March 4, 2002

Mr. William O'Connor, Jr.
Vice President
Nuclear Generation
Detroit Edison Company
6400 North Dixie Highway
Newport, MI 48166

SUBJECT: FERMI 2 NUCLEAR POWER STATION
NRC INSPECTION REPORT 50-341/02-02(DRP)

Dear Mr. O'Connor:

On February 15, 2002, the NRC completed an inspection at your Fermi 2 Nuclear Power Station. The enclosed report documents inspection findings which were discussed on February 13, 2002, with you, Mr. Hlavaty, and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel. Specifically, this inspection focused on plant operations, radiation protection and emergency preparedness.

No findings of significance were identified.

Immediately following the terrorist attacks on the World Trade Center and the Pentagon, the NRC issued an advisory recommending that nuclear power plant licensees go to the highest level of security, and all promptly did so. With continued uncertainty about the possibility of additional terrorist activities, the Nation's nuclear power plants remain at the highest level of security and the NRC continues to monitor the situation. This advisory was followed by additional advisories and although the specific actions are not releasable to the public, they generally include increased patrols, augmented security forces and capabilities, additional security posts, heightened coordination with law enforcement and military authorities, and more limited access of personnel and vehicles to the sites. The NRC has conducted various audits of your response to these advisories and your ability to respond to terrorist attacks with the capabilities of the current design basis threat (DBT). From these audits, the NRC has concluded that your security program is adequate at this time.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/NRC/ADAMS/index.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Mark A. Ring, Chief
Projects Branch 1
Division of Reactor Projects

Docket No. 50-341
License No. NPF-43

Enclosure: Inspection Report 50-341/02-02(DRP)

cc w/encl: N. Peterson, Director, Nuclear Licensing
P. Marquardt, Corporate Legal Department
Compliance Supervisor
R. Whale, Michigan Public Service Commission
Michigan Department of Environmental Quality
Monroe County, Emergency Management Division
Emergency Management Division
MI Department of State Police

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U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50-341
License No:	DPR-43
Report No:	50-341/02-02(DRP)
Licensee:	Detroit Edison Company
Facility:	Enrico Fermi, Unit 2
Location:	6400 N. Dixie Hwy. Newport, MI 48166
Dates:	December 30, 2001, through February 15, 2002
Inspectors:	S. Campbell, Senior Resident Inspector J. Larizza, Resident Inspector R. Jickling, Emergency Preparedness Analyst R. Alexander, Radiation Specialist
Approved by:	Mark Ring, Chief Branch 1 Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000341-02-02(DRP), on 12/30/01-2/15/02, Detroit Edison Company, Fermi 2 Nuclear Power Station.

The inspection was conducted by resident and specialist inspectors. No findings of significance were identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply are indicated by "No Color" or by the severity level of the application violation. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described at its Reactor Oversight Process website at http://www.nrc.gov/NRR/OVERSIGHT/index.html.

Report Details

Plant Status

Fermi 2 operated at or near 100 percent power throughout the inspection period. On January 13, 2002, power was decreased to 75 percent to perform control rod pattern adjustments and other planned maintenance and surveillance activities. Reactor power was returned to 100 percent on the same day. On January 22, 2002, power was decreased to 65 percent to remove from service the north reactor feedwater pump (NRFP) and perform troubleshooting of the NRFP turbine governor control valve which was cycling and causing flow and pressure oscillations in the condensate system. Following repairs and replacements of the failed turbine governor control logic components, reactor power was returned to 100 percent on January 30, 2002. Reactor power remained at 100 percent through the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstone: Mitigating Systems

1R04 Equipment Alignments (71111.04Q)

a. Inspection Scope

The inspectors conducted a partial walkdown of the emergency equipment service water system and emergency diesel generator 11 to verify proper alignment of valves, test switches, control switches, and clear annunciator alarms. The inspectors reviewed associated piping and instrumentation drawings, and condition assessment resolution documents (CARDs) to complete the walkdown. The inspectors used the documents to verify valves were aligned properly and that no outstanding deficient conditions existed to prevent proper operation of the system.

a. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05Q)

a. Inspection Scope

The inspectors toured the following areas to determine whether combustible hazards were present, fire extinguishers were properly filled and tested, the CARDOX units were operable, hose stations were properly maintained, and if the fire hazard analysis drawings were correct:

- Updated Final Safety Analysis Report (UFSAR) Section 9A.4.2.4, Zone 3, Relay Room
- UFSAR Section 9A 4.2.5, Zone 4, Division 1 Switchgear Room

- UFSAR Section 9A.4.2.13, Zone 12, Division 2 Switchgear Room
- UFSAR Section 9A4.2.3, Zone 2, Mezzanine and Cable Tray Area, Elevation 583 ft, 6 in.
- UFSAR Section 9A.4.2.9, Zone 8, Cable Tray Area, Elevation 631 ft, 0 in.
- UFSAR Section 9A.4.1.4, Zone 3, High Pressure Cooling Injection (HPCI) and Control Rod Drive Pump Rooms, Elevation 540 ft, 0 in. and 562 ft, 0 in.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification (71111.11)

a. Inspection Scope

On February 7, 2002, the inspectors observed simulator training and evaluator critiques for the operations staff. The inspectors observed crew performance including, timely operator responses to events, proper use of abnormal and emergency procedures, correct classification of events, appropriate control room supervisor and shift manager oversight, and appropriate implementation of Technical Specifications actions.

