

# The Light company

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

August 30, 1991  
ST-HL-AE-3830  
File No. : G2.06,  
G20.02.01  
10CFR50.90

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

South Texas Project Electric Generating Station  
Units 1 & 2  
Docket No. STN 50-498, STN 50-499  
Proposed Amendment to the Unit 1  
and Unit 2 Technical Specifications

Reference: (1) Letter ST-HL-AE-3831 dated August 26, 1991 from  
W. J. Jump to the USNRC Document Control Desk  
  
(2) Letter ST-HL-AE-3756 dated May 23, 1991 from  
W. H. Kinsey to the USNRC Document Control Desk

Pursuant to 10 CFR 50.90, Houston Lighting & Power (HL&P) hereby proposes to amend its Operating Licenses NPF-76 and NPF-80 by incorporating the attached proposed changes to the Technical Specifications, for the South Texas Project Electric Generating Station (STPEGS) Units 1 and 2.

This proposed Technical Specification amendment includes a reanalysis of the End of Life (EOL) Moderator Temperature Coefficient (MTC) limit derivation supporting a more negative EOL MTC. The MTC methodology change will allow STP to have a more negative EOL MTC than the present. The changes to allow relaxation of the EOL MTC limit in the Core Operating Limits Report (COLR) are based on Westinghouse methodology in WCAP 12942. The analysis is STP specific, and is similar to that approved for use at other nuclear power plants. The WCAP has been submitted by Reference 1 for approval on the STP docket. In addition the amendment includes clarifications to the text of the Axial Flux Difference (AFD) Specification and the operability requirements for the Incore Movable Detection System.

The individual Technical Specifications which are affected are contained in Attachment 1, accompanied by a change description and basis. Attachment 2 is the safety and No Significant Hazards evaluation for changes to Technical Specifications regarding AFD, MTC, and Movable Detectors. Attachment 3 provides the marked-up pages for the proposed amendment. Changes and clarifications are delineated by a change bar in the right margin.

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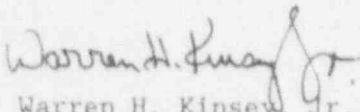
HL&P has reviewed the attached proposed amendment pursuant to 10CFR50.91(a) (1) and determined that it does not involve a significant hazards consideration. The basis for this determination is provided in the attachments. In addition, based on the information contained in this submittal and the NRC Final Environmental Assessment for STPEGS Units 1 and 2, HL&P has concluded that, pursuant to 10CFR51, there are no significant radiological or nonradiological impacts associated with the proposed action and the proposed license amendment will not have a significant effect on the quality of the environment.

The STPEGS Nuclear Safety Review Board has reviewed and approved the proposed changes.

The proposed changes are consistent with the requirements in 10CFR50.36, other nuclear plants' Technical Specifications and practices.

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

If the NRC should have any questions concerning this matter, please contact Mr. A. W. Harrison at (512) 972-7298 or myself at (512) 972-7921.

  
Warren H. Kinsey, Jr.  
Vice President  
Nuclear Generation

AWH/kmd

Attachments:

1. Index of Technical Specifications affected by the proposed Amendment and a brief description of the change
2. Safety and No Significant Hazards Evaluation for changes to Technical Specifications Regarding AFD, MTC, and Movable Detectors
3. Mark-ups of Proposed Changes to Technical Specifications

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

In the Matter )

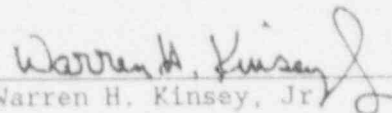
Houston Lighting & Power )  
Company, et al., )

Docket Nos. 50-498  
50-499

South Texas Project )  
Units 1 and 2 )

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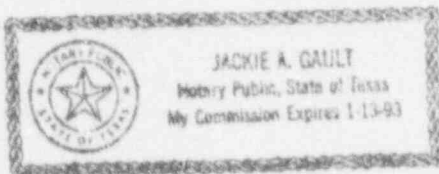
Warren H. Kinsey, Jr. being duly sworn, hereby deposes and says that he is Vice President, Nuclear Generation, of Houston Lighting & Power Company; that he is duly authorized to sign and file with the Nuclear Regulatory Commission the proposed amendment to the Unit 1 and Unit 2 Technical Specifications; is familiar with the content thereof; and that the matters set forth therein are true and correct to the best of his knowledge and belief.


  
Warren H. Kinsey, Jr.

Vice President, Nuclear Generation

STATE OF TEXAS )  
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Subscribed and sworn to before me, a Notary Public in and for The State of Texas this 30<sup>TH</sup> day of AUGUST, 1991.



