U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-341/90020(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 17, 1990, through February 8, 1991

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Date

Inspection Summary

Inspection on December 17, 1990 to February 8, 1991 (Report No. 50-341/90020(DRP))

Areas Inspected: Action on previous inspection findings; operational safety; ESF system walkdown; maintenance; surveillance; followup of events; LER followup; preparation for refueling; design changes; and licensee self-assessment evaluation.

Results: A continuation of adequate onshift operator performance was noted during the inspection period. Major plant evolutions such as the reactor startup in January were properly implemented. The licensee's cold weather preparations were complete, timely and comprehensive. Management tracking and control of staff overtime usage was found to be in compliance with the Technical Specifications. However, operator attention to detail was weak in certain cases. Still under review was an intentional deviation from an operations administrative procedure that was authorized by a Nuclear Shift Supervisor. New fuel receipt operations were much improved from the previous inspection period. Control of a contractor material storage and staging area in the turbine building was observed to be inadequate. A potential compromise in integrity of the most recent NRC license exam was identified by the licensee with appropriate notifications and compensatory measures taken. Some weaknesses were identified during inspector review of Engineering Design Package (EDP) installation packages. Many ISEG observations and findings from 1989 and 1990 were still outstanding at the end of the current inspection period

with ISEG personnel not fully cognizant of their exact status. One non-cited violation was identified addressing the compromise of the NRC exam (Paragraph 3.g). One unresolved item was identified dealing with the intentional deviation from procedure (Paragraph 3.f) and three open items were identified (Paragraphs 8.t, 8.u and 11).

DETAILS

1. Persons Contacted

a. Detroit Edison Company

* F. Abramson, Supervisor, Operator Training
# * R. Anderson, Superintendent, Radiation Protection
#&* S. Catola, Vice President, Nuclear Engineering and Services
W. Colonnello, Plant Safety
* G. Cranston, General Director, Nuclear Engineering
#&* R. Eberhardt, Outage Manager
D. Eisenhut, Chairman, NSRG
* P. Fessler, Superintendent, Technical Engineering
D. Gipson, Assistant Vice President, Nuclear Operations
#& L. Goodman, Director, Licensing
R. May, Director, Nuclear Materials Management
* R. McKeon, Plant Manager
* W. Miller, Director, NQA
J. Nyquist, Supervisor, ISEG
& G. Ohlemacher, Principal Engineer, Licensing
#&* W. Orser, Senior Vice President, Nuclear Operations
J. Pendergast, Compliance Engineer
J. Plona, Superintendent, Operations
* T. Riley, Supervisor, Compliance
* T. Schehr, Operations Engineer
A. Settles, Director, Plant safety
B. Sheffel, Nuclear Production, Technical Engineering ISI
* B. Siemasz, Compliance Engineer
* R. Stafford, General Director, Nuclear Assurance
# F. Svetkovich, Operations Support Engineer
R. Stafford, General Director, Nuclear Assurance
& W. Tucker, Assistant to the Assistant Vice President
* J. Walker, General Supervisor, Plant Engineering

b. U.S. Nuclear Regulatory Commission

W. Rogers, Senior Resident Inspector
#&* S. Stasek, Resident Inspector
B. Drouin, Project Engineer, RIII
D. Schrum, Reactor Engineer, RIII
D. Butler, Reactor Inspector, RIII
& H. Miller, Director, Division of Reactor Projects, RIII
# B. Clayton, Chief, Projects Branch 2, RIII
& R. DeFayette, Chief, Projects Section 2B, RIII
& J. Stang, Licensing Project Manager, NRR
& J. Partlow, Associate Director, Projects, NRR
& L. Spessard, Director, Division of Operational Assessment, AEOD
& T. Marsh, Director, Project Directorate III-1, NRR
& B. Boger, Director, Division of Reactor Projects III/IV/V, NRR
& J. Zwolinski, Assistant Director, Region III Reactors, NRR

*Denotes those attending the exit meeting on February 8, 1991.
&Denotes those attending a periodic management meeting on December 17, 1990.
#Denotes those attending a periodic management meeting on January 18, 1991.

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

2. Action on Previous Inspection Findings (92701)

a. (Closed) Violation (341/86011-02(DRP)): Inadequate surveillance procedures for the primary containment sump monitoring system. The licensee revised the appropriate surveillance procedures. However, all aspects of the testing requirements were not incorporated. Subsequently, violation 341/87002-01C was issued for the improperly revised drywell sump monitoring procedures. In response to violation 341/87002-01C, the sump surveillance procedures were appropriately and adequately modified. This matter is considered closed.

b. (Closed) Violation (341/87002-01A(DRP)): Inadequate surveillance procedure for daily channel checks of the offgas system noble gas activity monitor. The applicable procedure, NPP-24.000.02, "Shiftly, Daily, Weekly and Situational Required Surveillances," was revised to assure the monitor was appropriately channel checked. This matter is considered closed.

c. (Open) Violation (341/87002-01B(DRP)): Exceeding Technical Specification action statement while performing surveillance procedure NPP-44.030.154, "ECCS-HPCI Condensate Storage Tank Level Calibration." The licensee, in revision 7 to this procedure, revised section 4, recautions and Limitations," to require I&C engineer and operations engineer approval to perform this surveillance. Additionally, a caution was added for performance of step 5.7 which renders HPCI and RCIC inoperable. However, the inspector reviewed the current revision of NPP-44.030.154 and noted that those particular procedural controls had been deleted. In a meeting on January 7, 1991, the inspector informed the licensee that the appropriate controls had been deleted. This matter will be followed up in a subsequent inspection.

d. (Closed) Violation (341/87002-01C(DRP)): Inadequate surveillance procedures for channel functional and calibration testing of the drywell floor drain and equipment drain sump pump runtime system. The inspector confirmed that the functional and calibration surveillance procedures, NPP-44.120.50 through NPP-44.120.53, had been revised to assure appropriate circuit test overlap. In addition, the licensee initiated a Technical Specification line item verification effort. However, this was subsequently shown to be inadequate and later led to the initiation of the Technical Specifications improvement program which is discussed in a later violation. This matter is considered closed.

e. (Closed) Violation (341/87002-01D(DRP)): Failure to perform rod worth minimizer (RWM) and rod sequence control system (RSCS) surveillance within the required time interval. The inspector confirmed that the applicable surveillance procedures were revised to provide additional guidance as to when the surveillances are required to be performed. This matter is considered closed.

f. (Closed) Violation (341/87002-01E(DRP)): Inadequate installation of thermocouple leads associated with the reactor water cleanup isolation actuation instrumentation. The procedures associated with the calibration and functional testing of these instrument channels were revised to include documentation of the differential temperature indications for the applicable instruments. Also, the thermocouple leads within the cabinet were relabelled to ensure the leads would not be reversed again. This matter is considered closed.

g. (Closed) Violation (341/87002-02A(DRP)): Inadequate surveillance procedure for daily channel check of the offgas noble gas activity monitor. The inspector confirmed that procedure NPP-24.000.02, "Shiftly, Daily, Weekly and Situational Required Surveillances," was revised to include the appropriate channel check.

h. (Closed) Violation (341/87002-02B(DRP)): Failure to set the RCIC flow controller to its appropriate setpoint. Operations and maintenance personnel were retrained on independent verification requirements and additional training was given on the RCIC pump flow control circuit and its effect on system operability. This matter is considered closed.

