U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-341/84-25(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: June 5-15, 20-22, July 9-20, 1984

Inspectors: R. Hasse 8-8-84
Date

R. Smeenge 8-8-84
Date

Approved By: F. Hawkins, Chief 8/13/84
Quality Assurance Programs Section Date

Inspection Summary

Inspection on June 5-15, 20-22, July 9-20, 1984 (Report No. 50-341/84-25(DRS))
Areas Inspected: Routine, announced inspection by region-based inspectors of maintenance program; surveillance and calibration program; measuring and test equipment control; safety committee activities; test and experiments program; and design change and modifications program. The inspection involved a total of 155 inspector-hours by two NRC inspectors onsite.
Results: Of the six areas inspected, one item of noncompliance was identified (failure to follow procedures - Paragraph 2.f.(2)(b)).

## DETAILS

1. Persons Contacted

Detroit Edison

*L. Bregni, Licensing Engineer
*F. Agosti, Manager, Nuclear Operations
*W. Jens, Vice President, Nuclear Operations
*R. Lenart, Superintendent, Nuclear Production
*J. Leman, Maintenance Engineer
*W. Miller, Supervisor, Operational Assurance
*J. Wald, Principal QE, Operational Assurance
*D. Elloitt, Senior Engineer, Nuclear Production
*R. Sitter, Senior Nuclear Training Specialist, Nuclear Training
*G. Trahey, Director, Nuclear Quality Assurance
J. Hughes, PM and Surveillance Coordinator
G. Carter, Senior Engineer, Maintenance
M. Nelson, I & C Shop Foreman
E. Page, Nuclear Safety Engineer
C. Sexauer, General Supervisor, Administration
G. Preston, Operations Engineer

Nuclear Regulatory Commission

*P. Byron, Senior Resident Inspector

The inspectors contacted other licensee personnel as a matter of routine.

*Denotes those persons in attendance at the exit meeting held at the conclusion of the inspection on July 20, 1984.

2. Operational Program Areas Inspected

a. Maintenance

The inspector reviewed the licensee's maintenance program to determine whether the QA program relating to maintenance activities had been established in accordance with the Quality Assurance Program and 10 CFR 50, Appendix B requirements. The following items were considered during this review: written procedures had been established for initiating requests for routine and emergency maintenance; criteria and responsibilities had been designated for performing work inspection of maintenance activities; provisions and responsibilities had been designated for performing testing following maintenance work; methods and responsibilities for equipment control had been clearly defined; documentation requirements have been established to identify the persons who performed the maintenance, the replacement parts used, the corrective action taken, and the root cause of the equipment failure; administrative controls had been established for controlling special processes; and adequate maintenance procedures had been prepared for recurring maintenance tasks.

The inspector also reviewed the licensee's preventive maintenance program to verify that a written program had been established which included responsibility for the program, a master schedule for preventive maintenance, and documentation requirements. Additionally, implementation of the licensee's maintenance program was reviewed.

(1) Documents Reviewed

- 12.000.15, "PN-21 (Work Order) Processing," Revision 6
- 12.000.12, "Tagging and Protective Barrier System," Revision 4
- 12.000.43, "Verification of Correct Performance of Operating Activities," Revision 0
- 12.000.53, "Guidelines for Determination of Safety Related Systems, Equipment, and Procedures," Revision 1
- 12.000.55, "In Process Material Control," Revision 0
- 12.000.38, "Material Handling and Storage," Revision 4
- 12.000.29, "Material Issue and Return," Revision 4
- 12.000.13, "Radiation Work Permits," Revision 3
- 12.000.48, "Plant Housekeeping," Revision 1
- 12.000.17T, "Interim Preventive Maintenance Program," Revision 2
- 12.000.60T, "Grinding, Cutting, and Welding," Revision 0
- 41.000.18T, "PM Program Guidelines," Revision 3
- MI-M251, "PN-21 (Work Order) Preparation," Revision 1
- MI-M245, "Administrative Instruction - Criteria for Technical Review," Revision 1

The inspector also reviewed 24 maintenance procedures and instructions and five completed work orders.

