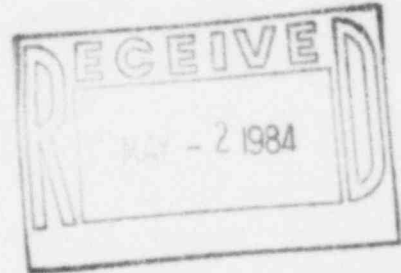


The Light company

Houston Lighting & Power P.O. Box 1700 Houston, Texas 77001 (713) 228-9211

April 30, 1984
ST-HL-AE-1088
File No.: G12.13



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
Description of Phase II Anchor Bolt Program

On March 30, 1984, in transmittal ST-HL-AE-1075, Houston Lighting & Power Company (HL&P) identified a series of evaluations which would be conducted to address the broader implications of the material mixup of site fabricated embed rods and anchor bolts. Within the transmittal, HL&P also committed to provide a more definitive plan of action and description of the evaluations to be performed. The attachment to this letter provides that information. The current schedule for completion of the evaluations and preparation of a comprehensive report for submittal to the Nuclear Regulatory Commission (NRC) is July 27, 1984.

HL&P (Goldberg) has discussed with Mr. Denise of your staff the desirability of meeting to review HL&P's program outlined herein. To date we have not been able to schedule such a meeting.

If you should have any questions concerning this item, please contact Mr. Michael E. Powell at (713) 993-1328.

Very truly yours,

G. W. Oprea, Jr.
G. W. Oprea, Jr.
Executive Vice President

RRH/mpg

Attachment: Description of Phase II Anchor Bolt Program

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A PDR

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cc:

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South Texas Project
Units 1 & 2
Docket Nos. STN 50-498, STN 50-499
Description of Phase II Anchor Bolt Program

ACTIVITY NO. 1

A verification of the heat treated condition and accurate hardness of installed anchor bolt heats of A193.B7 material which exhibited apparent high or variable hardness ranges in earlier tests by portable hardness test equipment.

HL&P shall accomplish verification of mechanical properties of installed safety-related anchor bolts of A193.B7 of heats such as 46239, 41261, 48191, 47147, and 90731 which showed apparent high and/or variable hardness ranges in earlier tests by portable hardness test equipment.

Intended Objective

Verify that the installed anchor bolt heats of A193.B7 material which exhibit high or variable hardness ranges, are in the proper heat treated condition.

Program Plan

1. Review B&R Test Data Sheets (TDS) and establish questionable bolts exhibiting apparent high and/or variable hardness.
2. Identify the heats of the questionable anchor bolts. Review CMTR's and Alloy Analyzer results for suspected heats.
3. Identify the highest and lowest hardness bolts in heats identified in 2.
4. Bar Stock: Retest one sample of each available heat of A193.B7 bar stock where more than 5% of the B&R tests showed a hardness value outside reasonable range for A193.B7 (242 to 373 BHN). Testing will be for Brinell hardness.
5. Out of the heats identified under Step 2 above, three installed bolts with apparently high hardness and three with apparently low hardness based on B&R Test Data Sheets, will be retested accurately for hardness. Coupons will be cut from these six bolts and will be tested for Brinell hardness in a laboratory. Additionally, metallographic examination of the heat treated condition will be performed.
6. Review results and determine if confirmatory tensile tests and/or metallography should be performed on bar stock of affected heats.
7. Write report with conclusions.

ACTIVITY NO. 2

A demonstration that there is a reasonable probability that A197.B7 rods have not been welded to significant safety-related embeds.

Intended Objective

To verify, without destructive damage to installed embeds, that there is a high probability that no ASTM A193.B7 bar stock is welded to significant safety-related embeds.

Program Plan

1. Tests were conducted at Southwest Research Institute to attempt to develop an ultrasonic method of differentiating ASTM A36 bar stock from ASTM A193.B7 bar stock. Preliminary results indicate that the two materials have sufficiently different ultrasonic attenuation characteristics (a ratio of 1:2 or more) to be distinguishable by ultrasonic testing. Data available at this time is, however, not sufficiently statistical, i.e., representative of all sizes and scatter, to be used without further development. The feasibility has been demonstrated, but HL&P is conducting additional tests on a range of rod diameters and lengths to confirm reliability of test method.

Trials have been conducted to verify whether it is possible to test inaccessible embed rods from the exposed face of the plate surface through the weld. Preliminary results show that at least 80% of the samples could be tested by SWRI technicians by the cylindrically guided wave method. Mockups tested so far were successful in both materials. Notwithstanding the 10% to 20% estimated sample that cannot be tested, it is expected that after full development, the direct testing of the selected significant safety-related embed population will provide a large sample resulting in a high statistical confidence level that ASTM A193 is not mixed in the embed rod population. Tests that do not yield at least two distinct back reflections will generally be characterized as not testable for attenuation measurement purposes.

