



Tennessee Valley Authority, Post Office Box 2000, Decatur, Alabama 35609-2000

TVA-BFN-TS-409

April 15, 2003

10 CFR 50.90

U.S. Nuclear Regulatory Commission  
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Washington, D.C. 20555-0001

Gentlemen:

In the Matter of	)	Docket Nos. 50-259
Tennessee Valley Authority	)	50-260
		50-296

**BROWNS FERRY NUCLEAR PLANT (BFN) - UNITS 1, 2, AND 3 - TECHNICAL SPECIFICATIONS (TS) CHANGE 409 - ADOPTION OF TS TASK FORCE (TSTF) TRAVELER - 287, REVISION 5 - CONTROL ROOM VENTILATION SYSTEM ENVELOPE - ALLOWED OUTAGE TIME**

Pursuant to 10 CFR 50.90, the Tennessee Valley Authority (TVA) is submitting a request for a TS change (TS-409) to licenses DPR-33, DPR-52, and DPR-68 for BFN Units 1, 2, and 3, respectively. The proposed change revises Limiting Condition for Operation 3.7.3, Control Room Emergency Ventilation (CREV) System, and the associated TS Bases to provide specific Conditions and Required Actions that address a degraded main control room boundary. The proposed changes are consistent with the industry Standard TS change Technical Specification Task Force Traveler 287, Revision 5, which was approved by the NRC by letter dated March 16, 2000.

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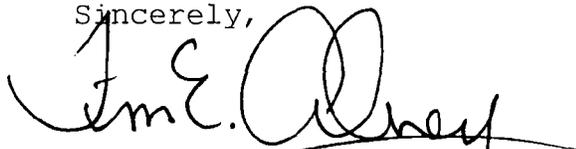
TVA has determined that there are no significant hazards considerations associated with the proposed change and that the TS change qualifies for a categorical exclusion from environmental review pursuant to the provisions of 10 CFR 51.22(c)(9). Additionally, in accordance with 10 CFR 50.91(b)(1), TVA is sending a copy of this letter and attachments to the Alabama State Department of Public Health.

This TS change request is not tied to a specific plant milestone or need date. TVA is asking that this TS change be approved by October 1, 2003, and that the implementation of the revised TS be made within 60 days of NRC approval.

One regulatory commitment is associated with this submittal as provided in Enclosure 4. This letter is being sent in accordance with NRC Regulatory Issue Summary 2001-05, Guidance on Submitting Documents to the NRC by Electronic Information Exchange or on CD-ROM. If you have any questions about this TS change, please contact me at (256)729-2636.

I declare under penalty of perjury that the foregoing is true and correct. Executed on April 15, 2003.

Sincerely,

A handwritten signature in black ink, appearing to read "T. E. Abney". The signature is written in a cursive style with a large, looping initial "T".

T. E. Abney  
Manager of Licensing  
and Industry Affairs

U.S. Nuclear Regulatory Commission  
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Enclosures:

1. TVA Evaluation of Proposed Change
2. Proposed Technical Specifications Changes (mark-up)
3. Changes to Technical Specification Bases Pages (mark-up)
4. List of Regulatory Commitments

cc: (Enclosures)  
State Health Officer  
Alabama State Department of Public Health  
RSA Tower - Administration  
Suite 1552  
P.O. Box 303017  
Montgomery, Alabama 36130-3017

## Enclosure 1

### Technical Specifications (TS) Change 409 Adoption of TSTF-287, Revision 5 Control Room Ventilation System Envelope Allowed Outage Time

#### TVA Evaluation of Proposed Change

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##### 1.0 DESCRIPTION

This letter is a request to amend Operating Licenses DPR-33 DPR-52, and DPR-68 for Browns Ferry Nuclear Plant (BFN) Units 1, 2, and 3, respectively. The proposed change revises Limiting Condition for Operation (LCO) 3.7.3, Control Room Emergency Ventilation (CREV) System, and the associated TS Bases to provide specific Conditions and Required Actions that address a degraded main control room boundary. The proposed changes are consistent with the Industry/Standard TS (STS) Technical Specification Task Force (TSTF) Change Traveler 287, Revision 5, "Ventilation System Envelope Allowed Outage Time," (Reference 1), which was approved by the NRC by letter dated March 16, 2000, (Reference 2).

