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December 29, 1983
ST-HL-AE-1041
File No.: G12.174

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 Installation
of Cathodic Protection Devices on
Stainless Steel Piping

On December 2, 1983, pursuant to 10CFR50.55(e), Houston Lighting & Power Company (HL&P) notified your office of an item concerning the installation of cathodic protection devices on stainless steel piping. 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,

/s/ A. Goldberg for

G. W. Oprea, Jr.
Executive Vice President

MEP/mpg
Attachment: Final Report Concerning Installation of Cathodic Protection Devices on Stainless Steel Piping

IE-27
1/1

cc:

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SOUTH TEXAS PROJECT
UNITS 1 & 2
FINAL REPORT CONCERNING INSTALLATION OF CATHODIC PROTECTION DEVICES ON STAINLESS STEEL PIPING

I. Summary

Currently, no evidence exists to show that attachments for cathodic protection/grounding were attached (i.e. cadwelded) to the pressure boundary of ASME III, Class 3, stainless steel Auxiliary Feedwater (AFW) suction piping for Unit 2 with the use of qualified weld procedures, qualified welders or with the use of a pad. The affected sections of the pipe are to be cut out and replaced. Appropriate cathodic protection will be provided. The deficiency, constituting a code violation, is conservatively considered to be a safety hazard and, is therefore reportable pursuant to 10CFR50.55(e).

II. Description of the Deficiency

On December 2, 1983, pursuant to 10CFR50.55(e), Houston Lighting & Power Company (HL&P) notified the NRC Region IV of an item concerning the installation of cathodic protection devices to stainless steel piping for Unit 2.

After excavation of soil in the vicinity of the Unit 2 (buried) AFW piping for placement of load spreading mats prior to moving heavy equipment in the area, it was discovered that attachments for cathodic protection were apparently cadwelded directly to the pressure boundary. Documentation could not be located to show that these devices were attached directly to the ASME III, Class 3 stainless steel pipe, with the use of a pad, qualified welding procedures or qualified welders. In addition, documentation could not be located to verify that the subject welds had been inspected or that the installation had been verified. The spools affected are in the AFW pump suction lines from the Auxiliary Feedwater Storage Tank.

An investigation has been conducted to determine whether this method of cathodic protection was utilized on any other buried safety-related piping. No other piping systems were identified as having this same concern, however, Unit 1 AFW piping may contain the same deficiency.

III. Corrective Action

The Unit 1 piping will be excavated and inspected to verify the type of cathodic protection utilized. The affected sections of the piping (Unit 2 and Unit 1 if found) are to be cut out and replaced. Appropriate cathodic protection will be provided in accordance with ASME code and weld specification requirements.

IV. Recurrence Control

The Cathodic Protection System design/installation documents will be revised to assure that appropriate requirements for cathodic protection attachments to safety-related piping are in place. The cathodic protection attachment welds are to be performed in accordance with approved weld procedures. In addition, the results of the investigation of the only other buried safety-related pipe (Essential Cooling Water) found cathodic protection attachments to have been made in accordance with the ASME Code.

V. Safety Analysis

A detailed safety evaluation was not performed. However, assuming a worst case scenario, i.e. intergranular stress-corrosion cracking of the pipe resulting from application of an uncontrolled weld to the surface of the stainless steel pressure boundary, a leak of unknown magnitude from one or more of the AFW suction lines could result. The loss of one or more AFW pump suction lines could result in an unanalyzed event and a potentially significant safety hazard. Consequently, the deficiency is considered reportable under 10CFR50.55(e).