

# The Light company

Houston Lighting & Power

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August 19, 1988

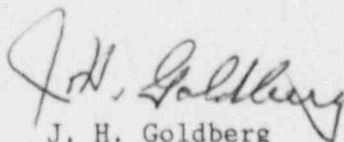
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File No.: G2.4  
10CFR2.201

U. S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, DC 20555

South Texas Project Electric Generating Station  
Units 1 and 2  
Docket Nos. STN 50-498, STN 50-499  
Response to Notice of Violation 498/499 88-38-01

Houston Lighting & Power Company has reviewed Notice of Violation 498/499 88-38-01 dated July 8, 1988, and submits the attached response pursuant to 10CFR2.201.

If you should have any questions on this matter, please contact Mr. M. F. Polishak at (512) 972-7071.



J. H. Goldberg  
Group Vice President, Nuclear

MFP/hg

Attachment: Response to Notice of Violation  
498/499 8838-01

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A Subsidiary of Houston Industries Incorporated

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Houston Lighting & Power Company

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Response to Notice of Violation 498/499 88-38-01

I. Statement of Violation

During an NRC inspection conducted on June 27 through July 1, 1988 the following violation of NRC requirements was identified for failure to follow instructions for measuring remaining pipe wall thickness.

Criterion V of Appendix B to 10 CFR Part 50 requires that activities affecting quality shall be prescribed by documented instructions of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions. This requirement is amplified by the approved Quality Assurance Program Description (QAPD) of the South Texas Project.

A nonconformance report, NCR SS-05553, required the removal of a magnetic particle examination indication from pipe spool AF-2012-H. The instructions of the nonconformance report were to excavate the indication but not go below a remaining wall thickness of 0.437 inch.

Contrary to the above, NCR SS-05553 was improperly closed in that ultrasonic thickness measurements, made after quality control (QC) closeout of the NCR, showed that the actual remaining wall thickness in the excavation area was 0.418 inch. Initial QC acceptance was determined subsequently to have been the result of use of an incorrect inspection method (i.e., estimating remaining wall thickness by subtracting depth of excavation from pipe nominal wall thickness).

II. Reason for Violation

The implementing procedures utilized for Quality Control verification of existing pipe wall thickness were misinterpreted by Quality Control inspection personnel, and the pipe wall thickness was determined by subtracting the depth of excavation from the nominal pipe wall thickness.

III. Corrective Action Taken and Results Achieved

As committed by HL&P in the July 1, 1988 NRC Exit interview, a review of Customer Notification Forms (CNFs), initiated by Southwest Research Institute, the project Preservice Inspection (PSI) contractor, has been completed to identify if any additional minimum pipe wall violations have resulted due to QC inspectors using nominal wall thickness tables and depth of excavation for determining remaining wall thickness.

CNF(s) which identified surface and heat affected zone indications were reviewed. Counterbored piping prepared for Pre-Service and In-Service weld inspection and receiving subsequent surface metal reduction represented the areas of concern or worst case scenarios. Two hundred and four (204) Unit 1 and Unit 2 CNF's were identified as applicable.

A thorough review of CNF's and associated documentation was performed to identify instances where grinding took place. Those records thus identified as involving measurement of pipe wall thickness were then reviewed to determine the method utilized.

The Unit 1 CNF review did not identify any wall thickness violations due to indication removal. Additionally, no condition was identified where remaining wall thickness had been determined by subtracting the depth of excavation from pipe nominal wall thickness.

The Unit 2 review revealed one (1) similar condition whereby remaining wall thickness was determined by subtracting the depth of excavation from pipe nominal wall thickness. Subsequent Ultrasonic Testing (UT) verified this pipe wall thickness to be acceptable.

The review of Unit 1 and Unit 2 Pre-Service Inspection CNFs has been completed. No case, other than NCR SS-05553, was identified where minimum wall violations have occurred due to Pre-Service Inspection Non-Destructive Examination indication removal.

#### IV. Corrective Steps Taken to Prevent Recurrence

STP plant maintenance procedures provide adequate inspection guidelines to prevent misinterpretation of pipe wall measurement method. They do not permit the estimating of remaining wall thickness by subtracting the depth of excavation from the pipe's nominal wall thickness value. Ultrasonic Testing or measurement of remaining pipe wall thickness using calibrated equipment is required.

