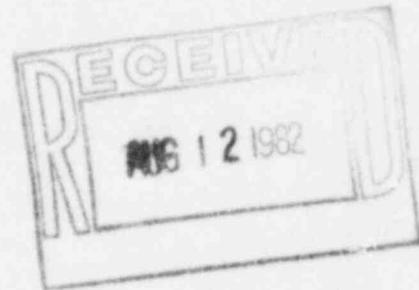


The Light company

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

August 11, 1982
ST-HL-AE-861
File Number: G12.54
SFN: V-0530

Mr. John T. Collins
Regional Administrator, Region IV
Nuclear Regulatory Commission
611 Ryan Plaza Dr., Suite 1000
Arlington, Texas 76012



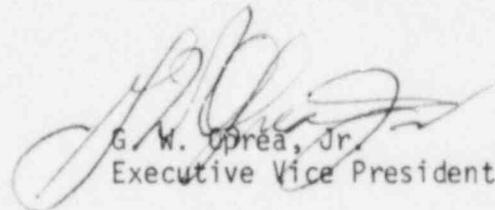
Dear Mr. Collins:

South Texas Project
Units 1 & 2
Docket Nos. STN 50-498, STN 50-499
Final Report Concerning Maximum/Minimum
Soil Density Tests on ECW Backfill

On June 20, 1980, pursuant to 10CFR50.55(e), Houston Lighting & Power Company (HL&P) notified your office of an item concerning soil density tests on the Essential Cooling Water (ECW) pipeline backfill material. Attached is our Final Report concerning this item.

If you should have any questions concerning this matter, please contact Mr. Michael E. Powell at (713) 877-3281.

Very truly yours,


G. W. Oprea, Jr.
Executive Vice President

MEP/kr

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Houston Lighting & Power Company

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August 11, 1982
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Revision Date 04-19-82

Final Report Concerning Maximum/Minimum
Soil Density Tests on ECW Backfill

I. Summary

During the reassessment of the Category I backfill and compaction testing program by Brown & Root, Inc. (B&R), the maximum/minimum density tests on the Essential Cooling Water (ECW) pipeline backfill were discovered to have not been conducted in accordance with specification requirements. Although the basic density tests were done, the maximum/minimum density laboratory tests were not performed due to a misinterpretation of the specification.

The final resolution of these matters rests on two distinct programs.

- 1) In conjunction with the ASME (ECW) Piping Re-examination, Repair, and Restart Program, sections of ECW piping which required excavation in order to resolve potential weld problems have had or will have the backfill soil densities requalified by programs established to replace backfill in accordance with required soil density testing requirements.
- 2) For the limited sections of ECW piping which do not otherwise require excavation, a combination of backfill documentation surveys and a review by Bechtel of the previous Show Cause Expert Committee Report provides the technical justification for adequacy.

II. Description of the Incident

On June 20, 1980, pursuant to 10CFR50.55(e), Houston Lighting & Power Company (HL&P) notified your office of an item concerning soil density tests on the ECW pipeline backfill material. During the B&R reassessment of the Category I backfill and compaction testing program (in response to Item 2, Appendix A of the Order to Show Cause), the maximum/minimum density tests were discovered to have not been conducted in accordance with specification requirements. Although the basic density tests were done, the maximum/minimum density laboratory tests were not performed on the material placed directly in the ECW pipeline trench. The tests were not performed due to a misinterpretation of the specification. The specification required one laboratory maximum/minimum density test for every four (4) field density tests.

III. Corrective Action

The corrective action for the resolution of this item has occurred in two (2) parts. These are as follows.

- 1) For those portions of the ECW piping where excavation is required to support the ASME Piping Re-examination, Repair, and Restart Program, requalification of the bedding, foundation, and backfill:
 - a) was performed by B&R in accordance with procedures

which included the required type and frequency of soil density tests, or

- b) will be performed by Bechtel Power Corporation (BPC) in accordance with their specification which requires, "For granular structural backfill placements at least one relative density test (ASTM D2049) and one gradation test (ASTM D422) shall be performed for every fourth field density test, except as otherwise specified herein. More frequent test intervals may be performed as necessary to ensure compatibility between field and laboratory tests."

On December 17, 1980, HL&P submitted the third interim report concerning maximum/minimum soil density tests on ECW backfill. This report stated that, concurrent with excavation of structural backfill from the ECW piping to be reexamined, samples for maximum/minimum density determination would be obtained and laboratory tests would be performed. B&R did not intend to remove all of the structural backfill from the ECW pipe trenches; therefore, the test program was necessary during excavation to qualify the remaining backfill. For those areas where BPC intends to remove all structural backfill from the ECW pipe trenches, the test program during excavation is not needed and will not be conducted.

- 2) There are two cases in which complete excavation of ECW piping is not currently anticipated.
 - a) For those limited sections of ECW piping which do not eventually require examination for weld requalification, no excavation is planned.
 - b) For some ECW piping located over very deep excavations such as those in close proximity to large structures, reexamination and repair can be performed without excavation to the original excavation limits. In this case, excavation will be limited to that necessary to requalify the piping.

For these two cases, BPC has completed an independent evaluation of:

the results of the Independent Expert Committee Report to Address Show Cause Item A-2 and concurs with their findings, in particular with regard to the ECW piping backfill, and

density test data compared to actual site QA records and reached the conclusion that the density averages are well in excess of the minimum requirements.

Based upon these evaluations, BPC has concluded that qualification of the backfill material for these limited sections of ECW piping is technically justified without further excavation.

IV. Recurrence Control

The NRC has reviewed the revised Quality Assurance Program Description (QAPD) for the Design and Construction Phase of the South Texas Project, Revision 3, in which the QA programs of HL&P, BPC and Ebasco are fully described. These proven programs ensure that the backfill specification will be completely and properly executed.

V. Safety Analysis

By letter dated February 27, 1981, HL&P forwarded to your office the Independent Expert Committee's "Final Report on the Adequacy of Category I Structural Backfill for the South Texas Project". The same backfill material supply source and compaction procedures were used in the ECW area as in the main plant area. Thus, the conclusions of the report that backfill is not a safety hazard can be applied to the ECW area.