

**NUCLEAR REGULATORY COMMISSION**

**Notice of Availability of  
Technical Specification Improvement To Modify Requirements Regarding  
Control Room Envelope Habitability  
Using the Consolidated Line Item Improvement Process**

**AGENCY:** Nuclear Regulatory Commission.

**ACTION:** Notice of Availability.

**SUMMARY:** Notice is hereby given that the staff of the Nuclear Regulatory Commission (NRC) has prepared and is making available a model safety evaluation (SE) and a model no-significant-hazards-consideration (NSHC) determination relating to the modification of technical specification (TS) requirements regarding the habitability of the control room envelope (CRE) for referencing in license amendment requests (LARs). The NRC staff is also making available an associated model LAR for use by licensees to prepare such LARs. The TS modification is based on NRC staff approved changes to the improved standard technical specifications (STS) (NUREGs 1430-1434) that were proposed by the pressurized and boiling water reactor owners groups' Technical Specifications Task Force (TSTF) on behalf of the commercial nuclear electrical power generation industry, in STS change traveler TSTF-448, Revision 3 (Rev 3). Previously, on October 17, 2006, drafts of the model SE, model NSHC determination, and model LAR were published in the *Federal Register* for public comment (71 FR 61075). Based on its evaluation of the public comments received in response to that notice, the NRC staff made appropriate changes to the models, and is including the final versions of the models in this notice. This notice also contains a description of each public comment and its disposition by the NRC staff. Based on its evaluation of the public comments,

the NRC staff has decided to announce the availability of the model SE and model NSHC determination to licensees for referencing in LARs to adopt TSTF-448, Rev 3, using the consolidated line item improvement process (CLIP). An LAR that references the model SE and model NSHC determination will permit the NRC to efficiently process a license amendment that proposes to adopt the changes in TSTF-448, Rev 3. Licensees of nuclear power reactors proposing to adopt these changes should follow the guidance in the model LAR and confirm the applicability of the model SE and model NSHC determination to their reactors.

**DATES:** The NRC staff hereby announces that the attached model SE and model NSHC determination (which differ only slightly from the versions previously published) may be referenced in plant specific applications to adopt the improved CRE habitability TS requirements. The staff has also posted the model LAR (which also differs only slightly from the versions previously published) on the NRC web site to assist licensees in using the CLIP to apply for the proposed TS change. The NRC staff can most efficiently consider applications based upon the model application if the application is submitted within a year of this Federal Register Notice.

**FOR FURTHER INFORMATION CONTACT:** C. Craig Harbuck, Mail Stop: O-12H2, Technical Specifications Branch, Division of Inspection and Regional Support, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, telephone 301-415-3140.

**SUPPLEMENTARY INFORMATION:**

#### **Background**

**Regulatory Issue Summary 2000-06, "Consolidated Line Item Improvement Process for Adopting Standard Technical Specification Changes for Power Reactors,"**

was issued on March 20, 2000. The consolidated line item improvement process (CLIIP) is intended to improve the efficiency of NRC licensing processes by processing proposed changes to the improved standard technical specifications (STS) (NUREGs 1430-1434) in a manner that supports subsequent license amendment requests (LARs) from licensees. The CLIIP includes an opportunity for the public to comment on a proposed change to the STS after a preliminary assessment by the NRC staff and a finding that the change will likely be offered for adoption by licensees. The CLIIP directs the NRC staff to evaluate any comments received for a proposed change to the STS and to either reconsider the change or announce the availability of the change for adoption by licensees. Licensees opting to apply for this TS change are responsible for reviewing the staff's evaluation, referencing the applicable technical justifications, and providing any necessary plant-specific information. Each LAR made in response to the notice of availability will be processed and noticed in accordance with applicable rules and NRC procedures.

The present notice makes available for adoption by licensees a change to establish more effective and appropriate action, surveillance, and administrative TS requirements related to ensuring CRE habitability. This change was proposed for incorporation into the STS by the owners groups participants in the Technical Specification Task Force (TSTF) and is designated TSTF-448, Revision 3 (Rev 3). TSTF-448, Rev 3, can be viewed on the NRC's web page at

<http://www.nrc.gov/reactors/operating/licensing/techspecs.html> .

#### Applicability

This proposal to modify the TS to establish more effective and appropriate action, surveillance, and administrative requirements related to maintaining CRE habitability, as proposed in TSTF-448, Rev 3, is applicable to all licensees.

To efficiently process incoming license amendment requests (LARs), the staff requests that each licensee applying for the TS changes proposed in TSTF-448, Rev 3, use the CLIP. The CLIP does not prevent licensees from requesting an alternative approach or proposing the TS changes without the requested TS bases and TS bases control program. Variations from the approach recommended in this notice may require additional review by the NRC staff, and may increase the time and resources needed for the review. Significant variations from the approach, or inclusion of additional changes to the license, will result in staff rejection of the application. Instead, licensees desiring significant variations and/or additional changes should submit an LAR that does not request to adopt TSTF-448, Rev 3, using the CLIP.

**Evaluation of Public Comments On The  
Model Safety Evaluation,  
Model No Significant Hazards Consideration Determination, And  
Model License Amendment Request**

The NRC staff evaluated the public comments received on the model safety evaluation (SE), model no significant hazards consideration (NSHC) determination, and model license amendment request (LAR) published in the Federal Register on October 17, 2006 (71 FR 61075 - 61084). Comments were received from Progress Energy (PE) (Agency-wide Documents Access and Management System (ADAMS) Accession No. ML063260063), Strategic Teaming and Resource Sharing (STARS) (ADAMS Accession No. ML063340340), and the pressurized and boiling water reactor owners groups'

Technical Specification Task Force (TSTF) (ADAMS Accession No. ML063260064). The NRC staff also had one comment. The NRC staff's disposition of each comment follows.

1. (PE) Reference: model SE Section 2.3, Paragraph 8 (71 FR 61078). Comment: "Other Technical Specifications currently exist that are directly related to control room habitability (e.g., NUREG-1430, TS 3.3.16, "Control Room Isolation - High Radiation," NUREG-1431, TS 3.3.7, "CREFS Actuation Instrumentation," and NUREG-1432, TS 3.3.8, "Control Room Isolation Signal (CRIS)"). It is recommended that the paragraph be revised as follows: *Prior to incorporation of TSTF-448, Revision 3, the STS requirements addressing CRE boundary operability resided only in the following CRE ventilation system specifications:*

Disposition: The NRC staff accepted the comment and incorporated the recommended change into the model SE.

2. (PE) Reference: model SE Section 2.4, Paragraph 1 (71 FR 61078). Comment: [The SE] characterizes the six year surveillance frequency for demonstrating unfiltered leakage into the control room envelope (CRE) is within limits as a relatively long test interval (frequency). When compared with the 15 year test frequency justified for the integrated leak rate test of containment, the six year frequency seems exceedingly short. This is particularly true given the safety (risk) significance of containment relative to the CRE boundary. Therefore, the bases for the six year frequency should be included in the model safety evaluation. Additionally, the model safety evaluation should allow sites the option to justify a site specific test frequency based on unique site characteristics using a risk-informed approach. (e.g., Regulatory Guide 1.177 - An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications)

**Disposition:** The NRC staff determined that explicitly suggesting in the model LAR that an applicant propose longer test intervals based on risk considerations is inappropriate because such a request would exceed the scope of changes covered by TSTF-448, Rev 3, would require staff evaluation beyond that described in the model SE, and could not be considered under the CLIP. The proposed TS Bases for the in-leakage surveillance gives the basis for the six-year frequency by referencing the TS CRE Habitability Program, which requires this surveillance to be performed “in accordance with the testing methods and at the Frequencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197.” However, the phrase “relatively long” in the model SE is potentially misleading and has been removed.

3. (PE) Reference: model SE Section 3.4 Paragraph 1 (71 FR 61081). Comment: [The] model safety evaluation states: *The program shall ensure that adequate radiation protection is provided to permit access and occupancy of the CRE under design basis accident (DBA) conditions ...*

The control room envelope boundary and programs to maintain it are providing the necessary radiological protection for occupancy of the control room. The program is independent of any ability to "access" the control room. Therefore, it is recommended that the sentence be revised as follows: *The program shall ensure that adequate radiation protection is provided to permit occupancy of the CRE under design basis accident (DBA) conditions ...*

**Disposition:** Occupancy of the CRE must account for any radiation sources encountered outside the CRE while accessing (going to and from) the CRE. The proposed CRE Habitability Program TS states, “The program shall ensure that adequate

radiation protection is provided to permit access and occupancy of the CRE under design basis accident (DBA) conditions ... ." The recommendation is not accepted.

