

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-341/84-31(DRS)

Docket No. 50-341

License No. CPPR-87

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

Facility Name: Enrico Fermi Nuclear Power Plant, Unit 2

Inspection At: Enrico Fermi 2 Site, Monroe, MI

Inspection Conducted: July 30 through August 3, 1984

Inspector: *D. H. Danielson*
for P. D. Kaufman

8/16/84
Date

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

8/16/84
Date

Inspection Summary

Inspection on July 30 through August 3, 1984 (Report No. 50-341/84-31(DRS))

Areas Inspected: Routine, unannounced safety inspection to review program and procedures in the areas of testing of pipe support and restraint systems; as-built walkdown and review of quality and design documents of safety-related piping systems in the RHR complex. The inspection involved a total of 35 inspector-hours on-site by one NRC inspector.

Result: No items of noncompliance or deviations were identified.

DETAILS

1. Persons Contacted

Detroit Edison Company (DECo)

- *D. Spiers, Director, Field Engineering
- *W. M. Street, Supervising Engineer/Civil
- *F. T. Schwartz, Acting Supervisor/QA Staff
- *L. P. Bregni, Licensing Engineer
- *J. F. Malaric, Supervisor, Field Engineering
- *T. Young, Lead Hanger Field Engineer
- L. Grantham, Hanger Field Engineer
- B. Sheffel, ISI Programming Engineer

Stone & Webster Engineering Corporation (S&W)

- J. Oliver, Principal Engineer/Supports - SWMI
- *P. Rigby, Engineer/Supports - SWMI
- *P. Capiak, Engineer/Supports - SWMI

Sargent & Lundy Engineers (S&L)

- H. A. Furlager, Site Project Engineer
- S. R. Raupp, Senior Structural Engineer

General Electric Company

- M. Jamal, Start-up Test Phase Engineer

General Physics Corporation

- R. Sanaker, Start-up Test Phase Engineer

*Denotes those attending the exit meeting.

2. Testing of Pipe Support and Restraint Systems

a. FSAR

The licensee's FSAR requirements and commitments regarding examination and testing of safety-related pipe support and restraint systems during system vibration and expansion preoperational testing were reviewed. The licensee's program for examination and testing of safety-related supports was outlined in FSAR Subsection 3.9.1, Subsection 14.1.3.2.64, Subsection 14.1.4.8.15, and responses to NRC questions - FSAR Appendix E.5.121-14, E.2.413-15, and E.2.413-16. The licensee was queried as to their response to E5.121-14, with respect to the organization responsible for ensuring that snubbers are not seized, frozen, or jammed. The inspector was informed that stroke testing of snubbers was Project Construction's responsibility and was accomplished by Wismer & Becker Procedure WB-C-121, "Installation of Snubbers." QC's verification of the stroke testing

is documented on Snubber Checklist forms, however, in the licensee's response to E.5.121-14, it designates that the Start-up organization is responsible for ensuring snubbers are not seized, frozen, or jammed. The licensee was requested to further determine the accuracy of the FSAR statement and if necessary submit an FSAR Change Notice to NRR. This matter is identified as an unresolved item (341/84-31-01).

b. Procedure Review

The snubber surveillance and functional testing requirements are contained in Section 4.7.5 of DECo's Technical Specification. The requirement that all safety-related mechanical and hydraulic snubbers be listed in Tables 3.7.-4a and 3.7-4b of the Technical Specifications is no longer necessary as implemented by NRC Generic Letter 84-13, dated May 3, 1984. However, the inspector informed the licensee that categorization of snubber accessibility during reactor operation has to be delineated prior to the first inservice visual inspection (within 4-10 months of Power Operation). Procedure review encompassed the following:

Detroit Edison Procedures

- . STUT.HUA.017, Revision 2, "System Expansion - Visual Inspection/Hanger Readings."
- . STUT.OVD.017, Revision 2, "System Expansion - Ambient Temperature Walkdown."
- . STUT.HUE.017, Revision 1, "System Expansion - Visual Inspection/Hanger Readings - Third Thermal Cycle."

Wisner & Becker Procedures

- . WB-C-121, Revision 13, "Installation of Snubbers."

The inspector concluded that the above procedure requirements and acceptance criteria meet the FSAR commitments with one possible exception. Specifically, the licensee has checked variable spring hangers to verify that the hangers are not bottomed or topped out. The license does not consider it necessary to verify that the spring hangers are in the manufacturers recommended range of movement or within tolerance at the design hot load setting. This conflicts with NRC FSAR question E.2.413-16 (7) which states, in part, the "acceptance criterion on spring hanger movement does not preclude exceeding the variability limit." This matter is identified for further inspection as an open item (341/84-31-02).

No violations or deviations were identified.

