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July 16, 2007

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

SUBJECT: License Amendment Request 2007-06
Control Room Envelope Habitability (TSTF-448, Revision 3)
River Bend Station, Unit 1
Docket No. 50-458
License No. NPF-47

RBF1-07-0102
RBG-46712

Dear Sir or Madam:

Pursuant to 10 CFR 50.90, Entergy Operations, Inc. (Entergy) hereby requests the following amendment for River Bend Station, Unit 1 (RBS). The proposed amendment would modify the Technical Specification (TS) related to Control Room Envelope Habitability in accordance with TSTF-448, Revision 3.

Attachment 1 provides a description of the proposed changes, the requested confirmation of applicability, and plant-specific verifications. Attachment 2 provides the existing TS pages marked up to show the proposed changes.

The proposed change has been evaluated in accordance with 10 CFR 50.91(a)(1) using criteria in 10 CFR 50.92(c) and it has been determined that this change involves no significant hazards consideration. The bases for these determinations are included in the attached submittal.

The proposed change does not include any new commitments.

Entergy requests approval of the proposed amendment by July 17, 2008. Once approved, the amendment shall be implemented within 60 days. Although this request is neither exigent nor emergency, your prompt review is requested.

A102
NRR

If you have any questions or require additional information, please contact Danny Williamson at 225-381-4279.

I declare under penalty of perjury that the foregoing is true and correct. Executed on July 16, 2007.

Sincerely,



Joseph E. Venable
Senior Vice President - Operations
River Bend Station.

JEV/DHW

Attachments:

1. Description and Assessment
2. Proposed Technical Specification Changes (mark-up)
3. Changes to Technical Specification Bases Pages – For Information Only

cc: Region Administrator
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Attachment 1

RBF1-07-0102

Description and Assessment

1.0 DESCRIPTION

This letter is a request to amend Operating License NPF-47 for River Bend Station, Unit 1 (RBS).

The proposed amendment would modify Technical Specification (TS) requirements related to control room envelope habitability in TS 3.7.2, "Control Room Fresh Air (CRFA) System" and TS Section 5.5, "Programs and Manuals."

The changes are consistent with the Nuclear Regulatory Commission (NRC) approved Industry/Technical Specification Task Force (TSTF) STS change TSTF-448 Revision 3. The availability of the TS improvement was published in the *Federal Register* on January 17, 2007, as part of the Consolidated Line Item Improvement Process (CLIIP).

2.0 ASSESSMENT

2.1 *Applicability of Published Safety Evaluation*

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

2.2 *Optional Changes and Variations*

Entergy is not proposing any variations or deviations from the TS changes described in the TSTF-448, Revision 3, or the applicable parts of the NRC staff's model safety evaluation dated January 17, 2007.

2.3 *License Condition Regarding Initial Performance of New Surveillance and Assessment Requirements*

Entergy proposes the following as a license condition to support implementation of the proposed TS changes:

Upon implementation of the license amendment adopting TSTF-448, Revision 3, the determination of control room envelope (CRE) unfiltered air inleakage as required by SR 3.7.2.4, in accordance with TS 5.5.14.c(i), the assessment of CRE habitability as required by Specification 5.5.14.c(ii), and the measurement of CRE pressure as required by Specification 5.5.14.d, shall be considered met. Following implementation:

- (a) The first performance of SR 3.7.2.4, in accordance with Specification 5.5.14.c(i), shall be within the specified Frequency of 6 years, plus the 18-month allowance of SR 3.0.2, as measured from May 2004, the date of the most recent successful tracer gas test, as stated in the January 25, 2005, letter response to Generic Letter 2003-01, or within the next 18 months if the time period since the most recent successful tracer gas test is greater than 6 years.

- (b) The first performance of the periodic assessment of CRE habitability, Specification 5.5.14.c.(ii), shall be within 3 years, plus the 9-month allowance of SR 3.0.2, as measured from May 2004, the date of the most recent successful tracer gas test, as stated in the January 25, 2005, letter response to Generic Letter 2003-01, or within the next 9 months if the time period since the most recent successful tracer gas test is greater than 3 years.
- (c) The first performance of the periodic measurement of CRE pressure, Specification 5.5.14.d, shall be within 24 months, plus the 182 days allowed by SR 3.0.2, as measured from May 2004, the date of the most recent successful pressure measurement test, or within 182 days if not performed previously.