##### 2.0 PROPOSED CHANGE

The proposed TS changes are as follows. Marked-up TS pages and TS Bases pages are provided in Enclosures 2 and 3, which show the specific revisions. The same exact changes are being proposed for Units 1, 2, and 3 TS.

- A Note is being added to LCO 3.7.3 unit that would allow the main control room boundary to be opened intermittently under administrative controls. The associated TS Bases are revised by adding a paragraph to specify the necessary administrative controls to restore the main control room boundary.
- A new Condition B is being added to LCO 3.7.3 to specify that 24 hours are allowed to restore an inoperable main control room boundary to OPERABLE status. Corresponding TS Bases are also added to support this change, which include a description of the compensatory measures to be taken during the time period that the main control room boundary is inoperable. The existing Conditions and Bases are renumbered accordingly.

- Condition D (new Condition E) of LCO 3.7.3 for two inoperable CREV subsystems in MODE 1, 2, or 3 is being modified to exclude entry into this Condition when the CREV subsystems are inoperable because of a degraded main control room boundary. The associated TS Bases for this Condition are revised accordingly.

TSTF-287, Revision 5 is proposed for adoption with no variances. However, plant-specific terminology (e.g., system name - CREV) is substituted for the generic system name in the Boiling Water Standard (BWR) STS. Also, in STS, the NRC-approved TSTF-287 is marked-up against LCO 3.7.4. For BFN TS, the corresponding LCO is LCO 3.7.3.

### 3.0 BACKGROUND

A description of the control building ventilation systems and the CREV System is provided in Section 10.12, Control Building Heating, Ventilating and Air-Conditioning (HVAC) Systems, of the BFN Updated Final Safety Analysis Report (UFSAR). Flow diagrams of the control building HVAC systems are also in UFSAR Section 10.12.

The CREV System provides a radiologically controlled environment (Unit Control Rooms) from which the units can be safely operated following a Design Basis Accident. The safety related function of the CREV System includes two independent and redundant high efficiency air filtration subsystems for emergency treatment of outside supply air. The system has a high efficiency particulate air (HEPA) filter bank in the portion of the inlet piping common to both subsystems. Each subsystem consists of a motor-driven fan, an electric duct air heater, an activated charcoal adsorber section, an electric charcoal heater, and the associated ductwork and dampers. The HEPA filter bank removes particulate matter, which may be radioactive. The charcoal adsorbers provide a holdup period for gaseous iodine, allowing time for decay.

The CREV System processes outside air needed to provide ventilation and pressurization for the Control Room Habitability Zone (CRHZ) during isolated conditions. When the CRHZ is isolated, a fixed amount of outside air is processed through the HEPA filter bank, air heater, charcoal adsorbers, and post filters. This system of filtered outside air aids in positive pressurization of the CRHZ with respect to the outdoors.

Surveillance Requirement (SR) 3.7.3.4 tests the integrity of the main control room boundary and requires a positive

pressure limit be satisfied with one CREV subsystem operating. While other SRs in LCO 3.7.3 test the Operability and function of the CREV ventilation subsystems, SR 3.7.3.4, ensures that the main control room boundary leak tightness is adequate to meet design basis assumptions.

While there are currently TS Conditions and Required Actions for CREV subsystem inoperability due to ventilation train degradation, there are no corresponding Conditions, Required Actions, or Completion Times specified in LCO 3.7.3 associated with this main control room boundary surveillance. Currently, if the control room habitability envelope pressure boundary was breached, the CREV subsystems might not be able to maintain the positive pressure required by SR 3.7.3.4. For this situation, under the existing TS, LCO 3.0.3 must be entered for two-train inoperability (during operation in MODES 1, 2, or 3). Requiring the plant to immediately enter LCO 3.0.3 when the main control room boundary is not intact is excessive and does not provide a suitable time allowance for preventive maintenance or unplanned corrective maintenance activities.

This TS Change also proposes that an LCO Note be added to LCO 3.7.3 that would allow the main control room boundary to be opened intermittently under administrative control. This provision acknowledges that for routine personnel entry and exit, the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings, these controls consist of stationing a dedicated individual at the opening who is in continuous communication with the main control room.

This proposed TS change addresses these issues by the adoption of TSTF-287, Revision 5. Similar TS changes have been approved by NRC for a number of Pressurized Water Reactors and several BWRs, including Duane Arnold, Hatch, Fermi, and most recently, Susquehanna.

