

# The Light company

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

November 6, 1996  
ST-HL-AE-5511  
File No.: G09.06  
10CFR50.90,  
10CFR50.92, 10CFR51

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

South Texas Project  
Units 1 & 2  
Docket Nos. STN 50-498, STN 50-499  
Unit 1 and Unit 2 Technical Specification 3.4.6.1

Reference: Letter from T. H. Cloninger to the Nuclear Regulatory Commission Document Control Desk dated October 23, 1996. (ST-HL-AE-5491)

In the letter referenced above, the South Texas Project proposed to amend its Operating Licenses NPF-76 and NPF-80 for the South Texas Project (STP), Units 1 and 2, by incorporating a proposed change to Technical Specifications 3.4.6.1, Reactor Coolant Leakage Detection Systems. This amendment will adopt the requirements found in NUREG 1431, Standard Technical Specifications Westinghouse Plants, for the Leakage Detection Systems.

Based on discussion with the Nuclear Regulatory Commission staff, the attached revision to the submittal is being provided. The changes are noted in the Description of Changes accompanying the proposed specification

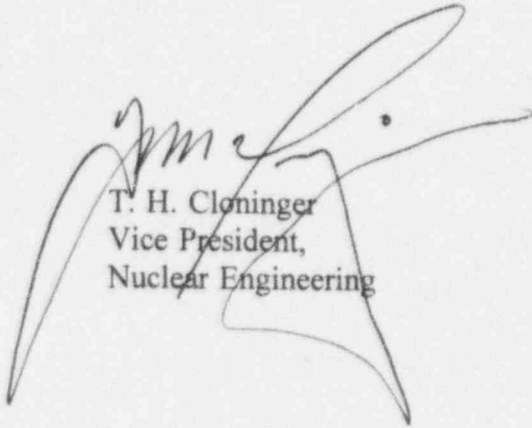
The South Texas Project has reviewed the attached proposed amendment pursuant to 10CFR50.92 and determined that it does not involve a significant hazards consideration. In addition, the South Texas Project has determined that the proposed amendment satisfies the criteria of 10CFR51.22(c)(9) for categorical exclusion from the requirement for an environmental assessment. The South Texas Project Electric Generating Station Nuclear Safety Review Board has reviewed and approved the proposed changes.

The required affidavit, along with a Safety Evaluation and No Significant Hazards Consideration Determination associated with the proposed changes, and the marked up affected pages of the Technical Specifications are included as attachments to this letter.

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

If you should have any questions concerning this matter, please call Mr. M. A. McBurnett at (512) 972-7206 or myself at (512) 972-8787.



T. H. Cloninger  
Vice President,  
Nuclear Engineering

TCK/

- Attachment:
1. Affidavit
  2. Safety Evaluation and No Significant Hazards Consideration Determination
  3. Proposed Replacement Page for Change to Technical Specification 3.4.6.1.

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South Texas Project Electric Generating Station

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**ATTACHMENT 1**

**AFFIDAVIT**

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

In the Matter of

South Texas Project  
Company, et al.,

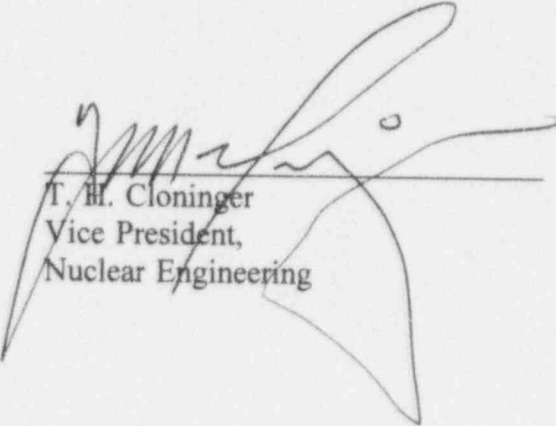
South Texas Project  
Units 1 and 2

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Docket Nos. 50-498  
50-499

AFFIDAVIT

I, T. H. Cloninger, being duly sworn, hereby depose and say that I am Vice President, Nuclear Engineering, of South Texas Project Company; that I am duly authorized to sign and file with the Nuclear Regulatory Commission the attached revision to proposed changes to Technical Specification 3.4.6.1; 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.