i. (Closed) Violation (341/87026-03(DRP)): Incorrect scheduling causes a surveillance of the standby gas treatment carbon dioxide system to be missed. Scheduling of surveillance NPP-24.404.06, "Standby Gas Treatment System Manual Actuation Puff Test," was revised to reflect the correct test frequency. In addition, a line item Technical Specification surveillance check was performed. However, the line item check was determined to have inadequacies, thus requiring initiation of a Technical Specification improvement program to more rigorously review surveillances for technical content and scheduling, as well as for identification of other improvements to the surveillance tracking and scheduling system.

j. (Closed) Violation (341/87008-01(DRP)): Mode change without performing the required containment integrity testing. The corrective actions discussed in violation 341/87008-02, were also applicable to this violation. Therefore, this matter is considered closed.

k. (Closed) Violation (341/87008-02(DRP)): Failure to perform required overall airlock leakage tests on the primary containment airlock. The procedure associated with this testing, NPP-43.401.206, was divided into two events in the surveillance tracking program. One event tested the interior and exterior door seals whereas the second event assured that the overall airlock leakage test was met. This,

coupled with modifications to administrative controls, were the licensee's original corrective actions to this violation. The administrative controls were further strengthened in this area in response to violation 341/89034-04 (reference paragraph 2.bb). The inspector confirmed the splitting of the tests by surveillance event number.

l. (Closed) Violation (341/87026-04(DRP)): Failure to perform primary containment sump flow rate and drywell floor drain sump level checks within the required time interval. In response the licensee stressed to operations personnel the need to assure proper completion of surveillances within the required time frame. Subsequently, deficiencies of a similar nature occurred as discussed in violations 341/88006-07 (paragraph 2.r) and 341/8801.-01 (paragraph 2.s) at which time stronger corrective actions were taken to assure proper completion of surveillances. This matter is considered closed.

m. (Closed) Violation (341/87026-06(DRP)): Inadequate surveillance procedure associated with verification of onsite Class 1E electrical distribution system. The inspector confirmed that procedure NPP-24.000.02, "Shiftly, Daily, Weekly and Situational Required Surveillances," was revised to assure proper verification of the applicable breaker alignments and bus voltages. This matter is considered closed.

n. (Closed) Unresolved Item (341/87031-03(DRP)): Qualification of soft seat check valves. The concern over the qualification of soft seats stemmed from local leakrate test failures of reactor water cleanup (RWCU) check valve G33-F120, and feedwater check valve B21-F010B.

Following the test failure on G33-F120, a licensee inspection concluded that the soft seat had swelled and dislodged from its O-ring groove. A number of contributory factors appear to have led to the failure including operation of the RWCU system in an unapproved manner, use of a soft seat material, SR-740-70, which was not consistent with the temperature requirements, and a less than optimum soft seat retention design.

Corrective action included use of another material, E962-85, which was qualified for that environment. Procedural controls were enacted to preclude unapproved system use, potential design changes were initiated, as well as a review of other soft seat applications.

It should be noted that following the 1987 B21-F010B test failure, a licensee inspection concluded that the floating shaft bearings had not been adjusted at original installation causing uneven wear/leakage on the soft seat and was not a material failure of the unqualified Kalrez material.

The review encompassed all soft seat check valves to assure that the proper material had been selected. During that review, the Kalrez material, used as the soft seat for valves B21-F010A and B was determined to be unqualified for high temperature use. The cause of

unqualified material usage rested with the valve supplier and a Part 21 report was issued on December 8, 1987. The Kalrez material was replaced with E692-75.

The review concluded that all the other soft seat materials were appropriate for this temperature environment. This was followed by performance of an extensive test program at Wyle Laboratories confirming those conclusions and determining the best soft seat material to use.

Based upon the licensee extensive testing program of the installed soft seat material, the inspector concluded that the soft seat check valves are qualified. This matter is considered closed.

o. (Closed) Violation (341/87048-02(DRP)): Inadequate impact statements associated with drywell pressure response time surveillance procedures. The licensee reviewed 100 other surveillance procedures to determine whether the impact statements were incorrect. All 100 impact statements were found to be adequate. Therefore, the inadequate impact statements were considered to be isolated examples. The inadequate impact statements were subsequently revised. This matter is considered closed.

p. (Closed) Violation (341/88003-01(DRP)): Failure to place high pressure coolant injection (HPCI) and reactor core isolation cooling (RCIC) systems into service before exceeding 150 psig during reactor startup. The licensee took disciplinary actions with the individuals involved and discussed the event with all operations onshift personnel. Subsequently, no failures to place HPCI and RCIC into service by the required pressure have occurred.

q. (Closed) Unresolved Item (341/88003-02(DRP)): Lack of IST on valves E11-F068 A and B. The open and closed stroking requirements for these valves have been added to the IST program. This item is considered closed.

r. (Closed) Violation (341/88006-07(DRP)): Failure to perform required shift surveillance checks. The inspector confirmed that additional management controls were inacted to assure that shiftly surveillances were completed on time. Also, procedure NPP-OP1-10, "Audits," was established to review management controls to assure continued implementation.

s. (Closed) Violation (341/88012-01(DRP)): Failure to perform shiftly checks within the required time frame. The corrective actions associated with violation 341/88006-01 were applicable to this violation. Additionally, disciplinary actions and counseling of the involved individuals were conducted to emphasize the need for proper implementation of the specified program. This matter is considered closed.

t. (Closed) Violation (341/88018-03(DRP)): The instrument and control (I&C) use-history records contained unapproved and uncontrolled specification sheets, unapproved and uncontrolled engineering

calculation sheets, and specification sheets that did not match surveillance test procedure calibration values.

The licensee integrated a review and upgrade of instrument use-history folders into an ongoing I&C calibration review program. This included a review and evaluation of all Technical Specification, QA1 and Q1M, and balance of plant (BOP) instruments to ensure all design calculations, setpoints and instrument ranges were correctly documented with any changes properly controlled. The licensee issued a Desktop Instruction, "I&C Calibration Records," to provide guidelines on establishing and controlling the Calibration Specification Data Sheets associated with plant I&C equipment. A review of the instruction determined that the licensee had adequately addressed this issue to prevent recurrence of this violation. Based on the above, this item is considered closed.

u. (Closed) Violation (341/88017-01(DRP)): Failure to perform Division I Control Center HVAC (CCHVAC) chiller pump testing within the required surveillance frequency. The licensee's corrective actions to this violation included development of procedure NPP-OP-11, "System and Equipment Status," to track normal system equipment status. Under this procedure, any surveillance not performed within required time intervals requires an LCO sheet be initiated. The surveillance scheduling and tracking group was moved within the organization to report to the Superintendent, Operations. This was done to more closely integrate the two groups to assure better surveillance coordination/completion. Procedure NPP-CT1-01, "Surveillance/Performance Package Control," was revised to require upcoming and overdue surveillances to be tracked on the plan of the day (POD) schedule. The surveillance scheduling and tracking database was modified to cross reference technical specification articles to surveillance event numbers and component numbers. Finally, whenever possible surveillance procedures were developed for each technical specification systems division. This matter is considered closed.

