

U. S. NUCLEAR REGULATORY COMMISSION
REGION III

Report No. 50-341/88035(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 3 through December 31, 1988

Inspectors: W. G. Rogers
S. Stasek
K. Ridgway
P. Pelke

Approved By: *R. W. Cooper*
R. W. Cooper, Chief
Reactor Projects Section 3B

2/7/89
Date

Inspection Summary

Inspection on December 3 to December 31, 1988 (Report No. 50-341/88035(DRP))

Areas Inspected: Action on previous inspection findings; operational safety; maintenance observation; surveillance observation; LER followup; followup of events; followup on Information Notices; safety evaluation reviews; corrective action system reviews; temporary instruction 2515/99 followup; and management meetings.

Results: No violations were identified. Two unresolved items were identified (Paragraphs 3 and 9) and two open items were identified (Paragraphs 4 and 8).

DETAILS

1. Persons Contacted

a. Detroit Edison Company

- °R. Matthews, General Supervisor, I&C
- °D. Ball, Nuclear Security Specialist
- °R. Vergiels, Public Affairs
- °D. Odland, Superintendent, Maintenance and Modification
- #*P. Anthony, Licensing
- *C. Baker, Business Planning Staff
- *S. Bastian, Safety R & R
- °#*S. Catola, Vice President, Nuclear Engineering and Services
- °#G. Cranston, General Director, Nuclear Engineering
- *T. Dong, Plant Safety Staff
- #P. Fallon, System Engineer
- *P. Fessler, Plant Safety Manager
- *F. Ghodsi, Plant Safety Staff
- °*D. Gipson, Plant Manager
- °*L. Goodman, Director, Nuclear Licensing
- *E. Madsen, NRA Management
- °#*W. Orser, Vice President, Nuclear Operations
- °#T. Riley, Supervisor, Compliance, Licensing
- *J. Rotondo, Plant Safety
- #A. Settles, Superintendent, Technical Engineering
- *G. Shukla, Licensing
- #*F. Svetkovich, Assistant to Plant Manager
- °*B. R. Sylvia, Senior Vice President
- °#*R. Stafford, Director, Quality Assurance and Plant Safety
- *J. Tibai, Nuclear Safety Review Group Secretary
- °#G. Trahey, Director, Special Projects
- #*W. Tucker, Assistant to the Vice President
- °#W. McKeon, Superintendent, Operations
- °R. May, Director, Nuclear Materials Management

b. U. S. Nuclear Regulatory Commission

- °T. Quay, Acting Director, PD III-1, NRR
- °E. Greenman, Director, Division of Reactor Projects
- °R. Cooper, Chief, Projects Section 3B
- °#*W. Rogers, Senior Resident Inspector
- °#*S. Stasek, Resident Inspector
- *K. Ridgway, Senior Resident Inspector, Dresden Station
- °*P. Pelke, Project Inspector
- °M. Virgilio, Acting Assistant Director, Regions III & V, NRR

*Denotes those attending the exit meeting on December 16, 1988.

#Denotes those attending the exit meeting on January 20, 1989.

°Denotes those attending the management meeting on December 16, 1988.

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

2. Action on Previous Inspection Findings (92701)

- a. (Closed) Unresolved Item (341/88003-10(DRP)): Implementation of NRC Information Notice (IN) 84-92. The corrective action for this IN concerning diesel fire pump flywheel cracking, dated January 24, 1985, was found to be incomplete during a January 1988 inspection, even though a Preliminary Design Change (PDC) had been issued in July 1985. The inspectors were concerned with the licensee's closure of commitments without assuring that they were fully implemented. The licensee issued DER 88-0054 on January 22, 1988, to determine why this specific change had not been implemented and also to determine if there was a generic problem in closing IN commitments.

Following the inspector's inquiry, the flywheel was changed to the recommended type by Work Order No. 011B010788 on January 30, 1988. The replaced flywheel had no signs of cracking. Upon further checking it was determined that the PDC had been approved on December 2, 1986, but was not completed in time to make the change during a 1987, 18 month surveillance test. It was found to be carried on the engineering tracking system and also carried on the outage job list. Although it could be changed out at any time, it was desired to schedule it with the surveillance test to maximize manpower usage. As an outage item it had been assigned a low priority. The Management Review Board had approved the change as a mini-modification on January 14, 1988, prior to the inspector's inquiry, but the change had not been scheduled with maintenance.

The inspector concluded that the IN review system is working, although the completion of this particular IN was not timely. The generic review of the IN review system is also discussed under followup of Information Notices (Paragraph 8).

This unresolved item is closed.

- b. (Closed) Unresolved Item (341/87044-08(DRS)): DECo Setpoint Methodology Program. The licensee has developed a setpoint methodology similar to that described in the Instrument Society of America (ISA) Standard S67.04-1982, "Setpoints for Nuclear Safety-Related Instrumentation Used in Nuclear Power Plants," and General Electric Company Setpoint Methodology NEDC 31336. DECo stated in the Fermi 2 UFSAR, Appendix A.1.105, "Regulatory Guide 1.105 (November 1976, Revision 1), Instrument Setpoints," that their Setpoint Methodology Program was established with an acceptable degree of compliance with RG 1.105, Revision 1. The inspectors reviewed the licensee's program for compliance with the six (6) Regulatory Position Statements listed in RG 1.105.

The Regulatory Position Statements are applicable to instruments in systems important to safety. The inspectors reviewed the following setpoint Design Calculations (DC):

- DC 4522 Reactor Dome Pressure Instrumentation. Surveillance Validation.
- DC 4547 Main Steam Tunnel and Turbine Building Area Temperature.
- DC 4552 Surveillance Procedure Validation for Interface Valve Leakage.
- DC 4568 Maximum Probable Error in Process Computer CTP Calculation.
- DC 4584 Surveillance Procedure Validation for Core Spray Header Differential Pressure.

