March 9, 1993

Docket Nos. 50-498
and 50-499

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Mr. Donald P. Hall
Group Vice-President, Nuclear
Houston Lighting & Power Company
P. O. Box 1700
Houston, Texas 77251

Dear Mr. Hall:

SUBJECT: ISSUANCE OF AMENDMENT NOS. 48 AND 37 TO FACILITY OPERATING LICENSE NOS. NPF-76 AND NPF-80 - SOUTH TEXAS PROJECT, UNITS 1 AND 2 (TAC NOS. M84618 AND M84619)

The Commission has issued the enclosed Amendment Nos. 48 and 37 to Facility Operating License Nos. NPF-76 and NPF-80 for the South Texas Project, Units 1 and 2. The amendments consists of changes to the Technical Specifications (TSs) in response to your application dated September 28, 1992 (ST-HL-AE-4222) as supplemented on November 12, 1992 (ST-HL-AE-4260).

The amendments change the Appendix A Technical Specifications by: (1) replacing the variable shutdown requirements (TS Figure 3.1-1) with a constant value; and (2) changing surveillance requirement TS 4.1.1.1.2 clarifying reactivity balance calculations to confirm core design predictions, leading to the validation of shutdown margin.

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

Sincerely,

Original Signed By

William R. Reckley, Project Manager
Project Directorate IV-2
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 48 to NPF-76
2. Amendment No. 37 to NPF-80
3. Safety Evaluation

cc w/enclosures:
See next page

OFFICE	PDIV-2/LA	PDIV-2/PM	OGC	PDIV-2/D	
NAME	EPeyton	WReckley:ye		SBlack for	
DATE	1/16/93	1/16/93	2/24/93	3/8/93	/ /

Document Name: B:\M84618.WR

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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. 48
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 September 28, 1992, as supplemented by letter dated November 12, 1992, 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.

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. 48 , 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 to be implemented within 15 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Thomas A. Bergman, Acting for
Suzanne C. Black, Director
Project Directorate IV-2
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 9, 1993

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. 50-499

SOUTH TEXAS PROJECT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 37
License No. NPF-80

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 September 28, 1992, as supplemented by letter dated November 12, 1992, 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.

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. 37 , 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 to be implemented within 15 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Thomas A. Bergman, Acting for
Suzanne C. Black, Director
Project Directorate IV-2
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 9, 1993

ATTACHMENT TO LICENSE AMENDMENT NOS. 48 AND 37

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 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	INSERT
3/4 1-2	3/4 1-2
3/4 1-3	3/4 1-3

3/4.1 REACTIVITY CONTROL SYSTEMS

3/4.1.1 BORATION CONTROL

SHUTDOWN MARGIN - T_{avg} GREATER THAN 200°F

LIMITING CONDITION FOR OPERATION

3.1.1.1 The SHUTDOWN MARGIN shall be greater than or equal to the limit as shown in Figure 3.1-1.

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

ACTION:

With the SHUTDOWN MARGIN less than the limit as shown in Figure 3.1-1, immediately initiate and continue boration at greater than or equal to 30 gpm of a solution containing greater than or equal to 7000 ppm boron or equivalent until the required SHUTDOWN MARGIN is restored.

SURVEILLANCE REQUIREMENTS

4.1.1.1.1 The SHUTDOWN MARGIN shall be determined to be greater than or equal to the limit as shown in Figure 3.1-1:

a. Within 1 hour after detection of an inoperable control rod(s) and at least once per 12 hours thereafter while the rod(s) is inoperable. If the inoperable control rod is immovable or untrippable, the above required SHUTDOWN MARGIN shall be verified acceptable with an increased allowance for the withdrawn worth of the immovable or untrippable control rod(s);

b. When in MODE 2 with K_{eff} less than 1, within 4 hours prior to achieving reactor criticality by verifying that the predicted critical control rod position is within the limits of Specification 3.1.3.6;

c. Prior to initial operation above 5% RATED THERMAL POWER after each fuel loading, by consideration of the factors of Specification 4.1.1.1.1d. below, with the control banks at the maximum insertion limit of Specification 3.1.3.6; and

*See Special Test Exceptions Specification 3.10.1.

