10 CFR 50.90

Progress Energy

Serial: RNP-RA/08-0006

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United States Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261/LICENSE NO. DPR-23

REQUEST FOR TECHNICAL SPECIFICATIONS CHANGES
RELATED TO CONTROL ROOM HABITABILITY – SUPPLEMENT (TAC NO. MD6117)

Ladies and Gentlemen:

In a letter dated July 17, 2007, Carolina Power and Light Company, also known as Progress Energy Carolinas, Inc. (PEC), submitted a request for an amendment to the Technical Specifications (TS) contained in Appendix A of the Operating License for H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2.

The July 17, 2007, amendment request proposed revisions to TS 3.7.9, "Control Room Emergency Filtration System (CREFS)," and the addition of TS 5.5.17, "Control Room Envelope Habitability Program." Proposed revisions to the Bases for TS 3.7.9 were also included. The changes were based on NRC-approved Technical Specifications Task Force (TSTF) Standard Technical Specification Change Traveler, TSTF-448, Revision 3, "Control Room Habitability."

A response to an NRC request for additional information (RAI) related to this proposed license amendment was provided by letter dated November 9, 2007. In a telephone communication on December 19, 2007, the RAI response was discussed with the NRC staff. The conclusion of the telephone discussion was that a revised TS submittal would be provided.

This letter provides the revised TS submittal. This letter provides the complete submittal to facilitate the NRC review. The following are the changes from the July 17, 2007, submittal:

1. A Note is added to Limiting Condition for Operation (LCO) 3.7.9 to allow the control room envelope (CRE) boundary to be opened intermittently under administrative control. The proposed Note is consistent with the TSTF-448 wording. A paragraph discussing this Note is also added to the TS 3.7.9 Bases section and to the description of change/technical justification provided in Attachment II to this submittal.

Progress Energy Carolinas, Inc.
Robinson Nuclear Plant
3581 West Entrance Road
Hartsville, SC 29550

A102
NRR

2. The proposed TS 5.5.17.c previously included a proposed exception to the unfiltered air inleakage testing frequency as specified in Regulatory Guide 1.197, Revision 0. This proposed exception is removed. The description and justification for this exception has been removed from Attachment II.
3. The proposed TS 5.5.17.c also included an exception that allowed for deviations from the test methodology of ASTM E741, provided such exceptions are documented in the test report. This exception is maintained, but is renumbered as Exception 1. In the November 9, 2007, RAI response, NEI 99-03, Revision 1, "Control Room Habitability Guidance," was referenced as providing examples of possible deviations. The reference to Revision 1 of NEI 99-03 as a basis for this exception is withdrawn because the NRC has not endorsed that revision of NEI 99-03. The revised justification for this exception is provided in Attachment II.

Attachment I provides an Affirmation as required by 10 CFR 50.30(b).

Attachment II provides a description of the current condition, a description and justification of the proposed changes including justification for the differences from TSTF-448, a No Significant Hazards Consideration Determination, and an Environmental Impact Consideration.

Attachment III provides a markup of the affected TS pages. Attachment IV provides the retyped TS pages. Attachment V provides a markup of the TS Bases revisions.

Additionally, Attachment VI provides a proposed revision to Technical Specifications, Appendix B, "Additional Conditions." These proposed conditions clarify the implementation schedule for the revised and new surveillance requirements.

In accordance with 10 CFR 50.91(b), Progress Energy Carolinas, Inc., is providing the State of South Carolina with a copy of this license amendment request.

Nuclear Regulatory Commission approval of the proposed license amendment is requested by September 2008, with an effective date of implementation within 180 days of issuance.

If you have any questions concerning this matter, please contact Mr. Curt Castell at (843) 857-1626.

Sincerely,

C. T. Baucom
Manager – Support Services – Nuclear

Attachments:

I. Affirmation
II. Request for Technical Specifications Changes Related to Control Room Habitability - Supplement
III. Markup of Technical Specifications Pages
IV. Retyped Technical Specifications Pages
V. Markup of Technical Specifications Bases Pages
VI. Markup of Technical Specifications, Appendix B, "Additional Conditions"

RAC/rac

c: S. E. Jenkins, Manager, Infectious and Radioactive Waste Management Section (SC)
A. Gantt, Chief, Bureau of Radiological Health (SC)
V. M. McCree, NRC, Region II
M. G. Vaaler, NRC Project Manager, NRR
NRC Resident Inspector, HBRSEP
Attorney General (SC)

AFFIRMATION

The information contained in letter RNP-RA/08-0006 is true and correct to the best of my information, knowledge, and belief; and the sources of my information are officers, employees, contractors, and agents of Carolina Power and Light Company, also known as Progress Energy Carolinas, Inc. I declare under penalty of perjury that the foregoing is true and correct.

