



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

May 1, 2001

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
REGARDING TECHNICAL SPECIFICATION CHANGES ADDRESSING THE
ACTIONS IN GENERIC LETTER 99-02 (TAC NOS. MA7297 AND MA7298)

Dear Mr. Cottle:

By a letter dated November 18, 1999, as supplemented by letters dated November 29, 1999, and November 22, 2000, South Texas Project Nuclear Operating Company (licensee), requested changes to TSs surveillance testing to satisfy the actions requested in GL 99-02.

In the November 29, 1999, letter, the licensee responded to Generic Letter (GL) 99-02, "Laboratory Testing of Nuclear-Grade Activated Charcoal," dated June 3, 1999. The licensee provided its response to the GL 99-02 request for (1) requirements for laboratory testing of charcoal samples; (2) submittal of Technical Specification (TS) amendment request requiring testing to American Society for Testing and Materials (ASTM) D3803-1989; and (3) implementation of charcoal tests in accordance with ASTM D3803-1989.

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 127 to Facility Operating License No. NPF-76 and Amendment No. 116 to Facility Operating License No. NPF-80 for the South Texas Project (STP), Units 1 and 2, respectively. The amendments consist of changes to the TSs in response to the licensee's request.

The amendments revise the STP, Units 1 and 2 TS to incorporate the changes according to the guidance in GL 99-02.

W. T. Cottle

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Enclosed is a copy of our related Safety Evaluation (SE) and attached to the SE is our contractor's Technical Evaluation Report. The Notice of Issuance will be included in the Commission's next biweekly *Federal Register* notice.

Sincerely,



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

Docket Nos. 50-498 and 50-499

Enclosures: 1. Amendment No. 127 to NPF-76
2. Amendment No. 116 to NPF-80
3. Safety Evaluation w/attachment

cc w/encls: See next page

South Texas, Units 1 & 2

cc:

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**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
WASHINGTON, D.C. 20555-0001

STP NUCLEAR OPERATING COMPANY

DOCKET NO. 50-498

SOUTH TEXAS PROJECT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 127
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 Houston Lighting & Power Company (HL&P), 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 November 18, 1999, as supplemented by letters dated November 29, 1999, and November 22, 2000, 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 Houston Lighting & Power Company (HL&P), 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 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. 127 , and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications 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



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

Attachment: Changes to the Technical
Specifications

Date of Issuance: May 1, 2001



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
WASHINGTON, D.C. 20555-0001

STP NUCLEAR OPERATING COMPANY

DOCKET NO. 50-499

SOUTH TEXAS PROJECT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 116
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 Houston Lighting & Power Company (HL&P), 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 November 18, 1999, as supplemented by letters dated November 29, 1999, and November 22, 2000, 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 Houston Lighting & Power Company (HL&P), 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.

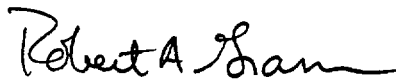
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and Paragraph 2.C.(2) of Facility Operating License No. NPF-80 is hereby amended to read as follows:

2. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 116 , and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications 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



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

Attachment: Changes to the Technical
Specifications

Date of Issuance: May 1, 2001

ATTACHMENT TO LICENSE AMENDMENT NOS. 127 AND 116

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

INSERT

3/4 7-17

3/4 7-17

3/4 7-20

3/4 7-20

3/4 9-15

3/4 9-15

*Overleaf pages provided to maintain document completeness. No changes on these pages. The overleaf pages represent current NRC document version.

PLANT SYSTEMS

3/4.7.7 CONTROL ROOM MAKEUP AND CLEANUP FILTRATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.7 Three independent Control Room Makeup and Cleanup Filtration Systems shall be OPERABLE.

APPLICABILITY: All MODES.