4. (PE) (TSTF) (STARS) Reference: model LAR Section 3.2 (71 FR 61084).

Comment: Section 3.2 of the model LAR requires that the applicant make three commitments. Commitments 2 and 3 state:

- 2. *[LICENSEE] will revise procedures to implement the new surveillance and programmatic TS requirements related to CRE habitability.*
- 3. *[LICENSEE] commits to Regulatory Positions C.1 and C.2 of Regulatory Guide 1.197, "Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors," Revision 0, May 2003, with the following exceptions:  
[Add descriptions of proposed exceptions.]*

In the case of commitment 2, 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," already requires that, "Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings."

In the case of commitment 3, the commitment is specifically addressed by the wording that will be included in Technical Specifications per Technical Specification Task Force 448 (TSTF-448) Section 5.5.18c (5 .5.15c for boiling water reactors) which states:

*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 are exceptions to Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0:***

***1. ; and]***

Therefore, upon approval of the licensee's amendment request, proposed commitments 2 and 3 will be addressed through legally binding regulatory obligations (i.e., 10 CFR 50, Appendix B and Technical Specifications) making regulatory commitments duplicative and an unnecessary burden on the licensee. It is recommended that commitments 2 and 3 be deleted from the subject model LAR.

**Disposition:** The NRC staff accepts the recommendation and has removed commitments 2 and 3 from Section 3.2 and Attachment 4 of the model LAR.

**5. (TSTF) Reference:** In the Notice under "Applicability," the last sentence (71 FR 61076). **Comment:** Should a licensee submit an application that requests adoption of TSTF-448 but includes significant variations or additional changes, it would facilitate the NRC's review for the licensee to acknowledge that the change is based on TSTF-448 so that the NRC may use the model safety evaluation to the extent possible. We recommend revising the [last] sentence as follows: "Instead, licensees desiring significant variations and/or additional changes should submit a license amendment request (LAR) that does not request to adopt TSTF-448, Rev 3, under the Consolidated Line Item Improvement Process."

**Disposition:** The NRC staff accepted the comment and incorporated the recommended change into the present notice.

**6. (TSTF) Reference: model LAR, Section 2.2 (71 FRN 61083). Comment: We recommend that the NRC modify Section 2.2 of the Model Application, "Optional Changes and Variations," to request that licensees describe which optional portions of the model Safety Evaluation are applicable.**

**Disposition: The NRC staff accepted the comment and incorporated the recommended change as a note at the end of the first paragraph of Section 2.2 of the model LAR.**

**7. (TSTF) Reference: model SE Section 2.3, first paragraph (71 FR 61077). Comment: Section 2.3, "Regulations Applicable to Control Room Habitability," lists General Design Criteria from 10 CFR 50, Appendix A. Many licensees are not committed to the General Design Criteria and the wording of this section may result in many plants proposing an unnecessary variation in response to the required verification that the published safety evaluation is applicable in Section 2.2 of the model application. We recommend adding the following sentence to the first paragraph prior to the last sentence, "Any licensee commitments to these criteria are described in the plant's licensing basis documents."**

**Disposition: The following optional sentence is added to the first paragraph for use by applicants whose facilities are not licensed under the General Design Criteria from 10 CFR 50, Appendix A. "[Facilities not licensed under the General Design Criteria from 10 CFR Part 50 are licensed under similar plant-specific design criteria, as described in the facility's licensing basis documents.]"**

**8. (TSTF) Reference: model SE Section 3.3, Evaluation 5 (71 FR 61080). Comment: Remove Mode 4 from the sentence about the applicable operational modes for new**

**Action B of TS 3.7.[4] because the BWR/4 and BWR/6 Applicability does not include Mode 4 for this action requirement.**

**Disposition: The NRC staff replaced the subject sentence with “This new condition in Action F is needed because proposed Action B will only apply in Modes 1, 2, and 3.”**

**9. (TSTF) Reference: model SE Section 3.3, Evaluation 6 (71 FR 61081). Comment: In Evaluation 6, the next to the last sentence is overly specific concerning the wording of the licensee's Generic Letter 2003-01 response about the adequacy of existing surveillance requirements to verify CRE boundary operability, and may lead to many plants proposing an unnecessary variation in response to the required verification that the published safety evaluation is applicable in Section 2.2 of the model LAR. The acceptability of the deletion of SR 3.7.[10].[4] is not dependent on the licensee's Generic Letter response, but on the findings in the Generic Letter. We propose revising the sentences to be consistent with the statements in Section 1.0 of the model Safety Evaluation, such as "In Generic Letter 2003-01 (Reference 1), licensees were alerted to findings that the differential pressure surveillance is not a reliable method for demonstrating CRE boundary operability. Based on the adoption of TSTF-448, Revision 3, the licensee's proposal to delete SR 3.7.[10].[4] is acceptable."**

**Response: If the language of the model SE is not consistent with the wording of the licensee's Generic Letter 2003-01 response, the licensee should explain the inconsistency in its LAR to facilitate evaluation of the inconsistency by the staff in the**

SE for the license amendment. To account for the possibility of an inconsistency, the model SE is revised by surrounding the sentence in brackets.

10. (TSTF) Reference: model NSHC determination (71 FR 61082). Comment: In the evaluation of Criterion 2, add the word "Accident" before the word "Previously" in the title, and change "an accident" to "any accident" in the last sentence to match the wording of Criterion 2 in 10 CFR 50.92(c)(2).

Disposition: The model NSHC determination was revised as suggested.

11. (TSTF) Reference: model LAR title, second sentence (71 FR 61083). Comment: Revise the sentence by inserting the phrase "Plant Technical Specifications" after the phrase "to Revise" and changing "Tstf-448" to "TSTF-448."

Disposition: The model LAR was revised as suggested.

12. (TSTF) Reference: model LAR, Section 2.2, third paragraph (71 FR 61083). Comment: Change the date "June 2003" to "June 2001."

Disposition: The model LAR was revised as suggested.

13. (TSTF) (STARS) Reference: model LAR, lists of Attachments in cover letter, and Attachment 3 cover page title (71 FR 61083 and 4). Comment: Place brackets around references to the revised TS pages in the LAR cover letter and the Attachment 3 cover page title, and replace "Proposed" with "Revised" in the Attachment 3 cover page title. Providing smooth revised TS pages should be optional in the LAR. Also, make the Attachment 4 cover page title consistent with the title as stated in the LAR cover letter by removing "list of."

Disposition: The model LAR was revised as suggested. Finally, because the revised model LAR contains no list of regulatory commitments, the NRC staff added

brackets around appropriate text in the model LAR to indicate that including regulatory commitments is optional.

14. (TSTF) Reference: model LAR cover letter, next to last paragraph (71 FR 61083). Comment: Revise the oath or affirmation statement to match the phrasing contained in Regulatory Issue Summary (RIS) 2001-18, "Requirements for Oath or Affirmation."

Disposition: The model LAR was revised to match RIS 2001-18.

15. (TSTF) Reference: model LAR, Section 3.2 (71 FR 61084). Comment: Commitment 1 states, "[LICENSEE] commits to the guidance of NEI 99-03, Revision 0, "Control Room Habitability Assessment Guidance" dated June 2001, which provides guidance and details on the assessment and management of control room envelope (CRE) habitability."

This commitment should be deleted. A licensee general commitment to NEI 99-03, Revision 0, is not relied upon in TSTF-448 or the model Safety Evaluation as a basis for finding the proposed changes acceptable. The analysis in the model Safety Evaluation does not support a conclusion that the NRC Staff has a "significant interest" in the matter to warrant a commitment.