The following position statements are applicable:

- C.1 states, in part, ". . . the setpoints should be established with sufficient margin between the technical specification limits for the process variable and the nominal trip setpoint . . ."
- C.2 states, in part, ". . . all setpoints should be established in that portion of the instrument span which ensures the accuracy, as required by position C.4 . . ."
- C.3 states, in part, ". . . the range selected for the instrumentation should encompass the expected operating range of the process variable being monitored . . ."
- C.4 states, in part, ". . . the accuracy of all setpoints should be equal to or better than the accuracy assumed in the safety analysis . . ."
- C.5 states, in part, ". . . instruments should have a securing device on the setpoint adjustment mechanism unless it can be demonstrated by analysis or test that such devices will not aid in maintaining the required setpoint accuracy and minimizing setpoint change . . ."
- C.6 states, in part, ". . . the assumptions used in selecting the setpoint values in position C.1 and the minimum margin with respect to the limiting safety system settings, setpoint drift rate, and the relationship of drift rate to testing interval should be documented . . ."

The inspector's review determined the DC's contained the necessary information as described in Positions C.1 through C.4. The inspectors verified in the plant that the testability panels had a securing device to meet Position C.5. The licensee stated in UFSAR A.1.105 that the documentation required by Position C.6 had been generated for a specific number of safety setpoints and had been submitted to NRR for review. The inspectors discussed the submittal with the NRR reviewer. The reviewer was in possession of the documents and stated the review was tentatively scheduled to be completed in 1989.

Based on the above information, this item is being closed. Followup on the results of the NRR review will be conducted at a later date.

- c. (Closed) Unresolved Item (341/88018-04(DRS)): NS4 Reactor Pressure Vessel (RPV) level channel trip indication. The inspectors had observed during the performance of Surveillance Procedure 44.020.004, "NSSSS - Reactor Vessel Low Water Level (Levels 1 and 3) Division II, Channel Functional Test," that the NS4 Level 1 channel trip was not annunciated.

The NS4 Level 1 instrumentation is part of the Containment and Reactor Vessel Isolation Control System (CRVICS). The safety design bases for the CRVICS commits to the requirements of IEEE 279-1971 (Fermi 2 UFSAR, Section 7.1.2.1.2). Section 4.19 (Identification of Protective Actions) of IEEE 279 states that "Protective actions shall be indicated and identified down to the channel level." DECO's Nuclear Engineering Department (NE) responded to this item in DER 88-1252. NE stated that Fermi's NS4 logic was designed originally to provide a Group 1 (MSIVs) isolation on RPV Level 2 and that a dedicated alarm window was provided. Subsequent to TMI, a NUREG-0737 requirement mandated that the reliability of the safety relief valves be improved by minimizing pressurization transients. As a result, General Electric recommended the Group 1 isolation on level be changed to Level 1. The Level 1 design scheme did not include a dedicated NS4 Level 1 alarm window.

The main concern of the inspectors for addressing the indication of a NS4 Level 1 channel trip was in alerting the Nuclear Shift Operator (NSO) that the MSIVs were being kept open by only one solenoid valve instead of two solenoid valves. Fermi 2 has, on several occasions, experienced the inadvertent closure of the MSIVs.

Procedure 44.020.004 did provide adequate steps to alert the NSO that a NS4 Level channel trip had been initiated. However, these steps were administrative controls only. NE stated that a RPV Level 1 trip was annunciated by the RHR logic (Window 1D29). The inspectors concur that this, in fact, does exist. However, Window 1D29 was provided to meet Section 4.19 for a RPV Level 1 ECCS 'protective action' channel. The inspectors reviewed the

Alarm Response Procedure (ARP) 1D29, "RHR UNIT VESSEL H2O LEVEL L1." Since ARP 1D29 was an ECCS response procedure, Group 1 valve isolation was not mentioned in the procedure text. The inspectors reviewed Emergency Operating Procedure NPP-29.000.01, "RPV Control." The responses in this type of procedure are symptom based. Procedure NPP-29.000.01 on page five (5) adequately addressed the system responses to a RPV Level 1 condition. The response included a Group 1 isolation, ECCS initiation (CS and LPCI), and the starting of the four EDGs. The inspectors interviewed several licensed operators about Group 1 isolation signals. All of the operators interviewed were knowledgeable on the Group 1 isolation signals and they knew a RPV Level 1 would initiate a Group 1 isolation. NE further states that the trip indication is provided by trip status lamps located at the trip units; HFA relay K7 armature position, and by the MSIV AC and DC solenoid current indication. Each of these devices will provide a channel trip indication; however, they are not located in the Main Control Room (MCR).

The licensee has recently placed the Reactor Isolation Mimic Group Display into service. The Mimic displays the eighteen (18) automatic isolation valve groups. Each valve group has the following isolation status indication lights:

- Green - Indicating total group isolation.
- Amber - Indicating the presence of the group isolation signal.
- Red - Indicating incomplete or no group isolation.

Therefore, it appears that the Mimic Display may function sufficiently to provide indications for a NS4 Level 1 trip.

This unresolved item is being closed as a result of placing the Isolation Mimic into service. However, the most reliable indications of a NS4 channel trip are the individual MSIV solenoid ammeters. These meters are located in the relay room. The inspectors recommend the licensee consider locating the ammeters in the MCR. This recommendation was also made in NRC Inspection Report No. 50-341/87036.

- d. (Open) Violation (341/88012-08(DPP)): Inadequate control of specific control room administrative processes. In response, the licensee addressed the specifics of the violation as well as the indicated generic aspects. A licensee review of control room records was made and entries were made to resolve any discrepancies; clarifications were made relative to the subject data sheet used as a Sequence-of-Events (SOE); a review of defeated alarms was made to ensure each had received Nuclear Shift Supervisor (NSS) approval; a review of in-plant operator aids was performed and aids were removed as required. Procedure NPP-OP1-07, "Operator Aids and Equipment Labeling," was issued (superseding Plant Order 8080) specifying the control requirements for aids used by the operators. In addition, operation administrative procedures were rewritten to

better incorporate requirements for ease of operator usage, and a departmental audit program was established to review level of compliance within the department to these administrative programs. The inspector reviewed applicable procedure revisions and verified appropriate requirements were established in the subject areas. A number of interviews were conducted with operations personnel to ascertain level of familiarity with administrative controls. This item will remain open pending further interviews and procedure reviews by the inspector.

