

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-341/84-11(DRS)

Docket No. 50-341

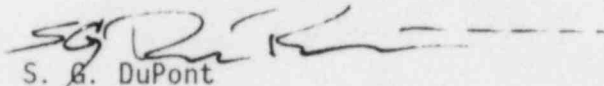
License No. CPPR-87

Licensee: Detroit Edison Company
2000 Second Avenue
Detroit, MI 48224

Facility Name: Enrico Fermi Nuclear Power Plant, Unit 2

Inspection At: Enrico Fermi 2 Site, Monroe, MI

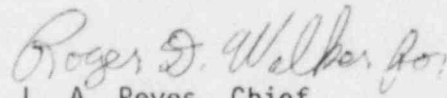
Inspection Conducted: April 16 through June 1, 1984

Inspectors:  S. B. DuPont

June 26, 1984
Date


R. C. Martin

6/26/84
Date

Approved By: 
L. A. Reyes, Chief
Test Programs Section

June 26, 1984
Date

Inspection Summary

Inspection on April 16 through June 1, 1984 (Report No. 50-341/84-11(DRS))

Areas Inspected: Routine, unannounced inspection of licensee action on previous inspection findings, IE circular followup, preoperational test procedure review, overall preoperational test program review, preoperational test witnessing, interim 50.55(e) report review, preoperational test program implementation, preoperational test results review and plant cleanliness. The inspection involved a total of 255 inspector-hours onsite by two NRC inspectors, including 99 inspector-hours onsite during off-shifts.

Results: Of the nine areas inspected, no items of noncompliance or deviations were identified in six areas. Within the remaining areas, four items of noncompliance were identified (Inadequate preoperational test procedure - Paragraph 4; Failure to follow procedures - Paragraph 6; Inadequate house-keeping - Paragraph 10; Failure to follow procedures - Paragraph 6).

DETAILS

1. Persons Contacted

- *R. S. Lenart, Superintendent, Nuclear Production
- *G. Overbeck, Assistant Superintendent, Nuclear Production
- *J. D. Leman, Director, Maintenance - Nuclear Production
- *P. Acharya, Director, System Completion Organization
- *T. Nicholson, Startup Engineer
- *T. Mintun, Startup Director
- *M. Ripley, Assistant Startup Director
- *P. Fessler, LSTE - NSSS
- *S. M. Price, SSTE - Rad Waste
- *L. P. Bregni, Licensing Engineer
- *P. L. Nadeau, Licensing Technician

The inspector also interviewed other licensee employees, including, members of the startup, quality assurance, and operating staff.

*Denotes personnel attending exit interview on June 1, 1984.

2. Action on Previous Inspection Findings

(Closed) Open Item (341/83-04-05(DE)): Management study of circumstances causing noncompliance 341/83-04-04(DE). The licensee utilized a consultant from the Education and Management Development Division of the Corporate Organization Planning and Development Department to conduct two sessions. The first session involved Startup Test Technicians (STT) and Startup Test Engineers (STE), an Operational Assurance Inspector, and a Reactor Operator License Candidate, while the second session involved the supervisors of the above groups. The objectives of the sessions were to determine and solve the cause of failing to adhere to procedures during testing. Both sessions had determined some of the causes as follows: changing of procedures requires additional training and effective communications, testing forms are not being used properly, and a need for effective communications between STEs of interfacing systems. In all of the above areas there have been various noncompliances; however, the inspector has observed improvements in these areas that have resulted in no noncompliances in recent inspections. Also, the inspector has found that the licensee has improved in these following areas: coordination of testing, verification of prerequisites, control and knowledge of systems under testing, and solving of abnormal testing conditions. However, even with these improvements, the following occurrences and their attributing causes have been noted in this report: operating a Diesel Generator Service Water (DGSW) pump with less than minimum level in the service water reservoir--inadequate test coordination and communication between interfacing STEs (paragraph 6), and housekeeping of Division I and II batteries were not adequately maintained as a prerequisite of testing (paragraph 10). Even though improvements have been made, these events have recently occurred indicating that during this accelerated testing schedule, the licensee's staff will have to maintain detailed knowledge

and forcible control of systems under testing. In addition, many of the causes and solutions determined by the licensee's study should be reexamined by the licensee's staff for applicability to current problems and trends.

