

The Light company

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

December, 16, 1996
ST-HL-AE-5489
File No.: G03.12

J. E. Dyer, Director
Division of Reactor Projects
U. S. Nuclear Regulatory Commission, Region IV
611 R Plaza Drive, Suite 400
Arlington, TX 76011-8064

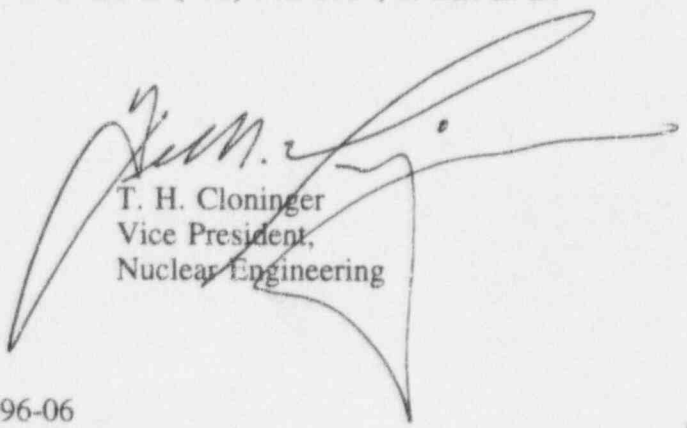
South Texas Project
Units 1 and 2
Docket Nos. STN 50-498, STN 50-499
Response to NRC Inspection Report 50-498/96-06; 50-499/96-06

Reference: Letter from J. E. Dyer, NRC to W. T. Cottle, South Texas Project, dated
October 2, 1996 (ST-AE-HL-94659)

This letter was developed in response to NRC Inspection Report 50-498/96-06; 50-499/96-06 to resolve apparent misunderstandings regarding issues associated with the Spent Fuel Pools (Attachment 1). This letter will also answer the concerns and questions pertaining to the "implications of having nonsafety-related gate seals" as characterized in Unresolved Item 96-006-04 (Attachment 2).

As you are aware, there have been many in-depth inspection activities directed at design issues associated with the South Texas Project's Spent Fuel Pools. In addition, South Texas Project has thoroughly reviewed the design and licensing bases associated with the Spent Fuel Pools. Based on these reviews, we are convinced that there are no safety issues associated with the design or operation of the Spent Fuel Pools at South Texas Project. Notwithstanding this, we have recently completed fabrication and installation of permanent stainless steel walls in the cask connecting channel for both units

If you have any questions regarding this, please contact me at (512) 972-8787, or Mr. E. D. Halpin at (512) 972-7849.



T. H. Cloninger
Vice President,
Nuclear Engineering

KDH/esh

Attachments: 1) Response to Inspection Report 96-06
2) Response to Unresolved Item 96-006-04

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

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South Texas Project Electric Generating Station

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Leonard J. Callan
Regional Administrator, Region IV
U. S. Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 400
Arlington, TX 76011-8064

Thomas W. Alexion
Project Manager, Mail Code 13H3
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

David P. Loveless
Sr. Resident Inspector
c/o U. S. Nuclear Regulatory Comm.
P. O. Box 910
Bay City, TX 77404-0910

J. R. Newman, Esquire
Morgan, Lewis & Bockius
1800 M Street, N.W.
Washington, DC 20036-5869

M. T. Hardt/W. C. Gunst
City Public Service
P. O. Box 1771
San Antonio, TX 78296

J. C. Lanier/M. B. Lee
City of Austin
Electric Utility Department
721 Barton Springs Road
Austin, TX 78704

Central Power and Light Company
ATTN: G. E. Vaughn/C. A. Johnson
P. O. Box 289, Mail Code: N5012
Wadsworth, TX 77483

Rufus S. Scott
Associate General Counsel
Houston Lighting & Power Company
P. O. Box 61067
Houston, TX 77208

Institute of Nuclear Power
Operations - Records Center
700 Galleria Parkway
Atlanta, GA 30339-5957

Dr. Bertram Wolfe
15453 Via Vaquero
Monte Sereno, CA 95030

Richard A. Ratliff
Bureau of Radiation Control
Texas Department of Health
1100 West 49th Street
Austin, TX 78756-3189