- e. (Closed) Open Item (341/88021-04(DRP)): Concurrent utilization of two procedures to verify equipment operability following completion of maintenance. In response, the licensee reviewed procedures 12.000.15, "Work Requests," and NPP-OP1-08, "Control of Equipment," in the area of post maintenance testing/surveillance test requirements (PMT/STR) and determined both to be adequate "as-is." Deviation Event Report (DER) 88-1870 was initiated to resolve the concern. The licensee's final determination was that adequate PMT/STR was the responsibility of the Nuclear Shift Supervisor (NSS) in accordance with the aforementioned procedures, and as such, a night order was issued to all operating shifts reiterating this requirement. In addition, the night order specified that pre-evolution briefings were to be held, as required by the complexity of the testing to be done, to ensure the adequacy of the testing and return-to-service of the affected equipment. This item is closed.
- f. (Open) Open Item (341/88030-05(DRP)): Review of the disposition of DER 88-1956 and the licensee's MOV lubrication program. DER 88-1956 had not been dispositioned at the time of the inspection. Further review determined that MOV lubrication concerns have also been identified in DER 88-1271, DER 88-0550 and the licensee's Long Term MOV Action Plan.
- g. (Open) Open Item (341/88030-06(DRP)): As part of the procedure rewrite program, the licensee will incorporate the contents of Job Instructional Training Units (JITS) into controlled procedures as required. The licensee informed the inspector that approximately 24 JITS are still outstanding and require review for incorporation into controlled procedures. This item will remain open pending completion of the review.

3. Operational Safety Verification (71707)

The inspectors observed control room operations, reviewed applicable logs and conducted discussions with control room operators during the period from December 3 through December 31, 1988. The inspectors verified the operability of selected emergency systems, reviewed tagout records and verified proper return to service of affected components. Tours of the reactor building and turbine building were conducted to observe plant equipment conditions, including potential fire hazards, fluid leaks, and excessive vibrations and to verify that maintenance requests had been initiated for equipment in need of maintenance.

The inspectors, by observation and direct interview, verified that the physical security plan was being implemented in accordance with the station security plan.

The inspectors observed plant housekeeping/cleanliness conditions and verified implementation of radiation protection controls. During the inspection, the inspectors walked down the accessible portions of the following systems to verify operability by comparing system lineup with plant drawings, as-built configuration or present valve lineup lists; observing equipment conditions that could degrade performance; and verified that instrumentation was properly valved, functioning, and calibrated.

- Standby Gas Treatment System Divisions I and II.
- Standby Feedwater System.
- Reactor Protection System (RPS) Bus A and B Power Supplies.

These reviews and observations were conducted to verify that facility operations were in conformance with the requirements established under Technical Specifications, 10 CFR, and administrative procedures.

During these reviews:

- a. The inspector observed the licensee perform an intentional trip of Reactor Recirculation (RR) Pump B on December 17, 1988. This was required to perform preventative maintenance (PM) activities on the associated motor-generator (MG) set brushes. Throughout the evolution, the reactor remained at power at approximately 43 percent power following the pump trip. Concurrent with the PM activities for the MG set, a control rod sequence exchange was also scheduled and subsequently completed. The inspector witnessed the RR pump trip, reviewed licensee preparations for the evolution, and observed performance of the sequence exchange and MG set B maintenance outage.

The inspector found the preparations for the pump trip and associated activities to be excellent. The licensee developed a detailed sequence of events (SOE B3103-88-01) which was OSRO reviewed as the overall controlling document for the evolution, and the operating crew that performed the pump trip received additional simulator training just prior to taking the shift. Operator actions/responses to the pump trip were satisfactory. Precautions were taken to maintain the reactor in a condition outside the region of potential instability while in single loop operation. The sequence exchange was performed efficiently and the MG set maintenance work was completed ahead of schedule.

- b. The inspector reviewed the Temporary Modification Program and implementation of selected temporary modifications during the inspection period. The procedure governing the program, at the time of the inspection was FIP-OP1-02, "Temporary Modifications." This procedure superseded Administrative Procedure POM 12.000.25 and was issued on October 31, 1988, as part of the procedure upgrade program. The inspector had no concerns with the procedure as written. The

following temporary modifications were reviewed to verify proper implementation under the appropriate programmatic control process (i.e., per FID-OP1-02 or POM 12.000.025) dependent upon the initiating timeframe in each case.

- T.M. 88-025 Addition of Delay Volume in N22 Reheater Seal Tank Instrument Air Line.
- T.M. 88-015A Installation of Pressure Regulator in Air Supply to Solenoid Valve G33-F102B.
- T.M. 88-055 Installation of New Sample Line at N71-F802 and Route to T.B. Basement M-6 Location.
- T.M. 88-069 Relocation of Blowdown Water Supply to MUD Silica Analyzer.
- T.M. 88-0107 Installation of Jumper.
- T.M. 88-0110 Installation of Jumper.

The following discrepancies were noted:

Regarding T.M. 88-025, although drawings 6M721-5716 and 6M721-2005 were identified as critical drawings in the Temporary Modification Package, controlled copies of those drawings in the control room were not "red-lined." Subsequent discussions with Technical Engineering personnel indicated that installation of a delay volume should not be represented on the drawings available to operators in the control room, and as such, these drawings should not have been designated as critical drawings in the Temporary Modification Package.

Regarding T.M. 88-051A, although control room drawings 6M721-5730-2 and 6M721-5711-2 include the subject pneumatic line, no critical drawings were referenced in the Temporary Modification Package, and therefore, no "red-lining" of the drawings was made.

