

The Light company

Houston Lighting & Power South Texas Project Electric Generating Station P. O. Box 289 Wadsworth, Texas 77483

September 15, 1993
ST-HL-AE-4566
File No.: G9.06
10CFR20
10CFR50.90

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

South Texas Project
Units 1 and 2
Docket Nos. STN 50-498; STN 50-499
Proposed Amendment to the
Unit 1 and Unit 2 Technical Specifications
For Implementing the New Requirements of 10CFR20

Houston Lighting & Power Company (HL&P) proposes to amend Facility Operating Licenses Nos. NPF-76 and NPF-80 for South Texas Project Units 1 and 2 by incorporating the attached proposed changes to the Technical Specifications. The purpose of this amendment is to implement the new requirements of 10CFR20.

Attachment 1 is an affidavit. Attachment 2 is the Safety Evaluation and No Significant Hazards Consideration Determination. Attachment 3 is a copy of the current Technical Specifications marked with the proposed changes.

HL&P is scheduled to fully implement the requirements of the new 10CFR20 on January 1, 1994. Therefore, HL&P requests that the proposed changes to the Technical Specifications be approved prior to January 1, 1994, but not be required to be implemented until that date.

HL&P has reviewed the attached proposed amendment pursuant to 10CFR50.92 and determined that it does not involve a significant hazard consideration. The basis for this determination is provided in Attachment 2. In addition, HL&P has reviewed the proposed changes against the criteria of 10CFR51.22 for categorical exclusion from environmental impact considerations. The proposed changes do not involve a significant hazards consideration, or significantly increase the amounts or change the types of effluents that may be released offsite, nor do they significantly increase individual or cumulative occupational radiation exposure. Therefore, HL&P concludes that the proposed changes satisfy the criteria given in 10CFR51.22(c)(9) for categorical exclusion from the requirement for an Environmental Impact Statement.

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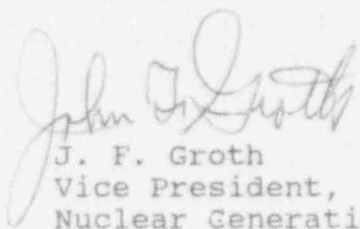
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Project Manager on Behalf of the Participants in the South Texas Project

ADD 1

In accordance with 10CFR50.91, HL&P is providing the State of Texas with a copy of this proposed amendment.

If you should have any questions on this matter, please contact Mr. A. W. Harrison at (512) 972-7298.



J. F. Groth
Vice President,
Nuclear Generation

DNB/pa

- Attachments:
1. Affidavit
 2. Safety Evaluation and No Significant Hazards Consideration Determination for Implementing the New Requirements of 10CFR20.
 3. Proposed Changes to the Technical Specifications for Implementing the New Requirements of 10CFR20

Houston Lighting & Power Company
South Texas Project Electric Generating Station

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter)

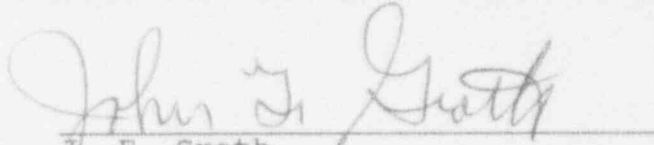
Houston Lighting & Power)
Company, et al.,)

Docket Nos. 50-498
50-499

South Texas Project)
Unit 1 and Unit 2)

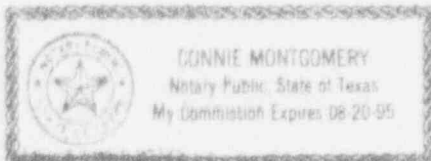
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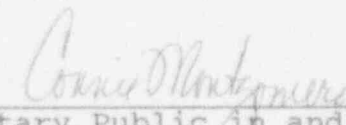
I, J. F. Groth, being duly sworn, hereby depose and say that I am Vice President, Nuclear Generation, of Houston Lighting & Power Company; that I am duly authorized to sign and file with the Nuclear Regulatory Commission the attached proposed changes to the South Texas Project Electric Generating Station Technical Specifications for implementing the new requirements of 10CFR20; that I am familiar with the content thereof; and that the matters set forth therein are true and correct to the best of my knowledge and belief.


