

July 29, 2008

Mr. Edward D. Halpin  
Chief Nuclear Officer  
STP Nuclear Operating Company  
South Texas Project  
P.O. Box 289  
Wadsworth, TX 77483

SUBJECT: SOUTH TEXAS PROJECT, UNITS 1 AND 2 - ISSUANCE OF AMENDMENTS  
RE: ADOPTION OF TECHNICAL SPECIFICATIONS TASK FORCE (TSTF)  
TRAVELER NO. TSTF-448, REVISION 3, "CONTROL ROOM ENVELOPE  
HABITABILITY" (TAC NOS. MD5942 AND MD5943)

Dear Mr. Halpin:

The Nuclear Regulatory Commission (NRC) has issued the enclosed Amendment No. 185 to Facility Operating License No. NPF-76 and Amendment No. 172 to Facility Operating License No. NPF-80 for the South Texas Project, Units 1 and 2, respectively. The amendments consist of changes to the Technical Specifications (TSs) in response to your application dated June 26, 2007, as supplemented by letters dated April 29 and May 27, 2008.

The amendments added a new license condition (12) for Unit 1 and new license condition (10) for Unit 2 on the control room envelope (CRE) habitability program. In addition, the amendments revised the TS requirements related to the habitability of the CRE in TS 3.7.7, "Control Room Makeup and Cleanup Filtration System (CRMCFs)," and added the new Control Room Envelope Habitability Program to TS Section 6.8, "Administrative Controls—Procedures, Programs, and Manuals." These changes are consistent with the NRC-approved TS Task Force (TSTF) Standard Technical Specification change traveler TSTF-448, Revision 3, "Control Room Envelope Habitability." The availability of the TS improvement was published in the *Federal Register* on January 17, 2007 (72 FR 2022), as part of the Consolidated Line Item Improvement Process.

E. Halpin

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A copy of our related Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's next biweekly *Federal Register* notice.

Sincerely,

***/RA/***

Jack N. Donohew, Senior Project Manager  
Plant Licensing Branch IV  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-498 and 50-499

Enclosures:

1. Amendment No. 185 to NPF-76
2. Amendment No. 172 to NPF-80
3. Safety Evaluation

cc w/encls: See next page

E. Halpin

- 2 -

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Sincerely,

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cc w/encls: See next page

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**ADAMS Accession Nos.:** Pkg ML082040560, Amendment ML082040595, License/TS Pgs ML082050427 (\*) via SE memo

OFFICE	NRR/LPL4/GE	NRR/LPL4/PM	NRR/LPL4/LA	NRR/DSS/SCVB	OGC	NRR/LPL4/BC (A)	NRR/LPL4/PM
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DATE	07/28/08	07/24/08	7/24/08	6/11/08	08/28/08	7/29/08	7/29/08

OFFICIAL RECORD COPY

South Texas Project, Units 1 and 2

7/29/2008

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STP NUCLEAR OPERATING COMPANY

DOCKET NO. 50-498

SOUTH TEXAS PROJECT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 185  
License No. NPF-76

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by STP Nuclear Operating Company (STPNOC)\* acting on behalf of itself and for NRG South Texas LP, the City Public Service Board of San Antonio (CPS), and the City of Austin, Texas (COA) (the licensees), dated June 26, 2007, as supplemented by letters dated April 29 and May 27, 2008, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this license amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

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\*STPNOC is authorized to act for NRG South Texas LP, the City Public Service Board of San Antonio, and the City of Austin, Texas, and has exclusive responsibility and control over the physical construction, operation, and maintenance of the facility.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and Paragraph 2.C.(2) of Facility Operating License No. NPF-76 is hereby amended to read as follows:

- (2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 185, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. STPNOC shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. In addition, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and Paragraph 2.C.(12) of Facility Operating License No. NPF-76 is hereby amended to read as follows:

