



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

February 09, 2009

TVA-BFN-TS-444

10 CFR 50.90

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

In the Matter of )  
Tennessee Valley Authority )

Docket Nos. 50-259  
50-260  
50-296

**BROWNS FERRY NUCLEAR PLANT (BFN) - RESPONSE FOR ADDITIONAL INFORMATION REGARDING UNITS 1, 2, AND 3 - TECHNICAL SPECIFICATIONS (TS) CHANGE 444 - ADOPTION OF CHANGES TO STANDARD TECHNICAL SPECIFICATIONS UNDER TECHNICAL SPECIFICATION TASK FORCE (TSTF) CHANGE NUMBER - 448, REVISION 3, REGARDING CONTROL ROOM ENVELOPE HABITABILITY**

This letter responds to the January 14, 2009 (Reference 1), Request for Additional Information (RAI) regarding proposed TS-444.

Enclosure 1 provides TVA's reply to the NRC's RAI questions. Enclosure 2 provides a revision to the Units 1, 2, and 3 TS pages marked-up to show the proposed change.

The revised pages provided in Enclosure 2 do not alter the original determination that there are no significant hazards considerations associated with the proposed changes, nor do they alter the originally submitted Environmental Assessment and Finding of No Significant Impact provided by the March 27, 2008 letter (Reference 2). Additionally, in accordance with 10 CFR 50.91(b)(1), TVA is sending a copy of this letter and the Enclosures to the Alabama State Department of Public Health.

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TVA is requesting approval of this TS change by April 1, 2009, and that the implementation of the revised TS be made within 60 days of NRC approval.

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 February 09, 2009.

Sincerely,



F. R. Godwin  
Manager of Licensing  
and Industry Affairs

Enclosures:

1. Reply to Request for Additional Information
2. Proposed Technical Specifications Changes (revised mark-up)

References:

1. E-mail from NRC, Eva Brown, to TVA, James E. Emens, Dated January 14, 2009:  
Browns Ferry TSTF-448
2. TVA letter to NRC Dated March 27, 2008: Browns Ferry Nuclear Plant (BFN) - Units 1, 2, and 3 - Technical Specifications (TS) Change 444-Adoption of Changes to Standard Technical Specifications Under Technical Specification Task Force (TSTF) Change Number-448, Revision 3, Regarding Control Room Envelope Habitability (ML080910360).

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cc:(Enclosures):

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## **Enclosure 1**

### **Browns Ferry Nuclear Plant (BFN) Units 1, 2, and 3**

#### **Technical Specifications (TS) Change 444**

#### **Adoption of Changes to Standard Technical Specifications Under Technical Specification Task Force (TSTF) Change Number - 448, Revision 3, Regarding Control Room Envelope Habitability**

#### **Reply to Request for Additional Information**

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##### NRC Request 1

The NRC staff noted the following discrepancies between the Unit 1 marked-up Technical Specification (TS) pages and

- The NOTE under LCO 3.7.3 for Unit 1 was revised by replacing the word "control room boundary" with "control room envelope (CRE) boundary." The same revision was omitted from Units 2 and 3.
- Condition B statement under LCO 3.7.3 for Unit 1 is not consistent with Condition B under LCO 3.7.3 for Units 2 and 3.
- The words "control room" were replaced with "CRE" in Condition B under LCO 3.7.3 for Unit 1.

Address the correctness of differences between the marked-up pages for the units.

##### TVA Reply 1

- TVA revised the note under LCO 3.7.3 for Units 2 and 3: Added "control room envelope (CRE)."
- TVA revised the Condition B statement on Units 2 and 3 LCO 3.7.3. The statement is consistent with the Unit 1 Condition B statement.
- TVA revised Condition B Action for Units 2 and 3. The statement is consistent with the Unit 1 statement.

##### NRC Request 2

Explain why Condition F statements under LCO 3.7.3 were revised again by your letter dated December 19, 2008 as compared to the proposed revision in your letter dated March 27, 2008. Condition F statements, required action, and completion times shall be consistent with the BWR/4 STS approved under TSTF-448, Rev. 3, with the exception of

plant specific changes such as the non-applicability of movement of irradiated fuel assemblies in the [secondary] containment to this condition for BFN. Condition F applies to MODES 4 and 5, where as Condition B applies to Modes 1, 2, and 3.