Regarding T.M. 88-055, the Temporary Modification Package specified that drawings 6M721-5724-2 and 6I721-2400-3 were critical drawings. However, although these drawings were available in the control room, no "red-lining" of the drawings was evident.

T.M. 88-069 was initiated to address a change to a EDP revision that was currently outstanding. Although the EDP was properly posted against the drawings, the temporary modification was not indicated via "red-lining" as required.

T.M. 88-0107, identified drawing 6I721-2868-65 as a critical drawing in the cover sheet of the Temporary Modification Package. In part 2 of the Electrical Jumper Modification (EJM) Form, (which is attached to the cover sheet when a EJM is required), a signoff by the Nuclear Shift Supervisor (NSS) was required as verification that all

critical drawings were red-lined upon installation of the temporary modification. This signoff was not performed although the jumper was installed. The inspector brought this to the attention of the on-duty NSS who subsequently performed the review and signed the appropriate block.

T.M. 88-0110 identified drawings 6IS-2481-2 and 6I-2482-2 as critical drawings although the subject drawings were not maintained in the control room.

Concurrent to the inspector's review, a NSS was conducting an audit of temporary modification pursuant to Administrative Procedure NPP-OP1-10, "Audits." Similar discrepancies to those identified by the inspector were identified during that audit (which was still ongoing at the end of the inspection period).

Due to the abundance of discrepancies identified during the inspector's review as well as the licensee's audit, inadequate implementation of the Temporary Modification Program was indicated. The licensee initiated a Deviation Event Report (DER 89-0028) to provide for proper documentation of the findings and to ensure proper resolution. Technical Engineering initiated actions to perform a review into implementation of each temporary modification currently outstanding. Pursuant to licensee completion of their audit and establishment of corrective actions; and completion of followup review by the inspector, this is considered an unresolved item (341/88035-01(DRP)).

No violations or deviations were identified in this area.

4. Monthly Maintenance Observation (62703)

Station maintenance activities on safety-related systems and components listed below were observed to ascertain that they were conducted in accordance with approved procedures, regulatory guides and industry codes or standards and in conformance with Technical Specifications.

The following items were considered during this review: the limiting conditions for operation were met while components or systems were removed from service; approvals were obtained prior to initiating the work; activities were accomplished using approved procedures and were inspected as applicable; functional testing and/or calibrations were performed prior to returning components or systems to service; quality control records were maintained; activities were accomplished by qualified personnel; parts and materials used were properly certified; radiological controls were implemented; and fire prevention controls were implemented.

Work requests were reviewed to determine the status of outstanding jobs and to assure that priority is assigned to safety-related equipment maintenance which may affect system performance.

The following maintenance activity was observed:

- P.M. B323881008 Inspect Reactor Recirculation Pump B MG set Generator and Exciter Slip Rings and Replace Brushes.

Following completion of maintenance on the brushes, the inspectors verified that the system had been returned to service properly.

The inspector witnessed the following maintenance activity on December 15, 1988:

- WR 003B070288 47.310.02 - 24/48 VDC Quarterly Battery Check.

The purpose of the work request was to perform general maintenance on the 24/48 VDC instrumentation batteries R3200S001 and R3200S002. The following items were noted:

- A Digital Low Resistance Ohmmeter (DLRO) was required to perform the test. Maintenance personnel indicated that there are only several DLROs at the plant. This can cause scheduling problems especially when pieces of measuring and test equipment are not available due to repairs or calibration. Additionally, there was only one DMA 35 density meter available for use.
- Both divisions failed the bolted terminal connection resistance acceptance criterion for certain cell to cell connections, i.e., the resistance was greater than 0.150 milliohms. Because of the failed connections, Procedure NPP-35.310.002 was to be performed to refurbish the failed connections. The inspector will review the completed work package for 35.310.002 in a subsequent inspection. The inspector noted that 35.310.002 allows the installation of temporary batteries while the work is being performed. The 24/48 VDC system is designed as Category I because of physical relationship with the 260/130-V Class 1E batteries, but is not Class 1E. The 24/48 VDC system supplies power to the SRMs and IRMs. Technical Specification 3/4.3.7.5 requires that certain post accident neutron monitoring instrumentation be operable. The licensee currently has a Technical Specification change request in to NRR which identifies the Intermediate Range Monitors and Power Range Monitors as the instrumentation to fulfill the neutron flux monitoring requirements. The inspector also reviewed licensee and NRR documentation relative to Regulatory Guide 1.97 compliance and determined that upgrading the power supplies for post accident neutron flux monitoring to Class 1E is still an open issue. Notwithstanding, the 24/48 VDC system is a support system for the operability of instrumentation covered in TS 3/4.3.7.5. The inspector will review in a subsequent inspection how the licensee controls the 24/48 VDC power supply as a support system and also how the licensee maintains the Category I classification during maintenance activities.

- It would be useful to record cell to cell resistance readings to provide historical data for the batteries.
- Several broken flash arrestor vents were identified on the 24/48 VDC batteries.
- The individual 24 VDC battery banks were not labeled A1, A2, B1, and B2. Additionally, NPP-47.310.02, Attachment 1, Page 7, Step No. 6.5 should read Battery B1 and Battery B2 instead of A1 and A2.
- In general, the inspector noted that more maintenance supervision is needed in the field to assist craft personnel with interpretation of procedures and work instructions, and to assure that craft personnel are following procedures verbatim.
- The inspector noted a Deficiency Notice Tag (DNT No. 06A120687 dated 12/6/87) located on the Division II 260/130 volt batteries. The tag identified leakage in cells 10, 54, and 87. The inspector noted that in addition to these cells, it appeared that cells 18, 19, 65, and 86 were also leaking. The tag had been in effect for over a year without corrective action. The inspector will further review this area in a subsequent inspection.

The above issues will be further tracked by the inspector and are considered to be an open item (341/88035-02(DRP)).

No violations or deviations were identified in this area.