3.0 Regulatory Analysis

3.1 *No Significant Hazards Consideration Determination*

Entergy has reviewed the proposed no significant hazards consideration determination (NSHCD) published in the *Federal Register* as part of the CLIIP. It was concluded that the proposed NSHCD presented in the *Federal Register* notice is applicable to River Bend Station and is hereby incorporated by reference to satisfy the requirements of 10 CFR 50.91(a).

4.0 Environmental Evaluation

Entergy has reviewed the environmental evaluation included in the model safety evaluation dated January 17, 2007, as part of the CLIIP. It was concluded that the staff's findings presented in that evaluation are applicable to RBS and the evaluation is hereby incorporated by reference for this application.

The proposed changes have been evaluated to determine whether applicable regulations and requirements continue to be met. Entergy has determined that the proposed changes do not require any exemptions or relief from regulatory requirements, other than the TS, and do not affect conformance with any General Design Criterion (GDC) differently than described in the Updated Safety Analysis Report (USAR.)

Attachment 2

RBF1-07-0102

Proposed Technical Specification Changes (mark-up)

**Operating License
Technical Specification 3.7.2
Technical Specification 5.5**

(13) Partial Feedwater Heating (Section 15.1, SER)

During power operation, the facility shall not be operated with a feedwater heating capacity which would result in a rated thermal power feedwater temperature less than 326 °F.

(14) Emergency Response Capabilities (Generic Letter 82-33, Supplement 1 to NUREG-0737, Section 7.5.2.4, SER and SSER 3, Section 18, SER, SSER 2 and SSER 3)

EOI shall complete the requirements of NUREG-0737 Supplement #1 as specified in Attachment 5. Attachment 5 is hereby incorporated into this license.

(15) Salem ATWS Events, Generic Letter 83-28 (Section 7.2.2.5, SSER 3)

EOI shall submit responses to and implement the requirements of Generic Letter 83-28 on a schedule which is consistent with that given in its letters dated August 3, 1984 and May 30, 1985.

(16) Merger Related Reports

Entergy Gulf States, Inc. shall inform the Director, NRR:

- a. Sixty days prior to a transfer (excluding grants of security interests or liens) from Entergy Gulf States, Inc. to Entergy or any other entity of facilities for the production, transmission or distribution of electric energy having a depreciated book value exceeding one percent (1 %) of Entergy Gulf States, Inc.'s consolidated net utility plant, as recorded on Entergy Gulf States, Inc.'s books of account.
- b. Of an award of damages in litigation initiated against Entergy Gulf States, Inc. by Cajun Electric Power Cooperative regarding River Bend within 30 days of the award.

(17) DELETED

(18) (INSERT "A")

INSERT "A"

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 3.7.2.4, in accordance with TS 5.5.14.c(i), the assessment of CRE habitability as required by Specification 5.5.14.c.(ii), and the measurement of CRE pressure as required by Specification 5.5.14.d, shall be considered met. Following implementation:

a. The first performance of SR 3.7.2.4, in accordance with Specification 5.5.14.c.(i), shall be within the specified Frequency of 6 years, plus the 18-month allowance of SR 3.0.2, as measured from May 2004, the date of the most recent successful tracer gas test, as stated in the January 25, 2005 letter response to Generic Letter 2003-01, or within the next 18 months if the time period since the most recent successful tracer gas test is greater than 6 years.

b. The first performance of the periodic assessment of CRE habitability, Specification 5.5.14.c.(ii), shall be within 3 years, plus the 9-month allowance of SR 3.0.2, as measured from May, 2004, the date of the most recent successful tracer gas test, as stated in the January 25, 2005 letter response to Generic Letter 2003-01, or within the next 9 months if the time period since the most recent successful tracer gas test is greater than 3 years.

c. The first performance of the periodic measurement of CRE pressure, Specification 5.5.14.d, shall be within 24 months, plus the 182 days allowed by SR 3.0.2, as measured from May 2004, the date of the most recent successful pressure measurement test, or within 182 days if not performed previously.