J. R. Egan, Esquire
Egan & Associates, P.C.
2300 N Street, N.W.
Washington, D.C. 20037

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555-0001

J. W. Beck
Little Harbor Consultants, Inc.
44 Nichols Road
Cohasset, MA 02025-1166

**ATTACHMENT 1
RESPONSE TO INSPECTION REPORT 96-06**

On Page 15, Section E8.1.b, Observations and Findings, the following statement appears:

"Engineers stated that a decision had been made not to perform Procedure OPOP07-FH-0001 [sic] because of concerns that the test would cause the inner seal to begin leaking."

South Texas Project developed preventative maintenance procedures for SFP seal replacement in 1995. In support of these activities, the station also developed procedure OPEP07-FH-0001, "Spent Fuel Pool Gate Seal Operability Check" to verify seal operability. A properly inflated seal is the primary consideration for preventing SFP inventory loss. Therefore, this procedure specifically is designed to ensure that the new seal is capable of maintaining air pressure when inflated and subjected to the hydrostatic force applied by SFP water. Once validated, this capability can only be diminished by seal damage or degradation.

SFP gates are removed and installed in accordance with plant maintenance procedure OPMP04-FH-0005, "In-Containment Storage Area and Spent Fuel Pool Gate Removal and Reinstallation". This procedure requires visual inspections of all sealing surfaces and specific inspection of the seal for tears, blisters, extreme wear, etc. The intent of these inspections is to inspect the gate and seal for any damage that may have occurred during removal or transit.

The work activities observed by NRC Resident Inspector(s) on August 8, 1996 consisted of moving a gate from the transfer canal outer gate position in the SFP to the Cask Handling Area outer gate position. The gate was removed from the transfer canal area and installed in the cask handling area in accordance with OPMP04-FH-0005. The seal on this gate had been replaced and tested in accordance with OPEP07-FH-0001 in April, 1996. The seals were inspected during the relocation of the gate in accordance with OPMP04-FH-0005. Based on the recent performance of OPEP07-FH-0001 and the scope of work performed, the control and inspection in OPMP04-FH-0005 provided assurance of the operability of the seal.

On Page 15, Section E8.1.b, Observations and Findings, the following statement appears:

"It was determined that the licensee's 5-year plan scheduled the installation of a spent fuel cask connecting channel gate for Unit 1 on July 31, 1997, and on October 31, 1997, for Unit 2. As of this inspection, no design work had been conducted."

South Texas Project issued a design for a welded stainless steel wall to be installed in the Cask Handling Areas on October 10, 1996. Actual design work commenced in September, 1995 when a design team comprised of engineering, operations, and station support personnel evaluated several design options. In accordance with station procedures, these evaluations consider the proposed designs' effectiveness, constructability, and station impact (procedural, training, etc.). The design team, based on these evaluations, made a recommendation to station management to install a steel wall in the Cask Handling Area. Although apparently not evident, the design process (preliminary calculations, conceptual design development, cost/benefit analyses of feasible options, etc.) had definitely commenced by the time of the inspection. Station management approved this plant modification in October, 1995. The installation has recently been completed for both units.

On Page 16, Section E8.1.b, Observations and Findings, the following statements appear:

"The valves were not danger tagged closed nor in the locked valve program."

"An equipment clearance order had been written to danger tag the drain valves closed in July 1995. This was documented in NRC Inspection Report 95-20. During a management meeting conducted in the Region IV office on July 25, 1995, senior licensee management had stated that, given the incomplete status of the cask handling areas, the associated drain valves would be closed and placed in the locked valve program. However, since that time, engineering personnel determined that the controls were not necessary and the danger tags were removed and the equipment clearance order was closed."

Following the July, 1995 event, equipment clearance orders were issued which closed and caution tagged all cask handling area drain valves in both units. As noted in our event investigation and NRC Inspection Report 95-21, the valves were originally not included in station valve lineups. The drain valves were subsequently incorporated into valve lineups. Once the valves were procedurally positioned and controlled in accordance with the valve lineup, the equipment clearance orders were removed. With regard to the July 25, 1995 meeting, we believe that our intention was to convey that the valves would be procedurally controlled by Plant Operations. Both the initial use of caution tags and subsequent valve lineups meet this intent.

