U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-341/91025(DRP)

Docket No. 50-341

Operating License No. NPF-43

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

Facility Name: Fermi 2

Inspection At: Fermi Site, Newport, MI

Inspection Conducted: December 11, 1991 to February 6, 1992

Inspectors:

- S. Stasek K. Riemer T. Tongue
- C. Gainty
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Approved By:

R. W. DeFayette, Chief Reactor Projects Section 2B

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2/26/92 Date

Inspection Summary

Inspection on December 11, 1991 to February 6, 1992 (Report No. 50-341/91025(DRP))

Areas Inspected: Action on previous inspection findings; operational safety; maintenance; surveillance; followup of events; and LER followup. Results: Overall, performance of the operating crews was good this inspection period. The inspector observed operators' quick response to an event involving substantive sparking in an area under the main generator during which the Nuclear Shift Supervisor demonstrated excellent command and control (paragraph 3.a). Adherence to administrative controls also improved with no problems noted. Surveillance and maintenance activities reviewed during the inspection period appeared to be conducted in accordance with all applicable requirements. A non-cited violation was identified for failure to follow a procedure during the previous inspection period that related to an event where a mobile crane inadvertently contacted a 120 kv overhead electrical line (paragraph 3.b). A concern identified with Fermi's emergency evacuation routes becoming very icy and significantly nampering normal traffic flow for several days following a severe winter storm was being resolved at the end of the inspection period. The licensee's emergency response organization was in discussion with the county road commission which agreed to better delineate the evacuation routes as snow emergency routes. One open item was identified (Paragraph 7.b).

DETAILS

Persons Contacted 1.

- ä., Detroit Edison Company
 - C. Cassise, General Supervisor, Mechanical Maintenance
 - * S. Catola, Vice President, Nuclear Engincoring and Services
 - J. Contoni, Supervisor, Plant Systems
 - * R. Eberhardt, Superintendent, Radiation Protection
 - * P. Fessler, Director, Nuclear Training
 - * D. Gipson, Assistant Vice President, Nuclear Operations
 - * L. Goodman, Director, Licensing
 - J. Hughes, General Supervisor, Electrical Maintenance
 - * J. Korte, Acting Director, Nuclear Security A. Kowalczuk, Superintendent, Maintenance & Mods
 - * R. Matthews, Assistant Superintendent, Maintenance & Mods
 - * R. McKeon, Plant Manager, Nuclear Production
 - * W. Miller, Superintendent, Technical Engineering N. Mims, Assistant Superintendent, Modifications/Turbines
 - * R. Newkirk, General Director, Regulatory Affairs
 - E. Nickolite, General Supervisor, Maintenance/I&C
 - * W. Orser, Senior Vice President, Nuclear Operations
 - * J. Plona, Superintendent, Operations
 - * T. Riley, Supervisor, Compliance
 - * L. Schuerman, General Supervisor, Plant Engineering
 - * R. Stafford, General Director, Nuclear Assurance
 - D. Stone, Supervisor, Quality Assurance Production

 - * F. Svetkovich, Superintendent, Radwaste * R. Szkotnicki, Director, Plant Safety
 - * J. Tibai, Engineer, Nuclear Safety/Review Group
 - W. Tucker, General Supervisor, Engineering Design and Services
 - * J. Walker, General Director, Nuclear Engineering
- b.-U.S. Nuclear Regulatory Commission
 - * S. Stasek, Senior Resident Inspector
 - * K. Riemer, Resident Inspector
 - T. Tongue, Project Inspector, RIII

*Denotes those attending the exit meeting on February 6, 1991.

Inspectors also interviewed others of the licensee's staff during this inspection.