- (12) Control Room Envelope Habitability

Upon implementation of this License Amendment Request adopting TSTF-448, Revision 3, the determination of CRE unfiltered air leakage as required by SR 4.7.7.e.3, in accordance with TS 6.8.3.p.3.(i), the assessment of CRE habitability as required by Specification 6.8.3.p.3.(ii), and the measurement of CRE pressure as required by Specification 6.8.3.p.4, shall be considered met. Following implementation:

- (a) For Unit 1, the first performance of SR 4.7.7.e.3, in accordance with Specification 6.8.3.p.3.(i), shall be within the specified frequency of 6 years, plus the 18-month allowance of SR 3.0.2, as measured from March 9, 2004, the date of the most recent successful tracer gas test, as stated in the letter from T.J. Jordan, STP Nuclear Operating Company, to the NRC Document Control Desk, dated August 5, 2004 (NOC-AE-04001758), response to Generic Letter 2003-01, or within the next 18 months if the time period since the most recent successful tracer gas test is greater than 6 years.
    - (b) For Unit 1, the first performance of the periodic assessment of CRE habitability, Specification 6.8.3.p.3.(ii), shall be within 3 years, plus the 9-month allowance of SR 3.0.2, as measured from March 9, 2004, the date of the most recent successful tracer gas test, as stated in the letter from T.J. Jordan, STP Nuclear Operating Company, to the NRC Document Control Desk, dated August 5, 2004 (NOC-AE-04001758), 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) For Unit 1, the first performance of the periodic measurement of CRE pressure, Specification 6.8.3.p.4, shall be within 18 months, plus the 138 days allowed by SR 3.0.2, as measured from April 30, 2007, the date of the most recent successful pressure measurement test.
4. The license amendment is effective as of its date of issuance and shall be implemented within 60 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Mohan C. Thadani, Acting Chief  
Plant Licensing Branch IV  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Facility Operating  
License No. NPF-76 and the  
Technical Specifications

Date of Issuance: July 29, 2008



STP NUCLEAR OPERATING COMPANY

DOCKET NO. 50-499

SOUTH TEXAS PROJECT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 172  
License No. NPF-80

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by STP Nuclear Operating Company (STPNOC)\* acting on behalf of itself and for NRG South Texas LP, the City Public Service Board of San Antonio (CPS), and the City of Austin, Texas (COA) (the licensees), dated June 26, 2007, as supplemented by letters dated April 29 and May 27, 2008, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this license amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

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\*STPNOC is authorized to act for NRG South Texas LP, the City Public Service Board of San Antonio, and the City of Austin, Texas, and has exclusive responsibility and control over the physical construction, operation, and maintenance of the facility.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and Paragraph 2.C.(2) of Facility Operating License No. NPF-80 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 172, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. STPNOC shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. In addition, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and Paragraph 2.C.(10) of Facility Operating License No. NPF-80 is hereby amended to read as follows:

(10) Control Room Envelope Habitability

Upon implementation of this License Amendment Request adopting TSTF-448, Revision 3, the determination of CRE unfiltered air leakage as required by SR 4.7.7.e.3, in accordance with TS 6.8.3.p.3.(i), the assessment of CRE habitability as required by Specification 6.8.3.p.3.(ii), and the measurement of CRE pressure as required by Specification 6.8.3.p.4, shall be considered met. Following implementation:

- (a) For Unit 2, the first performance of SR 4.7.7.e.3, in accordance with Specification 6.8.3.p.3.(i), shall be within the specified frequency of 6 years, plus the 18-month allowance of SR 3.0.2, as measured from February 12, 2007, the date of the most recent successful tracer gas test, or within the next 18 months if the time period since the most recent successful tracer gas test is greater than 6 years.
- (b) For Unit 2, the first performance of the periodic assessment of CRE habitability, Specification 6.8.3.p.3.(ii), shall be within 3 years, plus the 9-month allowance of SR 3.0.2, as measured from February 12, 2007, the date of the most recent successful tracer gas test, or within the next 9 months if the time period since the most recent successful tracer gas test is greater than 3 years.
- (c) For Unit 2, the first performance of the periodic measurement of CRE pressure, Specification 6.8.3.p.4, shall be within 18 months, plus the 138 days allowed by SR 3.0.2, as measured from February 16, 2007, the date of the most recent successful pressure measurement test.