v. (Open) Open Item (341/88037-12(DRP)): The licensee completed revising the P&IDs identified as having errors from the S&W drawing system. Presently, the licensee has changed over to his own drawing system. To preclude errors of a similar nature occurring within the new system, a revision to the drawing change procedure will be issued in February 1991 to procedurize verifications of drawing changes. The item will remain open pending the implementation of the revised procedure.

w. (Closed) Open Item (341/89002-04(DRP)): Communications weaknesses between control room operators and in-plant personnel. The particular examples identified relative to this issue were corrected via revisions to the operating and surveillance procedures for the Emergency Diesel Generators as well as management discussions with the involved personnel. The issue of operator cognizance of the status of important plant equipment will be tracked under violation 341/90013-03(DRP)). This item, therefore, is closed.

x. (Closed) Open Item (341/89007-01(DRP)): Proceduralization of engineering communications to production organizations upon issuance of new or revised engineering documents. The inspector verified that Fermi Interfacing Procedures for implementation of Modifications, As-Built Notices, Vendor Design Documents, Design Calculations,and Design Specifications were subsequently revised to incorporate more formalized methods of communication to production organizations onsite upon issuance of new or revised documents of the type specified above. This item is closed.

y. (Closed) Violation (341/89030-05(DRP)): Failure to perform surveillance testing of dampers T41-F009 and T41-F011 within the quarterly timeframe while core alterations were in progress. The inspector confirmed that additional training was given to all on-shift personnel in the use of the surveillance program with specific emphasis on the situational surveillance portion of the tracking system. The training involved hands on use of the computer system with specific instructions given by surveillance scheduling and tracking personnel. A critique was performed of this event and administrative procedure NPP-OP1-05, "Shift Turnover," was revised to require nontriggered situational surveillance requirements be reviewed during shift turnover by licensed and senior licensed operators.

z. (Closed) Violation (341/89033-01(DRP)): Inadequate electrical surveillance procedure renders Emergency Equipment Cooling Water (EECW) and Emergency Equipment Service Water (EESW) systems inoperable. The inspector confirmed that the applicable surveillance procedures, NPP-24.305.01 and NPP-24.305.02, were revised to assure that the omitted relay reset was accomplished. The inspector interviewed the personnel associated with development of the subject procedures to assure that this same problem was not common to other procedures as well. Based upon a sampling of the procedures and interviews with personnel, the inspector concluded that this problem was only associated with the two subject electrical busses. This matter is considered closed.

aa. (Open) Violation (341/89034-03(DRP)): Failure to perform hydrogen monitoring surveillance prior to placing the offgas system into service. The inspector verified that startup procedures, system operating procedures, and surveillance procedures had additional precautions added to specify the need to perform the hydrogen monitoring surveillances or to take the compensatory four hour grab samples allowed by Technical Specifications. The inspector verified the chemistry department incorporated additional mode change surveillances into their shiftly situational surveillance checklist. Required reading was issued to numerous departments within the organization and a critique was performed of the event. In addition, management actions were taken to enhance professionalism through preparation of a video tape for nuclear production personnel review. The outstanding corrective action to this violation involved implementation of the accountability action plan in concert with a nuclear quality assurance overview of the program. The accountability action plan was reviewed in the wake of violations

341/90007-02 and 341/90007-03 which demonstrated weaknesses in the depth of the action plan. However, the nuclear quality assurance overview of the action plan will be reviewed in a future inspection report. Closure of this item is contingent upon completion of that review.

bb. (Closed) Violation (341/89034-04(DRP)): Failure to test valve B31-F020 in accordance with ASME Section XI testing requirements. The inspector confirmed that applicable administrative control procedures were modified as discussed in paragraph 8.n of this report under LER 89037. In addition, critique and required reading was initiated on this event. This was one of three events that initiated the licensee's accountability action plan. One of the facets of that action plan involved a surveillance program review. Under that surveillance program review the licensee modified the surveillance scheduling and tracking report to provide additional information to operators and the computer displays associated with the tracking system were modified to help facilitate the schedule. This matter is considered closed.

cc. (Open) Unresolved Item (341/90002-01(DRP)): Material condition of SGTS after completion of maintenance. No further examples of similar problems of the type noted have been identified during unit operation or short outage conditions. However, a number of the examples originally noted occurred and were potentially impacted as a result of the last refuel outage. Therefore this item will remain open pending further inspector evaluation of equipment as-left conditions during the next refuel outage (currently scheduled to start on March 29, 1991.)

dd. (Closed) Open Item (341/90002-03(DRP)): Design change to control center heating ventilation and air conditioning (CCHVAC) to reduce inadvertent ESF actuations of the system. Design Change EDP-11115 was implemented to eliminate initiation of CCHVAC in the recirculation mode when an indicating lamp failed on the CCHVAC dampers. This modification was performed and the inspector confirmed this through record review. However, the modification did not occur before another unplanned ESF actuation as reported in LER 90007, occurred.

ee. (Closed) Open Item (341/90005-01(DRP)): Diesel fire pump preventative maintenance program. The inspector reviewed a modified preventative maintenance program for the diesel fire pump in accordance with improved recommendations from the manufacturer for a standby fire pump. This matter is considered closed.

ff. (Open) Open Item (341/90005-04(DRP)): Followup of licensee's actions associated with ventilation dampers T41-F010 and T46-F407. The first damper failure, T41-F010, was caused by a broken spring. The spring was broken due to standing water in the spring can for an extended period of time. The licensee could not ascertain the origin of the water. This was confirmed when the only damper in close proximity to this damper, T41-F008, was inspected for possible water intrusion. Only a minor amount of moisture was noted which was

associated with a gland sealing steam leak, of which the licensee was already aware. The other damper failure, on T46-F407, was caused by a burred shaft. Both T41-F010 and T46-F407 were repaired and returned to service and are operating properly. However, in the licensee's review of these failures, the licensee determined that no preventative maintenance (PM) program was established for Bettis actuators which these two were. The inspector noted that the vendor recommended five year PM program be established for Bettis actuators. The inspector will continue to review this matter to determine whether the consultant's review of the preventative maintenance program included Bettis actuators and whether all Bettis actuators have now been encompassed in the PM program.

gg. (Open) Violation (341/90007-02(DRP)): Inadequate instructions/procedures, document control, inspection and test control on work performed on the east mainsteam bypass valve during Refuel Outage (RF)01. The licensee responded to the violation in Detroit Edison Company letter, dated August 3, 1990. Licensee investigation of the violation identified the following factors contributed to the inadequate control of work: inadequate work package preparation; a lack of technical expertise; a missed QA/QC holdpoint; and inadequate post maintenance testing (PMT). Corrective actions were also described: revised maintenance procedures and I&C calibration documents for the turbine bypass valves; development of disassembly/reassembly work packages for all major turbine generator components; greater control over contractor turbine maintenance activities; an engineer with specific knowledge and expertise on the turbine was hired as a member of the Maintenance Department; and revised PMT for the turbine bypass valves.

During the inspection period the inspector reviewed minutes from the contractor pre-bid meetings for the Turbine Generator Overhaul project, Appendix F to the contract specification for RF02 Turbine Generator Overhaul, the contract which was awarded to perform RF02 Turbine Generator Overhaul work, a contractor proposal for ongoing maintenance and modification activities at Fermi, and interviewed licensee staff who were involved in work contracting process and/or exercise direction over contractor work. The inspector determined that the licensee has placed increased emphasis on experienced contractor work supervisors, technically qualified craft and knowledge of site requirements. The inspector's document review determined that the turbine contractor would be involved in the planning and review of work packages, and the development of work procedures and PMT for work performed.