There are only two references to NEI 99-03 in TSTF-448 and in the model Safety Evaluation:

a. The model SE, Section 3.4, "TS 5.5.[18], CRE Habitability Program," refers to NEI 99-03, Revision 0, as one of two documents (with Regulatory Guide 1.196) containing guidance related to configuration control and maintenance of the control room envelope boundary. TSTF-448, Revision 3, proposed Specification 5.5.[18], "Control Room

Envelope Habitability Program," paragraph b, requires that the licensee's Control Room Envelope Habitability Program include requirements for maintaining the control room envelope boundary in its design condition including configuration control and preventive maintenance. NEI 99-03, Revision 0, discusses configuration control and maintenance in Section 9.4, "Configuration Control," which contains only generic guidance applicable to any configuration control program and which encompasses less than 2 pages of a 177 page document. A generic commitment to all of NEI 99-03, Revision 0, for this purpose is unnecessary and unjustified. The appropriate control is already provided by the Technical Specifications and NEI 99-03, [Revision 0, Section 9.4] is only one method of meeting the Technical Specification requirement.

b. The proposed Bases for SR 3.7.[10].[4] (the inleakage test) state, "Compensatory measures are discussed in Regulatory Guide 1.196, Section C.2.7.3, (Ref. 5) which endorses, with exceptions, NEI 99-03, Section 8.4 and Appendix F (Ref. 6)." This very specific reference in the Technical Specification Bases to portions (8 pages of the 177 page document) of NEI 99-03, [Revision 0] do not justify a generic commitment to the entire document.

Disposition: The NRC staff revised the model application to remove the commitment as suggested.

16. (STARS) Reference: model LAR cover letter (71 FR 61083). Comment: After the sentence "Attachment 4 provides a summary of the regulatory commitments made in this submittal." insert "Attachment 5 provides the existing TS Bases pages marked up to show proposed change and is for information only." For completeness, this adds information related to Attachment 5 in the cover letter.

**Disposition:** The model LAR was revised by adding the sentence “Attachment 5 provides existing TS Bases pages marked up to show the proposed changes.” The NRC staff expects that a licensee adopting a TSTF change to the STS will also adopt associated changes to the STS Bases or provide in its LAR a justification for any deviation.

**17. (STARS) Reference:** model LAR, Attachment 1, Section 1.0, paragraph 1 (71 FR 61083). **Comment:** Place the title of TS Section 5.5 in brackets to account for the possibility that some facilities may have a different title.

**Disposition:** The model LAR was revised as suggested.

**18. (STARS) Reference:** model LAR cover letter (71 FR 61083) and Attachment 5 cover page (71 FR 61084). **Comment:** Include the phrase “(For Information Only)” to the title of Attachment 5.

**Disposition:** As noted in the disposition of Comment 16, the NRC staff expects that a licensee adopting a TSTF change to the STS will also adopt associated changes to the STS Bases or provide in its LAR a justification for any deviation. Consequently, the suggested phrase is not appropriate and is not adopted.

**19. (NRC staff) Reference:** model SE Section 3.1, last paragraph (71 FR 61079); model LAR, Section 2.2, third paragraph (71 FR 61083); model LAR Section 3.2 and Attachment 4, first commitment (71 FR 61083). **Comment:** Remove option to follow guidance in March 2003 version of NEI 99-03 contingent upon showing that differences with the June 2001 version do not conflict with staff positions in Regulatory Guide 1.196, because the NRC has not endorsed the March 2003 version.

**Disposition:** The model SE and model LAR have been revised to remove the option of referencing the March 2003 version of NEI 99-03, as described in the

**disposition of Comment 15. The NRC staff recommends that implementation of any guidance in NEI 99-03, Revision 0, dated June 2001, that a licensee elects to follow, be consistent with the NRC staff positions in Regulatory Guide 1.196.**

**Adoption of TSTF-448, Rev 3**

**Licensees wishing to adopt TSTF-448, Rev 3, must submit an LAR in accordance with applicable rules and other regulatory requirements. For each LAR, the NRC staff will publish a notice of consideration of issuance of amendment to a facility operating license, a proposed NSHC determination, and a notice of opportunity for a hearing. The NRC staff will also publish a notice of issuance of an amendment to a facility operating license to announce the modification of TS requirements related to CRE habitability, for each plant that receives the requested change.**

**Model Safety Evaluation**

**U.S. Nuclear Regulatory Commission**

**Office of Nuclear Reactor Regulation**

**Consolidated Line Item Improvement**

**Adoption of Changes to Standard Technical Specifications**

**Under Technical Specifications Task Force (TSTF) Change Number TSTF-448, Revision 3**

**Regarding Control Room Envelope Habitability**

**1.0 INTRODUCTION**

By application dated [ ] [as supplemented by letters dated[ and ]], [Name of Licensee] (the licensee) requested changes to the Technical Specifications (TS) for the [Name of Facility]. [The supplements dated [ and ], provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the staff's original proposed no significant hazards consideration determination as published in the Federal Register on [Date (PM/LA will fill in FR information)] (XX FR XXXX).]

On August 8, 2006, the commercial nuclear electrical power generation industry owners group Technical Specifications Task Force (TSTF) submitted a proposed change, TSTF-448, Revision 3, to the improved standard technical specifications (STS) (NUREGs 1430-1434) on behalf of the industry (TSTF-448, Revisions 0, 1, and 2 were prior draft iterations). TSTF-448, Revision 3, is a proposal to establish more effective and

appropriate action, surveillance, and administrative STS requirements related to ensuring the habitability of the control room envelope (CRE).

In United States Nuclear Regulatory Commission (NRC) Generic Letter 2003-01 (Reference 1), licensees were alerted to findings at facilities that existing TS surveillance requirements for the [Control Room Envelope Emergency Ventilation System (CREEVS )] may not be adequate. Specifically, the results of ASTM E741 (Reference 2) tracer gas tests to measure control room envelope (CRE) unfiltered inleakage at facilities indicated that the differential pressure surveillance is not a reliable method for demonstrating CRE boundary operability. Licensees were requested to address existing TS as follows:

*Provide confirmation that your technical specifications verify the integrity [i.e., operability] of the CRE [boundary], and the assumed [unfiltered] inleakage rates of potentially contaminated air. If you currently have a differential pressure surveillance requirement to demonstrate CRE [boundary] integrity, provide the basis for your conclusion that it remains adequate to demonstrate CRE integrity in light of the ASTM E741 testing results. If you conclude that your differential pressure surveillance requirement is no longer adequate, provide a schedule for: 1) revising the surveillance requirement in your technical specification to reference an acceptable surveillance methodology (e.g., ASTM E741), and 2) making any necessary modifications to your CRE [boundary] so that compliance with your new surveillance requirement can be demonstrated.*

*If your facility does not currently have a technical specification surveillance requirement for your CRE integrity, explain how and at what*

*frequency you confirm your CRE integrity and why this is adequate to demonstrate CRE integrity.*

To promote standardization and to minimize the resources that would be needed to create and process plant-specific amendment applications in response to the concerns described in the generic letter, the industry and the NRC proposed revisions to CRE habitability system requirements contained in the STS, using the STS change traveler process. This effort culminated in Revision 3 to traveler TSTF-448, "Control Room Habitability," which the NRC staff approved on [month dd, 2006].

Consistent with the traveler as incorporated into NUREG-143[0], the licensee proposed revising action and surveillance requirements in [Specification 3.7.10, "Control Room Envelope Emergency Ventilation System (CREEVS),"] and adding a new administrative controls program, [Specification 5.5.18, "CRE Habitability Program."] The purpose of the changes is to ensure that CRE boundary operability is maintained and verified through effective surveillance and programmatic requirements, and that appropriate remedial actions are taken in the event of an inoperable CRE boundary.

## **2.0 REGULATORY EVALUATION**

### **2.1 Control Room and Control Room Envelope**

NRC Regulatory Guide 1.196, "Control Room Habitability at Light-water Nuclear Power Reactors," Revision 0, May 2003, (Reference 4) uses the term "control room envelope (CRE)" in addition to the term "control room" and defines each term as follows:

*Control Room: The plant area, defined in the facility licensing basis, in which actions can be taken to operate the plant safely under*

*normal conditions and to maintain the reactor in a safe condition during accident situations. It encompasses the instrumentation and controls necessary for a safe shutdown of the plant and typically includes the critical document reference file, computer room (if used as an integral part of the emergency response plan), shift supervisor's office, operator wash room and kitchen, and other critical areas to which frequent personnel access or continuous occupancy may be necessary in the event of an accident.*

*Control Room Envelope: The plant area, defined in the facility licensing basis, that in the event of an emergency, can be isolated from the plant areas and the environment external to the CRE. This area is served by an emergency ventilation system, with the intent of maintaining the habitability of the control room. This area encompasses the control room, and may encompass other non-critical areas to which frequent personnel access or continuous occupancy is not necessary in the event of an accident.*

**NRC Regulatory Guide 1.197, "Demonstrating Control Room Envelope Integrity At Nuclear Power Reactors," Revision 0, May 2003 (Reference 5), also contains these definitions, but uses the term CRE to mean both. This is because the protected environment provided for operators varies with the nuclear power facility. At some facilities this environment is limited to the control room; at others, it is the CRE. In this safety evaluation, consistent with the proposed changes to the STS, the CRE will be used to designate both. For consistency, facilities should use the term CRE with an appropriate facility-specific definition derived from the above CRE definition.**

## **2.2 [Control Room Envelope Emergency Ventilation System (CREEVS)]**

The [CREEVS] provides a protected environment from which operators can control the unit, during airborne challenges from radioactivity, hazardous chemicals, and fire byproducts, such as fire suppression agents and smoke, during both normal and accident conditions.