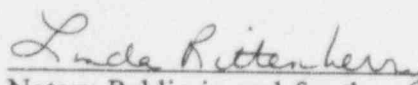
  
T. H. Cloninger  
Vice President,  
Nuclear Engineering

STATE OF TEXAS

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6<sup>th</sup> Subscribed and sworn to before me, a Notary Public in and for the State of Texas, this  
day of November, 1996.



  
Notary Public in and for the  
State of Texas

## **ATTACHMENT 2**

### **SAFETY EVALUATION AND NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION**

### Background

The leakage detection systems at the South Texas Project consist of two atmosphere radioactivity monitors, one gaseous and one particulate, and a containment normal sump level and flow monitoring system. For Technical Specifications 3.4.6.1 the Limiting Condition for Operation requires the following equipment to be OPERABLE in Modes 1, 2, 3 and 4.

- a. The Containment Atmosphere Gaseous Radioactivity Monitoring System.
- b. The Containment Normal Sump Level and Flow Monitoring System, and
- c. The Containment Atmosphere Particulate Radioactivity Monitoring System.

The following actions are applicable depending on the equipment that is inoperable.

- a. With a. or c. inoperable, operation may continue for up to 30 days provided grab samples of the containment atmosphere are obtained and analyzed for gaseous and particulate radioactivity at least once per 24 hours; otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With b. inoperable, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- c. With a. and c. inoperable:
  - 1) Restore either Monitoring System (a. or c.) to OPERABLE status within 72 hours and
  - 2) Obtain and analyze a grab sample of the containment atmosphere for gaseous and particulate radioactivity at least once per 24 hours, and
  - 3) Perform a Reactor Coolant System water inventory balance at least once per 8 hours.

Otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

In addition to the instrumentation required by Technical Specification 3.4.6.1, the South Texas Project has additional methods of detecting Reactor Coolant Leakage. These additional methods include the Reactor Coolant System precision water inventory balance required by Technical Specification Surveillance 4.4.6.2.1.c, containment pressure, temperature and humidity indicators and trending displays for the volume control tank and pressurizer level. All of these methods are available to the Operator in the control room for evaluating any possible leakage.



This request is being submitted to allow the calibration of the containment normal sump level transmitter during power operations. Due to a misunderstanding about the system configuration, the containment normal sump level transmitter loop was not calibrated during the previous outage. While the calibration can physically be done during power operations, the actual time to perform the calibration work will take approximately 7 hours to complete. During this time the containment normal sump level and flow monitoring system will be inoperable. This amendment will permit the calibration to be completed without forcing a unit shutdown.

#### Description of Change

This amendment to Technical Specification 3.4.6.1 Limiting Condition for Operation would change the equipment required to be OPERABLE in Modes 1, 2, 3 and 4 as follows:

- a. One Containment Atmosphere Radioactivity Monitor (gaseous or particulate), and
- b. The Containment Normal Sump Level and Flow Monitoring System.

This amendment will require the following actions depending on the equipment that is inoperable.

- a. With the required containment atmosphere radioactivity monitor inoperable perform the following actions or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours:
  - 1) Restore one containment atmosphere monitoring system to OPERABLE status within 30 days and,
  - 2) Obtain and analyze a grab sample of the containment atmosphere for gaseous and particulate radioactivity at least once per 24 hours, or
  - 3) Perform a Reactor Coolant System water inventory balance at least once per 24 hours.
- b. With the required containment normal sump level and flow monitoring system inoperable perform the following actions or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours:
  - 1) Restore the containment normal sump level and flow monitoring system to OPERABLE status within 30 days and,
  - 2) Perform a Reactor Coolant System water inventory balance at least once per 24 hours. (Deleted provision for hand calculation of leakage)
- c. With both a. and b. inoperable enter Specification 3.0.3. (Added Action c.)