#### TVA Reply 2

The RAI sent to TVA on October 15, 2008, implied that significant deviations from the model safety evaluation for TSTF-448 would not be approved by NRC. So, in reviewing the March 27, 2008, proposed TS change, for the December 19, 2008 (Reference) RAI, it was determined that the second paragraph from the template would be needed. The "OR" Statement under Condition F and the second paragraph was added by the RAI. The paragraph from TSTF-508 was used.

The "OR" Statement is tied to the Applicability Statement, "During operations with a potential for draining the reactor vessel (OPDRVs)." This applicability Statement is included in the current CREV System, TS-3.7.3, and part of the TSTF template.

#### NRC Request 3

Address the need for the designated time period, in Surveillance Requirement (SR) 3.7.3.4 for Unit 3, wherein the frequency is designated as "24 months on a STAGGERED TEST BASIS" under the column FREQUENCY.

#### TVA Reply 3

The designated period "24 months on a STAGGERED TEST BASIS," has been lined through like Units 1 and 2.

#### From the E-mail lead in:

- The staff recommends to delete the words "by administrative means" from Required Action B.2 from LCO 3.7.3. The staff recognizes that the proposed wording is consistent with the previously approved amendment for Duane Arnold. However, the staff is also presently reviewing a TSTF-508, which was submitted to clarify several issues related to TSTF-448 including the chemical and smoke hazards. The verification method can be described in the bases section as you have done for Units 1, 2, and 3. The Required Action B.2 as proposed would be acceptable to the staff.

TVA has included TSTF-508 wording in the revised TS changes in Enclosure 2: TVA reviewed the proposed bases changes and agrees that using the TSTF-508 wording does not impact the proposed bases.

Reference:

TVA Letter to NRC Dated December 19, 2008: Browns Ferry Nuclear Plant (BFN) - Response For Additional Information Regarding Units 1, 2, and 3 - Technical Specifications (TS) Change 444 - Adoption of Changes to Standard Technical Specifications under Technical Specification Task Force (TSTF) Change Number - 448, Revision 3, Regarding Control Room Envelope Habitability.

**Enclosure 2**

**Browns Ferry Nuclear Plant (BFN)  
Units 1, 2, and 3**

**Technical Specifications (TS) Change 444**

**Adoption of Changes to Standard Technical Specifications Under Technical  
Specification Task Force (TSTF) Change Number - 448, Revision 3, Regarding  
Control Room Envelope Habitability**

**Proposed Technical Specifications Changes (Revised Mark-up)**

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TVA has revised the enclosed pages. A line is drawn through the deleted text and a double underline for new or revised text. TVA highlighted the text revised because of the NRC's RAI questions.

3.7 PLANT SYSTEMS

3.7.3 Control Room Emergency Ventilation (CREV) System

LCO 3.7.3 Two CREV subsystems shall be OPERABLE.

-----NOTE-----  
The main control room envelope (CRE) boundary may be opened intermittently under administrative control.  
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APPLICABILITY: MODES 1, 2, and 3,  
During operations with a potential for draining the reactor vessel (OPDRVs).

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CREV subsystem inoperable <u>for reasons other than Condition B.</u>	A.1 Restore CREV subsystem to OPERABLE status.	7 days
B. <del>Two</del> <u>One or More</u> CREV subsystems inoperable due to inoperable <u>CRE control room</u> boundary <del>in</del> <u>MODES 1, 2, and 3.</u>	<p><u>B.1 Initiate action to implement mitigating actions.</u></p> <p><u>AND</u></p> <p><u>B.2 Verify mitigating actions ensure CRE occupant exposures to radiological hazards will not exceed limits, and verify the CRE occupants are protected from smoke and chemical hazards.</u></p> <p><u>AND</u></p> <p><del>B.1.3</del> Restore <u>CRE control room</u> boundary to OPERABLE status.</p>	<p><u>Immediately</u></p> <p><u>24 Hours</u></p> <p><del>24 Hours</del></p> <p><u>90 days</u></p>

C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, or 3.	C.1	Be in MODE 3.	12 hours
	<u>AND</u>		
	C.2	Be in MODE 4.	36 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition A not met during OPDRVs.	D.1 Place OPERABLE CREV subsystem in pressurization mode.	Immediately
	<u>OR</u> D.2 Initiate action to suspend OPDRVs.	Immediately
E. Two CREV subsystems inoperable in MODE 1, 2, or 3 for reasons other than Condition B.	E.1 Enter LCO 3.0.3.	Immediately