3.7 PLANT SYSTEM

3.7.2 Control Room Fresh Air (CRFA) System

LCO 3.7.2 Two CRFA subsystems shall be OPERABLE

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

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

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CRFA subsystem inoperable for reasons other than Condition B.	A.1 Restore CRFA subsystem to OPERABLE status.	7 days
B. One or more CRFA subsystems inoperable due to inoperable CRE boundary in MODE 1, 2, or 3.	B.1 Initiate action to implement mitigating actions.	Immediately
	AND B.2 Verify mitigating actions ensure CRE occupant exposures to radiological, chemical, and smoke hazards will not exceed limits.	24 hours
	AND B.3 Restore CRE boundary to OPERABLE status.	90 days

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>BC. Required Action and Associated Completion Time of Condition A or B not met in MODE 1, 2, or 3.</p>	<p>BC.1 Be in MODE 3.</p> <p><u>AND</u></p> <p>BC.2 Be in MODE 4.</p>	<p>12 hours</p> <p>36 hours</p>
<p>GD. Required Action and associated Completion Time of Condition A not met during movement of recently irradiated fuel assemblies in the primary containment or fuel building or during OPDRVs.</p>	<p>-----NOTE----- LCO 3.0.3 is not applicable. -----</p> <p>GD.1 Place OPERABLE CRFA subsystem in emergency mode.</p> <p><u>OR</u></p> <p>GD.2.1 Suspend movement of recently irradiated fuel assemblies in the primary containment and fuel building.</p> <p><u>AND</u></p> <p>GD.2.2 Initiate action to suspend OPDRVs.</p>	<p>Immediately</p> <p>Immediately</p> <p>Immediately</p>
<p>DE. Two CRFA subsystems inoperable in MODE 1, 2, or 3 for reasons other than Condition B.</p>	<p>DE.1 Enter LCO 3.0.3.</p>	<p>Immediately</p>

SURVEILLANCE	FREQUENCY
<p>SR 3.7.2.4 Verify each CRFA subsystem can maintain a positive pressure of $\geq 1/8$ inch water gauge relative to outside atmosphere during the emergency mode of operation at a flow rate of ≤ 4000 cfm. Perform required CRE unfiltered air inleakage testing in accordance with CRE Habitability Program.</p>	<p>18 months on a STAGGERED TEST BASIS In accordance with the CRE Habitability Program</p>

5.5.14

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 Fresh Air (CRFA) 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 the 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 CRFA System, operating at the flow rate required by the VFTP, at a Frequency of 18 months on a STAGGERED TEST BASIS. The results shall be trended and used as part of the 18 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 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. Unfiltered air leakage limits for hazardous chemicals must ensure that exposure of CRE occupants to these hazards will be within the assumptions in the licensing basis.
- 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.

Attachment 3

RBF1-07-0102

**Changes to Technical Specification Bases Pages
For Information Only**

B 3.7 PLANT SYSTEMS

B 3.7.2 Control Room Fresh Air (CRFA) System

BASES

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BACKGROUND

The CRFA System provides a radiologically controlled environment from which the unit can be safely operated following a Design Basis Accident (DBA). **protected environment from which occupants can control the unit following an uncontrolled release of radioactivity, hazardous chemicals, or smoke.**

The safety related function of the CRFA System used to control radiation exposure consists of two independent and redundant high efficiency air filtration subsystems for treatment of recirculated air or outside supply air **and a CRE boundary that limits the inleakage of unfiltered air.** Each CRFA subsystem consists of a demister, an electric heater, a prefilter, a high efficiency particulate air (HEPA) filter, an activated charcoal adsorber section, a second HEPA filter, a fan, and the associated ductwork, **valves or and dampers, doors, barriers, and instrumentation.** Demisters remove water droplets from the airstream. Prefilters and HEPA filters remove particulate matter, **which that** may be radioactive. The charcoal adsorbers provide a holdup period for gaseous iodine, allowing time for decay.