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation (71111.12Q)

a. Inspection Scope

The inspectors reviewed the system health reports, associated CARDs, white papers for probabilistic risk assessments on conditional probabilities, and the control room unit logs for the following systems to evaluate the maintenance rule program characterization of failed structures, systems, and components in the maintenance rule program. The inspectors also evaluated the performance goals and performance monitoring.

- Primary Containment Pneumatics (T4901)
- Standby Gas Treatment System (T4600)
- Primary Containment (T2300)
- 345 kV Switchyard (S3100)

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Evaluation (71111.13)

1. High Pressure Cooling Injection (HPCI) System Failure to Meet Flow Acceptance Criteria

a. Inspection Scope

The inspectors reviewed the licensee's activities related to the January 8, 2002, failure of the HPCI pump to generate a flow greater than or equal to 5000 gallons per minute within 29 seconds from the initiating signal. The inspectors attended various meetings, observed selected troubleshooting activities, work planning and scheduling, and reviewed work requests, engineering evaluations, and the results of the surveillance test following corrective action implementation.

b. Findings

No findings of significance were identified.

2. North Reactor Feedwater Pump Turbine Governor Control Valve Cycling

a. Inspection Scope

The inspectors reviewed the licensee's activities related to the January 22, 2002, cycling of the NRFP turbine governor control valve speed demand that caused feed pump, condensate and feedwater systems oscillations while the reactor was at full power. The inspectors observed the condensate and feedwater system oscillations, the response of the control room operators to the event, and the reduction in power to remove the NRFP from service. The inspectors attended various meetings, observed selected troubleshooting activities, work planning and scheduling, and reviewed the results of the surveillance test following corrective action implementation.

b. Findings

No findings of significance were identified.

3. Loss of "B" Main Steam Outboard Isolation Valve Position Open Indication

a. Inspection Scope

The inspectors reviewed the licensee's special report related to the December 22, 2001, discovery of the inoperable "B" main steam line outboard isolation valve open position indication. On December 22, 2001, the licensee had entered a 30-day Technical Specifications limiting condition for operations that expired on January 21, 2002. The inspectors reviewed the Technical Specifications requirements, work requests, troubleshooting plans, and the justification for continued operations to determine if the conditions would place the plant in an unacceptable configuration and to verify that the licensee managed plant risks adequately.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

On January 8, 2002, while performing surveillance tests of the HPCI system, the system engineer noted an unusual mechanical noise. Review of computer system response traces indicated the existence of a steam flow transient with the initiation of the HPCI turbine ramp generator indicative of a probable turbine stop valve opening transient. The phenomenon occurs when the balancing chamber is set too low and "catapults" the valve open. A review of industry information indicated this to be a known phenomenon that does not prevent the system from functioning, but repetitive occurrences could cause valve damage.

Review of computer system response traces indicated that the occurrence on January 8, 2002, was the only time this response was observed at Fermi. Since the potential exists for further stop valve opening transients, the licensee has suspended planned system initiations until the March 2002 system outage. The only initiation until then will be a response to a valid initiation signal. The licensee prepared an engineering functional analysis to justify continued operation without adjustment of the balancing chamber. The HPCI system is considered operable because a valve opening transient will not prevent the HPCI from performing its intended design function.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications (71111.17)

a. Inspection Scope

Engineering design package 30078, "Reactor Building Sump Level Instrumentation," was reviewed for adequacy of the safety evaluation and consideration of design parameters. The modification was for an equipment upgrade. The original sump level instrumentation was obsolete, causing the control room recorder to exceed 45 inches of water indication requiring operators to needlessly enter abnormal operating procedure actions and to use operator workarounds.

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testing (71111.19)

Post Maintenance Testing of Division 2 Non-Interruptible Air System

a. Inspection Scope

The inspectors reviewed the post maintenance testing surveillance procedure for the Division 2 non-interruptible air supply system. The procedure was performed to determine air compressor auto start capability, valve operability, and valve position indication. The inspectors reviewed the package to verify that the test was adequate for the scope of the maintenance. The inspectors also determined that the tests restored the operational readiness consistent with the design and licensing documents.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors verified that the following surveillance activities demonstrated that the risk-significant structures, systems, and components were capable of performing their intended safety functions. The reviews included, but were not limited to, avoidance of preconditioning, clear acceptance criteria, properly calibrated test equipment, proper procedure performance, control of electrical jumpers, complete test data, Technical Specifications and UFSAR compliance, and proper equipment restoration:

- Procedure 24.202.01, Section 5, “High Pressure Cooling Injection Pump time Response and Operability Test at 1025 psi”
- Procedure 24.307.15, Section 5.1, “Emergency Diesel Generator 12 Start and Load Test - Slow Start”
- Procedure 24.204.01, “Division 1 Low Pressure Cooling Injection and Torus Cooling/Spray Pump and Valve Operability Test
- Procedure 42.309.01, “Division ½ Weekly 130/260 VDC Battery Check”
- Procedure 44.020.208, “Nuclear Steam Supply Shutoff System - HPCI Steam Line Pressure Division 2 Functional Test”
-

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors reviewed Temporary Modification 02-003, “Install Pressure Transducers on NRFP Turbine Controls,” to verify that the modification was screened in accordance with 10 CFR 50.59, the modification was consistent with documentation, associated

drawings and procedures had been updated, and post installation test results were satisfactory. Also, a review of planned testing after removal of the modification was conducted.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP4 Emergency Action Level and Emergency Plan Changes (71114.04)

a. Inspection Scope

The inspectors reviewed Revisions 23, 24, 25, and 26 of the Fermi 2 Radiological Emergency Response Plan to determine whether changes identified in Revisions 24, 25, and 26 reduced the effectiveness of the licensee's emergency planning, pending onsite inspection of the implementation of these changes.

b. Findings

No findings of significance were identified.