4. The license amendment is effective as of its date of issuance and shall be implemented within 60 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Mohan C. Thadani, Acting Chief  
Plant Licensing Branch IV  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Facility Operating  
License No. NPF-80 and the  
Technical Specifications

Date of Issuance: July 29, 2008

ATTACHMENT TO LICENSE AMENDMENT NOS. 185 AND 172

FACILITY OPERATING LICENSE NOS. NPF-76 AND NPF-80

DOCKET NOS. 50-498 AND 50-499

Replace the following pages of the Facility Operating Licenses, Nos. NPF-76 and NPF-80, and Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Facility Operating License No. NPF-76

<u>REMOVE</u>	<u>INSERT</u>
-4-	-4-
-7-	-7-
-8-	-8-
-9-	-9-
--	-10-

Facility Operating License No. NPF-80

<u>REMOVE</u>	<u>INSERT</u>
-4-	-4-
-6-	-6-
-7-	-7-
-8-	-8-
--	-9-

Technical Specifications – NPF-76 and NPF-80

<u>REMOVE</u>	<u>INSERT</u>
3/4 7-16	3/4 7-16
3/4 7-18	3/4 7-18
6-12c	6-12c
--	6-12d

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NOS. 185 AND 172 TO  
FACILITY OPERATING LICENSE NOS. NPF-76 AND NPF-80  
STP NUCLEAR OPERATING COMPANY, ET AL.  
SOUTH TEXAS PROJECT, UNITS 1 AND 2  
DOCKET NOS. 50-498 AND 50-499

1.0 INTRODUCTION

By application dated June 26, 2007 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML071870252), as supplemented by letters dated April 29 and May 27, 2008 (ADAMS Accession Nos. ML081270047 and ML081720131, respectively), STP Nuclear Operating Company (STPNOC, the licensee) requested changes to the Technical Specifications (TS) for the South Texas Project (STP), Units 1 and 2.

The supplemental letters dated April 29 and May 27, 2008, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the U.S. Nuclear Regulatory Commission (NRC) staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on August 14, 2007 (72 FR 45460).

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 NRC Generic Letter (GL) 2003-01 (Reference 1), licensees were alerted to findings at facilities that existing TS surveillance requirements (SRs) for the Control Room Emergency Filter System (CREF) may not be adequate. Specifically, the results of American Society for Testing and Materials (ASTM) E741 (Reference 2) tracer gas tests to measure CRE unfiltered leakage 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] leakage 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 January 17, 2007 (72 FR 2022).

Consistent with the traveler as incorporated into NUREG-1431, the licensee proposed revising action and SRs in Specification 3.7.7, "Control Room Makeup and Cleanup Filtration System (CRMCFs)," and adding a new administrative controls program, Specification 6.8.3.q, "Control Room Envelope 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.

STP Units 1 and 2 are Custom Technical Specifications plants. The differences in TS numbering and in the TS bases references, combined with some editorial and plant-specific changes that were incorporated into this safety evaluation, resulted in minor deviations from the model safety evaluation text in TSTF-448, Revision 3.

## 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" 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.

## 2.2 Control Room Makeup and Cleanup Filtration System (CRMCFs)

The CRMCFs (the term used at STP Units 1 and 2 for the Control Room Envelope Emergency Ventilation System, 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 CRMCFs 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 5 roentgen equivalent man (rem) total effective dose equivalent (TEDE).

The CRMCFs consists of three independent, redundant 50 percent trains capable of maintaining the habitability of the CRE. The CRMCFs is considered operable when the individual components necessary to limit operator exposure are operable. The CRMCFs is considered operable when the associated:

- Fans are OPERABLE;
- HEPA filters and charcoal adsorbers are not excessively restricting flow and are capable of performing their filtration functions;
- Heater, ductwork, valves, and dampers are OPERABLE, and air circulation can be maintained; and
- CRE boundary is operable.

