

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

REGION IV

Report No. 50-498/80-18; 50-499/80-18

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: July 1980

Inspector: W. S. Phillips 9/16/80  
H. S. Phillips, Resident Reactor Inspector Date

Approved: W. A. Crossman 9/16/80  
W. A. Crossman, Chief, Projects Section Date

Inspection Summary:

Inspection of July 1980 (Report 50-498/80-18; 50-499/80-18)

Areas Inspected: Routine, announced inspection by the Resident Reactor Inspector (RRI) included independent inspection performed during site tours, follow-up inspections relative to noncompliances, unresolved matters, show cause order items; inspection of concrete placement activities, structural steel and supports inside/outside containment. This inspection involved one hundred inspector-hours by one NRC inspector.

Results: Three items of noncompliance were identified in three of four areas inspected (infraction - failure to respond to B&R audit findings - paragraph 5.b; infraction - failure to develop appropriate procedures to assure material traceability - paragraph 6; and infraction - failure to assure that purchased material conformed to procurement documents - paragraph 7.b(3)).

## DETAILS

### 1. Persons Contacted

#### Principal Licensee Employees

R. A. Frazar, Quality Assurance Manager  
J. W. Briskin, Manager Houston Operations  
L. D. Wilson, Project QA Supervisor (Mechanical)  
J. W. Soward, QC Supervisor  
T. J. Jordan, Supervisor Quality Systems  
R. A. Carvel, Project QA Supervisor (Civil/Structural)  
D. W. Bohner, Project QA Supervisor (Electrical)  
G. Steinmann, Lead Site Engineer  
L. R. Jacobi, Licensing

#### Brown & Root, Inc. (B&R) Employees

J. R. Geurts, Vice President  
R. W. Bass, Audit Section Manager  
D. A. Walker, Lead Site Auditor  
C. R. Guruprasad, Audit Team Member  
C. E. Williamson, Audit Team Leader  
D. Robertson, B&R Site Engineering  
J. Baysinger, B&R Construction (Adm)  
G. R. Purdy, QA Engineering Manager  
G. R. Murphy, B&R Engineering  
R. Osborne, Head Warehouseman  
D. Foehner, Embed Foreman  
L. Sciba, Fabrication Foreman

#### Management Analysis Company (MAC)

J. P. Jackson, Senior Vice President  
W. J. Friedrich, QA Manager for Brown & Root  
J. Rudd, QA Engineer for Brown & Root

### 2. Licensee Action on Previous Inspection Findings

(Open) Noncompliance (50-498/79-19-55; 50-499/79-19-55): Failure to Take Appropriate Corrective Action on Audit Findings. See paragraph 5 of this report for details of a similar noncompliance.

(Closed) Unresolved matter (50-498/79-19-01; 50-499/79-19-01) Allegation No. 12: That traceability of embeds is lost after leaving the B&R Receiving Group. This matter was upgraded to an item of noncompliance. See paragraph 6 for details.

3. Licensee Response to Show Cause Order

The RRI reviewed the licensee's response to the show cause order. Specific comments relative to show cause items are as follows:

(Open) Show Cause Order, Item Section V.A(3)(a): Licensee Review Safety-Related Welding Including Civil Structural and Piping. The RRI met with licensee personnel to review their action plan to resume welding. The plan consists of eleven steps which includes review/revision of manuals/procedures; qualification of welders/welding inspectors; AWS welding on limited basis; evaluation and documentation of this program. AWS welding would resume if the process demonstrates adequate controls.

NRC inspectors will review objective evidence of implementation of the action plan and observe welding prior to full resumption of work.

(Open) Show Cause Order, Item Section V.A(3)(b): Licensee Review of Safety-Related Concrete Structures. The RRI met with the HL&P task force assigned to answer this show cause order item. Construction Engineering Consultants' services were obtained to inspect and test 30 areas in six buildings. This included 100% visual inspection of concrete and records. Three random samples per area were selected for nondestructive examination and coring to determine that structures are solid and meet required strength. The RRI observed the calibration of sonic testing equipment and several areas where cores were taken.

