

January 27, 2003

Mr. William T. Cottle
President and Chief Executive Officer
STP Nuclear Operating Company
South Texas Project Electric
Generating Station
P.O. Box 289
Wadsworth, TX 77483

SUBJECT: SOUTH TEXAS PROJECT, UNITS 1 AND 2 - ISSUANCE OF AMENDMENTS
REVISING TECHNICAL SPECIFICATIONS 4.4.1.4.2.2 AND 4.9.1.3
(TAC NOS. MB6171 and MB6172)

Dear Mr. Cottle:

The Commission has issued the enclosed Amendment No. 149 to Facility Operating License No. NPF-76 and Amendment No. 137 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 August 21, 2002.

The amendments revise the TSs 4.4.1.4.2.2 and 4.9.1.3 by deleting the references to specific valves which must be secured to isolate potential uncontrolled dilution of boron in MODE 5 with loops unfilled and in MODE 6. The amendments replace the existing TS requirements with the requirements consistent with the improved standard TSs for Westinghouse plants (NUREG-1431).

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/

Mohan C. Thadani, Senior Project Manager, Section 1
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-498 and 50-499

Enclosures: 1. Amendment No. 149 to NPF-76
2. Amendment No. 137 to NPF-80
3. Safety Evaluation

cc w/encls: See next page

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NRR-058

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STP NUCLEAR OPERATING COMPANY

DOCKET NO. 50-498

SOUTH TEXAS PROJECT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 149
License No. NPF-76

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by STP Nuclear Operating Company* acting on behalf of itself and for Texas Genco, LP, the City Public Service Board of San Antonio (CPS), Central Power and Light Company (CPL), and the City of Austin, Texas (COA) (the licensees), dated August 21, 2002, 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.

*STP Nuclear Operating Company is authorized to act for Texas Genco, LP, the City Public Service Board of San Antonio, Central Power and Light Company, 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 (TSs) 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. 149 , and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. The STP Nuclear Operating Company shall operate the facility in accordance with the TSs and the Environmental Protection Plan.

3. The license amendment is effective as of its date of issuance and shall be implemented within 30 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Robert A. Gramm, Chief, Section 1
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: January 27, 2003

STP NUCLEAR OPERATING COMPANY

DOCKET NO. 50-499

SOUTH TEXAS PROJECT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 137
License No. NPF-80

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by STP Nuclear Operating Company* acting on behalf of itself and for Texas Genco, LP, the City Public Service Board of San Antonio (CPS), Central Power and Light Company (CPL), and the City of Austin, Texas (COA) (the licensees), dated August 21, 2002, 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.

*STP Nuclear Operating Company is authorized to act for Texas Genco, LP, the City Public Service Board of San Antonio, Central Power and Light Company, 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 (TSs) 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. 137 , and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. The STP Nuclear Operating Company shall operate the facility in accordance with the TSs and the Environmental Protection Plan.

3. The license amendment is effective as of its date of issuance and shall be implemented within 30 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Robert A. Gramm, Chief, Section 1
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: January 27, 2003

ATTACHMENT TO LICENSE AMENDMENT NOS. 149 AND 137

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

DOCKET NOS. 50-498 AND 50-499

Replace the following pages of the 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.

REMOVE

3/4 4-6

3/4 9-1

INSERT

3/4 4-6

3/4 9-1

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 149 AND 137 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 letter dated August 21, 2002, STP Nuclear Operating Company, the licensee for South Texas Project (STP), Units 1 and 2, proposed to revise the STP Technical Specifications (TSs). The proposed changes would revise Surveillance Requirement (SR) 4.4.1.4.2.2 and SR 4.9.1.3, for MODE 5 with loops not filled, and MODE 6, respectively, by deleting the referencing of specific valves required to be secured to isolate the potential uncontrolled boron dilution. Instead of referencing specific valves, the licensee proposed to add a requirement to isolate the unborated water sources by the Limiting Condition for Operation (LCO) 3.4.1.4.2 and LCO 3.9.1 for MODE 5 and MODE 6 operation, respectively.

