U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-341/85031(DRP)

Docket No. 50-341 License No. NPF-33

Licensee: Detroit Edison Company
2000 Second Avenue
Detroit, MI 48226

Facility Name: Fermi 2

Inspection At: Fermi Site, Newport, MI

Inspection Conducted: June 17 - June 21, 1985

Inspectors: R. L. Hague

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7/9/85
Date

Inspection Summary:

Inspection on June 17 - June 21, 1985 (Inspection Report No. 50-341/85031(DRP))
Areas Inspected: Special announced operational assessment team inspection of the Fermi 2 facility in the areas of Conduct of Operators, Maintenance, Surveillance, Health Physics, Administrative, and coordination between these groups. The inspection involved 140 hours on site by four Resident Inspectors including 20 hours on backshifts.
Results: No violations, deviations, or significant safety concerns were identified.

DETAILS

1. Persons Contacted

*W. Jens, Vice President, Nuclear Operations
*F. Agosti, Manager, Nuclear Operations
*R. Lenart, Superintendent Nuclear Production
*J. Nyquist, Assistant to Superintendent Nuclear Production
*G. Trahey, Director Nuclear Quality Assurance
*R. Eberhardt, Rad Chem Engineer
*C. Sexauer, Nuclear Production Administrator
*J. Leman, Maintenance Engineer
E. Preston, Operations Engineer
*K. Earle, Superintendent Licensing
*E. Griffing, Assistant Manager Nuclear Operations
*J. Bobba, Assistant Rad Chem Engineer
*F. Abramson, Assistant Operations Engineer
*J. Plona, Technical Engineer
*L. Bregni, Licensing Engineer
*J. Conen, Licensing Engineer

The inspectors also talked with and interviewed members of the Operation, Maintenance, Surveillance, and Health Physics Sections.

2. Scope

The purpose of the Operational Assessment Team inspection was to determine the readiness of the Fermi 2 facility for full power operation by evaluating the effectiveness of management controls over operational, surveillance testing, maintenance, and health physics activities. The methods of evaluation used included procedure review, personnel interviews, document review, facility tours, and direct observation of activities. Particular emphasis was focused on the interfaces among the various groups for planning, accomplishment, and review, and on the plant management oversight and review of these activities.

3. Operations

The inspectors spent many hours in the control room observing operations and speaking with the control room staff. The operations staff acted in a professional and knowledgeable manner. Alarms were responded to in an appropriate and timely fashion. The number of nuisance alarms has been reduced and should be reduced further as a result of work requests in progress. The current number of nuisance alarms appears not to be adversely affecting the operators.

The operating crews worked well together with frequent interchanges between the Nuclear Shift Supervisor (NSS), Nuclear Assistant Shift Supervisor (NASS), Nuclear Supervising Operators (NSOs), Nuclear Power Plant Operators (NPPOs) and Nuclear Assistant Power Plant Operators (NAPPOs). Also shift meetings were held after the individual shift turnovers for better communications.

Shift turnovers were well executed and followed the procedure. The procedure "Shift Operations and Control Room" was reviewed by the inspector and appears adequate. One strong point of the turnover is that the on-coming and off-going control room NSOs walk down all of the panels together and discuss any abnormalities.

Authority and responsibilities of the operations staff are defined in a portion of the "Nuclear Production Organization" procedure. The staff appears to be familiar with the procedure and acts accordingly.

Operation logs are governed by "Operation Logs and Records" and "Out-of-Specification Log" procedures. The inspector noted, while reviewing the Out-of-Specification Log (OSL) procedure, that it allowed not maintaining the OSL for a system outage which could lead to a violation of a Technical Specification (TS) time limit. The licensee will look at section 5.6 of this procedure to clarify the intent of not listing each component for an entire system outage in the OSL but listing the system to ensure that the time limitations are known and acted upon. Other than this, the OSL system appears adequate to track equipment that is in a TS time requirement and those that are required prior to a mode change. The log is kept in the NSS office. The staff is required to review this on a specified frequency dependent upon their positions. The control room operator is also required to be cognizant of his equipment status and to record pertinent information in the unit log.