ACTION:

MODES 1, 2, 3, and 4:

- a. With one Control Room Makeup and Cleanup Filtration System inoperable, restore the inoperable system to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With two Control Room Makeup and Cleanup Filtration Systems inoperable, restore at least two systems to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- c. With three Control Room Makeup and Cleanup Filtration Systems inoperable, suspend all operations involving movement of spent fuel, and crane operation with loads over the spent fuel pool, and restore at least one system to OPERABLE status within 12 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

MODES 5 and 6:

- a. With one Control Room Makeup and Cleanup Filtration System inoperable, restore the inoperable system to OPERABLE status within 7 days or initiate and maintain operation of the remaining OPERABLE Control Room Makeup and Cleanup Filtration Systems in the recirculation and makeup air filtration mode, or suspend all operations involving CORE ALTERATIONS, positive reactivity changes, movement of spent fuel, and crane operation with loads over the spent fuel pool.
- b. With more than one Control Room Makeup and Cleanup Filtration System inoperable, or with the OPERABLE Control Room Makeup and Cleanup Filtration Systems required to be in the recirculation and makeup air filtration mode by ACTION a. not capable of being powered by an OPERABLE emergency power source, suspend all operations involving CORE ALTERATIONS, positive reactivity changes, movement of spent fuel, and crane operations with loads over the spent fuel pool.

SURVEILLANCE REQUIREMENTS

4.7.7 Each Control Room Makeup and Cleanup Filtration System shall be demonstrated OPERABLE:

- a. At least once per 12 hours by verifying that the control room air temperature is less than or equal to 78°F;
- b. At least once per 92 days on a STAGGERED TEST BASIS by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers of the makeup and cleanup air filter units and verifying that the system operates for at least 10 continuous hours with the makeup filter unit heaters operating:

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- c. At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system by:
 - 1) Verifying that the makeup and cleanup systems satisfy the in-place penetration and bypass leakage testing acceptance criteria of less than 0.05% for HEPA filter banks and 0.10% for charcoal adsorber banks and uses the test procedure guidance in Regulatory Positions C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the system flow rate is 6000 cfm \pm 10% for the cleanup units and 1000 cfm \pm 10% for the makeup units;
 - 2) Verifying, within 31 days after removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of ASTM D3803-1989, "Standard Test Method for Nuclear-Grade Activated Carbon," for a methyl iodide penetration of less than 1.0% when tested at a temperature of 30°C and a relative humidity of 70%; and
 - 3) Verifying a system flow rate of 6000 cfm \pm 10% for the cleanup units and 1000 cfm \pm 10% for the makeup units during system operation when tested in accordance with ANSI N510-1980.
- d. After every 720 hours of charcoal adsorber operation, by verifying, within 31 days after removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of ASTM D3803-1989 for a methyl iodide penetration of less than 1.0% when tested at a temperature of 30°C and a relative humidity of 70%.
- e. At least once per 18 months by:
 - 1) Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6.1 inches Water Gauge for the makeup units and 6.0 inches Water Gauge for the cleanup units while operating the system at a flow rate of 6000 cfm \pm 10% for the cleanup units and 1000 cfm \pm 10% for the makeup units.
 - 2) Verifying that on a control room emergency ventilation test signal (High Radiation and/or Safety Injection test signal), the system automatically switches into a recirculation and makeup air filtration mode of operation with flow through the HEPA filters and charcoal adsorber banks of the cleanup and makeup units;

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- 3) Verifying that the system maintains the control room envelope at a positive pressure of greater than or equal to 1/8 inch Water Gauge at less than or equal to a pressurization flow of 2000 cfm relative to adjacent areas during system operation; and
 - 4) Verifying that the makeup filter unit heaters dissipate 4.5 ± 0.45 kW when tested in accordance with ANSI N510-1980.
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- f. After each complete or partial replacement of a HEPA filter bank, by verifying that the HEPA filter bank satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 0.05% in accordance with ANSI N510-1980 for a DOP test aerosol while operating the system at a flow rate of 6000 cfm \pm 10% for the cleanup units and 1000 cfm \pm 10% for the makeup units; and
 - g. After each complete or partial replacement of a charcoal adsorber bank, by verifying that the charcoal adsorber bank satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 0.10% in accordance with ANSI N510-1980 for a halogenated hydrocarbon refrigerant test gas while operating the system at a flow rate of 6000 cfm \pm 10% for the cleanup units and 1000 cfm \pm 10% for the makeup units.

PLANT SYSTEMS

3/4.7.8 FUEL HANDLING BUILDING (FHB) EXHAUST AIR SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.8 The FHB Exhaust Air System comprised of the following components shall be OPERABLE.

