

March 28, 1989

Docket No. 50-498

Mr. J. H. Goldberg
Group Vice-President, Nuclear
Houston Lighting & Power Company
P. O. Box 1700
Houston, Texas 77001

Dear Mr. Goldberg:

SUBJECT: ISSUANCE OF AMENDMENT NO. 6 TO FACILITY OPERATING LICENSE
NPF-76 - SOUTH TEXAS PROJECT, UNIT 1 (TAC NO. 72004)

The Commission has issued the enclosed Amendment No. 6 to Facility Operating License No. NPF-76 for the South Texas Project, Unit 1. The amendment consists of changes to the Technical Specifications (TS) and is in response to one of the requests in your application dated January 25, 1989. The other requests are under staff review.

The amendment changes the Appendix A Technical Specifications by changing the value of the fuel handling building exhaust air subsystem electric heaters to reference operation at 38 kW instead of the current 50 kW. As a result of the time required to change the different trains of heaters to operate at 38 kW, the amendment will be fully implemented six weeks after date of issuance. The staff concurs and has no safety concerns with this approach.

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

Sincerely,

George F. Dick, Jr., ^{15/} Project Manager
Project Directorate - IV
Division of Reactor Projects - III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation

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Enclosures:

- 1. Amendment No. 6 to NPF-76
- 2. Safety Evaluation

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DOCUMENT NAME: STP AMEND TAC 72004

See for
PD4/LA
P Noonan
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No legal objection, subject to additions on last page of SE as indicated.
OGC-Rockville
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vll



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

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The amendment changes the Appendix A Technical Specifications by changing the value of the fuel handling building exhaust air subsystem electric heaters to reference operation at 38 kW instead of the current 50 kW. As a result of the time required to change the different trains of heaters to operate at 38 kW, the amendment will be fully implemented six weeks after date of issuance. The staff concurs and has no safety concerns with this approach.

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Sincerely,


George F. Dick, Jr., Project Manager
Project Directorate - IV
Division of Reactor Projects - III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 6 to NPF-76
2. Safety Evaluation

cc w/enclosures:
See next page

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

HOUSTON LIGHTING & POWER COMPANY

CITY PUBLIC SERVICE BOARD OF SAN ANTONIO

CENTRAL POWER AND LIGHT COMPANY

CITY OF AUSTIN, TEXAS

DOCKET NO. 50-498

SOUTH TEXAS PROJECT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 6
License No. NPF-76

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Houston Lighting & Power Company* (HL&P) acting on behalf of itself and for the City Public Service Board of San Antonio (CPS), Central Power and Light Company (CPL), and City of Austin, Texas (COA) (the licensees) dated January 25, 1989, 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.

*Houston Lighting & Power Company is authorized to act for the City Public Service Board of San Antonio, Central Power and Light Company and City of Austin, Texas and has exclusive responsibility and control over the physical construction, operation and maintenance of the facility.

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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. 6, 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 will be fully implemented six weeks after date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Jose A. Calvo

Jose A. Calvo, Director
Project Directorate - IV
Division of Reactor Projects - III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 28, 1989

ATTACHMENT TO LICENSE AMENDMENT NO. 6

FACILITY OPERATING LICENSE NO. NPF-76

DUCKET NO. 50-498

Replace the following pages of the Appendix A Technical Specifications with the attached pages. The revised pages are identified by Amendment number and contain vertical lines indicating the areas of change. The corresponding overleaf pages are also provided to maintain document completeness.

Remove

3/4 7-20
3/4 9-16

Insert

3/4 7-20
3/4 9-16

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,
- b. Three independent exhaust booster fans,
- c. Three independent main exhaust fans, and
- d. Associated dampers.

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

ACTION:

With less than the above FHB Exhaust Air System components OPERABLE but with at least one FHB exhaust air filter train, two FHB exhaust booster fans, two FHB main exhaust fans and associated dampers OPERABLE, 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.

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 Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, 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 Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, 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 ± 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%.

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

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 Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, 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 Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, 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.*
- 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 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%.

*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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 6 TO

FACILITY OPERATING LICENSE NO. NPF-76

HOUSTON LIGHTING & POWER COMPANY

CITY PUBLIC SERVICE BOARD OF SAN ANTONIO

CENTRAL POWER AND LIGHT COMPANY

CITY OF AUSTIN, TEXAS

DOCKET NO. 50-498

SOUTH TEXAS PROJECT; UNIT 1

1.0 INTRODUCTION

By application dated January 25, 1989, Houston Lighting & Power Company, et. al., (the licensee) requested three sets of changes to the Technical Specifications (Appendix A to Facility Operating License No. NPF-76) for South Texas Project, Unit 1. The proposed changes addressed in this Safety Evaluation would change the value of the fuel handling building exhaust air subsystem electric heaters to reference operation at 38 kW instead of the current 50 kW.