(Closed) Open Item (341/83-21-02(DE)): The "B" pump was visually and liquid penetrant examined after a check valve had failed to close during testing and the pump had rotated in the reverse direction. The results had revealed a one-half inch crack through the pump impeller base. The licensee returned the pump to the manufacturer (Byron-Jackson) for repairs. The identified crack was determined not to be stress-induced cracking and was repaired as original casting flaws. The repaired pump was returned, installed, and inspected in February 1984, with subsequent preoperational testing scheduled in July. The inspector finds these actions to be adequate and will be witnessing the preoperational test. The event is also being followed by Detroit Edison Company (DECo) 10 CFR 50.55(e) report 341/83-21-EE.

(Closed) Noncompliance 341/83-21-05(DE)): Management controls had failed to revise the FSAR. The inspector reviewed the Edison Field Engineering Work Procedure FEWP-14, Revision 1, and determined that it addressed the responsibility to review procedures and test results for compliance to the FSAR. Also included in FEWP-14 are instructions for actions to be taken for preoperational tests that are not in compliance with the FSAR. The inspector also reviewed Nuclear Operations Directive NOD-26 which determines DECo's position with respect to the accuracy to which the FSAR will be maintained. In addition, the FSAR is considered by NOD-26 to be the principal document whereby DECo provides the information to the NRC to indicate that Fermi 2 has been designed and will be operated in a manner which will protect the health and safety of the public. The inspector finds these actions adequate.

(Closed) Open Item (341/83-25-02(DE)): Clarification of Main Steam Isolation Valve (MSIV) bypass leakage acceptance criterion. The acceptance criteria of the FSAR were not consistent with Technical Specification Section 3.6.1.2 or as-built system conditions. The FSAR was revised and approved with bypass leakage requirements consistent with the Technical Specifications. The inspector also verified that the MSIV leakage control system will be shown operable during initial vessel heatup (Startup Test). This item is considered to be closed.

(Closed) Noncompliance (341/83-25-03(DE)): Failure to transfer test objectives from PRET C3500.001 to PRET C3200.001. The licensee issued TCN 1487 (Test Change Notice) to incorporate testing of the reactor pressure indication (C35-R003) on the Division II Remote Shutdown Panel and the control room reactor pressure indication (C32-R605A) as part of preoperational test C3200.001. In addition, the licensee issued an instruction letter (SU-2511, Supplement 8) to ensure adequate transfer of test objectives from PRET A7100.001, Primary Containment Isolation System, to the following preoperational test procedures: PRET C7100.001, PRET B2100.001, PRET E1100.001, PRET T4500.001, PRET C5116.001, PRET T4100.001, PRET T4600.001, PRET B3100.001, PRET G5100.001, PRET T4802.001,

PRET T4102.001, PRET G3300.001, PRET E4100.001, PRET E5100.001, and PRET D1100.001. The inspector has reviewed the TCN and various procedures affected by SU-2511, including PRET D1100.001, PRET E4100.001, and PRET E5100.001 and finds the licensee actions adequate.

(Closed) Noncompliance 341/83-28-03(DE)): Preoperational test procedure B3100.001 Reactor Recirculation System, did not include prerequisites or initial conditions to verify the operability of valve operating air. Lack of coordination between the Joint Test Group (JTG) conducting hydro testing and STEs conducting preoperational testing contributed to the noncompliance. The licensee issued a Test Change Notice (TCN) to add verification of availability of valve operating air. In addition, the licensee has added hydro testing to the test plan of the day to provide STEs with notification of potential impact on related testing. The inspector has verified throughout the inspection periods from January through May 1984, that these actions have provided improvements in coordination of testing.

(Closed) Noncompliance (341/83-28-04(DE)): Welding blanket found in the open end of the Residual Heat Removal System (RHR) test return line. The licensee implemented SCO Procedure 13.1, "Surveillance Coordination," which requires that all open areas--tanks, return lines, and reservoirs--be inspected. In addition, Project Procedures PPM 7.27, "Project House-keeping," and PPM 7.38, "Storage and Handling of Materials Under Construction," were revised to include controls of open systems. The inspector also verified that DECo had instructed Bechtel and Wismer & Becker (construction organizations) to revise their procedures to include applicable controls of open pipe, tanks, vessels, and open components. The inspector considers this item to be closed; however, additional concerns with foreign material in safety related systems are addressed in Paragraph 7 of this inspection report.