- a. Two independent exhaust air filter trains, and
- b. Three exhaust ventilation trains.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

- a. With one FHB exhaust air filter train inoperable, restore the inoperable filter train to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN in the following 30 hours.
- b. With two FHB exhaust air filter trains inoperable, restore at least one inoperable filter train to OPERABLE status within 12 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN in the following 30 hours.
- c. With one FHB exhaust ventilation train inoperable, restore the inoperable exhaust ventilation train to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN in the following 30 hours.
- d. With more than one FHB exhaust ventilation train inoperable, restore at least two exhaust ventilation trains to OPERABLE status within 12 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN in the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.8 The Fuel Handling Building Exhaust Air System shall be demonstrated OPERABLE:

- a. At least once per 31 days on a STAGGERED TEST BASIS by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 10 continuous hours with the heaters operating with two of the three exhaust booster fans and two of the three main exhaust fans operating to maintain adequate air flow rate;
- b. At least once per 18 months and (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system by:
 - 1) Verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 0.05% for HEPA filter banks and 0.10% for charcoal adsorber banks and uses the test procedure guidance in Regulatory Positions C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the system flow rate is 29,000 cfm \pm 10%;
 - 2) Verifying, within 31 days after removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52,

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

Revision 2, March 1978, meets the laboratory testing criteria of ASTM D3803-1989 "Standard Test Method for Nuclear-Grade Activated Carbon," for a methyl iodide penetration of less than 1.0% when tested at a temperature of 30°C and a relative humidity of 70%; and

- 3) Verifying a system flow rate of 29,000 cfm \pm 10% during system operation with two of the three exhaust booster fans and two of the three main exhaust fans operating when tested in accordance with ANSI N510-1980. All combinations of two exhaust booster fans and two main exhaust fans shall be tested.
- c. After every 720 hours of charcoal adsorber operation, by verifying, within 31 days after removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of ASTM D3803-1989 for a methyl iodide penetration of less than 1.0% when tested at a temperature of 30°C and a relative humidity of 70%;
- d. At least once per 18 months by:
 - 1) Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6 inches Water Gauge while operating the system at a flow rate of 29,000 cfm \pm 10%,
 - 2) Verifying that the system starts on High Radiation and Safety Injection test signals and directs flow through the HEPA filters and charcoal adsorbers,
 - 3) Verifying that the system maintains the FHB at a negative pressure of greater than or equal to 1/8 inch Water Gauge relative to the outside atmosphere, and
 - 4) Verifying that the heaters dissipate 38 \pm 2.3 kW when tested in accordance with ANSI N510-1980.
- e. After each complete or partial replacement of a HEPA filter bank, by verifying that the HEPA filter bank satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 0.05% in accordance with ANSI N510-1980 for a DOP test aerosol while operating the system at a flow rate of 29,000 cfm \pm 10%; and
- f. After each complete or partial replacement of a charcoal adsorber bank, by verifying that the charcoal adsorber bank satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 0.10% in accordance with ANSI N510-1980 for a halogenated hydrocarbon refrigerant test gas while operating the system at a flow rate of 29,000 cfm \pm 10%.

REFUELING OPERATIONS

3/4.9.12 FUEL HANDLING BUILDING EXHAUST AIR SYSTEM

LIMITING CONDITION FOR OPERATION

3.9.12 The FHB Exhaust Air System¹ comprised of the following components shall be OPERABLE:

- a. Two exhaust air filter trains,
- b. Two exhaust ventilation trains

APPLICABILITY: Whenever irradiated fuel is in the spent fuel pool.

ACTION:

- a. With less than the above FHB Exhaust Air System components OPERABLE but with at least one FHB exhaust air filter train, one FHB exhaust ventilation train, and associated dampers OPERABLE, fuel movement within the spent fuel pool or crane operation with loads over the spent fuel pool may proceed provided the OPERABLE FHB Exhaust Air System components are capable of being powered from an OPERABLE emergency power source and are in operation and discharging through at least one train of HEPA filters and charcoal adsorbers.
- b. With no FHB exhaust air filter train OPERABLE, suspend all operations involving movement of fuel within the spent fuel pool or crane operation with loads over the spent fuel pool.
- c. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.12 The above required FHB Exhaust Air Systems shall be demonstrated OPERABLE:

- a. At least once per 31 days on a STAGGERED TEST BASIS by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 10 continuous hours with the heaters operating with the operable exhaust booster fans and the operable main exhaust fans operating to maintain adequate air flow rate;

¹At least one FHB exhaust air filter train, one FHB exhaust booster fan, and one FHB main exhaust fan are capable of being powered from an OPERABLE onsite emergency power source.