2. .RADIATION SAFETY

Cornerstone: Occupational Radiation Safety (OS)

2OS1 Access Control to Radiologically Significant Areas (71121.01)

.1 Plant Walkdowns and Radiological Boundary Verification

a. Inspection Scope

The inspector conducted walkdowns of the radiologically restricted area (RRA) to verify the adequacy of radiological boundaries and postings. Specifically, the inspector walked down several radiation and high radiation area boundaries in the Reactor, Radwaste, and Turbine Buildings. Confirmatory radiation measurements were taken to verify that these areas were properly posted and controlled in accordance with 10 CFR Part 20, licensee procedures and Technical Specifications. The radiation work permit (RWP) for general tours was reviewed for electronic dosimeter alarm set points and protective clothing requirements.

b. Findings

No findings of significance were identified.

.2 Job-in-Progress Reviews

a. Inspection Scope

The inspector observed the following high radiation area work activity and evaluated the licensee's use of radiological controls:

- Routine Maintenance for the North and South Reactor Feed Pump Room Coolers

The inspector reviewed radiological job requirements for the activity, attended the pre-job briefing, and observed job performance with respect to those requirements. The inspector reviewed required surveys and radiation protection (RP) job coverage, including contamination controls, to verify that appropriate radiological controls were utilized and consistent with the RWP. The inspector observed RP technician and worker performance to determine if the technicians and workers were aware of the radiological conditions in their workplace, the RWP controls/limits in place and to verify that they performed adequately given the level of radiological hazards present.

b. Findings

No findings of significance were identified.

.3 Identification and Resolution of Problems

a. Inspection Scope

The inspector reviewed Condition Assessment Resolution Documents (CARDs) completed in recent months which focused on access control to radiologically significant areas. The inspector reviewed these documents to assess the licensee's ability to identify repetitive problems, contributing causes, the extent of conditions, and implement corrective actions intended to achieve lasting results.

b. Findings

No findings of significance were identified.

2OS3 Radiation Monitoring Instrumentation (71121.03)

.1 Tests and Calibrations of Radiation Monitoring Instrumentation

a. Inspection Scope

The inspector reviewed calibration and surveillance records for radiological instrumentation associated with monitoring transient high and/or very high radiation areas, and instruments used for remote emergency assessment to verify the calibrations were conducted consistent with industry standards and in accordance with station procedures. The inspector reviewed the Updated Final Safety Analysis Report (UFSAR) and performed walkdowns to confirm that selected area radiation monitors (ARMs) were

located as described. The inspector reviewed the licensee's alarm setpoints for selected ARMs to verify that the set points were established consistent with the UFSAR and Technical Specifications. Specifically, the inspector selectively reviewed calibration procedures, calendar years 2000 - 2001 calibration records, and discussed the overall system health with the cognizant system engineers for the following radiation monitoring instrumentation:

- Containment Area High Range Radiation Monitor (PRM 1)
- ARM Outside the Traversing In-Core Probe Room on RB-1 (D21N113)
- Refuel Area High and Low Range ARMs on RB-5 (D21N118 and D21N115)
- Filter/Demin Area ARM on RW-1 (D21N142)
- Control Room ARM on AUX-3 (D21N106)

The inspector discussed surveillance practices and reviewed calendar years 2001 - 2002 calibration records and procedures for selected radiation monitors used for assessment of internal exposure, and those instruments utilized for surveys of personnel and equipment prior to egress from controlled areas of the station. The inspector observed RP staff complete functional tests of selected personnel contamination monitors and automated tool friskers at RRA egress points and portal monitors at the Primary Access Portal, to confirm that these instruments were source tested and calibrated adequately and consistent with station procedures and industry standards. These instruments included:

- Chair Whole Body Counter
- Standup Whole Body Counter
- Atlan-Scan Whole Body Counter
- Eberline Personnel Contamination Monitors (PCM-1B and PCM-2)
- Hydro Nuclear Services Model ATF-1 Automated Tool Friskers
- NNC Gamma 60 Portal Monitor

The inspector also reviewed the operations of the licensee's calibration facility and verified that those instruments staged "ready for use" had current calibrations, were operable, and in good physical condition. Additionally, the inspector reviewed the most recent calibration documentation for selected "ready for use" instruments staged in the calibration facility or used by the RP technicians during the coverage of the work described in Section 2OS1.2. The inspector observed RP staff source check portable radiation survey instruments and conduct a six month calibration of a portable frisker instrument to confirm that those tests were completed adequately using appropriate radiation sources and in accordance with station procedures.

The inspector also reviewed the licensee's personal dosimetry processing program to assess their compliance with 10 CFR Part 20.1501(c)(1) and (2) with respect to the licensee's current personnel radiation dosimetry accreditation from the National Voluntary Laboratory Accreditation Program (NVLAP) of the National Institute of Standards and Technology.

b. Findings

No findings of significance were identified.