  
Notary Public in and for the  
State of Texas

Attachment 1

Technical Specifications Affected and Description of Change

TECHNICAL SPECIFICATIONS AFFECTED BY PROPOSED  
AMENDMENT AND BRIEF DESCRIPTION OF CHANGE

<u>PAGE</u>	<u>TECHNICAL SPECIFICATION</u>	<u>CHANGE DESCRIPTION</u>
3/4 2-1	3.2.1 Axial Flux Difference	Administrative change to clarify ACTION statement. No change to requirements.
3/4 2-2	4.2.1.1.a AFD Surveillance Requirement	Delete requirement to monitor AFD for 24 hours after Monitor Alarm is declared OPERABLE.
3/4 2-10	4.2.4.2.a QPTR Surveillance Requirement above 75% power with one NIS	Add parenthetical statement that Specification 3.3.3.2.a does not apply with one Power Range Detector channel out of service.
B3/4 1-2	3/4.1.1.3 Moderator Temperature Coefficient Bases	Replace description of how the EOL MTC limit is derived with new description based on WCAP 12942.
6-20	6.9.1.6.b Administrative Controls - Core Operating Limits Report (COLR)	Add reference to WCAP 12942. This topical allows the use of a relaxed EOL MTC limit in the COLR.

Attachment 2

Safety and No Significant Hazards Evaluation



SAFETY EVALUATION FOR CHANGES TO TECHNICAL  
SPECIFICATIONS REGARDING AFD, MTC, AND MOVABLE DETECTORS

**Description of Amendment Request:**

The proposed Technical Specification Amendment addresses three specific items. The first item clarifies the text of the Axial Flux Difference (AFD) Specification Section. The second item clarifies operability requirements for the Incore Movable Detection System in the unique circumstance that only the four symmetric thimble pairs are used to verify the Quadrant Power Tilt Ratio (QPTR) above 75% power. The last item is a change to the Bases and Administrative Controls to allow relaxation of the current End Of Life (EOL) Moderator Temperature Coefficient (MTC) limit. Each of these three items is discussed in more detail below.

The changes to allow relaxation of the EOL MTC limit in the Core Operating Limits Report (COLR) are based on Westinghouse methodology in WCAP 12942 (Reference 1). The analysis is STP specific, and is similar to that approved for use at other nuclear power plants. While the MTC change provides the basis for an operational limit change in the COLR, in no case are any safety evaluation limits altered. This is discussed in more detail below. All safety analysis assumptions and safety margins remain unchanged by this proposed amendment.

The specific Technical Specifications addressed by this proposal are:

- |                  |  |
|------------------|--|
| (a) 3.2.1        | Axial Flux Difference LCO                          |
| (b) 4.2.1.1.a.1) | Axial Flux Difference<br>Surveillance Requirements |
| (c) 4.2.1.1.a.2) | Axial Flux Difference<br>Surveillance Requirements |
| (d) 4.2.4.2.a.   | Quadrant Power Tilt Ratio                          |
| (e) 6.9.1.6.b.   | Core Operating Limits Report                       |
| (f) B 3/4.1.1.3  | Moderator Temperature Coefficient Bases            |

Reason for Amendment:

The reasons behind this proposal are twofold. The first, and most important reason is the End of Life MTC limit. As the South Texas Project loads longer, more reactive cycles, the EOL MTC value approaches the current limit of -40 pcm/°F. This proposed Technical Specification amendment includes a reanalysis of the EOL MTC limit derivation. This methodology is STP specific, and removes some extremely conservative assumptions regarding control rod positioning. This methodology is referenced in Section 6.9.1.6.b<sup>(1)</sup> for the Core Operating Limits Report, and the Bases for Specification 3/4.1.1.3 are also updated to reflect this change. Upon NRC approval, the COLR limit will be changed to reflect the new methodology.

Note 1: As of this submittal, Sec. 6.9.1.6.b is not in the STPEGS specifications. Revised STPEGS Specification 6.9.1.6 was submitted for approval in a letter dated May 23, 1991 (Ref 2, ST-PL-AE-3756). The annotated page enclosed was prepared anticipating the earlier request would be approved.



The second reason for this amendment is to clarify other Specifications. The AFD Specification is clarified to give the operators better guidance. The current Specification has posed some interpretation difficulties in the past, and has been rewritten to provide clearer direction without changing the function of the current Specification. The Surveillance Requirement for this Specification was also changed. The current Specification requires 24 hours of AFD Monitor Alarm monitoring when the AFD Monitor Alarm is returned to an operable status. This poses an unnecessary burden on the plant operators, as the Monitor Alarm will frequently be lost for a very short period of time due to a process computer shutdown. The Monitor Alarm will then be returned to operable status within a few minutes. Currently, the operators then have to start a 24 hour log. Since the return to operability includes verification of the Monitor Alarm and updating of any penalty time accumulated, the 24 hour monitoring in Specification 4.2.1.1.a is redundant and unnecessary.

The other specification to be clarified regards the use of 4 pairs of symmetric incore flux thimbles for QPTR verification above 75% power. The QPTR Specifications make allowance for using only these eight unique thimbles, but the Flux Mapping System Operability Specification requires 75% of the incore flux thimbles be available before the system can be used for QPTR measurement. The need to demonstrate thimble accessibility defeats the advantage of using only 8 thimbles for this test. The proposed amendment clarifies that the 75% of incore thimble accessibility requirement does not apply to the 8 symmetric thimbles. This will allow the eight thimbles to be used to monitor the QPTR without unnecessarily accessing the rest of the incore thimbles.