The inspector was also aware that a turbine engineer had been hired who possessed specific technical knowledge of the turbine. The inspector determined through interviews that ongoing contractor maintenance activities received greater Detroit Edison supervisor scrutiny. The interview results were confirmed by past inspector field observations of contractor work. The effectiveness of the licensee contractor control actions will be determined during RF02. This item remains open pending verification of the effectiveness of all the licensee corrective actions taken in response to the violation.

hh. (Open) Open Item (341/90011-03(DRP)): Improvement of the Leakage Reduction Log. The licensee has revised the leak reduction procedure to simplify and better control the continuing trending of equipment leakage in the plant. Additionally, a night order was issued giving guidance to the operators on management expectations relative to implementing the program. The inspector will continue to evaluate adequacy of implementation during the initial period of implementation.

ii. (Open) Open Item (341/90013-08(DRP)): Design modifications for enhancing use of HPCI and RCIC for reactor pressure control. The licensee has initiated a potential design change (PDC 11655) to provide the specified enhancement with the associated work for the PDC incorporated into Fermi's five year plan. Currently the PDC is being evaluated to determine the optimum fix. This item will remain open pending completion of that evaluation and determination of the final in plant modification.

jj. (Closed) Non-Cited Violation (341/90014-01(DRP)): Failure to initiate a deviation event report (DER) associated with acceptance testing of differential current relays. As discussed in paragraph 3 of inspection report 341/90014, the licensee has taken appropriate corrective actions for this matter. Therefore, this non-cited violation is considered closed.

kk. (Open) Unresolved Item (341/90017-01(DRP)): Use of caulking for secondary containment integrity. The licensee completed an engineering evaluation of the subject configuration with and without caulking in place and determined that the caulking was required to maintain secondary containment integrity. A further review as to the methods employed to assure appropriate configuration control of structures similar to the subject floor blocks revealed that this type of caulking requirement was not included in design basis documents nor did any formal means exist to ensure caulking would be replaced if it was removed at some future time. The licensee committed to prepare a caulking specification for future reference and that guidance on caulking replacement would be included in a revision to NPP-PSI-01, "Planning of Maintenance Activities". This item will remain open pending completion of licensee followup activities and subsequent inspector evaluation.

ll. (Closed) Part 21: Kalrez. The unqualified material was only present in two valves, B21-F010A and B, and was replaced with qualified materials.

mm. (Closed) IE Bulletin (341/85003-BB): The requirements of this bulletin have been incorporated as part of the requirements of Generic Letter 89-10, "Safety Related Motor-Operated Valve Testing and Surveillance". Further followup actions will be in accordance with Generic Letter 89-10.

3. Operational Safety Verification (71707) (71714)

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

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

- Emergency Diesel Generator No. 11
- Emergency Diesel Generator No. 12
- Core Spray System - Division II
- Thermal Recombiners - Divisions I and II

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

Significant observations and reviews included the following:

a. On January 1, the inspector observed reactor startup activities following completion of a maintenance outage to repair the main turbine generator. All activities observed were conducted in an adequate manner.

b. During the inspection period, the inspector reviewed personnel overtime records for operations, maintenance, radiation protection, and technical engineering departments. Records for the time period September - November 1990 were reviewed and encompassed overtime usage during power operations as well as during a short maintenance outage that occurred in the beginning of October. The inspector determined the licensee had an established administrative program to accurately track and provide for proper management involvement in the use of overtime in all areas reviewed. The licensee was found to be in compliance with Technical Specification requirements in all cases.

c. The inspector reviewed the licensee process to ready the unit for cold weather operations. The inspector reviewed procedures NPP-27.000.04, "Freeze Protection Lineup Verification", Alarm Response Procedures (ARPs) 7D7 and 7D8, "Division I/II RHR Cooling Tower Inlet/Reservoir Temperature Abnormal," as well as associated referenced procedures. No substantive concerns were identified as a result of the review. Safety-related as well as balance of plant (BOP) equipment and systems that would be sensitive to cold weather conditions appeared to have been adequately addressed given normal winter conditions.

d. On January 24, during a routine plant walkdown of the turbine building, the inspector noted that an area being used for storage and staging of scaffolding and other miscellaneous materials was adversely impacting BOP instrument racks in the area. Specifically, materials such as parts for scaffolding were found laying in piles in close proximity and/or contact to the racks in three locations and an Argon gas cylinder was observed tied off with nylon cord to a fourth rack. Although this did not present any immediate safety hazard to the plant, the issue was discussed with plant management personnel who stated that the area was specified for use by contractor personnel as a storage/staging area. It was apparent that DECo oversite of the contractor's activities was not sufficient to adequately control the way materials were being stored and handled in the area. Such conditions would not be acceptable in safety-related parts of the plant. Furthermore, the lack of oversight of contractor activities has been an issue in the past at Fermi.

e. During a control room walkdown on January 4, the inspector noted that the ammeter for the Division II switchgear room ESS room cooler was flashing, indicative of a high current condition. When brought to the attention of control room personnel they indicated they were unaware of the problem but troubleshooting would be initiated. Results of the troubleshooting determined that the blower motor was drawing the normal amount of current and that the ammeter itself appeared defective. Subsequently, the inspector observed the ammeter had been replaced.

f. On February 1, while reviewing the Nuclear Shift Supervisor (NSS) log, the inspector noted a log entry made three days earlier that the NSS had authorized a maintenance activity to begin before the independent verification of the abnormal lineup sheet (ALS) equipment tagout had been performed. Subsequent discussions with the NSS and the operations engineer revealed that the NSS had consciously made the decision to deviate from administrative procedure NPP-OP1-12, "Tagging and Protective Barrier System" to facilitate starting of preventive maintenance work on the RCIC system as quickly as possible. Pending completion of inspector review, this matter is considered an unresolved item (341/90020-01(DRP)).

g. On December 10-14, 1990, the NRC administered initial and requalification retake exams for a number of licensed operators. Just prior to traveling to the site, the NRC examiners were informed of a situation that had occurred with the potential for compromising

the exam as prepared. Specifically, a facility instructor involved with prior review of the NRC exam had signed the required security agreement (Attachment 1, ES-201-1) in accordance with the criterion of NUREG 1021, "Operator Licensing Examiner Standards," on November 28, 1990. This security agreement states in part "I understand that I am not to participate in any instruction involving those applicants scheduled to be administered the above examination from this date until after the examination has been administered."

On December 7, 1990, the instructor conducted a question and answer period with the examination candidates for approximately one hour and fifteen minutes. Shortly after completion the instructor realized a potential compromise had occurred and informed his supervisor. The licensee promptly informed the NRC regional office of the occurrence and of the content of the training session. For the initial examination, one Job Performance Measure (JPM) and one written examination question were removed from the examination and substitutions made. For the requalification retake examination, three JPM's and one static written examination question were removed from the examination and substitutions made.

During the period December 8 and 9, 1990, the licensee conducted a prompt and detailed investigation of the event and of the content discussed in the training period. Following this investigation, one additional JPM was removed from the requalification retake examination and another substituted.

The licensee initiated a Deviation Event Report (No. 90-0695) to ensure proper evaluation and implementation of corrective actions to prevent recurrence.