This item will remain open until the inspection/testing report is completed by the licensee and has been reviewed by the Region IV staff.

(Closed) Show Cause Order, Item Section V.A(4): Recision/Republication of Brown & Root, Inc. Brochure Titled, "Implementation of Brown and Root Quality Assurance Program at the South Texas Project Jobsite." On July 30, 1980, the RRI attended the seminar during which the new publication was distributed and discussed. The RRI had no further questions regarding the brochure and seminar.

(Open) Show Cause Order, Item V.A(9): The Licensee Shall Develop and Implement an Improved Audit System. The RRI reviewed progress in this area by reviewing and evaluating the licensee's response to show cause item (9) and the licensee's responses to Investigation Report 50-498/79-19; 50-499/79-19, Appendix A, Items A.14, A.18.a, A.18.b, A.18.c, and A.19. The following comments are offered relative to these items as they relate to Show Cause Item V.A(9):

Item A.14: Failure to Take Corrective Action in a Reasonable Time and Management Did Not Get Problems Resolved. The RRI reviewed the corrective action relative to this item and found that several audits were performed after the NRC investigation exit interview on January 24,

1980. In several instances, responses were overdue for recent audits and, on Audit ST-36, an impasse developed between the auditors and those audited. The licensee's response indicated that the problems were largely procedural; however, it appears that the problem is caused by management's failure to reach agreement on findings at the post audit meeting, and require that causes of deficiencies be corrected and documented in the response by the specified due date.

The licensee had previously committed to increase the B&R auditor staff on site. The RRI was informed that one auditor (civil) resigned and the second was reassigned and subsequently resigned because of the impasse on Audit ST-36. This appears to contradict the licensee's commitment to increase the site audit staff.

Brown & Root replaced the old audit procedure STP-QAP-7.1 with ST-QAP-18.1, effective on July 22, 1980. Implementation of the procedure will be reviewed during future inspections.

Item A.18.a: Failure To Provide For and Conduct Supplemental Audits as a Part of the HL&P QA Plan and Audit System. The RRI reviewed the HL&P QA Plan, Section 8 and Auditing Procedure QAP-5. The RRI did not review any supplemental audits but observed that the licensee/contractor performed several supplemental audits as a result of the NRC investigation findings.

This item is considered closed.

Item A.18.b: Failure of HL&P to Perform Adequate Audits in that Unsatisfactory Conditions Were Observed. Recent audits performed by HL&P indicate a capability to perform in-depth audits. The HL&P staff has been expanded and will be further increased.

This item is considered closed, however, the effectiveness of audits at the prescribed frequency will be monitored by the RRI during future routine inspections.

Item A.19: Failure of B&R to Perform in Depth Audits of Site Activities. The RRI interviewed managers, supervisors and auditors relative to this finding. The licensee's response to this finding committed B&R to secure additional audit personnel for the Houston and the site groups. The RRI determined that the additional B&R auditors had not been hired. As previously stated, the site group has lost most, if not all, of their civil auditors with site experience. The RRI determined that full compliance was not achieved by July 22, 1980, as stated in their response of May 23, 1980.

In view of the above, the RRI does not concur with the licensee's response to the show cause Item V.A(9), page 9.2, Sections B and C which states:

"B. Improvement of the Audit System

". . . and it's contractor have substantially revised and improved their audit systems.

"The audit staffs of . . . and B&R have been upgraded through both increases in manpower. . . .

"B&R will increase the number of resident site auditors.

"C. Implementation

"The required improvements in the audit programs of . . . B&R have to a large extent already been accomplished . . . The audit staffs of . . . and B&R are currently under expansion, adding qualified personnel."

The RRI observed that progress has been made, however, the B&R site audit system is not currently working as it should.

4. Site Tours

The RRI inspected various site areas as follows: Units 1 and 2 Reactor Containment, Auxiliary and Fuel Handling Buildings, and the reinforcement bar laydown areas.

