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Ref: 10CFR50.90

CPSES-200501556
Log # TXX-05127
File # 00236

August 22, 2005

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

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES) DOCKET NOS. 50-445 AND 50-446 LICENSE AMENDMENT REQUEST (LAR) 05-005 REVISION TO TECHNICAL SPECIFICATION 3.7.10, "CONTROL ROOM EMERGENCY FILTRATION/PRESSURIZATION SYSTEM (CREFS)"

REF:
1) NRC Generic Letter 2003-01, "Control Room Habitability," June 12, 2003
2) TXU Power Letter, Logged TXX-03158, from Mike Blevins to Nuclear Regulatory Commission, dated December 4, 2003

Gentlemen:

Pursuant to 10CFR50.90, TXU Generation Company LP (TXU Power) hereby requests an amendment to the CPSES Unit 1 Operating License (NPF-87) and CPSES Unit 2 Operating License (NPF-89) by incorporating the attached change into the CPSES Unit 1 and 2 Technical Specifications. This change request applies to both units.

In response to Reference 1, Reference 2 committed to submitting a Technical Specification change to include periodic verification of control room leakage. This submittal satisfies that commitment. The proposed change will revise Technical Specification (TS) 3.7.10 "Control Room Emergency Filtration/Pressurization System (CREFS)," to address the Control Room Envelope and add new TS 5.5.20, "Control Room Integrity Program," and 5.6.11, "Control Room Report."

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The acceptance limits used in the new Control Room Integrity Program will be based on the assumptions of the radiological dose consequences calculations. CPSES is adopting new methods and assumptions as described in Regulatory Guide (RG) 1.195, "Methods and Assumptions for Evaluating Radiological Consequences of Design Accidents at Light-Water Nuclear Power Reactors," May 2003, for the calculations of the radiological dose consequences, both to the public and to demonstrate compliance with 10 CFR 50, Appendix A, General Design Criteria (GDC) 19 . These new methods and assumptions, to be presented in FSAR Chapters 1, 6 and 15, are also included for NRC review and approval.

Previous discussions with the NRC Staff indicated that adoption of RG 1.195 is contingent on adoption of RG 1.196, "Control Room Habitability at Light-Water Nuclear Power Reactors," May 2003, and RG 1.197 "Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors," May 2003. Unless otherwise identified, the proposed Technical Specification changes are consistent with the guidance of these two documents.

Attachment 1 provides a detailed description of the proposed changes, a safety analysis of the proposed changes, TXU Power's determination that the proposed changes do not involve a significant hazard consideration, a regulatory analysis of the proposed changes and an environmental evaluation. Attachment 2 provides the affected Technical Specification (TS) pages marked-up to reflect the proposed changes. Attachment 3 provides proposed changes to the Technical Specification Bases for information only. These changes will be processed per CPSES site procedures. Attachment 4 provides retyped Technical Specification pages which incorporate the requested changes. Attachment 5 provides retyped Technical Specification Bases pages which incorporate the proposed changes. Attachment 6 provides marked-up pages of the Final Safety Analysis Report to reflect the proposed changes to methods and assumptions used for the radiological dose consequences calculations.

TXU Power requests approval of the proposed License Amendment and the proposed methods and assumptions for evaluating radiological consequences by October 1, 2006, to be implemented within 120 days of NRC Approval. These changes are needed to support replacement of the Unit 1 steam generators in the spring of 2007.

In accordance with 10CFR50.91(b), TXU Power is providing the State of Texas with a copy of this proposed amendment.

As noted above this communication completes the following commitment.

Number	Commitment	Due Date/Event
27301	TXU Power plans to submit the Technical Specification change to include periodic verification of control room in-leakage by September 30, 2004, or within 90 days after TSTF-448 is available for use, whichever is later	90 days after TSTF-448 is available

The Commitment number is used by TXU Power for the internal tracking of CPSES commitments.

Should you have any questions, please contact Mr. Carl B. Corbin at (254) 897-0121.

I state under penalty of perjury that the foregoing is true and correct.

Executed on August 22, 2005

Sincerely,

TXU Generation Company LP

By: TXU Generation Management Company LLC
Its General Partner

Mike Blevins

By: Fred W. Madden
Fred W. Madden
Director, Regulatory Affairs

CBC

Attachments
1. Description and Assessment
2. Markup of Technical Specifications pages
3. Markup of Technical Specifications Bases pages (for information)
4. Retyped Technical Specification pages
5. Retyped Technical Specification Bases pages (for information)
6. Markup of FSAR changes

c - B. S. Mallet, Region IV
M.C. Thadani, NRR
Resident Inspectors, CPSES

Ms. Alice Rogers
Bureau of Radiation Control
Texas Department of Public Health
1100 West 49th Street
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ATTACHMENT 1 to TXX-05127

DESCRIPTION AND ASSESSMENT

LICENSEE'S EVALUATION

1.0 DESCRIPTION

By this letter, TXU Generation Company LP (TXU Power) requests an amendment to the CPSES Unit 1 Operating License (NPF-87) and CPSES Unit 2 Operating License (NPF-89) by incorporating the attached change into the CPSES Unit 1 and 2 Technical Specifications. Proposed change LAR 05-005 is a request to revise Technical Specifications (TS), 3.7.10, "Control Room Emergency Filtration/Pressurization System (CREFS)", add Section 5.5.20, "Control Room Integrity Program," add Section 5.6.11, "Control Room Report," and update the FSAR to include new methods and assumptions for evaluation of radiological consequences for Comanche Peak Steam Electric Station (CPSES) Units 1 and 2.

2.0 PROPOSED CHANGE

The name and LCO statement of LCO 3.7.10, "Control Room Emergency Filtration/Pressurization System (CREFS)," are revised to specify that the LCO applies to both the CREFS and the Control Room Envelope (CRE). These changes are consistent with the guidelines provided in RG 1.196 and RG 1.197 (References 8.4 and 8.5, respectively).

The header for TS 3.7.10 is changed from CREFS to Control Room.

The ACTIONS of LCO 3.7.10, are revised to specify that the LCO applies to both the CREFS and the Control Room Envelope (CRE).

TS 3.7.10, ACTION A is revised by deleting the phrase "for reasons other than Condition B." This phrase is no longer needed based on changes to the other conditions.

TS 3.7.10, ACTION B, is a new ACTION for an inoperable CRE which

- requires mitigating actions to be initiated immediately,
- within 24 hours, require restoration of CRE to OPERABLE status or verify the General Design Criterion (GDC) 19 is met using the mitigating action and restore CRE to operable status within 550 days and issue a report within 90 days in accordance with Specification 5.6.11.

TS 3.7.10, ACTION D is revised to indent the "AND" for consistency with Technical Specification as described in NEI 01-03, "Writer's Guide for the Improved Standard Technical Specifications" and NUREG-1431, "Standard Technical Specifications, Westinghouse Plants," Revision 3.

TS 3.7.10, ACTION E is revised by inserting "Required Action and associated Completion Time of Condition B not met in MODE 5 or 6, or during movement of irradiated fuel assemblies OR" and delete "except for up to 14 days for a one time implementation for each unit of the Turbine Control Digital Modification to be completed during 2RF07 and 1RF10)". This addition provides consistency with changes to other conditions and removes historical information.

TS 3.7.10, ACTION F is revised by deleting the phrase "for reasons other than Condition B." This phrase is no longer needed based on changes to other conditions.

Surveillance Requirement SR 3.7.10.4 is replaced with a new surveillance requirement and frequency which adopts the requirements / format of the NRC model TS to verify that the CRE Δ P is within limits with one CREFS train in operation.