Additionally, following approval by NRC, it is intended that the TSTFs be incorporated by individual licensees as changes to their respective TS. Thus, in proposing incorporation of this TSTF, BFN is maintaining consistency with the latest approved changes and improvements to STS.

This TS change request is not tied to a specific plant milestone or need date. Therefore, TVA is asking that this TS change be approved by October 1, 2003, and that the implementation of the revised TS be made within 60 days of NRC approval.

#### 4.0 TECHNICAL ANALYSIS

If the control room habitability pressure boundary is inoperable in MODES 1, 2, or 3 such that the CREV trains cannot establish or maintain the required control room pressure, this TS change will require action be taken to restore an OPERABLE control room habitability envelope pressure boundary within 24 hours. The 24-hour Completion Time is reasonable based on the low probability of a design basis accident occurring during this time period and compensatory measures available to the operator to minimize the consequences of potential hazards.

Additionally, LCO 3.7.3 is modified by a Note which allows the control room habitability envelope boundary to be opened intermittently under administrative controls. For entry and exit through doors, the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings, a dedicated individual, who is in continuous communication with the control room, is stationed at the opening. This individual will have a method to rapidly close the opening when a need for control room habitability envelope isolation is indicated.

As indicated, the proposed TS changes allow 24 hours (during operation in MODES 1, 2, and 3) to restore the capability to maintain control room habitability envelope boundary pressure before initiation of an orderly shutdown is required, while intermittent opening of the control room habitability envelope pressure boundary is permitted under direct administrative control.

During the period that the control room habitability envelope pressure boundary is inoperable, appropriate compensatory measures consistent with the intent of 10 CFR 50 Appendix A, General Design Criterion (GDC) 19 will be utilized to protect control room personnel from potential hazards such as radiation, radioactive contamination, toxic chemicals, smoke, temperature, and relative humidity, and to ensure physical security. The preplanned measures will be available to address these concerns for intentional and unintentional entry into proposed new Condition B. For example, when the control room habitability envelope pressure boundary is opened for other than entry through doors, the proposed TS Bases indicate that, in addition to other necessary measures, a dedicated individual, in continuous contact with the control room, will be stationed in the area to rapidly restore the pressure boundary. TVA will have approved written procedures in place that describe the compensatory measures to be taken in the event of an

intentional or unintentional entry into Condition B. A regulatory commitment to this effect is provided in Enclosure 4.

In summary, the proposed change is considered acceptable because of the low probability of an event occurring during the allowed outage time that would require an intact pressure boundary, and by the use of compensatory measures.

## 5.0 REGULATORY SAFETY ANALYSIS

The Tennessee Valley Authority (TVA) is submitting an amendment request to licenses DPR-33, DPR-52, and 68 for Browns Ferry Nuclear Plant Units 1, 2, and 3 Technical Specifications (TS). The proposed amendment revises Limiting Condition for Operation 3.7.3, Control Room Emergency Ventilation (CREV) System and the associated Bases to provide specific Conditions and Required Actions that address a degraded main control room boundary.

### 5.1 No Significant Hazards Consideration

TVA has evaluated whether or not a significant hazards consideration is involved with the proposed amendment 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 TS change involves the CREV system, which provides a radiological controlled environment from which the plant can be operated following a design basis accident (DBA). The CREV system is not assumed to be the initiator of any analyzed accident and cannot not affect the probability of accidents.

The proposed change allows the main control room boundary to be opened intermittently under administrative control, and allows 24 hours to restore the main control room boundary to Operable status before requiring the plant to perform an orderly shutdown. The 24-hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period and TVA's commitment to implement, via administrative controls, appropriate compensatory measures consistent

with the intent of 10 CFR 50, Appendix A, General Design Criteria (GDC) 19. These compensatory measures minimize the consequences of an open main control room boundary and assure that CREV system can continue to perform its function. As such, these changes will not affect the function or operation of any other systems, structures, or components.

Therefore, the proposed TS change does not involve an 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 allows the main control room boundary to be opened intermittently under administrative control and allows 24 hours to restore the main control room boundary to Operable status before requiring the plant to perform an orderly shutdown. The 24-hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period and TVA's commitment to implement, via administrative controls, appropriate compensatory measures consistent with the intent of 10 CFR 50, Appendix A, GDC 19. These compensatory measures minimize the consequences of an open main control room boundary and assure that the CREV system can continue to perform its function. As such, these changes will not affect the function or operation of any other systems, structures, or components.

