March 27, 2008

TVA-BFN-TS-444

10 CFR 50.90

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
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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 444 - ADOPTION OF CHANGES TO STANDARD TECHNICAL SPECIFICATIONS UNDER TECHNICAL SPECIFICATION TASK FORCE (TSTF) CHANGE NUMBER - 448, Revision 3, REGARDING CONTROL ROOM ENVELOPE HABITABILITY

Pursuant to 10 CFR 50.90, the Tennessee Valley Authority (TVA) is submitting a request for a TS change (TS-444) to licenses DPR-33, DPR-52, and DPR-68 for BFN Units 1, 2, and 3, respectively.

The proposed amendment would modify the TS requirements related to the control room envelope habitability in accordance with TSTF-448, Revision 3. The proposed amendment is consistent with the Consolidated Line Item Improvement that adopts changes to TS Section 3.7.3 Control Room Emergency Ventilation (CREV) system and adds Technical Specification Section 5.5.13, Control Building Envelope Habitability Program, consistent with TSTF-448, Revision 3.

Enclosure 1 provides a description of the proposed change, the requested confirmation of applicability, and plant-specific verifications. Enclosure 2 provides the existing Unit 1 TS pages marked-up to show the proposed change. The same exact TS changes are being requested for Units 2 and 3. Enclosure 3 provides the existing Unit 1 TS Bases pages marked-up to show the proposed changes. These pages are included to aid the staff in their review. They are for information only. Identical changes are being proposed for the Unit 2 and 3 TS Bases. Enclosure 4 provides a summary of the regulatory commitments made in this submittal.

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

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 Enclosures to the Alabama State Department of Public Health.

If you have any questions about this TS change, please contact Tony Langley at (256) 729-2636.

I declare under penalty of perjury that the foregoing is true and correct. Executed on March 27, 2008.

Sincerely,

Original signed by:

R. G. West
Site Vice President

Enclosures:
1. Description and Assessment
2. Proposed Technical Specifications Changes (mark-up)
3. Proposed Changes to Technical Specifications Bases Pages (mark-up)
4. Regulatory Commitments

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s:lic/submit/TechSpec/TS-444 TSTF-448

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

Description and Assessment

1.0 Description

The proposed amendment would revise the Technical Specifications (TS) requirements related to control building envelope habitability in TS Section 3.7.3 Control Room Emergency Ventilation (CREV) System and add TS Section 5.5.13, Control Building Envelope Habitability Program to the Administrative Section of TSs.

The changes are consistent with NRC approved Industry/Technical Specification Task Force (TSTF) Standard TS (STS) change TSTF-448, Revision 3. The Federal Register notice published on January 17, 2007, announced the availability of this TS improvement through the Consolidated Line Item Improvement Process (CLIIP). This change is consistent with the CLIIP except as described in Section 2.2 of this enclosure.

2.0 Assessment

2.1 Applicability of Published Safety Evaluation

TVA has reviewed the safety evaluation dated January 17, 2007, as part of the CLIIP. This review included a review of the NRC staff's evaluation, as well as the supporting information provided to support TSTF-448, Revision 3. TVA has concluded that the justifications presented in the TSTF proposal and the safety evaluation prepared by the NRC staff are applicable to BFN Units 1, 2, and 3 and justify this amendment for the incorporation of the changes to the BFN TS.

2.2 Optional Changes and Variations

Deviations from TS changes of TSTF-448, Revision 3

References to Chemical and smoke hazards are not included in the proposed revision to TS Section 3.7.3, TS Section 5.5.13 and TS Bases 3.7.3. The CREV System was not designed to protect the control room envelope (CRE) occupants from these hazards. No toxic gas detectors are provided to initiate CRE isolation.