5. Monthly Surveillance Observation (61726)

The inspectors observed Rod Block Monitor (RBM) Channel B Functional Test, 44.010.150, required by Technical Specifications and verified that: testing was performed in accordance with adequate procedures, test instrumentation was calibrated, limiting conditions for operation were met, removal and restoration of the affected components were accomplished, test results conformed with Technical Specifications and procedure requirements and were reviewed by personnel other than the individual directing the test, and any deficiencies identified during the testing were properly reviewed and resolved by appropriate management personnel.

The inspectors also witnessed portions of the following test activity:

- 24.404.04 SGTS - Auto/Manual Initiation Test.

No violations or deviations were identified in this area.

6. Licensee Event Reports Followup (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 85048 Loss of Secondary Containment.
- (Closed) LER 88007 Deenergized Radiation Monitor Causes Control Center Heating, Ventilation and Air Conditioning to Shift to the Recirculation Mode.
- (Closed) LER 88010 Deenergized Radiation Monitor Causes Control Center Heating, Ventilation and Air Conditioning to Shift to the Recirculation Mode.
- (Closed) LER 88024 Isolation of High Pressure Coolant Injection Due to Personnel Error While Performing a Surveillance.

No violations or deviations were identified in this area.

7. Followup of Events (93702)

During the inspection period, several events occurred, 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:

- December 13, 1988 Notification of state agency regarding a monitored liquid discharge from the south cooling tower.
- December 27, 1988 Notification of state agency regarding an oil spill.

No violations or deviations were identified in this area.

8. Followup on NRC Information Notices (92701)

During this inspection, the processing of Information Notices (IN) at Fermi 2 was reviewed to determine if the licensee's program for handling INs is being implemented, if applicable, to determine what if any corrective action is necessary, and to assure that any necessary corrective action is taken.

Prior to 1988, INs were administered by the Plant Safety Group along with other Operational Experience Reviews (OER), which included: INPO Significant Operating Experience Reviews (SOER), OERs, vendor reports such as General Electric Co. Service Information Letters (SIL), Application Information Documents (AID), and technical letters. These issues were tracked in the licensee's OER system. NRC violations, bulletins, generic letters, and NUREGs were administered by the Nuclear Licensing Group and tracked in the Regulatory Actions Commitment Tracking System (RACTS).

In 1988, the responsibilities for administering the various interface documents were modified by the new Fermi Management Directive FMD-CA1, "Evaluation and Corrective Action," issued January 9, 1988, and Fermi Interfacing Procedure FIP-CA1, Revision 2, issued November 11, 1988. The latter describes the Deviation Event Reporting (DER) System and specifies responsibilities for implementing the procedure. All interfacing documents are now required to be processed and tracked in the DER system until completion. The responsibilities for review and entry of each item has been changed as follows:

- a. Nuclear Licensing: All regulatory agency inputs including INs.
- b. Plant Safety: All INPO and American Nuclear Insurers inputs.
- c. Nuclear Engineering: All vendor identified nonconformances except 10 CFR 21 reports and Authorized Nuclear Inservice Inspector inputs.
- d. Nuclear Services: All vendor initiated 10 CFR 21 reports.

Two internal licensee reviews of the IN review process were prompted following issuance of DER 88-0054 in connection with NRC Unresolved Item 341/88003-10, discussed in Paragraph 2.a., concerning the questionable review of IN 84-92. Plant Safety initiated a review of all INs involving hardware changes or other commitments in March 1988. The review identified 26 INs of this category, two of which remained open but were being actively tracked in the DER system. No deficiencies were noted. A subsequent special audit requested by the Nuclear Safety Review Group on June 6, 1988, addressed the implementation of recent commitments that resulted in procedure changes and the maintenance of these commitments in the revised procedures. This audit, Surveillance Report 88-0090, reviewed 37 INs and concluded that the 38 required commitments had been satisfactorily completed. The auditors also determined that, although there were no specific requirements at the time of the IN reviews to track procedure changes, some of them had been included in the RACTS system. Procedures FMD RA1, "Interfacing With Regulatory Agencies," issued January 9, 1988, and FIP-PR1-01, Revision 1, "Procedures, Manuals, and Orders," issued October 20, 1988, now require the tracking of all commitments made to regulatory agencies and industry organizations to assure continued compliance.

The inspector reviewed eight INs during the inspection; five were INs issued in 1987 before the new review procedures were in effect and three were in 1988 after they were in effect.

(Closed)	IN 87-04	Diesel Generator Fails Test Because of Degraded Fuel.
(Closed)	IN 87-10	Potential for Water Hammer During Restart of Residual Heat Removal Pumps.
(Closed)	IN 87-24	Operational Experience Involving Losses of Electrical Inverters.
(Closed)	IN 87-56	Improper Hydraulic Control Unit Installation at BWR Plants.
(Closed)	IN 84-92	Diesel Fire Pump Fly Wheel Cracking.
(Closed)	IN 87-42	Diesel Generator Fuse Contacts.
(Closed)	IN 88-05	Fire in Annunciator Control Cabinets.
(Closed)	IN 88-09	Reduced Reliability of Steam Driver Auxiliary Feedwater Pumps Caused by Instability of Woodward PG-PL Type Governors.
(Closed)	IN 88-11	Potential Loss of Motor Control Centers and/or Switchboard Function Due to Faulty Tie Bolts.

Following the turnover of IN tracking responsibilities, a review was made to determine which INs issued prior to 1988 were still open. This review showed that 27 were still open. The licensee plans to review each outstanding unclosed IN and if unable to properly close it, it will be placed in the DER system for tracking to resolution. Completion of this action is considered an open item (341/88035-03(DRP)).

No violations or deviations were identified in this area.

9. Preliminary Safety Evaluations and 10 CFR 50.59 Safety Evaluations

Several prior Notices of Violation (NOV) have resulted from improper or after the fact Safety Evaluations (SE), i.e., NOV 341/87021-01 and 341/87048-01. The Diagnostic Evaluation Team reported several instances where Preliminary Evaluations (PE) had concluded that SEs were not required, while in fact, SEs were required because changes to the UFSAR were necessary. Several recent Deviation Event Reports (DER) have also been issued concerning inadequate SEs or SEs being written by untrained individuals.

