FPL Energy
Seabrook Station

FPL Energy Seabrook Station
P.O. Box 300
Seabrook, NH 03874
(603) 773-7000

July 17, 2007

SBK-L-07112
Docket No. 50-443

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

Seabrook Station
License Amendment Request 07-02

"Application to Revise the Technical Specifications Regarding Control Room Habitability in Accordance with TSTF-448, Revision 3, Using the Consolidated Line Item Improvement Process"

In accordance with the provisions of 10 CFR 50.90, FPL Energy Seabrook, LLC (FPL Energy Seabrook) is submitting a request for an amendment to the technical specifications (TS) for Seabrook Station. The proposed amendment would modify TS requirements related to control room envelope habitability in accordance with TSTF-448, Revision 3.

Attachment 2 provides a description of the proposed changes, the requested confirmation of applicability, and plant-specific verifications. Attachment 3 provides the existing TS pages marked up to show the proposed changes and retyped pages of the limiting condition for operation and actions. Attachment 4 provides existing TS Bases pages marked up to show the proposed changes.

As discussed in the enclosed license amendment request (LAR), the proposed change does not involve a significant hazard consideration pursuant to 10 CFR 50.92. A copy of this letter and the enclosed LAR has been forwarded to the New Hampshire State Liaison Officer pursuant to 10 CFR 50.91(b). FPL Energy Seabrook has determined that LAR 07-02 meets the criteria of 10 CFR 51.22(c)(9) for a categorical exclusion from the requirements for an Environmental Impact Statement. The Station Operation Review Committee and the Company Nuclear Review Board have reviewed this LAR.

A001

NRR

FPL Energy Seabrook requests NRC Staff review and approval of LAR 07-02 with issuance of a license amendment by July 31, 2008 and implementation of the amendment within 90 days.

Should you have any questions regarding this letter, please contact Mr. James M. Peschel, Regulatory Programs Manager, at (603) 773-7194.

Very truly yours,

FPL Energy Seabrook, LLC.

Gene St. Pierre
Site Vice President

Attachments:

1. Notarized Affidavit
2. Description and Assessment of Proposed Change
3. Proposed Technical Specification Changes (Mark-up)
4. Proposed Technical Specification Bases Changes (Mark-up)

cc: S. J. Collins, NRC Region I Administrator
G. E. Miller, NRC Project Manager, Project Directorate I-2
W. J. Raymond, NRC Senior Resident Inspector

Mr. Christopher M. Pope, Director Homeland Security and Emergency Management
New Hampshire Department of Safety
Division of Homeland Security and Emergency Management
Bureau of Emergency Management
33 Hazen Drive
Concord, NH 03305

FPL Energy
Seabrook Station

AFFIDAVIT

SEABROOK STATION UNIT 1

Facility Operating License NPF-86
Docket No. 50-443

License Amendment Request 07-02

"Application to Revise the Technical Specifications Regarding Control Room Habitability in Accordance with TSTF-448, Revision 3, Using the Consolidated Line Item Improvement Process"

The following information is enclosed in support of this License Amendment Request:

- **Attachment 2** — **Description and Assessment of Proposed Change**
- **Attachment 3** — **Proposed Technical Specification Changes (Mark-up)**
- **Attachment 4** — **Proposed Technical Specification Bases Changes (Markup)**

I, Gene F. St. Pierre, Site Vice President of FPL Energy Seabrook, LLC hereby affirm that the information and statements contained within this License Amendment Request are based on facts and circumstances which are true and accurate to the best of my knowledge and belief.

Sworn and Subscribed
before me this
17th day of July, 2007

Shirley Sweeney
Notary Public

SHIRLEY SWEENEY
MY COMMISSION EXPIRES OCT. 6, 2009
NOTARY PUBLIC
NEW HAMPSHIRE

Gene St. Pierre
Gene St. Pierre
Site Vice President

Attachment 2

Description and Assessment of Proposed Change

Subject: License Amendment Request 07-02, Application to Revise the Technical Specifications Regarding Control Room Habitability in Accordance with TSTF-448, Revision 3, Using the Consolidated Line Item Improvement Process

1. DESCRIPTION

2. ASSESSMENT

   2.1 Applicability of Published Safety Evaluation
   2.2 Optional Changes and Variations
   2.3 License Condition Regarding Initial Performance of New Surveillance and Assessment Requirements

3. REGULATORY ANALYSIS

   3.1 No Significant Hazards Consideration

4. ENVIRONMENTAL EVALUATION

1.0 DESCRIPTION

The proposed amendment would modify technical specification (TS) requirements related to control room envelope habitability in TS 3.7.6.1, Control Room Emergency Makeup Air and Filtration Subsystems, and TS Section 6.7, Administrative Controls—Procedures and Programs. The changes are consistent with Nuclear Regulatory Commission (NRC) approved Industry/Technical Specification Task Force (TSTF) STS change TSTF-448 Revision 3. The availability of this 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

FPL Energy Seabrook 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. FPL Energy Seabrook has concluded that the justifications presented in the TSTF proposal and the safety evaluation prepared by the NRC staff are applicable to Seabrook Station and justify this amendment for the incorporation of the changes to the Seabrook Station TS.