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

### 2.3 Regulations Applicable to Control Room Habitability

In Appendix A, "General Design Criteria for Nuclear Power Plants," to Title 10 of the *Code of Federal Regulations* (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. The STP Updated Final Safety Analysis Report (UFSAR) Section 3.1.1 states that the STP nuclear power plant fully satisfied and is in compliance with the GDC. A summary of these GDCs follows.

- 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 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 (stated in GDC 19) 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 SR associated with demonstrating the operability of the CRE boundary requires verifying that one CREEVS train subsystem can maintain a positive pressure relative to the areas adjacent to the CRE during the pressurization mode of operation at a makeup flow rate. Facilities that pressurize the CRE during the emergency mode of operation of the CREEVS have similar SRs. 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 SR, 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; i.e., as stated in GDC-19, even while crediting compensatory measures.

NRC Administrative Letter (AL) 98-10, "Dispositioning of Technical Specifications That Are Insufficient to Assure Plant Safety," 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 Regulatory Issue Summary (RIS) 2005-20 (Reference 3), "[i]mposing 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 NRC 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(d)(3), which requires a facility's TS to include SRs, 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(d)(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.

Because the design of the units is not being changed by the proposed amendment, the units continue to meet GDC 1, 2, 3, 4, and 5. Because the proposed addition of TS 6.8.3.q, "Control Room Envelope (CRE) Habitability Program," requires the dose requirements of GDC 19 to be met, GDC 19 will continue to be met by the units.

#### 2.4 Regulations Applicable to the TS

Section 182a of the Atomic Energy Act requires applicants for nuclear power plant operating licenses to include TSs as part of the license. The TSs ensure the operational capability of SSCs that are required to protect the health and safety of the public. The NRC's regulatory requirements related to the content of the TSs are contained in 10 CFR 50.36, which requires that the TSs include items in the following categories: (1) safety limits, limiting safety systems settings, and limiting control settings; (2) LCOs; (3) SRs; (4) design features; and (5) administrative controls. However, the rule does not specify the particular requirements to be included in a plant's TSs. As stated in 10 CFR 50.36(c)(2)(i), the "[l]imiting conditions for operation are the lowest functional capability or performance levels of equipment required for safe operation of the facility. When a limiting condition for operation of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the technical specifications ..." SRs are, in accordance with 10 CFR 50.36(c)(3), "requirements relating to tests, calibration, or inspection to assure that the necessary quality of the systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met."

#### 2.5 Adoption of TSTF-448, Revision 3, STP, Units 1 and 2

Adoption of TSTF-448, Revision 3, will assure that the facility's TS LCO for the CRMCFS 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) described in Regulatory Guide 1.197, 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 adoption of the changes made by TSTF-448 to the TS requirements for the CRMCFS and the CRE boundary conform to 10 CFR 50.36(d)(2) and 10 CFR 50.36(d)(3). Their adoption will better assure that the CRE at STP will remain habitable during normal operation and DBA

conditions. These changes are, therefore, acceptable from a regulatory standpoint in that they meet 10 CFR 50.36.

### 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 CRMCFS at STP pressurizes the CRE to minimize unfiltered air inleakage. The proposed changes are consistent with this design.

#### 3.1 Proposed Changes to Facility Operating License Nos. NPF-76 and NPF-80

The following new condition is to be added to facility operating license NPF-76 for STP Unit 1:

##### (12) Control Room Envelope Habitability

Upon implementation of this License Amendment Request adopting TSTF-448, Revision 3, the determination of CRE unfiltered air inleakage as required by SR 4.7.7.e.3, in accordance with TS 6.8.3.p.3.(i), the assessment of CRE habitability as required by Specification 6.8.3.p.3.(ii), and the measurement of CRE pressure as required by Specification 6.8.3.p.4, shall be considered met. Following implementation:

- (a) For Unit 1, the first performance of SR 4.7.7.e.3, in accordance with Specification 6.8.3.p.3.(i), shall be within the specified frequency of 6 years, plus the 18-month allowance of SR 3.0.2, as measured from March 9, 2004, the date of the most recent successful tracer gas test, as stated in the letter from T.J. Jordan, STP Nuclear Operating Company, to the NRC Document Control Desk, dated August 5, 2004 (NOC-AE-04001758), response to Generic Letter 2003-01, or within the next 18 months if the time period since the most recent successful tracer gas test is greater than 6 years.
- (b) For Unit 1, the first performance of the periodic assessment of CRE habitability, Specification 6.8.3.p.3.(ii), shall be within 3 years, plus the 9-month allowance of SR 3.0.2, as measured from March 9, 2004, the date of the most recent successful tracer gas test, as stated in the letter from T.J. Jordan, STP Nuclear Operating Company, to the NRC Document Control Desk, dated August 5, 2004 (NOC-AE-04001758), 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) For Unit 1, the first performance of the periodic measurement of CRE pressure, Specification 6.8.3.p.4, shall be within 18 months, plus the 138 days allowed by SR 3.0.2, as measured from April 30, 2007, the date of the most recent successful pressure measurement test.

The following new condition is to be added to facility operating license NPF-80 for STP Unit 2:

(10) Control Room Envelope Habitability

Upon implementation of this License Amendment Request adopting TSTF-448, Revision 3, the determination of CRE unfiltered air leakage as required by SR 4.7.7.e.3, in accordance with TS 6.8.3.p.3.(i), the assessment of CRE habitability as required by Specification 6.8.3.p.3.(ii), and the measurement of CRE pressure as required by Specification 6.8.3.p.4, shall be considered met. Following implementation:

- (a) For Unit 2, the first performance of SR 4.7.7.e.3, in accordance with Specification 6.8.3.p.3.(i), shall be within the specified frequency of 6 years, plus the 18-month allowance of SR 3.0.2, as measured from February 12, 2007, the date of the most recent successful tracer gas test, or within the next 18 months if the time period since the most recent successful tracer gas test is greater than 6 years.
- (b) For Unit 2, the first performance of the periodic assessment of CRE habitability, Specification 6.8.3.p.3.(ii), shall be within 3 years, plus the 9-month allowance of SR 3.0.2, as measured from February 12, 2007, the date of the most recent successful tracer gas test, or within the next 9 months if the time period since the most recent successful tracer gas test is greater than 3 years.
- (c) For Unit 2, the first performance of the periodic measurement of CRE pressure, Specification 6.8.3.p.4, shall be within 18 months, plus the 138 days allowed by SR 3.0.2, as measured from February 16, 2007, the date of the most recent successful pressure measurement test.

### 3.2 Proposed Changes

The proposed amendments would strengthen CRE habitability TS requirements by changing TS 3.7.7, Control Room Makeup and Cleanup Filtration (CRMCF) System, 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 to the latest information and references, correct factual errors, and achieve more consistency among the STS NUREGs. Except for plant-specific differences and changes that were necessary due to STP being a Custom TS plant, 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 amendments. Approval of the identified TS Bases change is through TS 6.8.3.m, "Technical Specifications Bases Control Program." This provides assurance that the licensee has established correct bases for the TSs, is not changing the licensing basis of the units without NRC review and approval, and will maintain the adequacy of the Bases. The proposed Bases for TS 3.7.7 refer to specific guidance in Nuclear Energy Institute (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).

A specific area that the licensee has elected to clarify in the TS Bases for SR 4.7.7.e.3 is the discussion of hazardous chemical releases and smoke challenges. Specifically, it is stated that there is no CRMCFs actuation for hazardous chemical releases or smoke and there are no SRs to verify operability for hazardous chemical releases or smoke. It is further stated that no in-leakage test is required to determine unfiltered in-leakage from hazardous chemical since this would be a value much less than that currently assumed in the hazardous chemical analysis. In a letter dated March 19, 2008 (ADAMS Accession No. ML080720007), the NRC staff requested the licensee to confirm that it is in compliance with the guidance of Regulatory Guide 1.78 or provide justification for any differences. In a letter dated April 29, 2008, the licensee stated that STP is in compliance with Regulatory Guide 1.78 and provided additional licensing basis discussion in support of this conclusion.