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

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

Response: No

The proposed change allows the main control room boundary to be opened intermittently under administrative control and allows 24 hours to restore the main control room boundary to Operable status before requiring the plant to perform an orderly shutdown. The 24-hour Completion Time is reasonable based on the low

probability of a DBA occurring during this time period and TVA's commitment to implement, via administrative controls, appropriate compensatory measures consistent with the intent of 10 CFR 50, Appendix A, GDC 19. These compensatory measures minimize the consequences of an open main control room boundary and assure that the CREV system can continue to perform its function such that compliance with GDC 19 is maintained.

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

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

## 5.2 Applicable Regulatory Requirements/Criteria

The proposed changes would allow 24 hours (during MODES 1, 2, or 3) to restore the capability to maintain control building boundary pressure before requiring the unit to perform an orderly shutdown, and would also allow intermittent opening of the control room boundary under administrative controls. During the period that the control room boundary is inoperable, appropriate compensatory measures consistent with the intent of 10 CFR Part 50, Appendix A, GDC 19 will be utilized to protect the control room operators from potential hazards; such as radioactive contamination, toxic chemicals, smoke, temperature, and relative humidity, and to ensure physical security. These preplanned compensatory measures will be available to address these concerns for intentional and unintentional entry into the condition. For example, when the control building boundary is opened for other than entry through doors, the proposed TS Bases describe that a dedicated individual will be stationed in the area in continuous contact with the control room to rapidly restore the boundary.

The proposed change is considered acceptable because of the low probability of an event requiring an intact control room boundary during the 24-hour Completion Time associated with the new Condition B. Based on the low probability of an event occurring in this time and the availability of compensatory measures consistent with GDC 19 to minimize the consequences during an event, the

proposed change is considered acceptable and is in conformance with NRC-approved TSTF-287 Revision 5.

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 the health and safety of the public.

#### **6.0 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 significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed 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.

#### **7.0 REFERENCES**

1. Technical Specifications Task Force (TSTF) Change Traveler 287, Revision 5, Ventilation System Envelope Allowed Outage Time.
2. Letter from William D. Beckner (NRC) to James Davis (NEI) dated March 16, 2000, (Approval of several TSTFs including TSTF-287, Revision 5).

Enclosure 2

Technical Specifications (TS) Change 409  
Adoption of TSTF-287, Revision 5  
Control Room Ventilation System Envelope  
Allowed Outage Time

Proposed Technical Specifications Changes (mark-up)

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

CREV System  
3.7.3

3.7 PLANT SYSTEMS

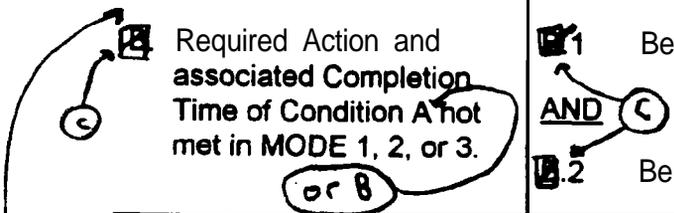
3.7.3 Control Room Emergency Ventilation (CREV) System

LCO 3.7.3 Two CREV subsystems shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A One CREV subsystem inoperable.	A.1 Restore CREV subsystem to OPERABLE status.	7 days
<input checked="" type="checkbox"/> Required Action and associated Completion Time of Condition A not met in MODE 1, 2, or 3.	<input checked="" type="checkbox"/> 1 Be in MODE 3.	12 hours
	<input checked="" type="checkbox"/> 2 Be in MODE 4.	36 hours



(continued)