(continued)



ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>F. Two CREV subsystems inoperable during OPDRVs <u>for reasons other than Condition B.</u></p> <p><u>OR</u></p> <p><u>Required actions and Completion times of Condition B not met during OPDRVS.</u></p>	<p>F.1 Initiate action to suspend OPDRVs.</p> <p><u>AND</u></p> <p><u>F.2 Initiate Actions to suspend OPDRVS.</u></p>	<p>Immediately</p> <p><u>Immediately</u></p>



**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE		FREQUENCY
SR 3.7.3.1	Operate each CREV subsystem for $\geq 10$ continuous hours with the heaters operating.	31 days
SR 3.7.3.2	Perform required CREV filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.3.3	Verify each CREV subsystem actuates on an actual or simulated initiation signal.	24 months
SR 3.7.3.4	<p><u>Perform required CRE unfiltered air leakage testing in accordance with the Control Room Envelope Habitability Program.</u></p> <p><del>Verify each CREV subsystem can maintain a positive pressure of <math>\geq 0.125</math> inches water gauge relative to the outdoors during the pressurization mode of operation at a flow rate of <math>\geq 2700</math> cfm and <math>\leq 3300</math> cfm.</del></p>	<p><u>In accordance with the Control Room Envelope Habitability Program</u></p> <p><del>24 months on a</del> <b>STAGGERED TEST BASIS</b></p>

5.5.12 Primary Containment Leakage Rate Testing Program (continued)

Leakage Rate acceptance criteria are:

- a. The primary containment leakage rate acceptance criteria is  $\leq 1.0 L_a$ . During the first unit startup following the testing performed in accordance with this program, the leakage rate acceptance criteria are  $\leq 0.60 L_a$  for the Type B and Type C tests, and  $\leq 0.75 L_a$  for the Type A test; and
- b. Air lock testing acceptance criteria are:
  - 1) Overall air lock leakage rate  $\leq 0.05 L_a$  when tested at  $\geq P_a$ .
  - 2) Air lock door seals leakage rate is  $\leq 0.02 L_a$  when the overall air lock is pressurized to  $\geq 2.5$  psig for at least 15 minutes.

The provisions of SR 3.0.2 do not apply to the test frequencies specified in the Primary Containment Leakage Rate Testing Program. The provisions of SR 3.0.3 are applicable to the Primary Containment Leakage Rate Testing Program.

5.5.13 Control Room Envelope Habitability Program

A Control Room Envelope (CRE) Habitability Program shall be established and implemented to ensure that CRE habitability is maintained such that, with an OPERABLE Control Room Emergency Ventilation (CREV) System, CRE occupants can control the reactor safely under normal conditions and maintain it in a safe condition following a radiological event, hazardous chemical release, or a smoke challenge. The program shall ensure that adequate radiation protection is provided to permit access and occupancy of the CRE under design basis accident (DBA) conditions without personnel receiving radiation exposures in excess of 5 rem total effective dose equivalent (TEDE) for the duration of the accident. The program shall include the following elements:

- a. The definition of CRE and the CRE boundary.
- b. Requirements for maintaining the CRE boundary in its design condition including configuration control and preventive maintenance.
- c. Requirements for (i) determining the unfiltered air inleakage past the CRE boundary into the CRE in accordance with the testing methods and at the Frequencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197, "Demonstrating Control Room

(continued)



Envelope Integrity at Nuclear Power Reactors," Revision 0, May 2003, and (ii) assessing CRE habitability at the Frequencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0.

- d. Measurement, at designated locations, of the CRE pressure relative to all external areas adjacent to the CRE boundary during the pressurization mode of operation by one subsystem of the CREV System, operating at the flow rate required by the VFTP, at a frequency of 24 months on a STAGGERED TEST BASIS. The results shall be trended and used as part of the **periodic** assessment of the CRE boundary.
  - e. The quantitative limits on unfiltered air leakage into the CRE. These limits shall be stated in a manner to allow direct comparison to the unfiltered air leakage measured by the testing described in paragraph c. The unfiltered air leakage limit for radiological challenges is the leakage flow rate assumed in the licensing basis analyses of DBA consequences.
  - f. The provisions of SR 3.0.2 are applicable to the Frequencies for assessing CRE habitability, determining CRE unfiltered leakage, and measuring CRE pressure and assessing the CRE boundary as required by paragraphs c and d, respectively.
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(continued)



### 3.7 PLANT SYSTEMS

#### 3.7.3 Control Room Emergency Ventilation (CREV) System

LCO 3.7.3 Two CREV subsystems shall be OPERABLE.

