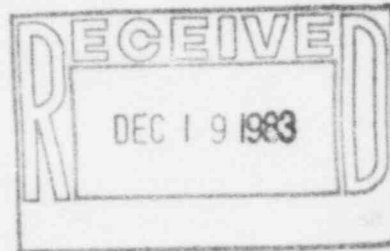


The Light company

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

December 15, 1983
ST-HL-AE-1035
File Number: G12.170



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

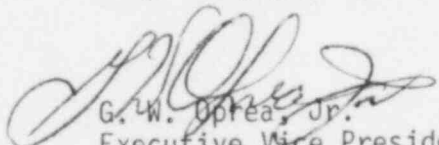
Dear Mr. Collins:

South Texas Project
Units 1 & 2
Docket Nos. STN 50-498, STN 50-499
Final Report Concerning Containment
Mechanical Penetration Welds

On November 15, 1983, pursuant to 10CFR50.55(e), Houston Lighting & Power Company (HL&P) notified your office of an item concerning two (2) containment mechanical penetrations. Attached is the final report concerning this item.

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

Very truly yours,


G. W. Oprea, Jr.
Executive Vice President

MEP/mpg

Attachment: Final Report Concerning Containment
Mechanical Penetration Welds

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Houston Lighting & Power Company

ST-HL-AE-1035
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Page 2

cc:

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Revised 12/1/83

South Texas Project
Units 1 & 2
Final Report Concerning
Containment Mechanical Penetration Welds

DER-019

I. Summary

Two (2) containment mechanical penetrations, M-85 and M-86, which contain sampling lines were identified by Bechtel as having potentially overstressed welds. Stress analyses of the bi-metallic welds connecting the carbon steel penetration plate to the stainless steel sampling lines indicated stresses could exceed allowables and thus result in failure of the fillet weld. In addition, the concrete interior surface at the interface with the penetration sleeve exceeds the acceptance criteria for local areas of 200°F. The deficiency is considered reportable since the failure of the welds would result in unacceptable containment leakage rates, and the concrete interior surface temperature exceeds the allowable of 200°F.

II. Description of the Deficiency

On November 16, 1983, pursuant to 10CFR50.55(e), Houston Lighting & Power Company (HL&P) notified the NRC Region IV of an item concerning two (2) containment mechanical penetrations, M-85 and M-86. Containment penetrations M-85 and M-86 contain 1" sampling lines (5 and 3 respectively) for the pressurizer samples, RC hot leg samples and SG water samples. The temperature of the sampling lines periodically exceeds 600°F. During the performance of stress analyses of the subject penetrations, it was discovered that the process pipe-to-penetration plate bi-metallic fillet welds were overstressed and could fail. The bi-metallic weld specified would not normally be used for fillet welds in fluid service above 250°F. The deficiency is due to inappropriate design of this bi-metallic assembly relative to temperature criteria.

Since the deficiency is due to the inappropriate design of the bi-metallic assembly by the previous architect-engineer, this item is also reportable pursuant to 10CFR21.

In addition, at the time of our initial reporting of this item, HL&P indicated that the temperature at the concrete interface may exceed the ASME III, Division 2, Subsection CC3430 allowable temperature for local areas of 200°F. Thermal analyses indicate the temperature of the sleeve interface with the concrete surface exceeds 380°F during the operation period of the sampling system lines.

III. Corrective Action

The penetration assemblies will be modified by replacing the carbon steel plate with a stainless steel plate to assure that the stresses in the process pipe-to-penetration weld remain below allowables and by redesigning the penetration to assure concrete interface temperature does not exceed 200°F.

IV. Recurrence Control

Bechtel has reviewed the piping penetrations and has determined these are the only penetrations that utilize bi-metallic fillet welds in high temperature service. No recurrence control is required for new procurements since normal Bechtel practice requires the penetration design to pass the stress analyses prior to shipment. Bechtel uses established procedures for the specification and analysis of safety-related components.

V. Safety Analysis

Had the deficiency remained uncorrected, the process pipe-to-penetration welds could have failed resulting in unacceptable containment leakage rates. In addition, the concrete interface temperature would have exceeded the ASME code limit. Therefore, the condition is being reported pursuant to 10CFR50.55(e).