On Page 16, Section E8.1.b, Observations and Findings, the following statement appears:

" ... concerns with not having safety-related seals on the spent fuel pool gates remain."

STP has determined that the gate seals are not required to maintain the reactor coolant pressure boundary, assist in shutting down the reactor or maintaining it in a shutdown condition, or to prevent/mitigate the consequences of an accident which could result in offsite exposure comparable to the guidelines in 10CFR100. Therefore, we conclude that the gate seals are properly classified as nonsafety-related. This classification is consistent with that of other nuclear sites we contacted.

South Texas Project also reviewed Regulatory Guide 1.13, "Spent Fuel Storage Facility Design Basis". Position C6 of this guide states, in part, "mechanical systems that by maloperation or failure could cause loss of coolant that would uncover fuel should not be installed or included in the design. Systems for maintaining water quantity should be designed so that any failure of such systems (including failures resulting from the Safe Shutdown Earthquake) will not cause fuel to be uncovered. These systems need not otherwise meet Category I seismic requirements." The bottom of the SFP gates are at elevation 39' 9" while the top of the active spent fuel is at approximate elevation 38'. Since our design precludes fuel uncover due to failure or maloperation of the SFP gates, the SFP gate seals are not required to be seismically qualified.

Based on these reviews, South Texas Project has determined that the SFP gate seals are properly classified as nonsafety-related and not subject to seismic Category I requirements. A similar evaluation was performed in 1984 by Bechtel Energy Corporation and South Texas Project.

**ATTACHMENT 2
RESPONSE TO UNRESOLVED ITEM 96-006-04**

- 1) **What design criteria was utilized for the seals during the original licensing review?**

GDC 61 as reflected in Reg. Guide 1.13 "Spent Fuel Storage Facility Design Basis" was used during the original licensing review. Specifically, Position C.6 which states in part:

Mechanical systems that by maloperation or failure could cause loss of coolant that would uncover fuel should not be installed or included in the design. Systems for maintaining water quantity should be designed so that any failure of such systems (including failures resulting from the Safe Shutdown Earthquake) will not cause fuel to be uncovered. These systems need not otherwise meet Category I seismic requirements.

For the STP design, this position is met with the use of non-safety related seals.

- 2) **What would be the final water level in the spent fuel pool should both nonsafety-related seals fail?**

South Texas Project determined that the resultant water level in the spent fuel pool following a postulated catastrophic failure of the SFP to Cask Handling Area gates would be approximately 47'. This is approximately ten feet above the active fuel. This calculation assumed that all leak paths in the Cask Handling Area were isolated and fluid absorption by unlined concrete was negligible. This calculation was presented to South Texas Project Resident Inspectors in July, 1995 and Region IV Inspectors in August, 1995.

- 3) **Was the cask connecting channel gate considered a critical part of the originally accepted design?**

As described in the original facility design, the cask connecting channel gate would only be used in preparation for offsite transport of spent fuel. During these activities, this gate would be required to be installed and capable of maintaining water inventory in the SFP and Cask Handling Area.

Since no federal repository existed at the time of license review, South Texas Project does not consider the cask connecting channel gate to be a critical part of our original or current SFP design.

- 4) **Has long-term exposure of the unfinished cask handling area surfaces to spent fuel pool boric acid affected the integrity of the reinforcing steel?**

Unfinished areas of the cask handling area have not been subjected to long-term exposure to boric acid. The cask connecting channel has experienced limited boric acid exposure during gate/seal maintenance or testing activities. These exposures have not resulted in damage to any exposed concrete due to the extremely limited exposure and evaporation timeframes. No deleterious effects of this exposure have been noted during engineering inspections of these areas.

- 5) **Has the licensee performed a flooding analysis considering the potential for loss of the spent fuel pool gates?**

South Texas Project personnel have thoroughly inspected all portions of the cask handling area and found no equipment that would be affected following postulated flooding from the SFP. The cask handling area is essentially a series of concrete vaults with no installed equipment required for plant operation. Based on these inspections, further flooding analysis is not warranted.