A new surveillance, SR 3.7.10.5, is added which requires verification of the CRE integrity in accordance with the Control Room Integrity Program. The Frequency is set in accordance with the Control Room Integrity Program.

A new TS 5.5.20, "Control Room Integrity Program" is added to the Administrative Controls Programs and Manuals section. This program requires the establishment of a new Program to ensure control room envelope integrity is maintained.

A new TS 5.6.11, "Control Room Envelope Report," is added to require a report within 90 days outlining the compensatory measures, the cause of Condition B in Specification 3.7.10, and the plans and schedule for restoring control room in-leakage to within the limits established in Specification 5.5.20.

Final Safety Analysis Report Chapters 1, 6, and 15 are revised to reflect new methods and assumptions for evaluating radiological consequences for design basis accidents which are adopted consistent with NRC Regulatory Guide 1.195.

In summary, TS 3.7.10 is revised to address the Control Room Envelope and update surveillances for the CREFS trains and the CRE, and new TS 5.5.20, "Control Room Integrity Program" and new TS 5.6.11 "Control Room Envelope Report" are added. The acceptance limits used for the new Control Room Integrity Program are based on the new assumptions and methodologies used to evaluate the radiological dose consequences. These new assumptions and methodologies, consistent with those provided in NRC Regulatory Guide 1.195, are presented in FSAR Chapters 1, 6, and 15.

Conforming changes are made to Technical Specification Bases 3.7.10.

3.0 BACKGROUND

In response to Reference 8.1, TXU Power, via Reference 8.2, committed to submitting a Technical Specification change to include periodic verification of control room leakage. This submittal satisfies that commitment.

CPSES is adopting new methods and assumptions as described in Regulatory Guide 1.195, "Methods and Assumptions for Evaluating Radiological Consequences of Design Accidents at Light-Water Nuclear Power Reactors," May 2003 (Reference 8.3) for the calculations of the radiological dose consequences, both to the public and in compliance with 10 CFR 50, Appendix A, GDC 19. These new methods and assumptions, to be presented in FSAR Chapters 1, 6 and 15, are also included for approval. The acceptance limits used in the new Control Room Integrity Program will be based on the assumptions of the radiological dose consequences calculations.

Previous discussions with NRC staff members indicated that adoption of the RG 1.195 methodology is contingent on adoption of RG 1.196, "Control Room Habitability at Light-Water Nuclear Power Reactors," May 2003, and RG 1.1.97 "Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors," May 2003. Unless otherwise identified, the proposed Technical Specification changes are consistent with the guidance of these two documents.

The current Technical Specifications require that the control room ventilation system be capable of maintaining positive pressure in the control room relative to adjacent areas. The Bases for this specification states that it maintains and verifies the integrity of the control room envelope and the assumed in-leakage rates of potentially contaminated air. Integrated in-leakage testing has been performed at CPSES and demonstrated that the measured unfiltered rates were zero. The filtered air in-leakage was slightly greater than the in-leakage rates originally assumed in the safety analyses. While CPSES, which has a positive pressure control room, has passed its positive pressure surveillance acceptance criteria, this testing did not verify the assumed in-leakage rate.

As noted in Reference 8.2, TXU Power plans to complete a plant modification (to install bubble tight dampers) to reduce the level of filtered air in-leakage by the end of 2005.

4.0 TECHNICAL ANALYSIS

The proposed Technical Specification changes are consistent with the guidance of RG 1.196 and include the testing guidance of RG 1.197. The proposed changes will modify the TS to address the potential for excessive control room in-leakage that could increase the radiation exposure to the operators. These proposed changes will establish a Control Room Integrity Program (TS 5.5.20) that will contain several programmatic elements that work together to maintain the control room habitability requirements that are specified in 10 CFR50, Appendix A, GDC 19. A new Surveillance Requirement is added to invoke this Program. The modified SR 3.7.10.4 verifies the ability of the control room ventilation system to pressurize the control room with one CREFS train in operation. With the CREFS pressurizing the CRE with respect to adjacent areas, in-leakage sources are limited to only a small amount of welded seamed duct work, and instrument air and service air piping and lines passing through the envelope. New tests will monitor these possible sources of unfiltered in-leakage. The requirements represent a more comprehensive approach to control room habitability. Thus, these changes to the TS are consistent with the current knowledge and experience in those areas that need to be controlled to assure a habitable post-accident environment for the control room operators.

The new TS 3.7.10 ACTION B.2.2.3, with a 550 day completion time, is appropriate for exceeding the control room in-leakage limits when control room habitability can still be maintained with mitigating actions. This rationale is described in the BASES for the new Condition B. The 550 day completion time recognizes that the GDC requirements remain satisfied, and the mitigating actions that are implemented assure continued protection of the control room operators. The existing action for an inoperable control room boundary applies when control room habitability cannot meet the GDC limits even with mitigating actions. In this case, the existing 24 hour Completion Time is appropriate. New TS 5.6.11, "Control Room Report," is appropriate for providing written notification to the NRC to discuss the cause of Condition B and the plans for restoring the CRE to operable status.

The surveillance interval for the new SR 3.7.10.4 begins upon completion of the last performance of the old SR 3.7.10.4 prior to implementation of this amendment.

The initial performance of the periodic test for the proposed SR 3.7.10.5 will be no later than December 31, 2007 (the baseline for the periodic test was performed in December 2001). The frequency of subsequent self-assessments and periodic tests will be in accordance with Figure 1, "Periodic Testing and Assessment Schedule," of NRC Regulatory Guide 1.197, May 2003.

The radiological dose consequences, both to the general public and to the control room operators, are updated consistent with Regulatory Guideline 1.195. The assumptions and acceptance limits used in the evaluations of the dose consequences apply to both CPSES units using the original steam generator designs as well as the replacement steam generators to be placed in Unit 1 during the spring of 2007. These methodologies, assumptions, and acceptance limits are described in the enclosed revisions to FSAR Chapters 1, 6 and 15.

In summary the proposed changes are acceptable and assure safe occupancy of the control room during normal operations and under abnormal and accident conditions.

5.0 REGULATORY SAFETY ANALYSIS

5.1 No Significant Hazards Consideration

TXU Power has evaluated whether or not a significant hazards consideration is involved with the proposed amendment(s) by focusing on the three standards set forth in 10CFR50.92, "Issuance of amendment," as discussed below:

1. Do the proposed changes involve a significant increase in the probability or consequences of an accident previously evaluated?

   Response: No

   The proposed change addresses the Control Room Envelope (CRE), including updated surveillances for the Control Room Emergency Filtration/Pressurization System (CREFS) trains and the CRE, a new TS 5.5.20, "Control Room Integrity Program," and a new TS 5.6.11, "Control Room Report." These changes are consistent with the guidance in Regulatory Guides 1.196 and 1.197. New methods and assumptions for evaluating radiological consequences for design basis accidents are adopted consistent with NRC Regulatory Guide 1.195. The acceptance limits for the Control Room Integrity Program are based on these revised radiological dose consequences calculations. The proposed changes do not adversely affect accident initiators or precursors nor alter the configuration of the facility. The proposed changes do not alter or prevent the ability of structures, systems, and components (SSCs) from performing their intended function to mitigate the consequences of an initiating event to within the Regulatory Guide 1.195 acceptance limits. This activity is a revision to the Technical Specifications and the supporting radiological dose consequences analyses for the control room ventilation system which is a mitigating system designed to minimize in-leakage into the control room and to filter the control room atmosphere to protect the control room operators following accidents previously analyzed. An important part of the system is the control room envelope (CRE). The CRE integrity is not an initiator or precursor to any accident previously evaluated. Therefore the probability of occurrence of any accident previously evaluated is not increased. Performing tests and implementing programs that verify the integrity of the CRE and control room habitability ensure mitigation features are capable of performing the assumed function.