This inspection was conducted to ascertain whether the DECo program to perform reviews of all facility and procedural changes are adequate to preclude an unreviewed safety issue and to assure that the plant will not be placed in a condition less conservative than assumed in the licensing basis.

Fermi Interfacing Procedure FIP-SRI-01, "Preliminary Evaluations and 10 CFR 50.59 Safety Evaluations," sets forth the process for performing safety evaluations. This procedure became effective June 29, 1988, and combined two previous procedures concerning safety evaluations and environmental evaluations.

This procedure requires a PE, and if required, a SE, for all proposed procedures and manuals and revisions to them, and all Proposed Design Changes (PDC), As-Built Notices (ABN), and temporary modifications. The procedure sets forth the qualifications and training of the preparer and reviewers of PEs and SEs including the independence of the reviewer. The issue of DER 88-1629 on September 2, 1988, pointed out that most PEs concerning the revisions of Fermi procedures were not being made by qualified authors or reviewers as required in FIP-SRI-01 and this instigated the revision of procedure FIP-PR1-01, "Procedures, Manuals, and Orders," on October 20, 1988, to include the above training requirements in procedure reviews. The procedure requires that the preparer, reviewer, and approver of PEs and SEs will have attended specific training courses in 10 CFR 50.59 safety evaluations. In addition, the preparer and reviewers of SEs of Technical Specification (TS) related procedures will have the qualifications set forth by Sections 4.2 or 4.4 of ANSI Standard N18.1-1971 and will be designated in writing by the Plant Manager.

The inspectors selected, at random, eleven recent Engineering Design Packages (EDP) to review for administrative handling and technical content. Ten EDPs had been properly completed; however, one preparer could not be found on the list of employees who had received 10 CFR 50.59 training and two had received the training after the PEs had been completed. In all three instances the PEs were written in 1987 and the PE approvers had received the training. In one PE completed on February 4, 1988 for EDP-7964, Revision A, concerning the replacement of the motor on HPCI inlet valve E4150F006 with one of higher horsepower, the PE had been approved by an unqualified individual before the EDP had been properly evaluated and because the changes did not require FSAR or TS working or drawing changes, no SE was issued. A replacement procedure in the EDP for the Environmentally Qualified (EQ) motor contained specific instructions for maintaining the EQ; however, there was no mention whether replacement procedures for future changes would include these instructions. The evaluation of this EDP is considered to be an unresolved item (341/88035-04(DRP)).

Five of the eleven EDPs contained SEs because of UFSAR changes involved. Nine other randomly selected SEs were also reviewed. One SE concerned ABN 9393-1, an FSAR and P&ID update to add an additional 38 locked valves and their normal positions to these documents. The inspector also reviewed Operational Procedure NPP-OP1-09, and Surveillance Procedure NPP-27.000.01, to determine if these procedures included all of the above valves. The operating procedure did; however, the surveillance procedure did not include four of the valves. The missing valve numbers were provided to the licensee at the interim exit meeting.

The review of the other SE selected indicated that it had been properly administered to update the UFSAR and no unresolved safety issues were involved.

In the course of the PE and SE review, the inspector reviewed four DERs that were issued because of concerns with the adequacy for specific SEs. These DERs were:

- DER 88-1412, issued by the Nuclear Safety Review Group (NSRG), concerned SE 88-0046, Main Steam Isolation Valve Leakage System Setpoints; a revised SE had been approved by the onsite review organization on October 27, 1988.
- DER 88-1811, issued by the Independent Safety Engineering Group (ISEG), concerned less than adequate SEs 87-0094, Rev A, and 87-095. The former was a SE for Temporary Modification (TM) 87-038A, a temporary reduction of the Rod Sequence Control System Low Power Setpoint and the latter for TM 87-039 concerning a reduction of the Rod Worth Minimizer Low Power Setpoint, both TMs to facilitate startup testing. The assigned DER reviewer concluded that the original SEs were valid and no changes were required.
- DERs 88-1840 and 88-1855, issued by the ISEG, concerned a difference between emergency loads for EECW and SW systems in FSAR Tables and Drawing 6I721-6714, Rev F. DER 88-1855, was later found to be a duplication of DER 88-1840 and was closed by OSRO on November 19, 1988. DER 88-1840, was handled as a 24 hour severity but it was issued and approved October 13, 1988 at 1419 hours but was not assigned until October 17, 1988. The initial response on the 17th concluded that the small load difference did not present a significant concern and the DER was scheduled to be completed by December 30, 1988 and the FSAR and drawings updated by February 24, 1989. The load difference was attributed to different methods of determining the loads. The conservative minimum name plate load from Design Calculation DC 2116 will be used to update the FSAR and drawings.

The inspector also reviewed a DER associated with personnel 50.59 qualification. This DER was:

- DER 88-1629, issued September 2, 1988, concerned individuals who had not taken the above training and were performing PEs on safety related documents, mainly TS related procedures. Corrective action for this DER resulted in the revision of Fermi Interfacing Procedure FIP-PRI-01, "Procedures, Manuals, and Orders," to include the 10 CFR 50.59 training requirements for authors and technical reviewers of Document Change Requests, related to procedure changes concerning safety on the environment. Additional training classes were held to include these individuals. The inspector reviewed eight recent procedure revisions and found all the PE authors and technical reviewers have completed these classes.

The above unresolved items, DERs and the inspectors problem in obtaining backup documents, indicated that problems with the SE system still remain.

No violations or deviations were identified.

10. Corrective Actions, Deviation Event Reports, and Tracking

Fermi Interfacing Procedure, FIP-CA1-01, "Deviation and Corrective Actions Reporting," Revision 1, issued May 23, 1988, sets forth the requirements for the DER system presently in use. The DER system is all-encompassing in that it is used to identify, document, notify, evaluate, and correct all events or nonconforming conditions that are adverse to quality, reportable events, nonconformances, or other operational experiences certified by regulatory or industrial organizations.

