93-01, "Industry Guidance for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Nuclear Management and Resource Council, Revision [4F].

BASES

ACTIONS (continued)

2. [Licensee] will follow the guidance established in TSTF-IG-05-02, Implementation Guidance for TSTF-423, Revision 2, "Technical Specifications End States, NEDC-32988-A," November 2009.

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In MODE 1, 2, or 3, if **one or more the**-inoperable [CRFA] subsystems or the CRE boundary cannot be restored to OPERABLE status within the required Completion Time, the unit must be placed in a MODE that minimizes overall plant risk. To achieve this status, the unit must be placed in at least MODE 3 within 12 hours.

Remaining in the Applicability of the LCO is acceptable because the plant risk in MODE 3 is similar to or lower than the risk in MODE 4 (Ref. 7) and because the time spent in MODE 3 to perform the necessary repairs to restore the system to OPERABLE status will be short. However, voluntary entry into MODE 4 may be made as it is also an acceptable low-risk state.

Required Action **DC**.1 is modified by a Note that states that LCO 3.0.4.a is not applicable when entering MODE 3. This Note prohibits the use of LCO 3.0.4.a to enter MODE 3 during startup with the LCO not met. However, there is no restriction on the use of LCO 3.0.4.b, if applicable, because LCO 3.0.4.b requires performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering MODE 3, and establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

The allowed Completion Time is reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

### **ED**.1 and **ED**.2

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

[CRFA] System B 3.7.3

#### BASES

### ACTIONS (continued)

During movement of [recently] irradiated fuel assemblies in the [primary or secondary containment], 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 ED.1 is modified by a Note alerting the operator to [place the system in the toxic gas protection mode if the toxic gas protection mode, automatic transfer capability is inoperable.]

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

If applicable, movement of [recently] 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.

### <u>E.1</u>

If both [CRFA] subsystems are inoperable in MODE 1, 2, or 3 for reasons other than an inoperable CRE boundary (i.e., Condition B), 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, the plant must be brought to a MODE in which the overall plant risk is minimized. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours.

Remaining in the Applicability of the LCO is acceptable because the plant risk in MODE 3 is similar to or lower than the risk in MODE 4 (Ref. 5) and because the time spent in MODE 3 to perform the necessary repairs to restore the system to OPERABLE status will be short. However, voluntary entry into MODE 4 may be made as it is also an acceptable low-risk state.

[CRFA] System B 3.7.3

#### BASES

### ACTIONS (continued)

Required Action E.1 is modified by a Note that states that LCO 3.0.4.a is not applicable when entering MODE 3. This Note prohibits the use of LCO 3.0.4.a to enter MODE 3 during startup with the LCO not met. However, there is no restriction on the use of LCO 3.0.4.b, if applicable, because LCO 3.0.4.b requires performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering MODE 3, and establishment of risk management actions, if appropriate. LCO 3.0.4 is not applicable to, and the Note does not preclude, changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

The allowed Completion Time is reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

### <u>F.1</u>

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

During movement of [recently] irradiated fuel assemblies in the [primary or secondary containment], with two [CRFA] subsystems inoperable or with one or more [CRFA] subsystems inoperable due to an inoperable CRE boundary, action must be taken immediately to suspend activities that present a potential for releasing radioactivity that might require isolation of the CRE. This places the unit in a condition that minimizes the accident risk.

If applicable, movement of [recently] 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.