.2 Identification and Resolution of Problems

a. Inspection Scope

The inspector reviewed: (1) the results of a self-assessment of the gamma calibrator dose rate verification completed by the RP staff in March 2001; (2) Nuclear Quality Assurance observations of the RP program completed in calendar years 2000-2001 as they relate to the radiation monitoring instrumentation program; and (3) licensee CARDs related to the radiation monitoring instrumentation program generated in calendar years 2001-2002. The inspector reviewed these documents to assess the licensee's ability to identify repetitive problems, contributing causes, the extent of conditions, and implement corrective actions intended to achieve lasting results.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES (OA)

4OA1 Performance Indicator Verification (71151)

a. Inspection Scope

The inspectors reviewed licensee event reports, licensee memoranda, unit logs, and NRC inspection reports to verify the following performance indicators for the fourth quarter of 2001.

- Unplanned Scrams per 7000 Critical Hours
- Scrams with Loss of Normal Heat Removal
- Unplanned Power Changes per 7000 Critical Hours
- Safety System Unavailability, HPCI
- Safety System Unavailability, Reactor Core Isolation Cooling
- Safety System Functional Failures
- Safety System Unavailability, Emergency Alternating Current Power
- Reactor Coolant System Activity
- Reactor Coolant Leakage

b. Findings

No findings of significance were identified.

4OA2 Problem Identification and Resolution (71152)

a. Inspection Scope

The inspectors reviewed CARD 99-16955 that documented an unexpected reactor recirculation pump "A" speed transient and a subsequent loss of heater drains. The root cause evaluation determined that aging electrolytic capacitors caused the unexpected reactor recirculation system response and therefore the scope of a review of capacitors in the plant was expanded. The inspectors reviewed this CARD following the condensate flow and pressure oscillations experienced on the north reactor feedwater pump (NRFP), which was also caused by degraded capacitors in the control circuit. Further, the inspectors interviewed system engineers to determine whether corrective actions for CARD 99-16955 were comprehensive enough to include capacitors in the controller circuit for the NRFP and whether this CARD should have identified these capacitors.

b. Findings

No findings of significance were identified.

4OA3 Event Followup (71153)

a. Inspection Scope

The inspectors reviewed licensee event reports and other items. The inspectors reviewed the root cause analysis and corrective actions taken by the licensee for these events.

b. Findings

(Closed) Licensee Event Report 50-341/99-04-00: "High Pressure Cooling Injection System Inoperability Due to Failed HPCI Room Temperature Switches." On September 13 and 20, 1999, the HPCI system was removed from service after HPCI room temperature switches failed to reset when the trip setpoint was exceeded during routine calibration/functional testing. The failure of the reset function of temperature switches was attributed to degradation of the electrolytic capacitor in the temperature switch circuit. On both occasions, the room temperature switches were replaced and the system was restored to operable status. The corrective actions included preventive maintenance. The Riley Model 86A temperature switches that provide isolations were also replaced in other systems. The licensee reviewed past occurrences and determined that a similar condition occurred as documented in Licensee Event Report 99-003, where the HPCI system became inoperable due to a degraded electrolytic capacitor in the HPCI flow controller. The inspectors determined that the proposed corrective actions were sufficient to close this item.

(Closed) Licensee Event Report 50-341/00-03-00: "High Pressure Cooling Injection System Inoperable due to High Reactor Water Level Trip during Channel Functional Test." On March 15, 2000, while conducting surveillance procedure 44.030.254, "Emergency Core Cooling System-Reactor Vessel Water Level Division 2, Channel D

Functional Test," and while testing the high reactor water level trip logic, an unexpected high water level (level 8) trip signal was generated. The level 8 signal trips the HPCI system, the reactor core isolation cooling system, and the main turbine to protect the turbines from moisture carryover. The trip was reset approximately 35 minutes later and the HPCI system was declared inoperable. During the investigation, the licensee eliminated human error as the cause of the inadvertent actuation. All proposed corrective actions were completed without identifying the cause of the inadvertent actuation. As a precaution, the level transmitter was replaced during a component outage on May 31, 2000. This event was discussed previously in Inspection Report 50-341/200002. The inspectors determined that the corrective actions taken were sufficient to close this item.

(Closed) Violation 50-341/00-09-01: "Catastrophic Failure of the Generator Outboard Bearing on Emergency Diesel Generator 14." This violation identified that the licensee implemented inadequate design controls while modifying the outboard generator bearing sight glass indicator piping during plant construction and changing the green band associated with the indicator in 1997. The modifications caused the licensee to fill an inadequate amount of lubrication for the bearing and a catastrophic failure of the bearing during a 24-hour endurance run for emergency diesel generator 14 on March 21, 2001.

The inappropriate modifications that ultimately led to the bearing failure were considered a WHITE finding. Further, the performance indicator for Emergency Alternating Current Power Unavailability turned WHITE due to accumulated fault exposure hours. On August 17, 2001, Supplemental Inspection Report 50-341/200001-10 was conducted for the WHITE performance indicator which concluded that the licensee's corrective action adequately addressed the causes and the extent of condition to prevent the recurrence of a similar condition on other safety-related equipment. On September 14, 2001, a final significance determination letter was issued for the WHITE finding. A regulatory performance meeting was held on October 5, 2001. This item is closed.

(Open) Unresolved Item 50-341/01-08-01: "High Pressure Cooling Injection System Pressure Transients." This item involved repeat occurrences of pressure transients during HPCI system starting. The licensee determined that HPCI injection valve E5150F006 was too close to the hot feedwater line and caused the valve to heat up and transfer the heat to the water in the HPCI discharge piping. The heated water created steam voids that collapsed when the system was started, causing pressure transients in the piping.