(2) Results of Inspection

Administrative Procedure 12.000.15, "PN-21 (Work Order) Processing," provides the overall administrative control of maintenance activities. Maintenance Instruction MI-M251, "PN-21 (Work Order) Preparation," provides additional directions for preparation of work order packages. Other interfacing procedures are listed in Paragraph 2.a.(1).

The maintenance program contained the following major provisions:

- Equipment is released for maintenance by the Nuclear Shift Supervisor. Proper removal from service is independently verified via a "System Alignment Verification Sheet."

- A "Maintenance Inspection Checklist" is included in the Package. It lists maintenance, QC, and QA inspections; holdpoints; and acceptance criteria.

. Spare parts and materials to be used are specified in the package. Spare parts are traceable to the purchase order.

. Cleanliness requirements and controls are specified.

. Post maintenance testing requirements are specified (as determined by the Operations Engineer).

. Controlled copies of maintenance procedures or instructions and other required documents are included in the package.

. System alignment is independently verified prior to return to service.

. Cause of the malfunction is recorded and included in maintenance history file.

. Provisions are also made for radiation work permits, fire watches, etc., as appropriate.

The inspector reviewed a sample of maintenance field procedures and instructions to verify the adequacy of instructional content and scope of coverage. The content review was conducted against the guidelines presented in the appendix to Chapter 14 of NUREG/CR-1278. The adequacy of scope of procedural coverage was determined by using the guidelines of Appendix A to Regulatory Guide 1.33. Both procedural content and scope of coverage were adequate.

There are three items requiring further review by the NRC:

. Vendor manuals are not presently controlled. The Nuclear Engineering Department is currently reviewing and approving these documents. They will then be controlled as design documents. Pending completion of this effort by the licensee and NRC review, this is considered an open item (341/84-25-01).

. Torque switch settings for motor operated valves will be determined in part by results of pre-operational testing which is currently in progress. Incorporation of this information into the maintenance program is considered an open item pending NRC review (341/84-25-02).

. An adequate assessment of maintenance program implementation could not be performed during this inspection. The adequacy of program implementation is considered an open item pending further NRC review subsequent to power operation (341/84-25-03).

The preventive maintenance (PM) program was also examined. The inspector was satisfied that an adequate program had been established. PM tasks are prioritized based on a hardware importance/task importance matrix.

The inspector did have one concern. PM tasks are issued to the performing organization on a monthly basis by the PM coordinator (PMC). Tasks not completed during the month are cancelled and returned to the PMC. The PMC then decides whether the task is to be reissued for the following month, scheduled later, or cancelled until the next due date. The inspector was concerned that the program contained no constraint that higher priority tasks must be completed prior to lower priority tasks (assuming resource availability). This concern was discussed with the PMC who assured the inspector that the intent was to always complete higher priority tasks first, unless appropriate resources were unavailable. He agreed to incorporate this constraint into the appropriate PM procedures. The inspector has no further questions in this area.

No items of noncompliance or deviations were identified.

b. Surveillance Testing and Calibration Control

The inspector reviewed the program for the control and evaluation of surveillance testing, calibration, and inspection required by Section 4 of the Technical Specifications and Inservice Inspection of Pumps and Valves as described in 10 CFR 50.55a(g). Calibration of safety-related instrumentation, not specifically controlled by the Technical Specifications was also reviewed. The following items regarding the surveillance testing program and the calibration of safety-related instrumentation were considered during this review: master schedules for surveillance testing, calibration, and inservice testing had been established; responsibility had been assigned for the maintenance of the master surveillance schedule; formal requirements for the conduct of surveillance test, calibration, and inspections in accordance with approved procedures had been established; responsibility to assure that required schedules were satisfied had been established; and calibration requirements for non-technical specification safety-related instruments had been established.

(1) Documents Reviewed

- 12.000.18, "Surveillance Program," Revision 4
- 12.000.61, "Inservice Testing Program for Pumps and Valves," Revision 0
- 41.000.20, "Surveillance Program Guidelines," Revision 1
- 41.000.22, "Inservice Testing Program for Pumps and Valves - Implementation and Control," Revision 0
- DET-16-0201, "Fermi 2 Inservice Testing Program"
- "Surveillance Coverage of Technical Specifications," Revision 4
- 41.000.11, "Process Instrumentation Calibration," Revision 6

The inspector also reviewed 22 surveillance and calibration procedures.