In TVA's response to NRC Generic Letter 2003-01, Control Room Habitability (Reference), an evaluation of both on-site and off-site threats to the CRE habitability zone posed by hazardous chemicals was performed in accordance with Regulatory Guide (RG) 1.78. The evaluation determined that of the chemicals stored onsite, offsite within a 5-mile radius, or transported near to the site by barge, rail, or surface road, only chlorine traveling by barge presents a hazard to the CRE occupants. However, due to the low probability of a chlorine chemical event, it can be excluded from the control room habitability analysis. Toxic gas protection is further detailed in Section 10.12.5.3 of the Browns Ferry Updated Final Safety Analyses Report (UFSAR).

Also discussed in TVA's response to NRC GL 2003-01, an evaluation performed in accordance with RG 1.196, using NEI 99-03 Revision 1, methodologies confirmed that the CRE will remain available and reactor control capability is maintained from either the CRE or the alternate shutdown panels during a postulated smoke event.

2.3 License Condition regarding Initial Performance of New Surveillance and Assessment Requirements

TVA Proposed the following license condition to support implementation of the proposed TS changes:

> Upon Implementation of Amendment No **XXX**, adopting TSTF-448, Revision 3, the determination of control room envelope (CRE) unfiltered air inleakage as required by SR 3.7.3.4, in accordance with TS 5.5.13.c.(i), the assessment of the CRE habitability as required by TS 5.5.13.c.(ii), and the measurement of CRE pressure as required by TS 5.5.13.d, shall be considered met. Following Implementation:
>
> (a) The first performance of SR 3.7.4.4, in accordance with TS 5.5.13.c.(i), shall be within a specified Frequency of 6 years, plus the 18-month allowance of SR 3.0.2, as measured from November 10, 2003, the date of the most recent successful tracer gas test.
>
> (b) The first performance of the periodic assessment of the CRE habitability, Specification 5.5.13.c.(ii), shall be within 9 months from the date of this letter.
>
> (c) The first performance of the periodic measurement of CRE pressure, TS 5.5.13.d, shall be within 24 months, plus the 180 days allowed by SR 3.0.2 as measured from the date of the most recent successful pressure measurement test.

3.0 Regulatory Analysis

3.1 No Significant Hazards Consideration Determination

TVA has reviewed the proposed no significant hazards consideration determination (NSHCD) published in the Federal Register as part of the CLIIP. TVA has concluded that the proposed NSHCD presented in the Federal Register notice is applicable to BFN Units 1, 2, and 3 and is hereby incorporated by reference to satisfy the requirements of 10 CFR 50.91(a).

3.2 Verification

As discussed in the notice of availability published in the Federal Register on January 17, 2007 for this TS improvement. TVA verified the applicability of TSTF-448 to BFN Units 1, 2, and 3, and commits to establishing Bases for TS as proposed in TSTF-448, Revision 3. Applicable bases sections are provided for information.

The enclosed changes are based on TSTF change traveler TSTF-448, Revision 3 that proposed changes to the Standard Technical Specifications (STS). TS Section 3.7.3 is modified to revise Condition and Required Action A, B and F to distinguish between inoperability due to a degraded CRE and a Control Room Emergency Ventilation (CREV) Subsystem: replaced the current surveillance to perform a positive pressure test with a requirement to perform an inleakage test in accordance with the Control Room Envelope Habitability Program. The requirements for this program are added to TS Section 5.5, Programs and Manuals.

3.2 Additional Information

BFN Technical instruction, "Control Bay Habitability Zone Penetration Breach Analysis", currently provides CRE breach area limits and methods for controlling breaches to ensure that the CREV System can pressurize the CRE as required by the TSs. The CRE can be opened intermittently per TS 3.7.3 under administrative controls. These controls include stationing a dedicated individual at the opening who is in continuous communication with the control room. The individual will have a method to rapidly close the opening when CRE must be isolated.

4.0 Environmental Evaluation

TVA has reviewed the environmental evaluation included in the model safety evaluation dated January 17, 2007, as part of the CLIIP. TVA has concluded that the staff's findings presented in that evaluation are applicable to BFN Units 1, 2, and 3 and the evaluation is hereby incorporated by reference for this application.