The instructor's actions are considered a violation of 10 CFR 55.49, "Integrity of Examinations and Tests" (341/90020-02(DRP)). However, inspector review has determined that a notice of violation is not warranted because this matter meets the criteria of 10 CFR 2, Appendix C, Part V.G.

In the associated NRC examination report (50-341/OL-90-03) dated January 22, 1991, this matter is further discussed as a programmatic concern for the adequacy of exam security with a request for a response within 30 days of report issuance. Licensee followup actions will be further evaluated by NRC Region III operator licensing personnel. Therefore, this item is considered closed.

One non-cited violation was identified in this area.

4. ESF System Walkdown (71710)

During the inspection period, in addition to the system walkdowns discussed in Paragraph 3, the inspector performed a more in-depth walkdown of the accessible portions of the high pressure coolant injection System to verify operability. Plant drawings and system operating and surveillance procedures were reviewed to confirm consistency with the as-built configuration. Hangers and supports

were verified against drawings for proper placement, alignment, and makeup. System components were inspected for proper installation, position, energization, and labelling. Availability/operability of ventilation and other support systems was also reviewed. Required instrumentation was verified operable and within current calibration periodicity.

No substantive discrepancies were identified during the walkdown.

No violations or deviations were identified in this area.

5. 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 activities were observed/reviewed:

- PM R507900926 Test 480v Switchgear, Megger Motor.
- WR 007E910115 Troubleshoot RCIC Overspeed Trip.
- PM G423901015 Inspect, Lube, Test MOV for G51-F602.
- WR 005D901105 Replace Div 2 PCMS Sample Pump Motor Assembly.
- PM Q314901017 Disassemble, Inspect and Clean Condensate Drain Trap Div II non-interruptable air supply (NIAS).

Following completion of maintenance on the above systems, the inspectors verified that each had been returned to service properly.

During the performance of maintenance on Division II of the NIAS system, the inspector interviewed maintenance personnel concerning the quality of work packages and the availability of appropriate tools, parts and lubricants. The maintenance personnel stated that work packages appeared better planned as evidenced by fewer problems in implementing work instructions in the field. The workers credited plant management action in resolving issues described in the work request feedback form for the work package improvements. The interviewed maintenance personnel had no recent personal experience with work requests which were impacted by the

wrong parts, lack of necessary tools, or incorrect/lack of lubricants. The inspector noted there were no problems with availability of required tools at the observed work sites on January 15 and 17, 1991.

However, following the subsequent return-to-service of NIAS Division II, the licensee determined that the wrong solenoid valves had been installed on the NIAS Division II air dryer (reference paragraph 7 of this report).

No violations or deviations were identified in this area.

6. Bimonthly Surveillance Observation (61726)

The inspectors observed/reviewed the following Technical Specification required surveillance testing.

- 24.137.01 Main Steam Line Isolation Channel Functional Test
- 24.202.01 HPCI Pump Time Response and Operability Test at 1000 PSI

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

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

- 24.000.02 Attch 1, 2, 3 and 6: Shiftly, Daily, and Weekly Required Surveillances
- 24.138.06 Jet Pump Operability Test
- 24.425.01 Section 5.1: Primary Containment Integrity Verification
- 44.020.236 NSSSS-RCIC Steam Line Pressure, Division II Functional Test
- 44.080.501 Off Gas Hydrogen Monitoring System-Channel Functional Tests and Channel Calibrations
- 44.220.201 Suppression Pool Water Temperature Instrumentation Channels Functional Test
- 54.000.07 Core Performance Parameter Check
- 64.713.018 Attch 4: Radiological Effluents Situational Surveillance
- 74.000.18 Attch 1 and 2: Chemistry Shiftly, 72 Hour and Situation Surveillances

The surveillances observed/reviewed were accomplished in accordance with all applicable requirements.

No violations or deviations were identified in this area.

7. Followup of Events (93702)

During this inspection period, the licensee experienced several events, some of which required prompt notification of the NRC pursuant to 10 CFR 50.72. The inspectors followed the events onsite with licensee and/or other NRC officials. In each case, the inspectors verified that the notification was correct and timely, 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:

- January 4 South Cooling Tower Aircraft Warning Light Inoperable.
- January 16 ESF Actuation, HPCI Isolation During Surveillance Testing of Turbine Exhaust Pressure Switches.
- January 20 Wrong Solenoid Valves Installed in NIAS Air Dryer During Maintenance.

a. Regarding the January 16 event, LER 91-001-00 will be issued documenting the licensee corrective actions.

b. Regarding the January 20 event, the licensee is currently conducting a formal critique into the root cause. The inspectors will complete followup of this matter during the next inspection period when that critique has been issued.

No violations or deviations were identified in this area.

8. 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.

a. (Closed) LER 86-041, Omissions in surveillance procedure for testing the drywell sump flow monitoring system as a result of inadequate review. Reference paragraph 2.d of this report for followup actions.

b. (Closed) LER 86-048 and Revision 1, HPCI and RCIC inoperable requiring entry into Technical Specification 3.0.3 caused by personnel error during RCIC system troubleshooting and testing. The licensee provided additional training to licensed operators and maintenance personnel on the requirements of Technical Specification 3.0.3 and independent verification requirements. In addition, the licensee began the implementation of what later became impact statements to surveillance procedures following this event.

c. (Closed) LER 87-003, Failure to perform primary containment airlock testing prior to plant startup. The licensee revised

the scheduling of the airlock testing program as discussed in violation 341/87008-01 and 341/87008-02 (See paragraph 2.k).

d. (Closed) LER 87-029, Inadequate surveillance coverage of alternating current power sources due to misinterpretation of Technical Specifications. Procedure 24.000.02, "Shiftly, Daily, Weekly and Situational Required Surveillances," was revised to provide the appropriate omitted breaker alignments to be checked for onsite power sources.

e. (Closed) LER 87-047, Surveillance not completed as required for control center heating ventilation and air conditioning operability. This LER was associated with violation 341/88017-01. The licensee modified the administrative controls associated with past due surveillances to require entry into the applicable LCO when a surveillance time interval is exceeded.

f. (Closed) LER 88-004, Reactor Scram and ECCS injection to the reactor vessel. The reactor scram was caused by a failure of a power supply in the feedwater control system. The power supply was subsequently replaced and the feedwater control system returned to service. Following the reactor scram an unanticipated reactor water cleanup isolation occurred on high temperature from the nonregenerative heat exchanger. The licensee determined that this isolation signal was not necessary under the accident analysis and, following a license change submittal, that particular isolation signal was removed from Technical Specifications.

g. (Closed) LER 88-008, Missed Technical Specification surveillances because of misinterpretation of Technical Specifications. This LER corresponds to the violation 341/86011-02 (paragraph 2.a) on the primary containment sump systems and subsequent violation 341/87002-01C. See paragraph 2.d for followup actions.

h. (Closed) LER 88-011, Failure to perform shiftly surveillance within the required time. Round sheets were modified to assure that the NASS assigns a particular individual to perform the shiftly surveillance checks. Implementation of the controls were found to be inadequate as discussed in a subsequent LER (88-018). Addition corrective action under that LER appeared to resolve the program deficiencies.

i. (Closed) LER 88-018, Failure to perform shiftly surveillance within the required time. After the initiation of additional management controls under LER 88-011 implementation of these controls were inadequate and led to this LER. Subsequently, the licensee initiated counseling and disciplinary action that appeared to have resolved the problem. The performance of the shiftly checks has been performed for approximately two years without any implementation errors.