The revised radiological consequences analyses, performed using the assumptions and methodologies presented in Regulatory Guidance 1.195, do not result in significant increases in the radiological dose consequences to the general public nor to the control room operators. All calculated dose consequences are within acceptance limits of Regulatory Guide 1.195.

Therefore, the proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Do the proposed changes create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No

The proposed changes will not alter the requirements of the control room ventilation system or its function during accident conditions. No new or different accidents result from performing the new revised actions and surveillances or programs required. The changes do not involve a physical alteration of the plant (i.e., no new or different type of equipment will be installed) or a change in the methods governing normal plant operation which could create the possibility of a new or different kind of accident. The proposed changes are consistent with the safety analysis assumptions and current plant operating practices. Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any previously evaluated.

3. Do the proposed changes involve a significant reduction in a margin of safety?

Response: No

The proposed changes do not alter the manner in which safety limits, limiting safety system settings or limiting conditions for operation are determined. The safety analysis acceptance criteria are not affected by these changes. The proposed changes will not result in plant operation in a configuration outside the design basis for an unacceptable period of time without mitigating actions. The proposed changes do not affect systems that are required to respond to safely shutdown the plant and to maintain the plant in a safe shutdown condition.

Therefore the proposed change does not involve a reduction in a margin of safety.

Based on the above evaluations, TXU Power concludes that the proposed amendment presents no significant hazards under the standards set forth in 10CFR50.92(c) and, accordingly, a finding of 'no significant hazards consideration' is justified.

5.2 Applicable Regulatory Requirements/Criteria

The proposed changes to the CPSES Technical Specifications will ensure that the requirements contained in 10 CFR 50, Appendix A, GDC 19 are maintained , as described in sections 1.0, 3.0, and 4.0 of this Attachment.

Regulatory Guideline 1.195, "Methods and Assumptions for Evaluating Radiological Consequences of Design Basis Accidents at Light-Water Nuclear Power Reactors, May 2003

Regulatory Guideline 1.196, "Control Room Habitability at Light-Water Nuclear Power Reactors," May 2003

CPSES has reviewed the guidance provided in RG 1.196, "Control Room Habitability at Light-Water Nuclear Power Reactors," May 2003. After approval of this License Amendment Request CPSES will comply with this RG with the following exceptions:

1. An acceptable alternative to the specific TS change identified in RG 1.196 is used which includes CRE integrity testing and periodic assessments. A Control Room Integrity Program is implemented.

2. CPSES currently is using RG 1.52, Revision 1 for the control room design. CPSES used Revision 2 for testing only.

3. CPSES uses RG 1.140 as information only for non-safety related air filtration systems.

Regulatory Guideline 1.197, "Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors," May 2003

CPSES will use RG 1.197 dated May 2003 for testing of the CRE. CPSES successfully completed comparison testing as described in section 1.2 of RG 1.197. Individual component tests will be performed in the future to determine the total CRE leakage as necessary. If future design changes warrant another ASTM E741 test, it will be performed with the exceptions as defined in NEI 99-03 Revision 1, Appendix EE.

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

6.0 ENVIRONMENTAL CONSIDERATION

TXU Power has determined that the proposed amendment would change requirements with respect to the installation or use of a facility component located within the restricted area, as defined in 10CFR20, or would change an inspection or surveillance requirement. TXU Power has evaluated the proposed changes and has determined that the changes do not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amount of effluent that may be released offsite, or (iii) a significant increase in the individual or cumulative occupational radiation exposure. Accordingly, the proposed change meets the eligibility criterion for categorical exclusion set forth in 10CFR51.22(c)(9). Therefore, pursuant to 10CFR51.22(b), an environmental assessment of the proposed change is not required.

7.0. PRECEDENTS

7.1 Joseph M. Farley Nuclear Plant, Units 1 and 2 RE: Issuance of Amendments 166 and 158 (TAC NOS. MC4186 and MC4187), September 30, 2004.

8.0 REFERENCES

8.1 NRC Generic Letter 2003-01 "Control Room Habitability," June 12, 2003

8.2 TXU Power letter from M. R. Blevins to the NRC Document Control Desk, "Response to Request For Information On Generic Letter 2003-001, Control Room Habitability (TXX-03158) dated December 4, 2003.

8.3 NRC Regulatory Guide 1.195, "Methods and Assumptions for Evaluating Radiological Consequences of Design Accidents at Light-Water Nuclear Power Reactors," May 2003.

8.4 NRC Regulatory Guideline 1.196, "Control Room Habitability at Light-Water Nuclear Power Reactors," May 2003.

8.5 NRC Regulatory Guideline 1.197, "Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors," May 2003.

ATTACHMENT 2 to TXX-05127

PROPOSED TECHNICAL SPECIFICATION CHANGES (MARK-UP)

Pages iii
3.7-23
3.7-24
3.7-25
5.0-28a
5.0-36a

and Control Room Envelope (CRE)

TABLE OF CONTENTS (continued)

(continued)

Control Room Emergency Filtration/Pressurization System (CREFS) trains and Control Room Envelope (CRE)

3.7 PLANT SYSTEMS

3.7.10 Control Room Emergency Filtration/Pressurization System (CREFS) and Control Room Envelope

LCO 3.7.10 Two CREFS trains shall be OPERABLE

NOTE
The Control Room boundary Envelope may be opened intermittently under administrative controls.

APPLICABILITY: MODES 1, 2, 3, 4, 5, and 6, During movement of irradiated fuel assemblies | 66

ACTIONS

INSERT A

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One CREFS train inoperable for reasons other than Condition B.	A.1	Restore CREFS train to OPERABLE status.	7 days
B. Two CREFS Trains inoperable due to inoperable Control Room boundary in MODES 1, 2, 3, and 4.	B.1	Restore control room boundary to OPERABLE status.	24 hours OR 14 days for a one time implementation for each unit of the Turbine Control Digital Modification to be completed during 2RF07 and 1RF10
C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, 3, or 4.	C.1 AND C.2	Be in MODE 3. Be in MODE 5.	6 hours 36 hours

108 (margin, Condition A)
108 (margin, Condition B)

(continued)

Control Room → CREFS
3.7.10

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. Required Action and associated Completion Time of Condition A not met in MODE 5 or 6, or during movement of irradiated fuel assemblies.	D.1	Place OPERABLE CREFS train in emergency recirculation mode.	Immediately
	OR		
	D.2.1	Suspend CORE ALTERATIONS.	Immediately
	AND		
	D.2.2	Suspend movement of irradiated fuel assemblies.	Immediately
INSERT B E. Two CREFS trains inoperable in MODE 5 or 6, or during movement of irradiated fuel assemblies except for up to 14 days for a one time implementation for each unit of the Turbine Control Digital Modification to be completed during 2RF07 and 1RF10.	E.1	Suspend CORE ALTERATIONS.	Immediately
	AND		
	E.2	Suspend movement of irradiated fuel assemblies.	Immediately
F. Two CREFS trains inoperable in MODE 1, 2, 3, or 4 for reasons other than Condition B.	F.1	Enter LCO 3.0.3.	Immediately

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SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.10.1	Operate each CREFS train's Emergency Pressurization Unit for ≥ 10 continuous hours with the heaters operating and Emergency Filtration Unit ≥ 15 minutes.	31 days
SR 3.7.10.2	Perform required CREFS testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with VFTP
SR 3.7.10.3	Verify each CREFS train actuates on an actual or simulated actuation signal.	18 months
SR 3.7.10.4	Verify one CREFS train can maintain a positive pressure of ≥ 0.125 inches water gauge, relative to the adjacent areas during the emergency recirculation mode of operation at a makeup flow rate of ≤ 800 cfm.	~~18~~ 24 months on a STAGGERED TEST BASIS
SR 3.7.10.5	Verify CRE integrity in accordance with the CRIP.	In accordance with the CRIP

Verify CRE ΔP within the limits of the Control Room Integrity Program (CRIP).

