

# The Light company

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

March 21, 1994  
ST-HL-AE-4732  
File No.: G20.02  
G21.02  
10CFR50.90

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

South Texas Project Electric Generating Station  
Units 1 & 2  
Docket Nos. STN 50-498, STN 50-499  
Proposed Amendment to the Technical Specification 3.1.2.3

Houston Lighting & Power (HL&P) proposes to amend Facility Operating Licenses NPF-76 and NPF-80 for South Texas Project Units 1 and 2 by incorporating the attached proposed amendment to Technical Specifications 3.1.2.3, Reactivity Control Systems Charging Pumps - Shutdown and 3.1.2.1 Boration Systems Flow Paths - Shutdown. The purpose of the proposed amendment is to modify a note which will permit energizing of an inoperable Centrifugal Charging Pump in preparation for switching of the Centrifugal Charging Pumps.

HL&P has reviewed the proposed amendment pursuant to 10CFR50.92 and determined that it does not involve a significant hazards consideration. In addition, HL&P 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 (STP) Nuclear Safety Review Board has reviewed and approved the proposed change.

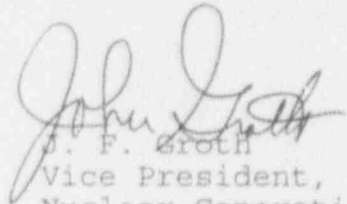
The required affidavit, along with a Safety Evaluation and No Significant Hazards Consideration Determination associated with the proposed change, and marked-up affected pages of the Technical Specifications and Bases are included as attachments to the letter.

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

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

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

  
J. F. Groth  
Vice President,  
Nuclear Generation

SJS/eg

- Attachment:
1. Affidavit
  2. Safety Evaluation and No Significant Hazards Consideration Determination
  3. Proposed Technical Specification Changes to 3.1.2.3 and 3.1.2.1 and Bases.

C:

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ATTACHMENT 1

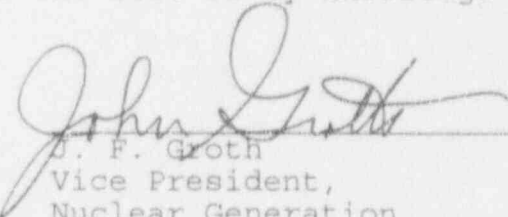
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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

|                          |   |                    |
|--------------------------|---|--------------------|
| In the Matter of         | ) |                    |
|                          | ) |                    |
| Houston Lighting & Power | ) | Docket Nos. 50-498 |
| Company, et al.,         | ) | 50-499             |
|                          | ) |                    |
| South Texas Project      | ) |                    |
| Units 1 and 2            | ) |                    |

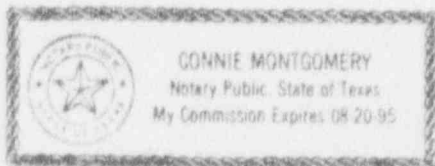
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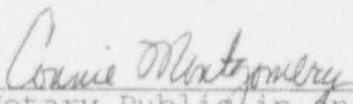
I, J. F. Groth, being duly sworn, hereby depose and say that I am Vice President, Nuclear Generation, of Houston Lighting & Power Company; that I am duly authorized to sign and file with the Nuclear Regulatory Commission the attached Proposed Amendment to the Technical Specifications 3.1.2.1 and 3.1.2.3; 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.

  
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 J. F. Groth  
 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 *21* day of *March*, 1994.



  
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 Notary Public in and for the  
 State of Texas

ATTACHMENT 2

SAFETY EVALUATION AND NO SIGNIFICANT HAZARDS  
CONSIDERATION DETERMINATION FOR CENTRIFUGAL  
CHARGING PUMP SWITCHING DURING MODES 4, 5, AND 6

SAFETY EVALUATION AND NO SIGNIFICANT HAZARDS  
CONSIDERATION DETERMINATION FOR CENTRIFUGAL  
CHARGING PUMP SWITCHING DURING MODES 4, 5, AND 6

Background

The Centrifugal Charging Pumps provide inventory control and normal boration to the Reactor Coolant System and flow to the Reactor Coolant Pump seals. During shutdown conditions, it is necessary to render a Centrifugal Charging Pump inoperable to maintain the Cold Overpressure Mitigating System design bases assumptions. This ensures that the postulated flow from two Centrifugal Charging Pumps will not exceed the relieving capacity of one Power Operated Relief Valve. Cold overpressure protection at the South Texas Project is provided by two pressurizer Power Operated Relief Valves.

During shutdown conditions, switching from one Centrifugal Charging Pump to the other is sometimes desirable. Currently, the boration flow paths of Technical Specification 3.1.2.1 must be maintained in conjunction with the requirements of Technical Specification 3.1.2.3 regarding charging pump operability. The NRC has indicated that it is not acceptable to have both Centrifugal Charging Pumps running simultaneously and aligned to the Reactor Coolant System during a switching process due to the potential pressure transients. This leaves as the only recourse, a momentary isolation of charging and boration flowpaths to the Reactor Coolant System during pump switching.

Proposed Change

Houston Lighting & Power proposes to modify Technical Specifications 3.1.2.1 and 3.1.2.3. The proposed change would modify the Note of Surveillance 4.1.2.3.2 which permits an inoperable charging pump to be energized for pump testing purposes. The modification would extend the Note to also include pump switching. During the switching process, both pumps would briefly be isolated from the Reactor Coolant System. A Note would also be added to Specification 3.1.2.1 stating that the boron injection flow path requirements are not applicable during charging pump switching performed pursuant to Specification 4.1.2.3.2. It is operationally desirable to maintain flow to the Reactor Coolant Pump seals during the Centrifugal Charging Pump switching process. This proposed change will not only protect the Reactor Coolant System from overpressurization at low temperatures, but will also provide the capability of maintaining Reactor Coolant Pump Seal Injection flow during the switching process. Attachment 3 contains a markup of the proposed changes.