SURVEILLANCE REQUIREMENTS (Continued)

d. When in MODE 3 or 4, at least once per 24 hours by consideration of the following factors:

1) Reactor Coolant System boron concentration,

2) Control rod position,

3) Reactor Coolant System average temperature,

4) Fuel burnup based on gross thermal energy generation,

5) Xenon concentration, and

6) Samarium concentration.

4.1.1.1.2 The overall core reactivity balance shall be compared to predicted values to demonstrate agreement within ± 1% $\Delta k/k$ at least once per 31 Effective Full Power Days (EFPD). This comparison shall consider at least those factors stated in Specification 4.1.1.1.1d., above. The predicted reactivity values shall be adjusted (normalized) to correspond to the actual core conditions prior to exceeding a fuel burnup of 60 EFPD after each fuel loading. The provisions of Specification 4.0.4 are not applicable.

REQUIRED SHUTDOWN MARGIN
FOR MODES 1 AND 2:
1.75% DELTA RHO

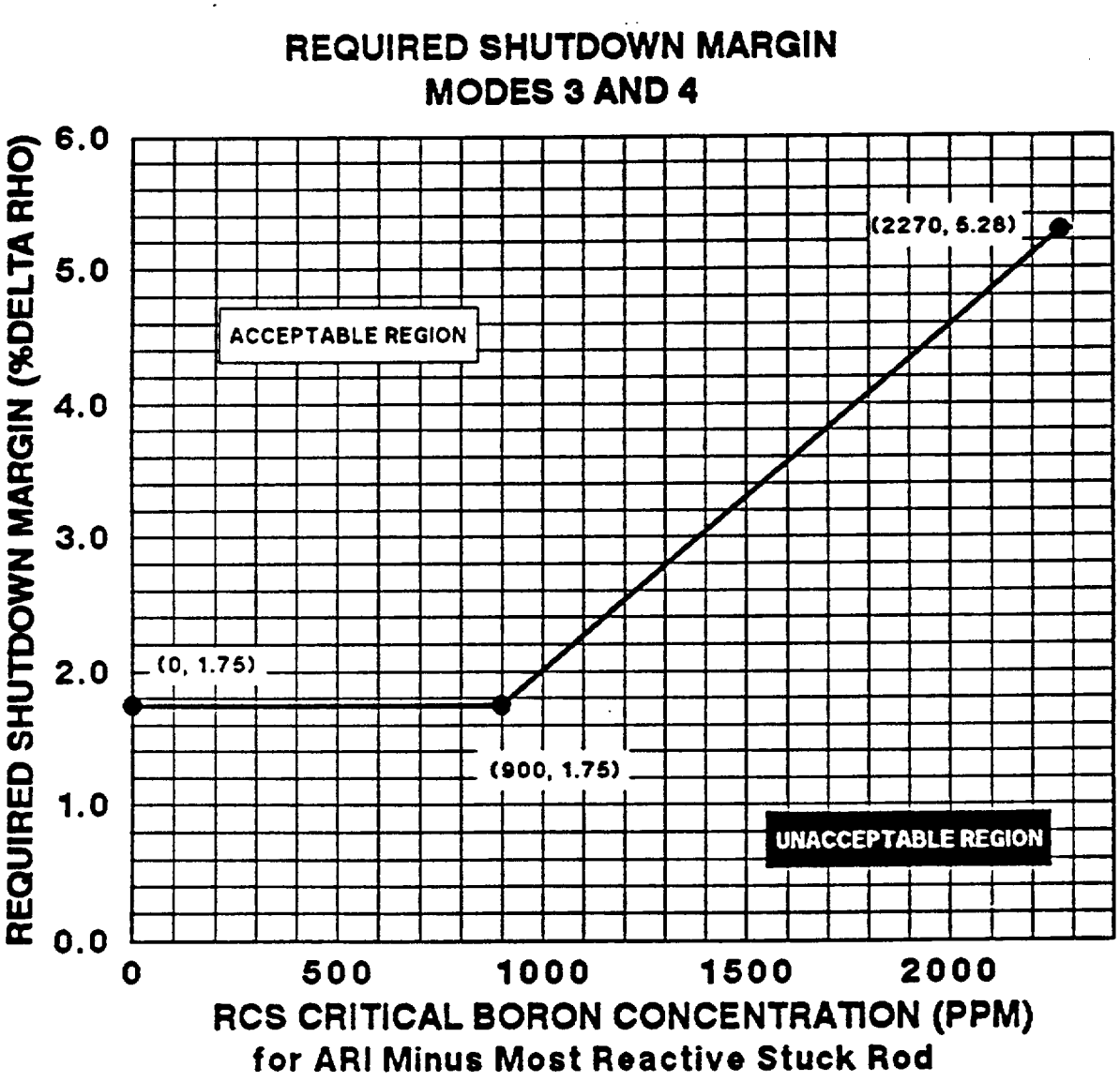

FIGURE 3.1-1
REQUIRED SHUTDOWN MARGIN VERSUS RCS CRITICAL BORON CONCENTRATION

SHUTDOWN MARGIN - T_{avg} LESS THAN OR EQUAL TO 200°F

LIMITING CONDITION FOR OPERATION

3.1.1.2 The SHUTDOWN MARGIN shall be greater than or equal to the limit as shown in Figure 3.1-2.

APPLICABILITY: MODE 5.

ACTION:

With the SHUTDOWN MARGIN less than the limit as shown in Figure 3.1-2, immediately initiate and continue boration at greater than or equal to 30 gpm of a solution containing greater than or equal to 7000 ppm boron or equivalent until the required SHUTDOWN MARGIN is restored.

SURVEILLANCE REQUIREMENTS

4.1.1.2 The SHUTDOWN MARGIN shall be determined to be greater than or equal to the limit as shown in Figure 3.1-2:

a. Within 1 hour after detection of an inoperable control rod(s) and at least once per 12 hours thereafter while the rod(s) is inoperable. If the inoperable control rod is immovable or untrippable, the SHUTDOWN MARGIN shall be verified acceptable with an increased allowance for the withdrawn worth of the immovable or untrippable control rod(s); and

b. At least once per 24 hours by consideration of the following factors:

   1) Reactor Coolant System boron concentration,

   2) Control rod position,

   3) Reactor Coolant System average temperature,

   4) Fuel burnup based on gross thermal energy generation,

   5) Xenon concentration, and

   6) Samarium concentration.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 48 AND 37 TO

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

HOUSTON LIGHTING & POWER COMPANY

CITY PUBLIC SERVICE BOARD OF SAN ANTONIO

CENTRAL POWER AND LIGHT COMPANY

CITY OF AUSTIN, TEXAS

DOCKET NOS. 50-498 AND 50-499

SOUTH TEXAS PROJECT, UNITS 1 AND 2

1.0 INTRODUCTION

By application dated September 28, 1992 (ST-HL-AE-4222) as supplemented by letter dated November 12, 1992 (ST-HL-AE-4260), Houston Lighting & Power Company, et.al., (the licensee) requested changes to the Technical Specifications (Appendix A to Facility Operating License Nos. NPF-76 and NPF-80) for the South Texas Project, Units 1 and 2. The proposed changes would replace the variable shutdown margin requirements for Modes 1 and 2 with a constant value. The constant value for MODES 1 and 2 is and will continue to be 1.75% delta rho. The variable shutdown margin is intended to be a prevention against the loss of shutdown margin during a boron dilution accident in MODES 3 and 4, and consequently, is not required for MODES 1 and 2.