2.2. Optional Changes and Variations

The proposed changes to Seabrook Station Technical Specification (TS) 3.7.6.1, Control Room Emergency Makeup Air and Filtration System (CREMAFS), are consistent with TS 3.7.10, Control Room Emergency Filtration System (CREFS), in NUREG-1431, Standard Technical Specifications Westinghouse Plants, as modified by TSTF-448, Revision 3. However, the proposed amendment includes two changes that are not specifically addressed in TSTF-448 and the accompanying safety evaluation. These changes include (1) extending the applicability of TS 3.7.6.1 to include the condition of movement of irradiated fuel assemblies, and (2) replacing an action that requires suspending core alterations with an action to suspend movement of irradiated fuel assemblies. The reason for the deviations is that the Seabrook Station TS are based on NUREG-0452 rather than NUREG-1431. NUREG-1431 previously contained the changes that this license amendment request (LAR) proposes to incorporate into the Seabrook TS; therefore, these Seabrook-specific changes are not addressed in TSTF-448.

Seabrook Station TS 3.7.6.1 currently specifies an applicability of "All MODES" for operability of the CREMAFS. This change extends the applicability of TS 3.7.6.1 to include "During movement of irradiated fuel assemblies." The CREMAFS is credited for mitigating a fuel handling accident, which is postulated to occur either in containment or in the fuel storage building (FSB). Movement of irradiated fuel may take place in the FSB when the reactor is completely de-fueled, and consequently, in a condition outside the current applicability of TS 3.7.6.1 of "All Modes." Therefore, consistent with the fuel handling accident analysis assumptions, this change establishes a requirement for operability of the CREMAFS during movement of irradiated fuel assemblies, which may

occur in the FSB when all fuel has been removed from the reactor vessel. This modification makes TS 3.7.6.1 consistent with TS 3.7.10 in TSTF-448, revision 3, although this change is not specifically addressed in TSTF-448. This additional change from those described in TSTF-448 is a more restrictive change, since it adds a new condition necessitating operability of the CREMAFS that does not exist under current TS 3.7.6.1.

As a result of the change in applicability of the TS, proposed action d. for an inoperable CREMAFS train in Mode 5 or 6, or during movement of irradiated fuel has been modified to include the option "or immediately suspend movement of irradiated fuel assemblies." This action suspends activities that could result in a release of radioactivity that might require actuation of the CREMAFS. In other words, with one CREMAFS train inoperable during movement of irradiated fuel assemblies, the action stipulates, as an alternative to placing the operable CREMAFS train in the filtration/recirculation mode, immediately exiting the specified condition in the applicability of the TS

TS 3.7.6.1, action b in the current Seabrook Station TS includes an action to suspend operations involving core alterations. In the proposed change, this action becomes action e, and the requirement to "suspend all operations involving CORE ALTERATIONS" is replaced with "immediately suspend all movement of irradiated fuel assemblies." This change makes action e. of TS 3.7.6.1 consistent with Required Action D.2 of TS 3.7.10 in TSTF 448. Further, eliminating the action to suspend core alterations is acceptable based on the NRC's Safety Evaluation for TSTF-471, Revision 1, "Eliminate Use of the Term Core Alterations in Actions and Notes." The analysis of the fuel handling accident assumes that a fuel assembly is dropped during fuel handling in the containment or the spent fuel pool. If a fuel assembly were damaged such that one or more fuel rods were broken, the accumulated fission product gases and iodines in the fuel element gap would be released to the surrounding water. Release of the solid fission products in the fuel would be negligible because of the low fuel temperature during refueling. There is no mitigation for the fuel handling accident except for crediting ventilation systems to reduce dose consequences. Consequently, the suspension of core alterations, except for suspension of movement of irradiated fuel, will not prevent or impair mitigation of a fuel handling accident.

In the preceding discussion, FPL Energy Seabrook proposed including two additional 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. These changes make Seabrook TS 3.7.6.1 consistent with TS 3.7.10 in NUREG-1431. In addition, expanding the applicability of TS 3.7.6.1 is a more restrictive change to the TS. Replacing the stipulation to suspend core alterations with a requirement to suspend movement of irradiated fuel assemblies has been previously approved by the NRC in its approval of TSTF-471. FPL Energy Seabrook has concluded that these additional changes do not affect the initial conditions or mitigation of any design accident or transient and, therefore, are acceptable.

TSTF-448, Revision 3 and the Model Safety Evaluation discuss the function of the Control Room Envelope Emergency Ventilation System with regard to providing an environment protected from airborne challenges of chemical hazards. This discussion is included in the Bases for TS 3.7.10 in TSTF-448. In addition, TS 3.7.10, Required Action B.2, for the condition of an inoperable control room envelope (CRE) boundary requires, in part, verifying that mitigating actions ensure CRE occupant exposures to chemical hazards will not exceed limits. Nevertheless, TS 3.7.6.1, action b.2 and the associated TS bases as proposed in this LAR have excluded consideration of challenges from chemical hazards based on Seabrook Station's current licensing basis.