The licensee explored using a contractor, alternatives, and estimates for a design modification to eliminate the problem. The proposals included the following: 1) remove heat from valve E5150F006 using heat dissipating fins, 2) increase saturation pressure using a "keep fill" system and, 3) install a check valve on the HPCI discharge line between injection valve E5150F006 and the feedwater line. System engineers preferred installing a "keep fill." On February 11, 2002, the system engineers decided not to install a "keep fill" system and will decide on a better alternative at a later time. This item will remain open pending approval of an appropriate design to correct the condition.

(Closed) Unresolved Item 50-341/01-014-01: "Failure to Complete Required Technical Requirements Manual Fire Penetration Seal Inspections." This item involved the failure to complete an inspection of all fire penetration seals within 15 years as required by Technical Requirements Manual Surveillance Requirement 3.12.8.7. The Problem Identification and Resolution Inspection team reviewed this issue and documented in Inspection Report 50-341/01-016 a NO COLOR finding and one Non-Cited Violation (NCV 50-341/01-016-01) associated with this issue. This unresolved item is closed to this Non-Cited Violation and the finding.

(Closed) Unresolved Item 50-341/01-17-01: "Fire Detection Equipment May Not be Tested Per Operability Test Procedures." This item involved the inspectors' concern regarding approximately 168 items of fire detection/protection equipment (T8200) not having a link to a planned surveillance test event in the work scheduling tracking database. The licensee wrote CARD 01-20330 to document the concern. An engineer conducted a review of the database and expanded the list to 241 components. One hundred and eighteen of these components were not relays. Of these 118 components, 112 have been evaluated as either not requiring testing or were tested in an event. The remaining 123 components were relays, which were identified as tested satisfactorily during associated system testing but were not listed in the work scheduling tracking database. The remaining six components (flasher boards) had been abandoned in place. An action to CARD 01-20330 included updating the work scheduling tracking database to cross reference the event number. This item is closed.

4OA6 Meeting(s)

.1 Exit Meeting Summary

The inspectors presented the inspection results to Mr. O'Connor and other members of licensee management at the conclusion of the inspection on February 13, 2002. The licensee acknowledged the findings presented. No proprietary information was identified.

Licensee Meeting

On January 14, 2002, at the NRC Region III office in Lisle, Illinois, a meeting was held between Fermi 2's Radiation Protection Supervision and the NRC's Plant Support Branch to discuss items of mutual interest with regards to the Fermi 2 Radiation Protection program. Though the meeting was noticed and open for public observation, no members of the public were present for the proceedings.

Specific Area Exits

Radiation Protection Exit Meeting

Senior Official at Exit:	W. O'Connor, Vice President, Nuclear Generation
Date:	February 8, 2002
Proprietary:	No
Subject:	radiation protection instrumentation
Change to Inspection Findings:	No

KEY POINTS OF CONTACT

Licensee

H. Arora, Nuclear Licensing
B. Bertossi, RP Supervisor - Instrumentation
D. Cobb, Director, Nuclear Production
T. Dong, Manager, Performance Engineering
Q. Duong, Manager, Plant Support Engineering
T. Haberland, Manager, Work Control
C. Heitzenrater, Assistant Manager, System Engineering
K. Hlavaty, Manager, Nuclear Maintenance
M. Hobbs, Supervisor, Electrical System Engineering
R. Johnson, Supervisor, Nuclear Licensing
R. Libra, Director Nuclear Engineering
M. McDonough, Lead Engineer, Fire Protection
A. Mann, Manager, Operations
J. Moyers, Manager, Quality Assurance
W. O'Connor, Vice President, Nuclear Generation
J. Pendergast, Principal Engineer, Licensing
N. Peterson, Manager, Nuclear Licensing
J. Priest, Nuclear Quality Assurance
L. Sanders, Manager, Nuclear Training
S. Stasek, Director, Nuclear Assessment
G. Strobel, Engineer, Operations
D. Williams, Radiation Protection Manager

NRC

G. Grant, Director, Division of Reactor Projects

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Closed

50-341/99-04-00	LER	High Pressure Coolant Injection System Inoperability Due to Failed HPCI Room Temperature Switches
50-341/00-03-00	LER	High Pressure Coolant Injection System Inoperable due to High Reactor Water Level Trip during Channel Functional Test
50-341/00-09-01	VIO	Catastrophic Failure of the Generator Outboard Bearing on Emergency Diesel Generator 14
50-341/01-14-01	URI	Failure to Complete Required Technical Requirements Manual Fire Penetration Seal Inspections
50-341/01-17-01	URI	Fire Detection Equipment May Not be Tested Per Operability Test Procedures

Discussed

50-341/01-08-01	URI	High Pressure Coolant Injection System Pressure Transients

LIST OF ACRONYMS USED

ARM	Area Radiation Monitor
CARD	Condition Assessment Resolution Document
CFR	Code of Federal Regulations
HPCI	High Pressure Cooling Injection
NRFP	North Reactor Feedwater Pump
NVLAP	National Voluntary Laboratory Accreditation Program
RP	Radiation Protection
RRA	Radiologically Restricted Area
RWP	Radiation Work Permit
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item

LIST OF DOCUMENTS REVIEWED

The following documents were selected and reviewed by the inspectors to accomplish the objectives and scope of the inspection and to support any findings.