-----NOTE-----  
The main control room envelope (CRE) boundary may be opened intermittently under administrative control.  
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APPLICABILITY: MODES 1, 2, and 3,  
During operations with a potential for draining the reactor vessel (OPDRVs).

#### ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CREV subsystem inoperable <u>for reasons other than Condition B.</u>	A.1 Restore CREV subsystem to OPERABLE status.	7 days
B. <del>Two</del> <u>One or more</u> CREV subsystems inoperable due to inoperable <del>control room</del> <u>CRE</u> boundary <del>in MODES 1, 2, and 3.</del>	<p>B.1 <u>Initiate actions to implement mitigating actions.</u></p> <p><u>AND</u></p> <p>B.2 <u>Verify mitigating actions ensure CRE occupant exposures will not exceed limits, and verify the CRE occupants are protected from smoke and chemical hazards.</u></p> <p><u>AND</u></p> <p>B. <del>1</del>3 Restore <u>CRE</u> <del>control room</del> boundary to OPERABLE status.</p>	<p><u>Immediately</u></p> <p><u>24 Hours</u></p> <p><del>24 hours</del> <u>90 days</u></p>

C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, or 3.	C.1 Be in MODE 3.	12 hours
	<u>AND</u> C.2 Be in MODE 4.	36 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition A not met during OPDRVs.	D.1 Place OPERABLE CREV subsystem in pressurization mode.  <u>OR</u>  D.2 Initiate action to suspend OPDRVs.	Immediately     Immediately
E. Two CREV subsystems inoperable in MODE 1, 2, or 3 for reasons other than Condition B.	E.1 Enter LCO 3.0.3.	Immediately

(continued)



ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>F. Two CREV subsystems inoperable during OPDRVs <u>for reasons other than Condition B.</u></p> <p><u>OR</u></p> <p><u>Required actions and Completion times of Condition B not met during OPDRVs.</u></p>	<p>F.1 Initiate action to suspend OPDRVs.</p> <p><u>AND</u></p> <p><u>F.2 Initiate actions to suspend OPDRVs.</u></p>	<p>Immediately</p> <p><u>Immediately</u></p>

## SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.3.1	Operate each CREV subsystem for $\geq 10$ continuous hours with the heaters operating.	31 days
SR 3.7.3.2	Perform required CREV filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.3.3	Verify each CREV subsystem actuates on an actual or simulated initiation signal.	24 months
SR 3.7.3.4	<p><u>Perform required CRE unfiltered air inleakage testing in accordance with the Control Room Envelope Habitability Program.</u></p> <p><del>Verify each CREV subsystem can maintain a positive pressure of <math>\geq 0.125</math> inches water gauge relative to the outdoors during the pressurization mode of operation at a flow rate of <math>\geq 2700</math> cfm and <math>\leq 3300</math> cfm.</del></p>	<p><u>In accordance with the Control Room Envelope Habitability Program</u></p> <p><del>24 months on a</del>  <b>STAGGERED TEST BASIS</b></p>



#### 5.5.12 Primary Containment Leakage Rate Testing Program (continued)

The peak calculated containment internal pressure for the design basis loss of coolant accident,  $P_a$ , is 50.6 psig. The maximum allowable primary containment leakage rate,  $L_a$ , shall be 2% of primary containment air weight per day at  $P_a$ .

Leakage Rate acceptance criteria are:

- a. The primary containment leakage rate acceptance criteria is  $\leq 1.0 L_a$ . During the first unit startup following the testing performed in accordance with this program, the leakage rate acceptance criteria are  $\leq 0.60 L_a$  for the Type B and Type C tests, and  $\leq 0.75 L_a$  for the Type A test; and
- b. Air lock testing acceptance criteria are:
  - 1) Overall air lock leakage rate  $\leq 0.05 L_a$  when tested at  $\geq P_a$ .
  - 2) Air lock door seals leakage rate is  $\leq 0.02 L_a$  when the overall air lock is pressurized to  $\geq 2.5$  psig for at least 15 minutes.