DERs may be issued by anyone openly through a supervisor or anonymously. Each DER is reviewed for significance and reportability, assigned a number and tracked after being assigned to individuals for review and corrective actions by the Plant Manager. If there is no significant impact and it is clearly not reportable, DERs are routed through the Plant Safety Director, who holds an SRO License. All DERs that are reportable or that have significant impact, are routed through the Nuclear Shift Supervisor. Each DER is assigned for corrective action with a completion date depending upon significance and tracked until the root cause and corrective action to prevent recurrence has been completed. The completed DER is reviewed and approved by Plant Safety, OSRO if the DER concerns a Technical Specification violation, a reportable event or a radioactive material release, and the Plant Manager.

Only minor changes of the DERs are permitted and only if they do not change the meaning or intent of the DER. All other changes must receive the same reviews and approvals as the original DER or be issued as a new DER.

Each DER is tracked and the status reported weekly until all corrective actions are completed and the closeout is approved. In addition, a DER trending program issued quarterly, by Plant Safety, follows the four major root cause groups: General, Hardware, Procedures, and Personnel, and indicates adverse trends by the various facility organizations.

This system processed more than 2100 DERs during 1988. About 80 percent were potential Fermi internal nonconformances and the rest regulatory or industry DER issuances. The licensee's Trend Analysis Report (TAR) for the second and third quarters of 1988 indicates a declining trend in the number of DERs issued. The volume in the first quarter was 646, in the second 588, and the third 561. The TAR, issued by Plant Safety, for the second and third quarters indicated increased DER contributions in the hardware area by the Maintenance and Modifications Organization, in the procedure area by the Nuclear Engineering Organization, and in the personnel error area by both Maintenance and Modification and the Nuclear Engineering Organizations. Plant Safety had issued DERs to these organizations to review these adverse trends and to initiate corrective actions to reduce the DERs in these areas. The TAR also noted that the Operations organization was showing an increase in both the areas of personnel errors and procedural errors. Personnel error continues to be the most significant root cause.

In the course of the inspection in the safety evaluation area and of NRC Information Notices, the inspector reviewed numerous DERs. In addition, several other DERs were selected for review. The inspector did not find any instances reported in the Diagnostic Evaluation Team's report where DERs were closed by referring to other DER closures, or where DERs had been combined. In one case two DERs were written on the same subject several days apart. The later one, which was more inclusive, remained in the system while the earlier one was administratively closed and a copy attached to the later DER. This closure appeared to be appropriate.

In one instance a DER was issued early in 1988, on the completion of Information Notice IN 84-92 (see Paragraph 2.a, Followup on Unresolved Item 341/88003-10). The DER 88-054 carried two objectives, one to assure closeout of the specific IN and the others to determine generically if the closure of INs was being made by issuing PDCs with no followup. This dual use of one DER appeared to be inappropriate.

The inspector concluded that the DER system was operating in accordance with the procedures and appeared to provide a good method of tracking and scheduling items until corrective actions were completed.

No violations or deviations were identified in this area.

11. Review of Temporary Instruction (TI) 2515/99

The inspector performed a review during the inspection period of licensee actions in response to requirements and recommendations developed for the industry as a result of a March 9, 1988 power oscillation event which occurred at LaSalle County Station, Unit 2. The review was conducted

in conformance with the guidelines specified in TI 2515/99, "Inspection of Licensee's Implementation of Requested Actions of NRC Bulletin 88-07 'BWR Power Oscillations'," issued on September 19, 1988, to ascertain if the licensee has (1) implemented precautions to avoid power oscillations, and (2) provided for prompt detection/suppression of power oscillations should they occur.

The following operations procedures were reviewed to verify proper incorporation of appropriate requirements/recommendations of G.E. Service Information Letter (SIL) No. 380, "BWR Core Thermal Hydraulic Stability," NRC Information Notice No. 88-39, "LaSalle Unit 2 Loss of Recirculation Pumps with Power Oscillation Event," and NRC Bulletin No. 88-07, "Power Oscillations in Boiling Water Reactors (BWRs)," as well as the interim corrective actions affirmed in a November 22, 1988 meeting between the NRC, BWR Owners' Group, and G.E.

- NPP 20.138.01 Recirculation Pump Trip.
- NPP 20.107.02 Loss of Feedwater Heating.
- NPP 22.000.17 Power Changes During Operation.
- NPP 23.138.01 Reactor Recirculation System.
- ARP 3D107 LPRM Downscale.
- ARP 3D106 LPRM Upscale.

The inspector found that these procedures provided for prompt detection and suppression of power oscillations, that special considerations were given to define and subsist with the operating region of potential instability (e.g., high power/low flow conditions), instrumentation deficiencies identified in the LaSalle AIT inspection report were accounted for, and that conditions involving two loop, single loop, and natural circulation were addressed. Operating procedures appeared consistent with Technical Specification 3/4.4.1, "Recirculation Loops."

The inspector interviewed members of the operating staff on their familiarity with the LaSalle event and applicability to Fermi as well as their familiarity with Fermi procedural requirements in this area. Two Senior Reactor Operators (one Nuclear Shift Supervisor, one Nuclear Assistant Shift Supervisor) and one Reactor Operator (Control Room Nuclear Supervising Operator) were interviewed. Each demonstrated an acceptable level of knowledge.

In addition, the inspector witnessed/reviewed one intentional trip of Reactor Recirculation (RR) Pump B during the inspection as well as an inadvertent trip of RR Pump B during a previous inspection (reference Inspection Report 341/88030). Operator response and procedural adherence in both instances were found to be satisfactory.

Completion of review in this area pursuant to the guidelines of TI 2515/99 requires interviews with additional operations personnel including those in the Shift Technical Advisor (STA) position, walkthroughs of pertinent procedures with operators as well as an evaluation of training on the LaSalle event and required operator actions to prevent/detect/suppress power oscillations. This will be accomplished and documented in Inspection Report 341/89002.

