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

May 30, 1985
ST-HL-AE-1254
File No.: G12.229

Mr. Robert D. Martin
Regional Administrator, Region IV
Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76011

Dear Mr. Martin:

South Texas Project
Units 1 & 2
Docket Nos. STN 50-498, STN 50-499
Final Report Concerning the
Component Cooling Water System Design

On February 20, 1985, Houston Lighting & Power Company (HL&P), pursuant to 10CFR50.55(e), notified your office of an item concerning the effects of a postulated failure of a reactor coolant pump thermal barrier heat exchanger combined with the single active failure of the component cooling water return isolation valve. Please find attached the Final Report on this item.

If you should have any questions on this matter, please contact Mr. Michael E. Powell at (713) 993-1328.

Very truly yours,

J. T. Westermeier for
J. H. Goldberg
Group Vice President, Nuclear

JSP/as

Attachment: Final Report Concerning the Component
Cooling Water System Design

85-395

W2/NRC1/e

IE-27
1/1

cc:

Hugh L. Thompson, Jr., Director
Division of Licensing
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

N. Prasad Kadambi, Project Manager
U.S. Nuclear Regulatory Commission
7920 Norfolk Avenue
Bethesda, MD 20814

Claude E. Johnson
Senior Resident Inspector/STP
c/o U.S. Nuclear Regulatory Commission
P. O. Box 910
Bay City, TX 77414

M. D. Schwarz, Jr., Esquire
Baker & Botts
One Shell Plaza
Houston, TX 77002

J. R. Newman, Esquire
Newman & Holtzinger, P.C.
1615 L Street N.W.
Washington, DC 20036

Director, Office of Inspection
and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

E. R. Brooks/R. L. Range
Central Power & Light Company
P. O. Box 2121
Corpus Christi, TX 78403

H. L. Peterson/G. Pokorny
City of Austin
P. O. Box 1088
Austin, TX 78767

J. B. Poston/A. vonRosenberg
City Public Service Board
P. O. Box 1771
San Antonio, TX 78296

Brian E. Berwick, Esquire
Assistant Attorney General for
the State of Texas
P. O. Box 12548, Capitol Station
Austin, TX 78711

Lanny A. Sinkin
3022 Porter Street, N.W. #304
Washington, D.C. 20008

Oreste R. Pirfo, Esquire
Hearing Attorney
Office of the Executive Legal Director
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Charles Bechhoefer, Esquire
Chairman, Atomic Safety & Licensing Board
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dr. James C. Lamb, III
313 Woodhaven Road
Chapel Hill, NC 27514

Judge Frederick J. Shon
Atomic Safety and Licensing Board
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Mr. Ray Goldstein, Esquire
1001 Vaughn Building
807 Brazos
Austin, TX 78701

Citizens for Equitable Utilities, Inc.
c/o Ms. Peggy Buchorn
Route 1, Box 1684
Brazoria, TX 77422

Docketing & Service Section
Office of the Secretary
U.S. Nuclear Regulatory Commission
Washington, DC 20555

South Texas Project
Units 1 & 2
Final Report Concerning the Component Cooling Water System Design

I. Summary

Failure of a reactor coolant pump (RCP) thermal barrier heat exchanger combined with single active failure of the component cooling water (CCW) return isolation valve could allow reactor coolant to enter the CCW system. If this deficiency were to remain uncorrected, the exiting design of the CCW system provides no capability to isolate this flow path nor to prevent possible radioactive releases into the Mechanical Auxiliary Building (MAB).

II. Description of Deficiency

Failure of the RCP thermal barrier heat exchanger would result in a direct interface of the reactor coolant system (RCS) and the CCW system. Assuming a single active failure of the non-Class 1E isolation valve in the CCW return line from the heat exchanger, high pressure (2385 psig) reactor coolant would flow into the low pressure (150 psig) CCW system at a maximum rate of approximately 275 gpm. The RCS flow to the CCW system would be released to the MAB through the CCW surge tank relief valve resulting in unanalyzed releases outside containment.

This deficiency was discovered during a design review.

III. Corrective Action

Two ASME Class 3 active self-actuated upstream pressure regulators will be added to each CCW thermal barrier discharge line. The increased pressure from a rupture in the thermal barrier heat exchanger will close the valves and isolate the rupture. Additionally, the discharge of the thermal relief valve in the same line will be redirected to the containment floor or normal sump.

IV. Recurrence Control

No recurrence control is necessary.

V. Safety Analysis

This item results in a flow path from the RCS which cannot be isolated by the current RCS and CCW system design. The possibility exists for unanalyzed releases to the MAB which could result in unacceptable dose levels. If this item had been left uncorrected it could have adversely affected the safety of plant operations and is considered reportable pursuant to 10CFR50.55(e).