No items of noncompliance or deviations were identified.

5. Review of Licensee Corrective Action Relative to Inadequate Responses to and Correction of B&R Site Audit Deficiencies

a. Background

In January 1980, the RRI reviewed B&R audit files and determined that the B&R Site Audit Group had effectively identified deficiencies while auditing several of the site organizations; however, audit deficiencies were neither corrected nor were the responses timely or adequate. Management was either not advised, or, if they were advised of impasses, did not take adequate steps to correct this condition over a long period of time. This noncompliance was documented in NRC Investigation Report 79-19, Appendix A, Item A.14, and in the details as Item No. 50-498/79-19-55; 50-499/79-19-55.

b. Failure to Respond to B&R Audit Findings

- (1) The RRI reviewed the HL&P response to NRC investigation findings transmitted by HL&P letter, dated May 23, 1980. Follow up indicated that site audits (SIS-12, SIS-18 and SIS-26) had been

closed. The RRI reviewed the new B&R Audit Procedure STP-QAP-18.1. The corrective action in the licensee's response stated that "in the interim, the old procedure would be followed until the new procedure would be implemented on July 22, 1980."

- (2) The RRI reviewed audit responses and found the following responses were delinquent:

<u>Audit No.</u>	<u>Subject</u>	<u>Response Due Date</u>	<u>Delinquent Response</u>
ST-36	Concrete Placement Activities	5/29/80 Extension Granted to 6/5/80	One response was made to one audit deficiency report (ADR), however, responses to eight other ADRs and eight concerns were due but had not been received on 7/23/80. Upper management granted an extension on 7/24/80.
ST-38	Document Control	6/11/80  6/18/80	Response to ST-38.2 and ST-38.3 from engineering  Response to ST-38.2 and ST-38.3 from construction
ST-40	Rigging	7/1/80  7/15/80	Response to ST-40.2 from engineering  Response to ST-40.2, 40.3 and 40.4 B&R Site QA

- (3) Audit ST-36 file was selected for a complete review because: (1) a potential construction deficiency was identified during the audit; (2) controversy surfaced and an impasse developed concerning the audit findings and responses; and (3) the subject of nonresponsiveness was a noncompliance as described in paragraph a. above.

- (a) The RRI reviewed the following in ST-36 audit file:

- . FREA 1-C 3979, dated 10-15-79
- . Audit Notification, March 19, 1980
- . Pre Audit Meeting Notice, March 18, 1980

- . Temporary Postponement Meeting, March 26, 1980
- . Telephone Minutes
- . Audit Checklist, March 24, 1980
- . ADR No. ST-36.8 (draft) dated April 10, 1980  
Block 11 was marked potentially reportable
- . "Confidential B&R Memo," dated May 12, 1980  
Subject: Inadequate Management Participation  
and Potentially Reportable Deficiency
- . B&R QA Audit ST-36 Concrete Placing Activities,  
May 13, 1980
- . Telephone & Conversation Reporting Form, dated  
May 29, 1980, granted extension due from May 29, 1980,  
to June 5, 1980
- . B&R Memo, dated June 4, 1980  
Subject: Audit ST-36 (Extension)
- . B&R Memo, dated June 11, 1980  
Subject: Audit ST-36 Response Extension  
June 19, 1980 extension requested
- . B&R Memo, dated June 11, 1980  
Subject: Responses to ADR 36.7 (extension requested on  
remainder of ST-36).
- . B&R Memo, dated July 2, 1980  
Subject: Response to ADR ST-36.7 (Rev.1)
- . B&R Memo, dated July 15, 1980  
Subject: Evaluation of Response (Rev. 1) to ADR ST-36.7  
by Audit Team

(b) The RRI also interviewed several individuals who were involved with the audit process. The following findings are based on those interviews and the objective evidence reviewed:

1. Key managers and supervisors of the audit section and the audited organization did not attend the pre-audit meeting or the post audit meeting even though the audit findings were significant. For example one of the significant findings indicated that the QA program may have broken down.