2. Action on Previous Inspection Findings (92701)

- a. (Closed) Unresolved Item (341/89002-03(DRP)): Operation without proper drywell-to-torus differential pressure. Staff review of the NUTECH analysis addressing negative dp conditions was completed with the licensee's analysis found to be acceptable. This item, therefore, is considered closed.
- b. (Closed) Open Item (341/89008-10(DRP)): Evaluation of Barton pressure switch performance. In addition to the corrective actions discussed in inspection report 341/90007 (Paragraph 2.e), the licensee revised procedures NPP-46.000.042, "Calibration of . ITT-Barton Model 288A/Model 289A/Model 580A/Model 200 Differential Pressure Instruments," and NPP-44.030.006, "ECCS-Core Spray Header Differential Channel Calibration," to add notes giving calibration personnel additional information to help identify failed devices. Also, the licensee has established a target periodicity for preventative maintenance of 12 months for the subject instruments. This item is considered closed.
- c. (Closed) Violation (341/89024-01A(DRS)): Failure to follow procedures regarding transport and storage of combustible materials. The inspector reviewed licensee actions to correct this problem, including those described in the licensee's response letter dated March 9, 1990. The licensee initiated Deviation Event Report (DER) 89-1275 to document the violation of the fire protection procedure and the corrective actions taken. Training was provided to appropriate personnel on the requirements for control of transient combustible materials. This item is considered closed.
- d. (Closed) Violation (341/89024-01B(DRS)): Inadequate procedure resulted in reassembly of check valve using incorrect match marks, which prevented the valve from stroking. The inspector reviewed licensee actions to correct this problem, including those described in response letter dated March 9, 1990. Procedure NPP-35.000.231, "Exercisable and Spring Assist Closing Check Valves" has been revised to clarify that unique match marks must be verified during disassembly and reassembly to prevent future problems. This item is considered closed.
- e. (Closed) Violation (341/89024-01C(DRS)): Operator failed to wear gloves as required by RWP while tightening a potentially contaminated test gauge connection. The inspector reviewed licensee actions to correct this problem, including those described in response letter dated March 9, 1990. The licensee determined the root cause of this incident to be a personnel error which involved an isolated case of not following RWP instructions. The radiological control program requires unescorted individuals to complete annual training on RWPs and protective clothing requirements. This item is considered closed.
- f. (Closed) Violation (341/89024-01F(DRS)): Pressure test gauge used for performance of ASME Section XI test was not verified for

calibration due date and iscued for use with date expired. The inspector reviewed licensee actions to correct this problem, including those described in the licensee's response letter dated March 9, 1990. The licensee believed the root cause of the violation to be personnel error. As a result, measuring and test equipment (M&TE) personnel received additional training on the proper equipment issue procedure. Also, procedure NPP-MT1-01 was revised to require the issuer to enter the calibration due date each time equipment is issued. Based on the actions taken and review of the revised procedure, this item is considered closed.

- g. (Closed) Violation (341/89024-01G(DRS)): M&TE in the possession of maintenance personnel after its calibration due date. The inspector reviewed licensee actions to correct this problem, including those described in the licensee's response letter dated March 9, 1990. Although the instrument in this instance was not found to have been used after the calibration due date, the licensee initiated a delinquent M&TE return list to identify any M&TE held by maintenance personnel that was past its due date. The delinquent list is expected to prevent recurrence by requiring return of M&TE that is past its calibration due date and by preventing individuals with overdue instruments from checking out other equipment. This item is considered closed.
- h. (Closed) Violation (341/89024-01H(DRS)): Craftsmen deviated from Potential Design Change (PDC) 8534 work package in violation of FIP-CM1-01, "Potential Design Changes," Revision 2. The inspector reviewed licensee actions to correct this problem, including those described in the licensee'e response letter dated March 9, 1990. Procedure FIP-CM1-01 was subsequently revised to allow "work at risk," which allows work to continue prior to the issuance of an approved design change. The procedure also specifies that the affected component or system cannot be declared operable or returned to service until the approved design change is issued. Concerning PDC 8534, the craftsmen had obtained prior verbal approval from engineering before deviating from the work package. This item is considered closed.
- i. (Open) Open Item (341/90013-11(DRP)): Use of uncontrolled labels on cabinets. The licensee subsequently issued Administrative Procedure FIP-OP1-04, "Equipment Labelling," and is currently in process of labelling the High Pressure Coolant Injection (HPCI) system. The estimated completion date for labelling all applicable equipment in the plant per the above procedure is May 1994. This item will remain open pending the establishment of a specific schedule.
- j. (Open) Open Item (341/91007-02(DRP)): Control Room Voltage Indicators Not Periodically Calibrated. In addition to the subject voltmeters previously identified, eight bus voltage recorders that are connected in parallel with several of the subject voltmeters were also not periodically calibrated. The

licensee incicated this was because they were determined to be obsolete and not repairable. Potential Design Change (PDC) 12746 was initiated to evaluate possible followup actions. This item will continue to remain open pending the final determination of which voltmeters and voltage recorders require periodic calibration and inclusion of those that do into the appropriate PM events.

