



Wayne H. Jens
 Vice President
 Nuclear Operations

Fermi-2
 6400 North Dixie Highway
 Newport, Michigan 48166
 (313) 586-4150

September 11, 1984
 EF2-69703

PRINCIPAL STAFF	
RA	DRP
D/RA	DRS
RC	DSS
PAU	OL
SG/	OL
ETC	OI
DRM	FILE

Mr. James G. Keppler
 Regional Administrator
 Region III
 U. S. Nuclear Regulatory Commission
 799 Roosevelt Road
 Glen Ellyn, Illinois 60137

Dear Mr. Keppler:

Reference: Fermi 2
 NRC Docket No. 50-341

Subject: Noncompliance at Fermi 2
Inspection Report 50-341/84-09

This letter responds to the items of noncompliance described in your Inspection Report No. 50-341/84-09. This inspection was performed by Messrs. P. D. Kaufman, R. L. Cilimberg, J. Muffett, D. E. Keating and I. T. Yin for 23 days from April 9, 1984 through July 2, 1984.

The items of noncompliance are discussed in this reply as required by Section 2.201 of the NRC's "Rules of Practice", Part 2, Title 10, Code of Federal Regulations.

The enclosed response is arranged to correspond to the sequence of items cited in the body of your report. The number for the items of noncompliance and the applicable criterion are referenced.

We trust this letter will satisfactorily respond to the noncompliances cited in your report. If you have questions regarding this matter, please contact Mr. Lewis P. Bregni. (313) 586-5083.

Sincerely,

cc: Mr. P. M. Byron
 Mr. P. D. Kaufman
 Mr. R. C. Knop
 Mr. J. Muffett

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THE DETROIT EDISON COMPANY

FERMI 2

NUCLEAR OPERATIONS ORGANIZATION

Response to NRC Report No. 50-341/84-09

Docket No. 50-341

License No. CPPR-87

Inspection at: Fermi 2, Newport Michigan, and Stone and
Webster Offices, Cherry Hill, New Jersey

Inspection Conducted: 23 days from April 9, 1984 through
July 2, 1984

Statement of Noncompliance 84-09-01, Criterion VI

10CFR50, Appendix B, Criterion VI, as implemented by DECO Quality Assurance Manual, Section 5.0.1, requires that documents be adequately controlled, and to assure documents, including changes thereto, prescribing activities affecting quality be reviewed for adequacy and approved for release by authorized personnel, and properly distributed.

Contrary to the above, Engineering Mechanics Technical Supplements CHOC-EMTS-10-1, Fillet Weld Design Criteria for Pipe Supports, was revised by Stone and Webster Engineering Corporation interoffice memorandum dated October 19, 1981, and Engineering Mechanics Division memorandum CHOC-EMDM-81-27, Design Criteria for Detroit Edison Company Category I, II, and III Pipe Supports, was being altered by Detroit Edison Company Tel-Con-Note dated December 2, 1983. The subject interoffice memorandum and tel-con did not receive the same level of review or approval as the procedures they revised nor were they controlled in accordance with Detroit Edison Company's Quality Assurance Procedure Manual, Section 5.0.1.

Corrective Action Taken and Results Achieved

Both Cherry Hill Operations Center (CHOC) EMTS 10-1 (currently superseded by CHOC EMDM 82-39) and CHOC EMDM 81-27 have been revised to incorporate all changes thereto which had been promulgated by methods such as tel-con notes, memoranda, and letters. These documents have been reviewed for adequacy, approved for release by authorized personnel, and distributed properly.

In addition, Stone and Webster Michigan Incorporated (SWMI) has performed an evaluation of all the Fermi 2 QA Level 1 large bore pipe support calculations in the SWMI scope of work and determined that the reported condition did not adversely affect the structural and functional adequacy of these pipe supports.