J. F. Groth
Vice President,
Nuclear Generation

STATE OF TEXAS)
)
)

Subscribed and sworn to before me, a Notary Public in and for the State of Texas, this 15th day of September, 1993.




Notary Public in and for the
State of Texas

ATTACHMENT 2

Safety Evaluation and No Significant Hazards
Consideration Determination for
Implementing the New Requirements of 10CFR20

Safety Evaluation and No Significant Hazards
Consideration Determination for
Implementing the New Requirements of 10CFR20

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Background

On May 21, 1991, the Nuclear Regulatory Commission (NRC) issued a revision to its standards for protection against ionizing radiation, 10CFR20.

The purpose of the revision was to modify the Radiation Protection Standards to reflect developments in the principles and scientific knowledge underlying radiation protection. In addition, the revision addresses International Radiation Protection Standards in order to attain more consistency with the requirements of other nations. The revised 10CFR20 became effective on June 20, 1991 and requires implementation on or before January 1, 1994. Houston Lighting and Power, on behalf of South Texas Project Units 1 and 2, plans to implement the new 10CFR20 requirements on January 1, 1994.

Description of Proposed Changes

In accordance with 10CFR50.90, the following changes to the South Texas Project Units 1 and 2 Technical Specifications are being proposed to implement the new requirements of 10CFR20:

1. Technical Specification 1.18 MEMBERS OF THE PUBLIC, Technical Specification 1.31 SITE BOUNDARY, and Technical Specification 1.39 UNRESTRICTED AREA definitions were similar to those of 10CFR20.1003. The revised definitions correspond to revised 10CFR20.1003 with site specific clarifications.
2. Technical Specification 3/4.11.1.4 Liquid Holdup Tanks for LCO 3.11.1.4 limits the quantity of radioactive material contained in each unprotected outdoor tank. No change to the Technical Specification is required. The basis for the Technical Specification has been edited to clarify the 10 Curie limit.
3. Technical Specification 5.1.3 Map Defining UNRESTRICTED AREAS and SITE BOUNDARY for Radioactive Gaseous and Liquid Effluents requires a change to correct the 10CFR20 reference from 10CFR20.3(a)(17) to 10CFR20.1003. Maps (Figures 5.1-1, 5.1-2, 5.1-3, 5.1-4) were updated to make the notes more legible and to clarify the location of unrestricted, controlled and restricted areas.

4. Technical Specification 6.8.3.g.2) defines the radioactive effluent control program limiting the concentration of radioactive material released in liquid effluents to UNRESTRICTED AREAS "conforming to 10CFR20, Appendix B, Table II, Column 2." A change is required to change the quoted section of the preceding sentence to "conforming to 10 times 10CFR20.1001-20.2401 Appendix B, Table 2, Column 2."
5. Technical Specification 6.8.3.g.3) defines the radioactive effluent control program for monitoring, sampling, and analysis of radioactive liquid and gaseous effluents. A change is required to change "10CFR20.106" to "10CFR20.1302".
6. Technical Specification 6.8.3.g.7) defines the radioactive effluent control program limiting the dose rate resulting from radioactive material released in gaseous effluents to areas beyond the SITE BOUNDARY "conforming to the doses associated with 10CFR20, Appendix B, Table II, Column 1,". A change is required to change the quoted section of the preceding sentence to:

"shall be limited to the following:
 - a. For noble gases: Less than or equal to a dose rate of 500 mrem/yr to the total body and less than or equal to a dose rate of 3000 mrem/yr to the skin, and
 - b. For Iodine-131, for Iodine-133, for tritium, and for all radionuclides in particulate form with half-lives greater than 8 days: Less than or equal to a dose rate of 1500 mrem/yr to any organ, and
 - c. The radioactivity release rate and the current or default meteorological data averaged over one hour should be used for dose rate calculations."