B. Two CREV subsystems inoperable due to inoperable control room boundary in modes 1, 2, and 3.	B.1 Restore control room boundary to OPERABLE status.	24 hours
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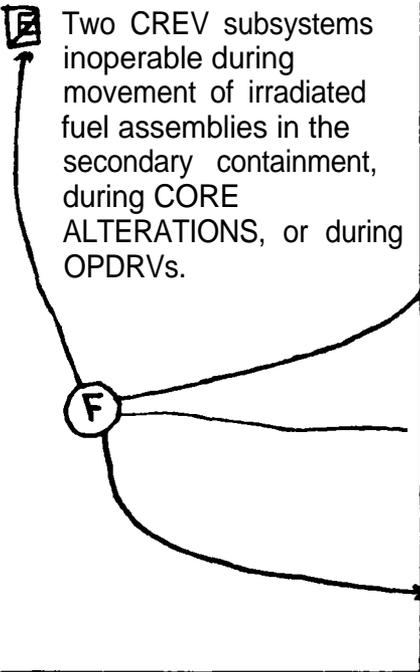
ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p><input checked="" type="checkbox"/> Required Action and associated Completion Time of Condition A not met during movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs.</p>	<p><input checked="" type="checkbox"/> 1 <u>NOTE</u> LCO 3.0.3 is not applicable.</p> <hr/> <p>Place OPERABLE CREV subsystem in pressurization mode.</p> <p><u>OR</u></p> <p><input checked="" type="checkbox"/> 2.1 Suspend movement of irradiated fuel assemblies in the secondary containment.</p> <p><u>AND</u></p> <p><input checked="" type="checkbox"/> 2.2 Suspend CORE ALTERATIONS.</p> <p><u>AND</u></p> <p><input checked="" type="checkbox"/> 2.3 Initiate action to suspend OPDRVs.</p>	<p>Immediately</p> <p>Immediately</p> <p>Immediately</p> <p>Immediately</p>
<p><input checked="" type="checkbox"/> Two CREV subsystems inoperable in MODE 1, 2, or 3</p>	<p><input checked="" type="checkbox"/> 1 Enter LCO 3.0.3.</p>	<p>Immediately</p>

(continued)

for reasons other than Condition B

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p></p> <p><b>E</b> Two CREV subsystems inoperable during movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs.</p>	<p><b>E</b> 1 <u>NOTE</u> LCO 3.0.3 is not applicable.</p> <p>Suspend movement of irradiated fuel assemblies in the secondary containment.</p> <p><u>AND</u></p> <p><b>E</b> 2 Suspend CORE ALTERATIONS.</p> <p><u>AND</u></p> <p><b>E</b> 3 Initiate action to suspend OPDRVs.</p>	<p>Immediately</p> <p>Immediately</p> <p>Immediately</p>

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

3.7 PLANT SYSTEMS

3.7.3 Control Room Emergency Ventilation (CREV) System

LCO 3.7.3 Two CREV subsystems shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CREV subsystem inoperable.	A.1 Restore CREV subsystem to OPERABLE status.	7 days
Required Action and associated Completion Time of Condition A not met in MODE 1, 2, or 3. <i>(Handwritten: or B)</i>	<input checked="" type="checkbox"/> 1 Be in MODE 3. AND <input checked="" type="checkbox"/> 2 Be in MODE 4. <i>(Handwritten: C)</i>	12 hours 38 hours

(continued)

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

B.1 Restore control room boundary to OPERABLE status.

24 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>Required Action and associated Completion Time of Condition A not met during movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs.</p>	<p>NOTE LCO 30.3 is not applicable.</p> <hr/> <p>Place OPERABLE CREV subsystem in pressurization mode.</p> <p>OR</p> <p>2.1 Suspend movement of irradiated fuel assemblies in the secondary containment.</p> <p>AND</p> <p>2.2 Suspend CORE ALTERATIONS.</p> <p>AND</p> <p>2.3 Initiate action to suspend OPDRVs.</p>	<p>Immediately</p> <p>Immediately</p> <p>Immediately</p> <p>Immediately</p>
<p>Two CREV subsystems inoperable in MODE 1, 2, or 3.</p>	<p>1 Enter LCO 3.0.3.</p>	<p>Immediately</p>

(continued)

for reasons other than Condition B

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p><b>F</b> Two CREV subsystems inoperable during movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs.</p>	<p><b>B 1</b> <u>NOTE</u> LCO 3.0.3 is not applicable.</p>	
	<p><u>AND</u> <b>B 2</b> Suspend movement of irradiated fuel assemblies in the secondary containment.</p>	Immediately
	<p><u>AND</u> <b>B 3</b> Suspend CORE ALTERATIONS.</p> <p><u>AND</u> <b>B 3</b> Initiate action to <b>suspend OPDRVs</b>.</p>	Immediately

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

3.7 PLANT SYSTEMS

3.7.3 Control Room Emergency Ventilation (CREV) System

LCO 3.7.3 Two CREV subsystems shall be OPERABLE.