j. (Closed) LER 89-014, Inadequacies in Technical Specifications and surveillances found during surveillance review. The method used in performing the rod block monitor functional and calibration surveillances was determined to be inappropriate. The functional

test of the bypass setpoint was performed on decreasing power instead of increasing reactor power. The procedures associated with the two rod block monitor channels for functional and calibration testing NPP-44.010.149 through NPP-44.010.152, were properly revised.

k. (Closed) LER 89-024, Surveillance of secondary containment damper was not completed due to personnel error. The licensee performed a critique of this event, provided additional training to operating personnel in the use of the situational surveillance program and discussed this event in the operator requalification training program to improve a questioning attitude in the operating shift personnel. Additional hands-on training was given in the use of the computer program generating the surveillance schedules.

l. (Closed) LER 89-031, Inadequate surveillance procedure renders emergency equipment cooling water and emergency equipment service water inoperable. Reference paragraph 2.z of this report for the followup of this matter.

m. (Closed) LER 89-035, Offgas hydrogen monitoring surveillance was not completed as required by Technical Specifications. The licensee modified procedures NPP-22.000.02, NPP-23.712, NPP-23.125 and NPP-44.060.501 by adding additional precautions/prerequisites when placing the offgas system into service to assure the surveillance is completed for the hydrogen monitor or the Technical Specification action statement taken. The situational surveillance check list associated with the chemistry department was modified and a written report discussing this event which was "required reading" was issued to operations, surveillance tracking, instrument and controls, and chemistry personnel.

n. (Closed) LER 89-037 and Revision 1, Testing required by Technical Specifications for the reactor water sample line isolation valve had not been completed due to personnel error. The inspector confirmed that the corrective actions associated with revising procedure NPP-OP1-11 had been performed to prohibit the combining of LCOs and requiring tagging of specific components that are out of service. A critique was held on this event and required reading was initiated and reviewed by operating authority personnel. The inspector also confirmed that procedure NPP-CT1-01 was revised to ensure that credit for an entire surveillance cannot be taken unless the entire procedure has been completed satisfactorily. Specifically, the surveillance performance form has been revised to indicate when a surveillance is partially completed versus completed in its entirety.

o. (Open) LER 90-001, Rev. 1, Blown fuse in testability cabinet H21-P083 caused entry into Technical Specification 3.0.3. Analysis, to date, identified the failed component associated with the testability cabinet to be capacitor C25 on trip unit B21-N694D. The capacitor failed due to a dielectric breakdown that was also substantiated by a visual observation of a crack on the body of the capacitor. However, the cause of the dielectric breakdown could not

be established. The inspector reviewed the licensee's investigation under DER 90017 and interviewed the cognizant person associated with the DER. In the review of the DER, including the laboratory report, it appeared that there had been other failures with the C25 capacitor that rose to be a concern with the Boiling Water Reactor Owners Group Scram Frequency Reduction Maintenance Committee in October of 1987. Subsequently, a modified system was made available from the vendor. Based upon discussion with the DER reviewer it appears that this modification involved the same C25 capacitor but from a different manufacturer and that the licensee is on a replacement program on an "as failed" basis to replace the circuit board to the newer model. However, a failure of the trip unit resulting in blowing the feeder fuse will create the same situation and entry in Technical Specification 3.0.3. When asked what actions were being taken to improve the response to such a failure, the licensee's response from the DER reviewer indicated that the alarm response procedures had been modified to more readily identify this testability cabinet failure. However, he was unaware of any changes to the procedures on how to deal with the failure. During the original response to this LER situation the licensee almost scrammed the plant by complying with the procedures available at that time. Fortunately, through management overview and timely involvement those actions were not taken. The corrective actions associated with the alarm response procedure and any corrective actions to the manner in which the licensee would respond to this event were not discussed in the LER.

p. (Closed) LER 90-002, Area radiation monitors surveillance procedure NPP-44.080.301 listed incorrect values for alarm setpoints. The licensee revised surveillance NPP-44.080.301, "Radiation Monitoring System Functional Test," to the proper alarm setpoint. In addition, under Revision 1 to the LER, more comprehensive corrective actions were taken as discussed below.

q. (Open) LER 90-002, Revision 1, Under this revision the licensee performed setpoint evaluations of all the area radiation monitoring alarm setpoints associated with Technical Specifications and established them as the correct setpoints per procedures. Also, plant safety personnel sampled all the Technical Specification Improvement Program concerns associated with radiation alarm setpoints to determine whether they had been handled in an appropriate manner. To date, all but 20 of the approximately 860 comments have been reviewed and considered satisfactory. The last 20 are scheduled for completion by the end of January, 1991. Closure of this LER is contingent upon completion of the plant safety review of the last 20 discretionary items associated with setpoints.

r. (Closed) LER 90-005, Closure of reactor water cleanup outboard isolation valve G33-F004. During the licensee's troubleshooting effort they identified that one of two relays caused the automatic valve closure and RWCU isolation. These relays were sent for laboratory analysis. This LER will be updated upon completion of the laboratory's analysis of the two relays. Therefore, followup of the root cause and long term corrective actions to the relay failure will be performed under the supplement to this LER.

s. (Closed) LER 90-007, Control center ventilation shifts to recirculation phase due to blown fuse. A similar event previously occurred as documented in LER 89-026. The licensee's corrective actions to that event resulted in initiation of an engineering design package (EDP) 11115 to separate system logic and position indication power supplies for CCHVAC. The latter event occurred prior to implementation of EDP 11115. The EDP was subsequently completed and, therefore, this LER is considered closed.

t. (Closed) LER 90-009, Loss of Shutdown Cooling and Safety Feature Actuation due to Breaker Tripping. After the event, an electrical protection assembly (EPA) breaker was found with its undervoltage trip setpoint outside of the acceptable tolerance. However, the licensee could not positively conclude that this resulted in the trip. This problem with EPA breakers had also been a problem at other utilities as described in GE RIC SIL No. 026 (July 18, 1989), GE SIL No. 496 (August 23, 1989), and GE SIL No. 496, Rev. 1 (September 14, 1990). The inspector reviewed the licensee's evaluation and corrective actions regarding these SILs. The licensee had evaluated each of the SILs and had taken remedial corrective actions as indicated in the SILs and had ordered a new design of EPA breakers to replace the existing breakers. The licensee had also reviewed previously issued DERs for similar spurious trips of these types of breakers and suspects that this EPA breaker problem also caused up to six other problems as a result of spurious trips.

Presently, Detroit Edison is evaluating the SIL under DER 88-166. The inspector will continue to review this event under open item (341/90020-03(DRP)). The inspector will review specifically whether appropriate and timely corrective action had been taken.

u. (Closed) LER 90-010, MSIV closure due to operator error. Corrective actions to this matter included initiation of required reading to all operations personnel, human factors enhancement to surveillance procedure NPP-24.137.01, "Main Steam Line Isolation Channel Functional Test," and an independent review of the control room controls for enhancements. The inspector confirmed the implementation of the procedural changes and "required reading" issuances. As a result of the control room review, the licensee installed protective covers on the MSIV "close" pushbuttons. The inspector confirmed the installation of the protective covers. The inspector will pursue any other control room modification from this independent review under open item (341/90020-04(DRP)).

v. (Closed) LER 90-012, HPCI steamline flow transmitter failure. The failed transmitter was repaired and returned to service. The failed circuit board associated with the transmitter was sent to Rosemount, the transmitter's manufacturer, for failure analysis. Upon completion of the Rosemount's analysis the licensee documented that a supplemental report would be submitted within 30 days. Therefore, this LER will be closed and the root cause analysis and final followup will be performed on the supplement to LER 90-012.