2.0 DISCUSSION

The fuel handling building (FHB) exhaust air HVAC system exhausts air from the interior of the FHB to the plant main vent stack. This subsystem is designed as safety-related and seismic Category I and consists of two 100% capacity exhaust filter trains, three 50% capacity exhaust booster fans, three 50% capacity main exhaust fans, and associated dampers and instrumentation. The system design exhaust air flow capacity is 29,000 ± 10% cubic feet per minute (CFM).

Each redundant exhaust filter train consists of three 33-1/3% capacity filter units. Each filter unit contains an electric heating element, prefilters, high efficiency particulate air (HEPA) filters and carbon absorber. The electric heating elements are provided to decrease the relative humidity of the incoming air. The efficiency of iodine removal by the charcoal absorbers is adversely affected by high relative humidity in the air stream. The operability of the heater is determined pursuant to Technical Specification 4.7.8.d.4 (Fuel Handling Building Exhaust Air System) and 4.7.12.d.4 (Fuel Handling Building Exhaust Air System - Refueling Operations) which require verification that the heaters dissipate 50 kW ± 5kW when tested in accordance with ANSI N510-1980.

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A flow switch provided downstream of each exhaust filter unit automatically turns off the heating element to prevent damage to the element when the air flow rate drops below a minimum flow value. Currently the minimum flow setpoint is 9330 CFM. When all three trains are actuated the exhaust flow is split between the six operating filter units (two filter trains, each composed of three filter units). Therefore, the flow through each unit is 4833 CFM (29,000 CFM divided by 6). Since this flow rate is less than the setpoint, the flow switch prevents the heater from energizing. When only one train is actuated, the flow through each of the three operating filter units is 9667 CFM (29,000 CFM divided by 3).

The offsite and control room dose calculations for the loss of coolant accident and fuel handling accident are based on an iodine removal efficiency assuming that the relative humidity of the incoming air is maintained at or below 70%. If the heaters are not actuated the relative humidity may not be below 70%, and the charcoal iodine removal efficiency may be decreased resulting in high control room and offsite doses.

Procedural changes have been implemented on Unit 1 which require that operators shut down one filter train following an ESFAS actuation after verifying that all of the FHB exhaust system components have actuated. The licensee calculated that the doses remain within 10 CFR Part 100, Standard Review Plan (SRP) 15.7.4, and 10 CFR Part 50 Appendix A, General Design Criterion (GDC) 19 requirements with operator action within 30 minutes as directed in the procedures.

The long term solution to this problem is to derate the heaters from 50 kW to 38 kW. At 38 kW the heaters can operate at the lower flow rate (assuming all trains are operating) without damage. The incoming air to the charcoal filters will be maintained at or below 70% relative humidity with various combinations of trains operating; therefore, the existing dose calculation assumptions relative to iodine removal efficiencies will be maintained.

To reflect the fact that the design of the fuel handling building exhaust air subsystem heaters must be changed from 50 kW to 38 kW, it is, therefore, necessary that the Technical Specifications that contain the surveillance requirements for those heaters (4.7.8.d.4 and 4.9.12.d.4) be modified as proposed.

3.0 EVALUATION

The staff has reviewed and concurs with the licensee's evaluation and further finds, based on our review, that the proposed change is consistent with SRP 6.5.1, Regulatory Guide 1.52, and GDC 61 as it relates to the design of systems for radioactivity control under normal and postulated accident conditions, and with the Standard Technical Specifications and is, therefore, acceptable.

4.0 ENVIRONMENTAL CONSIDERATION

The amendment relates to changes in installation or use of a facility component located within the restricted area. The staff has determined that the amendment involves 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 amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, the amendment meets 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 this amendment.

5.0 CONCLUSION

Based upon its evaluation of the proposed changes to the South Texas Project, Unit 1, Technical Specifications, the staff has concluded that: there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and such activities will be conducted in compliance with the Commission's regulations and the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public. The staff, therefore, concludes that the proposed changes are acceptable, and are hereby incorporated into the South Texas Project, Unit 1 Technical Specifications. As a result of the time required to change the different trains of heaters to operate at 38 kW, the amendment will be fully implemented six weeks after date of issuance. The staff concurs and has no safety concerns with this approach.

Date: March 28, 1989

Principal Contributor: C. Nichols