

APPENDIX

U.S. NUCLEAR REGULATORY COMMISSION  
REGION IV

NRC Inspection Report: 50-498/91-04  
50-499/91-04

Operating Licenses: NPF-76  
NPF-80

Docket: 50-498  
50-499

Licensee: Houston Lighting & Power Company  
P. O. Box 1700  
Houston, Texas 77251

Facility Name: South Texas Project, Units 1 and 2

Inspection At: STP, Matagorda County, Texas

Inspection Conducted: January 28 through February 1, 1991

Inspector: *J. Barnes*  
for L. D. Gilbert, Reactor Inspector, Materials  
and Quality Programs Section, Division of  
Reactor Safety

2-8-91  
Date

Approved: *J. Barnes*  
I. Barnes, Chief, Materials and Quality  
Programs Section, Division of Reactor Safety

2-8-91  
Date

Inspection Summary

Inspection Conducted January 28 through February 1, 1991 (Report 50-498/91-04)

Areas Inspected: Routine, unannounced inspection of inservice inspection (ISI) activities for Unit 1.

Results: The inspector found that the nondestructive examinations specified in the ISI examination plan for Unit 1 were, in general, being effectively performed. One inspector followup item was identified (paragraph 2) pertaining to the eddy current examination results from additional steam generator tubes (to those designated as the Technical Specification 3/4.4.5 sample) not being included as part of the Technical Specification sample for the purpose of determining whether subsequent sample expansion was required.

Inspection Conducted January 28 through February 1, 1991 (Report 50-499/91-04)

Areas Inspected: No inspection of Unit 2 was conducted.

Results: Not applicable.

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PDR ADDCK 05000498  
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DETAILS

1. PERSONS CONTACTED

HL&P

- \*M. R. Wisenburg, Plant Manager
- \*T. J. Jordan, General Manager, Nuclear Assurance
- \*A. C. McIntyre, Manager, Design Engineering Department (DED)
- \*D. J. Denver, Manager, Plant Engineering Department
- \*M. K. Chakravorty, Director, Nuclear Safety Review Board
- \*D. R. Keating, Director, Independent Safety Evaluation Group
- \*R. L. Beverly, Supervising Engineer, DED
- \*J. C. Younger, Staff Engineer, DED
- \*A. R. Pennanen, Level III, DED
- \*S. K. Hubbard, Quality Control Supervisor
- \*A. W. Harrison, Manager, Nuclear Licensing
- \*C. A. Ayala, Supervising Licensing Engineering
- \*A. K. Khosla, Senior Licensing Engineer
- J. Haning, Staff Engineer, DED

Southwest Research Institute, Inc. (SwRI)

- A. R. Anderson, Project Manager
- M. R. Ehnstrom, Quality Assurance Representative

Westinghouse Electric Corporation (Westinghouse)

- v. O. Izzo, Project Manager

NRC

- \*J. I. Tapia, Senior Resident Inspector

The inspector also interviewed other licensee and contractor employees during the inspection.

\*Denotes attendance at exit interview conducted on February 1, 1991.

2. INSERVICE INSPECTION (73753)

The purpose of the inspection was to ascertain whether the inservice inspection (ISI) examinations, including repair and replacement, of ASME Class 1, 2, and 3 pressure retaining components for Unit 1 are performed in accordance with the Technical Specifications (TSs), ASME Code Section XI, and correspondence between NRR and the licensee concerning relief requests.

The inspector met with personnel from engineering, quality control (QC), and Southwest Research Institute (SwRI) that were responsible for scheduling the ISI examinations. The inspector was informed that the ASME Class 1, 2, and 3 examinations selected from the first 10-year interval ISI program plan and scheduled to be performed during 1RE03 (i.e., the third refueling outage for Unit 1) were listed in an "Examination Plan for the 1991 - 1RE03 Inservice Inspection" dated January 1991. Since the steam generator tube examinations were requirements of the TSs for Unit 1, they were listed separately in a "1991 Outage Plan for the Inservice Inspection of Steam Generator Tubing" dated January 1991.

The inspector was informed that QC was responsible for performing the visual, liquid penetrant, and ultrasonic examinations; however, the ultrasonic examinations for QC were limited to carbon steel materials. SwRI was responsible for performing the ultrasonic examinations on stainless steel materials and dissimilar metal weldments. Westinghouse was responsible for performing the eddy current examinations on the steam generator tubing.