5.5 Programs and Manuals (continued)

5.5.19 Battery Monitoring and Maintenance Program 113

This Program provides for restoration and maintenance, based on the recommendations of IEEE Standard 450, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications," or of the battery manufacturer for the following:

a. Actions to restore battery cells with float voltage < 2.13 V, and

b. Actions to equalize and test battery cells that had been discovered with electrolyte level below the top of the plates.

INSERT C

5.6 Reporting Requirements (continued)

5.6.10 Steam Generator Tube Inspection Report (continued)

d. For implementation of the voltage based repair criteria to tube support plate intersections, notify the staff prior to returning the steam generators to service should any of the following conditions arise: 70

1. If estimated leakage based on the projected end-of-cycle (or if not practical, using the actual measured end-of-cycle) voltage distribution exceeds the leakage limit (determined from the licensing basis dose calculation for the postulated main steam line break) for the next operating cycle.

2. If circumferential crack-like indications are detected at the tube support plate intersections.

3. If indications are identified that extend beyond the confines of the tube support plate.

4. If indications are identified at the tube support plate elevations that are attributable to primary water stress corrosion cracking.

5. If the calculated conditional burst probability based on the projected end-of-cycle (or if not practical, using the actual measured end-of-cycle) voltage distribution exceeds 1×10^{-2}, notify the NRC and provide an assessment of the safety significance of the occurrence.

INSERT D →

Insert A (page 3.7-23)

B. CRE inoperable	B.1 Initiate mitigating actions. AND B.2.1 Restore CRE to OPERABLE status. OR B.2.2.1 Enter Specification 5.6.11 AND B.2.2.2 Verify General Design Criteria (GDC) 19 met using mitigating actions in B.1 AND B.2.2.3 Restore CRE to OPERABLE status.	Immediately 24 hours Immediately 24 hours 550 days

Insert B (page 3.7-24)

Required Action and associated Completion Time of Condition B not met in MODE 5 or 6, or during movement of irradiated fuel assemblies.

OR

Insert C (page 5.0-28a)

5.5.20 Control Room Integrity Program

A Control Room Integrity Program (CRIP) shall be established and implemented to ensure that the control room integrity is maintained such that a radiological event or a fire challenge (e.g., fire byproducts, halon, etc.) will not prevent the control room operators from controlling the reactor during normal or accident conditions. The program shall require testing as outlined below. Testing should be performed when changes are made to structures, systems and components, which could impact Control Room Envelope (CRE) integrity. These structures, systems and components may be internal or external to the CRE. Testing should also be conducted following a modification or a repair that could affect CRE in-leakage. Testing should also be performed if the conditions associated with a particular challenge result in a change in operating mode, system alignment or system response that could result in a new limiting condition. Testing should be commensurate with the type and degree of modification or repair. Testing should be conducted in the alignment that results in the greatest consequence to the operators.

A CRIP shall be established to implement the following:

a. Demonstrate, using Regulatory Guide (RG) 1.197, that CRE in-leakage is less than the value specified in the licensee program in the pressurized mode of operations. Testing should be performed at frequencies specified in R.G. 1.197 Revision 0.

b. Maintain CRE configuration control, management of breeches, and a preventative maintenance program. SR 3.7.10.4 documents and trends the CRE differential pressure relative to the adjacent areas compared to the values measured at the time the initial ASTM E741 baseline test was performed. A self assessment of the CPSES procedures and activities that maintain the CRE design basis should be performed at the frequencies specified in R.G. 1.197, Revision 0.

The provisions of SR 3.0.2 are applicable to the control room in-leakage testing frequencies.

Insert D (page 5.0-36a)

5.6.11 Control Room Report

Submit a report within 90 days of entering TS 3.7.10 Condition B, Required Action B.2.2, outlining the compensatory measures, the cause of Condition B in Specification 3.7.10, and the plans and schedule for restoring the CRE to operable status in accordance with CRIP in Specification 5.5.20.

ATTACHMENT 3 to TXX-05127

PROPOSED TECHNICAL SPECIFICATION BASES CHANGES
(Markup For Information Only)

and Control Room Envelope (CRE)

TABLE OF CONTENTS (continued)

Control Room
CREFS

B 3.7 PLANT SYSTEMS

B 3.7.10 Control Room Emergency Filtration/Pressurization System (CREFS)

BASES

BACKGROUND

The CREFS provides a protected environment from which operators can control the unit following an uncontrolled release of radioactivity.

INSERT E

The CREFS consists of two independent, redundant trains that pressurize, recirculate and filter the control room air. Each train contains two filtration units: an emergency pressurization unit and an emergency filtration unit. Each filtration unit consists of a prefilter, high efficiency particulate air (HEPA) filters, an activated charcoal adsorber section for removal of gaseous activity (principally iodines), and a fan. Ductwork, valves or dampers, and instrumentation also form part of the system, as well as demisters to remove water droplets from the air stream. A second bank of HEPA filters follows the adsorber section to collect carbon fines and provide backup in case of failure of the main HEPA filter bank. In addition, the emergency pressurization units contain a demister and a heater to maintain the humidity of the incoming air below 70%.

The CREFS is an emergency system wholly contained within the Control Room Air Conditioning System, parts of which operate during normal unit operations. Upon receipt of the actuating signal(s), normal air supply fans to the control room are isolated, and the stream of ventilation air is provided by the emergency pressurization units and then recirculated through the emergency filtration units. The demisters and heaters in the emergency pressurization units remove any large particles in the air, and any entrained water droplets present, to prevent excessive loading of the HEPA filters and charcoal adsorbers. Continuous operation of each train's emergency pressurization unit for at least 10 hours per month, with the heaters on, reduces moisture buildup on the HEPA filters and adsorbers. Both the demister and heater are important to the effectiveness of the charcoal adsorbers.

(continued)

A single CREFS Train provides makeup air flow and radiological dose cleanup for the control room.

BASES (continued)

BACKGROUND (continued)

Actuation of the CREFS by a Safety Injection, Loss of Offsite Power or Intake Vent High Radiation signal places the system in the emergency recirculation mode. Actuation of the system to the emergency recirculation mode of operation, closes the unfiltered outside air supply path and the system exhaust dampers, stops normal supply and exhaust fans, and aligns the system for recirculation of the control room air through the redundant trains of HEPA and the charcoal filters. The emergency recirculation mode also initiates pressurization and filtered ventilation of the air supply to the control room.

Outside air is filtered, and added to the air being recirculated from the control room. Pressurization of the control room prevents infiltration of unfiltered air from the surrounding areas of the plant.

The air entering the control room is continuously monitored by radiation detectors. One detector output above the setpoint will cause actuation of the emergency recirculation mode.

A single train will pressurize the control room to about 0.125 inches water gauge. The CREFS operation in maintaining the control room habitable is discussed in the FSAR, Sections 2.2, 6.4, 6.5, 7.3, and 9.4 (Ref. 1).

The CPSES CREFS design is zone isolation, with filtered recirculation air, and with a positive pressure. This design maximizes the iodine protection factors and minimizes the dose from iodine. The total unfiltered infiltration rate in the control room is conservatively assumed to be 12 cfm, including 10 cfm due to ingress/egress and 2 cfm leakage from the ductwork passing through the control room pressure boundary. Filtered inleakage through the closed dampers due to the pressure differential is also included. The damper leakage air will be filtered by the recirculation filtration units. 27

Because the control room door ingress/egress is to a stairwell which is equivalent to a two-door vestibule, backflow will not occur with the CPSES CREFS design and the 10 cfm is not applicable per SRP 6.4. The ductwork has all welded joints which were leak tested prior to operation. Therefore, the assumed unfiltered inleakage from adjacent areas is conservative with respect to the SRP review criteria.