(Closed) Open Item (341/84-01-01(DE)): Approval of major Test Change Notices (TCNs) by the Joint Test Group (JTG) not in accordance with the FSAR. The licensee revised the Startup Instruction to define that a major TCN will necessitate stopping the preoperational test until it has been reviewed and approved by the reviewers as specified in the Startup Manual and the FSAR. The inspector finds this to be acceptable.

(Closed) Open Item (341/84-01-02(DE)): Various concerns with the use and control of Measuring and Test Equipment (M&TE). The concerns were identified in six areas: (1) Classification and control of permanently installed instrumentation, (2) Actions to be taken when M&TE is lost, (3) Clarification of the evaluation procedure for M&TE found to be out of calibration, broken, or missing to be used with all preoperational tests and not just QA Level I (safety related), (4) The M&TE evaluation procedure does not involve Startup personnel when the instruments of question were used to verify acceptability of preoperational procedures, (5) Basis for three-in-a-row testing for evaluation of M&TE missing and out of calibration, and (6) SI 4.7.3.01 does not require trending of M&TE found to be out of calibration.

- (1) DECo does not currently classify permanently installed instrumentation as M&TE; however, SI 8.1.0.01, "Testing Progress Checklist," and SI 8.4.2.01, "Preoperational Procedure Preparation," require that permanently installed instrumentation be calibrated prior to and after testing. Additionally, the licensee in their response dated April 9, 1984, stated that their basis for not classifying permanent instruments as M&TE is that IEEE Standard 498 Section 1.1 does not specify permanent instruments. However, Section 1.1 states that "Measuring and Test Equipment does not include permanently installed operating equipment, nor test equipment used for preliminary checks where data obtained will not be used to determine acceptability or be the basis for design or engineering evaluation." This statement is interpreted to mean that permanent instrumentation used to determine acceptability, such as an installed flow meter used to collect data to verify the acceptability of a safety-related systems, shall be controlled in the same manner as M&TE. Since the licensee does control permanent instruments the same as M&TE and that SI 8.1.0.01 and SI 8.4.2.01 provide acceptable methods to meet the requirements of IEEE Std 498, the inspector finds these controls adequate even though the licensee does not classify permanent instruments as M&TE.
- (2) The licensee has revised Nuclear Quality Assurance Procedure PQAP 9.150, "Calibration and Control of M&TE," to include requirements to conduct an evaluation of the need for retesting in the event M&TE used in the original test is lost. The inspector finds the licensee's actions acceptable.
- (3) The licensee has stated that evaluations conducted when M&TE is found out-of-calibration will be consistent and shall not differentiate between M&TE used during performance of safety-related (QA Level I) and nonsafety-related preoperational testing (Procedure 41.000.05). In addition, M&TE found out-of-calibration during post test checks will require an evaluation for impact on checkout and initial operation (CAIO), preoperational, and acceptance testing. The inspector finds these actions to be acceptable.
- (4) The licensee has also implemented instructions that all documentation of out-of-calibration M&TE found during post test checks will also be evaluated by the STE for impact on applicable acceptance criteria and effects on the applicable and related systems. The inspector finds these actions to be acceptable.
- (5) The licensee has revised SI 4.7.3.01, "Control and Storage of Electrical Group M&TE," to delete the post calibration retest of only three in a row. The requirements for lost or failed M&TE now require a retest of the last use for recording quantitative data in addition to two other discrepant uses. This quantitative base is then compared to the test data recorded by the discrepant M&TE. The STE will determine from the quantitative base data all retesting of recorded data dependant upon the discrepant instrument. The inspector finds this revision to be an improvement of the licensee's program.

- (6) The licensee issued Revision 7 to SI 4.7.3.01 to provide instruction for the M&TE controller to review M&TE calibration for trending of equipment found consistently out of calibration. The inspector finds this revision to be adequate in trending and control of M&TE.

(Closed) Unresolved Item (341/84-01-06(DE)) and Open Item (341/84-01-07(DE)): Determination of design change status of safety related system. The licensee's System Completion Organization (SCO) developed a tracking system that would display the status of all design changes to a system. This configuration log reflects the completion date of design changes to allow the Startup Test Engineer to verify any possible impact to the preoperational test. Also, during turnover, Nuclear Operations can now easily verify status of the system and schedule for any outstanding items. The inspector believes this to be an improvement to the licensee's program.

No items of noncompliance or deviations were identified.