Independent verification is governed by the "Verification of Correct Performance of Operating Activities" procedure. Due to the importance of independent verification, the inspector was concerned by this statement contained in the procedure: "Independent Verification will not be performed if it will result in an estimated personnel radiation exposure in excess of 0.1 man-rem". The licensee expeditiously drafted a procedure change following discussions with the inspector. The change will allow the NSS to review alternate methods for verification for a particular situation in order to maintain exposure as low as is reasonably achievable while ensuring system operability.

Through discussions and observations it appears that the operations staff has good communications with the other working groups at Fermi 2. The operators are kept informed of activities that may affect the unit by the maintenance and surveillance groups. The control room NSO must give permission for persons to enter the area immediately in front of the control room panels, which keeps the NSO in charge of who is working on his panels and for what reason. This reduces the chances of someone not belonging in this area from accidentally coming in contact with the control panels.

The conduct of control room operations appears to be adequate to accomplish a smooth running operation. Other than the two weaknesses previously noted, the inspectors found the operations program adequate and ready to support plant power operations.

4. Maintenance

The inspector reviewed the maintenance organization, maintenance procedures, and various completed work orders to evaluate the readiness of the Maintenance Department to support full plant operation.

The inspection included the following general areas:

(a) The Preventive Maintenance and Inservice Inspection Programs

(b) The Equipment History Program

(c) Coordination and Communication Between Departments

(d) Plant Modification Program

(e) Maintenance Activities

The licensee's maintenance organization reports to the Superintendent, Nuclear Production. All maintenance activities are under the direction of the Maintenance Engineer. The organization includes engineering and technical personnel as well as quality assurance and craft personnel. The licensee believes this type of organization will provide for solid technical and engineering support during the development of maintenance work packages as well as during the actual work activities. The inspector interviewed several maintenance personnel and reviewed the licensee's training program for maintenance personnel.

The inspector reviewed the licensee's programs for preventive maintenance and those portions of the Inservice Inspection Program that could be considered preventive maintenance. The licensee has a formal computerized Preventive Maintenance Program for safety related and other important equipment. For ASME code and major safety related components, the Inservice Inspection Program and the Technical Specifications required survillances are utilized to assure component reliability. For these components, the preventive maintenance activities consist of minor inspections and lubrication.

The licensee's program for equipment history is identified as the "Nuclear Plant Reliability Data System (NPRDS) and Equipment History Data" and is included as part of work package processing in Maintenance Instruction MI-M251. The program was developed based on the licensee's commitment to the industry-wide NPRDS information system. Equipment history data is developed prior to work order closure by the maintenance personnel and is stored via a computerized system.

The inspector evaluated coordination and communication between departments based on discussions with licensee personnel and other inspectors. The basic coordination and communications between departments is considered to be adequate. Various licensee personnel, however, did express a need for improvement in both areas. Maintenance work packages, for example, were considered to frequently require unnecessary or wasteful tasks.

The maintenance support group also was concerned about not getting sufficient feedback on the quality of the procedures used on the jobsite. Communication between Maintenance and Operations personnel was also expressed as a concern in that various maintenance activities could be expedited if both the Operations Shift Supervisor and the Maintenance personnel took extra effort to communicate more freely. The inspector considers the comments on communications to be generic to all licensees and that the effort for improvement should be an ongoing effort throughout the life of the plant.