The Control Room Habitability is maintained by limiting the inleakage of potentially contaminated air into the Control Room Envelope. The potential leakage paths for the Control Room Envelope include the control room enclosure (e.g., walls, penetrations, floors, ceilings, joints, etc.), and other potential paths such as pressurized ductwork from other HVAC systems, pressurized air systems (e.g., instrument air) or isolated HVAC intakes.

The periodic surveillance pressurization tests verify the integrity of the control room enclosure with respect to potentially contaminated adjacent

(continued)

Control Room → CREFS

BASES (continued)

by SR 3.7.10.5

BACKGROUND (continued)

areas in accordance with SRP 6.4. It does not verify filtered inleakage internal to the filtration units and ductwork nor does it verify unfiltered inleakage from internal pressurized sources (e.g. instrument air). These sources of inleakage are addressed separately from TS surveillances. 27

Redundant supply and recirculation trains provide the required filtration should an excessive pressure drop develop across the other filter train. The CREFS is designed in accordance with Seismic Category I requirements.

INSERT F

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.

within the CRE

APPLICABLE SAFETY ANALYSES

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

CRE

INSERT G

The Control Room post accident mode of operation is the emergency recirculation mode. In the emergency recirculation mode, both the Emergency Filtration and Emergency Pressurization Units are functioning and they operate in series. In other words, all air which passes through the Emergency Pressurization Unit in each train will pass through the corresponding Emergency Filtration Unit before it is released into the Control Room. The safety analysis which confirmed the CREFS design took credit for no more than 99% filter efficiency of the Emergency Filtration Units only. If the Emergency Pressurization Units do not meet the surveillance requirement criteria for filtration the safety analyses and the associated acceptance criteria continue to be met by the Emergency Filtration Units. Thus, the operators will continue to be provided the protection identified in the licensing bases for CPSES.

The analysis of toxic gas releases demonstrates that the toxicity limits are not exceeded in the control room following a toxic chemical release, as presented in Reference 1. Isolation of the control room is not automatic for a toxic chemical release event.

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 10CFR50.36(c)(2)(ii).

(continued)

BASES (continued)

LCO

Two independent and redundant CREFS trains are required to be OPERABLE to ensure that at least one is available assuming a single failure disables the other train. Total system failure could result in exceeding a dose of 5 rem to the control room operator in the event of a large radioactive release.

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 both filtration units (i.e., the emergency pressurization unit (EPU) and emergency filtration unit (EFU)) are OPERABLE. A filtration unit 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 (the EFU must meet Ventilation Filter Testing Program (VFTP) requirements; the EPU must meet VFTP requirements, except for filtration requirements); and

c. Heater (EPU only), demister (EPU only), ductwork, valves, and dampers are OPERABLE, and air circulation can be maintained.

INSERT H

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

The LCO is modified by a Note allowing the Control Room boundary to be opened intermittently under administrative controls. For entry and exit through doors the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings these controls consist of stationing a dedicated individual at the opening who is in continuous communication with the control room. This individual will have a method to rapidly close the opening when needed for control room isolation.

(continued)

Control Room → CREFS
B.3.7.10

BASES (continued)

and the CRE

APPLICABILITY

In MODES 1, 2, 3, 4, 5, 6, and during movement of irradiated fuel assemblies CREFS must be OPERABLE to control operator exposure during and following a DBA.

and the CRE

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

ACTIONS

A.1

When one CREFS train is inoperable for reasons other than Condition B, 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 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. 31

B.1

B.1, B.2.1, B.2.2.1, B.2.2.2 and B.2.2.3

INSERT I →

If the control room boundary is inoperable in MODES 1, 2, 3, and 4 such that the CREFS trains can not establish or maintain the required pressure, action must be taken to restore an OPERABLE control room boundary within 24-hours. The 24 hour completion time is reasonable based on the low probability of a DBA occurring during this time period, and the availability of CREFs to provide a filtered environment (albeit with potential control room inleakage).

A temporary Completion Time is connected to the Completion Time requirements of 24 hours. The temporary Completion Time is 14 days and applies to the implementation of the Turbine Control Digital Modification for each unit during 2RF07 and 1RF10. 31

(continued)

Control Room → CREFS

BASES

ACTIONS (continued)

C.1 and C.2

CRE

In MODE 1, 2, 3, or 4, if the inoperable CREFS train or control room 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.

D.1, D.2.1, and D.2.2

In MODE 5 or 6, or 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 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 D.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.

E.1 and E.2

In MODE 5 or 6, or during movement of irradiated fuel assemblies, with two CREFS trains inoperable ~~except for up to 14 days for a one time implementation for each unit of the Turbine Control Digital Modification to be completed during 2RF07 and 1RF10~~, 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. 31

(continued)

if an inoperable CRE cannot be restored to OPERABLE status within the required Completion Time or

BASES

ACTIONS (continued)

F.1

If both CREFS trains are inoperable in MODE 1, 2, 3, or 4, for reasons other than an inoperable control room boundary (i.e., Condition B), the CREFS 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.

SURVEILLANCE REQUIREMENTS

SR 3.7.10.1

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, 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. Filtration units with heaters must be operated for ≥ 10 continuous hours with the heaters energized. Filtration units without heaters need only be operated for ≥ 15 minutes 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.

SR 3.7.10.2

This SR verifies that the required CREFS testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). The CREFS filter tests are in accordance with Regulatory Guide 1.52 (Ref. 3). 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.

The VFTP filtration testing requirements of Sections 5.5.11a, b, and c are not required for an Emergency Pressurization Unit when being testing (1) during a periodic test (e.g., 18 months or after 720 hours of operation), (2) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (3) following painting, fire, or chemical release for the corresponding CREFS train to be OPERABLE.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.10.3

This SR verifies that each CREFS train starts and operates on an actual or simulated Safety Injection, Loss-of-Offsite Power, or Intake Vent-High Radiation actuation signal. The Frequency of 18 months is specified in Regulatory Guide 1.52 (Ref. 3). Each actuation signal must be verified (overlapping testing is acceptable).

SR 3.7.10.4

INSERT J

This SR verifies the capability of the CREFS to pressurize the control room envelope. The control room positive pressure, with respect to potentially contaminated adjacent areas, is periodically tested to verify this function of the CREFS. During the emergency recirculation mode of operation, the CREFS is designed to pressurize the control room ≥ 0.125 inches water gauge positive pressure with respect to adjacent areas in order to minimize unfiltered inleakage. The CREFS is designed to maintain this positive pressure with one train at a makeup flow rate of ≤ 800 cfm. The Frequency of 18 months on a STAGGERED TEST BASIS is consistent with the guidance provided in NUREG-0800 (Ref. 4). 27 27 1

INSERT K

REFERENCES

1. FSAR, Sections 2.2, 6.4, 6.5, 7.3, and 9.4.
2. FSAR, Chapters 1, 6, and 15.
3. Regulatory Guide 1.52, Rev. 2.
4. NUREG-0800, Section 6.4, Rev. 2, July 1981.

INSERT L

Insert E (page B 3.7-54)

This environment is protected by the integrity of the Control Room Envelope (CRE) and the operation of the Control Room Emergency Filtration/Pressurization System (CREFS). The Unit 1 and 2 control room is a common room served by a shared CREFS.

The control room boundary is the combination of walls, floor, roof, ducting, dampers, doors, and penetrations that physically form the CRE. The CRE is the area within the confines of the control room boundary that contains the spaces that control room operators inhabit to control the plant. This space is protected for normal operation, natural events, and accident conditions.