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 for normal operation, natural events, 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 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.

In addition to the safety related standby emergency filtration function, parts of the CRFA System are operated to maintain the **CRE control room** environment during normal operation. Upon receipt of the initiation signal(s) (indicative of conditions that could result in radiation exposure to **CRE occupants control room personnel**), the CRFA System automatically switches to the isolation mode of operation to **minimize prevent** infiltration of contaminated air into the **CRE control room.** A system of dampers isolates the **CRE control room,** and **CRE control room** air flow is recirculated and processed through either of the two filter subsystems.

The CRFA System is designed to maintain a **habitable environment in the CRE the control room environment** for a 30 day continuous occupancy after a DBA, per the requirements of GDC 19 and 10CFR50.67. CRFA System operation in maintaining the **CRE control room** habitability is discussed in the USAR, Sections 6.4.1 and 9.4.1 (Refs. 1 and 2, respectively).

APPLICABLE
SAFETY ANALYSES

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

The CRFA System provides protection from smoke and hazardous chemicals to the CRE occupants. The analysis of hazardous chemical releases demonstrates that the toxicity limits are not exceeded in the CRE following a hazardous chemical release (Ref. 5). The evaluation of a smoke challenge demonstrates that it will not result in the inability of the CRE occupants to control the reactor either from the control room or from the remote shutdown panels (Ref. 6).

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

LCO

Two redundant subsystems of the CRFA System are required to be OPERABLE to ensure that at least one is available, ~~assuming if a single active failure disables the other subsystem.~~ Total **CRFA system failure, such as from a loss of both ventilation subsystems or from an inoperable CRE boundary,** could result in a failure to meet the dose requirements of GDC 19 and 10CFR50.67 in the event of a DBA.

The **Each CRFA subsystem** ~~System~~ 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 adsorber are not excessively restricting flow and are capable of performing their filtration functions; and
- c. Heater, demister, ductwork, valves, and dampers are OPERABLE, and air circulation can be maintained.

In order for the CRFA 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 consequence analyses for DBAs, and that CRE occupants are protected from hazardous chemicals and smoke.

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

The LCO is modified by a Note allowing the CRE boundary to be opened intermittently under administrative controls. This Note only applies to openings in the CRE boundary that can be rapidly restored to the design condition, such as doors, hatches, floor

plugs, and access panels. For entry and exit through doors, the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings, these controls should be proceduralized and consist of stationing a dedicated individual at the opening who is in continuous communication with the operators in the CRE. This individual will have a method to rapidly close the opening and to restore the CRE boundary to a condition equivalent to the design condition when a need for CRE isolation is indicated.

APPLICABILITY

In MODES 1, 2, and 3, the CRFA System must be OPERABLE to control operator exposure **ensure that the CRE will remain habitable** 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 due to the pressure and temperature limitations in these MODES. Therefore, maintaining the CRFA System OPERABLE is not required in MODE 4 or 5, except for the following situations under which significant radioactive releases can be postulated:

- a. During operations with a potential for draining the reactor vessel (OPDRVs); and
- b. During the movement of recently irradiated fuel assemblies in the primary containment or fuel building.

ACTIONS

A.1

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

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 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), or inadequate protection of CRE occupants from hazardous chemicals or smoke, the CRE boundary is inoperable. Actions must be taken to restore an OPERABLE CRE boundary within 90 days.

During the period that the CRE boundary is considered inoperable, action must be initiated to implement mitigating actions to lessen the effect on CRE occupants from the potential hazards of a radiological or chemical event or a challenge from smoke. Actions must be taken within 24 hours to verify that in the event of a DBA,

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

C.1 and C.2

In MODE 1, 2, or 3, if the inoperable CRFA subsystem or the CRE boundary cannot be restored to OPERABLE status within the associated required Completion Time, the unit must be placed in a MODE that minimizes accident risk. To achieve this status, the unit must be placed in at least MODE 3 within 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.