The licensee has also proposed a change to surveillance requirement, TS 4.1.1.1.2, clarifying reactivity balance calculations to confirm core design predictions, leading to the validation of shutdown margin. The proposed changes will modify figure 3.1-1 of TS 3.1.1.1 and change the text of TS 4.1.1.1.2. These changes will only impact MODES 1 and 2, and will have no impact on MODES 3 and 4.

2.0 EVALUATION

2.1 Variable Shutdown Margin

In MODES 1 and 2, the most restrictive condition occurs at end-of-life (EOL), with T (AVG) at no load operating temperature, and is generally associated with a postulated steam line break accident, resulting in a reactor coolant system (RCS) cooldown.

The presence of the variable shutdown margin requirements for MODES 1 and 2 places an undue restriction on the design of the reactor core at beginning-of-life (BOL) conditions. The present use of Figure 3.1-1 (TS 3.1.1.1), suggests that additional shutdown margin over and above the constant value of 1.75% delta rho is required for critical boron concentrations over 900 ppm. The safety analyses were performed using a constant shutdown margin of 1.75% delta rho, consequently, the change to figure 3.1-1 will reflect the use of the constant shutdown margin of 1.75% delta rho in the safety analyses. Similarly, the proposed change to Figure 3.1-1 will not reduce the margin of safety for MODES 1 and 2.

In MODES 3 and 4, the most restrictive condition occurs at BOL when the boron concentration is greatest. In MODES 3 and 4, the required shutdown margin is composed of a constant and a variable requirement. The variable portion is a function of the RCS boron concentration. The constant shutdown margin requirement of 1.75% delta rho is based on an uncontrolled RCS cooldown from a steamline break accident. The variable shutdown margin requirement is based on the results of a boron dilution accident analysis, whereby the shutdown margin is varied as a function of RCS boron concentration, to guarantee a minimum time for operator action after a boron dilution alarm. Consequently, the above analysis suggests that the shutdown margin requirements for MODES 1 and 2 are separable from those for MODES 3 and 4. It should be pointed out that the change to Figure 3.1-1 does not constitute a change to the design basis of South Texas Units 1 and 2, since the design limits for MODES 1 and 2 remain at 1.75% delta rho. The change to Figure 3.1-1 is acceptable.

2.2 Technical Specification 4.1.1.1.2

Specification 4.0.4 states that:

> "entry into an Operational Mode or other specified condition shall not be made unless the Surveillance Requirement(s) associated with the Limiting Condition for Operation has been performed within the stated surveillance interval or as otherwise specified."

However, as Surveillance Requirement 4.1.1.1.2 is currently written, Specification 4.0.4 would require that a core reactivity balance be performed for all operational Mode evolutions for which Specification 3.1.1.1 is currently applicable, which are MODES 1, 2, 3, 4. Since the reactor must be in critical condition for a core reactivity balance to be performed, it is not possible to perform the surveillance for all evolutions. Therefore, Surveillance Requirement 4.1.1.1.2 should be modified to be exempted from the requirements of Specification 4.0.4.

The proposed change to the surveillance requirement will not affect the accuracy of the parameters used in the shutdown margin calculation performed for Specification 3.1.1.1.

Neither of the changes proposed by the licensee constitute a change to the design basis.

The NRC staff has reviewed the licensee's request to modify the Technical Specifications of the South Texas Nuclear Project, Units 1 and 2 regarding the removal of the variable shutdown margin requirements for MODES 1 and 2, and the change to Surveillance Requirement 4.1.1.1.2. The staff find these changes acceptable.

3.0 STATE CONSULTATION

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

4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and surveillance requirements. The NRC 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 (58 FR 595). 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 the amendment.

5.0 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 amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: A. Attard

Date: March 9, 1993