Maintaining the integrity of the CRE minimizes the infiltration of unfiltered air from areas adjacent to the CRE, thereby minimizing the possibility that the effects of a radiological challenge would result in a radiological dose which exceeds the limits of General Design Criteria (GDC) 19. It also minimizes the possibility that a fire challenge would result in a condition where the operator would be disabled or impaired such that the reactor could not be controlled from the control room. While the CRE provides a boundary for the CREFS to operate in, the CRE is independent from the CFEFS, and its OPERABILTY requirements are separate from the CREFS requirements.

Insert F (page B 3.7-56)

An inoperable CRE does not render the CREFS inoperable or vice versa. The OPERABILITY of the CREFS and the CRE are determined separately and both are required to be OPERABLE.

Insert G (page B 3.7-56)

Maintaining the integrity of the CRE limits the quantity of contaminants allowed into the CRE so that the radiological dose criteria of GDC 19 are met. The analysis of toxic gas release demonstrates that the toxicity limits are not exceeded in the control room. Maintaining the integrity of the CRE helps to ensure that the control room operators may maintain reactor control from the control room.

Insert H (page B 3.7-57)

In addition, the CRE must be maintained, including the integrity of the walls, floors, ceilings, ductwork, and access doors. In-leakage must also be minimized such that operator exposure limits are not exceeded.

The LCO is modified by a Note allowing the CRE to be opened intermittently under administrative controls. For entry and exit through doors the administrative control of the opening is performed by the4 person(s) entering or exiting the area. For maintenance access openings, such as penetration blockouts, hatches and test ports, the administrative control of the opening is performed by the attendant persons performing the maintenance. For other openings, these controls consist of stationing a dedicated individual at the opening who is in a continuous communication with the control room. This individual will have a method to rapidly close the opening when a need for control room integrity is indicated.

Insert I (page B 3.7-58)

If the CRE is inoperable, the operator protection analyses assumption of in-leakage may be exceeded. During the period that the CRE is inoperable, mitigating actions must be initiated to protect control room operators from potential hazards. These mitigating actions (i.e., actions that are taken to offset the consequences of the inoperable CRE) should be preplanned for initiation upon entry into the condition.

Within 24 hours of entry into Condition B, Actions must be taken to restore the CRE to OPERABLE status or to verify that the requirements of GDC 19 are met for the facility. GDC 19 is verified to be met by limiting dose from radioactive gas and particulates to levels that support control room habitability, crediting, as necessary, the mitigating actions required by Required Action B.2. The 24 hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, the use of mitigating actions, and the time necessary to perform an assessment.

If it is determined that the requirements of GDC 19 are met crediting, as necessary, the mitigating actions required by Required Action B.1, 550 days are provided to return the CRE to OPERABLE status. The 550 day Completion Time is a reasonable time to diagnose, plan, and repair most problems with the CRE.

If the CRE is inoperable for more than 24 hours and mitigating actions are used to meet GDC 19, action B.2.2.1 requires that a report be submitted to the NRC within 90 days. This report details the cause of Condition B in Specification 3.7.10 and the plan to restore the CRE to operable status.

Insert J (page B 3.7-61)

This SR verifies that the CRE ΔP can be maintained within limits defined in the Control Room Integrity Program (CRIP) with one CREFS train in operation. If the requirements of this SR cannot be met, a determination must be made as to the cause of the failure. Once identified, the appropriate Condition (for either the CREFS or the CRE) must be entered. For example, if the failure is due to a breach in the integrity of the CRE, the Condition for an inoperable CRE would be entered but the Condition for an inoperable CREFS would not be entered. An inoperable CRE does not render the CREFS inoperable or vice versa. The frequency of 24 months on a STAGGERED TEST BASIS is adequate and has been shown to be acceptable by operating experience.

Insert K (page B 3.7-61)

SR 3.7.10.5

This SR verifies the integrity of the CRE by requiring testing for control room in-leakage. The details of the in-leakage testing are contained in the CRIP.

Insert L (page B 3.7-61)

5. NRC Regulatory Guide 1.195, "Methods and Assumptions for Evaluating Radiological Consequences of Design Accidents at Light-Water Nuclear Power Reactors," May 2003.

6. NRC Regulatory Guideline 1.196, "Control Room Habitability at Light-Water Nuclear Power Reactors," May 2003.

7. NRC Regulatory Guideline 1.197, "Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors," May 2003.

ATTACHMENT 4 to TXX-05127

RETYPED TECHNICAL SPECIFICATION PAGES

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3.7-25
5.0-28a
5.0-36a

TABLE OF CONTENTS (continued)

(continued)

3.7 PLANT SYSTEMS

3.7.10 Control Room Emergency Filtration/Pressurization System (CREFS) and Control Room Envelope (CRE)

LCO 3.7.10 Two Control Room Emergency Filtration/Pressurization System (CREFS) trains and Control Room Envelope (CRE) shall be OPERABLE

-----NOTE-----
The Control Room Envelope may be opened intermittently under administrative controls.

APPLICABILITY: MODES 1, 2, 3, 4, 5, and 6,
During movement of irradiated fuel assemblies

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CREFS train inoperable.	A.1 Restore CREFS train to OPERABLE status.	7 days
B. CRE inoperable	B.1 Initiate mitigating actions.	Immediately
	AND	
	B.2.1 Restore CRE to OPERABLE status.	24 hours
	OR	
	B.2.2.1 Enter Specification 5.6.11.	Immediately
	AND	
	B.2.2.2 Verify General Design Criteria (GDC) 19 met using mitigating actions in B.1.	24 Hours
	AND	
	B.2.2.3 Restore CRE to OPERABLE status.	550 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, 3, or 4.	C.1	Be in MODE 3.	6 hours
	AND		
	C.2	Be in MODE 5.	36 hours
D. Required Action and associated Completion Time of Condition A not met in MODE 5 or 6, or during movement of irradiated fuel assemblies.	D.1	Place OPERABLE CREFS train in Emergency recirculation mode.	Immediately
	OR		
	D.2.1	Suspend CORE ALTERATIONS.	Immediately
	AND		
	D.2.2	Suspend movement of irradiated fuel assemblies.	Immediately
E. Required Action and associated Completion Time of Condition B not met in MODE 5 or 6, or during movement of irradiated fuel assemblies. OR Two CREFS trains inoperable in MODE 5 or 6, or during movement of irradiated fuel assemblies.	E.1	Suspend CORE ALTERATIONS.	Immediately
	AND		
	E.2	Suspend movement of irradiated fuel assemblies.	Immediately
F. Two CREFS trains inoperable in MODE 1, 2, 3, or 4.	F.1	Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.10.1	Operate each CREFS train□s Emergency Pressurization Unit for ≥ 10 continuous hours with the heaters operating and Emergency Filtration Unit ≥ 15 minutes.	31 days
SR 3.7.10.2	Perform required CREFS testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with VFTP
SR 3.7.10.3	Verify each CREFS train actuates on an actual or simulated actuation signal.	18 months
SR 3.7.10.4	Verify CRE ΔP within the limits of the Control Room Integrity Program (CRIP).	24 months on a STAGGERED TEST BASIS
SR 3.7.10.5	Verify CRE integrity in accordance with the CRIP.	In accordance with the CRIP

5.5 Programs and Manuals (continued)

5.5.19 Battery Monitoring and Maintenance Program

This Program provides for restoration and maintenance, based on the recommendations of IEEE Standard 450, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications," or of the battery manufacturer for the following:

a. Actions to restore battery cells with float voltage < 2.13 V, and

b. Actions to equalize and test battery cells that had been discovered with electrolyte level below the top of the plates.