REFUELING OPERATIONS

SURVEILLANCE REQUIREMENTS (Continued)

- b. At least once per 18 months and (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system by:
 - 1) Verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 0.05% for HEPA filter banks and 0.10% for charcoal adsorber banks and uses the test procedure guidance in Regulatory Positions C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the system flow rate is 29,000 cfm \pm 10%;
 - 2) Verifying, within 31 days after removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of ASTM D3803-1989, "Standard Test Method for Nuclear-Grade Activated Carbon," for a methyl iodide penetration of less than 1.0% when tested at a temperature of 30°C and a relative humidity of 70%; and
 - 3) Verifying a system flow rate of 29,000 cfm \pm 10% during system operation with two of the three exhaust booster fans and two of the three main exhaust fans operating when tested in accordance with ANSI N510-1980. All combinations of two exhaust booster fans and two main exhaust fans shall be tested.
- c. After every 720 hours of charcoal adsorber operation by verifying, within 31 days after removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of ASTM D3803-1989 for a methyl iodide penetration of less than 1.0% when tested at a temperature of 30°C and a relative humidity of 70%.
- d. At least once per 18 months by:
 - 1) Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6 inches Water Gauge while operating the system at a flow rate of 29,000 cfm \pm 10%,
 - 2) Verifying that on a High Radiation test signal, the system automatically starts (unless already operating) and directs its exhaust flow through the HEPA filters and charcoal adsorber banks,

REFUELING OPERATIONS

SURVEILLANCE REQUIREMENTS (Continued)

- 3) Verifying that the system maintains the spent fuel storage pool area at a negative pressure of greater than or equal to 1/8 inch Water Gauge relative to the outside atmosphere during system operation, and
 - 4) Verifying that the heaters dissipate 38 ± 2.3 kW when tested in accordance with ANSI N510-1980.*
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- e. After each complete or partial replacement of a HEPA filter bank, by verifying that the HEPA filter bank satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 0.05% in accordance with ANSI N510-1980 for a DOP test aerosol while operating the system at a flow rate of 29,000 cfm \pm 10%.
 - f. After each complete or partial replacement of a charcoal absorber bank, by verifying that the charcoal absorber bank satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 0.10% in accordance with ANSI N510-1980 for a halogenated hydrocarbon refrigerant test gas while operating the system at a flow rate of 29,000 cfm \pm 10%.

* During the first six weeks after March 28, 1989, testing will be required for both 50 kW and 38 kW heaters.



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 127 AND 116 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 November 29, 1999, South Texas Project Nuclear Operating Company, the licensee, submitted its response to the actions requested in Generic Letter (GL) 99-02, "Laboratory Testing of Nuclear-Grade Activated Charcoal," dated June 3, 1999, for the South Texas Project (STP), Units 1 and 2. In a separate letter dated November 18, 1999, the licensee requested changes to the Technical Specifications (TS) Section 4.7.7, "Control Room Makeup and Cleanup Filtration System (CRMCF), Section 4.7.8, "Fuel Handling Building (FHB) Exhaust Air System (Modes 1, 2, 3, 4)," and Section 4.9.12, "Fuel Handling Building (FHB) Exhaust Air System (whenever irradiated fuel is in the spent fuel pool)," for the STP, Units 1 and 2. In another letter dated November 22, 2000, the licensee submitted additional information pertaining to the TS change request for the above systems. The proposed changes would revise the TS surveillance testing to meet the requested actions of GL 99-02. The November 29, 1999, and November 22, 2000, letters provided additional clarifying information that was within the scope of the original application and *Federal Register* notice and did not change the Nuclear Regulatory Commission (NRC) staff's initial proposed no significant hazards consideration determination.

2.0 BACKGROUND

Safety-related air-cleaning units used in the engineered safety features ventilation systems of nuclear power plants reduce the potential onsite and offsite consequences of an accident involving radiological releases by filtering radioiodine. Analyses of design-basis accidents use specific efficiencies of safety-related charcoal adsorption, when calculating offsite and control room operator doses. To ensure that the charcoal filters used in these systems will perform in a manner that is consistent with the licensing basis of a facility, licensees incorporate requirements in their TS to periodically perform a laboratory test (in accordance with a test standard) of charcoal samples taken from these ventilation systems.

