

The Light company

Houston Lighting & Power P.O. Box 1700 Houston, Texas 77001 (713) 228-9211

November 11, 1980
ST-HL-AE-574
SFN: V-0530

Mr. Karl Seyfrit
Director, Region IV
Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76012

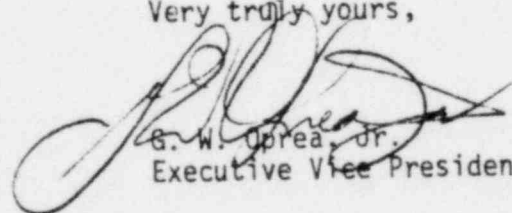
Dear Mr. Seyfrit:

South Texas Project
Units 1&2
Docket Nos. STN 50-498, STN 50-499
Interim Report Concerning Reactor Cavity
Ventilation Design

Please find attached our interim report regarding reactor cavity ventilation design which Houston Lighting & Power Company verbally reported to your office on October 17, 1980 as being potentially reportable pursuant to 10CFR50.55(e). The next interim report will be submitted to your office by January 27, 1981.

If there are any questions concerning this item, please contact Mr. Michael E. Powell at (713) 676-8592.

Very truly yours,



G. W. Oprea, Jr.
Executive Vice President

MEP/pjb
Attachment

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Interim Report
Concerning Reactor Cavity
Ventilation Design
November 11, 1980

On October 17, 1980, pursuant to 10CFR50.55(e), Houston Lighting & Power Company notified your office of a potentially reportable deficiency concerning the reactor cavity ventilation design for the South Texas Project Electric Generating Station, Units 1 and 2.

The design criteria requires that ventilation be provided to the reactor cavity, primary shield wall penetrations and inspection toroid volumes sufficient to maintain primary shield wall concrete temperatures within specified limits during normal plant operation. During a recent confirmatory thermal analysis performed by Brown & Root of the reactor coolant piping supports located in primary shield wall penetrations, it was determined that the temperature of the primary shield wall concrete in the penetration and along the face exposed to the reactor vessel would exceed the specified limits. The structural integrity of the shield wall in these areas could be reduced because of localized concrete failure resulting from these temperatures.

Brown & Root has investigated the cause of this design defect and determined that the original ventilation calculation did not account for flow resistance due to the reactor vessel nozzle configuration and the reactor cavity seal plate configuration. The seal plate is required to limit asymmetric loads on the reactor vessel following a break at the vessel nozzle (ref. FSAR 6.2.1.2.2.1 and 6.2.1.2.3.2). In addition, the vent area at the top of the reactor cavity is inadequate. This vent area design was based on preliminary information.

Assuming adequate ventilation design, the reactor can be brought to a safe shutdown condition following loss of cavity cooling without exceeding shield wall concrete temperature limits.

The current status of design and construction in the areas of concern is as follows:

Unit 1

Primary shield wall concrete has been poured to El. 29'-4". The reactor vessel is in place and primary coolant piping welded to the reactor vessel nozzles. Primary shield wall concrete above El. 29'-4 is on hold. The reactor cavity seal plate design has not been issued for construction. It will not be issued until all design problems noted in this deficiency are resolved. The reactor cavity cooling fan unit is at the site and is awaiting installation. This fan is currently placed on hold.

Unit 2

Primary shield wall concrete has been poured to El. 19'-0". All primary shield wall concrete above El. 19'-0" is on hold. The reactor vessel is not in place. The reactor cavity seal plate design is in the same status as the design for Unit 1. It will not be released for construction until all design problems noted in this deficiency are resolved. The reactor cavity cooling fan unit is at the site and is awaiting installation. This fan is currently placed on hold.

In order to satisfactorily correct the design defect, alternatives are currently being evaluated, which include redesign of the reactor cavity seal plate and potential reactor cavity venting designs.