Corrective Action Taken to Avoid Further Noncompliance

The noncompliance resulted from a training (as opposed to a programmatic) deficiency. In order to prevent recurrence of the reported conditions, SWMI's Engineering Manager has issued instructions to appropriate personnel emphasizing the necessity of maintaining proper document control and document change control. In addition, as noted in the inspection report, Detroit Edison has informed other Fermi 2 contractors of the proper method for revising procedures.

RESPONSE TO NRC INSPECTION REPORT No. 50-341/84-09

Date When Full Compliance Will be Achieved

The corrective actions identified above have been completed.

Statement of Noncompliance 84-09-02, Criterion V

10CFR50, Appendix B, Criterion V, as implemented by DECO Quality Assurance Manual, Section 9.0.1, requires that activities affecting quality be prescribed by written instructions, procedures or drawings, and accomplished in accordance with these documents.

Contrary to the above, the following examples of failure to follow written procedures were identified:

- a. There was no evidence of a Design Change Request revision to DCR No. P-6289 which documents the offsetting of a structural member attachment point to the base plate, since the 1/8 inch relocation tolerance was exceeded. A DCR is required by Wismer & Becker Procedure WB-C-114 if the 1/8 inch tolerance is exceeded.
- b. A weld was not performed on pipe support E41-3167-G17 because a Work Assignment Sheet/Material Notice (WAS/MN), as required by DECO Procedure FEWP-9, was not prepared by the Field Engineering Group.
- c. Stone & Webster Procedure CHOC-EMDM-81-27 requires that pipe supports be designed to a deflection criteria, however some supports have been designed to a stiffness criteria.
- d. Some minimum fillet weld sizes were not consistent with the Seventh Edition - ASIC Manual-1970, as required by Stone & Webster's pipe support calculation reference cover sheets.
- e. A stress intensification factor of 1.3 for all fillet welds, as specified by Stone & Webster Procedure CHOC-EMDM-81-27, is not being applied to the fillet weld calculations.
- f. Other calculational deficiencies and inadequacies were observed in large bore pipe support designs. These were also caused by Stone & Webster personnel failing to follow design procedures.

Corrective Action Taken and Results Achieved

- a. Design Change Request No. P-6289, Revision H, dated May 22, 1984, was written to document the offsetting of the structural member attachment point to the baseplate. In addition, the design calculation for support

E11-3177-G23 was revised to reflect the offset of the structural member and to verify that the existing baseplate is structurally acceptable.

In addition, this support characteristic was included in the scope of the hanger reinspection program discussed in Section IV of the inspection report. Deviations identified in this program did not affect the structural and functional integrity of the pipe support. Therefore, this item is not considered to be a generic problem.

- b. On September 2, 1983, due to the stress report as-built reconciliation, DCR P3773, Rev. E, was written to revise the weld on support E41-3167-G17. The needed paper work (i.e., WAS/MN) to have construction completed was not issued promptly.

Edison had previously identified the possibility that this could occur and had instituted an activity to uncover missing items. This process involves comparing the hanger control system (HCS) computer printout against all "issued for construction" DCRs, DCNs, hanger sketches and WAS/MNs.

The above activity identified that the WAS/MN had not been issued. However, before the necessary paper could get issued, the NRC inspector discovered this item. The field work for this item was finished on April 23, 1984 and was QC accepted April 26, 1984.

- c. Detroit Edison, in a letter to SWMI dated August 31, 1982 (EF2-59,637) stated that SWMI need not be concerned with pipe support deflection where support stiffness is input in the pipe stress analysis calculations. Detroit Edison further stated that SWMI should ensure that support stiffness be maintained or increased if a support were to require modification. This direction was followed by SWMI. However, the letter was not incorporated into CHOC EMDM-81-27. As indicated in the reply to Noncompliance 84-09-01 above, CHOC EMDM 81-27 has been revised to incorporate this change.
- d. Minimum fillet weld sizes for the (SWMI) Fermi 2 large bore pipe supports meet the requirements of CHOC EMTS 10-1 which is referenced in the SWMI pipe support calculations. As mentioned in Noncompliance 84-09-01, CHOC EMTS 10-1 was changed by means of an interoffice memorandum to adopt the Eighth Edition of the AISC

Manual with regard to the minimum fillet weld sizes specified in Table 1.17.2A. Detroit Edison processed FSAR Change Notice No. 84-328, dated May 16, 1984, to indicate clearly that the Eighth Edition of the AISC Manual may be used for pipe support designs.