7. Technical Specification 6.9.1.2.a defines annual reports for tabulation of personnel receiving exposures greater than 100 mrem/yr. A note referencing 10CFR20.407 will be changed to reference 10CFR20.2206. The wording of Technical Specification 6.9.1.2.a was clarified by adding the phrases in **boldface type**. This is consistent with the requirements of 10CFR20.2206.

[6.9.1.2]

- a. A tabulation on an annual basis of the number of station, utility, and other **individuals, for whom monitoring was required**, (including contractors), receiving exposures greater than 100 mrem in one **calendar year at South Texas Project** and their associated man-rem exposure
8. Records - Technical Specification 6.10.2.f was moved to 6.10.3.p. 10CFR20.2108 requires longer retention of records of disposal of licensed material. Technical Specification 6.10.3.c was edited to be consistent with the record keeping requirements of 10CFR20.2106.

[6.10.3]

- c. Records of **doses received by all individuals for whom monitoring was required;**
9. Technical Specification 6.12 High Radiation Area requires Technical Specification change to change measurement distances and 10CFR20 references.
10. Technical Specification 6.14.a.2 references 10CFR20.106 and was changed to Technical Specification 6.8.3.g.

Safety Evaluation

The proposed changes to the South Texas Project Technical Specifications are editorial changes that provide consistency between the Technical Specifications and the revised 10CFR20 or are changes to the effluent limits cross referenced to the former 10CFR20 in the implementation of 10CFR50, Appendix I limits.

The basic requirements concerning effluents from nuclear power reactors are stated in 10CFR50.36a. These requirements indicate that compliance with effluent Technical Specifications will keep average annual releases of radioactive material in effluents to small percentages of the limits specified in the former 10CFR20.106 (revised 10CFR20.1301). The requirements further indicate that operational flexibility is allowed, compatible with considerations of health and safety, which may temporarily result in releases higher than such small percentages, but still within the limits specified in 10CFR20.106 which references Appendix B, Table II concentrations (MPCs). The limits correlate to an annual dose of 500 mrem. 10CFR50.36a indicates that when using operational flexibility, best efforts shall be exerted to keep levels of radioactive materials in effluents as low as is reasonably achievable (ALARA) as set forth in 10CFR50, Appendix I.

The changes proposed to the South Texas Project Technical Specification are consistent with the philosophy to keep dose to the public as low as is reasonably achievable (ALARA) and below the limits set forth in 10CFR50, Appendix I.

Definitions - (Technical Specifications 1.18, 1.31, 1.39)

MEMBER OF THE PUBLIC, SITE BOUNDARY, and UNRESTRICTED AREA definitions were revised to correspond to 10CFR20.1003 with site specific clarifications. The information added to the MEMBER OF THE PUBLIC definition clarifies which personnel are treated as MEMBERS OF THE PUBLIC. The definition is:

individuals working within the SITE BOUNDARY and not assigned duties in the restricted area, would be considered a MEMBER OF THE PUBLIC;

individuals accessing a restricted area, but not assigned work related to plant operations in the restricted area, would be limited to the same dose as a MEMBER OF THE PUBLIC;

personnel assigned duties in a restricted area are not a MEMBER OF THE PUBLIC while within the SITE BOUNDARY.

