



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

February 12, 1988

Docket Nos. 50:445
and 50-446

APPLICANT: Texas Utilities Electric Company (TU Electric)
FACILITY: Comanche Peak Steam Electric (CPSES), Units 1 and 2
SUBJECT: SUMMARY OF AUDIT ON DECEMBER 7-11, 1987 - IMPLEMENTATION
OF PROCEDURES FOR TRAIN C CONDUIT SUPPORTS LESS THAN
OR EQUAL TO TWO INCHES

On December 7-11, 1987, the NRC staff and its consultants conducted an audit at the CPSES site in Glen Rose, Texas of the application of design criteria and methodology developed for Train C conduits less than or equal to two inches in diameter and their supports (hereinafter referred to as "Train C conduit"). The Train C conduit design validation is being performed by Impell Corporation as a part of the TU Electric Corrective Action Program. A list of persons involved with the audit is provided in Enclosure 1.

The purpose of the staff audit was to assess the adequacy of Impell's implementation of the design validation procedures and to further review selected criteria and methodology. The audit consisted of:

- 1) a review of a sample of Impell's calculation packages, and
- 2) a plant inspection of selected supports and support systems reviewed in the above calculation packages.

In addition, discussions with Impell personnel regarding implementation of procedures, criteria and methodology were held.

Review of Calculation Packages

The audit sample was selected from the Master Calculation Log provided by the Impell Field Office. The audit team selected a total of 51 calculation and modification packages representing supports and support systems from the following buildings:

Safeguards
Electrical Control
Auxiliary
Fuel Loading
Service Water
Containment

Specific calculation packages were selected for review to ensure a representation of each of the screening levels implemented by Impell in the design validation process.

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In the course of the implementation audit, the audit team reviewed the latest Impell procedures and reviewed selected Train C criteria and methodology for practicality and effectiveness of implementation (see Enclosure 2).

Plant Inspection

The audit team performed plant inspections of selected supports as a part of our audit. The inspection sample was selected from the calculation packages. The inspection sample covered all the screening levels implemented in the program, including modifications implemented as a result of the design validation process. The inspection sample included one or more of the supports associated with the calculation or modification packages.

Overall Findings

Based on our audit, the team finds the following:

- 1) Implementation of the design validation program was conducted satisfactorily and in accordance with the program instructions.
- 2) Validation of supports to date has been accomplished using Screening Levels 2 (Acceptable Supports), 4 (Seismic Capacity Check), 5 (Seismic Analysis) and 3/6 (No Interaction Potential/Impact Evaluation).
- 3) Where implementation of Screening Level 6 required some judgement in assessing interaction potential, the audit team found such judgement to be sound and, thus, concurs with that judgement.

Two discrepancies were noted by the audit team in the course of our audit which required action by the Impell field office. The discrepancies and corrective actions taken are discussed below:

- 1) Level 5 evaluation criterion (PI-0210-052-003), Rev. 4, Par. 4.3.8) specifies allowable stresses for fillet welds and base metal in hot-rolled and cold-formed members. Review of the calculation audit sample indicated that only the stress in the weld was checked and base-metal stress evaluations were not performed. In the case of welding to Unistrut, the base-metal stress was the governing stress.

Resolution: Impell reviewed all calculations performed to date involving field-welded Unistrut supports, and modified the calculations to include the base-metal stress evaluation. No inadequacies resulted. In addition, Impell conducted a training session for the appropriate analysts to provide assurance against recurrence of this problem.

Conclusion:

The audit team finds the resolution adequately resolves the concern and is, thus, acceptable.

- 2) Calculation A-02542 was not reconciled with field modifications. The problems occurred when initially agreed-upon modifications could not be validated by Level 5 calculation, and a new support location was recommended. Interface between Support Design and Level 5 groups was not completed.

Resolution: Impell determined that this incident was an isolated one and developed the following Action Plan:

- a) Send notification letter to Level 5.
- b) Incorporate new loads in calculation.
- c) Review originator's calculations for similar incidence.
- d) Conduct training sessions to reinforce interfacing procedures.

Conclusion: The audit team finds the resolution adequately resolves the concern and is, thus, acceptable.

A total of 80 hours were involved with this audit.

David Teran

David Teran, Mechanical Engineer
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Enclosure:

1. List of Persons Involved With Audit
2. List of Documents Reviewed

cc: See next page

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LIST OF DOCUMENTS REVIEWED

Impell Corporation, "Procedures for Implementing Screen Level 6", Project Instruction No. PI-2010-052-005.

Impell Corporation, "Level Four Screening Criteria for Type 1 Supports", Project Instruction No. PI-0210-052-002.

Impell Corporation, "Seismic Evaluation of Train C Conduit Supports," Project Instruction No. PI-0210-052-003.

CPRT Results Report, ISAP: I.c, "Train C Conduit and Supports", Revision 1.

Impell Corporation, "TU Electric CPSES Project Status Report, Conduit Supports Train C Two-Inches and Less", Revision 0.

Distribution:

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