In GL 99-02, the NRC staff alerted licensees that testing nuclear-grade activated charcoal to standards other than American Society for Testing and Materials (ASTM) D3803-1989, "Standard Test Method for Nuclear-Grade Activated Carbon," does not provide assurance for complying with their current licensing bases with respect to the dose limits of General Design Criterion 19 of Appendix A to Part 50 of Title 10 of the *Code of Federal Regulations* (10 CFR) and Subpart A of 10 CFR Part 100.

In GL 99-02, the NRC requested that all licensees determine whether their TSs reference ASTM D3803-1989 for charcoal filter laboratory testing. Licensees whose TS do not reference ASTM D3803-1989 were requested to either amend their TS to reference ASTM D3803-1989 or propose an alternative test protocol.

3.0 EVALUATION

The NRC staff, with technical assistance from Brookhaven National Laboratory (BNL), has reviewed the licensee's submittals. In addition, the NRC staff has reviewed the attached BNL Technical Evaluation Report (TER) regarding the proposed TS changes for the STP, Units 1 and 2. Based on its review, the NRC staff adopts the TER. In view of the above, and because the NRC staff considers ASTM D3803-1989 to be the most accurate and most realistic protocol for testing charcoal in safety-related ventilation systems, the NRC staff finds that the proposed TS changes satisfy the actions requested in GL 99-02, "Laboratory Testing of Nuclear-Grade Activated Charcoal," dated June 3, 1999, and are acceptable.

The NRC received a letter from ASTM in response to a March 8, 2000, *Federal Register* Notice (65 FR 12286) related to revising testing standards in accordance with ASTM D3803-1989 for laboratory testing of activated charcoal in response to GL 99-02. ASTM notified the NRC that the 1989 standard is out of date and should be replaced by ASTM D3803-1991(1998). The NRC staff acknowledges that the most current version of ASTM D3803 is ASTM D3803-1991 (reaffirmed in 1998). However, it was decided, for consistency purposes, to have all of the nuclear reactors test to the same standard (ASTM D3803-1989) because, prior to GL 99-02 being issued, approximately one-third of nuclear reactors had TSs that referenced ASTM D3803-1989 and there are no substantive changes between the 1989 and 1991 versions.

The NRC staff, based on its review of the licensee's submittal and BNL's TER concluded that the proposed changes (see Table 1 for current TSs and Table 2 for proposed revisions to TSs in BNL's TER) satisfy the actions requested in GL 99-02 and are therefore 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 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 (64 FR 73099). 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.

Attachment: Technical Evaluation Report

Principal Contributor: J. Segala

Date: May 1, 2001

TECHNICAL EVALUATION REPORT
BROOKHAVEN NATIONAL LABORATORY
FOR THE OFFICE OF NUCLEAR REACTOR REGULATION
DIVISION OF SYSTEMS SAFETY AND ANALYSIS
PLANT SYSTEMS BRANCH
RELATED TO AMENDMENT TO FACILITY
OPERATING LICENSES NPF-76 AND NPF-80
SOUTH TEXAS PROJECT NUCLEAR OPERATING COMPANY
SOUTH TEXAS PROJECT UNITS 1 AND 2
DOCKET NOS. 50-498 AND 50-499

1.0 INTRODUCTION

By letter dated November 29, 1999 (NOC-AE-000622), South Texas Project Nuclear Operating Company submitted its response to the actions requested in Generic Letter (GL) 99-02, "Laboratory Testing of Nuclear-Grade Activated Charcoal," dated June 3, 1999, for the South Texas Project - Units 1 and 2. In a separate letter dated November 18, 1999 (NOC-AE-000623), South Texas Project Nuclear Operating Company requested changes to the Technical Specifications (TS) Section 4.7.7, "Control Room Makeup and Cleanup Filtration System (CRMCF), Section 4.7.8, "Fuel Handling Building (FHB) Exhaust Air System (Modes 1, 2, 3, 4)," and Section 4.9.12, "Fuel Handling Building (FHB) Exhaust Air System (whenever irradiated fuel is in the spent fuel pool)," for the South Texas Project Units 1 and 2. By letter dated November 22, 2000 (NOC-AE-00000944), South Texas Project Nuclear Operating Company submitted additional information pertaining to the TS change request for the above systems. The proposed changes would revise the TS surveillance testing to meet the requested actions of GL 99-02.