1R04 Equipment Alignment

Procedure 24.208.02	Division 1 EESW Pump and Valve Operability Test	Revision 42
Drwg 6M721-5706-3	RHR Service Water make up decant and overflow system functional operating sketch.	Revision U
Drawing M5729-1	Emergency Equipment Cooling water Division 1 functional operating sketch.	Revision AM
UFSAR Section 8.3.1.1.8	Standby AC Power System	Revision 8
Drwg 6M721-5734	Emergency Diesel Generator Functional Operating Sketch	Revision AF

1R05 Fire Protection

UFSAR Section 9A.4.2.4	Relay Room, Zone 3, El. 613 Ft 6 In.	Revision 11
UFSAR Section 9A.4.2.5	Switchgear Room, Zone 4, El. 613 Ft 8-1/2 In.	Revision 8
UFSAR Section 9A.4.2.13	Division 2 Switchgear Room, Zone 12, El. 643 Ft 6 In.	
Drwg 6A721-2405	Fire Protection Evaluation Reactor and Auxiliary Buildings Second Floor Plan El. 613' 6"	Revision Q
Drwg 6A721-2407	Fire Protection Evaluation Reactor and Auxiliary Building s Third Floor Plan El. 641' 6"	Revision Q
UFSAR Section 9A.4.2.3	Mezzanine and Cable Tray Area, Zone 2, El. 583 ft., 6 In.	Revision 9
UFSAR Section 9A.4.2.9	Cable Tray Area, Zone 8, El 631 Ft. 0 In.	Revision 10
Drwg 6A721-2403	Fire Protection Evaluation Reactor and Auxiliary Buildings First Floor Plan El. 583.5 Ft.	Revision 10
Drwg 6A721-2404	Fire Protection Evaluation Reactor and Auxiliary Buildings Cable Tay Area Plan El. 603.5 Ft.	Revision 11

UFSAR Section 9A.4.1.4	HPCI and CRD Pump Rooms, Zone 4, El. 540 Ft, 0 In and 562 Ft, 0 In.	Revision 11
Drwg 6A721-2401	Fire Protection Evaluation Reactor Building Subbasement Plan (540.0 Ft.)	Revision 10
Drwg 6A721-2402	Fire Protection Evaluation Reactor and Auxiliary Buildings Basement Plan (Elevation 562.0 Ft.)	Revision 10

1R11 Licensed Operator Requal

SS-OP-202-0211 Simulator Scenario No. 10	Loss of Transformer 64, EDG 12 Trip and Small LOCA	Revision 0
SS-OP-202-0211 Simulator Scenario No. 8	ATWS and LOCA	Revision 0

1R12 Maintenance Rule Implementation

NUMARC 93-01	Nuclear Energy Institute Industry Guideline for Monitoring Effectiveness at Nuclear Power Plants April 1996	Revision 2
PRA Ranking Table 4.1	Probabilistic Importance Measure	
Log 98-002	Maintenance Rule position Paper: Bases Summary for Maintenance Rule Performance Criteria, Table 1	Revision O, October 2, 1998
Log 96-01	Maintenance Rule Position Paper: Development of “Conditional Probability” for SSCs Modeled in the Fermi 2 PSA	Revision 1, October 2, 1998
Log 96-002	Maintenance Rule Position Paper: Development of Train and Divisional Level Conditional Probability, Allowed Number of Failures and Out-of-Service Hours, and Redundancy Factor	Revision 1, October 2, 1998
MR06, Section 5.2.1	Establishing Performance Criteria	Revision 6
MR06, Appendix H	Performance Criteria Summary	Revision 8
	Control Room Logs for Primary Containment Pneumatics (T4901), Standby Gas Treatment System (T4600), and Primary Containment (T2300).	January 1, 1999 - January 9, 2002

	Condition Assessment Resolution Documents for the Primary Containment Pneumatics (T4901), Standby Gas Treatment System (T4600), and Primary Containment (T2300).	January 1, 1999 - January 9, 2002
	Work Requests and Preventive Maintenance Task for the Primary Containment Pneumatics (T4901), Standby Gas Treatment System (T4600), and Primary Containment (T2300).	January 1, 1999 - January 9, 2002
WR 000Z011897	T4901F469 Did Not Stroke as Expected	June 13, 2001
SST AB50010614	Perform EQ1-EF2-052A Stroke Valve T49F469 E/V Verification.	June 13, 2001

13 Maintenance Risk Assessment and Emergent Work

WR E971020100	Replace HPCI Oil Filter Elements	January 15, 2002
WR 000Z020091	E4100F068 Shown Dual Indication, Troubleshoot, Rework.	January 11, 2002
WR 000Z020092	Oil Leak on Hydraulic Cylinder	January 11, 2002
WR 000Z020087	Troubleshoot Relays and Control Circuits	January 11, 2002
CARD 02-10802	HPCI Surveillance 24.202.01 Section 5.3 Response Time Failure	
CARD 01-22436	Loss of Open Indication on “B” MSIV Outboard Valve	December 22, 2001
Limiting Condition for Operation 01-0525	B2103F028B Open Indication (B21N575B) Malfunction	December 22, 2001
WR 000Z014688	Loss of Open Indication on “B” MSIV Outboard Valve	December 22, 2001
Technical Specification 3.3.3.1	Post Accident Monitoring Instrumentation	
Technical Specification 5.6.7	Administrative Controls	

1R15 Operbility Evaluations

MES 27 Operability Evaluation	Potential Opening Transient on E4100F067	Revision 0
CARD 02-11585	Potential "Jack Rabbit Start" of HPCI Steam Stop Valve E4100F067.	
Control Room Logs	Control Room Log of January 13, 2002 at 6:26 p.m., HPCI system entry.	