Seabrook Station UFSAR section 2.2.3.1.c documents the results of an assessment of hazardous chemicals. The assessment identified no significant manufacturing plants, chemical plants, refineries, storage facilities, mining and quarrying operations; or oil pipelines, wells or storage facilities within a five-mile radius of the site. An evaluation of the local natural gas pipelines within the five-mile radius of the site found that an accidental release of natural gas would have no impact on plant operation. The assessment concluded that the requirements of Regulatory Guide 1.78, Assumptions for Evaluating the Habitability of a Nuclear Power Plant Control Room During a Postulated Hazardous Chemical Release, were met. In addition, Seabrook Station complies with the relevant portions of Regulatory Guide 1.95, Protection of Nuclear Power Plant Control Room Operators Against Accidental Chlorine Release. The plant design does not include storage of chlorine within 100 meters of the control room, excluding small laboratory quantities, and chlorine storage does not exceed the maximum allowable chlorine inventory as a function of distance in Regulatory Guide 1.95 for Type I control rooms. As a result, a toxic chemical hazard does not exist either on-site or in the vicinity of the site; therefore, no requirements exist for toxic gas protection of the CRE.

Included in the proposed change is new action f., applicable in Mode 5 or 6, or during movement of irradiated fuel, that states "With one or both CREMAF trains inoperable due to an inoperable CRE boundary, immediately suspend movement of irradiated fuel assemblies." Evaluation 4 in the Model Safety Evaluation for this CLIIP is applicable to this change.

Evaluation 6 in the Model Safety Evaluation for facilities that have a CRE pressurization surveillance requirement is applicable to this LAR.

This LAR modifies TS 3.7.6.1 by adding a note that permits the control room envelope boundary to be opened intermittently under administrative controls. This change also adds a new action requirement for a condition in which one or both CREMAFS trains are inoperable due to an inoperable CRE boundary. Because Seabrook Station has not previously adopted these changes under TSTF-287, Evaluation 2 in the Model Safety Evaluation for this CLIIP is applicable to this change.

This LAR also adds a CRE Habitability Program as TS 6.7.6.l. TS 6.7.6.l.b. addresses the element related to configuration control. The Model Safety Evaluation for this CLIIP references RG 1.196 for guidance in implementing this element of the program. Also described is that RG 1.196 endorsed NEI 99-03 with exceptions specific to this element. RG 1.196 did not endorse the method of equating a breach size to an inleakage flow rate. Seabrook does use a breach control method that equates breach size to the CREMAFS design filtered pressurization airflow rate and differential pressure limit. This method does not equate breach sizes to or result in any increase in inleakage flow rate.

GL 2003-01 discusses various CRE design issues that could result in unfiltered inleakage above that assumed in design evaluations, and result in exceeding design basis radiation exposure limits. In response to GL 2003-01, the review performed of the design bases of the Seabrook CRE Habitability Systems only identified one potential source of unfiltered inleakage. The other examples provided in GL 2003-01 were determined to not be design issues at Seabrook. The one potential source of unfiltered inleakage was through the instrument air components in the CRE. This unfiltered inleakage resulted from the normal air consumption of air operated components located within the CRE. This postulated air inleakage is not affected by changes in the filtered pressurization airflow rate or CRE pressure.

The breach control method utilized at Seabrook equates a breach size to an outflow of air from the CRE. This outflow of air is maintained below the maximum air pressurization flow rate provided by the CREMAFS, with margin. The outflow of air is also maintained such that the differential pressure between the CRE and all adjacent areas remains greater than or equal to the CREMAFS design bases minimum differential pressure. This breach control method will not result in any increase in unfiltered inleakage above that determined by test. Therefore, the CRE Habitability Program being implemented in response to this LAR will utilize this breach control method in addition to the method described in RG 1.196, and originally added by TSTF-287.

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

FPL Energy Seabrook proposes the following as a 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 4.7.6.2, in accordance with TS 6.7.6.l.c. (i), the assessment of CRE habitability as required by Specification 6.7.6.lc. (ii), and the measurement of CRE pressure as required by Specification 6.7.6.l.d, shall be considered met. Following implementation:
>
> > (a) The first performance of SR 4.7.6.2, in accordance with Specification 6.7.6.l.c. (i), shall be within the specified Frequency of 6 years, plus the 18-month allowance of SR 4.0.2, as measured from August 2003, the date

of the most recent successful tracer gas test, as stated in the December 9, 2003 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 6.7.6.lc. (ii), shall be within 3 years, plus the 9-month allowance of SR 4.0.2, as measured from August 2003, the date of the most recent successful tracer gas test, as stated in the December 9, 2003 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 6.7.6.l.d, shall be within 18 months, plus the 138 days allowed by SR 4.0.2, as measured from August 2003, the date of the most recent successful pressure measurement test, or within 138 days if not performed previously.

3.0 REGULATORY ANALYSIS

3.1 No Significant Hazards Consideration Determination

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

4.0 ENVIRONMENTAL EVALUATION

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

Attachment 3

Proposed Technical Specification Change (mark-up)

Refer to the attached markup of the proposed change to the Technical Specifications. The attached markup reflects the currently issued revision of the Technical Specifications. At the time of submittal, the Technical Specifications were revised through Amendment 115. Pending Technical Specifications or Technical Specification changes issued subsequent to this submittal are not reflected in the enclosed markup.

Listed below are the license amendment requests that are awaiting NRC approval and may impact the currently issued version of the Technical Specifications.