An inadvertent or uncontrolled boron dilution event, which results in the increase of core reactivity and decrease of shutdown margin, can occur because of operator error or equipment malfunction of the chemical volume and control system (CVCS) that results in uncontrolled dilution of boron concentration in the reactor coolant system (RCS). The operator must stop this unplanned dilution before shutdown margin limit is violated.

2.0 REGULATORY EVALUATION

The Standard Review Plan (NUREG-0800), Section 15.4.6, "Chemical and Volume Controls System Malfunction that Results in a Decrease in Boron Concentration in the Reactor Coolant (PWR)," provides for evaluation of inadvertent boron dilution events occurring during various modes of operation.

Chapter 15.4.6.2 in the STP Updated Final Safety Analysis Report (UFSAR) states that an uncontrolled boron dilution accident cannot occur during a refueling outage (MODE 6), and in cold shutdown (MODE 5) with the water level being drained down from a filled and vented condition. This uncontrolled boron dilution accident is prevented during these modes of operation by administrative controls which isolate the RCS from the potential sources of unborated water.

3.0 TECHNICAL EVALUATION

The UFSAR lists four valves in the CVCS, which will be locked closed or isolated by removal of instrument air or electrical power during these modes of operation. The secured closure of these valves to prevent a potential uncontrolled boron dilution event is an operating restriction to prevent the occurrence of an accident. This restriction is included in the TS LCO, in accordance with 10 CFR 50.36(c)(2)(ii)(B), Criterion 2 of Title 10 of the *Code of Federal Regulations* (10 CFR). Section 10 CFR 50.36(c)(2)(ii) requires that an LCO be established for items meeting Criterion 2: "a process variable, design feature, or operating restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier."

The STP TS LCO 3.4.1.4.2 for MODE 5 with reactor coolant loop not filled, and LCO 3.9.1 during MODE 6, respectively, do not include this operating restriction. Rather, the operating restriction is specified in SR 4.4.1.4.2.2 and SR 4.9.1.3, which specify that valves FCV-110B, FCV-111B, CV0201A, and CV0221 shall be verified closed and secured in position by mechanical stops or by removal of air or electric power at least once per 31 days.

The licensee states that these SRs are unnecessarily restrictive because there are alternative means of isolating the boron dilution pathways, which provide the same level of safety assurance. Because the subject isolation valves specified in the SRs are inservice during power operations and on-line maintenance is not practical, and because the valves must be secured during outages, its normal maintenance cannot be performed except in a very narrow time window when all fuel is removed from the vessel. The proposed changes would revise the SRs to require the isolation of the boron dilution pathways, without prescribing the isolation valves to be used or prescribing the means of securing the device in the closed position.

To justify its contention that an uncontrolled boron dilution event cannot occur during refueling operation and during cold shutdown with the water level drained down from a filled and vented condition, UFSAR Chapter 15.4.6.2 states that Valves FCV-110B, FCV-111B, CV0201A, and CV0221 in the CVCS will be locked closed or isolated by removal of instrumentation air or electrical power during these modes of operations to isolate the boron dilution sources from the RCS. SR 4.4.1.4.2.2, for MODE 5 with reactor coolant loops not filled, and SR 4.9.1.3, for MODE 6 refueling operation, respectively, specify the above referenced four valves in the CVCS shall be verified closed and secured in position by mechanical stops or removal of air or electrical power at least once per 31 days. As such, the licensee states that an uncontrolled boron dilution event in MODE 5 with the loops not filled, and in MODE 6, is outside the STP design basis.