DC.1, DC.2.1, and DC.2.2

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

During movement of recently irradiated fuel assemblies in the primary containment or fuel building or during OPDRVs, if the inoperable CRFA subsystem cannot be restored to OPERABLE status within the required Completion Time, the OPERABLE CRFA subsystem may be placed in the emergency 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 **DC.1** is to immediately suspend activities that present a potential for releasing radioactivity that might require isolation of the **CRE control room**. This places the unit in a condition that minimizes **the accident risk**.

If applicable, movement of recently irradiated fuel assemblies in the primary containment or fuel building must be suspended immediately. Suspension of these activities shall not preclude completion of movement of a component to a safe position. Also, if applicable, actions must be initiated immediately to suspend OPDRVs to minimize the probability of a

vessel draindown and subsequent potential for fission product release.
Actions must continue until the OPDRVs are suspended.

ED.1

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

(continued)

ACTIONS
(continued)

FE.1 and FE.2

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

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

SURVEILLANCE
REQUIREMENTS

SR 3.7.2.1

This SR verifies that a subsystem in a standby mode starts on demand from the control room and continues to operate with flow through the HEPA filters and charcoal adsorbers. 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 accumulated in the charcoal from humidity in the ambient air. Systems with heaters must be operated for ≥ 10 continuous hours with the heaters energized 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 3.7.2.2

This SR verifies that the required CRFA testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). The CRFA filter tests are in accordance with Regulatory Guide 1.52 (Ref. 5). The VFTP includes testing HEPA filter performance, charcoal adsorber efficiency, minimum system flow rate, and the physical properties of the activated charcoal (general use and following specific operations). Specific test Frequencies and additional information are discussed in detail in the VFTP.

SR 3.7.2.3

This SR verifies that each CRFA subsystem starts and operates on an actual or simulated initiation signal. The LOGIC SYSTEM FUNCTIONAL TEST in SR 3.3.7.1.5 overlaps this SR to provide complete testing of the safety function. While this Surveillance can be performed with the reactor at power, operating experience has shown these components usually pass the Surveillance when performed at the 18 month Frequency, which is based on the refueling cycle. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

SR 3.7.2.4

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

The CRE is considered habitable when the radiological dose to CRE occupants calculated in the licensing basis analyses of DBA consequences is no more than 5 rem TEDE and the CRE occupants are protected from hazardous chemicals and smoke. This SR verifies that the unfiltered air leakage into the CRE is no greater than the flow rate assumed in the licensing basis analyses of DBA consequences. When unfiltered air leakage 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 the occupants following an accident. Compensatory measures are discussed in Regulatory Guide 1.196, Section C.2.7.3, (Ref. 7) which endorses, with exceptions, NEI 99-03, Section 8.4 and Appendix F (Ref. 8). 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. 9). Options for restoring the CRE boundary to OPERABLE status include changing the licensing basis DBA consequence analysis, repairing the CRE boundary, or a combination of these actions. Depending upon the nature of the problem and the corrective action, a full scope leakage 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 leakage rates of potentially contaminated air. The control room positive pressure, with respect to potentially contaminated adjacent areas, is periodically tested to verify proper function of the CRFA System. During the emergency mode of operation, the CRFA System is designed to slightly pressurize the control room to 1/8 inch water gauge positive pressure with respect to outside atmosphere to prevent unfiltered leakage. The CRFA System is designed to maintain this positive pressure at a flow rate of ≤ 4000 cfm to the control room in the isolation mode. The Frequency of 18 months on a STAGGERED TEST BASIS is consistent with industry practice and other filtration system SRs.~~

(continued)

REFERENCES

1. USAR, Section 6.4.1.
 2. USAR, Section 9.4.1.
 3. USAR, Chapter 6.
 4. USAR, Chapter 15.
 5. **USAR, Section 6.4**
 6. **USAR, Section 9.5**
 57. ~~Regulatory Guide 1.19652, Revision 2, March 1978.~~
 8. **NEI 99-03, "Control Room Habitability Assessment,"
June 2001**
 9. **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).**

 610. 10CFR50.67.
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