These changes are consistent with NUREG 1431 and do not involve any changes unique to the South Texas Project.



### Safety Evaluation

The proposed change reduces the number of containment atmospheric radioactivity channels which must be OPERABLE when operating in MODES 1, 2, 3, and 4 from two to one. This change does not significantly increase the probability or consequences of a previously evaluated accident since the plant will continue to have diverse and independent means of detecting significant changes in the amount of leakage from the Reactor Coolant System (RCS); including the containment normal sump level and flow monitoring system and at least one of the two containment atmospheric radiation monitors. These methods along with the periodic precision RCS water inventory balance required by TS surveillance requirement 4.4.6.2.1.c and trending displays which can assist in detecting leakage based on changes in the volume control tank or pressurizer level. Other instruments, which are not listed in the Technical Specification related to leakage, but which can provide indication of leakage, are the containment pressure, temperature and humidity indicators.

The proposed change also revises the limitation on continued operation with both containment atmospheric radiation monitors inoperable from 72 hours to 30 days. This change is based on the continued availability of diverse and redundant instrumentation discussed above to detect and indicate RCS leakage and the compensatory requirements in the Action statements. The Actions required as a result of this change include analysis of a containment atmospheric grab sample or performance of a precision RCS water inventory balance in accordance with surveillance requirement 4.4.6.2.1.c. The containment normal sump level and flow monitoring system will also promptly identify changes in RCS leakage. Other installed instrumentation, such as containment pressure, temperature, and humidity indicators, will provide indications of significant increases in leakage. Slower increases will be detected by the daily inventory balance or the daily grab sample analysis, and the three day inventory balance.

The proposed 30 day allowed outage time instead of the 6 hours to HOT STANDBY requirement for an inoperable on-line automatic containment normal sump level and flow monitoring system is based on the compensatory Actions required by the amendment. These Actions require the performance of a precision RCS inventory balance as described in surveillance requirement 4.4.6.2.1.c. Other indications of increases in leakage such as the containment atmospheric radiation monitoring instruments and installed containment temperature, pressure and humidity instrumentation are also available. The STP control room design also incorporates features which allow rapid detection of unexpected changes in the volume control tank and pressurizer level through available instrument trend displays. The combination of the compensatory measures, diverse and separate channels, and non-TS required instrumentation provides a sufficient level of detection to assure prompt identification and quantification of leakage with an inoperable containment normal sump level and flow monitoring system.

Conclusion

Based on information discussed above, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated. Therefore, there is reasonable assurance that the operation of the South Texas Project in the proposed manner will not endanger the public health and safety. In addition, the proposed amendment is consistent with the Improved Technical Specification requirements found in NUREG 1431.

## NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

Pursuant to 10CFR50.91, this analysis provides a determination that the proposed change to the Technical Specifications described previously, does not involve any significant hazards consideration as defined in 10CFR50.92, as described below:

1. **The proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.**

The proposed change reduces the number of containment atmospheric radioactivity channels which must be OPERABLE when operating in MODES 1, 2, 3, and 4 from two to one. This change does not significantly increase the probability or consequences of a previously evaluated accident since the plant will continue to have diverse and independent means of detecting significant changes in the amount of leakage from the RCS; the normal sump level and flow monitoring system, at least one of the two containment atmospheric radiation monitors, and the periodic precision RCS water inventory balance required by Technical Specification surveillance requirement 4.4.6.2.1.c. In addition, STP design includes advanced trending displays which can assist in detecting leakage based on changes in the volume control tank or pressurizer level. Other instruments, which are not listed in the Technical Specification related to leakage, but which can provide indication of leakage, are the containment pressure, temperature and humidity indicators. Good operating practice and commercial risk associated with long term inoperability of both monitors assures that an inoperable containment atmospheric radiation monitor will be promptly returned to service.