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

ACTIONS

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

(continued)

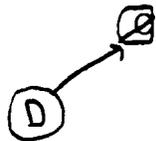
<i>B. Two CREV subsystems inoperable due to inoperable control room boundary in MODES 1, 2, and 3.</i>	<i>B.1 Restore control room boundary to OPERABLE status.</i>	<i>24 hours</i>
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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p><input checked="" type="checkbox"/> Required Action and associated Completion Time of Condition A not met during movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs.</p>	<p><input checked="" type="checkbox"/> 1 -----NOTE----- LCO 3.0.3 is not applicable. -----</p> <p>Place OPERABLE CREV subsystem in pressurization mode.</p> <p>OR</p> <p><input checked="" type="checkbox"/> 2.1 Suspend movement of irradiated fuel assemblies in the secondary containment.</p> <p>AND</p> <p><input checked="" type="checkbox"/> 2.2 Suspend CORE ALTERATIONS.</p> <p>AND</p> <p><input checked="" type="checkbox"/> 2.3 Initiate action to suspend OPDRVs.</p>	<p>Immediately</p> <p>Immediately</p> <p>Immediately</p> <p>Immediately</p>
<p><input checked="" type="checkbox"/> Two CREV subsystems inoperable in MODE 1, 2, or 3.</p>	<p><input checked="" type="checkbox"/> 1 Enter LCO 3.0.3.</p>	<p>Immediately</p>

(continued)

for reasons other than Condition B

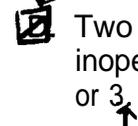


OR



AND

AND



ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p> Two CREV subsystems inoperable during movement of irradiated fuel assemblies in the secondary containment, <b>during CORE ALTERATIONS</b>, or during OPDRVs.</p>	<p> 1</p> <p>-----<b>NOTE</b>-----            LCO 3.0.3 is not applicable.</p> <hr/> <p>Suspend movement of irradiated fuel assemblies in the secondary containment.</p> <p><b>AND</b></p> <p> 2 Suspend CORE ALTERATIONS.</p> <p><b>AND</b></p> <p> 3 Initiate action to suspend OPDRVs.</p>	<p>Immediately</p> <p>Immediately</p> <p>Immediately</p>

Enclosure 3

Technical Specifications (TS) Change 409  
Adoption of TSTF-287, Revision 5  
Control Room Ventilation System Envelope  
Allowed Outage Time

Changes to Technical Specifications Bases Pages  
(mark-up)

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BASES (continued)

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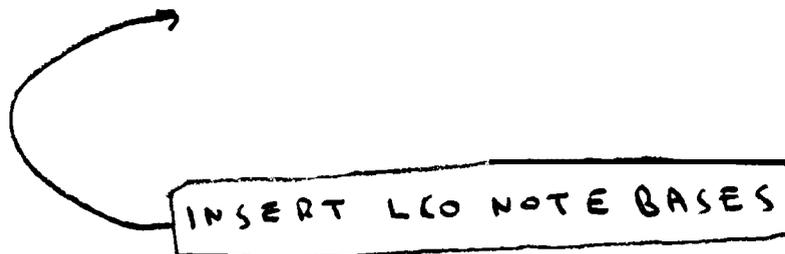
LCO

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

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

- a. Fan is **OPERABLE**;
- b. **HEPA filter** and charcoal **adsorbers** are not excessively restricting flow and are capable of performing their filtration functions; and
- c. The electric duct heater, ductwork, and dampers are **OPERABLE**.

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



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(continued)

INSERT  
LCO NOTE BASES (~~BWR-4 3.7.4, MREC System~~)

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

BASES (continued)

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

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

- a. During operations with potential for draining the reactor vessel (OPDRVs);
- b. During CORE ALTERATIONS; and
- c. During movement of irradiated fuel assemblies in the secondary containment.

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ACTIONS

A.1

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

B.1



(continued)

INSERT 1 (BWR/4-3.7.4)

**B.1**

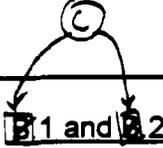
[Reviewer's Note: Adoption of Condition B is dependent on a commitment from the licensee to have written procedures available describing compensatory measures to be taken in the event of an intentional or unintentional entry into Condition B.]