1R17 Permanent Plant Modifications

EDP 30078	Replace Reactor Building Corner Sump Level Instrumentation and Lower Sump Switch High Level Setpoint	May 11, 1999

1R19 Post Maintenance Testing

Procedure 24.129.01	Station and control Air System Valve Operability and Position Indication Verification Test	Revision 32
Procedure 27.129.02	Division 2 Control Air Compressor Auto Start Test	Revision 3

1R22 Surveillance Testing

Procedure 42.309.01	Divisions 1 & 2 Weekly 130/260 VDC Battery Check	Revision 30
Vendor Manual VME 11-1	C & D Technologies Inc. 130/260 VDC Stationary Batteries	Revision E
TSSR 3.8.4.1	Verify Battery Terminal Voltage is $\geq$ 125.7 V on Float Charge	Amendment 136
TSSR 3.8.6.1	Verify Battery Cell Parameters Meet Table 3.8.6-1 Category A Limits	Amendment 136
Procedure 24.307.15, Section 15	EDG 12 Start and Load Test - Slow Start	Revision 47
TSSR 3.8.1.2	Perform EDG Manual Slow Start	Amendment 134
TSSR 3.8.1.3	Synchronize and Load EDG	Amendment 134
TSSR 3.8.1.4	Verify Day Tank Level $\geq$ 210 gallons	Amendment 134
TSSR 3.8.1.5	Check and Remove Accumulated water from Day Tank	Amendment 134

TSSR 3.8.1.6	Verify Fuel Transfer from Storage to Day tanks	Amendment 134
CARD 01-01563	EDG 12 Jacket Cooling Water Temperature Low	October 6, 2001
CARD 01-01579	EDG 12 ACS TCV Not Working Correctly	November 9, 2001
CARD 01-02300	EDG 12 Heat Exchanger Drain Valve Leaks	December 29, 2001
CARD 01-01589	EDG 12 KVAR Gage needs Calibration	November 17, 2001
CARD 01-01590	DC Field Amps out of Tolerance with Control Room Indication	November 17, 2001
CARD 02-00159	EDG 12 Lube Oil Temperature Alarm Locked In	January 4, 2002
Procedure 24.204.01	Division 1 LPCI & Torus Cooling/Spray Pump and Valve Operability Test	Revision 47

1R23 Temporary Plant Modifications

Temp Mod 02-003	Install Pressure Transducers to Monitor North Reactor Feed Pump Turbine System.	Revision 0

1EP4 Emergency Action Level and Emergency Plan Changes

	Fermi 2 Radiological Emergency Response Plan	Revision 23
	Fermi 2 Radiological Emergency Response Plan	Revision 24
	Fermi 2 Radiological Emergency Response Plan	Revision 25
	Fermi 2 Radiological Emergency Response Plan	Revision 26

2OS1 Access Control to Radiologically Significant Areas

CARD 02-11894	RRA Access Denial	January 8, 2002
GRWP 02-0002	USNRC Personnel General Access to the RRA for Inspections and Surveillances	Revision 0
SRWP 02-1042, Tasks 9 &10	T4100/U4100/V4100 - Plant Ventilation Equipment Including Stand-by Gas System: Performing PM's, Maintenance, Minor Repair and Inspections	Revision 0

2OS3 Radiation Monitoring Instrumentation

	Eberline Instruments Certification of Calibration ASP-2/NRD (S/N: 660/711674)	January 23, 2002
	Fermi 2 Dosimetry Laboratory TLD Quality Manual	Revision 5 (July 27, 2000)
	Instrument Daily IP Check List	February 7, 2002
	Instrument Weekly IP Check List	February 7, 2002

CARD 01-14124	Evaluate New Technology for Release of Materials from the RRA	April 9, 2001
CARD 01-21603	Automatic Tool Frisker (ATF-1) SN 8802002 Failed Daily Source Check	November 12, 2001
CARD 01-19788	Ludlum 500 Minipulser RPT-500-001-H (18477) Failed During Calibration of AMS-3	October 12, 2001
NPRC-00-0372	Fermi's Site-Specific Internal Sensitivity Check for the PCM-1B	November 16, 2000
NPRC-01-0078	Self-Assessment of Gamma Calibrator Dose Rate Verification	March 19, 2001
NPRC-99-0206	Documenting the Selection of Alarm Settings for Eberline Personnel Contamination Monitors (PCM) and Automatic Tool Frisker (ATF) Operation at Fermi 2	June 7, 1999
PTP 64.080.302	Area Radiation Monitoring System Channel 6 (Control Room) Calibration	November 13, 2000
PTP 64.080.303	Area Radiation Monitoring System Channel 15 (RB5 Refuel Area Low Range) Calibration	August 20, 2001
PTP 64.120.040	Containment Area High Range Radiation Monitor Division 1 Calibration	October 22, 2001
PTP 64.611.504	Area Radiation Monitoring System Channel 13 (RB1 Outside TIP Room) Calibration/Functional Test	August 21, 2001
PTP 64.611.504	Area Radiation Monitoring System Channel 18 (RB5 Refuel Area High Range) Calibration/Functional Test	August 20, 2001
PTP 64.611.504	Area Radiation Monitoring System Channel 42 (RW1 Filter/Demin Area) Calibration/Functional Test	May 23, 2001
PTP 65.000.265	Atlan-Scan Whole Body Counter Energy/Efficiency Calibration	September 13, 2001
PTP 65.000.265	Chair Whole Body Counter Energy/Efficiency Calibration	April 9, 2001
PTP 65.000.265	Maintenance and Operation of the Fermi 2 Whole Body Counters Using Renaissance Software	Revision 1
PTP 65.000.265	Standup Whole Body Counter Energy/Efficiency Calibration	August 16, 2001
PTP 66.000.205	Calibration of Portable Ion Chamber Survey Instruments	Revision 4
PTP 66.000.205	Calibration of Portable Ion Chamber Survey Instrument - Bicron RSO-50E (S/N: C516H)	October 3, 2001
PTP 66.000.205	Calibration of Portable Ion Chamber Survey Instrument - Eberline RO-2A (S/N: 1945)	August 21, 2001
PTP 66.000.207	Calibration of the Ludlum 177	Revision 4

