

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-341/84-38(DRS)

Docket No. 50-341

License No. CPPR-87

Licensee: Detroit Edison Company
2000 Second Avenue
Detroit, Michigan 48224

Facility Name: Enrico Fermi Nuclear Power Plant, Unit 2

Inspection At: Sargent & Lundy Engineers Office, Chicago, IL

Inspection Conducted: September 7, 19, and 28, 1984

Inspector(s): *D.H. Danielson*
P.D. Kaufman

9/28/84
Date

D.H. Danielson
for J. W. Muffett

9/28/84
Date

Approved By: *D.H. Danielson*
D. H. Danielson, Chief
Materials & Processes Section

9/28/84
Date

Inspection Summary

Inspection on September 7, 19, and 28, 1984 (Report No. 50-341/84-38(DRS))

Areas Inspected: Routine, announced safety inspection on previously identified inspection items; as-built review and verification of quality and design documents of safety-related piping systems in the RHR complex. The inspection involved a total of 34 inspector-hours at the Sargent & Lundy (S&L) office in Chicago, Illinois by two NRC inspectors.

Results: Of the areas inspected, one apparent violation was identified. (Inadequate design control for u-bolt side load capacities - Paragraph 3.a).

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DETAILS

1. Persons Contacted

Detroit Edison Company (DECo)

*M. S. Williams, Senior Engineer/Mechanical Engineering

Sargent & Lundy Engineers (S&L)

G. T. Kitz, Head/EMD
R. C. Odegard, QA Coordinator
S. E. Azzazy, Supervisor/EMD
R. F. Scheibel, Project Director
F. P. Tsai, Project Manager
A. Morcos, Assistant Head QA
P. J. Peterson, MEchanical Engineer
M. Tatosiam, Senior Structural Project Engineer
O. P. Gupta, Assistant Head/Structural Engineering
E. B. Branch, Mechanical Design Director

*Denotes those telephonically contacted on September 28, 1984 for the exit interview.

2. Licensee Action on Previously Inspection Findings

- a. (Closed) Unresolved Item (341/84-31-04): During a previous inspection it was identified that hanger data table load listings on as-built hanger location isometrics (-2) prints were not consistent with the design loading direction shown on S&L's detailed as-built pipe support drawings. Also, the types of supports listed on the hanger data tables were not always comparable with the types of supports depicted on the detailed as-built pipe support drawings. Clarification to this drawing inconsistency is contained in S&L instructions P1-EF-08, "Project Instruction for Piping Analysis and Component Support Design for RHR Complex ASME Class III Piping Systems, and for Piping Analysis for Main Plant ASME Class II and III Piping Systems", Revision 3, dated August 14, 1984. In subsection 3.3.3 of this project instruction it states that on specific instructions from DECo, S&L is not updating pipe support drawings. Therefore, the pipe support calculations which reflect all change documents must serve as the "picture" of the support condition. Any revised loads, thermal pipe deflections, or support locations will be added on a print of the support. The marked-up support print will serve as the vehicle for design information. The marked-up support prints are then filed together with the prepared calculations into piping subsystem calculation packages. The inspectors concluded that the pipe support design calculations along with the marked-up support prints do reflect the latest loading information.

3. Functional or Program Areas Inspected

a. Reconciliation of Piping System As-Built

During review of RHR complex safety-related as-built piping and piping suspension systems design calculations and applicable procedures by the Region III inspectors, the following observation was made:

(1) Inadequate Design Control

S&L Interoffice Memorandum EMD-042587, "Load Capacity for U-Bolts Under Side and Axial Loads," dated February 18, 1983, was utilized for design purposes by the S&L support design section even though the subject interoffice memorandum was not reviewed, approved, or issued in the required established design control methods. Utilization of the uncontrolled memorandum was evidenced in the following pipe support design calculations:

- . E11-2179-G14
- . E11-2179-G19
- . E11-2180-G14
- . E11-2180-G19
- . R30-2175-G17
- . R30-2175-G20
- . R30-2175-G16
- . R30-2173-G16

The licensee was informed the use of interoffice memorandums for design basis in lieu of controlled design documents is an item of noncompliance in accordance with Criterion III of 10 CFR 50, Appendix B (341/84-38-01).

Subsequent to this finding, the S&L personnel were queried by the inspectors to evaluate and determine if any other S&L projects had used the internal, uncontrolled memorandum for the design of U-Bolts under lateral loading, since the interoffice memorandum was referenced to all projects.

S&L's review of all projects to see if they had used the uncontrolled memorandum has been completed as denoted by S&L Interoffice Memorandum EMD-049225 dated September 14, 1984. S&L determined that this document was used only on the Fermi Project.

b. Review of Pipe Stress Analysis

The inspectors while performing an as-built pipe stress analyses review noticed inconsistencies in S&L's U-Bolt modeling techniques. The licensee was informed of these inconsistencies and asked to develop a consistent documented criteria for the modeling and reconciliation of as-built U-Bolt configurations. This is an unresolved item (341/84-38-02).

No items of noncompliance or deviations were identified.

4. 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. An unresolved item disclosed during the inspection is discussed in Paragraph 3.b.

5. Exit Interview

The inspection scope and findings were summarized in a telephone conversation on September 28, 1984. The licensee acknowledged the inspection findings without significant comment.