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

September 29, 1982
ST-HL-AE-887
File Number: G12.130
SFN: V-0530

Mr. John T. Collins
Regional Administrator, Region IV
Nuclear Regulatory Commission
611 Ryan Plaza Dr., Suite 1000
Arlington, Texas 76012

Dear Mr. Collins:

South Texas Project
Units 1 & 2
Docket Nos. STN 50-498, STN 50-499
Final Report Concerning Design Loadings
for the Isolation Valve Cubicle Walls

On September 1, 1982, pursuant to 10CFR50.55(e), Houston Lighting & Power Company (HL&P) notified your office of an item concerning the design pressure loading for the Isolation Valve Cubicle (IVC) walls. Attached is the Final Report which provides the results of the evaluation that has been performed.

If you should have any questions concerning this item, please contact Mr. Michael E. Powell at (713)877-3281.

Very truly yours,

G. W. Oprea, Jr.
Executive Vice President

MEP/mg

Attachment

IE27

cc: G. W. Oprea, Jr.
J. H. Goldberg
J. G. Dewease
J. D. Parsons
D. G. Barker
C. G. Robertson
R. A. Frazar
J. W. Williams
R. J. Maroni
J. E. Geiger
H. A. Walker
S. M. Dew
J. T. Collins (NRC)
D. E. Sells (NRC)
W. M. Hill, Jr. (NRC)
M. D. Schwarz (Baker & Botts)
R. Gordon Gooch (Baker & Botts)
J. R. Newman (Lowenstein, Newman, Reis, & Axelrad)
STP RMS
Director, Office of Inspection & Enforcement
Nuclear Regulatory Commission
Washington, D. C. 20555

G. W. Muench/R. L. Range
Central Power & Light Company
P. O. Box 2121
Corpus Christi, Texas 78403

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

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

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

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

Mr. Ernest E. Hill
Lawrence Livermore Laboratory
University of California
P. O. Box 808, L-46
Livermore, California 94550

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

William S. Jordan, III
Harmon & Weiss
1725 I Street, N. W.
Suite 506
Washington, D. C. 20006

Lanny Sinkin
Citizens Concerned About Nuclear Power
5106 Casa Oro
San Antonio, Texas 78233

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

Jay Gutierrez, Esquire
Hearing Attorney
Office of the Executive Legal Director
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attachment

Final Report Concerning the Design Loadings for the Isolation Valve Cubicle Walls

I. Summary

The design pressure loading of the Isolation Valve Cubicle (IVC) Auxiliary Feedwater (AFW) pump compartment walls could be exceeded in the event of a feedwater bypass line break. Failure of the AFW pump compartment walls may lead to unacceptable safety hazards in cubicles adjacent to the break compartment. A detailed failure analysis of the walls and the resulting effects was not performed because the building will be redesigned to accommodate the loadings resulting from a feedwater bypass line break.

II. Description of the Incident

On September 1, 1982, pursuant to 10CFR50.55(e), Houston Lighting & Power Company (HL&P) notified your office of an item concerning the design pressure loading for the IVC AFW pump compartment walls. The design pressure loading of the IVC AFW pump compartment walls could be exceeded in the event of a feedwater bypass line break. A calculation performed by NUS shows the pressure calculated to result from a feedwater bypass line break to be 35.24 psid (not including additional loading factors), while the subject walls are designed for 19.1 psid based upon a 10.6 psid applied load plus additional loading factors. This condition is assumed to compromise the integrity of the walls.

III. Corrective Action

The design of the IVC is being reviewed and revised. The design of AFW pump cubicles is included in this review. More realistic calculational models, structural design changes and system design changes are being considered in finding an acceptable solution. In any case, sufficient venting will be available to maintain the AFW pump cubicle integrity. A final pressure/temperature analysis will be performed based on the revised design to confirm its adequacy.

The redesign and restart of construction as currently scheduled is shown on the Milestone Summary Schedules (line number 10) provided under separate cover on September 20, 1982. Once the design is finalized FSAR Section 3.8.4 will be updated.

IV. Recurrence Control

Bechtel includes conservatism in its structural design criteria to compensate for the uncertainty due to the preliminary nature of postulated loads. In the earlier stages of structural design, greater margins are included to account for possible changes which may occur as a result of design evolution. Final analysis is performed to confirm the loads after the design has progressed to a more completed stage. This process provides adequate assurance that major structural redesign will not be required.

V. Safety Analysis

Analysis of the pressure/temperature conditions following a postulated feedwater bypass line break has confirmed that without redesign the applied loads due to pressurization of the AFW pump cubicle exceed the structural allowance. The IVC structure will be redesigned and no further detailed failure analysis is planned.

We have concluded that a condition exists which could have adversely affected the safety of operation of the South Texas Project (STP). This condition will be corrected as outlined in Section III.