No violations or deviations were identified in this area.

12. Management Meetings

- a. On December 6, 1988, the Diagnostic Team Manager and the Region III Director, Division of Reactor Projects met with the Monroe County Commissioners at the Civil Preparedness Building in Monroe, Michigan. The NRC personnel explained the purpose of the diagnostic evaluation recently conducted at the Fermi site, the personnel composition of the diagnostic evaluation team and some of the general conclusions of the report.
- b. On December 16, 1988, NRC Region III management met with DECo management at the Nuclear Operations Center at Fermi 2. The purpose of the meeting was to continue the periodic meetings with the licensee to help assess Fermi 2's progress in dealing with various matters of interest to Region III. The meeting topics along with a summary of the licensee's presentation on these topics is provided below:

General Overview

Some stabilization has occurred in the organization with numerous acting supervisors made permanent and 18 of 24 system engineers hired. Consolidation of the material control function has been completed. One significant management position (Outage Manager) has yet to be filled. Management is developing a 5 year master plan to be approved in March. A planning and scheduling group has been created in nuclear engineering. The corrective maintenance backlog is slowly decreasing. A continuing technical training program has been established and a leadership training program is underway. Operations human error rate is decreasing.

Engineering Progress

The consultant diagnosis of the material management and the nuclear engineering/technical engineering interface has been completed. The recommendations were:

- Define NE/TE interfaces.
- Stabilize the organization.
- Define and provide appropriate resources.
- Establish a formal technical training program.
- Centralize engineering planning and scheduling.
- Take outage management seriously.

Presently a DECo study group was working on the NE/TE interface with their study results expected in January. Mr. Cranston had been hired as Engineering Director to help stabilize the engineering organization and almost all the supervisors in NE have been appointed as permanent.

Probabilistic Risk Assessment (PRA)

The licensee has contracted a Level 1 PRA to be performed for Fermi 2. The contractor portion of the PRA is approximately 80% complete and is expected to be submitted to the licensee in mid-January. Following a licensee review, the final report is expected to be completed in the summer of 1989. The licensee cited numerous uses for the PRA.

Safety Parameter Display System

The licensee established a multidiscipline team review of SPDS. The team conducted 18 operator interviews and reviewed all applicable documents and reports on the SPDS. From this review numerous system modifications were implemented. Verification and validation of these changes have been performed along with simulator and classroom training. The licensee indicated that previously identified deficiencies by the NRC have been resolved.

Equipment Problems

The licensee discussed ten of their more significant equipment problems and their planned actions for resolution.

Commitments

A statical compilation of commitments due and those completed were presented along with a breakdown of how the commitments are internally categorized.

Startup Test Program

The test program is essentially complete and the shift operating advisors have been taken off shift.

Performance Indicators

The ROIP indicators were shown along with the CRIS dot and maintenance backlog status. The licensee stated that the ROIP indicators will be deleted and more meaningful Business Plan indicators will be presented in future meetings.

Control Room Evolution Evaluation Program

The cumulative program results were presented. The licensee indicated a wish to change the way in which operations evaluations would be conducted. The simulator evaluations would continue but the on-shift evaluations would be performed by the NSSs and other senior licensed individuals. Correspondence will be transmitted on the matter to Region III.

Technical Specification Improvement Program (TSIP)

The TSIP is 97% complete. The program will be complete by the end of December with the exception of a few actions. The program identified 19 reportable items, 51 major non-reportable items, 26 Technical Specification changes and 184 mandatory open items. These actions are:

- Submittal of all Technical Specification changes.
- Completion of the last 1% of the surveillance/maintenance cross reference.
- Establishment of some situational surveillance trigger points.
- Complete all UFSAR changes identified.
- Provide followup and resolution of all open items, some of which may require additional Technical Specifications to be submitted.
- Perform a feedback evaluation of the new surveillance system during the first quarter of 1989.

EOP Action Plan

The licensee has developed a general action plan to resolve the major concerns from the EOP inspection. However, a time table or detailed schedule is still being developed. Some of these major concerns include flow charts, containment vent paths and improving the fidelity of the simulator. Presently, Revision 4 has been approved by the licensee. Also, a second simulator instructor has been added when students are in the simulator.

Procedures Upgrade Program

The upgrade program appeared to be a little behind with 409 left from the 4656 total population.

Leadership Training

The licensee has initiated a leadership training program directed at the supervisor/management individuals (approximately 380 people) entitled STEPS. The program can accommodate 64 people per cycle and will take approximately 6 months to complete per cycle.

Preventative Maintenance Program (PM)

The PM program is being implemented with all the A PMs barely being completed and almost none of the B PMs being done. Presently, contractor bids are outstanding to review, consolidate, and determine the appropriate frequency for PMs.

Spare Parts

The availability of spare parts is improving. Fifteen instead of thirty five percent of received parts are going to the QC hold area. Four percent of stock items are below the emergency spare quantity amount. Planning improvements have occurred through a rewrite of work control procedures, pre-planning jobs, SPRS is being used more, additional resources have been provided in planning and parts review and a "customer satisfaction program" has been established. A continuous inventory is being performed on a two year cycle. A purchase technical review is to begin in the second quarter of 1989.

I&C Specification Sheets

There are approximately 18,000 specification sheets that need review. Five additional personnel are being acquired to help. Safety-related sheets will be the first priority.

Quality Programs and Effectiveness Review

Trends were presented on the DER system.

Industry Experience Re-review

IN review is in progress. ISEG is doing a GE SIL review. ISEG review of surveillances was satisfactory.

13. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, violations, or deviations. Unresolved items disclosed during the inspection are discussed in Paragraphs 3 and 9.

14. 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 4 and 8.

15. Exit Interview (30703)

The inspectors met with licensee representatives (denoted in Paragraph 1) on December 16, 1988, and January 20, 1989, 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.