

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION IV

Report No. 50-498/81-14; 50-499/81-14

Docket No. 50-498; 50-499

Category A2

Licensee: Houston Lighting and Power Company
Post Office Box 1700
Houston, Texas 77001

Facility Name: South Texas Project, Units 1 and 2

Inspection at: South Texas Project, Matagorda County, Texas

Inspection Conducted: April 6-10, 1981

Inspector:

D. P. Tomlinson
D. P. Tomlinson, Reactor Inspector, Engineering and
Materials Section

4-24-81
Date

Approved:

R. E. Hall
R. E. Hall, Acting Chief, Engineering and Materials Section

4-24-81
Date

Inspection Summary:

Inspection on April 6-10, 1981 (Report No. 50-498/81-14; 50-499/81-14)

Areas Inspected: Unannounced follow-up inspection of construction activities pertaining to the review of responses to NRC Inspection Report No. 50-498/79-19; 50-499/79-19 and other inspection findings. The inspection involved 32 inspector-hours by one NRC inspector.

Results: No violations were identified.

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DETAILS

1. Persons Contacted

Principal Licensee Employees

R. Frazar, Manager, Quality Assurance
*L. Wilson, Supervisor, Mechanical/NDE
M. Powell, Licensing Team Leader

Other Personnel

R. Hand, Project QA General Supervisor, Management Analysis Company (MAC)

The NRC inspector also contacted other licensee and contractor employees including members of the QA/QC and engineering staffs.

*Denotes attendance at the exit interview.

2. Licensee Action on Previous Inspection Findings

During this inspection, certain corrective actions concerning the findings of Investigation Report No. 50-498/79-19; 50-499/79-19, additional items extracted from the NRC transcript of the Public Meeting with HL&P/B&R on August 19, 1980, and commitments from management meetings were reviewed:

NRC Inspection Report No. 50-498/81-06; 50-499/81-06 closed the following six Public Hearing commitments: H-24, A-38, A-52, A-53, A-82, and A-83. Part of commitment A-83 was to conduct an engineering analysis of all unacceptable ASME piping welds to determine the necessity of inspecting and repairing joints embedded in concrete. It has since been determined, by a review of all ASME piping completed to date, that none of the welds have been embedded. The absence of inaccessible piping joints negates the necessity for this commitment.

(Closed) Public Meeting Commitment A-36: Initially, TRD 5A700GP004 was drafted and issued detailing the review performed by the Task Force, and the results, conclusions, and recommendations of the study. This TRD was augmented on September 8, 1980, by the issuance of Attachment II, Revision I, "Re-examination, Repair and Welding Restart Plans," and STP-PGM-12, Revision 0, "Welding Program Description." The final Task Force Report has been drafted and is presently being reviewed prior to being issued. HL&P requested and was granted NRC approval to resume welding on a limited basis in areas described in two 12-Week resumption plans and one 10-Week resumption plan.

This item is closed.

(Closed) Public Meeting Commitment A-46: The NRC reviewed the results of the Task Force effort to determine the compliance of structural steel with the project requirements. All of the suppliers referenced on the purchase orders for Category I structural steel were found to be on the approved vendor's list. The NRC inspector randomly selected and reviewed six Certified Material Test Reports (CMTRs) for material type, description, heat numbers, and size as stated in the various purchase orders. A comparison was made of each CMTR and the applicable ASTM specification including the chemical composition and mechanical properties required by each specification. There were no discrepancies noted in the Task Force inspection or the NRC review. The commitment for Category I material review has been completed.

This item is closed.

(Closed) Public Meeting Commitment A-57: The NRC inspector reviewed the results of the Task Force check of welder's certifications. The Task Force compared the dates of certification of the 631 welders hired since the start of the project through April 30, 1980, to the dates that ASME welds were produced. This was accomplished by an examination of the site Welder Certification Report, Welding Material Requisitions (WMRs) and the WMR Rejection Reports to verify that the welders did not exceed the time requirement for certification. A welder must use a particular welding process at least once every six months to maintain his certification. All ASME Weld Data Cards (WDCs) were checked against the data gathered, and it was determined that no ASME welds were produced by unqualified welders or welders whose certifications had lapsed. A similar review of AWS welders could not be performed as the same detailed information was not available. The review of AWS welder qualifications was limited to an examination of welder's Performance Qualification Tests (PQTs) and welder qualification continuity. A particular AWS structural weld is not traceable to the individual who produced the weld. No discrepancies in the area of certification continuity were noted by the Task Force or the NRC inspector.

This item is closed.

(Closed) Public Hearing Commitments A-58 and A-61: The NRC inspector reviewed the data gathered by the Task Force in its investigation into the compliance of weld filler material with the ASME requirements. A list of all filler material used to date to produce welds in ASME safety-related systems was obtained from the welding engineer's office. The purchase orders referenced on this list were checked against the approved vendor's list. All purchases were found to have been placed with approved vendors in accordance with "Weld Filler Material Specification," TRD 1U020WS001. TRD 1U020WS001 was thoroughly reviewed and found to be in compliance with the requirements of ASME Boiler and Pressure Vessel (B&PV) Code, Section III, 1974 Edition with Addenda

through Winter 1975. A checklist of all test requirements was established by the Task Force and the CMTRs for each purchase order were reviewed to this list. One CMTR and two purchase orders were found to contain minor discrepancies, but a review of all supporting documentation provided objective evidence that no nonconforming material was received on site, and that the two noted discrepancies were isolated cases.