LAR	Title	FPL Energy Seabrook SBK Letter No.	Date of Submittal
NONE			

The following Technical Specifications are included in the attached markup:

Technical Specification	Title	Page
3.7.6.1	Control Room Emergency Makeup Air and Filtration System	3/4 7-16 3/4 7-17 3/4 7-18
6.7.6	Programs and Procedures	6-14

INSERT NOTE

----------NOTE----------

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

INSERT 1

a. With one CREMAFS train inoperable for reasons other than an inoperable CRE boundary,

INSERT 2

b. With one or both CREMAFS trains inoperable due to an inoperable CRE boundary:

1. Immediately initiate action to implement mitigating actions or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours, and
2. Within 24 hours, verify mitigating actions ensure CRE occupant exposures to radiological and smoke hazards will not exceed limits or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours, and
3. Within 90 days, restore CRE boundary to OPERABLE status or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

c. With two CREMAFS trains inoperable for reasons other than an inoperable CRE boundary, immediately enter Technical Specification 3.0.3.

INSERT 3

f. With one or both CREMAFS trains inoperable due to an inoperable CRE boundary, immediately suspend movement of irradiated fuel assemblies.

PLANT SYSTEMS

3/4.7.6 CONTROL ROOM SUBSYSTEM

EMERGENCY MAKEUP AIR AND FILTRATION

LIMITING CONDITION FOR OPERATION

3.7.6.1 Two independent Control Room Emergency Makeup Air and Filtration ~~Subsystems~~ System (CREMAFS) trains shall be OPERABLE.

APPLICABILITY: All MODES ~~1, 2, 3 and 4~~ During movement of irradiated fuel assemblies

ACTION:

In MODES 1, 2, 3 and 4:

~~With one Control Room Emergency Makeup Air and Filtration Subsystem inoperable~~, restore the inoperable system to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

In MODES 5 and 6, or during movement of irradiated fuel assemblies:

a. ~~With one Control Room Emergency Makeup Air and Filtration Subsystem inoperable~~, restore the inoperable system to OPERABLE status within 7 days or initiate and maintain operation of the remaining OPERABLE ~~Control Room Emergency Makeup Air and Filtration Subsystem~~ in the filtration/recirculation mode, or immediately suspend movement of irradiated fuel assemblies.

b. With both ~~Control Room Emergency Makeup Air and Filtration Subsystems~~ inoperable, or with the OPERABLE ~~Control Room Emergency Makeup Air and Filtration Subsystem~~, required to be in the filtration/recirculation mode by ACTION a, not capable of being powered by an OPERABLE emergency power source, suspend all ~~operations involving~~ CORE ALTERATIONS, movement of irradiated fuel assemblies immediately

SURVEILLANCE REQUIREMENTS

4.7.6.1 Each ~~Control Room Emergency Makeup Air and Filtration Subsystem~~ CREMAFS train shall be demonstrated OPERABLE:

a. At least once per 31 days on a STAGGERED TEST BASIS by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 10 continuous hours with the heaters operating;

This page contains No changes

SURVEILLANCE REQUIREMENTS (Continued)

b. At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire or chemical release in any ventilation zone communicating with the system by:

1) Verifying that the filtration system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than .05% and uses the test procedure guidance in Regulatory Position C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978*, and the system flow rate is 1100 cfm ± 10%;

2) Verifying, within 31 days after removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, by showing a methyl iodide penetration of less than or equal to 2.5% when tested at a temperature of 30°C, at a relative humidity of 70% and a face velocity of 34.5 fpm (Train A) and 58.3 fpm (Train B) in accordance with ASTM-D-3803-1989;

3) Verifying a system flow rate of 1100 cfm ± 10% during system operation when tested in accordance with ANSI N510-1980.

c. After every 720 hours of charcoal adsorber operation, by verifying, within 31 days after removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, by showing a methyl iodide penetration of less than or equal to 2.5% when tested at a temperature of 30°C, at a relative humidity of 70% and a face velocity of 34.5 fpm (Train A) and 58.3 fpm (Train B) in accordance with ASTM-D-3803-1989;

d. At least once per 18 months by:

1) Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks, for filter CBA-F-38, is less than 2.8 inches Water Gauge while operating the system at a flow rate of 1100 cfm ± 10%; and verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks, for filter CBA-F-8038, is less than 6.3 inches Water Gauge while operating the system at a flow rate of 1100 cfm ± 10%.

*ANSI N510-1980 shall be used in place of ANSI N510-1975 as referenced in Regulatory Guide 1.52, Revision 2, March 1978.