5.5.20 Control Room Integrity Program

A Control Room Integrity Program (CRIP) shall be established and implemented to ensure that the control room integrity is maintained such that a radiological event, or a fire challenge (e.g., fire byproducts, halon, etc.) will not prevent the control room operators from controlling the reactor during normal or accident conditions. The program shall require testing as outlined below. Testing should be performed when changes are made to structures, systems and components, which could impact Control Room Envelope (CRE) integrity. These structures, systems and components may be internal or external to the CRE. Testing should also be conducted following a modification or a repair that could affect CRE inleakage. Testing should also be performed if the conditions associated with a particular challenge result in a change in operating mode, system alignment or system response that could result in a new limiting condition. Testing should be commensurate with the type and degree of modification or repair. Testing should be conducted in the alignment that results in the greatest consequence to the operators.

A CRIP shall be established to implement the following:

a. Demonstrate, using Regulatory Guide (RG) 1.197, that CRE in-leakage is less than the value specified in the licensee program in the pressurized mode of operations. Testing should be performed at frequencies specified in R.G. 1.197 Revision 0.

b. Maintain CRE configuration control, management of breeches, and a preventative maintenance program. SR 3.7.10.4 documents and trends the CRE differential pressure relative to the adjacent areas compared to values measured at the time the initial ASTM E741 baseline test was performed. A self assessment of the CPSES procedures and activities that maintain the CRE design basis should be performed at the frequencies specified in R.G. 1.197, Revision 0.

The provisions of SR 3.0.2 are applicable to the control room in-leakage testing frequencies.

5.6 Reporting Requirements (continued)

5.6.10 Steam Generator Tube Inspection Report (continued)

d. For implementation of the voltage based repair criteria to tube support plate intersections, notify the staff prior to returning the steam generators to service should any of the following conditions arise:

1. If estimated leakage based on the projected end-of-cycle (or if not practical, using the actual measured end-of-cycle) voltage distribution exceeds the leakage limit (determined from the licensing basis dose calculation for the postulated main steam line break) for the next operating cycle.

2. If circumferential crack-like indications are detected at the tube support plate intersections.

3. If indications are identified that extend beyond the confines of the tube support plate.

4. If indications are identified at the tube support plate elevations that are attributable to primary water stress corrosion cracking.

5. If the calculated conditional burst probability based on the projected end-of-cycle (or if not practical, using the actual measured end-of-cycle) voltage distribution exceeds 1×10^{-2}, notify the NRC and provide an assessment of the safety significance of the occurrence.

5.6.11 Control Room Report

Submit a report within 90 days of entering TS 3.7.10 Condition B, Required Action B.2.2, outlining the compensatory measures, the cause of Condition B in Specification 3.7.10, and the plans and schedule for restoring the CRE to operable status in accordance with CRIP in Specification 5.5.20.

ATTACHMENT 5 to TXX-05127

RETYPED TECHNICAL SPECIFICATION BASES PAGES
(For Information Only)

TABLE OF CONTENTS (continued)

B 3.7 PLANT SYSTEMS

B 3.7.10 Control Room Emergency Filtration/Pressurization System (CREFS) and Control Room Envelope (CRE)

BASES

BACKGROUND

The CREFS provides a protected environment from which operators can control the unit following an uncontrolled release of radioactivity.

This environment is protected by the integrity of the Control Room Envelope (CRE) and the operation of the Control Room Emergency Filtration/Pressurization System (CREFS). The Unit 1 and 2 control room is a common room served by a shared CREFS.

The control room boundary is the combination of walls, floor, roof, ducting, dampers, doors, and penetrations that physically form the CRE. The CRE is the area within the confines of the control room boundary that contains the spaces that control room operators inhabit to control the plant. This space is protected for normal operation, natural events, and accident conditions.

Maintaining the integrity of the CRE minimizes the infiltration of unfiltered air from areas adjacent to the CRE, thereby minimizing the possibility that the effects of a radiological challenge would result in a radiological dose which exceeds the limits of General Design Criteria (GDC) 19. It also minimizes the possibility that a fire challenge would result in a condition where the operator would be disabled or impaired such that the reactor could not be controlled from the control room. While the CRE provides a boundary for the CREFS to operate in, the CRE is independent from the CREFS, and its OPERABILITY requirements are separate from the CREFS requirements.

The CREFS consists of two independent, redundant trains that pressurize, recirculate and filter the control room air. Each train contains two filtration units: an emergency pressurization unit and an emergency filtration unit. Each filtration unit consists of a prefilter, high efficiency particulate air (HEPA) filters, an activated charcoal adsorber section for removal of gaseous activity (principally iodines), and a fan. Ductwork, valves or dampers, and instrumentation also form part of the system, as well as demisters to remove water droplets from the air stream. A second bank of HEPA filters follows the adsorber section to collect carbon fines and provide backup in case of failure of the main HEPA filter bank. In addition, the emergency pressurization units contain a demister and a heater to maintain the humidity of the incoming air below 70%.

The CREFS is an emergency system wholly contained within the Control Room Air Conditioning System, parts of which operate during normal unit operations. Upon receipt of the actuating signal(s), normal air supply fans to the control room are isolated, and the stream of ventilation air is provided by the emergency pressurization units and then recirculated through the emergency filtration units. The demisters and heaters in the emergency pressurization units remove any large particles in the air, and any entrained water droplets present, to prevent excessive loading of the HEPA filters and charcoal adsorbers. Continuous operation of each train's emergency pressurization unit for at least 10 hours per month, with the heaters on, reduces moisture buildup on the HEPA filters and adsorbers. Both the demister and heater are important to the effectiveness of the charcoal adsorbers.

(continued)

BASES

BACKGROUND (continued)

Actuation of the CREFS by a Safety Injection, Loss of Offsite Power or Intake Vent High Radiation signal places the system in the emergency recirculation mode. Actuation of the system to the emergency recirculation mode of operation, closes the unfiltered outside air supply path and the system exhaust dampers, stops normal supply and exhaust fans, and aligns the system for recirculation of the control room air through the redundant trains of HEPA and the charcoal filters. The emergency recirculation mode also initiates pressurization and filtered ventilation of the air supply to the control room.

Outside air is filtered, and added to the air being recirculated from the control room. Pressurization of the control room prevents infiltration of unfiltered air from the surrounding areas of the plant.

The air entering the control room is continuously monitored by radiation detectors. One detector output above the setpoint will cause actuation of the emergency recirculation mode.

A single CREFS Train provides makeup air flow and radiological dose cleanup for the control room. The CREFS operation in maintaining the control room habitable is discussed in the FSAR, Sections 2.2, 6.4, 6.5, 7.3, and 9.4 (Ref. 1).

The CPSES CREFS design is zone isolation, with filtered recirculation air, and with a positive pressure. This design maximizes the iodine protection factors and minimizes the dose from iodine. The total unfiltered infiltration rate in the control room is conservatively assumed to be 12 cfm, including 10 cfm due to ingress/egress and 2 cfm leakage from the ductwork passing through the control room pressure boundary. Filtered inleakage through the closed dampers due to the pressure differential is also included. The damper leakage air will be filtered by the recirculation filtration units.

Because the control room door ingress/egress is to a stairwell which is equivalent to a two-door vestibule, backflow will not occur with the CPSES CREFS design and the 10 cfm is not applicable per SRP 6.4. The ductwork has all welded joints which were leak tested prior to operation. Therefore, the assumed unfiltered inleakage from adjacent areas is conservative with respect to the SRP review criteria.

