DMB

Wayne H. Jens
Vice President
Nuclear Operations

Detroit Edison

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

February 16, 1985
EF2-70390

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

Dear Mr. Keppler:

References: (1) Fermi 2
NRC Docket No. 50-341

(2) Detroit Edison letter EF2-70237, same subject, dated January 18, 1985

Subject: Final Report of 10CFR50.55(e) Item No. 143 "Deviations of As-Built Plant from Design Documents"

On December 19, 1984, Detroit Edison's Mr. J. E. Conen, Engineer - Licensing, telephoned Mr. P. Pelke of NRC Region III, to report a potential deficiency concerning deviations in instrument racks from applicable instrumentation and controls (I&C) design drawings. Subsequently, this item was determined to be reportable under 10CFR50.55(e) and is identified as Item No. 143.

Description of Deficiency

Walkdown inspections have identified some deviations, principally non-functional in nature, between the design drawings and the electrical and I&C scope of the as-built plant. The deviations represent a small percentage of the applicable drawing details. Their importance is recognized and prompt corrective action is being taken. Details of the deviations are documented and available for review at the Fermi 2 site. Item No. 143 is considered reportable under 10CFR50.55(e) due to a number of identified drawing deviations, hardware discrepancies and the extent of the evaluation program required to analyze the individual deviations.

Analysis of Safety Implications

Some of these deficiencies are considered to have potential safety implications, in that if left undetected, they could have resulted in the loss of or incorrect function of a safety-related component or system.

Corrective Action

Corrective action is discussed below in two parts: correction of the deficiency and actions to prevent recurrence.

The following actions have been taken or are scheduled to correct the deficiency:

- Walkdown inspections to verify design document conformance with the as-built plant were performed on Quality Assurance Level 1 (QA-1) electrical and I&C equipment. The justification for the few items not included in the walkdown inspection is documented and available for review at the Fermi 2 site.

- The initial walkdown inspections addressed mechanical, electrical and I&C attributes for QA-1 instrument racks. Additional walkdown inspections addressed wiring drawings for other I&C equipment and electrical equipment. The remote shutdown panels, safety and non-safety related, and balance-of-plant wiring contained in QA-1 equipment were also included in the walkdown inspections.

- The deviations are documented and are being processed in accordance with Fermi 2 nonconformance reporting procedures. The corrective action process includes evaluation for testing or retest requirements.

- Drawing deviations, as described in Nonconformance Reports (NCRs) and Deviation Event Reports (DERs), will be posted against the applicable drawings before fuel load. The NCRs and DERs will be cleared as the drawings are updated.

- The evaluation results were categorized into three groups:

Category A - Component Operability

A deviation which, if left undetected, could result in the loss of or incorrect function of a safety-related component or system.

Category B - Operation/Maintenance

A deviation which, if left uncorrected, could result in impaired performance of the operations and maintenance personnel.

Category C - Other

Minor hardware or drawing discrepancy.

These evaluations are documented and available for review at the Fermi 2 site.

o The deviations are to be corrected on the following schedule:

Category A - The goal is fuel load, but no later than by Fermi 2 Technical Specification system operability requirements.

Category B - Before exceeding 5% power.

Category C - Under the Long-Term Program, the goal is for resolution by December 1986, but not later than the start-up following the first refueling outage.

Design document reconciliation will be accomplished by revision or the issuance of an As-built Notice, and field work will be performed to Nuclear Operations procedures.

The walkdown inspections, evaluations and the corrective actions per the above schedule address and resolve the identified electricial and I&C deviations.

- To further reduce the potential for operator confusion due to drawing deviations, the accuracy of the drawings in the Control Room (less selected balance-of-plant drawings) has been established and verified. Additionally, the lead information on Tagging Center CA-1 drawings has been established and verified. In conjunction with the foregoing, compatibility between component labels and the Functional Operating Sketches will be accomplished by system before the need for a system is required by the Fermi 2 Technical Specifications.

- The remaining balance-of-plant drawings in the Control Room will be verified to be accurate before exceeding 5% power, and the broader plant labeling program, as defined in Plant Order EFP-1066, will be completed under the Long-Term Program.

- To assist the users of Fermi 2 design drawings, a Lead Design Document Index (LDDI) was established to identify the accurate information on various types of drawings.

- Under the Long-Term Program, the need for the LDDI in conjunction with Tagging Center drawings and the same drawings in other locations, e.g., the Production Information Center, will be eliminated. In addition, an evaluation will be performed to determine the need for a drawing consolidation and update program.

Underlying causes of the deviations in the electrical and I&C drawings are: lack of sufficient detail in engineering direction which allowed interpretation by craft personnel performing the work and draftsmen incorporating design changes, improper incorporation of design change documents and lack of as-built requirements in the electrical and I&C procurement specifications.

The following actions have been taken or are scheduled to prevent recurrence:

- Checklists are used during the verification of the drawing revision process.

- Design changes are marked on the base configuration document.

- "Yellow-line" verification is performed by Nuclear Quality Assurance (NQA) on the design change documents during the in-process field inspection. Deviations from the "yellow-line" verification are identified and dispositioned before returning the equipment to service. The as-built information is communicated back to engineering.

- Design changes affecting QA-1 electrical and I&C internal wiring connections, issued after the walkdown of the affected equipment and before February 11, 1985 (start of the revised verification process), will be verified by NQA to assure the drawing reflects the plant configuration.

- Under the Long-Term Program, implementation of configuration management will be completed, and its effectiveness will be evaluated.

- A training program has been established and implemented for those personnel involved with the corrective actions described above. This training program and its implementation have been documented and are available for review at the Fermi 2 site.

If you have questions concerning this matter, please contact Mr. Lewis Bregni, (313) 586-5083.

Sincerely,

Wayne H. Jens

cc: P. M. Byron
R. C. Knop
R. C. DeYoung
J. M. Taylor
USNRC Document Control Desk
Washington, D. C. 20555