SURVEILLANCE REQUIREMENTS (Continued)

2) Verifying that upon generation of an 'S' test signal, the following automatic system functions occur:

   a. The normal makeup air fan(s) trip off and the normal makeup air isolation damper(s) close;

   b. The control room exhaust subsystem isolation damper(s) close, and the exhaust fan trips off;

   c. The control room emergency makeup air and filtration subsystem actuates with flows through the HEPA filters and charcoal adsorber banks;

3) Verifying that upon generation of Remote Intake High Radiation test signal, the following automatic system functions occur:

   a. The normal makeup air fan(s) trip off and the normal makeup air isolation damper(s) close;

   b. The control room exhaust subsystem isolation damper(s) close, and the exhaust fan trips off;

   c. The control room emergency makeup air and filtration subsystem actuates with flows through the HEPA filters and charcoal adsorber banks;

4) Verifying that the Control Room Emergency Makeup Air and Filtration Subsystem maintains the control room at a positive pressure of greater than or equal to 1/8 inch Water Gauge at less than or equal to a pressurization flow of 600 cfm relative to adjacent areas during system operation; and

5) Verifying that the heaters dissipate at least 3.24 kW (based on design rated voltage of 460V) when tested in accordance with ANSI N510-1980.

e. After each complete or partial replacement of a HEPA filter bank, by verifying that the filtration system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than .05% in accordance with ANSI N510-1980 for a DOP test aerosol while operating the system at a flow rate of 1100 cfm ± 10%; and

f. After each complete or partial replacement of a charcoal adsorber bank, by verifying that the filtration system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than .05% in accordance with ANSI N510-1980 for a halogenated hydrocarbon refrigerant test gas while operating the system at a flow rate of 1100 cfm ± 10%.

4.7.6.2 Perform required CRE unfiltered air inleakage testing in accordance with the Control Room Habitability Program.

Retype of Proposed TS 3.7.6.1 (LCO and Actions only)

PLANT SYSTEMS

3/4.7.6 CONTROL ROOM SUBSYSTEM

EMERGENCY MAKEUP AIR AND FILTRATION

LIMITING CONDITION FOR OPERATION

3.7.6.1 Two independent Control Room Emergency Makeup Air and Filtration System (CREMAFS) trains shall be OPERABLE.

APPLICABILITY: All MODES
During movement of irradiated fuel assemblies

----------NOTE----------

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

ACTION:

In MODE 1, 2, 3 or 4:

a. With one CREMAFS train inoperable for reasons other than an inoperable CRE boundary, restore the inoperable system to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With one or both CREMAFS trains inoperable due to an inoperable CRE boundary:

1. Immediately initiate action to implement mitigating actions or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours, and

2. Within 24 hours, verify mitigating actions ensure CRE occupant exposures to radiological and smoke hazards will not exceed limits or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours, and

3. Within 90 days, restore CRE boundary to OPERABLE status or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

Retype of Proposed TS 3.7.6.1 (LCO and Actions only)

PLANT SYSTEMS

CONTROL ROOM SUBSYSTEMS

EMERGENCY MAKEUP AIR AND FILTRATION

LIMITING CONDITION FOR OPERATION (continued)

c. With two CREMAFS trains inoperable for reasons other than an inoperable CRE boundary, immediately enter Technical Specification 3.0.3.

In MODE 5 or 6, or during movement of irradiated fuel assemblies:

d. With one CREMAFS train inoperable for reasons other than an inoperable CRE boundary, restore the inoperable system to OPERABLE status within 7 days or either immediately initiate and maintain operation of the remaining OPERABLE CREMAFS train in the filtration/recirculation mode or immediately suspend movement of irradiated fuel assemblies.

e. With both CREMAFS trains inoperable, or with the OPERABLE CREMAFS train, required to be in the filtration/recirculation mode by ACTION d., not capable of being powered by an OPERABLE emergency power source, immediately suspend all movement of irradiated fuel assemblies

f. With one or both CREMAFS trains inoperable due to an inoperable CRE boundary, immediately suspend movement of irradiated fuel assemblies.

PROCEDURES AND PROGRAMS

6.7.6 (Continued)

3. If crack indications are found in any SG tube, then the next inspection for each SG for the degradation mechanism that caused the crack indication shall not exceed 24 effective full power months or one refueling outage (whichever is less). If definitive information, such as from examination of a pulled tube, diagnostic non-destructive testing, or engineering evaluation indicates that a crack-like indication is not associated with a crack(s), then the indication need not be treated as a crack.

INSERT 4

e. Provisions for monitoring operational primary to secondary leakage.

6.8 REPORTING REQUIREMENTS

ROUTINE REPORTS

6.8.1 In addition to the applicable reporting requirements of Title 10, Code of Federal Regulations, the following reports shall be submitted to the Regional Administrator of the Regional Office of the NRC unless otherwise noted.

STARTUP REPORT

6.8.1.1 A summary report of station startup and power escalation testing shall be submitted following: (1) receipt of an Operating License, (2) amendment to the license involving a planned increase in power level, (3) installation of fuel that has a different design or has been manufactured by a different fuel supplier, and (4) modifications that may have significantly altered the nuclear, thermal, or hydraulic performance of the station.

The Startup Report shall address each of the tests identified in the Final Safety Analysis Report and shall include a description of the measured values of the operating conditions or characteristics obtained during the test program and a comparison of these values with design predictions and specifications. Any corrective actions that were required to obtain satisfactory operation shall also be described. Any additional specific details required in license conditions based on other commitments shall be included in this report.

Startup Reports shall be submitted within: (1) 90 days following completion of the Startup Test Program, (2) 90 days following resumption or commencement of commercial power operation, or (3) 9 months following initial criticality, whichever is earliest. If the Startup Report does not cover all three events (i.e., initial criticality, completion of Startup Test Program, and resumption or commencement of commercial operation), supplementary reports shall be submitted at least every 3 months until all three events have been completed.