2. Meetings were held relative to responses subsequent to the post audit meeting. Impasses developed shortly after the report was issued. The RRI could find no objective evidence as required by B&R Procedure ST-QAP-7.1 that management insisted on immediate corrective action when it was evident that an impasse had occurred. Allowing the impasse to continue hardened the positions of the auditors and those responsible for responding to the audits.
3. Responses to nine audit deficiency reports (ADRs) and eight concerns were due on or before May 29, 1980. Only one response (ADR ST-36.7) was received and the site audit group considered it inadequate. The responses were not in the proper format, that is, corrective action taken, cause of the deficiency and action taken to preclude recurrence. An extension was granted by higher management on July 24, 1980, however, this audit was performed in mid April 1980, and several of the ADRs should have been answered fully and in a timely manner.
4. The B&R Audit Section Manager did not prepare a letter, to the managers of the audited organizations, for the QA manager's signature even though such correspondence was required by B&R procedure ST-QAP-7.1 and should have been issued.

This finding represents a noncompliance to 10 CFR 50, Appendix B, Criterion V in that audit procedures were not followed relative to issuing the letter.

5. The licensee's response to noncompliance A.14, "Failure to take corrective action in a reasonable time and management did not get the problems resolved," stated that the cause of the noncompliance was an oversight, that is, the requirement for notifying the B&R Group Vice President of impasses was in the PSAR but had not been addressed in the procedures. It was also stated that the B&R QA Manager and/or the B&R STP Project QA Manager resolved such impasses.

This licensee's response to item A.14 has apparently not addressed the cause of the noncompliance since the audit process is still not functioning adequately. Additional information related to this matter is required in accordance with the provisions of Section 2.201 of the NRC's "Rules of Practice, Part 2, Title 10, Code of Federal Regulations. This item remains open.

6. Concrete Placement Activities

On July 23, 1980, the RRI observed preparations to make concrete pour MEA2-W008-3A in the Auxiliary Building.

a. The RRI verified the following:

- . Preplacement inspection performed
- . Cleanliness of construction joints
- . Pumping equipment in place
- . Adequate crews on hand
- . Qualified test personnel present to perform concrete tests
- . Aggregate storage acceptable
- . Reinforcement spacing

b. The RRI inspected embedments placed to determine whether B&R inspectors had verified that the embed materials were numbered and were traceable to physical/chemical certifications. The inspectors stated that embed traceability had not been verified on this pour or other safety-related pours. The concrete specification and implementing procedures do not adequately describe required inspection to verify traceability. Further, inspection determined that the embed material in pour MEA2-W008-3A was traceable; however, inspection of embed storage and issue areas verified the potential to interchange safety-related and non-safety-related embeds in the Reactor Containment and Auxiliary Buildings in at least two instances.

This condition was identified in Investigation Report No. 50-498/79-19; 50-499/79-19 as Unresolved Item No. 50-498/79-19-01; 50-499/79-19-01. B&R QA Management committed, in early January 1980, to correct the condition; however, the new B&R QA Manager stated that traceability was not required for the subject embeds and questioned the need to be traceable to certifications as long as the proper material was used.

The condition was also identified in B&R Special Audit, November 1979, but the audited organization has failed to adequately respond to the audit or correct the condition.

This finding represents a noncompliance to 10 CFR 50 Appendix B, Criterion V in that procedures have not have been revised to adequately require the inspection necessary to verify traceability of safety-related materials.