2.0 BACKGROUND

Safety-related air-cleaning units used in the engineered safety features (ESF) ventilation systems of nuclear power plants reduce the potential onsite and offsite consequences of a radiological accident by filtering radioiodine. Analyses of design basis accidents assume particular safety related charcoal adsorption efficiencies when calculating offsite and control room operator doses. To ensure that the charcoal filters used in these systems will perform in a manner that is consistent with the licensing basis of a facility, licensees have requirements in their TS to periodically perform a laboratory test (in accordance with a test standard) of charcoal samples taken from these ventilation systems.

In GL 99-02, the staff alerted licensees that testing nuclear-grade activated charcoal to standards other than American Society for Testing and Materials (ASTM) D3803-1989, "Standard Test Method for Nuclear-Grade Activated Carbon," does not provide assurance for complying with their current licensing bases with respect to the dose limits of General Design Criterion (GDC) 19 of Appendix A to Part 50 of Title 10 of the Code of Federal Regulations (10 CFR) and Subpart A of 10 CFR Part 100.

ATTACHMENT

GL 99-02 requested that all licensees determine whether their TS reference ASTM D3803-1989 for charcoal filter laboratory testing. Licensees whose TS do not reference ASTM D3803-1989 were requested to either amend their TS to reference ASTM D3803-1989 or propose an alternative test protocol.

3.0 EVALUATION

3.1 Laboratory Charcoal Sample Testing Surveillance Requirements

The current and proposed laboratory charcoal sample testing TS surveillance requirements for the Control Room Makeup and Cleanup Filtration System (CRMCFs) and the Fuel Handling Building Exhaust Air System (FHBEAS) are shown in Table 1 and Table 2 for both Units 1&2 of the South Texas Project.

The proposed use of ASTM D3803-1989 is acceptable because it provides accurate and reproducible test results. The proposed test temperature of 30°C and relative humidity of 70% for both systems are acceptable because the FHBEAS and the control room makeup filter unit are equipped with safety related heaters and it is consistent with ASTM D3803-1989. This is consistent with the actions requested in GL 99-02.

By letter dated November 22, 2000, the credited removal efficiency for radioactive organic iodine for each system is 95% for each 2-inch bed charcoal filter. The proposed test penetration for radioactive methyl iodide for each system is less than 1% for the 2-inch bed charcoal bed. The proposed test penetration was obtained by applying a safety factor of 5 to the credited efficiency. The proposed safety factor of 5 for all systems is acceptable because it ensures that the efficiency credited in the accident analysis is still valid at the end of the surveillance interval. This is consistent with the minimum safety factor of 2 specified in GL 99-02.

The August 23, 1999 errata to GL 99-02 clarified that if the maximum actual face velocity is greater than 110% of 40 fpm, then the test face velocity should be specified in the TS. By letters dated November 18, 1999 and November 22, 2000, the face velocity for the CRMCFs and the FHBEAS is not greater than 40 fpm. The proposed testing of the charcoal adsorbers will be performed in accordance with ASTM D3803-1989 which specifies a test face velocity of 40 fpm with appropriate margins. This is acceptable because it ensures that the testing will be consistent with the operation of the ventilation system during accident conditions. Therefore, it is not necessary to specify the face velocity in the proposed TS change. This is consistent with the errata to GL 99-02 dated August 23, 1999.

4.0 CONCLUSION

On the basis of its evaluation, BNL recommends that the NRC staff consider the proposed TS changes to be acceptable.