Liquid Waste Holdup Tanks - (Technical Specification 3.11.1.4)

No change is proposed to the Technical Specification. The purpose for the Technical Specification is to restrict the radioactivity content such that an uncontrolled release of the tank's contents would not exceed the limits of 10CFR20, Appendix B, Table II, Column 2 at the nearest potable water supply and the nearest surface water supply in an UNRESTRICTED AREA. The Technical Specification bases should indicate that limiting tank contents to 10 Curies is a conservative and more realistic limit than the concentration that would result in 10 times the limits of 10CFR20, Appendix B, Table 2, Column 2. Section 15.7.3 of NUREG 0800 and Sections 2.4.13.3.2 and 15.7.3 of the South Texas Project Updated Final Safety Analysis Report (UFSAR) indicate that the radioactive source term previously evaluated was approximately 10 Curies for an accidental tank rupture. The calculated concentrations offsite were below 10 times the Effluent Concentration (EC) Limits by several orders of magnitude. The clarification to the bases of the Technical Specifications indicates that the total curie content is the limiting factor rather than concentration.

Site Maps - (Technical Specification 5.1.3)

The description of the design features related to gaseous and liquid effluents was edited and Figures 5.1-3 and 5.1-4 were revised and clarified to reflect the revised 10CFR20.1003 concepts of restricted, controlled and unrestricted areas. The wording concerning water bodies and exclusion area boundary was deleted. The Technical Specification limitations on effluents at the site boundary is not related to the exclusion area boundary. All areas within the SITE BOUNDARY can be controlled, if necessary, for purposes of limiting dose to MEMBERS OF THE PUBLIC. Figures 5.1-1 through 4 are updated such that the notes are more legible.

Liquid Effluents - (Technical Specification 6.8.3.g.2)

Current wording: "Limitations on the concentrations of radioactive material released in liquid effluents to UNRESTRICTED AREAS conforming to 10CFR20, Appendix B, Table II, Column 2."

Proposed wording: "Limitations on the concentrations of radioactive material released in liquid effluents to UNRESTRICTED AREAS conforming to 10 times 10CFR20.1001-20.2401, Appendix B, Table 2, Column 2."

The Introduction to Appendix B of the revised 10CFR20 indicates that the liquid effluent concentration limits given in Appendix B, Table 2, Column 2, are based on an annual dose of 50 mrem. Under the former 10CFR20, effluent concentration limits (i.e. unrestricted area MPCs) corresponded to a dose limit of 500 mrem in a year for liquid effluents. Operational history at South Texas Project has demonstrated that the use of the concentration values associated with the former 10CFR20.106 as Technical Specification limits has resulted in calculated maximum individual doses to a member of the public that are small percentages of the requirements of 10CFR50, Appendix I. The effluent concentrations listed in the revised 10CFR20, Appendix B, Table 2, Column 2, correspond to a dose of 50 mrem in a year. When applied as a dose rate, 50 mrem/year corresponds to a dose rate of 5.7 microrem/hr. Considering monitor background, sensitivity, and performance, it is impractical to base liquid effluent monitor setpoints on this low value for many liquid effluent release situations. The operational flexibility needed for liquid effluent releases requires that release rate limits be revised to allow ten times the concentrations stated in the revised 10CFR20, Appendix B, Table 2, Column 2.

The factor of ten is based on the ratio of former annual dose limit of 500 mrem, to the revised annual dose limit of 50 mrem. The proposed change provides operational flexibility consistent with 10CFR50 Appendix I, concurrent with the implementation of the revised 10CFR20.

Effluent Monitoring - (Technical Specification 6.8.3.g.3)

Current wording: "Monitoring, sampling, and analysis of radioactive liquid and gaseous effluents in accordance with 10CFR20.106 and with the methodology and parameters in the ODCM."

Proposed wording: "Monitoring, sampling, and analysis of radioactive liquid and gaseous effluents in accordance with 10CFR20.1302 and with the methodology and parameters in the ODCM."

The proposed change to Technical Specification 6.8.3.g.3 is purely editorial, correcting the reference section of 10CFR20 as necessary for consistency with other changes to the Technical Specifications. No changes in programs or procedures are intended as a result of this change.