2. Define significant safety-related embed population.
3. Conduct physical testing of arc welded anchor rods in significant safety-related embeds in field excluding those that are physically inaccessible. Specialist technicians will be used. It is expected that approximately 80% of the selected sample can be effectively tested.
4. Analyze results.
5. Determine if further testing is required.
6. Write report with conclusions.

ACTIVITY NO. 3

HL&P shall review B&R, Ebasco, and Bechtel NCRs pertaining to bolting to verify adequate corrective action, including generic implications of NCR's.

HL&P shall review the NCR's generated pertaining to the anchor bolt/embed evaluation to verify appropriate disposition, including generic implications of the individual NCR's.

Program Plan

1. Set-up a HL&P mini-task force to review NCR's for disposition and generic implications.
2. Review NCR's.
3. Write report along with conclusions.

ACTIVITY NO. 4

A demonstration by a thorough and comprehensive review of the Brown & Root material control program by HL&P/Bechtel that the potential for future reportable concerns is acceptably small.

Intended Objective

Demonstrate that a thorough and comprehensive review of the B&R material control program by BEC/HL&P has been performed and documented. Determine if the extent the reviews are reasonable to minimize the potential that future 10CFR50.55(e) deficiencies will be identified with respect to past B&R material control practices.

Program Plan

Although various reviews have been conducted on facets of the B&R material control program, the reviews to date were generally narrow in scope and for a specific purpose. Therefore, this program would first examine the results of the previous program reviews and decide whether they are sufficient if considered in the composite.

1. Identify all reviews performed to date regarding B&R material control.
2. Evaluate individual reviews to determine purpose, scope and results.
3. Determine if individual reviews, when considered in the composite, minimize the potential for deficiencies.
4. If required, develop action plans for conducting additional reviews.
5. Consolidate results into single report with resulting conclusions.

ACTIVITY NO. 5

HL&P shall demonstrate that review of B&R procurement by Bechtel/HL&P has been adequate and reasonable and that the potential for future 10CFR50.55(e) or Part 21 concerns in this area is acceptably small.

Intended Objective

Demonstrate that the review of B&R procurement by BEC/HL&P has been adequate and reasonable to minimize the potential for future 10CFR50.55(e) or Part 21 concerns in this area. Both field and home office procurements for safety-related items will be addressed in this review program.

Program Plan

The review of the B&R procurement process for safety-related items has been conducted through various individual programs. Although the programs may have been performed separately in the composite the reviews do provide a high level of confidence that the material was satisfactorily procured, delivered and received by B&R in accordance with project requirements.

1. Identify all reviews performed to date regarding B&R procurement.
2. Evaluate individual reviews to determine purpose, scope and results.
3. Determine if individual reviews, when considered in the composite, minimize the potential for deficiencies.
4. If required, develop action plans for conducting additional reviews.
5. Consolidate results into single report with resulting conclusions.

ACTIVITY NO. 6

Determine the adequacy of the present record control systems to ensure that Brown & Root construction inspection records are used with up-to-date supplements so that superseded information in records is not erroneously used to the detriment of reactor safety.

Intended Objective

Demonstrate that the B&R records system had the ability to document the full history of a unit of construction chronologically. Demonstrate that the current RMS system has the ability to provide the user with the full history of a unit of construction or inspection.

Assure that the current procedures require RMS to give a user a record updated chronologically up to the latest supplements, and the contractors to do the same for records in their custody. Conduct a review of B&R procedures and RMS in this respect. Demonstrate the adequacy of this system, the typical industry practice, and the fact that relatively few records are totally superseded by subsequent modifications or inspections.

Program Plan

1. Identify all B&R procedures for construction and inspection records implemented on STP.
2. Review pertinent procedures, determine adequacy and practices compared to BEC practices.
3. Review whether B&R controls and present BEC and Ebasco controls, and RMS controls, are sufficient to ensure that a user of records is presented with an updated chronological record and not an incomplete status.
4. Describe, as background and additional assurance the BEC, HL&P and RMS checks on B&R records to assure that they are complete.
5. Write report and conclusions.

ACTIVITY NO. 7

A demonstration through a comprehensive review that that CMTR's provided for threaded fasteners and anchor bolts are in accordance with project requirements.

Intended Objective

Demonstrate through a comprehensive review that the CMTR's provided for threaded fasteners and anchor bolts are in accordance with project commitments. The review of the CMTR's will also include Category I safety-related structural steel and ASME suppliers of threaded fasteners. Equipment fasteners are excluded.

Program Plan

1. Identify all reviews performed to date regarding CMTR's for Category I safety-related structural steel anchor bolts and threaded fasteners. The review will also include CMTR's for ASME threaded fasteners.
2. Evaluate individual reviews to determine purpose, scope and results.
3. Determine if individual reviews, when considered in the composite, minimize the potential for deficiencies.

4. If required, develop action plans for conducting additional reviews.
5. Consolidate results into single report with resulting conclusions.