The [CREEVS] is designed to maintain a habitable environment in the control room envelope 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] [5 rem total effective dose equivalent (TEDE)].

The [CREEVS] consists of two redundant trains [subsystems], each capable of maintaining the habitability of the CRE. The [CREEVS] is considered operable when the individual components necessary to limit operator exposure are operable in both trains [subsystems]. A [CREEVS] train [subsystem] is considered operable when the associated:

- Fan is operable;
- High efficiency particulate air (HEPA) filters and charcoal adsorbers are not excessively restricting flow, and are capable of performing their filtration functions;
- Heater, demister, ductwork, valves, and dampers are operable, and air circulation can be maintained; and
- CRE boundary is operable (the single boundary supports both trains [subsystems]).

The CRE boundary is considered operable when the measured unfiltered air inleakage is less than or equal to the inleakage value assumed by the licensing basis analyses of design basis accident consequences to CRE occupants.

### **2.3 Regulations Applicable to Control Room Habitability**

In Appendix A, "General Design Criteria for Nuclear Power Plants," to 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," General Design Criteria (GDC) 1, 2, 3, 4, 5, and 19 apply to CRE habitability. A summary of these GDCs follows. [Facilities not licensed under the GDC from 10 CFR Part 50 are licensed under similar plant-specific design criteria, as described in the facility's licensing basis documents.]

GDC 1, "Quality Standards and Records," requires that structures, systems, and components (SSCs) important to safety be designed, fabricated, erected, and tested to quality standards commensurate with the importance of the safety functions performed.

GDC 2, "Design Basis for Protection Against Natural Phenomena," requires that structures, systems, and components (SSCs) important to safety be designed to withstand the effects of earthquakes and other natural hazards.

GDC 3, "Fire Protection," requires SSCs important to safety be designed and located to minimize the effects of fires and explosions.

GDC 4, "Environmental and Dynamic Effects Design Bases," requires SSCs important to safety to be designed to accommodate the effects of and to be compatible with the environmental conditions associated with normal operation, maintenance, testing, and postulated accidents, including loss-of-coolant accidents (LOCAs).

GDC 5, "Sharing of Structures, Systems, and Components," requires that SSCs important to safety not be shared among nuclear power units unless it can be shown that such sharing will not significantly impair their ability to perform their safety functions, including, in the event of an accident in one unit, the orderly shutdown and cooldown of the remaining units.

GDC 19, "Control Room," requires that a control room be provided from which actions can be taken to operate the nuclear reactor safely under normal conditions and to maintain the reactor in a safe condition under accident conditions, including a LOCA. Adequate radiation protection is to be provided to permit access and occupancy of the control room under accident conditions without personnel receiving radiation exposures in excess of specified values.

Prior to incorporation of TSTF-448, Revision 3, the STS requirements addressing CRE boundary operability resided only in the following CRE ventilation system specifications:

- NUREG-1430, TS 3.7.10, "Control Room Emergency Ventilation System (CREVS);"
- NUREG-1431, TS 3.7.10, "Control Room Emergency Filtration System (CREFS);"
- NUREG-1432, TS 3.7.11, "Control Room Emergency Air Cleanup System (CREACS);"
- NUREG-1433, TS 3.7.4, "[Main Control Room Environmental Control (MCREC) System;" and
- NUREG-1434, TS 3.7.3, "[Control Room Fresh Air (CRFA)] System."

In these specifications, the surveillance requirement associated with demonstrating the operability of the CRE boundary requires verifying that one [CREEVS] train [subsystem] can maintain a positive pressure of [0.125] inches water gauge,

relative to the adjacent [turbine building] during the pressurization mode of operation at a makeup flow rate of [3000] cfm. Facilities that pressurize the CRE during the emergency mode of operation of the [CREEVS] have similar surveillance requirements. Other facilities that do not pressurize the CRE have only a system flow rate criterion for the emergency mode of operation. Regardless, the results of ASTM E741 (Reference 2) tracer gas tests to measure CRE unfiltered inleakage at facilities indicated that the differential pressure surveillance (or the alternative surveillance at non-pressurization facilities) is not a reliable method for demonstrating CRE boundary operability. That is, licensees were able to obtain differential pressure and flow measurements satisfying the SR limits even though unfiltered inleakage was determined to exceed the value assumed in the safety analyses.

In addition to an inadequate surveillance requirement, the action requirements of these specifications were ambiguous regarding CRE boundary operability in the event CRE unfiltered inleakage is found to exceed the analysis assumption. The ambiguity stemmed from the view that the CRE boundary may be considered operable but degraded in this condition, and that it would be deemed inoperable only if calculated radiological exposure limits for CRE occupants exceeded a licensing basis limit; e.g., as stated in GDC-19, even while crediting compensatory measures.

NRC Administrative Letter 98-10, "Dispositioning of Technical Specifications That Are Insufficient to Assure Plant Safety," (AL 98-10) states that " the discovery of an improper or inadequate TS value or required action is considered a degraded or nonconforming condition," which is defined in [NRC Inspection Manual Chapter 9900; see latest guidance in RIS 2005-20 (Reference 3)]. "Imposing administrative controls in response to an improper or inadequate TS is considered an acceptable short-term

corrective action. The [NRC] staff expects that, following the imposition of administrative controls, an amendment to the [inadequate] TS, with appropriate justification and schedule, will be submitted in a timely fashion."

Licensees that have found unfiltered inleakage in excess of the limit assumed in the safety analyses and have yet to either reduce the inleakage below the limit or establish a higher bounding limit through re-analysis, have implemented compensatory actions to ensure the safety of CRE occupants, pending final resolution of the condition, consistent with RIS 2005-20. However, based on GL 2003-01 and AL 98-10, the staff expects each licensee to propose TS changes that include a surveillance to periodically measure CRE unfiltered inleakage in order to satisfy 10 CFR 50.36(c)(3), which requires a facility's TS to include surveillance requirements, which it defines as "requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and *that limiting conditions for operation will be met.*" (Emphasis added.)

The NRC staff also expects facilities to propose unambiguous remedial actions, consistent with 10 CFR 50.36(c)(2), for the condition of not meeting the limiting condition for operation (LCO) due to an inoperable CRE boundary. The action requirements should specify a reasonable completion time to restore conformance to the LCO before requiring a facility to be shut down. This completion time should be based on the benefits of implementing mitigating actions to ensure CRE occupant safety and sufficient time to resolve most problems anticipated with the CRE boundary, while minimizing the chance that operators in the CRE will need to use mitigating actions during accident conditions.

#### **2.4 Adoption of TSTF-448, Revision 3, by [facility name]**

Adoption of TSTF-448, Revision 3, will assure that the facility's TS LCO for the [CREEVS] is met by demonstrating unfiltered leakage into the CRE is within limits; i.e., the operability of the CRE boundary. In support of this surveillance, which specifies a test interval (frequency) of 6 years, TSTF-448 also adds TS administrative controls to assure the habitability of the CRE between performances of the ASTM E741 test. In addition, adoption of TSTF-448 will establish clearly stated and reasonable required actions in the event CRE unfiltered inleakage is found to exceed the analysis assumption.

The changes made by TSTF-448 to the STS requirements for the [CREEVS] and the CRE boundary conform to 10 CFR 50.36(c)(2) and 10 CFR 50.36(c)(3). Their adoption will better assure that [facility name]'s CRE will remain habitable during normal operation and design basis accident conditions. These changes are, therefore, acceptable from a regulatory standpoint.