Based on its review of the identified changes to the TS Bases for this amendment, the NRC staff has not identified any problems with the changes.

### 3.3 TS 3.7.7, CRMCFs

The licensee proposed to establish new action requirements in TS 3.7.7, "CRMCFs," for an inoperable CRE boundary. STP is a Custom TS plant and currently has no action requirements for an inoperable CRE boundary. The licensee proposed to revise the action requirements by adding a new Condition d in MODES 1, 2, 3, and 4 "One or more Control Room Makeup and Cleanup Filtration Systems inoperable due to inoperable Control Room Envelope (CRE) boundary." The new Actions d.1, d.2, and d.3 would allow 90 days (Action d.3) to restore the CRE boundary (and consequently, the CRMCFs) to operable status, provided that mitigating actions are immediately implemented (Action d.1) and within 24 hours (Action d.2) 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 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 d.3 is a reasonable time to diagnose, plan and possibly repair, and test

most anticipated problems with the CRE boundary. Therefore, proposed Actions d.1, d.2, and d.3 are acceptable.

The licensee also proposed to revise the existing Conditions a, b, and c in TS 3.7.7. The existing conditions address the action statements to address the inoperability of one or more CRMCF Systems. Conditions a, b, and c address the inoperability of one CRMCF System, two CRMCF Systems, and three CRMCF Systems, respectively. To distinguish new Condition d from the existing conditions for inoperable CRMCFs, the existing Conditions a, b, and c would be revised to state that their applicability excludes the new Condition d. For example, Condition a would be revised to state, "With one Control Room Makeup and Cleanup Filtration System inoperable for reasons other than condition d ---." Conditions b and c would also be revised similarly. The changes to existing Conditions a, b, and c are less restrictive because these Conditions will no longer apply in the event the CRMCF Systems are inoperable due to an inoperable CRE boundary during operation in MODES 1, 2, 3, and 4. This is acceptable because the new Action d establishes adequate remedial measures in this condition.

In the emergency radiation mode of operation, the CRMCFs isolate normal unfiltered outside air intake path, filters the emergency ventilation air supply to the CRE, and pressurizes the CRE to minimize unfiltered air leakage past the CRE boundary. The licensee proposed to delete the CRE pressurization SR. This SR requires verifying that the CRMCFs operating in the emergency radiation mode can maintain a pressure of  $\geq 0.25$  inches water gauge relative to all adjacent areas during the pressurization mode of operation at a makeup flow rate of  $\leq 2000$  cubic feet per minute (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 responses to GL 2003-01, dated December 9, 2003, and August 4, 2004 (ADAMS Accession Nos. ML033500387 and ML042260183, respectively), the licensee made a commitment to revise the TS to include periodic verification of control room in-leakage in accordance with TSTF-448. Accordingly, the licensee has now proposed to revise the current CRE pressurization surveillance, SR 4.7.7.e.3, with an inleakage measurement SR and a CRE Habitability Program in TS Section 6.8.3.q, in accordance with the approved version of TSTF-448. Based on the adoption of TSTF-448, Revision 3, the licensee's proposed revision to SR 4.7.7.e.3 is acceptable.

The proposed CRE inleakage measurement SR 4.7.7.e.3 states, "Perform required CRE unfiltered air inleakage testing in accordance with the Control Room Envelope Habitability Program." The CRE Habitability Program TS, proposed in TS 6.8.3.p, 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 proposed to follow this method. Therefore, the proposed CRE inleakage measurement SR is acceptable.

### 3.4 TS 6.8.3.q, 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 4.7.7.e.3, this program is intended to ensure the operability of the CRE boundary, which as part of an operable CRMCFs 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 DBA conditions without personnel receiving radiation exposures in excess of 5 rem 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. 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, will be performed as part of assessing the CRE boundary at a frequency of 18 months. 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 DBAs. Having an unambiguous criterion for the CRE boundary to be considered operable in order to meet LCO 3.7.7, 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) (measurement of CRE in-leakage and assessment of CRE habitability), 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 6.8.3.q 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 6.8.3.q, which is consistent with the model program TS approved by the NRC staff in TSTF-448, Revision 3, is acceptable.