(2) Results of Inspection

Administrative Procedures 12.000.18, "Surveillance Program," and 12.000.61, "Inservice Testing Program for Pumps and Valves," provide the administrative controls for the technical specification related surveillance testing and calibration program. Non-technical specification related surveillances and calibrations are included in the preventive maintenance program. A review of these procedures indicated an adequate program had been established.

The inspector reviewed the surveillance schedule (SURVTRAC) and compared the frequency required for a sample of surveillances against the current draft of the technical specifications. No problems were identified.

A sample of surveillance and calibration procedures were reviewed to verify instructional adequacy, adequacy of content, and consistency with the draft technical specifications. The following items require resolution:

. Many of the procedures have not incorporated acceptance criteria. This is considered an open item to be completed by the licensee and reviewed by the NRC prior to fuel load (341/84-25-04).

. The acceptance criteria in Surveillance Procedure 34.000.41, "18 Month Suppression Pool Inspection" states that "no defects which would result in loss of suppression chamber integrity exist." The inspector questioned whether the acceptance criteria were sufficiently quantitative or if the responsible inspector would have adequate training to make such a judgement. The licensee agreed to address the issue. This is considered an open item pending further NRC review (341/84-25-05).

. Surveillance Procedure 44.010.124, "RPS-APRM A Channel Functional Test" stated in Section 6.2 that "this section must be performed weekly in Conditions 2, 3, 4, and 5." Tables 4.3.1.1-1 and 4.3.6-1 of the draft technical specification state that the test must be performed weekly in Conditions 2, 3, and 5. The inspector also noted several inconsistencies in references to technical specifications (e.g., wrong specification number). The licensee has implemented a documented systematic review of these surveillance procedures to assure such inconsistencies are detected and corrected. This is considered an open item to be reviewed by the NRC in a future inspection (341/84-25-06).

No items of noncompliance or deviations were identified.

c. Measuring and Test Equipment (M&TE)

The licensee's M&TE program was reviewed to verify conformance with regulatory requirements and operational QA program commitments. The inspection consisted of a review of procedures, personal interviews, review of M&TE usage, a review of calibration records, and inspection of M&TE storage facilities.

(1) Documents Reviewed

- 31.000.04, "Control of Calibrated Maintenance Equipment," Revision 8
- 31.000.11, "Calibrated Maintenance Equipment Numbering Sequence," Revision 3
- 31.000.12, "Handling, Inspection, and Recalibration of Reference Standards," Revision 1
- 31.000.13, "Scheduling of Test Equipment Calibration," Revision 2
- 31.000.15, "Specification for Test Equipment Calibration," Revision 1
- 31.000.16, "Records of Maintenance Calibration," Revision 2
- 41.000.05, "Control and Storage of Test Equipment," Revision 10
- 41.000.06, "Calibration of Reference Standards," Revision 2
- 41.000.08, "Calibration of Measuring and Test Equipment," Revision 8
- 41.000.17, "Scheduling of Test Equipment Calibration," Revision 2
- History Files for:
  - TW-242, Torque Wrench
  - CR-226, Hydraulic Crimper
  - DI-50040, Dial Indicator
  - FIC-2523, Pressure Gauge
  - FIC-1502, Multimeter
  - FIC-1077, Voltmeter

(2) Results of Inspection

The maintenance and technical engineering (I&C) organizations maintain their own M&TE, calibration laboratories, and control programs. A review of the programs, calibration records, equipment usage records, and calibration specifications indicated that the programs met regulatory requirements and were properly implemented.

No items of noncompliance or deviations were identified.

d. Safety Committees

The activities of the on-site and off-site safety review committees were inspected to determine if they were functioning in accordance with the draft technical specifications. The inspection consisted of a review of committee procedures and meeting minutes.