The inspector reviewed the licensee's procedures for Maintenance and Modification Package Development (12.000.54) and Work Order Processing (12.000.15) and discussed the various steps for development and completion with licensee personnel. Specific areas investigated included the licensee's methods for processing 10 CFR 50.59 safety evaluations for temporary (Procedure 12.000.25) as well as permanent modifications. The inspector also evaluated the procedures utilized to establish quality control hold points, and the procedures utilized to control work accomplished by contractors. In addition, the inspector reviewed the methods utilized to determine and specify post maintenance testing requirements and the methods used to process changes to maintenance and modification procedures based on changes to vendor technical documents. The inspector considers the licensee's overall program for processing modifications to be adequate. Two specific areas of concern were identified with potential areas of concern in two additional areas. The two specific areas of concern were identified during a review of completed maintenance/modification packages discussed in the following paragraphs. Two potential areas of concern are the timeliness of package development to support urgent work and the procedures to be utilized to assure that drawing and procedure revisions and operator training are completed in a timely manner following changes to plant systems or components. Due to time limitations the inspector was unable to conduct a comprehensive review of these areas. They are identified here to allow the licensee the opportunity to evaluate the existing methods to assure that Operations personnel are made aware of operational changes to plant equipment and to provide them with updated system drawings and procedures in a timely manner.

Due to ongoing operational consideration (initial criticality) the inspector was unable to directly observe significant safety related maintenance activities. The inspector opted, therefore, to review various completed safety related work orders. Seventeen work orders were reviewed which included maintenance activities as well as plant modifications. As previously noted, two specific areas of concern were identified.

The first concern was related to the size of various work packages. A recent work order for maintenance of the control rod drives became large enough to make the procedure difficult to utilize effectively. Required technical reviews of the completed package also became difficult to accomplish. Discussion with the licensee noted that the licensee is aware of this problem and is investigating methods of improvement.

The second item of concern was in the area of system operability testing following maintenance or modification. The post maintenance testing program performed by the Maintenance Department as part of the work package is often limited to specific component tests such as setting relief valves or pump motor resistance readings and rotational checks. Six of the seventeen work packages reviewed did not clearly indicate the component/system operability testing accomplished to assure that the equipment would in fact operate correctly when returned to service. For example, three work orders (Nos. 567978, 555626 and 818262) did not clearly document that piping joints received a leak check of mechanical or welded joints at system operating pressure. For three additional work orders (Nos. 814617, 814618 and 370900) the inspector was unable to verify that the specified testing constituted an adequate system operational test.

The licencee's maintenance organization is considered to be adequate to support plant power operation.

5. Surveillance

The scope of the surveillance inspection included scheduling (tracking), adequacy of procedures, responsibility/authority, and how the surveillance program interfaced with operations.

Fermi procedure 12.000.18 Surveillance Program was reviewed. This document detailed the responsibilities of the individuals involved in the program. Both responsibilities and authority were clearly detailed. The surveillance program is handled in a centralized manner. The Surveillance Performance Coordinator is charged with the following duties:

(a) Schedule all routine surveillances.

(b) Inform appropriate section heads of surveillances to be performed.

(c) Adjust and revise schedules as necessary.

(d) Provide a list of surveillances needed to be performed prior to mode changes.

The surveillances are reviewed prior to use to ensure that procedures and drawings are correct. The surveillances are reviewed upon completion to ensure that the surveillance was performed according to procedure. The following procedures were also reviewed and no weaknesses were noted:

41.000.03 Instrumentation Calibration Records
41.000.05 Control and Storage of Test Equipment
41.000.06 Calibration of Reference Standards
41.000.08 Calibration of Maintenance and Test Equipment
41.000.11 Calibration of Process Instrumentation
41.000.16 Response Time Program
41.000.17 Scheduling of Test Equipment Calibration
42.309.01 Weekly 130/260 VDC Battery Check

The inspector verified that good communications existed between the surveillance team and the operating department by direct observation of the following surveillances:

44.010.101	SRM Functional Tests
44.010.57	Valve Timing Tests
44.030.69 Rev 3	ECCS Reactor Recirculation Pump B dP, Division I, Functional Test B31-NG14A and B31-N613A
43.401.206	Local Leak Rate Testing for Airlock X-2
24.425.02	Containment Airlock Operability Test
43.401.378	Local Leak Rate Test for Penetration X-206A
43.401.379	Local Leak Rate Test for Penetration X-206D

These procedures contained prerequisites, cautions, acceptance criteria, and instructions to ensure systems or components were restored to the original lineup upon completion of the surveillance, including independent verification were applicable.