3. Piping As-Built Walkdown - RHR Complex

a. General

During the inspection the inspector examined selected large bore safety-related piping 2½ inches in diameter and greater in the RHR Complex for as-built verification. Piping system attributes reviewed essential to the seismic pipe stress analysis included: pipe run geometry, support and restraint design, locations, function and clearance, and valve and valve operator locations, orientation, and weights. Assessment of the above attributes was to assure the plant's safety-related piping systems were constructed and seismically analyzed in accordance with the final design documents.

b. As-Built Verification - RHR Complex

The inspector selected As-Built Memorandum (ABM) packages from the two QA-I systems listed below for as-built reconciliation:

- . E11-00 Residual Heat Removal Service Water System
- . R30-00 Emergency Diesel Generator Service Water System

As-Built verification of QA-I systems consisted of the following design disclosure documents in the ABM packages:

- . (-2s) -- Hanger Location Isometrics
- . (-1s) -- Piping Isometrics
- . Individual Hanger Sketches

The contents of the ABM packages were reviewed for adequacy against the As-Built Summary Sheet Forms and for completeness of design documents, including title, identification number, and revision required to perform a pipe stress analysis evaluation of the walkdown data and as-analyzed conditions.

c. As-Built Walkdown - RHR Complex

The inspector performed field walkdowns of large bore piping and associated components randomly selected from the above QA-I systems. Comparison of actual system configurations with the detailed as-built documents were consistent with the as-built information contained in the ABM packages indicated below:

<u>ABM No.</u>	<u>Stress Report No.</u>	<u>Line No.</u>	<u>System</u>
0104 Revision A	SX-06	2176	R30-00
0109 Revision A	SX-10	2181	R30-00
0116 Revision A	EDG-11	2175	R30-00
0118 Revision B	SX-12	2182	R30-00
0126 Revision A	SX-14	2184	E11-00

In conjunction with the above ABM packages, the licensee assembled current piping isometrics (-1s); hanger location isometrics (-2s), and individual detailed hanger drawings, including latest Design Change Requests (DCRs), for system as-built verification walkdown by the NRC inspector and members of the licensee's staff.

d. As-Built Pipe Support Reconciliation

The inspector compared the actual field installation of the following safety-related pipe supports with the final detailed design/construction drawing to determine whether final design drawings reflected the as-built conditions:

Pipe Support No.

R30-2175-G07
R30-2175-G16
R30-2175-G17
R30-2176-G07
R30-2176-G29
R30-2176-G30
R30-2176-G32
R30-2181-G09
R30-2182-G01
R30-2182-G18
E11-2184-G05

During review and walkdown of the as-built pipe support drawings by the NRC inspector, the following observations were made:

- (1) Pipe support E11-2184-G05 (DCR No. P-4569, Revision B) installed field condition did not agree with the latest above DCR. The inspector informed the licensee of a 3 inch offset of the structural members attachment point to the centerline of existing embed. The allowable offset tolerance was 1½ inches by DECo's Specification 3071-31, when this support was installed and signed off by Townsend and Bottums (T&B) QC on November 9, 1981. A DCR was also required to be issued if the tolerance was exceeded. Also, the inspector noted that the piping which was supported by this support was being restrained, not only at it's intended location, but also 19 inches below it's intended restraint location. The pipe was hitting structural member item (A)-W6 x 15.5 of the support. The inspector concluded this to be an isolated incident, since he had reviewed a total of 92 as-built pipe support drawings done by Concourse Engineering Company (CEC) and found only this one case of either CEC or T&B's QC failing to document the attachment point offset on the embed. The licensee's corrective actions will be reviewed during a subsequent inspection. This matter is considered to be an unresolved item (341/84-31-03).

- (2) The design loading direction shown on S&L's detailed as-built pipe support sketches were not always commensurable with the hanger data table load listings on the as-built (-2) hanger location isometrics. Also, the type of support listed in the hanger data table does not always agree with the type of supports shown on the pipe support sketch. For example; the (-2) isometric specifies the type of support to be a strut and the type of support depicted on the detailed pipe support sketch is a U-Bolt. The inspector was informed by the licensee and S&L that the as-built pipe support design calculations and pipe stress calculations were not available at the jobsite. The inspector stated further review would be required at the S&L office. This matter is considered to be an unresolved item (341/84-31-04).

No violations or deviations were identified.

4. Open Items

Open items are matters which have been discussed with the licensee, which will be reviewed further by the inspector, and which involve some action on the part of the NRC or licensee or both. An open item disclosed during the inspection is discussed in Paragraph 2.b.

5. 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. Three unresolved items disclosed during the inspection are discussed in Paragraphs 2.a., 3.d.(1), and 3.d.(2).

6. Exit Interview

The inspection scope and findings were summarized with licensee representatives (denoted in Paragraph 1) on August 3, 1984. The licensee acknowledged the inspection findings without significant comment.