The Control Room Habitability is maintained by limiting the inleakage of potentially contaminated air into the Control Room Envelope. The potential leakage paths for the Control Room Envelope include the control room enclosure (e.g., walls, penetrations, floors, ceilings, joints, etc.), and other potential paths such as pressurized ductwork from other HVAC systems, pressurized air systems (e.g., instrument air) or isolated HVAC intakes.

The periodic surveillance pressurization tests verify the integrity of the control room enclosure with respect to potentially contaminated adjacent

(continued)

BASES

BACKGROUND (continued)

areas in accordance with SRP 6.4. It does not verify filtered inleakage internal to the filtration units and ductwork nor does it verify unfiltered inleakage from internal pressurized sources (e.g. instrument air). These sources of inleakage are addressed by SR 3.7.10.5.

Redundant supply and recirculation trains provide the required filtration should an excessive pressure drop develop across the other filter train. The CREFS is designed in accordance with Seismic Category I requirements.

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.

An inoperable CRE does not render the CREFS inoperable or vice versa. The OPERABILITY of the CREFS and the CRE are determined separately and both are required to be OPERABLE.

APPLICABLE SAFETY ANALYSES

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

Maintaining the integrity of the CRE limits the quantity of contaminants allowed into the CRE so that the radiological dose criteria of GDC 19 are met. The analysis of toxic gas release demonstrates that the toxicity limits are not exceeded in the control room. Maintaining the integrity of the CRE helps to ensure that the control room operators may maintain reactor control from the control room.

The analysis of toxic gas releases demonstrates that the toxicity limits are not exceeded in the control room following a toxic chemical release, as presented in Reference 1. Isolation of the control room is not automatic for a toxic chemical release event.

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 10CFR50.36(c)(2)(ii).

(continued)

BASES (continued)

LCO

Two independent and redundant CREFS trains are required to be OPERABLE to ensure that at least one is available assuming a single failure disables the other train. Total system failure could result in exceeding a dose of 5 rem to the control room operator in the event of a large radioactive release.

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 both filtration units (i.e., the emergency pressurization unit (EPU) and emergency filtration unit (EFU)) are OPERABLE. A filtration unit 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 (the EFU must meet Ventilation Filter Testing Program (VFTP) requirements; the EPU must meet VFTP requirements, except for filtration requirements); and

c. Heater (EPU only), demister (EPU only), ductwork, valves, and dampers are OPERABLE, and air circulation can be maintained.

In addition, the CRE must be maintained, including the integrity of the walls, floors, ceilings, ductwork, and access doors. In-leakage must also be minimized such that operator exposure limits are not exceeded.

The LCO is modified by a Note allowing the CRE to be opened intermittently under administrative controls. For entry and exit through doors the administrative control of the opening is performed by the person(s) entering or exiting the area. For maintenance access openings, such as penetration blockouts, hatches and test ports, the administrative control of the opening is performed by the attendant persons performing the maintenance. For other openings, these controls consist of stationing a dedicated individual at the opening who is in a continuous communication with the control room. This individual will have a method to rapidly close the opening when a need for control room integrity is indicated.

(continued)

BASES

APPLICABILITY

In MODES 1, 2, 3, 4, 5, 6, and during movement of irradiated fuel assemblies CREFS and the CRE must be OPERABLE to control operator exposure during and following a DBA.

During movement of irradiated fuel assemblies the CREFS and the CRE must be OPERABLE to cope with the release from a fuel handling accident.

ACTIONS

A.1

When one CREFS train is inoperable, 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 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, B.2.1, B.2.2.1, B.2.2.2 and B.2.2.3

If the CRE is inoperable, the operator protection analyses assumption of in-leakage may be exceeded. During the period that the CRE is inoperable, mitigating actions must be initiated to protect control room operators from potential hazards. These mitigating actions (i.e., actions that are taken to offset the consequences of the inoperable CRE) should be preplanned for initiation upon entry into the condition.

Within 24 hours of entry into Condition B, Actions must be taken to restore the CRE to OPERABLE status or to verify that the requirements of GDC 19 are met for the facility. GDC 19 is verified to be met by limiting dose from radioactive gas and particulates to levels that support control room habitability, crediting, as necessary, the mitigating actions required by Required Action B.2. The 24 hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, the use of mitigating actions, and the time necessary to perform an assessment.

If it is determined that the requirements of GDC 19 are met crediting, as necessary, the mitigating actions required by Required Action B.1, 550 days are provided to return the CRE to OPERABLE status. The 550 day Completion Time is a reasonable time to diagnose, plan, and repair most problems with the CRE.

If the CRE is inoperable for more than 24 hours and mitigating actions are used to meet GDC 19, action B.2.2.1 requires that a report be submitted to the NRC within 90 days. This report details the cause of Condition B in Specification 3.7.10 and the plan to restore the CRE to operable status.

(continued)

BASES

ACTIONS (continued)

C.1 and C.2

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

D.1, D.2.1, and D.2.2

In MODE 5 or 6, or 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 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 D.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.

E.1 and E.2

In MODE 5 or 6, or during movement of irradiated fuel assemblies, if an inoperable CRE cannot be restored to OPERABLE status within the required Completion Time or 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.

(continued)

BASES

ACTIONS (continued)

F.1

If both CREFS trains are inoperable in MODE 1, 2, 3, or 4, the CREFS 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.

SURVEILLANCE REQUIREMENTS

SR 3.7.10.1

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, 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. Filtration units with heaters must be operated for ≥ 10 continuous hours with the heaters energized. Filtration units without heaters need only be operated for ≥ 15 minutes 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.

SR 3.7.10.2

This SR verifies that the required CREFS testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). The CREFS filter tests are in accordance with Regulatory Guide 1.52 (Ref. 3). 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.

The VFTP filtration testing requirements of Sections 5.5.11a, b, and c are not required for an Emergency Pressurization Unit when being testing (1) during a periodic test (e.g., 18 months or after 720 hours of operation), (2) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (3) following painting, fire, or chemical release for the corresponding CREFS train to be OPERABLE.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.10.3

This SR verifies that each CREFS train starts and operates on an actual or simulated Safety Injection, Loss-of-Offsite Power, or Intake Vent-High Radiation actuation signal. The Frequency of 18 months is specified in Regulatory Guide 1.52 (Ref. 3). Each actuation signal must be verified (overlapping testing is acceptable).

SR 3.7.10.4

This SR verifies that the CRE ΔP can be maintained within limits defined in the Control Room Integrity Program (CRIP) with one CREFS train in operation. If the requirements of this SR cannot be met, a determination must be made as to the cause of the failure. Once identified, the appropriate Condition (for either the CREFS or the CRE) must be entered. For example, if the failure is due to a breach in the integrity of the CRE, the Condition for an inoperable CRE would be entered but the Condition for an inoperable CREFS would not be entered. An inoperable CRE does not render the CREFS inoperable or vice versa. The frequency of 24 months on a STAGGERED TEST BASIS is adequate and has been shown to be acceptable by operating experience.

SR 3.7.10.5

This SR verifies the integrity of the CRE by requiring testing for control room in-leakage. The details of the in-leakage testing are contained in the CRIP.

REFERENCES

1. FSAR, Sections 2.2, 6.4, 6.5, 7.3, and 9.4.
2. FSAR, Chapters 1, 6, and 15.
3. Regulatory Guide 1.52, Rev. 2.
4. NUREG-0800, Section 6.4, Rev. 2, July 1981.
5. NRC Regulatory Guide 1.195, "Methods and Assumptions for Evaluating Radiological consequences of Design Accidents at Light-Water Nuclear Power Reactors," May 2003.
6. NRC Regulatory Guideline 1.196, "Control Room Habitability at Light-Water Nuclear Power Reactors," May 2003.
7. NRC Regulatory Guideline 1.197, "Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors," May 2003.