Reference:

TVA letter to NRC Dated December 8, 2003, Tennessee Valley Authority - Browns Ferry Nuclear Plant (BFN) Units 1, 2, and 3 - Dockets 50-259, -260, and -296 - Facility Operating Licenses DPR -33,-52 and 68 - Response to Generic Letter (GL) 2003-01 - Control Room 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 (mark-up)

The following pages have been revised. The same exact TS changes are being requested for Units 2 and 3. Accordingly only Unit 1 pages are supplied in the enclosure. On the affected pages, the revised portions have been highlighted. A line has been drawn through the deleted text and a double underline for new or revised text.

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 for reasons other than Condition B.	A.1 Restore CREV subsystem to OPERABLE status.	7 days
B. ~~Two~~ One or More CREV subsystems inoperable due to inoperable CRE ~~control room~~ boundary in MODES 1, 2, and 3.	B.1 Initiate action to implement mitigating actions. AND	Immediately
	B.2 Verify mitigating actions ensure CRE occupant exposures to radiological hazards will not exceed limits. AND	24 Hours
	B.~~1~~3 Restore CRE boundary to OPERABLE status.	~~24 Hours~~ 90 days

C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, or 3.	C.1 AND C.2	Be in MODE 3. Be in MODE 4.	12 hours 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. OR 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
F.1 Two CREV subsystems inoperable during OPDRVs. OR F.2 One or more CREV subsystems inoperable due to an inoperable CRE boundary during OPDRVs.	F.1 Initiate action to suspend OPDRVs. AND F.2 Initiate Actions to suspend OPDRVS	Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.3.1	Operate each CREV subsystem for ≥ 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	Perform required CRE unfiltered air inleakage testing in accordance with the Control Room Envelope Habitability Program. ~~Verify each CREV subsystem can maintain a positive pressure of ≥ 0.125 inches water gauge relative to the outdoors during the pressurization mode of operation at a flow rate of ≥ 2700 cfm and ≤ 3300 cfm.~~	In accordance with the control Room Envelope Habitability Program ~~24 months on a STAGGERED TEST BASIS~~

5.5.12 Primary Containment Leakage Rate Testing Program (continued)

Leakage Rate acceptance criteria are:

a. The primary containment leakage rate acceptance criteria is ≤ 1.0 L_a. During the first unit startup following the testing performed in accordance with this program, the leakage rate acceptance criteria are ≤ 0.60 L_a for the Type B and Type C tests, and ≤ 0.75 L_a for the Type A test; and

b. Air lock testing acceptance criteria are:

1) Overall air lock leakage rate ≤ 0.05 L_a when tested at $\geq P_a$.

2) Air lock door seals leakage rate is ≤ 0.02 L_a when the overall air lock is pressurized to ≥ 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. 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.

(continued)

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 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 36 month 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 inleakage measured by the testing described in paragraph c. The unfiltered air inleakage 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.

(continued)

Enclosure 3

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 Changes to Technical Specifications Bases Pages (mark-up)

The following pages have been revised. The same exact TS Bases changes are made for Units 2 and 3. Accordingly only Unit 1 pages are supplied in the enclosure. On the affected pages, a line has been drawn through the deleted text and a double underline for new or revised text.

B 3.7 PLANT SYSTEMS

B 3.7.3 Control Room Emergency Ventilation (CREV) System

BASES

BACKGROUND

The CREV System provides a protected environment from which occupants can control the unit following an uncontrolled release of radioactivity. ~~radiologically controlled environment from which the unit can be safely operated following a Design Basis Accident (DBA).~~

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 and a CRE boundary that limits the inleakage of unfiltered air. The CREV S~~s~~ystem has a high efficiency particulate air (HEPA) filter bank in the portion of the inlet piping common to both subsystems. Each CREV 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, valves or ~~and~~ dampers, doors, barriers, and instrumentation. 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; however, no credit is taken in the analyses for the charcoal adsorbers.

The CRE is the area within the confines of the CRE 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 CRE is protected during normal operation, natural event and accident conditions. The CRE boundary is the combination of walls, floor, roof, ducting, doors, penetrations and equipment that physically form the CRE. The OPERABILITY of the CRE boundary must be

(continued)

maintained to ensure that the inleakage of unfiltered air into the CRE will not exceed the inleakage assumed in the licensing basis analysis of design basis accident (DBA) consequences to CRE occupants. The CRE and its boundary are defined in the Control Room Envelope Habitability Program.