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

CREV

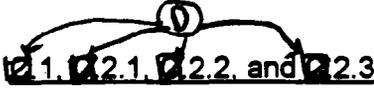
BASES

ACTIONS  
(continued)



or control room boundary

In MODE 1, 2, or 3, if the inoperable CREV subsystem cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE that minimizes risk. To achieve this status, the unit must be placed in at least MODE 3 within 12 hours and in MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.



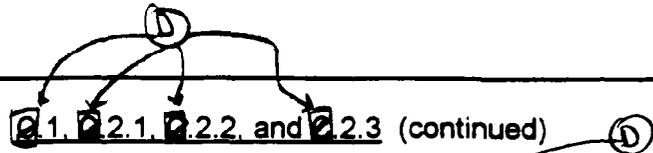
The Required Actions of Condition D are modified by a Note indicating that LCO 3.0.3 does not apply. If moving irradiated fuel assemblies while in MODE 1, 2, or 3, the fuel movement is independent of reactor operations. Therefore, inability to suspend movement of irradiated fuel assemblies is not sufficient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

During movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs, if the inoperable CREV subsystem cannot be restored to OPERABLE status within the required Completion Time, the OPERABLE CREV 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.

(continued)

BASES

ACTIONS



An alternative to Required Action **3.1** is to immediately suspend activities that present a potential for releasing radioactivity that might require isolation of the control room. This places the unit in a condition that minimizes risk

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



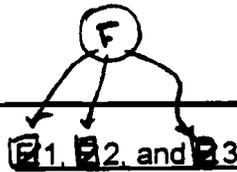
If both **CREV** subsystems are inoperable in MODE 1, 2, or 3, the CREV System may not be capable of performing the intended function and the unit is in a condition outside the accident analyses. Therefore, LCO 3.0.3 must be entered immediately.

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

(continued)

BASES

ACTIONS  
(continued)



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

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

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

(continued)

BASES (continued)

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LCO

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

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

- a. **Fan** is **OPERABLE**;
- b. **HEPA** filter and **charcoal adsorbers** are not excessively restricting flow and are capable of performing their filtration functions; and
- c. The **electric** duct heater, ductwork, and dampers are OPERABLE.

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



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(continued)

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

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

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|

BASES (continued)

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

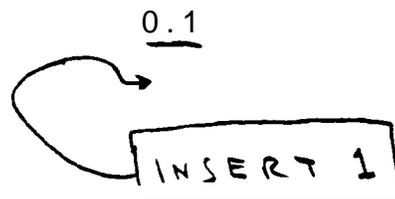
In MODES 4 and 5, the probability and consequences of a DBA are reduced because of the pressure and temperature limitations in these MODES. Therefore, maintaining the CREV System OPERABLE is not required in MODE 4 or 5, except for the following situations under which significant radioactive releases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

- a. During operations with potential for draining the reactor vessel (**OPDRVs**);
- b. During CORE ALTERATIONS; and
- c. During movement of irradiated fuel assemblies in the secondary containment.

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ACTIONS            **A.1**

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



(continued)

INSERT 1 (~~BWR/4.3.7.4~~)

**B.1**

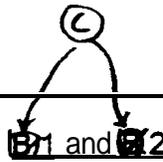
[Reviewer's Note: Adoption of Condition B is dependent on a commitment from the licensee to have written procedures available describing compensatory measures to be taken in the event of an intentional or unintentional entry into Condition B.]

CREV

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

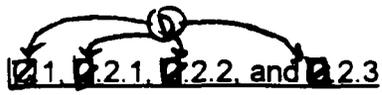
BASES

ACTIONS  
(continued)



or control room boundary

In MODE 1, 2, or 3, if the inoperable CREV subsystem cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE that minimizes risk. To achieve this status, the unit must be placed in at least MODE 3 within 12 hours and in MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.



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

During movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs, if the inoperable CREV subsystem cannot be restored to OPERABLE status within the required Completion Time, the OPERABLE CREV 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.

(continued)

BASES

ACTIONS



An alternative to Required Action **A1** is to immediately suspend activities that present a potential for releasing radioactivity that might require isolation of the control room. This places the unit in a condition that minimizes risk.

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



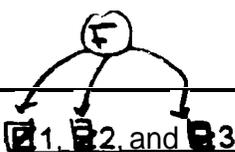
If both CREV subsystems are inoperable in MODE 1, 2, or 3, the CREV System may not be capable of performing the intended function and the unit is in a condition outside the accident analyses. Therefore, LCO 3.0.3 must be entered immediately.