Executed On: 4/1/08

T. D. Walt
Vice President, HBRSEP, Unit No. 2

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2

REQUEST FOR TECHNICAL SPECIFICATIONS CHANGES RELATED TO CONTROL ROOM HABITABILITY - SUPPLEMENT

Description of Current Condition

Technical Specifications (TS) 3.7.9, "Control Room Emergency Filtration System (CREFS)," specifies requirements to ensure the control room remains habitable under design basis accident conditions. The current TS do not distinguish between system inoperability due to a degraded Control Room Envelope (CRE) boundary and inoperability for other reasons. The current TS do not contain a note that allows for the opening of the CRE boundary intermittently under administrative controls. The current surveillance to demonstrate CRE boundary integrity requires the performance of a positive pressure test. The edited pages in Attachment III show the current wording for TS 3.7.9. The current TS do not contain a Section 5.5, "Programs and Manuals," requirement for a CRE Habitability Program.

Description and Justification of the Proposed Changes

The proposed changes are consistent with the intent of NRC-approved Technical Specifications Task Force (TSTF) Standard Technical Specification Change Traveler, TSTF-448, Revision 3, "Control Room Habitability." The changes to TS 3.7.9 add Conditions and Required Actions to distinguish between inoperability due to a degraded Control Room Envelope (CRE) boundary and inoperability for other reasons. The proposed changes also add a note consistent with TSTF-448 that will allow for the opening of the CRE boundary intermittently under administrative controls. Currently, when the CRE boundary must be opened intermittently under administrative controls, the Limiting Condition for Operation (LCO) must be entered. The note will preclude having to enter the LCO. Changes to the Surveillance Requirements for TS 3.7.9 replace the current surveillance to perform a positive pressure test with a more comprehensive Control Room Envelope Habitability Program. The requirements for this program are incorporated into new TS 5.5.17. This program will continue to require a positive pressure test, but augments that test with additional requirements such as a tracer gas inleakage test and a Preventative Maintenance Program. These new requirements will provide added confidence in the integrity of the CRE boundary.

The differences between the proposed wording and the TSTF-448 wording are described as follows [Note: The comparisons are with the TSTF-448 changes to the Westinghouse Owners Group (WOG) Standard Technical Specifications (STS), NUREG-1431]:

1. The existing H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2, Technical Specifications for the Control Room Emergency Filtration System (CREFS) are not structured consistently with the WOG STS. The proposed license amendment incorporates TSTF-448 into the HBRSEP, Unit No. 2, TS as currently structured. For example, the condition for one or more CREFS trains inoperable due to an inoperable CRE boundary (STS 3.7.10, Condition B) was added as a new Condition G to the HBRSEP, Unit No. 2, TS because the WOG STS, Condition B, does not currently exist in the HBRSEP, Unit No. 2,

TS. These differences are formatting (e.g., numbering) differences and do not impact the actual requirements as specified by TSTF-448.

2. The wording for the proposed Required Action G.2 is modified from the wording of the corresponding TSTF-448, Required Action B.2. The TSTF-448 wording states, "Verify mitigating actions ensure CRE occupant exposures to radiological, chemical, and smoke hazards will not exceed limits." This wording implies there are quantitative limits for chemical and smoke hazards. HBRSEP, Unit No. 2, does not have quantitative limits for such hazards. No credit is taken for the control room habitability systems or boundary integrity in meeting hazardous chemical criteria. Smoke hazards are only qualitatively evaluated. The proposed HBRSEP, Unit No. 2, wording reads, "Verify mitigating actions ensure CRE occupancy for design basis conditions." This wording imposes the same requirements without implying there are quantitative limits for each condition.

3. The TSTF-448 Surveillance Requirement (SR) 3.7.10.4 states, "Perform required CRE unfiltered air inleakage testing in accordance with the Control Room Envelope Habitability Program." This SR replaces the surveillance that demonstrates the integrity of the CRE boundary by verifying adequate positive pressure can be maintained. The infrequent performance (once every six years) of an unfiltered air inleakage test does not by itself demonstrate continued integrity of the CRE boundary. Other aspects of the proposed Control Room Envelope Habitability Program, such as an effective Preventative Maintenance Program, are just as important as the inleakage test to ensure continued CRE boundary integrity. Therefore, the corresponding HBRSEP, Unit No. 2, SR 3.7.9.4 states, "Perform required CRE maintenance and testing in accordance with the Control Room Envelope Habitability Program." The proposed SR 3.7.9.4 is more comprehensive than TSTF-448 by requiring the performance of the unfiltered air inleakage test and the other testing and maintenance specified in the CRE Habitability Program.