SAFETY EVALUATION AND NO SIGNIFICANT HAZARDS  
CONSIDERATION DETERMINATION FOR CENTRIFUGAL  
CHARGING PUMP SWITCHING DURING MODES 4, 5, AND 6

Safety Evaluation

**Current Licensing Basis**

Technical Specification 3.1.2.3 requires one charging pump to be operable in Modes 4, 5, and 6 with the other charging pumps rendered inoperable to prevent a overpressure event. The bases for Technical Specification 3/4.1.2, "Boration Systems," states that:

"The limitation for a maximum of one charging pump to be OPERABLE and the Surveillance Requirement to verify all charging pumps except the required OPERABLE pump to be inoperable below 350°F provides assurance that a mass addition pressure transient can be relieved by the operation of a single PORV."

Technical Specification 3.1.2.1 requires one boron injection flow path to be operable during Modes 4, 5, and 6. According to the bases for Specification 3/4.1.2,:

"With the RCS temperature below 350°F, one boron injection flow path/source is acceptable without single failure consideration on the basis of the stable reactivity conditions of the reactor and the additional restrictions prohibiting CORE ALTERATIONS and positive reactivity changes in the event the single boron injection flow path/source becomes inoperable."

**Impact of Proposed Changes**

The proposed changes can potentially impact two events during Modes 4, 5, and 6: (1) cold overpressurization of the Reactor Coolant System, and (2) boron dilution resulting in a return to criticality. Current cold overpressurization analyses would remain valid because, at any given time, the inoperable Centrifugal Charging Pump would be isolated from the Reactor Coolant System per the revised Note of Specification 3.1.2.3. Boron dilution resulting in a return to criticality is avoided because the action statement of Specification 3.1.2.1 would be entered if one of the boron injection flow paths of Specification 3.1.2.1 could not be restored following Centrifugal Charging Pump switching. This would ensure that core alterations and positive reactivity changes are suspended. The temporary loss of the boron injection flow path during the brief period in which Centrifugal Charging Pump switching occurs would not have a significant effect on the margin of safety for this event. Therefore, there is no adverse impact on plant safety resulting from the proposed Technical Specification changes.



SAFETY EVALUATION AND NO SIGNIFICANT HAZARDS  
CONSIDERATION DETERMINATION FOR CENTRIFUGAL  
CHARGING PUMP SWITCHING DURING MODES 4, 5, AND 6

No Significant Hazards Consideration Determination

Houston Lighting & Power has evaluated the proposed amendment against the criteria of 10 CFR 50.92 as follows

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

The proposed change is to modify the note which permits energizing of an inoperable Centrifugal Charging Pump for testing purposes, provided the pump discharge is isolated from the Reactor Coolant System, to include pump energization for switching purposes.

The requirements of Specification 3.1.2.3 with regard to the Cold Overpressure Mitigation System analysis would remain valid because the inoperable Centrifugal Charging Pump would be isolated from the Reactor Coolant System. A return to criticality would be prevented because the action statement of Specification 3.1.2.1 would be entered if the boron injection flow path could not be restored following Centrifugal Charging Pump switching. Energization of an inoperable pump is currently permitted for testing purposes provided the pump discharge is isolated from the Reactor Coolant System. It is operationally desirable to maintain flow to the Reactor Coolant Pump seals during the Centrifugal Charging Pump switching process. This proposed change will not only protect the Reactor Coolant System from overpressurization at low temperatures, but will also provide the capability of maintaining Reactor Coolant Pump Seal Injection flow during the switching process. Allowing energization of an inoperable pump for switching would have an insignificant effect on the probability of an overpressurization and boron dilution accident, and the consequences of these accidents have previously been evaluated. Therefore, there is no increase in the probability or consequences of a previously evaluated accident.

2. Does the change create the possibility of a new or different kind of accident from any previously evaluated?

Required boron injection flow paths would be maintained in Modes 4, 5, and 6 except during Centrifugal Charging Pump switching. In the event the boron injection flow path could not be restored after Centrifugal Charging Pump switching,

SAFETY EVALUATION AND NO SIGNIFICANT HAZARDS  
CONSIDERATION DETERMINATION FOR CENTRIFUGAL  
CHARGING PUMP SWITCHING DURING MODES 4, 5, AND 6

the action statement of Specification 3.1.2.1 would be entered. The proposed changes would not affect the operability of safety-related equipment and Reactor Coolant Pump Seal Injection flow could be maintained. The plant operators are knowledgeable of the potential situation being created by energizing two Centrifugal Charging Pumps and have control such that the pumps will be isolated from the Reactor Coolant System. Therefore, the possibility of a new or different kind of accident is not created.

3. Does the change involve a significant reduction in a margin to safety?

Cold Overpressure Mitigating System requirements in Specification 3.1.2.3 would continue to be maintained as a result of the proposed change. Thus, 10CFR50 Appendix G limits will not be affected. Although the boron injection flow path required by Specification 3.1.2.1 may briefly be compromised, there is no significant reduction in a margin of safety because core alterations would be halted and positive reactivity changes would not be made if the boron injection path could not be maintained after Centrifugal Charging Pump switching. This action, coupled with the short time period required for Centrifugal Charging Pump switching, would preclude a return to criticality event. Therefore, there is no significant reduction in a margin of safety.

Based on the reasoning stated above and South Texas Project's evaluation of the proposed amendment, Houston Lighting & Power has determined that the proposed change does not involve a significant hazards consideration.

Implementation Plan

Houston Lighting & Power requests an implementation time of 31 days from the effective date to complete procedures and make appropriate document distribution.