However, in the proposed TS 6.8.3.q, the licensee took exceptions to Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0, as follows:

The licensee took a general exception to Section C of Regulatory Guide 1.197, Revision 0 by stating that Section 4.3.2, "Periodic CRH Assessment" from NEI 99-03, Revision 1, will be used as input to a site-specific self-assessment procedure. The NRC staff has neither formally endorsed NEI 99-03, Revision 1, nor has it reviewed this document. In a letter dated March 19, 2008, the NRC staff requested the licensee to clarify the inconsistency between this exception and the licensee's letter dated June 26, 2007, which stated that "STPNOC proposes to reference NEI (Nuclear Energy Institute) 99-03, Revision 0, dated June 2001, in the TS basis for TS 3.7.7, instead of Revision 1, dated March 2003 because the NRC has not formally endorsed Revision 1." In a letter dated April 29, 2008 (ADAMS Accession No. ML081270047), the licensee corrected this inconsistency by stating that the requested general exception would be withdrawn, and followed it with a formal withdrawal in a letter dated May 27, 2008.

The licensee also took an exception to Section C.1.2 of Regulatory Guide 1.197, Revision 0 by stating that "No peer reviews are required to be performed." The licensee's justification was based on the consideration that vulnerabilities were previously identified in STP's self-assessment conducted in April 2000, and that three offsite peers were involved in the assessment. The licensee further stated that corrective actions were completed prior to the successful ASTM E741 tracer gas tests conducted in year 2004 for both Units 1 and 2. The NRC staff finds the justification acceptable and that maintenance level of effort as proposed by the licensee is appropriate for the CRE Habitability Program at STP.



### 3.5 Conclusion on proposed Amendment

In its application and supplemental letters, the licensee proposed changes to the STP TSs to adopt TSTF-448, revision 3, on CRE habitability. These changes were evaluated in Sections 3.3 and 3.4 of this safety evaluation. Based on the conclusions in these sections and Section 2.3, the NRC staff concludes that the proposed amendment meets GDC 1, 2, 3, 4, 5, and 19, and 10 CFR 50.36. Based on this conclusion, the NRC staff further concludes that the proposed amendment is acceptable.

### 3.5 Implementation of New Surveillance and Assessment Requirements by the Licensee

The licensee has proposed license conditions regarding the initial performance of the new surveillance and assessment requirements. The new license conditions adopted the conditions in section 2.3 of the model application published in the *Federal Register* on January 17, 2007 (72 FR 2022). Plant-specific changes were made to these proposed license conditions. The proposed plant-specific license conditions, as shown in Section 3.1 of this safety evaluation, are consistent with the model application, and are acceptable.

## 4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Texas State official was notified of the proposed issuance of the amendments. The State official had no comments.

## 5.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. 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 consideration, and there has been no public comment on such finding published in the *Federal Register* on August 14, 2007 (72 FR 45460). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

## 6.0 CONCLUSION

The Commission has concluded, based on 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

NRC Generic Letter (GL) 2003-01, "Control Room Habitability," dated June 12, 2003 (ADAMS Accession No. ML031620248).

American Society for Testing & Materials (ASTM) E741, "Standard Test Method for Determining Air Change in a Single Zone by Means of a Tracer Gas Dilution," 2000.

NRC Regulatory Issue Summary (RIS) 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 (ADAMS Accession No. ML081090556).

Regulatory Guide 1.196, "Control Room Habitability at Light-Water Nuclear Power Reactors," Revision 0, dated May 2003 (ADAMS Accession No. ML031490611).

Regulatory Guide 1.197, "Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors," Revision 0, date May 2003 (ADAMS Accession No. ML931490664).

Nuclear Energy Institute (NEI) 99-03, "Control Room Habitability Assessment Guidance," Revision 0, dated June 2001.

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