The proposed changes are consistent with the requirements in 10CFR50.36, other nuclear plants' Technical Specifications and practices, and MERITS proposals. The following safety evaluation illustrates that there is no adverse safety impact in this proposal.

#### Safety Evaluation:

##### 1. Axial Flux Difference

The AFD changes are administrative changes to clarify the ACTION statement for this Specification. The wording of the ACTION statement is changed, but the function is not. All of the requirements of the Specification remain intact. There is also a change made to the Surveillance Requirements so that unnecessary logging of AFD is not performed after the AFD monitor is made operable. The Surveillance Requirement change is considered an improvement under the MERITS program. The rationale for this is that determination of the operability of the AFD Monitor is made by the plant. The manual logging of AFD for 24 hours after the Monitor Alarm is determined operable is an unnecessary burden on the operators. The return to operability should not be a Technical Specification requirement. The proposal does not change the safety impact of this Specification.

## 2. Moderator Temperature Coefficient

The MTC limit has been relocated to the Core Operating Limits Report by a previous amendment, so there is no explicit change to the Technical Specification MTC limit. The methodology by which the EOL moderator temperature coefficient limit, which corresponds to the limiting moderator density coefficient (a safety analysis input), is calculated has been changed. This STP specific analysis is being added to the COLR references in Specification 6.9.1.6.b so that the MTC limit calculated by the new methodology can be used as a limit in the COLR. The methodology has been approved by NRC for other plants, and has been submitted in Reference 1 for approval to the STP docket. Since the MTC limit change does not affect the safety analysis inputs, the safety analysis remains bounding.

## 3. Movable Detection System Operability/QPTR

The proposed change is to explicitly allow the use of a unique set of four symmetric thimble pairs for QPTR verification. The Technical Specifications already specifically allow the use of these thimbles, but no provisions are made for the operability requirement that requires 75% of the thimbles be available before the Movable Detector System can be used for QPTR measurements. Obviously, since the Bases and Technical Specifications allow the QPTR to be satisfied by 8 thimbles, there is no reason to require access to 75% in this specific circumstance. This is an administrative change only, and does not impact any operating parameters, or their limits. There is no safety implication from this change.

## Determination of Significant Hazards

Pursuant to 10CFR50.91, Houston Lighting and Power has determined that operation of the facility in accordance with the proposed license amendment does not involve any significant hazards considerations as defined by NRC regulations in 10CFR50.92. The following discussion describes how the proposed amendment satisfies each of the three requirements of 10CFR50.92(c).

1. The proposed change does not involve a significant increase in the probability or consequence of an accident previously evaluated.
  - a. The AFD change requires operation within the target band in the same manner that the current specification does. This is only an administrative change for clarification.
  - b. The Incore Movable Detector System Operability/QPTR change is also an administrative change to clarify the operability requirements for the Incore System, but does not affect the approved use of that system.
  - c. The MTC methodology change will allow STP to have a more negative EOL MTC than the present, but the actual safety analysis parameter, the moderator density coefficient, will remain unchanged. This has no accident probability impact, and the consequences remain bounded.

It is concluded that none of the components in this proposal involves a significant increase in the probability or consequences of a previously analyzed accident.

2. The proposed change does not create the possibility of a new or different kind of accident from any accident previously analyzed.
  - a. The AFD component of this proposal does not allow operation of the plant in any way different from the current Specifications. The target band is not altered, and operation within the target band is required to the same degree as the current Specifications. This change is administrative in nature, and poses no functional change.
  - b. The Movable Detector System Operability/QPTR proposal is only an administrative clarification, and does not affect either plant operation or accident analyses in any way.
  - c. The MTC portion will expand the current EOL limit, but the parameters used in the safety analysis remain unchanged. The safety analysis remains bounding for any accident types.

Since there is no impact on plant operation from this proposal, and there is no change in safety evaluation assumptions, it is concluded that there is no possibility of a new or different kind of accident from those previously analyzed.

3. The proposed amendment does not result in a significant reduction in the margin of safety
  - a. For the reasons given above, the AFD change does not impact the margin of safety. There is no change to the target band, or the requirements to be within the target band. The removal of the Surveillance Requirement to log AFD for 24 hours after the AFD Monitor is restored to operability is consistent with the MERITS improvement program. The rationale is that, once the AFD Monitor Alarm is determined to be fully operable, there is no reason to require continued logging by Technical Specifications.
  - b. The Movable Detector Operability/QPTR proposal is completely administrative. It clarifies that, when using the unique set of 8 symmetric detectors already allowed, there is no reason to access 75% of the incore thimbles to declare the system operable. This will have no impact on the margin of safety.
  - c. The last component of this proposal, the MTC methodology to relax the negative EOL limit, has no reduction in the margin of safety. The most negative EOL MTC limit is generated to assure that the moderator density coefficient, which is the parameter used in the safety analysis, remains below its limiting value. The new MTC methodology removes overly conservative assumptions made in converting between the MTC and MDC, but does not alter the safety analysis inputs. The methodology (WCAP 12942) was submitted to the NRC in Reference 1.

It is concluded that there is no reduction in the margin of safety for this proposal.