3. IE Circular Followup

For the IE Circular listed below, the inspector verified that the Circular was received by the licensee management, that a review for applicability was performed, and that if the circular was applicable to the facility, appropriate corrective actions were taken or were scheduled to be taken.

(Closed) IE Circular 79-22. Pressure transient associated with Power Operated Relief Valves (PORVs) with stroke times greater than designed. This circular is not applicable to Fermi 2 in that the PORVs utilized by PWRs require a maximum closure stroke time to prevent a pressure transient that could affect the vessel's nil ductility. However, the related component utilized by BWRs are the Safety Relief Valves (SRVs), which do not require closure stroke times. The inspector verified that the licensee had received and considered the circular for applicability and information.

No items of noncompliance or deviations were identified.

4. Preoperational Test Procedure Review

The inspector reviewed the following test procedures for compliance with the FSAR, the SER, Regulatory Guide 1.68, the QA Manual, and the Startup Manual and found them satisfactory except as noted below:

R3000.001	EDG System
T4800.001	Primary Containment Pressure Control System
R5202.001	24/48 VDC System
R3600.001	Plant Normal & Emergency Lighting System
B3100.001	Reactor Recirculation System
C1109.001	Rod Sequence Control System
E1151.001	RHR Service Water Complex System

During review of the approved and released procedure R3202.001 the inspector identified an inadequacy related to the battery charger performance test. The procedure prescribed isolating the battery chargers from the 24/48 VDC system for performance of the battery discharge test by opening specified circuit breakers (Section 6.1.6.1). However, the procedure did not provide required steps to reconnect the battery chargers to the 24/48 VDC system prior to the battery charger performance test (Section 6.1.6.3). This omission would have resulted in the inability of the procedure to meet the stated test objective to verify the battery charger performance requirements. This inadequacy was also found in the testing of the Division II battery system. Although the preoperational test procedure was reviewed, approved and released by the Technical Review Committee, this inadequacy was not identified. This is considered an item of noncompliance (341/84-11-01(DRS)).

Concerning T4800.001, while reviewing this preoperational test procedure the inspector was informed of a major design change in progress affecting this system. The inspector was also informed that upon completion of the design change and its implementation in the field, the preoperational test would be revised to reflect the necessary testing for these changes and retesting would be performed as necessary. This is an open item (341/84-11-02(DRS)) until the implementation has been completed and verified.

Portions of C1100.001 CRD Manual Control System and C7100.001 Reactor Protection System were reviewed during this inspection period. These reviews will be completed during subsequent inspections.

No other items of noncompliance or deviations were identified.

5. Overall Preoperational Test Program Review

The inspector reviewed the preoperational test program against the testing requirements defined in Regulatory Guide 1.68, Appendix A, Revision 0 and found the licensee's program adequate.

- a. A review of the Primary Containment isolation valve stroke time testing program was performed by the inspector. A review of the requirements in the FSAR, proposed draft Technical Specifications and the Master Valve List was performed along with the program for testing the stroke times of these valves to demonstrate conformance with these requirements. The inspector noted that many valves requiring stroke time testing were not being tested as a portion of the appropriate preoperational tests. The licensee stated that valve stroke time testing is performed as a portion of the checkout and initial operations (CAIO) test program. CAIO testing is conducted under the authority of the preoperational testing organization with the appropriate administrative, procedural and quality controls. Also the results of all stroke time testing performed as CAIO tests shall be included in the preoperational test results package and subject to full standards of preoperational test results review. This method is considered acceptable. However, it was identified that stroke time requirements from the governing documents did not agree

in all cases and some valves, when tested, did not meet acceptance criteria. These problems were referred to the engineering organization for disposition. A Design Change Notice was issued by the engineering organizations to resolve these items. Pending a review of this Design Change Notice and the Engineering Evaluations which supports this design change this is considered an Unresolved Item (341/84-11-03(DRS)).

- b. The inspector reviewed the plant maintenance and preventive maintenance programs and determined that the licensee's administrative procedures require plant maintenance, with the exception of activities defined as "craft capability", to be performed by trained, qualified personnel in accordance with approved, written procedures.

The following activities have been verified to be controlled by maintenance administrative procedures and the startup manual or both:

- (1) Method for preparing maintenance procedures.
- (2) Maintenance procedures are reviewed by and approved by an operating technical review group.
- (3) QC inspects maintenance including final inspection of completed activities.
- (4) Administrative procedures control the use and calibration of measuring test equipment.