(1) Documents Reviewed

. 12.000.04, "On-site Review Organization," Revision 5
. NE-1.4, "Nuclear Safety Review Group," Revision 2
. NE-1.4.1, "NSRG's Review of Written Safety Evaluations," Revision 0
. NE-1.4.2, "Process for Document Review by the NSRG Membership," Revision 0
. QA-84-1271, Memorandum, W.E. Miller, Supervisor - Operation Assurance to C. Sexauer, General Supervisor - Administration dated July 18, 1984.
. On-site Review Organization (OSRO) meeting minutes for meeting Nos. 114 (June 12, 1984) and 115 (June 26, 1984).
. Nuclear Safety Review Group (NSRG) meeting minutes June 7, and January 18-19, 1984.

(2) Results of Inspection

The OSRO conducts its activities in accordance with Procedure 12.000.04, "On-site Review Organization." This procedure had recently been reviewed by the QA organization to assure that it was consistent with the technical specifications and that implementing procedures existed for each OSRO charter element. The review identified several areas where implementing procedures could be more explicit. Also, the inspector noted that the method used by the OSRO to "review normal plant operations to detect potential hazards to nuclear safety" (Technical Specification 6.7) had not been explicitly addressed. The licensee agreed to address these items via procedure revision as appropriate. Completion of these procedure revisions is considered an open item pending NRC review (341/84-25-07).

A review of selected OSRO meeting minutes indicated that the committee was discharging its responsibilities and properly documenting its activities.

The NSRG conducts its activities in accordance with Procedure NE-1.4, "Nuclear Safety Review Group," and two supporting procedures. A review of these procedures and selected meeting minutes indicated that the NSRG was constituted and conducting its activities in accordance with the technical specifications.

No items of noncompliance or deviations were identified.

e. Tests and Experiments

The inspector reviewed the licensee's program for handling tests and experiments involving safety-related components, systems and structures or modes of operation different from those described in the FSAR.

(1) Documents Reviewed

POM 12.000.04, "On-site Review Organization," Revision 5
POM 12.000.07, "Plant Operations Manual Procedure"
POM 12.000.11, "Engineering Evaluation Requests," Revision 2
POM 12.000.64, "EDP Implementation Procedure," Revision 1
NE-3.1, "Safety Evaluations"
NE-3.8, "Preparation, Review and Approval of Scope Documents," Revision 1
NE-3.9, "Preparation, Review and Approval of Engineering Design Packages," Revision 0

(2) Results of Inspection

Proposals for conducting plant tests and experiments may be initiated by Nuclear Engineering (NE) or requested by Nuclear Production (NP) using an Engineering Design Package (EDP). The EDP is used as the vehicle for obtaining the requisite review and approvals. One of the review groups, the On-site Review Organization (OSRO), reviews all proposed tests and experiements that affect nuclear safety. The OSRO review assures that the tests and experiments do not involve an unreviewed safety question, that they are technically accurate, and that the conduct of the test or experiment will not adversely affect the operation of the plant, system, or any related equipment. If an unreviewed safety question or technical specification change is identified, the work package is sent to the Nuclear Safety Review Group (NSRG) for review and submittal for NRC approval. The OSRO Chairman signs off approval of the work after the NSRG and NRC approvals are obtained. A written safety evaluation, prepared by the Plant System Engineer in accordance with NE-3.1, is reviewed by OSRO and provided with the work package submitted to NSRG.

The procedure(s) for conducting the test or experiment is identified in the EDP package. Test procedures are approved, revised and controlled in accordance with POM 12.000.07.

No items of noncompliance or deviations were identified. Because the test and experiment program is not required until the facility license is issued, program implementation was not evaluated at this time. This portion of the inspection will be deferred and remain an open item until after the plant is in operation (341/84-25-08).

f. Design Changes and Modifications

The inspector reviewed the licensee's program for handling design changes and modifications to determine if the program met regulatory requirements and QA program commitments.