Principal Contributors: Anthony Fresco and Mano Subudhi

Date: March 8, 2001

SOUTH TEXAS PROJECT - UNITS 1 AND 2

TABLE 1 - CURRENT TS REQUIREMENTS

System Description						Current TS Requirements					
TS Section	System	Bed Thickness (inches)	Actual Charcoal		Credited Efficiency (% organic iodine)	Test Penetration (% methyl iodide)	Safety Factor ****	Test Standard	Test Temp (° C)	Test RH (%)	Test Face Velocity (fpm)
			Res. Time (sec)	Face Velocity (fpm)*							
4.7.7	Control Room Makeup and Cleanup Filtration System (CRMCFs)	2	0.25	≤40	95**	<1	5	RG 1.52, Rev. 2, March 1978, Position C.6.a ANSI N510-1980 ASTM D3803-1979	30	70	Not stated
4.7.8	Fuel Handling Building Exhaust Air System (FHBEAS) (Modes 1, 2, 3, 4)	2	0.25	≤40	95***	<1	5	RG 1.52, Rev. 2, March 1978, Position C.6.a ANSI N510-1980 ASTM D3803-1979	30	70	Not stated
4.9.12	Fuel Handling Building Exhaust Air System (FHBEAS) (whenever irradiated fuel is in the spent fuel pool)	2	0.25	≤40	95***	<1	5	RG 1.52, Rev. 2, March 1978, Position C.6.a ANSI N510-1980 ASTM D3803-1979	30	70	Not stated

* The submittals (November 18, 1999 and November 22, 2000) state that face velocities are no higher than 40 ft/min, and that this is consistent with the limit specified in ASTM D3803-1989.

** The control room filtration system consists of a 2" (pressurization) makeup filter and a 2" clean-up (recirculation) filter, each with 95% filter efficiency. In accordance with USAR Table 6.4-2, 1765 cfm of the 2000 cfm makeup air is filtered through both the makeup and the clean-up filters, and the remaining 235 cfm of the 2000 cfm makeup air is filtered through the makeup filter only, since it bypasses the clean-up filter. 7500 cfm of clean-up air passes through the clean-up filter alone.

*** Per UFSAR Table 15.6-10.

**** Safety factor is based on the credited efficiency of 95% for 2" bed and <1% test penetration.

SOUTH TEXAS PROJECT - UNITS 1 AND 2

TABLE 2 - PROPOSED TS REQUIREMENTS

TABLE 2 - PROPOSED TS REQUIREMENTS											
System Description						Proposed TS Requirements					
TS Section	System	Bed Thickness (inches)	Actual Charcoal		Credited Efficiency (% methyl iodide)	Test Penetration (% methyl iodide)	Safety Factor ****	Test Standard	Test Temp (° C)	Test RH (%)	Test Face Velocity (fpm) *****
			Res. Time (sec)	Face Velocity (fpm)*							
4.7.7	Control Room Makeup and Cleanup Filtration System (CRMCFs)	2	0.25	≤40	95**	<1	5	ASTM D3803-1989	30	70	Not stated (40)
4.7.8	Fuel Handling Building Exhaust Air System (FHBEAS) (Modes 1, 2, 3, 4)	2	0.25	≤40	95***	<1	5	ASTM D3803-1989	30	70	Not stated (40)
4.9.12	Fuel Handling Building Exhaust Air System (FHBEAS) (whenever irradiated fuel is in the spent fuel pool)	2	0.25	≤40	95***	<1	5	ASTM D3803-1989	30	70	Not stated (40)

* The submittals (November 18, 1999 and November 22, 2000) state that face velocities are no higher than 40 ft/min, and that this is consistent with the limit specified in ASTM D3803-1989.

** The control room filtration system consists of a 2" (pressurization) makeup filter and a 2" clean-up (recirculation) filter, each with 95% filter efficiency. In accordance with USAR Table 6.4-2, 1765 cfm of the 2000 cfm makeup air is filtered through both the makeup and the clean-up filters, and the remaining 235 cfm of the 2000 cfm makeup air is filtered through the makeup filter only, since it bypasses the clean-up filter. 7500 cfm of clean-up air passes through the clean-up filter alone.

*** Per UFSAR Table 15.6-10.

**** Safety factor is based on the credited efficiency of 95% for 2" bed and <1% test penetration.

***** Per ASTM D3803-1989.

W. T. Cottle

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Enclosed is a copy of our related Safety Evaluation (SE) and attached to the SE is our contractor's Technical Evaluation Report. 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 & Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-498 and 50-499

Enclosures: 1. Amendment No. 127 to NPF-76
2. Amendment No. 116 to NPF-80
3. Safety Evaluation w/attachment

cc w/encls: See next page

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NRR-058
*No major changes to the SE input

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