The preventive maintenance program was also reviewed to verify that periodic surveillance is scheduled and governed by written and approved procedures.

Fermi has also implemented a master maintenance procedure and instruction cross reference index to aid in performing plant maintenance and to schedule preventive maintenance. The inspector finds these programs to be adequate.

No items of noncompliance or deviations were identified.

6. Preoperational Test Witnessing

The inspector witnessed the following preoperational testing to ascertain through observation and record review that testing was conducted in accordance with approved procedures. Additionally, the performance of licensee personnel was evaluated during testing and was found satisfactory unless otherwise noted.

a. PRET C1150.001, Control Rod Drive (CRD) Hydraulic System

The inspector witnessed the CRD pump flow tests (Section 6.7.2) and observed the utilization of the CRD operating procedure, SOP 23.106. The test was performed satisfactorily. Previous inspections in this area is documented in inspection report 50-341/83-17(DPRP).

b. PRET R3201.001 130/260 VDC System

The inspector witnessed the Spare Battery Charger (2B1-2) Service Test and the performance test of the 2PA DC system 2A-1 battery. The objective of the battery performance test is to verify that the battery capacity is at least 90% of the manufacture's rating with a continuous discharge load of 80 (-0, +8) amps.

Prior to completion of the performance test, it appeared that two battery cells had possibly reversed voltage and an additional two cells had dropped below the rated minimum voltage of 1.75 VDC. These cells were jumpered, however, the test was discontinued due to a concern that other cells might have failed prior to completion of the performance test. This is an unresolved item (341/84-11-04(DRS)) until the status of the battery is determined.

c. PRET C1109.001 Rod Sequence Control System

The inspector witnessed verification of A12, A34, B12, and B34 sequences during CAIO testing. Additionally, the inspector verified operations of interlocks, rod and notch blocks during preoperational testing of the A34 sequence. The tests were completed satisfactorily.

d. PRET R3000.001 Emergency Diesel Generator (EDG) System

The inspector witnessed the satisfactory completion of the following tests for EDG 11, 12, and 13: Diesel Generator auxiliary systems interlocks of the fuel oil transfer pumps and fuel oil standby pump, fuel oil transfer pump performance and reliability tests, starting air system operations, generator overspeed, full load rejection, EDG emergency start and interlock checks, full load test, and 23 reliability starts. The objective of the full load test is to verify capability of the EDG to carry a 3135 KW load for 2 hours and 2850 KW load for 22 hours.

During the testing of EDG 14, excessive vibration was recorded and the generator outboard bearing was removed for a visual inspection. The inspection of the bearing and generator did not reveal the cause of the vibration and the licensee determined that the EDG testing should continue on May 1, 1984. However, on May 5, 1984 during preoperational testing, the outboard generator bearing seized. Replacement of the bearing was completed on May 25, 1984 and testing is scheduled to resume in June.

However, the inspector identified additional information pertinent to the evaluation of the vibration condition that had not been provided to the startup group in a timely manner. This information was the results of a chemistry sample analysis of the EDG 14 bearing oil. These results were routed to Nuclear Productions on April 19, 1984. The sample had revealed that significant bearing materials, as large as 100 mills, were contained in the oil. Startup was not informed of these results until May 7, 1984; after the EDG 14 outboard generator bearing had failed. Because of the deletion of the

oil sample analysis results from the evaluation process, startup was not able to make an engineering decision based upon all available data. This is a concern to the inspector in that it is not apparent that the information necessary to conduct an engineering evaluation is being effectively transmitted between the licensee's internal organizations. The inspector will be reviewing completed test results evaluations during subsequent inspections for evidence of adequate engineering evaluations based upon complete technical data.

In addition, during the emergency starts of EDG 13, the operator failed to reset the engine exciter. This is an item of noncompliance (341/84-11-05(DRS)) in that the operator had failed to follow operating procedure SOP 23.307, which requires that to place the engine in a standby mode for operation, the engine exciter must be reset at the local control panel.