4. The lead-in paragraph for the new Control Room Envelope Habitability Program (Section 5.5.18 in the WOG STS TSTF, and Section 5.5.17 in the HBRSEP, Unit No. 2, TS) was shortened to eliminate unnecessary information. For example, there is no need to quote the dose limits, as those limits are part of 10 CFR 50 and are documented in the HBRSEP, Unit No. 2, licensing basis. Additionally, TSTF-448 states that the program ensures "...CRE occupants can control the reactor safely under normal conditions and maintain it in a safe condition following a radiological event..." This is inconsistent with the General Design Criteria, including GDC 19, as it is not "the reactor" that is being maintained safe. GDC 19 states that it is the nuclear power unit that must be operated safely, not the reactor. The Introduction to 10 CFR 50, Appendix A, is even more global by stating the intent as not resulting in undue risk to the health and safety of the public. Therefore, the intent is that the CRE occupant also be able to control accident mitigating features outside the reactor, such as containment sprays. As another example, TSTF-448 states that the program ensures "...adequate radiation protection is provided to permit access and occupancy of the CRE...." The CRE boundary and programs to maintain it are only providing the necessary radiological protection for occupancy of the control room. The program is independent of the ability to access the control room. The regulatory guidance for performing control room dose analyses (e.g., Regulatory Guides 1.183 and 1.195) do not require the assessment of the

access dose in assessing the ability of the control room habitability systems to meet the specified dose acceptance criteria. The reduced content of the lead-in paragraph does not impact the listed program requirements.

5. In line item "c" for the program requirements, TSTF-448 recognizes there may be plant-specific exceptions to the generic guidance for performance of the unfiltered air inleakage test. For HBRSEP, Unit No. 2, the following exception is included in the proposed amendment:

   "Unfiltered air inleakage testing shall include the ability to deviate from the test methodology of ASTM-E741. These exceptions shall be documented in the test report."

   This exception is based on the potential need to deviate from the specific details, but not the general methods and intent, of the ASTM-E741 testing methodology. A similar exception has been approved for the San Onofre Nuclear Generating Station, Units 2 and 3, in an NRC letter dated October 31, 2007. The exception is needed as ASTM-E741 was not originally developed for nuclear power plant control room envelope testing. Therefore, minor exceptions from the standard may be necessary. Exceptions will be documented in the individual test report.

6. In line item "d" for the program requirements, the term "all" in the TSTF-448 wording has been deleted from the HBRSEP, Unit No. 2, proposed wording. The literal interpretation of term "all" can cause implementation questions. For example, if an external wall of the control room has a number of 4 ft x 4 ft enclosures attached to the wall, the internals of which don't readily communicate with the surrounding air, but also have no penetration into the CRE boundary, the requirement to measure the pressure relative to "all" external adjacent areas could be interpreted to require pressure differential measurements with each enclosure.

7. In line item "d" for the program requirements, the term "[ ] month" in the TSTF-448 wording has been deleted, since the frequency of the assessment may vary. This does not reduce the specified requirement in that the trending of the positive pressure test results will be performed for each required assessment.

8. In line item "e" for the program requirements, the wording in the last sentence has been modified to eliminate the use of the term "limits." As stated previously, there are no quantified limits for the HBRSEP, Unit No. 2, hazardous chemical analyses.

The above differences also result in corresponding differences in the TS Bases wording and format.

<u>No Significant Hazards Consideration Determination</u>

Carolina Power and Light Company, also known as Progress Energy Carolinas, Inc. (PEC), is proposing a change to Appendix A, Technical Specifications, of Facility Operating License No. DPR-23, for the H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2. The proposed change revises the requirements related to control room habitability.

Carolina Power and Light Company has reviewed the proposed No Significant Hazards Consideration Determination published on January 17, 2007 (72 FR 2022), as part of the Consolidated Line Item Improvement Process (CLIIP). Carolina Power and Light Company has concluded the proposed determination presented in the notice is applicable to HBRSEP, Unit No. 2, and the determination is hereby incorporated by reference to satisfy the requirements of 10 CFR 50.91(a).

Environmental Impact Consideration

10 CFR 51.22(c)(9) provides criteria for identification of licensing and regulatory actions for categorical exclusion from performing an environmental assessment. A proposed change for an operating license for a facility requires no environmental assessment if operation of the facility in accordance with the proposed change would not (1) involve a significant hazards consideration; (2) result in a significant change in the types or significant increases in the amounts of any effluents that may be released offsite; (3) result in a significant increase in individual or cumulative occupational radiation exposure. Carolina Power and Light Company, also known as Progress Energy Carolinas, Inc., has reviewed this request and determined the proposed change meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment needs to be prepared in connection with the issuance of the amendment. The basis for this determination follows.