7. Procurement of Miscellaneous Steel

a. Purchase Order Review

It was determined that embeds are fabricated from materials purchased from Bostrom-Bergen (P.O. 6008), Inryco (P.O. 6011), Pittsburgh Des Moines (P.O. 6026) and NPS Industries (P.O. 6027). The material purchased from Inryco was nonsafety-related while the other purchase orders were for safety-related material.

b. Visual Inspection

The RRI observed the storage areas "F," "M," "P," and the Fabrication Shop areas to select for inspection miscellaneous steel items which had been purchased and receiving action was complete. The storage areas were orderly and all items were stacked on dunnage. Two minor unsatisfactory conditions and one item of noncompliance were noted:

- (1) Embed material in area "M" was not stacked properly which could lead to damage to the Nelson studs and bending the "H" plate. This condition was immediately corrected and the RRI has no further question regarding this matter.
- (2) The second matter relates to segregation of nonconforming materials. Several instances were observed where nonconforming materials with tags were mixed with conforming materials. In some instances it was difficult to determine if a whole stack was nonconforming or only the one piece which had a tag. In another instance, scrap, conforming and nonconforming material were located outside the controlled access storage area. It was not entirely clear that the materials were properly controlled. This matter is considered unresolved pending further review of storage requirements. (Open Item No. 50-498/80-18-01; 50-499/80-18-01)
- (3) On July 23-26, 1980, while inspecting the storage areas and the steel materials, the RRI observed over seven hundred Bostrom-Bergen embeds, which had six to eight stud welds per embed. The ceramic arc shields had not been completely broken free on the majority of embeds inspected. On at least twenty embeds, the shields that were left prevented visual inspection for 360 degrees of flash or other defects. The majority of the embeds had smaller pieces of the ceramic shields which rendered visual inspection of the welds indeterminate if not inadequate.

This finding represents a noncompliance with 10 CFR 50 Appendix B, Criterion V in that ceramic shields were not broken free from the studs to allow inspection as required by the Bostrom-Bergen surveillance plan and AWS D1.1, paragraph 4.28.9.

8. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance, or deviations. One unresolved item is discussed in paragraph 7.b(2).

9. Management Meetings

The following meetings were held during the subject inspection period:

<u>Attendees</u>	<u>Subject</u>	<u>Date</u>
HL&P QA Manager	Show Cause Order	7-10-80
Management Analysis Co. Vice President	Revision of B&R QA Brochure	7-10-80
B&R Vice President Power Group	Improvements in B&R Performance	7-14-80
B&R Auditor	Follow-Up Inspection	7-14-80
HL&P QA Mgr, Houston Operations	Plan to qualify six welders and need to notify RIV relative to RIV Immediate Action Letter	7-16-80
HL&P Proj. QA Supv (Elect)	Motor for RC pump mishandled	7-16-80
Concrete Show Cause Task Force	Consultant inspection/testing of concrete	7-16-80
B&R Auditor	Interviewed auditor relative to impasse on ST-36	7-17-80
Bay City Service Center Representative	Facilities for Public Meeting on August 19, 1980	7-18-80
HL&P QA Mgr; NRC Civil Inspector	Exit Meeting; meeting on RRI findings	7-23-80
B&R QA Manager (MAC Employee)	Embed traceability, an unresolved matter during Investigation 79-19	7-23-80
HL&P Proj. QA Supv. (Civil): B&R QA Eng (MAC)	Embed traceability; stud welding	7-24-80
B&R Audit Section Mgr.	Audit ST-36	7-25-80
B&R Site Lead Auditor/ Auditor	NRC follow-up inspection on ST-36 and other audits performed since January	7-28-80

RIV NRC Inspector (Mechanical)	Entrance Meeting	7-28-80
RIV NRC Investigators, HL&P QA Mgr.	Entrance Meeting. Allegations relative to falsification of records.	7-29-80
HL&P QA mgr.	Relative to potential non- compliances Audit ST-36, embed material traceability, vendor inspection of embeds, segregation of nonconforming materials and scrap in storage areas.	7-29-80
B&R Material Control Mgr., Head Warehouseman; Embed Foreman	Purchase Orders for miscellaneous steel, conditions in the storage areas.	7-30-80
B&R QE Site Mgr.	Audit Responses to ST-36	7-30-80
HL&P QA Supv. (Elect)	Cable trays	7-31-80
HL&P QA Supv. (Mech)	HL&P Plan for resumption of welding and milestone charts showing target dates for implementation.	7-31-80