k. (Open) Open Item (341/91022-01(DRP)): Initiation of potential design change to evaluate installation of test jacks on panel fronts. The licensee subsequently determined that the PDC will be dispositioned and planned for implementation, if needed, within the five-year operating plan.

3. Operational Safety Verification (71707) (71714)

The inspectors observed control room operations, reviewed applicable logs and conducted discussions with control room operators throughout the inspection period. The inspectors verified the operability of selected safety-related systems, reviewed tagout records, and verified proper return to service of affected components. The inspectors observed a number of control room shift turnovers. The turnovers were conducted in a professional manner and included log reviews, panel walkdowns, discussions of maintenance and surveillance activities in progress or planned, and associated LCO time restraints, as applicatle.

The inspectors conducted tours of the reactor, auxiliary and turbine buildings. During these tours, observations were made regarding plant equipment conditions, fire hazards, fire protection, adherence to procedures, radiological controls and conditions, housekeeping, tagging of equipment, ongoing maintenance and surveillance activities. containment integrity, and availability of safety-related equipment. Walkdowns of the accessible portions of the following systems were conducted to verify operability by comparing system lineups with plant drawings, as-built configuration or present valve lineup lists; observing equipment conditions that could degrade performance; and verifying that instrumentation was properly valved, functioning and calibrated.

Standby Liquid Control System
High Pressure Coolant Injection System
Core Spray System - Division II
Thermal Recombiners - Divisions I and II
Emergency Diesel Generator No. 11
Emergency Diesel Generator No. 12

Additionally, the inspector observed implementation of portions of the licensee's security program during the inspection period including: badging of personnel; access control; security walkdowns; security response (compensatory actions); visitor control; security staff attentiveness; and operation of security equipment.

Significant observations and reviews included the following:

- a . On January 13, plant personnel on the second floor turbine building identified sparking coming from an area under the main generator. Control room operators took immediate actions to assemble the fire brigade and contacted the DECo system dispatcher of the situation. Generator reactive load was adjusted to a unity power factor in attempts to minimize loading on the equipment. The Nuclear Shift Supervisor (NSS) inspected the affected area and ascertained that there was no immediate impact to unit operation. Subsequent evaluation determined the cause of the sparking to be from a scaffold that had previously been erected that had come in contact with generator output bus duct housing. The inspector observed operator response from the control room during the event and noted good command and control by the NSS with all actions taken to be timely and in accordance with plant procedures and operating requirements.
- As discussed in Inspection Report 341/91024 (Paragraph 6) the b. licensee experienced an event on December 16, 1991 where a 40 ton mobile crane inadvertently contacted an overhead 120 KV electrical line. Review of the event determined that NPP-35.RIG.017, "Mobile Crane Operation," specified in Section 4.1, "Unloaded Crane Movement," Step 2.a, "Confirm booms are fully retracted, lowered to horizontal position, and centered in normal travel position over frame or resting in boom cradle (if applicable)." Enclosure B of the procedure also specified that, "Before operating a crane near an electrical distribution and transmission lines, the protection/work leader shall notify Nuclear Operations to determine if the lines are energized." In the subject case it was determined that the crane driver failed to fully retract, lower. and center the boom over the frame and did not contact operations prior to operating the crane near the overhead electrical line. Therefore, this is considered a violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, procedures, and drawings." However, because there was no impact to in-plant equipment, and no interruption of power to the switchyard occurred, inspector review determined that the event itself was of minimal safety significance, and in reviewing 10 CFR 2, Appendix C, the criteria specified in Section V.G. of the Enforcement Policy was met to allow exercising of enforcement discretion. Therefore, a Notice of Violation will not be issued.