Proposed Change

Carolina Power and Light Company, also known as Progress Energy Carolinas, Inc. (PEC), is proposing a change to Appendix A, Technical Specifications (TS), of Facility Operating License No. DPR-23, for the H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2. The proposed change revises the requirements related to control room habitability in TS 3.7.9, and adds TS 5.5.17 to provide new Control Room Envelope Boundary Program requirements.

Basis

Carolina Power and Light Company has reviewed the environmental evaluation included in the model safety evaluation, dated January 17, 2007 (72 FR 2022), as part of the Consolidated Line Item Improvement Process (CLIIP). Carolina Power and Light Company has concluded that the staff's findings presented in that evaluation are applicable to HBRSEP, Unit No. 2, and the evaluation is hereby incorporated by reference for this application.

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2

REQUEST FOR TECHNICAL SPECIFICATIONS CHANGES RELATED TO CONTROL ROOM HABITABILITY - SUPPLEMENT

MARKUP OF TECHNICAL SPECIFICATIONS PAGES

3.7 PLANT SYSTEMS

3.7.9 Control Room Emergency Filtration System (CREFS)

LCO 3.7.9 Two CREFS trains shall be OPERABLE.

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

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

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One CREFS train inoperable for reasons other than Condition G.	A.1	Restore CREFS train to OPERABLE status.	7 days
B. Required Action and associated Completion Time of Condition A not met in MODE 1, 2, 3, or 4.	B.1	Be in MODE 3.	6 hours
	AND		
	B.2	Be in MODE 5.	36 hours
C. Required Action and associated Completion Time of Condition A not met during movement of irradiated fuel assemblies.	C.1	Place OPERABLE CREFS train in emergency pressurization mode.	Immediately
	OR		
	C.2	Suspend movement of irradiated fuel assemblies.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Two CREFS trains inoperable during movement of irradiated fuel assemblies.	D.1 Suspend movement of irradiated fuel assemblies.	Immediately
E. Two CREFS trains inoperable for reasons other than Condition G in MODE 1, 2, 3, or 4.	E.1 Restore at least one CREFS train to OPERABLE status.	48 hours
F. Required Action and associated Completion Time of Condition E not met in MODE 1, 2, 3, or 4.	F.1 Be in MODE 3. AND F.2 Be in MODE 5.	6 hours 36 hours
G. One or more CREFS trains inoperable due to inoperable Control Room Envelope (CRE) Boundary in MODE 1, 2, 3, or 4.	G.1 Initiate action to implement mitigating actions. AND G.2 Verify mitigating actions ensure CRE occupancy for design basis conditions. AND G.3 Restore CRE boundary to OPERABLE status.	Immediately 24 hours 90 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
H. Required Action and associated Completion Time of Condition G not met in MODE 1, 2, 3, or 4.	H.1 Be in MODE 3. AND H.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.9.1	Operate each CREFS train for ≥ 15 minutes.	31 days
SR 3.7.9.2	Perform required CREFS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with VFTP
SR 3.7.9.3	Verify each CREFS train actuates on an actual or simulated actuation signal.	18 months
SR 3.7.9.4	~~Verify one CREFS train can maintain a positive pressure of ≥ 0.125 inches water gauge, relative to the outside atmosphere and a positive pressure relative to adjacent building areas during the emergency pressurization mode of operation at a makeup flow rate of ≤ 400 cfm.~~ Perform required CRE maintenance and testing in accordance with the CRE Habitability Program.	~~18 months on a STAGGERED TEST BASIS~~ In accordance with the CRE Habitability Program

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5.5 Programs and Manuals (continued)

5.5.16 Containment Leakage Rate Testing Program

This program provides controls for implementation of the leakage rate testing of the containment as required by 10 CFR 50.54(o) and 10 CFR 50, Appendix J, Option B, as modified by approved exemptions for Type A testing. This program shall be in accordance with the guidelines contained in Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program," dated September 1995, as modified by the following exception:

a. NEI 94-01 - 1995, Section 9.3.2: The first Type A test performed after the April 9, 1992, Type A test shall be performed no later than April 9, 2007.

Type B and C testing shall be implemented in the program in accordance with the requirements of 10 CFR 50, Appendix J, Option A.

The peak containment pressure, P_a, is specified as the containment design pressure of 42 psig, which exceeds the peak calculated containment internal pressure for the design basis loss of coolant accident.

The maximum allowable containment leakage rate, L_a, at P_a, shall be 0.1% of the containment air weight per day.