### **3.0 TECHNICAL EVALUATION**

The NRC staff reviewed the proposed changes against the corresponding changes made to the STS by TSTF-448, Revision 3, which the NRC staff has found to satisfy applicable regulatory requirements, as described above in Section 2.0. [The emergency operational mode of the [CREEVS] at [facility name] [pressurizes] [isolates but does not pressurize] the CRE to minimize unfiltered air inleakage.] The proposed changes are consistent with this design.

#### **3.1 Proposed Changes**

The proposed amendment would strengthen CRE habitability TS requirements by changing TS [3.7.10, CREEVS] and adding a new TS administrative controls program on CRE habitability. Accompanying the proposed TS changes are appropriate conforming technical changes to the TS Bases. The proposed revision to the Bases also includes editorial and administrative changes to reflect applicable changes to the corresponding STS Bases, which were made to improve clarity, conform with the latest information and references, correct factual errors, and achieve more consistency among the STS NUREGs. [Except for plant specific differences, all of] these changes are consistent with STS as revised by TSTF-448, Revision 3.

The NRC staff compared the proposed TS changes to the STS and the STS markups and evaluations in TSTF-448. [The staff verified that differences from the STS were adequately justified on the basis of plant-specific design or retention of current licensing basis.] The NRC staff also reviewed the proposed changes to the TS Bases for consistency with the STS Bases and the plant-specific design and licensing bases, although approval of the Bases is not a condition for accepting the proposed amendment. However, TS 5.5.[11], "TS Bases Control Program," provides assurance that the licensee has established and will maintain the adequacy of the Bases. The proposed Bases for TS 3.7.[10] refer to specific guidance in NEI 99-03, "Control Room Habitability Assessment Guidance," Revision 0, dated June 2001 (Reference 6), which the NRC staff has formally endorsed, with exceptions, through Regulatory Guide 1.196, "Control Room Habitability at Light-Water Nuclear Power Reactors," dated May 2003 (Reference 4).

### **3.2 Editorial Changes**

The licensee proposed editorial changes to TS [3.7.10, "CREEVS,"] to establish standard terminology, such as "control room envelope (CRE)" in place of "control room," except for the plant-specific name for the [CREEVS], and "radiological, chemical, and smoke hazards (or challenges)" in place of various phrases to describe the hazards that CRE occupants are protected from by the [CREEVS]. [The licensee also proposed to correct a typographical error by replacing "irradiate" with "irradiated" in TS 3.7.10 Condition E.] These changes improve the usability and quality of the presentation of the TS, have no impact on safety, and therefore, are acceptable.

### **3.3 TS [3.7.10, CREEVS]**

**< Evaluation 1 - for facilities that have adopted the [CREEVS] TS LCO Note and  
Action B of TSTF-287, Rev. 5 >**

The licensee proposed to revise the action requirements of TS [3.7.10, "CREEVS,"] to acknowledge that an inoperable CRE boundary, depending upon the location of the associated degradation, could cause just one, instead of both [CREEVS] [trains] to be inoperable. This is accomplished by revising Condition A to exclude Condition B, and revising Condition B to address one or more [CREEVS] [trains], as follows:

- **Condition A One [CREEVS] [train] inoperable for reasons other than Condition B.**
- **Condition B One or more [CREEVS] [trains] inoperable due to inoperable CRE boundary in MODE 1, 2, [or] 3[, or 4].**

This change clarifies how to apply the action requirements in the event just one [CREEVS] [train] is unable to ensure CRE occupant safety within licensing basis limits

because of an inoperable CRE boundary. It enhances the usability of Conditions A and B with a presentation that is more consistent with the intent of the existing requirements. This change is an administrative change because it neither reduces nor increases the existing action requirements, and, therefore, is acceptable.

The licensee proposed to replace existing Required Action B.1, "Restore control room boundary to OPERABLE status," which has a 24-hour Completion Time, with Required Action B.1, to immediately initiate action to implement mitigating actions; Required Action B.2, to verify, within 24 hours, that in the event of a DBA, CRE occupant radiological exposures will not exceed the calculated dose of the licensing basis analyses of DBA consequences, and that CRE occupants are protected from hazardous chemicals and smoke; and Required Action B.3, to restore CRE boundary to operable status within 90 days.

The 24-hour Completion Time of new Required Action B.2 is reasonable based on the low probability of a DBA occurring during this time period, and the use of mitigating actions as directed by Required Action B.1. The 90-day Completion Time of new Required Action B.3 is reasonable based on the determination that the mitigating actions will ensure protection of CRE occupants within analyzed limits while limiting the probability that CRE occupants will have to implement protective measures that may adversely affect their ability to control the reactor and maintain it in a safe shutdown condition in the event of a DBA. The 90-day Completion Time is a reasonable time to diagnose, plan and possibly repair, and test most anticipated problems with the CRE boundary. Therefore, proposed Action B is acceptable.

< End of Evaluation 1 >

< Evaluation 2 - for facilities that have not yet adopted the [CREEVS] TS LCO Note and

**Action B of TSTF-287, Rev. 5 >**

The licensee proposed to establish new action requirements in TS [3.7.10, "CREEVS,"] for an inoperable CRE boundary. Currently, if one [CREEVS] [train] is determined to be inoperable due to an inoperable CRE boundary, existing Action A would apply and require restoring the [train] (and the CRE boundary) to operable status in 7 days. If two [trains] are determined to be inoperable due to an inoperable CRE boundary, existing Action [E] specifies no time to restore the [trains] (and the CRE boundary) to operable status, but requires immediate entry into the shutdown actions of LCO 3.0.3. These existing Actions are more restrictive than would be appropriate in situations for which CRE occupant implementation of compensatory measures or mitigating actions would temporarily afford adequate CRE occupant protection from postulated airborne hazards. To account for such situations, the licensee proposed to revise the action requirements to add a new Condition B, "One or more [CREEVS] [trains] inoperable due to inoperable CRE boundary in MODE 1, 2, [or] 3[, or 4]." New Action B would allow 90 days to restore the CRE boundary (and consequently, the affected [CREEVS] [trains]) to operable status, provided that mitigating actions are immediately implemented and within 24 hours are verified to ensure, that in the event of a DBA, CRE occupant radiological exposures will not exceed the calculated dose of the licensing basis analyses of DBA consequences, and that CRE occupants are protected from hazardous chemicals and smoke.

The 24-hour Completion Time of new Required Action B.2 is reasonable based on the low probability of a DBA occurring during this time period, and the use of mitigating actions. The 90-day Completion Time is reasonable based on the determination that the mitigating actions will ensure protection of CRE occupants within analyzed limits while

limiting the probability that CRE occupants will have to implement protective measures that may adversely affect their ability to control the reactor and maintain it in a safe shutdown condition in the event of a DBA. The 90-day Completion Time of new Required Action B.3 is a reasonable time to diagnose, plan and possibly repair, and test most anticipated problems with the CRE boundary. Therefore, proposed Action B is acceptable.

To distinguish new Condition B from the existing condition for one [CREEVS] [train] inoperable, Condition A is revised to state, "One [CREEVS] [train] inoperable for reasons other than Condition B." To distinguish new Condition B from the existing condition for two [CREEVS] [trains] inoperable, Condition [E] (renumbered as Condition [F]) is revised to state, "Two [CREEVS] [trains] inoperable during MODE 1, 2, [or] 3[, or 4] for reasons other than Condition B." The changes to existing Conditions A and [E] are less restrictive because these Conditions will no longer apply in the event one or two [CREEVS] [trains] are inoperable due to an inoperable CRE boundary during unit operation in Mode 1, 2, [or] 3[, or 4]. This is acceptable because the new Action B establishes adequate remedial measures in this condition. With the addition of a new Condition B, existing Conditions B, C, D, and E are re-designated C, D, E, and F, respectively.

The licensee also proposed to modify the [CREEVS] LCO by adding a note allowing the CRE boundary to be opened intermittently under administrative controls. As stated in the LCO Bases, this Note "only applies to openings in the CRE boundary that can be rapidly restored to the design condition, such as doors, hatches, floor plugs, and access panels. For entry and exit through doors, the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings,

these controls should be proceduralized and consist of stationing a dedicated individual at the opening who is in continuous communication with operators in the CRE. This individual will have a method to rapidly close the opening and to restore the CRE boundary to a condition equivalent to the design condition when a need for CRE isolation is indicated." The allowance of this note is acceptable because the administrative controls will ensure that the opening will be quickly sealed to maintain the validity of the licensing basis analyses of DBA consequences.