The operator had correctly followed the operating procedure for four previous starts on EDG 13 and nine starts on EDG 12. This is considered to be an isolated failure to follow a procedure and does not require a written response.

e. PRET P8000.001 Fire Protection System

The inspector observed the successful testing of the diesel fire pump to achieve design flow and pressure, verification of overspeed trip, and alarm conditions for low oil pressure and high water temperature.

f. PRET E1151.001 RHR Service Water System

The inspector witnessed the RHR Complex Service Water System performance tests of the Division 1 and 2 pumps with the reservoir at minimum submergence level for verification that the service water pumps do not experience vortering. However, during the establishing of the initial conditions for the Division 2 tests, the licensee reported to the inspector a nonconformance. On April 28, 1984, the Division 2 DGSW pumps B and D were operated with the reservoir below minimum submergence.

On April 27, 1984, operations were to pump down the reservoir to the minimum submergence level for E1151 testing. However, operations failed to follow instructions in that the reservoir was lowered below the level required by the PN-21. Additionally, operations requested the Startup Test Engineer (STE) for E1151 via the Joint Test Group (JTG) to verify the level. The STE intended to verify the level prior to commencing the E1151 testing. However, EDG testing (R3000) was also being conducted. The two preoperational tests, R3000 and E1151 required coordination because a portion of the R3000 testing automatically started the Division 2 DGSW pumps. Startup had failed to coordinate the two preoperational tests, resulting in operating the DGSW D pump below minimum submergence level. A trip of the DGSW

D pump occurred. This is an item of noncompliance (341/84-11-06(DRS)) in that instructions were not followed and that tests were not controlled or coordinated. Factors that contributed to the noncompliance were:

- (1) Operations drained the reservoir without continuously monitoring the level.
- (2) Operations verified the breaker position of the incorrect pump (RHR SW pump) to be in the test position when requested by the control room Nuclear Shift Operator (NSO) to verify the breaker position of the DGSW D pump after receiving a DGSW D pump trip alarm.
- (3) Operations failed to follow-up on a DGSW D pump trip alarm.
- (4) Operations failed to realize that the DGSW pump electrical breakers do not have a test position.

After level was returned, the DGSW D pump was tested for vibration. The testing included a 24 hour vibration verification which indicated that the pump had not been degraded or that the pumps' vibration was not intensifying.

The inspector is concerned that testing coordination is not adequate in that testing conditions, prerequisites and initial conditions are not being adequately controlled by the JTG and operations. Although many of the testing conditions have already been accomplished by the completion of the PN-21, neither group is presented with the required testing conditions prior to or during their shift except at the pretest briefing conducted by the STE. Additionally, the Nuclear Shift Operator (NSO) may not be able to attend the briefing unless it is held in the control room. This is generally not acceptable because the congestion and traffic would interfere with the normal control room activities. Because of this lack of information, it is unmanageable for the JTG to coordinate two tests that require related systems as testing conditions.

As similar events have occurred during previous inspection periods and the testing schedule indicates testing activity is increasing, the licensee is to respond to this noncompliance with a written explanation of how testing coordination will be improved.

g. PRET C7100.001 Reactor Protection System

The inspector witnessed the Reactor Protection System (RPS) Motor Generator (MG) Set A and B initial performance tests and the response time testing of the sensor relay to scram contactor circuit. During the test, the inspector verified calibrations and settings of the special test equipment. Additionally, the inspector verified that the raw data collected was correctly identified and that the data was accurately interpreted.

h. PRET T4800.001 Primary Containment Pressure Control System

The inspector witnessed section 6.5, initial nitrogen fill and makeup test. Additionally the inspector witnessed the usage of operating procedure SOP 23.406, Nitrogen Control System. The fill and test was completed satisfactorily.

No other items of noncompliance or deviations were identified.