Leakage rate acceptance criteria are:

a. Containment leakage rate acceptance criteria is $\leq$ 1.0 L_a. During the first unit startup following testing in accordance with this program, the leakage rate acceptance criteria are $\leq$ 0.60 L_a for the Type B and Type C tests, and $\leq$ 0.75 L_a for Type A tests.

The provisions of SR 3.0.3 are applicable to the Containment Leakage Rate Testing Program.

5.5.17 Control Room Envelope Habitability Program

A Control Room Envelope (CRE) Habitability Program shall be implemented to ensure that, with an OPERABLE Control Room Emergency Filtration System, CRE occupants can control the nuclear power unit safely following a radiological event, hazardous chemical release, or a smoke challenge. The program shall include the following elements:

(continued)

5.5 Programs and Manuals (continued)

5.5.17 Control Room Envelope Habitability Program (continued)

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 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.
The following exception is taken to Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0:
1. Unfiltered air inleakage testing shall include the ability to deviate from the test methodology of ASTM-E741. These exceptions shall be documented in the test report.

d. Measurement, at designated locations, of the CRE pressure relative to external areas adjacent to the CRE boundary during the pressurization mode of operation by one train of the CREFS, 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 assessment of the CRE boundary.

e. The quantitative limits on unfiltered air inleakage 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. For hazardous chemicals, inleakage rates shall be less than assumed in the licensing bases.

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.

United States Nuclear Regulatory Commission
Attachment IV to Serial: RNP-RA/08-0006
6 Pages (including cover page)

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2

REQUEST FOR TECHNICAL SPECIFICATIONS CHANGES RELATED TO CONTROL ROOM HABITABILITY – SUPPLEMENT

RETYPED TECHNICAL SPECIFICATIONS PAGES

3.7 PLANT SYSTEMS

3.7.9 Control Room Emergency Filtration System (CREFS)

LCO 3.7.9 Two CREFS trains shall be OPERABLE.

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

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

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One CREFS train inoperable for reasons other than Condition G.	A.1	Restore CREFS train to OPERABLE status.	7 days
B. Required Action and associated Completion Time of Condition A not met in MODE 1, 2, 3, or 4.	B.1	Be in MODE 3.	6 hours
	AND		
	B.2	Be in MODE 5.	36 hours
C. Required Action and associated Completion Time of Condition A not met during movement of irradiated fuel assemblies.	C.1	Place OPERABLE CREFS train in emergency pressurization mode.	Immediately
	OR		
	C.2	Suspend movement of irradiated fuel assemblies.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. Two CREFS trains inoperable during movement of irradiated fuel assemblies.	D.1	Suspend movement of irradiated fuel assemblies.	Immediately
E. Two CREFS trains inoperable for reasons other than Condition G in MODE 1, 2, 3, or 4.	E.1	Restore at least one CREFS train to OPERABLE status.	48 hours
F. Required Action and associated Completion Time of Condition E not met in MODE 1, 2, 3, or 4.	F.1	Be in MODE 3.	6 hours
	AND		
	F.2	Be in MODE 5.	36 hours
G. One or more CREFS trains inoperable due to inoperable Control Room Envelope (CRE) Boundary in MODE 1, 2, 3, or 4.	G.1	Initiate action to implement mitigating actions.	Immediately
	AND		
	G.2	Verify mitigating actions ensure CRE occupancy for design basis conditions.	24 hours
	AND		
	G.3	Restore CRE boundary to OPERABLE status.	90 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
H. Required Action and associated Completion Time of Condition G not met in MODE 1, 2, 3, or 4.	H.1 Be in MODE 3. AND H.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.9.1	Operate each CREFS train for ≥ 15 minutes.	31 days
SR 3.7.9.2	Perform required CREFS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with VFTP
SR 3.7.9.3	Verify each CREFS train actuates on an actual or simulated actuation signal.	18 months
SR 3.7.9.4	Perform required CRE maintenance and testing in accordance with the CRE Habitability Program.	In accordance with the CRE Habitability Program

5.5 Programs and Manuals (continued)

5.5.16 Containment Leakage Rate Testing Program

This program provides controls for implementation of the leakage rate testing of the containment as required by 10 CFR 50.54(o) and 10 CFR 50, Appendix J, Option B, as modified by approved exemptions for Type A testing. This program shall be in accordance with the guidelines contained in Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program," dated September 1995, as modified by the following exception:

a. NEI 94-01 - 1995, Section 9.3.2: The first Type A test performed after the April 9, 1992, Type A test shall be performed no later than April 9, 2007.

Type B and C testing shall be implemented in the program in accordance with the requirements of 10 CFR 50, Appendix J, Option A.