< End of Evaluation 2 >

< Evaluation 3 - for B&W CREVS TS >

The existing TS 3.7.10 condition for two control room emergency ventilation system (CREVS) trains inoperable during refueling, Condition E, is revised to also apply during plant operation in Modes 5 and 6. It will state, "Two CREVS trains inoperable [in MODE 5 or 6, or] during movement of [recently] irradiated fuel assemblies." This change clarifies the applicability of this condition for dual unit facilities when the unit is in Mode 5 or 6, and the other unit is moving [recently] irradiated fuel assemblies. Similarly, Condition D, for failing to meet Action A during movement of [recently] irradiated fuel assemblies, is revised to also apply in Modes 5 and 6. These changes are administrative because they only clarify the intended applicability of the existing conditions, and are, therefore, acceptable. Required Actions D.2 and E.1, to immediately suspend movement of [recently] irradiated fuel assemblies, ensures that a fuel handling accident cannot occur while the unit is in these conditions. With only one CREVS train inoperable, Required Action D.1 specifies an alternative to immediately suspending fuel movement; it requires immediately placing the operable CREVS train in its emergency operating alignment, or mode, to minimize the chance the train will fail to properly switch to this

mode if called upon in response to a fuel handling accident, or other airborne hazards challenge.

< End of Evaluation 3 >

< Evaluation 4 - for B&W, CE, and W [CREEVS] TS >

The licensee proposed to add a new condition to Action E of TS 3.7.1[0] that states, "One or more [CREEVS] trains inoperable due to an inoperable CRE boundary [in Mode 5 or 6, or] during movement of [recently] irradiated fuel assemblies." The specified Required Action proposed for this condition is the same as for the existing condition of Action E [(revised as discussed previously) <for B&W plants if Evaluation 3 is used>], which states "[Two [CREEVS] trains inoperable [in MODE 5 or 6, or] during movement of [recently] irradiated fuel assemblies." Accordingly, the new condition is stated with the other condition in Action E using the logical connector "OR" in accordance with the STS writer's guide (TSTF-GG-05-01, "Writer's Guide for Plant-Specific Improved Technical Specifications," June 2005). The practical result of this presentation in format is the same as specifying two separately numbered Actions, one for each condition. Its advantage is to make the TS Actions table easier to use by avoiding having an additional numbered row in the Actions table. The new condition in Action E is needed because proposed Action B will only apply in Modes 1, 2, 3, and 4. As such, this change will ensure that the Actions table continues to specify a condition for an inoperable CRE boundary during Modes 5 and 6 and during refueling. Therefore, this change is administrative and acceptable.

< End of Evaluation 4 >

< Evaluation 5 - for BWR4 and BWR6 [CREEVS] TS >

The licensee proposed to add a new condition to Action F of TS 3.7.[4] that states, "One or more [CREEVS] subsystems inoperable due to an inoperable CRE boundary during movement of [recently] irradiated fuel assemblies in the [[primary or] secondary] containment or during operations with a potential for draining the reactor vessel (OPDRVs)." The specified Required Actions proposed for this condition are the same as for the other existing condition for Action F, which states, "Two [CREEVS] subsystems inoperable during movement of [recently] irradiated fuel assemblies in the [secondary] containment or during OPDRVs." Accordingly, the new condition is stated with the other condition in Action F using the logical connector "OR" in accordance with the STS writer's guide (TSTF-GG-05-01, "Writer's Guide for Plant-Specific Improved Technical Specifications," June 2005). The practical result of this presentation in format is the same as specifying two separately numbered Actions, one for each condition. Its advantage is to make the TS Actions table easier to use by avoiding having an additional numbered row in the Actions table. This new condition in Action F is needed because proposed Action B will only apply in Modes 1, 2, and 3. As such, this change will ensure that the Actions table continues to specify a condition for an inoperable CRE boundary during refueling and OPDRVs. Therefore, this change is administrative and acceptable.

< End of Evaluation 5 >

< Evaluation 6 - for facilities that have a CRE pressurization surveillance requirement >

In the [emergency radiation state] of operation, the [CREEVS] isolates unfiltered ventilation air supply intakes, filters the emergency ventilation air supply to the CRE, and pressurizes the CRE to minimize unfiltered air inleakage past the CRE boundary. The licensee proposed to delete the CRE pressurization surveillance requirement (SR). This SR requires verifying that one [CREEVS] [train][subsystem], operating in the [emergency

radiation state], can maintain a pressure of [0.125] inches water gauge, relative to the adjacent [turbine building] during the pressurization mode of operation at a makeup flow rate of [3000] cfm. The deletion of this SR is proposed because measurements of unfiltered air leakage into the CRE at numerous reactor facilities demonstrated that a basic assumption of this SR, an essentially leak-tight CRE boundary, was incorrect for most facilities. Hence, meeting this SR by achieving the required CRE pressure is not necessarily a conclusive indication of CRE boundary leak tightness, i.e., CRE boundary operability. [In its response to GL 2003-01, [dated month, dd, yyyy], the licensee reported that it had determined that the [facility name] CRE pressurization surveillance, SR 3.7.[10].[4], was inadequate to demonstrate the operability of the CRE boundary, and proposed to replace it with an inleakage measurement SR and a CRE Habitability Program in TS Section 5.5, in accordance with the approved version of TSTF-448.] Based on the adoption of TSTF-448, Revision 3, the licensee's proposal to delete SR 3.7.[10].[4] is acceptable.

< End of Evaluation 6 >

The proposed CRE inleakage measurement SR states, "Perform required CRE unfiltered air inleakage testing in accordance with the Control Room Envelope Habitability Program." The CRE Habitability Program TS, proposed TS 5.5.[18], requires that the program include "Requirements for 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, Revision 0 (Reference 5). This guidance references ASTM E741 (Reference 2) as an acceptable method for ascertaining the unfiltered leakage into the CRE. The licensee has[, however, not] proposed to follow this method. [The NRC staff reviewed the licensee's proposed

alternative method for measuring CRE leakage to ensure it meets the criteria for such methods given in RG 1.197.] [Insert plant-specific technical evaluation by the staff of the alternative method.] [The NRC staff finds that the proposed alternative method satisfies the criteria of RG 1.197.] Therefore, the proposed CRE leakage measurement SR is acceptable.

#### **3.4 TS 5.5.[18], CRE Habitability Program**

The proposed administrative controls program TS is consistent with the model program TS in TSTF-448, Revision 3. In combination with SR 3.7.[10].[4], this program is intended to ensure the operability of the CRE boundary, which as part of an operable [CREEVS] will ensure that CRE habitability is maintained such that CRE occupants can control the reactor safely under normal conditions and maintain it in a safe condition following a radiological event, hazardous chemical release, or a smoke challenge. The program shall ensure that adequate radiation protection is provided to permit access and occupancy of the CRE under design basis accident (DBA) conditions without personnel receiving radiation exposures in excess of [5 rem whole body or its equivalent to any part of the body] [5 rem total effective dose equivalent (TEDE)] for the duration of the accident.

A CRE Habitability Program TS acceptable to the NRC staff requires the program to contain the following elements:

Definitions of CRE and CRE boundary. This element is intended to ensure that these definitions accurately describe the plant areas that are within the CRE, and also the interfaces that form the CRE boundary, and are consistent with the general definitions discussed in Section 2.1 of this safety evaluation. Establishing what is meant

by the CRE and the CRE boundary will preclude ambiguity in the implementation of the program.

Configuration control and preventive maintenance of the CRE boundary. This element is intended to ensure the CRE boundary is maintained in its design condition. Guidance for implementing this element is contained in Regulatory Guide 1.196 (Reference 4), which endorsed, with exceptions, NEI 99-03 (Reference 6). Maintaining the CRE boundary in its design condition provides assurance that its leak-tightness will not significantly degrade between CRE inleakage determinations.

Assessment of CRE habitability at the frequencies stated in Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0 (Reference 5), and measurement of unfiltered air leakage into the CRE in accordance with the testing methods and at the frequencies stated in Sections C.1 and C.2 of Regulatory Guide 1.197. [The licensee proposed the following exception[s] to Sections C.1 and C.2 of Regulatory Guide 1.197, to be listed in the TS with this program element.] [Insert plant-specific evaluation of licensee's proposed exceptions.] This element is intended to ensure that the plant assesses CRE habitability consistent with Sections C.1 and C.2 of Regulatory Guide 1.197 [and NRC approved exceptions]. Assessing CRE habitability at the NRC accepted frequencies provides assurance that significant degradation of the CRE boundary will not go undetected between CRE inleakage determinations. Determination of CRE inleakage using test methods acceptable to the NRC staff assures that test results are reliable for ascertaining CRE boundary operability. Determination of CRE inleakage at the NRC accepted frequencies provides assurance that significant degradation of the CRE boundary will not occur between CRE inleakage determinations.