INSERT 4

l. 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 Makeup Air and Filtration System (CREMAFS), CRE occupants can control the reactor safely under normal conditions and maintain it in a safe condition following a radiological event 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 in-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 train of the CREMAFS, operating at a flow rate of less than or equal to 600 CFM 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 in-leakage into the CRE. These limits shall be stated in a manner to allow direct comparison to the unfiltered air in-leakage measured by the testing described in paragraph c. The unfiltered air in-leakage limit for radiological challenges is the in-leakage flow rate assumed in the licensing basis analyses of DBA consequences.

f. The provisions of SR 4.0.2 are applicable to the Frequencies for assessing CRE habitability, determining CRE unfiltered in-

leakage, and measuring CRE pressure and assessing the CRE boundary as required by paragraphs c and d, respectively.

Attachment 4

Proposed Technical Specification Bases Changes (mark-up)

3/4.7.4 SERVICE WATER SYSTEM/ULTIMATE HEAT SINK (Continued)

Verifying the correct alignment of manual, power-operated, and automatic valves provides assurance that the proper flow paths exist for operation of the Service Water System under accident conditions. This verification includes only those valves in the direct flow paths through safety-related equipment whose position is critical to the proper functioning of the safety-related equipment. Vents, drains, sampling connections, instrument taps, etc., that are not directly in the flow path and are not critical to proper functioning of the safety-related equipment are excluded from this surveillance requirement. This surveillance does not apply to valves that are locked, sealed, or otherwise secured in position because these valves are verified in their correct position prior to locking, sealing, or securing. Also, this requirement does not apply to valves that cannot be inadvertently misaligned, such as check valves.

An automatic valve may be aligned in other than its accident position provided (1) the valve receives an automatic signal to re-position to its required position in the event of an accident, and (2) the valve is otherwise operable (stroke time within limits, motive force available to re-position the valve, control circuitry energized, and mechanically capable of re-positioning).

3/4.7.5 (THIS SPECIFICATION NUMBER IS NOT USED)

3/4.7.6 CONTROL ROOM SUBSYSTEMS

The OPERABILITY of the Control Room Emergency Makeup Air and Filtration Subsystem ensures that the control room will remain habitable for operations personnel during and following credible accident conditions. Cumulative operation of the system with the heaters on for 10 hours over a 31-day period is sufficient to reduce the buildup of moisture on the absorbers and HEPA filters. Heaters cycle on and off to maintain the relative humidity below 70%. The OPERABILITY of this system in conjunction with control room design provisions is based on limiting the radiation exposure to personnel occupying the control room to 5 rems or less whole body, or its equivalent. This limitation is consistent with the requirements of General Design Criterion 19 of Appendix A, 10 CFR Part 50. ANSI N510-1980 will be used as a procedural guide for surveillance testing.

INSERT BASES

3/4.7.6 CONTROL ROOM SUBSYSTEMS (Continued)

The OPERABILITY of the Control Room Emergency Makeup Air and Filtration Subsystem is also contingent on maintaining the integrity of the Control Room complex envelope. Envelope integrity is maintained by controlling activities that could introduce sources of makeup air or infiltration of unfiltered air other than that assumed in the UFSAR. Examples of activities that could render either or both subsystem trains inoperable: (1) removal of penetration seals; (2) blocking open or removing either Control Room door (C312, C325); (3) open access doors to filter units 1-CBA-F-38, 8038; (4) repositioning of remote intake manual isolation valves 1, 2-CBA-V9; (5) any activity which allows makeup air to be drawn into the system from locations other than the remote intakes (e.g., removal of an opacity detector or radiation monitor in the DG Building, cutting of either makeup air line, etc.). Breaches to the envelope shall be controlled by station programs and may require an engineering evaluation to ensure UFSAR assumptions remain valid. Refer to Engineering Evaluation 91-39, Rev. 1 and CR 02-16293 for specific information and compensatory measures.

CONTROL ROOM AIR CONDITIONING SUBSYSTEM

The OPERABILITY of the safety-related Control Room Air Conditioning Subsystem ensures that the allowable temperature for continuous-duty rating for the equipment and instrumentation cooled by this system is not exceeded. The safety-related Control Room Air Conditioning Subsystem consists of two independent and redundant trains that provide cooling of recirculated control room air. The design basis of the safety-related Control Room Air Conditioning Subsystem is to maintain the control room temperature for 30 days of continued occupancy. The safety-related chillers are designed to operate in conditions down to the design basis winter temperature. When the chiller units unload due to insufficient heat load on the system, each Control Room air Conditioning Subsystem remains operable. Surveillance to demonstrate OPERABILITY will verify each subsystem has the capability to maintain the control room area temperature less than the limiting equipment qualification temperature. The operational surveillance will be performed on a quarterly basis, requiring each safety-related Control Room Air Conditioning Subsystem to operate over a twenty-four hour period. This will ensure the safety related subsystem can remove the heat load based on daily cyclic outdoor air temperature.

The Control Room Air Conditioning fans are necessary to support both the operation of the Control Room Emergency Makeup Air and Filtration and the Control Room Air Conditioning Subsystems.

3/4.7.7 SNUBBERS

All snubbers are required OPERABLE to ensure that the structural integrity of the Reactor Coolant System and all other safety-related systems is maintained during and following a seismic or other event initiating dynamic loads.