The peak containment pressure, P_a, is specified as the containment design pressure of 42 psig, which exceeds the peak calculated containment internal pressure for the design basis loss of coolant accident.

The maximum allowable containment leakage rate, L_a, at P_a, shall be 0.1% of the containment air weight per day.

Leakage rate acceptance criteria are:

a. Containment leakage rate acceptance criteria is $\leq$ 1.0 L_a. During the first unit startup following testing in accordance with this program, the leakage rate acceptance criteria are $\leq$ 0.60 L_a for the Type B and Type C tests, and $\leq$ 0.75 L_a for Type A tests.

The provisions of SR 3.0.3 are applicable to the Containment Leakage Rate Testing Program.

5.5.17 Control Room Envelope Habitability Program

A Control Room Envelope (CRE) Habitability Program shall be implemented to ensure that, with an OPERABLE Control Room Emergency Filtration System, CRE occupants can control the nuclear power unit safely following a radiological event, hazardous chemical release, or a smoke challenge. The program shall include the following elements:

(continued)

5.5.17 Control Room Envelope Habitability Program (continued)

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 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.
The following exception is taken to Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0:
1. Unfiltered air inleakage testing shall include the ability to deviate from the test methodology of ASTM-E741. These exceptions shall be documented in the test report.

d. Measurement, at designated locations, of the CRE pressure relative to external areas adjacent to the CRE boundary during the pressurization mode of operation by one train of the CREFS, 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 assessment of the CRE boundary.

e. The quantitative limits on unfiltered air inleakage 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. For hazardous chemicals, inleakage rates shall be less than assumed in the licensing bases.

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.

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2

REQUEST FOR TECHNICAL SPECIFICATIONS CHANGES RELATED TO CONTROL ROOM HABITABILITY – SUPPLEMENT

MARKUP OF TECHNICAL SPECIFICATIONS BASES PAGES

B 3.7 PLANT SYSTEMS

B 3.7.9 Control Room Emergency Filtration System (CREFS)

BASES

BACKGROUND

The CREFS provides a protected environment from which ~~operators~~ occupants can control the unit following an uncontrolled release of radioactivity, hazardous chemicals, or smoke.

The CREFS is a subsystem of the Control Room Air Conditioning System and consists of redundant air cleaning unit fans, redundant air intake dampers and associated ductwork, redundant air recirculation fans and associated ductwork, redundant air exhaust dampers, a non-redundant air filtration unit housing, and non-redundant ductwork and gravity dampers. The necessary instrumentation is also considered a part of the system. The air filtration unit housing contains a prefilter, a high efficiency particulate air (HEPA) filter bank, and an activated charcoal adsorber section for removal of gaseous activity (principally iodines). 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 control room envelope (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 areas to which personnel access is necessary in the event of an accident. 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 bases analyses of design basis accident (DBA) consequences to CRE occupants. The CRE and its boundary are defined in the Control Room Envelope Habitability Program.

The CREFS is an emergency system, parts of which also operate during normal unit operations in the standby mode of operation. Upon receipt of the actuating signal(s), the stream of ventilation air is recirculated through the system filters. The prefilters remove any large particles in the

(continued)

air, and any entrained water droplets present, to prevent excessive loading of the HEPA filters and charcoal adsorbers.

The CREFS is actuated to the emergency pressurization mode of operation on a safety injection signal. A single area radiation monitor also provides a signal to the CREFS to actuate emergency pressurization. Upon actuation, the air recirculation fans start and move recirculation air through the air cleaning unit filter train, and the control room exhaust to the outdoors is isolated.

The control room envelope is maintained under a positive differential pressure with respect to adjacent areas and the outdoors during the emergency pressurization mode of operation. ~~Under Design Basis Accident (DBA) conditions, a~~A maximum makeup rate of 400 CFM is provided for pressurizing the control room envelope. Periodic testing is required to demonstrate that the control room is pressurized to a minimum of 0.125 inches water gage with respect to the outdoors, and to a positive pressure with respect to adjacent areas, with an outside air makeup rate of $\leq$ 400 CFM, while in the emergency pressurization mode of operation. Periodic testing also demonstrates that a positive pressure can be maintained in the control room with respect to the outdoors. The CREFS operation in maintaining the control room habitable is discussed in the Updated Final Safety Analysis Report (UFSAR), Section 6.4 (Ref. 1).

Pressurization of the control room habitability envelope by the CREFS assumes that non-safety related ventilation fans in the Auxiliary Building adjacent to the control room either remain in operation or cease operation. In the event that the air supply fan to the Auxiliary Building remains in operation simultaneously with the Auxiliary Building air exhaust fan not in operation, one room of the Auxiliary Building (i.e., Hagan Room) could be slightly positive with respect to the control room. Procedures require that the air supply fan to the Auxiliary Building be shut down within one hour of actuation of the CREFS to assure that the air pressure in the Auxiliary Building is reduced. Analyses show that the dose to the control room operator is satisfactory under this condition (Ref. 2).