No violations or deviations were identified in this area.

9. Preparation for Refueling (60705)

The inspector observed new fuel receipt and inspection activities during the inspection period. Verification of proper handling, control and inspection, and adequacy of personnel training to safely and adequately perform their assigned tasks was made. Associated activities observed included truck inprocessing into the protected area, radiation protection surveying, container offloading, bundle inspection and channeling, and assembly. The last shipment arrived onsite on February 4 and related inspection activities completed two days later.

All activities observed appeared to have been accomplished per the applicable requirements.

No violations or deviations were identified in this area.

10. Design Changes and Modifications (37700)

Through a review of documents and personnel interviews, the following engineering design packages (EDPs) and associated work packages were inspected to verify conformance with the requirements of Technical Specifications (TS), 10 CFR 50.59, the Updated Final Safety Analysis Report, the licensee's Quality Assurance Program and 10 CFR 50, Appendix B, Criterion III, "Design Control."

- EDP 0599A Reroute NIAS Tubing to Actuator on Vacuum Breaker V21-2013
- EDP 09922 EPA Replacement Circuit Cards
- EDP 10828 Modify Hinges on Exterior Reactor Building Railway Doors
- EDP 11281 Relocate E11-F008 Indication on Control Room Panel H11P601A502 so that valve is located in mimic board flow path

a. Several administrative discrepancies were noted in EDP 09922 which included: the wrong work request (WR) number on one document in an implementing WR package; the incorrect Technical Specification (TS) reference; and the apparent incorrect surveillance procedure required for post modification testing. The inspectors also noted a discrepancy regarding the amount of connecting cable necessary to implement the EDP. The apparent discrepancies were discussed with the acting General Supervisor, Electrical. Actions were then initiated to effect the appropriate corrections.

b. Engineering design package (EDP) 10828 was initiated by the licensee to install a boot over the railroad door hinges to protect the hinges from the weather. A review of the EDP by the inspector identified two concerns. The first was that the doors were not identified as a secondary containment boundary which must be opened one at a time in order not to violate secondary containment. The second concern was that the WR instructions were not as detailed as the work requirements identified in EDP 10828 and appeared insufficient to allow the workers to adequately make the modification. The concerns were discussed with the Modifications Supervisor and the responsible

modifications engineer. The Modifications Supervisor stated that the responsible modifications engineer would be directing the work at the job site to resolve any work instruction concerns. The Modification Supervisor was also considering the need to add a precaution to work instructions concerning the secondary containment requirement of having only one door open at a time.

No violations or deviations were identified in this area.

11. Evaluation of Licensee Self-Assessment Capability (40500)

This inspector assessed the following organizations: Nuclear Safety Review Group (NSRG): Independent Safety Engineering Group (ISEG); On-site Review Organization (OSRO); Plant Safety, which includes trending and Human Performance Evaluation System (HPES); and Quality Assurance Groups.

a. On-Site Review Organization (OSRO)

The inspector reviewed the OSRO minutes for the past year and determined that the committee met the Technical Specification (TS) requirements for composition, alternate members, meeting frequency, and quorum requirements. The minutes also indicated that the OSRO committee had covered required areas of review and was fulfilling its responsibilities. However, the OSRO minutes were not issued in a timely manner and were poorly written during most of 1990. This is relevant in that the minutes are necessary for NSRG to perform adequate safety reviews. This is a repeat of the same problem which was discussed during a 1989 NRC inspection of the OSRO minutes. In addition, during the early part of 1990, the problem was discussed in a QA audit report, with a Deviation Event Report (DER) issued and subsequently closed out after the problem was corrected. The NSRG, the actual user of the minutes, was aware of this situation and discussed the untimeliness of minutes in NSRG meetings as indicated in several meeting minutes, but failed to take action to resolve the problem until November 1990. Neither the NSRG, nor the safety group, offered a reason for this problem with the meeting minutes other than the concurrence cycle of the minutes was slow.

On January 16, 1991, the inspector attended an On Site Review Organization (OSRO) meeting which was a followup to a January 15, 1991, teleconference for the installation of a temporary modification, (TM) 91-0001 to the Reactor Core Isolation Cooling (RCIC) system. The inspector noted that the discussions on January 16, 1991 were comprehensive and addressed all pertinent issues.

b. Nuclear Safety Review Group (NSRG)

The NSRG appeared to be performing effective reviews of plant activities and met bi-monthly in full day sessions to review significant licensee issues. The NSRG met the TS requirements for composition, alternate members, meeting frequency, and quorum

requirements. The licensee had assembled persons with multiple functional areas of expertise so that all subject areas could be adequately discussed during NSRG meetings. The NSRG process was well organized and all supporting documents for NSRG meetings and minutes were of high quality and detailed. The NSRG had performed reviews of required activities and any recommendations made were tracked to completion by an NSRG open item tracking system. The group also reviewed QA audits with no audits being asked to be reperformed during 1990.

The inspector attended a full day session of the NSRG on January 24, 1991. The group performed excellent assessments and had high expectations of plant personnel. Plant personnel who were in attendance at the meeting responded positively to NSRG recommendations. The inspector observed that the meeting appeared dominated by a few individuals. However, the inspector could not determine if this had any negative effect on the quality of reviews/analysis performed by the group.

A second observation was that few people are on distribution for the meeting minutes. The NSRG made this issue an open item and assigned it to an NSRG member for review.

A third observation made when reviewing QA audits was that active participation by NSRG members in audits appeared to be low because only two names appeared as active participants in the QA audit list.

The NSRG has in its Business Plan a goal to have each NSRG member participate in one audit during the year; the actual level of participation is left to the individuals and is not mandated.

Following a discussion with NSRG, during the January 24 meeting, the NSRG made participation an open item and assigned it to an NSRG member to determine the actual level of member participation in audits. Subsequent to the inspection, the licensee stated that the NSRG members had participated in nine audits to some degree, but confirmed that not all nine members had participated in an audit.

c. Independent Safety Engineering Group (ISEG)

ISEG met TS requirements for performing required reviews of plant activities. The group also met the TS requirement for the number of persons in the ISEG for 1990. In addition to conducting their normal review activities, the members were performing an average of two inspections per month per member of in plant activities. The large number of items that ISEG, with only six persons in the group, is required to review indicates that the resources of ISEG may be strained. But the group did have many observations and findings, which were added to their internal tracking system and sent to the plant for resolution. However, one-third of the findings for 1989 and two-thirds of the findings for 1990 were not closed out. Further review indicated that the items, including DERs initiated by ISEG, were not closely tracked to completion to ensure timely

resolution. This is considered an open item (341/90020-05(DRP)) pending inspector review of licensee action on this matter.

d. Human Performance Evaluation System (HPES)