Gaseous Effluents - (Technical Specification 6.8.3.g.7)

Current wording: "Limitations on the dose rate resulting from radioactive material released in gaseous effluents to areas beyond the SITE BOUNDARY conforming to the doses associated with 10CFR20, Appendix B, Table II, Column 1."

Proposed wording: "Limitations on the dose rate resulting from radioactive material released in gaseous effluents from the site to areas at or beyond the SITE BOUNDARY shall be limited to the following:

- a. For noble gases: Less than or equal to a dose rate of 500 mrem/yr to the total body and less than or equal to a dose rate of 3000 mrem/yr to the skin, and
- b. For Iodine-131, for Iodine-133, for tritium, and for all radionuclides in particulate form with half-lives greater than 8 days: Less than or equal to a dose rate of 1500 mrem/yr to any organ, and
- c. The radioactivity release rate and the current or default meteorological data averaged over one hour should be used for dose rate calculations."

Technical Specification 6.8.3.g.7 provides for a program to limit the dose from gaseous effluents at anytime, at and beyond the site boundary, to within the annual dose limits for unrestricted areas as specified by 10CFR20. The current annual dose limits are the doses associated with the concentrations in 10CFR20, Appendix B, Table II, Column 1 (10CFR20.106) and equate to 500 mrem in a year. These limits on radioactive material discharged in gaseous effluents provide reasonable assurance that a member of the public in an unrestricted area, outside of the site boundary, would not be exposed to annual average concentrations exceeding the limits specified in Appendix B, Table II of 10CFR20 (10CFR20.106(b)).

The South Texas Project Offsite Dose Calculation Manual (ODCM) currently establishes release rate controls, at all times, to restrict gamma and beta dose rates to a member of the public, at or beyond the site boundary, to less than or equal to 500 mrem/year to the whole body or to less than or equal to 3000 mrem/year to the skin. These release rate limits also restrict, at all times, the corresponding thyroid dose rate via the inhalation pathway to less than or equal to 1500 mrem/year. These limits are consistent with the guidance provided in NUREG-0133, "Preparation of Radiological Effluent Technical Specifications for Nuclear Power Plants."

The dose rate controls in the ODCM ensure that licensees meet the 10CFR50 Appendix I requirements. The proposed change does not revise the dose rate controls identified in the Technical Specifications and implemented by the South Texas Project ODCM. The proposed change deletes the reference to 10CFR20, Appendix B, Table II and instead, explicitly identifies the dose rate controls. The change further identifies hourly averages as the basis for performing calculations. The proposed change to the Technical Specification is consistent with the South Texas Project ODCM.

Annual Reports - (Technical Specification 6.9.1.2.a)

Technical Specification 6.9.1.2.a requires a report to be submitted annually which includes a tabulation of individuals receiving exposures greater than 100 mrem/yr and their associated man-rem exposure according to work and job functions. Since the revised 10CFR20 only requires reporting for monitored individuals as defined in 10CFR20.1502, Technical Specification 6.9.1.2.a is being revised to clearly identify the individuals for whom tabulation in the annual report is required. This is an administrative change which clarifies reporting requirements. This change does not alter South Texas Project requirements or responsibilities for protection of the public and employees against radiation hazards. The footnote in this paragraph was edited to reference the revised criteria in 10CFR20.2206 (b).

Records - (Technical Specification 6.10)

The retention period for records of disposal of licensed material changed from 5 years to the duration of the operating license as required by 10CFR20.2108, so Technical Specification 6.10.2.f was moved to 6.10.3.p. Technical Specification 6.10.3.c was edited to be consistent with the requirements of 10CFR20.2106.