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

(continued)

BASES

ACTIONS  
(continued)



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

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

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

(continued)

BASES (continued)

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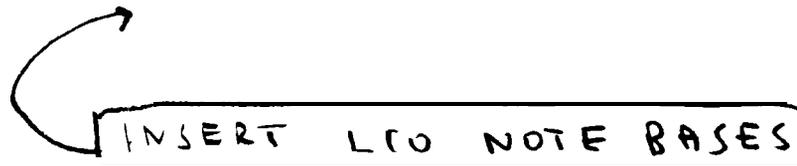
**LCO**

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

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

- a. Fan is OPERABLE;
- b. **HEPA** filter and charcoal **adsorbers** are not excessively restricting flow and are capable of performing their filtration functions; and
- c. The electric duct heater, ductwork, and dampers are OPERABLE.

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



INSERT LCO NOTE BASES

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(continued)

INSERT  
LCO NOTE BASES (~~BWR4 2.7.4, MCREC System~~)

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



BASES (continued)

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APPLICABILITY

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

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

- a. During operations with potential for draining the reactor vessel (**OPDRVs**);
- b. During CORE ALTERATIONS; and
- c. During movement of irradiated fuel assemblies in the secondary containment.

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ACTIONS

A.1

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

R.1  


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(continued)

INSERT 1 (~~DWR 43.7.4~~)

**B.1**

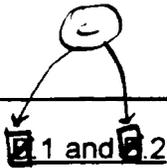
[Reviewer's Note: Adoption of Condition B is dependent on a commitment from the licensee to have written procedures available describing compensatory measures to be taken in the event of an intentional or unintentional entry into Condition B.]

CREV

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

BASES

ACTIONS  
(continued)



or control room boundary

In MODE 1, 2, or 3, if the inoperable CREV subsystem cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE that minimizes risk. To achieve this status, the unit must be placed in at least MODE 3 within 12 hours and in MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.



①

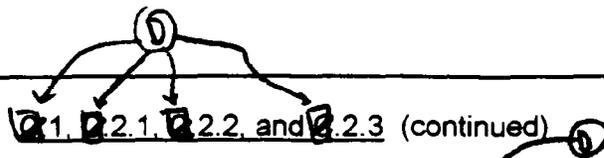
The Required Actions of Condition 1 are modified by a Note indicating that LCO 3.0.3 does not apply. If moving irradiated fuel assemblies while in MODE 1, 2, or 3, the fuel movement is independent of reactor operations. Therefore, inability to suspend movement of irradiated fuel assemblies is not sufficient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

During movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs, if the inoperable CREV subsystem cannot be restored to OPERABLE status within the required Completion Time, the OPERABLE CREV 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.

(continued)

BASES

ACTIONS



An alternative to Required Action 3.1 is to immediately suspend activities that present a potential for releasing radioactivity that might require isolation of the control room. This places the unit in a condition that minimizes risk.

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



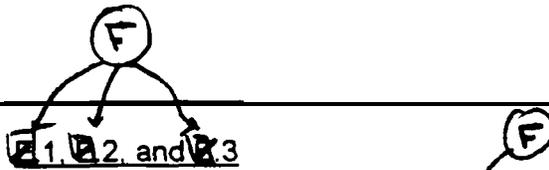
If both CREV subsystems are inoperable in MODE 1, 2, or 3, the CREV System may not be capable of performing the intended function and the unit is in a condition outside the accident analyses. Therefore, LCO 3.0.3 must be entered immediately..

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

(continued)

BASES

ACTIONS  
(continued)



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

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

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

(continued)

## Enclosure 4

### Technical Specifications (TS) Change 409 Adoption of TSTF-287, Revision 5 Control Room Ventilation System Envelope Allowed Outage Time

#### List of Regulatory Commitments

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During the period that the control room habitability envelope pressure boundary is inoperable, appropriate compensatory measures consistent with the intent of 10 CFR 50 Appendix A, General Design Criterion (GDC) 19 will be utilized to protect control room personnel from potential hazards such as radiation, radioactive contamination, toxic chemicals, smoke, temperature and relative humidity, and to ensure physical security. The preplanned measures will be available to address these concerns for intentional and unintentional entry into proposed new Condition B for Technical Specification 3.7.3.