Upon receipt of the initiation signal(s) (indicative of conditions that could result in radiation exposure to CRE occupants ~~control room personnel~~), the CREV System automatically switches to the pressurization mode of operation to minimize ~~prevent~~ infiltration of contaminated air into the CRE ~~control room~~. A system of dampers isolates the CRE ~~control room~~. Outside air is taken in through the CREV System ventilation intake and is passed through one of the charcoal adsorber filter subsystems for removal of airborne radioactive particles.

(continued)

BASES

BACKGROUND

(continued)

The CREV System is designed to maintain a habitable environment in the CRE ~~control room environment~~ for a 30 day continuous occupancy after a DBA without exceeding 5 rem total effective dose equivalent (TEDE). A single CREV subsystem operating at a flow rate of 3000 cfm ±10 percent will pressurize the CRE ~~control room~~ to about 0.125 inches water gauge to minimize ~~prevent~~ infiltration of air from all surrounding areas adjacent to CRE boundary ~~buildings~~ and the outdoors. CREV System operation in maintaining CRE ~~control room~~ habitability is discussed in the FSAR, Section 10.12 (Ref. 1).

APPLICABLE SAFETY ANALYSES

The ability of the CREV System to maintain the habitability of the CRE ~~control room~~ is an explicit assumption for the safety analyses presented in the FSAR, Chapters 10 and 14 (Refs. 2 and 3, respectively). The pressurization mode of the CREV System is assumed to operate following a DBA, ~~loss of coolant accident, main steam line break, and control rod drop accident (for the control rod drop accident and main steam line break, no credit is taken for any filtration by the CREV system)~~ as discussed in the FSAR, Section 14.6 (Ref. 4). The analyses for radiological doses to CRE occupants ~~control room personnel~~ as a result of the various DBAs are summarized in Reference 3. No single active failure will cause the loss of filtered outside air from the CRE ~~control room~~.

The CREV System satisfies Criterion 3 of the NRC Policy Statement (Ref. 6).

(continued)

BASES (continued)

LCO

Two redundant subsystems of the CREV System are required to be OPERABLE to ensure that at least one is available, ~~assuming~~ if a single active failure disables the other subsystem. Total CREV S~~s~~ystem failure, such as from a loss of both ventilation subsystems or from an inoperable CRE boundary, could result in exceeding a TEDE of 5 rem to the CRE occupants ~~control room operators~~ in the event of a DBA.

~~The~~ Each CREV ~~System~~ subsystem is considered OPERABLE when the individual components necessary to limit CRE occupant ~~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.~~

In order for the CREV subsystems to be considered OPERABLE, the 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 consequences analyses for DBAs.

The LCO is modified by a Note allowing the CRE ~~main control room~~ 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,

(continued)

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 ~~main control room~~. 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 ~~main control room~~ isolation is indicated.

(continued)

BASES (continued)

APPLICABILITY

In MODES 1, 2, and 3, the CREV System must be OPERABLE to ensure that the CRE will remain habitable ~~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 during operations with a potential for draining the reactor vessel (OPDRVs).

ACTIONS

A.1

With one CREV subsystem inoperable, for reasons other than an inoperable CRE boundary, 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 the CRE occupant ~~control room radiation~~ protection function. However, the overall reliability is reduced because a ~~single~~ failure in the OPERABLE subsystem could result in loss of the ~~reduced~~ CREV System function ~~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)

BASES

ACTIONS (continued)

B.1, B.2 and B.3

If the unfiltered inleakage of potentially contaminated air past the CRE boundary and into the CRE can result in a CRE occupant radiological dose greater than the calculated dose of the licensing basis analyses of DBA consequences (allowed to be up to 5 REM TEDE) 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 event. 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. 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 within the CRE boundary.