7. Interim Report Review of 10 CFR 50.55(e) Item #101, Foreign Debris in Piping Systems

The inspector met with the licensee on May 22, 1984 to discuss the interim report EF2-68,541 dated May 11, 1984 for 50.55(e) item 341/83-15-EE. The licensee provided detailed information of the Fermi flushing program which consisted of an initial backflush from the vessel followed by a high velocity flush of the following safety related systems utilizing a temporary flushing systems with flow provided by the installed condensate pumps: Reactor Water Cleanup System (RWCU), Core Spray (CS), Reactor Core Isolation Cooling (RCIC), High Pressure Coolant Injection (HPCI), Residual Heat Removal (RHR), Feedwater (FW), Condensate, and Reactor Building Closed Cooling Water (RBCCW). The core spray and RWCU systems were flushed at greater than 120 percent, RCIC at greater than 200 percent, and all others were flushed greater than 100 percent normal system flow. However, because of inadequacies in initial controls of clean systems, debris was introduced into the piping systems. To correct these deficient conditions and in response to two items of noncompliance, the licensee improved their administrative and maintenance procedures to provide adequate control of closed and open systems including a final or closure inspection of the system. In addition, the licensee has conducted visual and ultrasonic inspection of the dead areas in the HPCI, RCIC, RHR and the Safety Relief Valve lines. These actions have resolved the specific debris concerns for the systems that have been flushed. The concerns of debris left in the systems from construction activities was resolved in General Electric reports TDEC-4264 and 4780. These reports will be included with the detailed flush program and dead area inspections as part of the final report to 341/83-15-EE.

One item remains open as an inspector's concern. Procedure 12.000.48, as described in EF2-68,541, requires Edison Engineering to be notified of any future debris concerns to ensure that the intrusion is documented, trended and to conduct or authorize the conduct of a safety analysis to determine the safety implications of the debris. This is a concern if these actions are not controlled by a governing, written, and approved procedure to specify the trending and analysis for both the specific and generic safety implication. Instructions should be provided to analyze for implications to related systems, specifically those that have a common source for suction. This is an open item (341/84-11-07) until a procedure is written that governs the specific and generic implications.

No items of noncompliance or deviations were identified.

8. Preoperational Test Program Implementation

The following is considered to be an improvement of the Fermi 2 startup program. As directed by Startup Group letter SU-84-0773, dated April 19, 1984, startup has implemented a program to perform operational surveillance tests as an integral part of the preoperational test. This has been accomplished by a minor Test Change Notch (TCN) to require that the surveillance tests of the related system to be completed in Section 8.0 of the preoperational procedure. For those systems that had already had their test results approved and accepted, startup will assist nuclear operations in completing the surveillances. This program should prove instrumental in accomplishing the surveillances tests prior to fuel load.

No items of noncompliance or deviations were identified.

9. Preoperational Test Results Review

The inspector reviewed preoperational test result C5115.001 Recirculation Flow Bias for acceptance and completion of test objectives of the FSAR and SER. In addition, the licensee's test result evaluation was reviewed for adequacy and found satisfactory.

No items of noncompliance or deviations were identified.

10. Plant Cleanliness

During the inspection period, the inspector toured the reactor, turbine and the RHR complex buildings and noticed an improvement in overall house cleanliness except as noted below. Improvements included control of clean areas and the removal of excess scaffolding in the drywell. However, two areas were inadequately controlled resulting in an item of noncompliance (341/84-11-08(DRS)).

- a. During the tour of the Division 1 and 2 Battery Rooms, the inspector noted the following deficient conditions. On both divisions of the 260/130 VDC Batteries, there was free standing battery acid, signs of oxidation on terminals, and various fill and sample caps missing or not tightly secured. These are indications of poor housekeeping practices during a recent battery fill and periodic maintenance sampling. In addition to free standing acid, oxidation of the 48/24 VDC batteries was advanced to the degree that the battery hold down straps had oxidized through the protective covering. Once notified, the licensee immediately cleaned the batteries and ordered replacement hold down straps.
- b. During a tour of the RHR complex building prior to commencing the service water minimum submergence test, the inspector noticed debris in the Division 2 service water reservoir. The debris was identified as plastic bags, wood, paper, rags, and various plastic objects floating on or near the surface. Because of the uncertainty that any of the debris might become lodged in the suction of a service water pumps, the licensee drained and cleaned the reservoir. To prevent further occurrences, the licensee completed the construction

activities above the reservoir prior to continuing testing. The licensee is also considering an improved design for the reservoir covering grid to prevent intrusions of paper, rags and other debris from falling into the reservoir.

Because of the licensee's prompt response to correct the above deficient conditions and the actions the licensee is taking to prevent further intrusions; improved reservoir grid, access control to the RHR complex and battery rooms, and administrative controls to maintain the cleanliness of the batteries, a written response to this item of noncompliance is not required.

11. 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 7.

12. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance, or deviations. Unresolved item disclosed during the inspection are discussed in Paragraphs 5.b and 6.b.

13. Exit Meeting

The inspector met with site representatives (denoted in Paragraph 1) at the conclusion of the inspection on June 1, 1984. The inspector summarized the scope and findings of the inspection.