The licensee's corrective actions included revising of applicable procedures to better delineate requirements for crane movement, and reinforcing training of crane operators on the subject event.

 The inspector completed review of the licensee's process to ready the unit for cold weather operations. The inspector's review included direct observation of components or systems potentially affected by cold weather, log reviews to check for cold weather related problems, interviews with licensee personnel and a

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documentation review of the licensee's cold weather preparation procedure, NPP-27.000.04, "Freeze Protection Lineup Verification." No substantive concerns were identified as a result of the review. Safety-related as well as balance-of-plant (BOP) equipment and systems that would be sensitive to cold weather conditions appeared to have been adequately addressed by the licensee's procedures and preparations.

d. During the inspection period, a severe winter storm occurred and the inspector observed the licensee's compensatory actions to deal with the severe weather conditions. The inspectors verified that adequate staffing levels were maintained, both during the storm and afterwards. The licensee's ability to safely operate the plant was not affected by the storm.

However, the inspector noted that some roads associated with the plant's emergency evacuation routes remained very icy for several days after the storm which significantly hampered traffic flow. The licensee's Radiological Emergency Response Program (RERP) staff contacted the county road commission requesting better delineation of Fermi's emergency evacuation routes as snow emergency routes. At the end of the inspection period, the road commission was in process of revising their snow response plan to better address Fermi's evacuation routes.

e. As documented in inspection report 341/91018 paragraph 3.a, the inspector had previously noted that hydrometers that were not included in the licensee's measuring and test equipment (M&TE) program were being used by operations personnel to take weekly specific gravity readings on the 24/48v batteries. Subsequently, the electrical maintenance department prepared a new surveillance procedure to check the 24/48v batteries using approved M&TE equipment similar to the way the 130/260v batteries are currently tested. At the conclusion of the current inspection period, the new procedure had been issued, and the subject hydrometers were in process of being removed.

While reviewing this matter, the inspector noted that the 24/48v batteries were classified as nonsafety related. Since the batteries provide a support function to equipment specified in the Technical Specifications, Fermi Management Directives (FMDs) appeared to require at least a QIM classification under the licensee's program. At the end of the inspection period, an engineering review was being conducted to determine the appropriate classification. The inspector will further review this during the next inspection period.

One non-cited violation was identified in this area.

The following items were considered during the inspection: the testing was performed in accordance with approved procedures; that test instrumentation was calibrated; that test results conformed with Technical Specifications and procedure requirements and were reviewed by personnel other than the individual directing the test; and that any deficiencies identified during the testing were reviewed and resolved by appropriate management personnel.

The inspectors also performed a record review of the completed surveillance tests listed below. The review was to detern ne that the test was accomplished within the required time interval, procedural steps were properly initialled, the procedure acceptance criteria were met, independent verifications were accomplished by individuals other than those performing the test, and that the test was signed in and out of the control room surveillance log book.

24.204.002	RHR Valve Lineup and System Fill
	Verification
24.107.003	Standby Feedwater Pump and Valve Operability and Lineup Verification Test
24.203.002	Division I Core Spray Pump and Valve Operability and Automatic Actuation
24.000.002	Shiftly, Daily, and Weekly Required Surveillances
24,138,006	Jetpump Operability Test
64.713.018	Radiological Effluent Situational Surveillances
27.000.002	Shiftly, Daily, Weekly and Situation Required Performance Evaluations
74.000.018	Chemistry Shiftly, 72 Hour, and Situation
54 000 006	APRM Calibration
54.000.007	Core Performance Parameter Check

No violations or deviations were identified in this area.

6. Followup of Events (93702)

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During the inspection period, the licensee experienced several events, some of which required prompt notification of the NRC pursuant to 10 CFR 50.72. The inspectors pursued the events onsite with licensee and/or other NRC officials. In each case, the inspectors verified that the notification was correct and timely, if appropriate, that the licensee was taking prompt and appropriate actions, that activities were conducted within regulatory requirements and that corrective actions would prevent future recurrence. The specific events are as follows:

<u>December 11</u> - ESF actuation which involved torus-to-drywell and torusto-reactor building vacuum breakers cycling. During a normal reactor shutdown evolution, reactor and mainsteam piping pressure was reduced to less than atmospheric pressure as a result of attempts to maintain a vacuum on the main condenser (to facilitate condenser tube leak troubleshooting). The reverse differential pressure (i.e., containment air space pressure greater than SRV inlet pressure) allowed the safety relief valves to function as check valves and relieve drywell and torus atmospheres to the main stram system. This reduction in containment pressure caused the torus-to-drywell and torus-to-reactor building vacuum breakers to open. Also, the Reactor Water Cleanup system isolated on low suction as a result of the low pressures experienced in containment. The licensee subsequently determined that no detrimental effects to squipment had occurred as a result of the actuation. Licensee Event Report (LER) 91-022 was thereafter initiated to document the event.

<u>February 5</u> - High Pressure Coolant Injection (HPCI) system inoperable during a preventative maintenance activity. While performing a periodic check of a temperature probe in the HPCI turbine oil cooler discharge line, the procedure required removal of the probe from its associated well. The technician performing the activity erroneously removed the well also. This caused a breach in the oil system which the licensee determined made the HPCI system inoperable. The error was immediately recognized and the well reinstalled. The licensee subsequently made a four hour red phone notification on the event and is in process of preparing an LER.

No violations or deviations were identified in this area.

7. Followup of Licensee Event Reports (92700)

Through direct observations, discussions with licensee personnel, and review of records, the following event reports were reviewed to determine that reportability requirements were fulfilled, immediate corrective action was accomplished, and corrective action to prevent recurrence had been accomplished in accordance with technical specifications.

(Closed) LER 88-034-01, Isolation of Reactor Water Cleanup System а. Due to Suspected Relay Failure. The licensee determined the source of the silver sulphide contamination on the relay contact surfaces to be from the manufacturing process at General Electric. At Fermi, CR120A type relays are used in safety-related applications for the primary containment isolation system. In these applications, the relays are normally energized. To perform their intended satety function, the subject relays must deenergize. The reset circuitry for the containment isolation function also rely on relays of this type. However, in this case, t'ey are normally de-energized and must be energized to reset the isolation logic. Because of this, the licensee determined that there was no detrimental impact to the proper functioning of the related safety functions. In September 1991, the licensee completed a review for 10 iFR 21 reportability and determined that the particular application at Fermi was not reportable per Part 21. The licensee plans to replace all affected relays. This LER is considered closed.

b. (Closed) LER 91-018-00, APRM Weekly Calibration Requirement Not Performed Per Technical Specifications. The licensee determined the primary root cause of this event to be weaknesses in the process used to implement Technical Specification amendments. Several actions were subsequently initiated to correct the identified deficiencies. These included: 1) better delineation of affected 1&C surveillance procedure purpose statements to better describe surveillance requirements and periodicity, 2) future Technical Specification amendment requests will include requesting an appropriate period of implementation, 3) clarification of organizational responsibilities, and 4) training was provided to appropriate personnel concerning correct implementation of surveillance changes required by Technical Specification amendments. A final action that is currently under development involves revising the Technical Specification surveillance article cross reference computer data base to include all surveillance requirements contained within footnotes in the Technical Specifications. This action is currently scheduled for completion by June 1992. This LER is considered closed, however, the final corrective action to be taken will be tracked as open item (341/91025-01(DRP)).

No violations or deviations were identified in this area.

8. Management Meeting (30702)

On January 21, 1992, a management meeting was held in the NRC Region III office in Glen Ellyn, IL. The meeting was held at the request of the licensee in order to discuss the event of December 16, 1991 where a crane being moved outside the protected area came in contact with a 120 KV electrical transmission line (reference paragraph 3.b). During the meeting the licensee presented the results of their investigation, their short and longterm corrective actions and how the event related to their earlier shutdown risk assessment actions. The licensee also provided diagrams and photographs of the equipment and areas involved in the event. The discussion also provided an opportunity for the licensee to respond to questions from the NRC staff.

9. 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 7.b.

10. Exit Interview

The inspectors met with licensee representatives (denoted in paragraph 1) on February 6, 1992, and informally throughout the inspection period and summarized the scope and findings of the inspection activities. 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. The licensee acknowledged the findings of the inspection.