INSERT BASES

CONTROL ROOM EMERGENCYMAKEUP AIR AND FILTRATION SYSTEM (CREMAFS)

BACKGROUND

The control room emergency makeup air and filtration system (CREMAFS) provides a protected environment from which occupants can control the unit following an uncontrolled release of radioactivity or smoke.

The CREMAFS consists of two independent, redundant trains that recirculate and filter the air in the control room envelope (CRE) and a CRE boundary that limits the inleakage of unfiltered air. Each CREMAFS train consists of a prefilter, a high efficiency particulate air (HEPA) filter, an activated charcoal adsorber section for removal of gaseous activity (principally iodines), and a fan. Ductwork, valves or dampers, doors, barriers, and instrumentation also form part of the system. A second bank of HEPA filters follows the adsorber section to collect carbon fines and provides backup in case of failure of the main HEPA filter bank.

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, computer room, technical support center, office, conference room and library, emergency storage room, HVAC equipment room, kitchen, and sanitary facilities. The CRE is protected during 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.

The CREMAFS is an emergency system, parts of which may also operate during normal unit operations in the standby mode of operation. Upon receipt of the actuating signal(s), the normal makeup air fans are automatically tripped and their associated discharge dampers close. Both redundant emergency cleanup fans and their associated discharge dampers are automatically actuated. Makeup air is transported to the control room via piping and backdraft dampers configured in parallel, which bypass the normal makeup air fans and dampers. The prefilters remove any large particles in the air to prevent excessive loading of the HEPA filters and charcoal adsorbers. Continuous operation of each train for at least 10 hours per month, with the heaters on, reduces moisture buildup on the HEPA filters and adsorbers. The heaters are important to the effectiveness of the charcoal adsorbers.

Actuation of the CREMAFS places the system in the emergency mode of operation. Actuation of the system to the emergency mode of operation trips the normal makeup air fans and closes their associated discharge dampers, trips the control room exhaust fan and closes the exhaust dampers, actuates the emergency cleanup fans and aligns the system for recirculation of the air within the CRE through the redundant trains of HEPA

and the charcoal filters. The emergency mode also initiates pressurization and filtered ventilation of the air supply to the CRE.

Makeup air is drawn from both remote air intakes and delivered to the control room complex by two fully redundant emergency filtration system fans. One hundred percent of the makeup air passes through the prefilter and heater and a HEPA-Carbon-HEPA filter configuration in either or both emergency filter units prior to discharging into the control room HVAC equipment room. In addition, approximately 2 percent of the total control room complex recirculation air flow, (i.e., including the air conditioning system flow rate) is drawn through the HEPA-Carbon-HEPA filter configuration in either or both emergency filter units. Pressurization of the CRE minimizes infiltration of unfiltered air through the CRE boundary from all the surrounding areas adjacent to the CRE boundary Radiation and smoke detectors in each remote air intake continuously monitor the air entering the CRE. High radiation in either remote air intake initiates operation of the CREMAF in the emergency mode of operation. Upon receipt of a smoke alarm from either remote air intake, the operators will manually initiate operation of the CREMAFS in the emergency mode of operation.

A single CREMAFS train operating at a pressurization flow rate of up to 600 cfm will pressurize the CRE to about 0.125 inches water gauge relative to external areas adjacent to the CRE boundary. The CREMAFS operation in maintaining the CRE habitable is discussed in the UFSAR, Section 6.4 (Ref. 1).

The CREMAFS is designed in accordance with Seismic Category I requirements.

The CREMAFS is designed to maintain a habitable environment in the CRE for 30 days of continuous occupancy after a Design Basis Accident (DBA) without exceeding a 5 rem total effective dose equivalent (TEDE).

APPLICABLE SAFETY ANALYSES

The CREMAFS components are arranged in redundant, safety related ventilation trains. The location of components and ducting within the CRE ensures an adequate supply of filtered air to all areas requiring access. The CREMAFS provides airborne radiological protection for the CRE occupants, as demonstrated by the CRE occupant dose analyses for the most limiting design basis accident fission product release presented in the FSAR, Chapter 15 (Ref. 2).

The CREMAFS provides protection from smoke to the CRE occupants. 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. 4).

The analysis of hazardous chemical releases found that no significant quantity of toxic gases is stored at any industrial facility in the vicinity of the site. Further chemical shipments on the nearby highways and chemicals stored on site do not present an undue risk to control room habitability (Ref. 3). As a result, toxic gas protection is not required for the CRE.

The worst case single active failure of a component of the CREMAFS, assuming a loss of offsite power, does not impair the ability of the system to perform its design function.

The CREMAFS satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

Two independent and redundant CREMAFS trains are required to be OPERABLE to ensure that at least one is available if a single active failure disables the other train. Total system failure, such as from a loss of both ventilation trains or from an inoperable CRE boundary, could result in exceeding a dose of 5 rem TEDE to the CRE occupants in the event of a large radioactive release.

Each CREMAFS train is considered OPERABLE when the individual components necessary to limit CRE occupant exposure are OPERABLE. A CREMAFS train is OPERABLE when the associated:

a. Fan is OPERABLE,

b. HEPA filters and charcoal adsorbers are not excessively restricting flow, and are capable of performing their filtration functions, and

c. Heater, ductwork, valves, and dampers are OPERABLE, and air circulation can be maintained.