The proposed change also revises the limitation on continued operation with both containment atmospheric radiation monitors inoperable from 72 hours to 30 days. This change is based on the continued availability of diverse and redundant instrumentation discussed above to detect and indicate RCS leakage.

The Actions required as a result of this change include analysis of a containment atmospheric grab sample or performance of a precision RCS water inventory balance in accordance with surveillance requirement 4.4.6.2.1.c. The containment normal sump level and flow monitoring system will also promptly identify changes in RCS leakage. Other installed instrumentation, such as containment pressure, temperature, and humidity, will provide indications of significant increases in leakage. Slower increases will be detected by the daily inventory balance or the daily grab sample analysis, and the three day inventory balance.

Inoperability of the on-line automatic containment normal sump level and flow monitoring system can be compensated for by the performance of a daily manual calculation, a precision RCS inventory balance as described in surveillance requirement 4.4.6.2.1.c, or the other available indications of increases in leakage such as the containment atmospheric radiation monitoring instruments and installed containment temperature, pressure and humidity instrumentation. The STP control room design also incorporates features which allow rapid detection of unexpected changes in the volume control tank and pressurizer level through available instrument trend displays. The combination of the compensatory measures, diverse

and separate channels, and non-TS required instrumentation provides a sufficient level of detection to assure prompt identification and quantification of leakage with an inoperable containment normal sump level and flow monitoring system. The allowable outage time of 30 days provides assurance the normal containment sump level and flow monitoring system will be returned to service in a reasonable amount of time.

Based on the continued availability of adequate and redundant instrumentation to detect changes in RCS leakage rate, this change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

**2. The proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.**

The proposed change does not require the installation of any new or different kind of equipment. Nor does the change involve any significantly new or different MODE of operation of the plant. The proposed change reduces the number of required containment atmospheric radiation monitors, and provides a 30 day allowed outage time for either the containment atmosphere radioactivity monitor or the containment normal sump level and flow monitoring system. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

**3. The proposed change does not involve a significant reduction in a margin of safety.**

In addition, as described above, the proposed change does not significantly reduce a margin of safety. Small changes in RCS leak rates are typically detected over a relatively long period of time. Diverse instrumentation continues to be available to plant operators which will assist in early detection of any change. The STP design provides additional non-Technical Specification human factors which assist in assuring any changes in leakage will be quickly detected.

The proposed change extends the amount of time that the containment atmospheric radiation monitors may be inoperable. The extension is based on the continued availability of equipment which provides a level of detection capability adequate to detect increases in RCS leakage and which continues to be diverse and independent. This protection is afforded by the continued OPERABILITY of the containment normal sump level and flow monitoring system, the daily performance of a precision RCS inventory balance as described by surveillance requirement 4.4.6.2.1.c or the daily analysis of containment atmospheric grab samples, and other instrumentation such as pressure, temperature and humidity indicators.

The combination of the compensatory measures, diverse and separate channels, and non-TS required instrumentation provides a sufficient level of detection to assure prompt identification and quantification of leakage with an inoperable containment normal sump level and flow monitoring system. Additionally, the compensatory measure of performing either a daily manual calculation or precision RCS inventory balance, provides assurance that the level of safety is maintained when the containment normal sump level and flow monitoring system is

inoperable. The allowable outage time of 30 days provides assurance the normal containment sump level and flow monitoring system will be returned to service in a reasonable amount of time.

Based on the compensatory actions and available installed equipment, the proposed changes do not represent a significant reduction in a margin of safety.

#### Implementation Schedule

South Texas Project requests this amendment be approved by January 10, 1997 to allow for the timely implementation of the change. The containment normal sump level calibration will exceed its frequency on February 1, 1997.