The surface examinations selected were listed in the ISI examination plan as liquid penetrant examination of ISI Weld Nos. 6-SI-1107-1, -2, and -3. These welds were 6-inch diameter pipe butt welds in the Class 2 portion of the safety injection (SI) system. The examinations witnessed were performed by a QC Level II examiner using the liquid penetrant method and the requirements of Procedure NPED-6.2, "Nondestructive Examination Procedure," Revision 3. The inspector verified that the examinations performed were consistent with the requirements of the procedure in the following areas: surface cleaning and temperature, penetrant and developer application, evaluation, and certification of personnel and penetrant materials.

The ultrasonic examinations selected were listed in the ISI examination plan for: (1) ISI Weld No. 31-RC-1202-9, a 31-inch diameter pipe butt weld in the Class 1 portion of the reactor coolant system, (2) ISI Weld No. 31-RC-1102-1, a 31-inch diameter pipe butt weld in the Class 1 portion of the reactor coolant system; and (3) ISI Weld No. 6-SI-1107-2, a 6-inch diameter pipe butt weld in the Class 2 portion of the SI system. The portions of the examinations witnessed were performed by a SwRI Level II examiner using the UT method, calibration block, and the SwRI procedure specified in the ISI examination plan. The SwRI procedures specified in the ISI examination plan for the above three welds were respectively: STP-UT54, "Manual Ultrasonic Examination of Pressure Piping Welds of High Attenuation Materials," Revision 0, Interim Change Notice through ICN No. 2; STP-UT31, "Manual Ultrasonic Examination of Austenitic Pressure Piping Welds," Revision 0, Interim Change Notice through ICN No. 1; and STP-UT52, "Manual Ultrasonic Examination of Similar and Dissimilar Metal Welds in Austenitic Piping Systems," Revision 0, Interim Change Notice through ICN No. 1. The inspector verified that the examinations performed were consistent with the requirements of the procedure and the examination plan in the following areas: basic calibration block; calibration of equipment; angle, size, and size of search unit; couplant material same as used for calibration and certification; temperature of calibration block and material examined; examination technique;

evaluation and data recording; and personnel certification. The inspector also verified that the contractor personnel received specific training on the ultrasonic procedures to be used during the outage. This training was provided by a Level III examiner and documented. The inspector also noted that surveillance of ongoing examinations was performed by the Level III examiner and a SwRI QA representative.

The eddy current examination of 301 steam generator tubes was specified in the 1991 outage plan for each of two steam generators, C and D, to meet sampling and examination requirements of TS 3/4.4.5. The outage plan specified that the tubes will be examined full length using Westinghouse Procedure MRS 2.4.2 GEN-28, "Digital Multifrequency Eddy Current Inspection of Preservice and Inservice Heat Exchanger Tubing," Revision 4. During eddy current examination of Steam Generator D, the inspector witnessed the full length examination of two tubes. The inspector verified that the eddy current probe was inserted into the tubes identified as 24-41 and 28-46 in Steam Generator D from the hot leg completely around the U-bend and out the cold leg end. The probe was then pulled through each tube while the eddy current examination data was collected and recorded on Tape No. 09. The examinations were performed using Procedure MRS 2.4.2 GEN-28 and the MIZ-13A eddy current examination data collection equipment. The data collector and data evaluators were certified by Westinghouse for performing eddy current examination. The eddy current examination data collection equipment calibration was verified as being current.

During review of the eddy current program, the inspector was informed that three tubes were inadvertently examined by Westinghouse that were not included in the 1991 outage plan. The staff engineer coordinating the eddy current examinations indicated that these tubes would not be included as part of the TS sample. Therefore, if defective, a nonconformance report would be generated but that the TS sample expansion requirements would not apply. The inspector expressed concern that this interpretation did not appear to be consistent with the wording of the TS. The inspector contacted NRR for assistance in the interpretation of the TS. NRR indicated that inadvertently examined tubes should be included in the TS sample. Since generic guidance on this issue was not known to exist, NRR suggested that the licensee be informed to contact the NRR project manager for the STP facility for assistance in the interpretation of the TS requirements. The inspector informed the licensee of the conversation with NRR and requested that an engineering review of all previously examined tubes be performed on the Unit 1 and 2 steam generators. This review was performed and documented in a memorandum to the Manager, Design Engineering Department dated February 1, 1991. The memorandum documented that the evaluation of all previous eddy current examinations, performed to date in both units, were in compliance with the TS and no sample expansion was required. The licensee has indicated that their position on various issues related to steam generator inspections will be formalized and presented to NRC for resolution. This issue is considered an inspector followup item. (498/9104-01)

3. EXIT INTERVIEW

An exit interview was conducted on February 1, 1991, with those personnel denoted in paragraph 1 in which the inspection findings were summarized. No information was presented to the inspector that was identified by the licensee as proprietary.