The cover sheet that accompanies the surveillance package has check offs/signature blocks for indicating that the surveillance results were in conformance with Technical Specifications and that completed surveillances were reviewed. If a Technical Specification related surveillance failed, the shift supervisor is notified immediately so that compensatory measures can be started.

The strong points of the program are the good communications, the ability to quickly correct problems with surveillance procedures, and the computer tracking of schedules. A minor drawback in the program was that while communications were good, in some areas establishing communications was inconvenient. This matter was discussed with the licensee staff. The licensee's surveillance program appears adequate to support plant power operations.

6. Health Physics

The inspector verified that sufficient planning and training had been accomplished to ensure that personnel are aware of changing radiological conditions especially during plant startup and power escalation. Through discussions with Health Physics personnel, it was determined that maintenance personnel have been trained in the proper use of radiological controls and procedures in order to minimize their dose and the spread of contamination. Practical experience was acquired at the Fermi 1 facility where maintenance personnel were given the opportunity to request an RWP, perform the required surveys, prepare an RWP, and finally suit-out and perform maintenance. The inspector believes that this exercise not only promotes a better understanding of why certain controls are necessary, it also promotes better communication between the groups.

The inspector also verified that although projected dose rates have been calculated for various areas in the plant, health physics technicians will accompany operations personnel during power escalation to ensure that no one accidently enters an area of unexpectedly high radiation

levels. Roving operators will also be provided with alarming dosimeters. Posting for potential areas of contamination and/or radiation areas are in place and will be up-dated as conditions warrant.

It is obvious that a significant amount of planning and forethought has gone into the preparations for power escalation in the health physics area. The licensee's Health Physics organization appears adequate to support plant power operations.

7. Simulator Exercises

The inspectors observed the re-qual training crew as they operated the simulator under conditions prescribed by the inspectors. The following exercises were simulated:

(a) Main Steam Isolation Valve closure at end of life with two rods stuck in the full out position.

(b) Stuck open SRV.

(c) Recirculation piping leak with an increasing rate.

The operations crew performed very well during all of the exercises. Especially noteworthy were their overall knowledge of the plant and procedures, their ability to communicate effectively, and their overall professional attitude.

One problem was encountered while performing the emergency procedure for a stuck open SRV. The operators performed the procedure as written and found that it took approximately three minutes to reach the point at which a manual scram was inserted. The action statement for technical specification 3.4.2.1 requires: "with one or more safety/relief valves stuck open, provided that suppression pool average water temperature is less than 95 degrees F., close the stuck open safety/relief valve: if unable to close the stuck open valve within 2 minutes or if suppression pool average water temperature is 95 degrees F. or greater, place the reactor mode switch in the shutdown position." It would appear that properly following the emergency procedure would result in a technical specification violation. The inspectors have recommended that the licensee determine actual suppression pool heat-up rates with an open SRV during start-up testing and submit a technical specification change request to reflect a more realistic time interval in the action statement.

8. Conclusion

Based on the review detailed above it appears that the licensee has established and implemented the administrative controls necessary to support full power operations. The professionalism, knowledge level, and dedication of the licensee staff to safe conservative plant operation is noteworthy.

9. Exit Interview

The inspectors met with licensee representatives (denoted in Paragraph 1) throughout the inspection period and at the conclusion of the inspection period to summarize the scope and findings of the inspection activities. The licensee acknowledged the inspectors' comments. The inspectors also discussed the likely informational content of the inspection report with regard to documents or processes reviewed by the inspectors during the inspection. The licensee did not identify any such documents/processes as proprietary.