PTP 66.000.207	Calibration of the Ludlum 177 (S/N: 19697)	February 6, 2002
PTP 66.000.223	Calibration of the Eberline Personnel Contamination Monitor	Revision 3
PTP 66.000.223	Calibration of the Eberline Personnel Contamination Monitor (PCM-1B, S/N: 122)	July 12, 2001 & January 8, 2002
PTP 66.000.223	Calibration of the Eberline Personnel Contamination Monitor (PCM-1B, S/N: 699)	March 22, 2001 & September 13, 2001
PTP 66.000.223	Calibration of the Eberline Personnel Contamination Monitor (PCM-1B, S/N: 700)	April 16, 2001 & October 10, 2001
PTP 66.000.223	Calibration of the Eberline Personnel Contamination Monitor (PCM-1B, S/N: 877)	March 20, 2001 & September 14, 2001
PTP 66.000.232	Calibration of the Hydro Nuclear Services Model ATF-1 Automated Tool Frisker	Revision 5
PTP 66.000.232	Calibration of the Hydro Nuclear Services Model ATF-1 Automated Tool Frisker (S/N: 8802002)	August 18, 2001
PTP 66.000.232	Calibration of the Hydro Nuclear Services Model ATF-1 Automated Tool Frisker (S/N: 8901015)	September 6, 2001
PTP 66.000.232	Calibration of the Hydro Nuclear Services Model ATF-1 Automated Tool Frisker (S/N: 8906025)	October 8, 2001
PTP 66.000.242	Calibration of NNC Gamma 60 Portal Monitor	Revision 1
PTP 66.000.242	Calibration of NNC Gamma 60 Portal Monitor (S/N: 960059)	Jaunary 10, 2002
PTP 66.000.242	Calibration of NNC Gamma 60 Portal Monitor (S/N: 960060)	December 12, 2001
PTP 66.000.304	Verification of Gamma Calibrator Dose Rates	Revision 5
PTP 66.000.419	Calibration of the Eberline Personnel Contamination Monitor (PCM-2)	Revision 4
PTP 66.000.419	Calibration of the Eberline Personnel Contamination Monitor (PCM-2, S/N: 216)	March 29, 2001 & September 27, 2001
PTP 66.000.423	Calibration of the Eberline AMS-4 Air Monitoring System	Revision 3
PTP 66.000.423	Calibration of the Eberline AMS-4 Air Monitoring System (S/N: 441)	August 20, 2001

4OA1 Performance Indicator Verification

Technical Specification 1.1	Definition: Dose Equivalent Iodine-131	Amendment 134
Procedure 76.000.34	Reactor Coolant Analysis	Revision 10

TID-14844	AEC 1962, “Calculation of Distance Factors for Power and Test Reactor Sites”	
Procedure 74.000.19	Reactor Coolant System iodine Analysis Surveillance-Weekly Mode 1	
	Chemistry Department Gamma Spectroscopy Report	February 6, 2002
	4Q/2001 Performance Indicators - Fermi 2	
	Control Room Logs from October 1 through December 31, 2001	
Nuclear Generation Memo	Performance Engineering Group NRC Performance Indicator Fourth Quarter 2001 Data Submittal	January 15, 2002
Log 01-013	Performance Evaluation Program Evaluation Sheet NRC Performance Indicator Data Submittal for 2001 Q4	January 10, 2002
Nuclear Generation Memo	NRC Performance Indicators for EDGs, HPCI, RCIC, and RHR Systems 4th Quarter 2001 Safety System Unavailability	January 2002
File 0801.26	Radiation Protection NRC Performance Indicators 4th Quarter 2001	January 8, 2001
NEI 99-02	Regulatory Assessment Performance Indicator Guideline	Revision 2

4AO2 Problem Identification and Resolution

CARD 99-16955	Recirc Pump Speed Transient with Subsequent Loss of Heater Drains	September 11, 1999
CARD 99-11260	Troubleshoot and Replace Capacitors on GEMACS	June 1, 1999
CARD 99-14354	Degraded Capacitor in C36K405	June 14, 1999
CARD 99-14736	HPCI Flow Controller Failed	June 28, 1999
CARD 99-15138	OTH 99-098: OE 3625 - Capacitor Failure	May 15, 1999
CARD 99-16258	Shelf Life Stock of Electrolytic Capacitors	June 23, 2000