(1) Documents Reviewed

POM 12.000.04, "On-site Review Organization (OSRO)," Revision 5
POM 12.000.11, "Engineering Evaluation Request," Revision 2
POM 12.000.25T, "Interim Temporary Modification Procedure," Revision 3
POM 12.000.49, "Document Control and Records Management," Revision 2
POM 12.000.64, "EDP Implementation Procedure," Revision 1
NE-3.7, "Submittal, Evaluation and Disposition of Potential Design Changes," Revision 0
NE-3.8, "Preparation, Review and Approval of Scope Documents," Revision 1
NE-3.9, "Preparation, Review and Approval of Engineering Design Packages," Revision 0
NOP-106, "Nuclear Operations Design Change Program," Revision 0
NOP-301, "Management Control Board," Revision 0

(2) Results of Inspection

(a) Design Change Program

Potential design changes are submitted to Nuclear Safety and Plant Engineering for evaluation by Nuclear Engineering prior to preparation of a Engineering Design Package (EDP). The request may be submitted formally by an Engineering Evaluation Request (EEP) or by other documents generated within the Nuclear Operations Organization. The Engineering Design Tracking Program (ENDTRAP) is to be used to log and monitor the status of engineering activities involved with the evaluation and disposition of potential design changes and plant modifications.

When the potential change has been evaluated to be required, a EDP is prepared. The EDP is a comprehensive design document prepared and approved by Nuclear Engineering to provide authorization to construct or implement a design change or plant modification. Any changes with (1) a cost impact greater than a specified amount, (2) personnel exposure greater than or equal to 10 man-rem, (3) which affects safety of the plant in a negative way, (4) or causes an amendment to the plants operating license are approved by the Management Control Board (MCB). All other changes are approved by the Director of Nuclear Engineering after the EDP review by the plant organization is completed. The change is authorized and instructions generated to implement a design change or plant modification by the EDP implementation package. The program provides methods to maintain accurate records of the as-built system's configuration.

The On-site Review Organization (OSRO) reviews all modifications and Technical Specification changes in accordance with 10 CFR 50.5[illegible]. The OSRO also reviews deviations from the approved Fire Protection Guidelines. Those changes which involve unreviewed safety questions or cause a deviation in the approved Fire Protection Guidelines are reviewed and submitted to the NRC by the Nuclear Safety Review Group (NSRG).

Nuclear Engineering is responsible for the plant design. System and Plant Engineering prepares a written safety evaluation of the change. The NSRG conducts an independent review of the written safety evaluation. A Technical Engineer (TE) is assigned for each change. The TE has the overall responsibility for review and implementation of the change. He designates a Plant Support Engineer (PSE) who is responsible for preparing the EDP, tracking progress of the review, interfacing with the reviewer, and preparing the EDP implementation package. The TE also assigns a technical reviewer to provide an independent review of the implementation package for technical accuracy and completion.

The procedures specify licensee organizations which are required to perform reviews of EDPs. The OSRO provides for review in-house or by company consultants, when required.

Nuclear Engineering is responsible for controlling changes to approved design change documents. Document Control is responsible for posting design changes and controlled distribution of documents and changes. Their objective is to do so within 24 hours of receipt of a change. Individual recipients are responsible for positively associating design changes with those design documents they receive under controlled distribution. Information Systems internal reviewers periodically verify current status and accuracy of documents within Design Control and its satellites and among recipients of "CONTROLLED/FOR CONSTRUCTION" documents.

System and Plant Engineering is responsible for securing necessary inputs to develop the scope of the EDP. The PSE interfaces with other plant groups while preparing the EDP implementation package. The PSE also routes any information on new equipment to the appropriate group for Equipment History preparation. The completed EDP implemented package is assigned a file number by the PSE and forwarded to the Records Center for storage in the permanent plant file.

Work to be performed and post modification testing is identified on a PN-21, work order. The responsible work group coordinates any problems with the PN-21 task description or EDP contents with the PSE who will effect any necessary changes. When the work is completed, the PSE will review the PN-21 packages, including post modification test data.

The number of EDPs processed or being processed at this time is minimal. Only two have been completed and forwarded to permanent plant files. Three packages in final review were examined by the inspector, only one of the three packages was safety-related. The three packages were processed in accordance with the program procedures.

Because of the limited number of EDPs processed, the implementation of the licensee's design change program will remain an open item for future inspection (341/84-25-09).