The NRC inspector randomly selected the PQT results of fifteen requalified welders and compared the recorded data with the filler material requirement of each referenced WPS. In all cases, these were in agreement, and the NRC results were in accord with those of the Task Force.

These two items are closed.

(Closed) Public Meeting Commitment A-64: The NRC inspector reviewed the results of the Task Force inspection of past audits and the disposition of audit findings. Four audits performed by B&R and six performed by HL&P of safety-related welding and nondestructive examination (NDE) were reviewed by the Task Force along with four B&R audits of the B&R Materials and Engineering Laboratory. The Materials and Engineering Laboratory qualifies welding procedure specifications for STP. It was determined by this review that all deficiencies identified in the audit reports had been responded to, and that the responses were accepted by the auditors. All items identified in the audit reports had been properly dispositioned, and the appropriate corrective action taken.

This item is closed.

3. Review of Construction Deficiencies

(Closed) Polar Crane Clip Stud Welds Failed: On March 20, 1980, Region IV was notified that several polar crane rail retaining clip studs has broken during polar crane operation. Five interim reports were issued by HL&P between this date and the issuance of the final report on April 1, 1981. The interim reports were progress reports that detailed the actions taken to correct the deficiency and to prevent recurrence. It was determined by an engineering analysis that the failures were caused by a series of design and fabrication errors rather than a single condition. To eliminate future stud failures, it was decided that all of the studs would be removed and the rail clips would be changed to a welded floating-clamp design. The incorrect curvature of the crane rails has been corrected and new rail sections have been installed eliminating the gaps that previously existed between the rail sections. Engineering approval has been given for these changes and the new welded-clip installation is approximately one-third completed.

Based on a review of the engineering analyses, installation and inspection records, and discussions with licensee representatives, the NRC inspector had no further questions concerning the licensee's evaluation and corrective action taken on this matter.

(Closed) Bostrom-Bergen Embed Nelson Stud with Arc Shields - Improper Inspection: On July 31, 1980, Region IV was notified that embed plates with Nelson studs attached had been received on site with the ceramic arc shield ferrules still in place. This is an indication that no inspection of the welds, visual or bend test, had been performed. Three interim reports were issued by HL&P between this date and the issuance of the final report on March 5, 1981. It was determined that a 100% visual inspection of these stud welds was necessary to assure the acceptability of the embeds. A total of 369,025 Bostrom-Bergen Nelson stud welds were visually inspected. One hundred sixty-two studs were found to have rejectable welds, and an additional forty-nine studs were missing. The HL&P safety analysis performed using these figures indicates that the total .05% rejection would not result in a safety hazard if left uncorrected. All embed plates containing rejectable or incomplete welds and those with missing studs have been segregated from acceptable embed plates. All rejectable or incomplete welds and all missing studs are currently being welded or repaired and inspected in compliance with the requirements of AWS D1.1 (1975) and STP Project Specification, "Miscellaneous Steel for Category I Structures."

Based on a review of the safety analysis figures, installation and inspection records and discussions with licensee representatives, the NRC inspector had no further questions regarding the licensee's evaluation and corrective action taken on this matter.

(Closed) Inadequate PT Testing on Containment Spray and Safety Injection Systems: On June 25, 1980, Region IV was notified that several linear indications had been noted in piping welds and adjacent base material in the Containment Spray and Safety Injection Systems. These welds had been previously inspected and accepted. In response to the NRC Order to Show Cause Item 3(a), a 100% reinspection is currently being performed on all ASME B&PV Code, Section III piping welds. All welds found to be defective are being repaired or replaced with acceptable welds. The inspection and repair of all ASME piping is being performed by recently recertified personnel and is being fully documented as described in TRD 5A700GP004, Attachment II, Section 3, dated September 8, 1980. It was determined that all piping welds in these two systems are accessible and that none are embedded in concrete.

Based on a review of the re-examination and repair program, a review of inspection records, and discussions with licensee representatives, the NRC inspector had no further questions regarding the licensee's evaluation and corrective actions taken on this matter.

4. Action Taken on Order to Show Cause

(Open) Order to Show Cause Item VA(3)(a): A program for review of all safety-related welding has been established and is described in TRD 5A700GP004, Attachments I and II. At this writing, the final report of

the Task Force had not been issued. This TRD and the Task Force Report outline the extent of the review, the manner in which it is to be accomplished, and follow-up actions that are to be taken. This outline states the extent of the re-examination and repair of existing welds and how the ASME and AWS welding programs will be restarted.

Actions taken appear to be in accordance with re-examination and repair program and the restart program. This item will remain open pending NRC review of the final Task Force Report.

5. Exit Interview

The NRC inspector met with the licensee representative (denoted in paragraph 1) at the conclusion of the inspection on April 10, 1981. The findings of this inspection were discussed. Emphasis was placed on the need for closure of the remaining open items.