The air entering the control room through the outside air intake is continuously monitored for radiation in the control room and smoke in the ventilation air duct.

(continued)

BASES

The CREFS is designed to maintain the control room environment for 30 days of continuous occupancy after a Design Basis Accident (DBA) without exceeding a 5 rem ~~whole body dose or its equivalent to any part of the body, or a 5 rem~~ total effective dose equivalent (TEDE) ~~for a fuel handling accident~~.

APPLICABLE SAFETY ANALYSES

The active CREFS components are arranged in redundant, safety related ventilation trains. The location of components and ducting within the ~~control room envelope~~CRE ensures an adequate supply of filtered air to all areas requiring access. The CREFS provides airborne radiological protection for the control room ~~operators~~occupants, as demonstrated by the control room accident dose analyses for the ~~most limiting~~ design basis ~~loss of coolant~~ accidents.~~, fission product release presented in the UFSAR, Chapter 15 (Ref. 3).~~

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

The CREFS satisfies Criterion 3 of the NRC Policy Statement.

LCO

Two redundant CREFS trains are required to be OPERABLE to ensure that at least one is available ~~assuming~~ 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 ~~whole body or its equivalent to any part of the body to the control room operator in the event of a large radioactive release, or 5 rem~~ TEDE ~~for a fuel handling accident~~to the CRE occupants in the event of a radioactive release.

(continued)

BASES

The CREFS is considered OPERABLE when the individual components necessary to limit operator exposure are OPERABLE in both trains. A CREFS train is OPERABLE when the air cleaning unit fan, air recirculation fan, air intake damper and associated ductwork, and air exhaust damper and associated ductwork, are operable for the given train. The common air filtration unit is OPERABLE to support either train in accordance with the Ventilation Filter Testing Program. In addition, non-redundant ductwork and gravity dampers are OPERABLE to support either train.

In order for the CREFS trains to be considered OPERABLE, the CRE boundary must be maintained such that the CRE occupant dose from a radioactive release does not exceed the calculated dose in the licensing bases, and that CRE occupants are protected from hazardous chemicals and smoke. ~~Implicit in the OPERABILITY of either train is that the integrity of the control room envelope is such that it can be pressurized to ≥0.125" water gauge relative to the outside atmosphere and to a positive pressure relative to adjacent areas at a make-up rate of ≤400 cfm in the emergency pressurization mode.~~
The LCO is modified by a Note allowing the CRE boundary to be opened intermittently under administrative control. This Note only applies to openings that can be rapidly restored to the design condition (e.g., doors, access panels). For entry and exit through doors, the administrative control of the opening is performed by the person(s) entering or exiting. For other openings, the control will be proceduralized and consist of stationing an individual at the opening with continuous communication capability with operators in the CRE and the ability to rapidly close the opening and restore the CRE boundary to a condition equivalent to the design condition when the need is indicated.

APPLICABILITY

In MODES 1, 2, 3, 4, and during movement of irradiated fuel assemblies, CREFS must be OPERABLE to control ~~operator~~ occupant exposure during and following a DBA. ~~During movement of irradiated fuel assemblies, the CREFS must be OPERABLE to cope with the release from a fuel handling accident.~~ Applicability to movement of irradiated fuel excludes movement of irradiated fuel within a properly sealed spent fuel shipping cask.

(continued)

BASES

ACTIONS

A.1

When one CREFS 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 CREFS train is adequate to perform the ~~control room~~CRE occupant protection function. However, the overall reliability is reduced because a ~~single~~ failure in the OPERABLE CREFS train could result in loss of CREFS 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 and B.2

In MODE 1, 2, 3, or 4, if the inoperable CREFS train 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.1 and C.2

During movement of irradiated fuel assemblies, if the inoperable CREFS train cannot be restored to OPERABLE status within the required Completion Time, action must be taken to immediately place the OPERABLE CREFS train in the emergency pressurization mode. 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 Required Action C.1 is to immediately suspend activities that could result in a release of radioactivity that might require isolation of the control room. This places the unit in a condition that minimizes risk. This does not preclude the movement of fuel to a safe position.

BASES

ACTIONS (continued)

D.1

During movement of irradiated fuel assemblies, with two CREFS trains inoperable, action must be taken immediately to suspend activities that could result in a release of radioactivity that might enter the control room. This places the unit in a condition that minimizes accident risk. This does not preclude the movement of fuel to a safe position.