Construction Site Standard Procedure (SSP-18) "General ASME III Welding Requirements" and Site Standard Procedure (SSP-17), "General ANSI B31.1 Welding Requirements", which provide inspection guidelines for determining pipe wall thickness utilizing mechanical means have been revised. A standard measuring device such as a caliper or micrometer is required to measure actual remaining wall thickness where accessible.

Where inaccessible for utilizing a standard measuring device, direct ultrasonic testing may be used. When direct ultrasonic testing of an area is not possible, UT is to be performed along the periphery of excavated areas and the thickness of the thinnest section determined. The depth of excavation is measured utilizing an inspection instrument capable of reaching the bottom of the excavated area. This value is subtracted from the lowest UT reading achieved to determine remaining pipe wall thickness.

QC inspectors associated with piping installations have been instructed in use of the revised SSP-18 procedure.

Field engineering personnel associated with piping installation have been instructed in use of the revised SSP-17 procedure.

V. Additional Investigative Steps Taken and Results Achieved

In addition to the aforementioned review of CNF's the project performed a review of Unit 2 programmatic documents utilized at STP to report discrepant piping surface conditions, to gain additional confidence that the NCR SS-05553 infringement of design minimum wall is an isolated occurrence. These documents are identified as follows.

- 1) Base Material Surface Condition Reports (BMSCR)
- 2) Deficiency Notices (DN)
- 3) Nonconformance Reports (NCR)

Unit 2 documentation was treated as representative of conditions for the entire project.

The review of these documents concentrated on repairs performed by grinding which did not require subsequent welding activities on Quality Class 1, 2 and 3 piping lines to identify if wall thickness was determined by subtracting the depth of excavation from the nominal wall thickness. This review was completed and revealed five additional cases of acceptance of items by Quality Control based on the depth of excavation subtracted from nominal wall thickness measurement method. Four (4) areas were identified on Deficiency Notices, and the other on a Base Material Surface Condition Report. All five cases have been ultrasonically examined and found to be well above design minimum wall thickness. The remaining documents reviewed were found to be acceptable based on the measurement method performed (i.e., direct ultrasonic testing, or calibrated micrometer measurement), surface blend, or the affected area was repaired by welding.

The project next reviewed ASME piping systems for minimum pipe wall requirements. Portions of piping systems were identified where the excess wall between manufacturers minimum wall and calculated design minimum wall is 1/32" or less. These lines (the most limiting cases) were reviewed against the population of BMSCR's, DN's and NCR's previously discussed. No cases were found where the depth of excavation was subtracted from nominal wall thickness to obtain remaining pipe wall.

Unit 2 Quality Class 1 and 2 (vendor and field counterbored piping) and Quality Class 3 (field counterbored) piping lines were reviewed to determine locations where counterboring had been performed. This review included determining if repairs by grinding had been performed in the counterbored area to identify if remaining wall thickness was determined by subtracting the depth of excavation from the nominal wall thickness.

This review consisted of over 5,500 vaulted weld data packages and 2,900 pipe spool data packages. Thirteen (13) areas were identified where basemetal surface condition repairs within the heat affected zone (HAZ) on the Pipe Pressure Boundary were accepted by Quality Control and the mechanical measurement method used (i.e, caliper, micrometer or depth of excavation) was not clearly documented. After further evaluation six (6) areas required wall thickness verification. Ultrasonic testing has been performed on two of these areas and the wall thickness verified acceptable. The remaining four (4) areas are inaccessible at this time and are scheduled to be verified by September 30, 1988. This response will be supplemented by October 14, 1988 with the results of the remaining wall thickness measurements.

The investigation to date of Unit 2 Class 1, 2 and 3 counterbored welds, the review of Bechtel identified piping lines having the least excess wall thickness, and the review of BMSCR's, DN's, and NCR's for ASME piping, yields a high confidence level for the Project (Unit 1 and 2) that infringement of design minimum wall per NCR SS-05553 thus far is an isolated occurrence and no additional reviews are necessary beyond the remaining four verifications discussed in the previous paragraph.

VI. Date of Full Compliance

HL&P is in full compliance.