(b) Temporary Modification Program

A temporary modification (TM) can be made only if (1) the TM is identified in an approved test or surveillance procedure, or (2) it is necessary to permit other than normal operation of systems or components. OSRO is responsible to review all proposed changes or modifications to systems or equipment that affect safety. Abnormal operation TMs also require approval of the Joint Test Group (JTG), the Nuclear Shift Supervisor (NSS), and the Tagging Coordinator. The Staff Supervisor in charge ensures that careful thought is given to the TM to ensure that interfacing plant equipment is not adversely affected and personnel safety is not jeopardized. He consults with the Operational Engineer, as necessary, when the installation of a TM will affect normal system operation.

The TM log is a two part log book maintained by the Tagging Coordinator. One part lists TMs and the other part has a separate page for each system to identify all TMs against that system. The NSS periodically reviews the TM log.

Visual independent verification of safety-related work, by qualified individuals other than the person installing or removing the TM, is performed within two hours during regular shifts. During off-shift, the independent verification begins no later than two hours after the beginning of the next regular workshift.

Retest of a system/component after removal of a TM is identified on the TM record. After the system/component is restored to its normal configuration, the initiator directs the responsible group to perform the retest. The person responsible for retest signs the record when the tests have been completed, the system/component is returned to normal, and the NSS signs the record when he accepts the system/component for service.

Paragraph 6.2.12 of POM 12.000.25T requires the Tagging Coordinator (TC) to issue, on the first Monday of each month, a notification of all overdue TMs. The initiator is requested to review the need for the TM and respond to the TC with a revised estimated removal date.

The records for five open TMs were selected at random from the TM log in the Tagging Center. The records were reviewed and tagging at the modification was verified. The results of the review and verification are as follows:

- TMR 587 (Lifting of 56 leads) - The TM record indicated that all but two leads had been returned to normal. In fact, the two leads had been reconnected and the tags were removed. The TM record and TM log did not reflect the actual modification status.

- TMR 594 (Lifting of 53 leads) - The TM record indicated that all but three leads had been returned to normal. The tags remaining on the modification were consistent with the records.

- TMR 265 - The TM record indicated that the tags had been removed from the modification and the sign-off indicated that the system had been returned to normal on April 28, 1984. In fact, the tags had been removed and the modification returned to normal. The TM log did not reflect the actual modification status.

- TMR 470 (Installation of a screen in an inlet system of the diesel generator) - The TM record indicated that the system had been returned to normal on April 23, 1984. In fact, the system had been returned to normal and the tags had been removed. The TM log did not reflect the actual modification status.

- TMR-482 (Lifting leads at two relays) The TM record did not indicate that the system had been returned to normal. Two tags remained on the modification; however, the tags were identified as TMR 16095. TMR 16095 specified the modification for the preoperational phase rather than during construction. TMR 482 remained open in the TM log, although it had been superceded by TMR 16095.

These failures of the licensee to maintain a correct and up-to-date Temporary Modification Log in the Tagging Center, as required by Paragraph 5.3 of POM 12.000.25T, is considered to be an item of noncompliance with 10 CFR 50, Appendix B, Criterion V (341/84-25-10).

Corrective Action for this noncompliance was immediately implemented by the licensee. Quality Surveillance Finding QA-QSF-84-120 was issued by the Operational Assurance department. The corrective action specified that all TMs will be reviewed with the initiator. If it is determined that the TM is still necessary, a new TM with new tagging will be initiated. TMs which are no longer necessary will be closed out by removing any outstanding tags and returning the system to normal. All TMs remaining after this 100% review will be entered into a new log. This action is to be completed within 30 days. Review of the corrective action will be perused during normal routine inspections.

3. 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. Open items disclosed during the inspection are discussed in Paragraphs 2.a.(2), 2.b.(2), 2.d.(2), 2.e.(2), and 2.f.(2)(a).

4. Exit Meeting

The inspectors met with licensee representatives (denoted in Paragraph 1) at the conclusion of the inspection on July 20, 1984, and summarized the scope and findings of the inspection.