~~If the main control room boundary is inoperable in MODES 1, 2, and 3, the CREV 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~~

(continued)

~~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.~~

C.1 and C.2

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

(continued)

BASES

ACTIONS (continued)

D.1 and D.2

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.

An alternative to Required Action D.1 is to immediately initiate actions 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.

(continued)

BASES

ACTIONS (continued)

E.1

If both CREV subsystems are inoperable in MODE 1, 2, or 3 for reasons other than an inoperable CRE ~~control room boundary~~ (i.e., Condition B), the CREV System may not be capable of performing the intended function and the unit is in a condition outside of the accident analyses. Therefore, LCO 3.0.3 must be entered immediately.

F.1 and F.2

During OPDRVs, with two CREV subsystems inoperable or with one or more CREV subsystems inoperable due to an inoperable CRE boundary, 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)

SURVEILLANCE REQUIREMENTS

SR 3.7.3.1

This SR verifies that a subsystem in a standby mode starts on demand and continues to operate. Standby systems should be checked periodically to ensure that they start and function properly. As the environmental and normal operating conditions of this system are not severe, testing each subsystem once every month provides an adequate check on this system. Monthly heater operation dries out any moisture that has accumulated in the charcoal as a result of humidity in the ambient air. The CREV System must be operated for $\geq$ 10 continuous hours with the heaters energized to dry out any moisture and to demonstrate the function of the system. Furthermore, the 31 day Frequency is based on the known reliability of the equipment and the two subsystem redundancy available.

SR 3.7.3.2

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

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.3.3

This SR verifies that on an actual or simulated initiation signal, each CREV subsystem starts and operates. This SR includes verification that dampers necessary for proper CREV operation function as required. The LOGIC SYSTEM FUNCTIONAL TEST in SR 3.3.7.1.4 and SR 3.3.7.1.6 overlaps this SR to provide complete testing of the safety function. The Frequency of 24 months is based on BFN's normal operating cycle.

SR 3.7.3.4

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 that 5 rem TEDE. This SR verifies that the unfiltered air inleakage into the CRE is no greater than the flow rate assumed in the licensing basis analysis of DBA consequences. When unfiltered air inleakage is greater than the assumed flow rate, Condition B must be entered. Required Action B.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 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 B.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 consequences analysis, repairing the CRE boundary, or a combination of these actions.

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.3.4

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.

~~This SR verifies the integrity of the control room enclosure and the assumed inleakage rates of potentially contaminated air. The control room positive pressure, with respect to outdoors is periodically tested to verify proper function of the CREV System. During the emergency mode of operation, the CREV System is designed to slightly pressurize the control room ≥ 0.125 inches water gauge positive pressure with respect to the outdoors to prevent unfiltered inleakage. The CREV System is designed to maintain this positive pressure at a flow rate of ≥ 2700 cfm and ≤ 3300 cfm to the control room in the pressurization mode. The Frequency of 24 months on a STAGGERED TEST BASIS is consistent with industry practice and other filtration systems SRs.~~

REFERENCES

1. FSAR, Section 10.12.
2. FSAR, Chapter 10.
3. FSAR, Chapter 14.
4. FSAR, Section 14.6.
5. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.
6. NRC Regulatory Guide 1.196, "Control Room Habitability At Light-Water Power Reactors". January 2007.
7. NEI 99-03, "Control Room Habitability Assessment," March 2003.

(continued)

8. Letter from Eric J. Leeds (NRC) to James W. Davis (NEI) dated January 30, 2004, "NEI Draft White Paper, Use of Generic Letter 91-18 Process and Alternative Source Terms in the Context of Control Room Habitability." (ADAMS Accession No. ML040300694)

Enclosure 4

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

Regulatory Commitments

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1. The first performance of the periodic assessment of the CRE habitability, Specification 5.5.13.c.(ii), shall be within 9 months from the date of this letter.

2. The first performance of the periodic measurement of CRE pressure, TS 5.5.13.d, shall be within 24 months, plus the 180 days allowed by SR 3.0.2 as measured from the date of the most recent successful pressure measurement test.