However, the licensee further contends that there are alternative means of isolating the boron dilution pathways, and that SR 4.4.1.4.2.2 and SR 4.9.1.3 are unnecessarily restrictive in specifying the referenced valves for unborated water isolation, which allows a short time window for the maintenance of these valves. In Figure 1 of the submittal, the licensee provides examples of alternate isolation locations compared to the four isolation valves specified in these SRs for the isolation of potential dilution flow paths. The licensee proposed to delete the reference of the four specific valves from the SRs and replace it with a general requirement of isolating the unborated water sources. In its totality, the licensee proposed TS revisions that are modeled after the provisions of NUREG-1431, "Standard Technical Specifications, Westinghouse Plants," which requires the flow path to be closed and secured without

identifying which valves must be used to isolate the flow path. The proposed changes include the following:

- Revision of SR 4.4.1.4.2.2 and 4.9.1.3, respectively, by stating that “Each valve or mechanical joint used to isolate unborated water sources shall be verified closed and secured in position at least once per 31 days.” This eliminates the referencing of specific valves and means of securing the closed position in the specifications.
- Addition to LCO 3.4.1.4.2 and LCO 3.9.1 during MODE 5 with reactor coolant loops not filled, and during MODE 6, respectively, a requirement that “Each valve or mechanical joint used to isolate unborated water sources shall be secured in the closed position.”
- Addition of an Action requirement under LCO 3.4.1.4.2, which states that, “With a valve or mechanical joint used to isolate unborated water sources not secured in the closed position, immediately suspend all operations that would cause introduction into the RCS of coolant with boron concentration less than required to meet SHUTDOWN MARGIN of LCO 3.1.1 and initiate action to secure the valve(s) or joint(s) in the closed position and within 4 hours verify boron concentration is within limits specified in LCO 3.1.1.2. The required action to verify the boron concentration within limits must be completed whenever ACTION c. is entered. A separate ACTION entry is allowed for each unsecured valve or mechanical joint.”
- Addition of an Action requirement under LCO 3.9.1, which states that, “With a valve or mechanical joint used to isolate an unborated water source not secured in the closed position, immediately suspend CORE ALTERATIONS and initiate action to secure the valve(s) or mechanical joint(s) in the closed position and within 4 hours verify boron concentration is within limit. The required action to verify the boron concentration within limits must be completed whenever ACTION b. is entered. A separate ACTION entry is allowed for each unsecured valve or mechanical joint.”
- In reviewing the revised TS pages, the NRC staff noted that, under action b., the licensee inserted "all" before "operations." Also, under action c., the licensee specified "joint" and "mechanical joint" instead of "joint(s)" and "mechanical joints(s)." The staff discussed these errors with the licensee and revised actions b. and c. to correct the errors.
- Revision of TS BASES 3/4.4.1.4.2 and 3/4.9.1, by adding the basis information of the LCO, action requirements, and SRs, and the details of how the pathways can be isolated.

In addition, the licensee also states that it would make appropriate changes to the UFSAR to allow for alternate means of isolating the dilution flow paths.

The intents of the existing SR 4.4.1.4.2.2 and 4.9.1.3 are to ensure the isolation of the unborated water sources from entering the RCSs. The NRC staff agrees with the licensee that alternate valves and means within the CVCS can be used to ensure the isolation of the unborated water paths and, therefore, prevent an uncontrolled boron dilution event. The proposed changes to require isolation of the unborated water sources without identifying the specific valves to be used meet the intents of the current SRs. The addition to LCO 3.4.1.4.2

and LCO 3.9.1 of a limiting condition that each valve or mechanical joint used to isolate unborated water sources shall be secured in the closed position would comply with Criterion 2 in 10 CFR 50.36(c)(2)(ii)(B). The added Action requirements under LCO 3.4.1.4.2 and LCO 3.9.1, respectively, require the operator to remedy the unsecured unborated water flow paths, suspend actions that could exacerbate the condition, and confirm that the noncompliance condition is resolved.

The NRC staff finds that all the changes described above do not change any design basis or technical requirements, and provide the same level of safety as the current TSs. Therefore, the staff concludes the proposed changes 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 surveillance requirements with respect to the 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 (67 FR 61686 dated October 1, 2002). 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.

Principal Contributor: Y. Hsui

Date: January 27, 2003

South Texas, Units 1 & 2

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