The licensee continued its activities in the HPES area, with the plant performing approximately one HPES investigation each month during 1990. The findings with recommendations that resulted from the investigation were issued with the final report for the investigation. The inspector reviewed several HPES reports of particular plant problems and found them to contain thorough investigations. The problems had been selected on the basis of possible impact on plant safety and appeared to be human performance problems. A DER was issued for any significant findings, which then followed the corrective actions to completion. The HPES process also included anonymous reporting, so individuals could report identified or suspected problems without being identified. The HPES process was contributing to the licensee's self-assessment capability.

e. Plant Safety Trending

The plant safety group issues four trend reports from DERs as a data base each year. The reports trend hardware, documents, personnel, and miscellaneous problems as the major cause groups. Even though the formal reports are issued only four times a year, the trend data is dynamic and updates are made daily to maintain the trended data current and useful. The cause group for personnel data is further divided into subcategories: inattention to detail, deficient work practices, misinterpretation, misorientation, and disregard for acceptable standards of conduct. The trended data can then be further sorted by plant organization. Following indications of a negative trend by a particular group, a memo is issued to the group to resolve the reasons for the negative trend and what corrective actions will be taken.

f. Quality Assurance Groups (QA)

The quality assurance groups appeared to be well staffed and substantial licensee resources were devoted to each surveillance and audit. All QA groups had well trained personnel and were performing performance based audits during the SALP period. Auditors were made individually responsible, as prescribed by their performance elements, for following up and assessing the adequacy of the corrective actions to ensure that there was not a repetition of a problem and to ensure proper closeout of findings. Open items were found to be well tracked. The Quality Program Assurance group had also exchanged inspectors with other utilities to obtain additional expertise for inspections in certain areas.

The inspector reviewed several QA audit reports and found them to be of high quality. Changes had been made in the format of issued audit reports to shorten them and ensure a more timely issuance following the inspection. Most of the audits were found to be

performance based. Surveillances were performed of plant activities that were of immediate concern and appeared to require a QA assessment.

The licensee committed greater than 1000 hours to audits for assessing the plant's self-assessment groups and activities. The quality of the reports and the large use of audit resources demonstrated the licensee's commitment to self-assessment activities. In summary, all QA groups were found to be contributing substantially to licensee self-assessments and quality verification activities.

g. Safety System Function Inspection (SSFI)

A self-initiated SSFI was performed by the licensee on the safety-related HVAC Systems. The systems included the Control Center HVAC, Reactor Building HVAC, Residual Heat Removal (RHR) Building HVAC, and the Standby Gas Treatment System. A total of 76 individual observations were made. A large number of the inspection concerns were resolved within four months of the inspection which indicated timely resolution of problems. A review of the SSFI determined that six individuals had performed in-depth reviews of those areas of the plant that interface with the HVAC systems to ensure operability of systems. The group's conclusion following the inspection was that the HVAC systems would perform their intended functions in accordance with the design bases in the event of an accident or transient. The SSFI demonstrated a licensee commitment for overall self-assessment of safety-related systems towards assuring equipment operability.

In summary, with the one exception noted relative to the ISG, the self assessment capability at Fermi appeared to be comprehensive with good followup of findings and observations generally performed to ensure corrective actions were implemented.

No violations or deviations were identified in this area.

12. Management Meetings

a. On December 17, 1990, the licensee and NRC management met in NRC Headquarters for a periodic management meeting. The agenda included:

- Introduction - Introductions of DECo/NRR management were made and an extended discussion ensued outlining Fermi regulatory and operating history for the benefit of those NRR managers recently assigned to the Fermi project.

- Plant Status - the licensee briefly summarized plant status since the last periodic meeting. A discussion of the current maintenance outage to repair LP3 of the main turbine was held as well as plans for the final run into the next refuel outage (RF02).

- Lessons Learned From RF01 - The licensee made a presentation of the lessons learned from the first refuel outage and plans for their application to RF02. In the area of planning and scheduling, improvements in controlling the scope and scheduling of work were discussed. The licensee stated that a certain amount of emergent work was anticipated beyond that originally scheduled. An increase in upfront manloading of approximately 50 percent is anticipated to account for this extra amount of potential work effort. Actions to better control contractor work onsite has been initiated. Improved training for inprocessing individuals was under developement in the areas of industrial and nuclear safety as well as Detroit Edison management expectations of work quality. More DECo oversight of contractor activities will be required during the upcoming outage. Preparation for work during RF02 will be of better quality due to coordinating activities being specified beforehand, and a more timely review and closure of associated paperwork is to be mandated. Finally, the licensee indicated that feedback from the work groups would be evaluated towards further improvements in RF03.

- Fermi's Five Year Operating Plan - The licensee provided a presentation of the major programs and projects under consideration for the next five years and briefly described the process to implement those items. Some of the programs described included simulator upgrade, errosion/corrosion monitoring, on-site storage facility (OSSF) usage, IPE, condensate filter demineralizer upgrades, cobalt reduction, hydrogen water chemistry, and turbine protection upgrades.

b. On January 18, 1991, the licensee and NRC management met onsite for a second periodic management meeting. The agenda included:

- Plant Status - The licensee summarized unit operation since the December 17 management meeting including discussion of the damage found in the main turbine, the decision to derate the unit to 80 percent until the next refuel outage, and the decision to postpone start of RF02 by two weeks (new start date specified was March 29). A discussion of the upcoming refuel outage was held addressing the anticipated scope of work, current status of preparation for the outage, and brief descriptions of planned contractor involvement for the refuel floor, main turbine and main condenser retubing projects. NRC management emphasized the need for adequate control over contractors to have a successful outage. Finally the licensee presented the latest data on timeliness of corrective actions to DERs and the number of DERs currently outstanding. It was noted that the number had significantly decreased during 1990.

- Refuel Outage Preparation - The licensee presented the latest status of preparations for the upcoming refuel outage. Since the previous management meeting, they indicated that substantial progress had been made. Additionally, they indicated that approximately 173 PMs had been pulled forward

out of the RF02 scope and accomplished during the December maintenance outage.

- Plant Staff Overtime Usage - A brief discussion was held on the licensee's utilization and control of overtime. NRC management noted that the use of overtime at Fermi appeared well managed.

- Problems with Recent Radioactive Shipments - The licensee provided a brief overview of the followup actions relative to the recent problems with contractor work in cutting up and disposal of materials from the spent fuel pool in September 1990 (as discussed in NRC inspection report 341/90018).

- Root Cause of Main Turbine Damage - The licensee made a presentation of the root cause of identified main turbine blade damage on the fourth stage of LP3 that necessitated the 30 day outage in December. The licensee had determined that four factors in conjunction caused the damage. These were: 1) The removal of fifth stage blading during the last refuel outage which approximately doubled the differential pressure across the fourth stage, 2) an observed decrease in fatigue strength at the sight of failure due to machining operations during original manufacture, 3) a high stress concentration at the blading root area, and 4) operation of the turbine with steam bypass leakage from the third stage of LP3 directly to the fourth stage due to poor fitup at reassembly in RF01.

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. An unresolved item disclosed during the inspection is discussed in Paragraph 3.f.

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. Three open items disclosed during the inspection are discussed in Paragraphs 8.t, 8.u and 1..

15 Exit Interview

The inspectors met with licensee representatives (denoted in paragraph 1) on February 8, 1991, 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 indicated that it considered those documents associated with the SSFI reviewed by the inspector as proprietary. The licensee acknowledged the findings of the inspection.