Further, on the subject of minimum fillet weld sizes, it should be noted that Wismer and Becker procedure WPS-7002, Interim Change 537, also specifies minimum fillet weld sizes. Some of these are less than those in AISC Table 1.17.2A. However, in accordance with the provisions set forth in the AISC commentary, these minimum weld sizes are acceptable based upon weld qualification tests. The required tests were performed in accordance with AISC and AWS requirements, and the results (acceptable minimum weld sizes) were documented in WPS-7002. This procedure change was processed in accordance with Edison's procedures and subsequently promulgated. WPS-7002 is referenced in CHOC EMDM 81-27.

SWMI has evaluated all of its Fermi 2 QA Level 1 large bore support calculations and determined that these supports comply with minimum weld size requirements.

- e. The 1.3 stress intensification factor specified in paragraph 4.9.4 of CHOC EMDM 31-27 has been deleted in the current revision of this EMDM. It was an overly conservative and unnecessary requirement which should have been removed from the EMDM when first recognized as such. The SWMI Engineering Manager has issued instructions to appropriate personnel emphasizing the need for issuing procedure changes in a timely manner.
- f. Detroit Edison directed SWMI to perform a special evaluation to verify that Fermi 2 large bore pipe support designs comply with applicable codes and design criteria and are structurally and functionally adequate. When technical/procedural concerns were identified, they were addressed and evaluated for specific and generic impact. Initially, the evaluation entailed an extensive review of a random sample of 125 of the Fermi 2 large bore pipe support calculations prepared by SWMI. These 125 pipe support calculations represented a cross section of the various types of supports, i.e. support design elements, computer programs, personnel, offices involved in developing the calculations, and the dates the calculations were prepared. The cross section provided a statistically valid basis for determining the acceptability of the pipe supports.

During the evaluation, every potential engineering concern observed by the evaluation team was reported as an action item to SWMI Management. SWMI then performed an evaluation of the affected pipe support calculations to determine if the support design was acceptable. SWMI also evaluated other pipe support calculations, as necessary, to determine if the reported condition existed elsewhere and, if so, whether the supports were still acceptable. This process led to the evaluation of the remainder (approximately 1600) of the large bore pipe supports at Fermi 2. The evaluation team verified and closed out each of the action items. The affected calculations and procedures have been revised or amended as appropriate.

In summary:

1. This evaluation demonstrated that the large bore pipe supports are structurally and functionally adequate.
2. The evaluation and engineering followup of the action items were thorough and covered all large bore pipe support calculations.
3. There were no hardware modifications resulting from the evaluation and engineering followup.
4. The three general causes of the findings were identified as incomplete technical and administrative direction, and insufficient attention to detail in the development of the calculations by the SWMI preparers.

Corrective Action Taken to Avoid Further Noncompliance

Appropriate engineering management action with respect to calculation preparers and supervisors was considered necessary. As such, S&W CHOC committed to provide additional training for SWMI calculation preparers and supervisors to re-emphasize the need for compliance with procedures and accuracy in the preparation of calculations.

In addition, S&W CHOC Engineering Assurance will perform an additional review of all new QA Level I pipe support calculations. To assure the effectiveness of the corrective actions, Detroit Edison will review a sample of SWMI calculations. This effort will continue until renewed confidence is achieved.

Date When Full Compliance Will be Achieved

SWMI has notified Edison that the training mentioned above will be conducted and completed in September 1984. The review of new calculations by Edison and SWMI will continue until renewed confidence is achieved. All other actions identified above have been completed.