Measurement of CRE pressure with respect to all areas adjacent to the CRE boundary at designated locations for use in assessing the CRE boundary at a frequency of [18] months on a staggered test basis (with respect to the [CREEVS] trains). This element is intended to ensure that CRE differential pressure is regularly measured to identify changes in pressure warranting evaluation of the condition of the CRE boundary. Obtaining and trending pressure data provides additional assurance that significant degradation of the CRE boundary will not go undetected between CRE inleakage determinations.

Quantitative limits on unfiltered inleakage. This element is intended to establish the CRE inleakage limit as the CRE unfiltered infiltration rate assumed in the CRE occupant radiological consequence analyses of design basis accidents. Having an unambiguous criterion for the CRE boundary to be considered operable in order to meet LCO 3.7.[10], will ensure that associated action requirements will be consistently applied in the event of CRE degradation resulting in inleakage exceeding the limit.

Consistent with TSTF-448, Revision 3, the program states that the provisions of SR 3.0.2 are applicable to the program frequencies for performing the activities required by program paragraph number c, parts (i) and (ii) (assessment of CRE habitability and measurement of CRE inleakage), and paragraph number d (measurement of CRE differential pressure). This statement is needed to avoid confusion. SR 3.0.2 is applicable to the surveillance that references the testing in the CRE Habitability Program. However, SR 3.0.2 is not applicable to Administrative Controls unless specifically invoked. Providing this statement in the program eliminates any confusion regarding whether SR 3.0.2 is applicable, and is acceptable.

Consistent with TSTF-448, Revision 3, proposed TS 5.5.[18] states that (1) a CRE Habitability Program shall be established and implemented, (2) the program shall include all of the NRC-staff required elements, as described above, and (3) the provisions of SR 3.0.2 shall apply to program frequencies. Therefore, TS 5.5.[18], which is consistent with the model program TS approved by the NRC staff in TSTF-448, Revision 3, is acceptable.

#### **4.0 STATE CONSULTATION**

In accordance with the Commission's regulations, the [ ] State official was notified of the proposed issuance of the amendment. The State official had [(1) no comments or (2) the following comments - with subsequent disposition by the staff].

#### **5.0 ENVIRONMENTAL CONSIDERATION**

The amendments change a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and change surveillance requirements. The NRC staff has determined that the amendments involve no significant increase in the amounts and no significant change in the types of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no-significant-hazards considerations, and there has been no public comment on the finding [xx FR xxxxx]. Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) [and (c)(10)]. Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

## **6.0 CONCLUSION**

The Commission has concluded, on the basis of the considerations discussed above, that (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 amendments will not be inimical to the common defense and security or to the health and safety of the public.

## **7.0 REFERENCES**

1. NRC Generic Letter 2003-01, "Control Room Habitability," dated June 12, 2003, (GL 2003-01).
  
2. ASTM E 741 - 00, "Standard Test Method for Determining Air Change in a Single Zone by Means of a Tracer Gas Dilution," 2000, (ASTM E741).
  
3. NRC Regulatory Issue Summary 2005-20: Revision to Guidance Formerly Contained in NRC Generic Letter 91-18, "Information to Licensees Regarding Two NRC Inspection Manual Sections on Resolution of Degraded and Nonconforming Conditions and on Operability," dated September 26, 2005 (RIS 2005-20).
  
4. Regulatory Guide 1.196, "Control Room Habitability at Light-Water Nuclear Power Reactors," Revision 0, dated May 2003.

5. **Regulatory Guide 1.197, "Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors," Revision 0, May 2003.**
  
6. **NEI 99-03,"Control Room Habitability Assessment Guidance," Revision 0, dated June 2001.**

**Principal contributors: C. Harbuck**

## **Model No-Significant-Hazards-Consideration Determination**

***Description of Amendment Request:*** A change is proposed to the standard technical specifications (STS) (NUREGs 1430 through 1434) and plant specific technical specifications (TS), to strengthen TS requirements regarding control room envelope (CRE) habitability by changing the action and surveillance requirements associated with the limiting condition for operation operability requirements for the CRE emergency ventilation system, and by adding a new TS administrative controls program on CRE habitability. Accompanying the proposed TS change are appropriate conforming technical changes to the TS Bases. The proposed revision to the Bases also includes editorial and administrative changes to reflect applicable changes to the corresponding STS Bases, which were made to improve clarity, conform with the latest information and references, correct factual errors, and achieve more consistency among the STS NUREGs. The proposed revision to the TS and associated Bases is consistent with STS as revised by TSTF-448, Revision 3.

***Basis for proposed no significant hazards consideration determination:*** As required by 10 CFR 50.91(a), an analysis of the issue of no significant hazards consideration is presented below:

### **Criterion 1—The Proposed Change Does Not Involve a Significant Increase in the Probability or Consequences of an Accident Previously Evaluated**

The proposed change does not adversely affect accident initiators or precursors nor alter the design assumptions, conditions, or configuration of the facility. The proposed change does not alter or prevent the ability of structures, systems, and components (SSCs) to perform their intended function to mitigate the consequences of

an initiating event within the assumed acceptance limits. The proposed change revises the TS for the CRE emergency ventilation system, which is a mitigation system designed to minimize unfiltered air leakage into the CRE and to filter the CRE atmosphere to protect the CRE occupants in the event of accidents previously analyzed. An important part of the CRE emergency ventilation system is the CRE boundary. The CRE emergency ventilation system is not an initiator or precursor to any accident previously evaluated. Therefore, the probability of any accident previously evaluated is not increased. Performing tests to verify the operability of the CRE boundary and implementing a program to assess and maintain CRE habitability ensure that the CRE emergency ventilation system is capable of adequately mitigating radiological consequences to CRE occupants during accident conditions, and that the CRE emergency ventilation system will perform as assumed in the consequence analyses of design basis accidents. Thus, the consequences of any accident previously evaluated are not increased. Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

**Criterion 2—The Proposed Change Does Not Create the Possibility of a New or Different Kind of Accident from any Accident Previously Evaluated**

The proposed change does not impact the accident analysis. The proposed change does not alter the required mitigation capability of the CRE emergency ventilation system, or its functioning during accident conditions as assumed in the licensing basis analyses of design basis accident radiological consequences to CRE occupants. No new or different accidents result from performing the new surveillance or following the new program. The proposed change does not involve a physical alteration of the plant (i.e., no new or different type of equipment will be installed) or a significant

change in the methods governing normal plant operation. The proposed change does not alter any safety analysis assumptions and is consistent with current plant operating practice. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

**Criterion 3—The Proposed Change Does Not Involve a Significant Reduction in the Margin of Safety**

The proposed change does not alter the manner in which safety limits, limiting safety system settings or limiting conditions for operation are determined. The proposed change does not affect safety analysis acceptance criteria. The proposed change will not result in plant operation in a configuration outside the design basis for an unacceptable period of time without compensatory measures. The proposed change does not adversely affect systems that respond to safely shut down the plant and to maintain the plant in a safe shutdown condition. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based upon the reasoning presented above and the previous discussion of the amendment request, the requested change does not involve a no-significant-hazards consideration.

Dated at Rockville, Maryland, this 9th day of January, 2007.

**FOR THE NUCLEAR REGULATORY COMMISSION**

*/RA/*

**Timothy J. Kobetz, Branch Chief  
Technical Specifications Branch  
Division of Inspection and Regional Support**

**Office of Nuclear Reactor Regulation**

THE FOLLOWING MODEL LICENSE AMENDMENT REQUEST (LAR) WAS PREPARED BY THE NRC STAFF TO FACILITATE USE OF THE CONSOLIDATED LINE ITEM IMPROVEMENT PROCESS (CLIIP). THE MODEL PROVIDES THE EXPECTED LEVEL OF DETAIL AND CONTENT FOR AN APPLICATION TO REVISE PLANT TECHNICAL SPECIFICATIONS ACCORDING TO TSTF-448, "CONTROL ROOM HABITABILITY," REVISION 3, USING THE CLIIP. EACH LICENSEE REMAINS RESPONSIBLE FOR ENSURING THAT ITS ACTUAL APPLICATION FULFILLS ITS ADMINISTRATIVE REQUIREMENTS AS WELL AS NUCLEAR REGULATORY COMMISSION REGULATIONS.