E.1

If both CREFS trains are inoperable in MODE 1, 2, 3, or 4, for reasons other than an inoperable CRE boundary, action must be taken to restore OPERABLE status of at least one CREFS train within 48 hours. The 48 hour completion time is based upon the low probability of a DBA occurring during this time.

F.1 and F.2

In MODE 1, 2, 3, or 4, if both CREFS trains are inoperable, for reasons other than an inoperable CRE boundary, ~~CREFS trains~~ and 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.

G.1, G.2, and G.3

If the CRE boundary is inoperable as defined in the CRE Habitability Program, then 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 the CRE can be safely occupied. These mitigating actions (i.e., actions that are taken to offset the consequences of the inoperable CRE boundary) should be preplanned, to the extent possible, for implementation upon

BASES

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. 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.

H.1

In MODE 1, 2, 3, or 4, if the inoperable 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.

SURVEILLANCE REQUIREMENTS

SR 3.7.9.1

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. Operation for ≥ 15 minutes is adequate to demonstrate the function of the system. The 31 day Frequency is based on the reliability of the equipment and the two train redundancy availability.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.9.2

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

SR 3.7.9.3

This SR verifies that each CREFS train starts and operates on an actual or simulated actuation signal. The Frequency of 18 months is consistent with Position C.5 of Regulatory Guide 1.52 (Ref. 4). The 18 month Frequency is based on the refueling cycle. Operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency.

SR 3.7.9.4

This SR verifies the integrity of the CRE boundary. The CRE Habitability Program specifies administrative controls for temporary breaches to the boundary, preventative maintenance requirements to ensure the boundary is maintained, and leak test surveillance requirements. The details and frequencies for these requirements are specified in the CRE Habitability Program. ~~This SR verifies the integrity of the control room envelope, and the assumed inleakage rates of the potentially contaminated air. The control room positive pressure, with respect to potentially contaminated adjacent areas, is periodically tested to verify proper functioning of the CREFS. During the emergency pressurization mode of operation, the CREFS is designed to pressurize the control room ≥ 0.125 inches water gauge positive pressure with respect to the outside atmosphere and maintain a positive pressure with respect to adjacent building areas in order to prevent unfiltered inleakage. The CREFS is designed to maintain this positive pressure with one train at a makeup flow rate of ≤ 400 cfm. The Frequency of 18 months on a STAGGERED TEST BASIS is consistent with the guidance provided in NUREG-0800 (Ref. 5).~~

BASES

REFERENCES

1. UFSAR, Section 6.4.
2. UFSAR Section 6.4.2.3.
3. UFSAR, Chapter 15.
4. Regulatory Guide 1.52, Rev. 2, March 1978.
~~5. NUREG-0800, Section 6.4, Rev. 2, July 1981.~~

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2

REQUEST FOR TECHNICAL SPECIFICATIONS CHANGES
RELATED TO CONTROL ROOM HABITABILITY – SUPPLEMENT

MARKUP OF TECHNICAL SPECIFICATIONS,
APPENDIX B,
"ADDITIONAL CONDITIONS"

APPENDIX B

ADDITIONAL CONDITIONS
FACILITY OPERATING LICENSE NO. DPR-23

Carolina Power & Light Company (the term licensee in Appendix B refers to Carolina Power & Light Company) shall comply with the following conditions on the schedules noted below:

Amendment Number	Additional Conditions	Implementation Date
176	The licensee is authorized to relocate certain requirements included in Appendix A and the former Appendix B to licensee-controlled documents. Implementation of this amendment shall include the relocation of these requirements to the appropriate documents, as described in the licensee's letters dated September 10, 1997, and October 13, 1997, evaluated in the NRC staff's Safety Evaluation enclosed with this amendment.	This amendment is effective immediately and shall be implemented within 90 days of the date of this amendment.
---	Upon implementation of the amendment adopting TSTF-448, Revision 3, the determination of control room envelope (CRE) unfiltered air inleakage as required by TS 5.5.17.c.(i), the assessment of CRE habitability as required by TS 5.5.17.c.(ii), and the measurement of CRE pressure as required by TS 5.5.17.d, shall be considered met. Following implementation: (a) The first performance of TS 5.5.17.c.(i), shall be within the specified Frequency of 6 years, plus the 18-month allowance of SR 3.0.2,	This amendment is effective immediately and shall be implemented as specified.

as measured from January 27,2003, the date of the most recent successful tracer gas test, 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, TS 5.5.17.c.(ii), shall be within the next 9 months.

(c) The first performance of the periodic measurement of CRE pressure, TS 5.5.17.d, shall be within 18 months, plus the 138 days allowed by SR 3.0.2, as measured from the date of the most recent successful pressure measurement test.