- c. Records of "doses received by all individuals for whom monitoring was required";

High Radiation Area - (Technical Specification 6.12)

The revised 10CFR20 provides a new definition of a high radiation area which is based on a radiation level measurement made at 30 cm. Therefore, the measurement distance identified in Technical Specifications 6.12.1 and 6.12.2 are being changed from 18 inches to 30 cm (12 inches) to be consistent with 10CFR20.1601(a). This represents a conservative change since 30 cm is a shorter distance than 18 inches. Implementing this change will result in higher dose measurements and more conservative identification of high radiation areas. An upper limit of 500 Rad in one hour at one meter was incorporated into this Technical Specification to specify an upper bound to HIGH RADIATION AREA. The upper limit of 500 Rad in one hour at one meter denotes a boundary between HIGH RADIATION AREA and VERY HIGH RADIATION AREA. Posting and controls for VERY HIGH RADIATION AREAS will be consistent with the requirements of 10CFR20.1602 and 10CFR20.1902(c) independent of the Technical Specifications. Other terminology changes are proposed in this Technical Specification for consistency (i.e., mR/h to mrem/h; exposure to dose; personnel to individuals). The phrase referencing the Health and Safety Services Manager was changed to health physics supervision to eliminate an organizational title and preserve administrative control.

ODCM - (Technical Specification 6.14.a.2)

Technical Specification 6.14.a.2 has been edited to change the reference to 10CFR20.106 to TS 6.8.3.g. This change will maintain consistency with the effluent limitations in both liquid and gaseous effluents as was previously justified.

4.0 No Significant Hazards Consideration Determination

In accordance with 10CFR50.92, any proposed change to a Operating License (Technical Specifications) must be evaluated for significant hazards considerations. The operation of the facility in accordance with the proposed change shall not:

- 1) involve a significant increase in the probability or consequences of any accident previously evaluated, or

The proposed revisions to the liquid and gaseous release limits will not change the type or amount of effluent released nor will there be an increase in individual or cumulative dose. The changes will result in levels of radioactive materials in effluents being maintained ALARA and comply with 10CFR50.36a and 10CFR50 Appendix I. The change to the high radiation area dose measurement distance will ensure that high radiation areas are conservatively posted per 10CFR20.1601(a)(1) and provide controls to minimize individual dose. The changes do not impact the operation or design of any plant structure, system or component. Other proposed changes are administrative only. Therefore, the proposed changes do not involve an increase in the probability or consequences of an accident previously evaluated.

- 2) create the possibility of a new or different kind of accident from any accident previously evaluated, or

The proposed changes do not affect the plant design or operation nor do they result in a change to the configuration of any equipment. No change is proposed that will change the type or quantity of effluents released off site or change the source terms available for release. Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any previously evaluated.

- 3) involve a significant reduction in a margin of safety.

The proposed changes do not change the type or increase the amount of effluents released off site. No change in the methodology used to control radioactive waste or radiological environmental monitoring is proposed. Control of radioactive effluents and effluent monitor setpoints will be based on current dose to the public limitations. Under the proposed change, high radiation area measurements are more conservative and will not result in an increase in individual or cumulative occupational radiation exposures. Compliance with the limits of the revised 10CFR20.1301 will be demonstrated by operating within the limits of 10CFR50 Appendix I and 40CFR190. Therefore, these changes do not reduce the margin of safety.

Based upon the foregoing, South Texas Project concludes that the proposed changes do not involve a significant hazards consideration.

Environmental Impact Analysis

The proposed changes to the South Texas Project Technical Specifications have been reviewed against the criteria of 10CFR51.22 for environmental considerations. The proposed changes do not involve a significant hazards consideration; nor increase the types and amounts of effluents that may be released offsite; nor increase the individual or cumulative occupational radiation exposures. The proposed effluent concentration limits requested will allow the liquid and gaseous effluent release rates to correspond to the current annual dose limits. Compliance with the annual dose limits of the new 10CFR20.1301 will be demonstrated by operating within the requirements of 10CFR50 Appendix I and 40CFR190. Therefore, the proposed Technical Specification changes meet the criteria given in 10CFR51.22(c)(9) for a categorical exclusion from the requirement for an Environmental Impact Statement.