The provisions of SR 3.0.2 do not apply to the test frequencies specified in the Primary Containment Leakage Rate Testing Program. The provisions of SR 3.0.3 are applicable to the Primary Containment Leakage Rate Testing Program.

#### 5.5.13 Control Room Envelope Habitability Program

A Control Room Envelope (CRE) Habitability Program shall be established and implemented to ensure that CRE habitability is maintained such that, with an OPERABLE Control Room Emergency Ventilation (CREV) System, CRE occupants can control the reactor safely under normal conditions and maintain it in a safe condition following a radiological event, hazardous chemical release, or a smoke challenge. The program shall ensure that adequate radiation protection is provided to permit access and occupancy of the CRE under design basis accident (DBA) conditions without personnel receiving radiation exposures in excess of 5 rem total effective dose equivalent (TEDE) for the duration of the accident. The program shall include the following elements:

- a. The definition of CRE and the CRE boundary.
- b. Requirements for maintaining the CRE boundary in its design condition including configuration control and preventive maintenance.



- c. Requirements for (i) determining the unfiltered air leakage past the CRE boundary into the CRE in accordance with the testing methods and at the Frequencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197, "Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors," Revision 0, May 2003, and (ii) assessing CRE habitability at the Frequencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0.
  - d. Measurement, at designated locations, of the CRE pressure relative to all external areas adjacent to the CRE boundary during the pressurization mode of operation by one subsystem of the CREV System, operating at the flow rate required by the VFTP, at a frequency of 24 months on a STAGGERED TEST BASIS. The results shall be trended and used as part of the periodic assessment of the CRE boundary.
  - e. The quantitative limits on unfiltered air leakage into the CRE. These limits shall be stated in a manner to allow direct comparison to the unfiltered air leakage measured by the testing described in paragraph c. The unfiltered air leakage limit for radiological challenges is the inleakage flow rate assumed in the licensing basis analyses of DBA consequences.
  - f. The provisions of SR 3.0.2 are applicable to the Frequencies for assessing CRE habitability, determining CRE unfiltered inleakage, and measuring CRE pressure and assessing the CRE boundary as required by paragraphs c and d, respectively.
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3.7 PLANT SYSTEMS

3.7.3 Control Room Emergency Ventilation (CREV) System

LCO 3.7.3 Two CREV subsystems shall be OPERABLE.

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

APPLICABILITY: MODES 1, 2, and 3,  
During operations with a potential for draining the reactor vessel (OPDRVs).

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CREV subsystem inoperable <u>for reasons other than Condition B.</u>	A.1 Restore CREV subsystem to OPERABLE status.	7 days
B. <del>Two</del> <u>One or more</u> CREV subsystems inoperable due to inoperable <del>control room</del> <u>CRE</u> boundary <del>in</del> <u>MODES 1, 2, and 3.</u>	<p><u>B.1 Initiate actions to implement mitigating actions.</u></p> <p><u>AND</u></p> <p>B.2 <u>Verify mitigating actions ensure CRE occupant exposures to radiological hazards will not exceed limits, and verify the CRE occupants are protected from smoke and chemical hazards.</u></p> <p><u>AND</u></p> <p>B. <del>1, 2, and 3</del> Restore <u>CRE</u> <del>control room</del> boundary to OPERABLE status.</p>	<p><u>Immediately</u></p> <p><u>24 hours</u></p> <p><del>24 hours</del> <u>90 days</u></p>

C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, or 3.	C.1	Be in MODE 3.	12 hours
	<u>AND</u>		
	C.2	Be in MODE 4.	36 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition A not met during OPDRVs.	D.1 Place OPERABLE CREV subsystem in pressurization mode.  <u>OR</u>  D.2 Initiate action to suspend OPDRVs.	Immediately     Immediately
E. Two CREV subsystems inoperable in MODE 1, 2, or 3 for reasons other than Condition B.	E.1 Enter LCO 3.0.3.	Immediately

(continued)



ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>F. Two CREV subsystems inoperable during OPDRVs <u>for reasons other than Condition B.</u></p> <p><u>OR</u></p> <p><u>Required actions and Completion times of Condition B not met during OPDRVs.</u></p>	<p>F.1 Initiate action to suspend OPDRVs.</p> <p><u>AND</u></p> <p><u>F.2 Initiate actions to suspend OPDRVs.</u></p>	<p>Immediately</p>

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE		FREQUENCY
SR 3.7.3.1	Operate each CREV subsystem for $\geq 10$ continuous hours with the heaters operating.	31 days
SR 3.7.3.2	Perform required CREV filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.3.3	Verify each CREV subsystem actuates on an actual or simulated initiation signal.	24 months
SR 3.7.3.4	<p><u>Perform required CRE unfiltered air inleakage testing in accordance with the Control Room Envelope Habitability Program.</u></p> <p><del>Verify each CREV subsystem can maintain a positive pressure of <math>\geq 0.125</math> inches water gauge relative to the outdoors during the pressurization mode of operation at a flow rate of <math>\geq 2700</math> cfm and <math>\leq 3300</math> cfm.</del></p>	<p><u>In accordance with the Control Room Envelope Habitability Program</u></p> <p><del>24 months on a</del> <b>STAGGERED TEST BASIS</b></p>



#### 5.5.12 Primary Containment Leakage Rate Testing Program (continued)

The peak calculated containment internal pressure for the design basis loss of coolant accident,  $P_a$ , is 50.6 psig. The maximum allowable primary containment leakage rate,  $L_a$ , shall be 2% of primary containment air weight per day at  $P_a$ .

Leakage Rate acceptance criteria are:

- a. The primary containment leakage rate acceptance criteria is  $\leq 1.0 L_a$ . During the first unit startup following the testing performed in accordance with this program, the leakage rate acceptance criteria are  $\leq 0.60 L_a$  for the Type B and Type C tests, and  $\leq 0.75 L_a$  for the Type A test; and
- b. Air lock testing acceptance criteria are:
  - 1) Overall air lock leakage rate  $\leq 0.05 L_a$  when tested at  $\geq P_a$ .
  - 2) Air lock door seals leakage rate is  $\leq 0.02 L_a$  when the overall air lock is pressurized to  $\geq 2.5$  psig for at least 15 minutes.

The provisions of SR 3.0.2 do not apply to the test frequencies specified in the Primary Containment Leakage Rate Testing Program. The provisions of SR 3.0.3 are applicable to the Primary Containment Leakage Rate Testing Program.

#### 5.5.13 Control Room Envelope Habitability Program

A Control Room Envelope (CRE) Habitability Program shall be established and implemented to ensure that CRE habitability is maintained such that, with an OPERABLE Control Room Emergency Ventilation (CREV) System, CRE occupants can control the reactor safely under normal conditions and maintain it in a safe condition following a radiological event, hazardous chemical release, or a smoke challenge. The program shall ensure that adequate radiation protection is provided to permit access and occupancy of the CRE under design basis accident (DBA) conditions without personnel receiving radiation exposures in excess of 5 rem total effective dose equivalent (TEDE) for the duration of the accident. The program shall include the following elements:

- a. The definition of CRE and the CRE boundary.
- b. Requirements for maintaining the CRE boundary in its design condition including configuration control and preventive maintenance.



- c. Requirements for (i) determining the unfiltered air leakage past the CRE boundary into the CRE in accordance with the testing methods and at the Frequencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197, "Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors," Revision 0, May 2003, and (ii) assessing CRE habitability at the Frequencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0.
  - d. Measurement, at designated locations, of the CRE pressure relative to all external areas adjacent to the CRE boundary during the pressurization mode of operation by one subsystem of the CREV System, operating at the flow rate required by the VFTP, at a frequency of 24 months on a STAGGERED TEST BASIS. The results shall be trended and used as part of the periodic assessment of the CRE boundary.
  - e. The quantitative limits on unfiltered air leakage into the CRE. These limits shall be stated in a manner to allow direct comparison to the unfiltered air leakage measured by the testing described in paragraph c. The unfiltered air leakage limit for radiological challenges is the leakage flow rate assumed in the licensing basis analyses of DBA consequences.
  - f. The provisions of SR 3.0.2 are applicable to the Frequencies for assessing CRE habitability, determining CRE unfiltered leakage, and measuring CRE pressure and assessing the CRE boundary as required by paragraphs c and d, respectively.
-