In order for the CREMAFS trains 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 smoke. Maintaining the CRE boundary also includes ensuring that the total size of all openings in the boundary is kept below the design bases limit.

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 that exceed the allowable opening size, these controls should be proceduralized and consist of stationing a dedicated individual at the opening who is in continuous communication with the operators in the CRE. This individual will have a method to rapidly close the opening and to restore the CRE boundary to a condition equivalent to the design condition when a need for CRE isolation is indicated.

APPLICABILITY

In MODES 1, 2, 3, 4, 5, and 6, and during movement of irradiated fuel assemblies, the CREMAFS must be OPERABLE to ensure that the CRE will remain habitable during and following a DBA.

During movement of irradiated fuel assemblies, the CREMAFS must be OPERABLE to cope with the release from a fuel handling accident.

ACTIONS

a.

When one CREMAFS train is inoperable, for reasons other than an inoperable CRE boundary, action must be taken to restore OPERABLE status within 7 days. In this Condition, the remaining OPERABLE CREMAFS train is adequate to perform the CRE occupant protection function. However, the overall reliability is reduced because a failure in the OPERABLE CREMAFS train could result in loss of CREMAFS function. The 7-day Completion Time is based on the low probability of a DBA occurring during this time period, and ability of the remaining train to provide the required capability.

b.1, 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 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 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 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.

In MODE 1, 2, 3, or 4, if the inoperable CREMAFS train or the CRE boundary cannot be restored to OPERABLE status within the required Completion Time, the unit must be placed in a MODE that minimizes accident risk. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

c.

If both CREMAFS trains are inoperable in MODE 1, 2, 3, or 4 for reasons other than an inoperable CRE boundary (i.e., Action b.), the CREMAFS may not be capable of performing the intended function and the unit is in a condition outside the accident analyses. Therefore, LCO 3.0.3 must be entered immediately.

d.

In MODE 5 or 6, or during movement of irradiated fuel assemblies, if the inoperable CREMAFS train cannot be restored to OPERABLE status within the required Completion Time, action must be taken to immediately place the OPERABLE CREMAFS train in the emergency mode of operation. This action ensures that the remaining train is OPERABLE, that no failures preventing automatic actuation will occur, and that any active failure would be readily detected.

An alternative to placing the OPERABLE CREMAFS train in the emergency mode of operation is to immediately suspend activities that could result in a release of radioactivity that might require isolation of the CRE. This places the unit in a condition that minimizes the accident risk. This does not preclude the movement of fuel to a safe position.

e.

In MODE 5 or 6, or during movement of irradiated fuel assemblies, with two CREMAFS trains inoperable or with the CREMAFS train required to be in the emergency mode of operation not capable of being powered from an OPERABLE emergency power source, action must be taken immediately to suspend activities that could result in a release of radioactivity that might require isolation of the CRE. This places the unit in a condition that minimizes the accident risk. This does not preclude the movement of fuel to a safe position.

f.

In MODE 5 or 6, or during movement of irradiated fuel assemblies, with one or both CREMAFS trains inoperable due to an inoperable CRE boundary, action must be taken immediately to suspend activities that could result in a release of radioactivity that might require isolation of the CRE. This places the unit in a condition that minimizes the accident risk. This does not preclude the movement of fuel to a safe position

SURVEILLANCE REQUIREMENTS

SR 4.7.6.1

Standby systems should be checked periodically to ensure that they function properly. As the environment and normal operating conditions on this system are not too severe, testing each train once every month provides an adequate check of this system. Monthly heater operations dry 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. The 31-day Frequency is based on the reliability of the equipment and the two-train redundancy.

SRs also periodically test the performance of the HEPA filter, charcoal adsorber efficiency, minimum flow rate, and the physical properties of the activated charcoal.

The SRs verify that each CREMAFS train starts and operates on test actuation signals. The Frequency of 18 months is based on industry operating experience and is consistent with the typical refueling cycle.

SR 4.7.6.2

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

The CRE is considered habitable when the radiological dose to CRE occupants calculated in the licensing basis analyses of DBA consequences is no more than 5 rem TEDE and the CRE occupants are protected from smoke. This SR verifies that the unfiltered air inleakage into the CRE is no greater than the flow rate assumed in the licensing basis analyses of DBA consequences. When unfiltered air inleakage is greater than the assumed flow rate, Action b. must be entered. 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. 5), which endorses, with exceptions, NEI 99-03, Section 8.4 and Appendix F (Ref. 6). These compensatory measures may also be used as mitigating actions as required by Action b.2. Options for restoring the CRE boundary to OPERABLE status include changing the licensing basis DBA consequence analysis, repairing the CRE boundary, or a combination of these actions. Depending upon the nature of the problem and the corrective action, a full scope inleakage test may not be necessary to establish that the CRE boundary has been restored to OPERABLE status.

REFERENCES

1. FSAR, Section 6.4
2. FSAR, Chapter 15
3. FSAR, Section 6.4.4.2
4. FSAR, Section 6.4
5. Regulatory Guide 1.196
6. NEI 99-03, "Control Room Habitability Assessment"