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U. S. Nuclear Regular Commission  
Document Control Desk  
Washington, DC 20555

SUBJECT: PLANT NAME  
DOCKET NO. 50-  
APPLICATION TO REVISE TECHNICAL SPECIFICATIONS REGARDING  
CONTROL ROOM ENVELOPE HABITABILITY IN ACCORDANCE WITH  
TSTF-448, REVISION 3, USING THE CONSOLIDATED LINE ITEM  
IMPROVEMENT PROCESS

Gentlemen:

In accordance with the provisions of 10 CFR 50.90 [LICENSEE] is submitting a request for an amendment to the technical specifications (TS) for [PLANT NAME, UNIT NOS.].

The proposed amendment would modify TS requirements related to control room envelope habitability in accordance with TSTF-448, Revision 3.

Attachment 1 provides a description of the proposed changes, the requested confirmation of applicability, and plant-specific verifications. Attachment 2 provides the existing TS pages marked up to show the proposed changes. [Attachment 3 provides revised (clean) TS pages.] [Attachment [4] provides a summary of the regulatory commitments made in this submittal.] Attachment [5] provides existing TS Bases pages marked up to show the proposed changes.

[LICENSEE] requests approval of the proposed License Amendment by [DATE], with the amendment being implemented [BY DATE OR WITHIN X DAYS].

In accordance with 10 CFR 50.91, a copy of this application, with attachments, is being provided to the designated [STATE] Official.

I declare [or certify, verify, state] under penalty of perjury that the foregoing is true and correct. (Note that request may be notarized in lieu of using this oath or affirmation statement).

If you should have any questions regarding this submittal, please contact [NAME, TELEPHONE NUMBER]

Sincerely,

[Name, Title]

**Attachments:**

1. Description and Assessment
2. Proposed Technical Specification Changes (Mark-Up)
3. Revised Technical Specification Pages
- [[4]. Regulatory Commitments]
- 5]. Proposed Technical Specification Bases Changes (Mark-Up)

**cc:** NRC Project Manager  
NRC Regional Office  
NRC Resident Inspector  
State Contact

## Attachment 1 – DESCRIPTION AND ASSESSMENT

### 1.0 DESCRIPTION

The proposed amendment would modify technical specification (TS) requirements related to control room envelope habitability in TS 3.7.[10], [“Control Room Envelope Emergency Ventilation System (CREEVS)”] and TS Section 5.5, [“Administrative Controls - Programs.”]

The changes are consistent with Nuclear Regulatory Commission (NRC) approved Industry/Technical Specification Task Force (TSTF) STS change TSTF-448 Revision 3. The availability of this TS improvement was published in the *Federal Register* on [DATE] as part of the consolidated line item improvement process (CLIP).

### 2.0 ASSESSMENT

#### 2.1 Applicability of Published Safety Evaluation

[LICENSEE] has reviewed the safety evaluation dated [DATE] as part of the CLIP. This review included a review of the NRC staff’s evaluation, as well as the supporting information provided to support TSTF-448. [LICENSEE] has concluded that the justifications presented in the TSTF proposal and the safety evaluation prepared by the NRC staff are applicable to [PLANT, UNIT NOS.] and justify this amendment for the incorporation of the changes to the [PLANT] TS.

#### 2.2 Optional Changes and Variations

[LICENSEE] is not proposing any variations or deviations from the TS changes described in the TSTF-448, Revision 3, or the applicable parts of the NRC staff’s model

safety evaluation dated [DATE]. [Note: The Applicant should state which parts of Section 3.0 of the model SE are applicable to its facility, since these sections contain variations based on the plant-specific design and existing TS requirements.]

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

[LICENSEE] proposes the following as a license condition to support implementation of the proposed TS changes:

Upon implementation of Amendment No. xxx adopting TSTF-448, Revision 3, the determination of control room envelope (CRE) unfiltered air inleakage as required by SR 3.7.[10].[4], in accordance with TS 5.5.[18].c.(i), the assessment of CRE habitability as required by Specification 5.5.[18].c.(ii), and the measurement of CRE pressure as required by Specification 5.5.[18].d, shall be considered met. Following implementation:

(a) The first performance of SR 3.7.[10.5], in accordance with Specification 5.5.[18].c.(i), shall be within the specified Frequency of 6 years, plus the 15-month allowance of SR 3.0.2, as measured from [date], the date of the most recent successful tracer gas test, as stated in the [date] letter response to Generic Letter 2003-01, or within the next 15 months if the time period since the most recent successful tracer gas test is greater than 6 years.

(b) The first performance of the periodic assessment of CRE habitability, Specification 5.5.[18].c.(ii), shall be within 3 years, plus the 9-month

allowance of SR 3.0.2, as measured from [date], the date of the most recent successful tracer gas test, as stated in the [date] letter response to Generic Letter 2003-01, or within the next 9 months if the time period since the most recent successful tracer gas test is greater than 3 years.

(c) The first performance of the periodic measurement of CRE pressure, Specification 5.5.[18].d, shall be within [18] months, plus the [138] days allowed by SR 3.0.2, as measured from [date], the date of the most recent successful pressure measurement test, or within [138] days if not performed previously.

### 3.0 REGULATORY ANALYSIS

#### 3.1 No Significant Hazards Consideration Determination

[LICENSEE] has reviewed the proposed no significant hazards consideration determination (NSHCD) published in the *Federal Register* as part of the CLIP.

[LICENSEE] has concluded that the proposed NSHCD presented in the Federal Register notice is applicable to [PLANT] and is hereby incorporated by reference to satisfy the requirements of 10 CFR 50.91(a).

#### [3.2 Commitments]

[Note: The applicant should state regulatory commitments proposed in support of this LAR, if any, in this section, and restate them in optional Attachment 4.]

### 4.0 ENVIRONMENTAL EVALUATION

[LICENSEE] has reviewed the environmental evaluation included in the model safety evaluation dated [DATE] as part of the CLIP. [LICENSEE] has concluded that the staff's

findings presented in that evaluation are applicable to [PLANT] and the evaluation is hereby incorporated by reference for this application.

**Attachment 2 – PROPOSED TECHNICAL SPECIFICATION CHANGES (MARK-UP)**

**Attachment 3 – REVISED TECHNICAL SPECIFICATION PAGES**

**[Attachment 4 – REGULATORY COMMITMENTS]**

[The following table identifies those actions committed to by [LICENSEE] in this document. Any other statements in this submittal are provided for information purposes and are not considered to be regulatory commitments. Please direct questions regarding these commitments to [CONTACT NAME].]

REGULATORY COMMITMENTS	DUE DATE/EVENT

**Attachment 5 – PROPOSED CHANGES TO TECHNICAL SPECIFICATION BASES PAGES (MARK-UP)**

**Criterion 3—The Proposed Change Does Not Involve a Significant Reduction in the Margin of Safety**

The proposed change does not alter the manner in which safety limits, limiting safety system settings or limiting conditions for operation are determined. The proposed change does not affect safety analysis acceptance criteria. The proposed change will not result in plant operation in a configuration outside the design basis for an unacceptable period of time without compensatory measures. The proposed change does not adversely affect systems that respond to safely shut down the plant and to maintain the plant in a safe shutdown condition. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based upon the reasoning presented above and the previous discussion of the amendment request, the requested change does not involve a no-significant-hazards consideration.

Dated at Rockville, Maryland, this 9th day of January, 2007.

**FOR THE NUCLEAR REGULATORY COMMISSION**

*/RA/*

**Timothy J. Kobetz, Branch Chief  
Technical Specifications Branch  
Division of Inspection and Regional Support  
Office of Nuclear Reactor Regulation**

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\* See previous concurrence

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<b>NAME</b>	<b>CCHarbuck*</b>	<b>MKotzalas*</b>	<b>RDennig*</b>	<b>JMartin*</b>	<b>TJKobetz</b>

<b>DATE</b>	<b>12/15/2006</b>	<b>12/26/2006</b>	<b>12/22/2006</b>	<b>01/04/2007</b>	<b>01/09/2007</b>
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