



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION III  
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February 2, 2010

Mr. Jack M. Davis  
Senior Vice President and  
Chief Nuclear Officer  
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Newport, MI 48166

SUBJECT: FERMIL POWER PLANT, UNIT 2, INTEGRATED  
INSPECTION REPORT 05000341/2009005

Dear Mr. Davis:

On December 31, 2009, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Fermi Power Plant, Unit 2. The enclosed report documents the inspection findings, which were discussed on January 5, 2010, with J. Plona and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and to 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.

Based on the results of this inspection, one NRC-identified finding of very low safety significance was identified. The finding involved no violation of NRC requirements.

If you contest the subject or severity of this finding, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission - Region III, 2443 Warrenville Road, Suite 210, Lisle, IL 60532-4352; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the Resident Inspector Office at the Fermi Power Plant. In addition, if you disagree with the characterization of any finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region III, and the NRC Resident Inspector at the Fermi Power Plant. The information that you provide will be considered in accordance with Inspection Manual Chapter 0305.

J. Davis

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In accordance with 10 CFR 2.390 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), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

***/RA/***

John B. Giessner, Chief  
Branch 4  
Division of Reactor Projects

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

Enclosure: Inspection Report 05000341/2009005  
w/Attachment: Supplemental Information

cc w/encl: Distribution via ListServ

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

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

Report No: 05000341/2009005

Licensee: Detroit Edison Company

Facility: Fermi Power Plant, Unit 2

Location: Newport, MI

Dates: October 1 through December 31, 2009

Inspectors: R. Morris, Senior Resident Inspector  
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Enclosure

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## SUMMARY OF FINDINGS

IR 05000341/2009005; 10/01/2009 – 12/31/2009; Fermi Power Plant, Unit 2; Maintenance Effectiveness

This report covers a 3-month period of inspection by resident inspectors and announced baseline inspections by regional inspectors. One Green finding was identified by the inspectors. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

### A. NRC-Identified and Self-Revealed Findings

#### **Cornerstone: Mitigating Systems**

Green. A finding of very low safety significance (Green) was identified by the inspectors for the licensee's failure to adhere to self-imposed maintenance rule procedural requirements. Contrary to maintenance rule monitoring requirements, while performing a maintenance rule functional failure evaluation of a diesel fire pump functional failure, licensee personnel inappropriately determined the failure was not maintenance preventable and assigned an incorrect causal code to the event prior to completing and documenting a cause analysis. These actions led to a delay in licensee recognition that the fire protection system had exceeded its performance criteria; therefore, presentation of the system's condition to the maintenance rule expert panel for a(1) consideration was delayed by several months. No violation of NRC requirements occurred. The licensee entered this item into their corrective action program (CAP) as condition assessment and resolution document (CARD) 09-28649. The licensee's immediate actions included correction of the causal code for the maintenance rule functional failure and initiation of the a(1) evaluation process for the affected system. The system was placed in a(1) status on January 12, 2010.

The finding was determined to be more than minor in accordance with IMC 0612, Appendix E, Example 4.a, in the not minor section, because procedural noncompliance in the maintenance rule area continues to be an issue at Fermi. In addition, if left uncorrected, the failure to adhere to procedures could have the potential to lead to a more significant safety concern. Specifically, not following procedural requirements specified in the Fermi Maintenance Rule Conduct Manual has led to a failure to monitor degraded equipment in an a(1) status as required. The finding affected the Mitigating Systems cornerstone and was determined to be of very low significance (Green), because the finding was a procedural compliance issue that was confirmed not to result in loss of operability or functionality; it did not result in a loss of system safety function, and did not screen as potentially risk significant due to external initiating events. This finding has a cross-cutting aspect in Human Performance—Work Practices human error prevention techniques due to a failure to use error prevention techniques during the assessment of the failure (H.4(a)). (Section 1R12)

**B. Licensee-Identified Violations**

No violations of significance were identified.

## REPORT DETAILS

### Summary of Plant Status

Fermi Unit 2 started this inspection period in shutdown mode due to a leak in the main generator stator water cooling system. The plant remained in shutdown mode until November 11, 2009; power was restored to 100 percent on November 12, and remained at that level for the remainder of the inspection period.

### 1. REACTOR SAFETY

#### **Cornerstone: Initiating Events, Mitigating Systems, Barrier Integrity, and Emergency Preparedness**

#### 1R01 Adverse Weather Protection (71111.01)

##### .1 Winter Seasonal Readiness Preparations

##### a. Inspection Scope

The inspectors conducted a review of the licensee's preparations for winter conditions to verify the plant's design features and implementation of procedures were sufficient to protect mitigating systems from the effects of adverse weather. Documentation for selected risk-significant systems was reviewed to ensure these systems would remain functional when challenged by inclement weather. During the inspection, the inspectors focused on plant specific design features and the licensee's procedures used to mitigate or respond to adverse weather conditions. Additionally, the inspectors reviewed the Updated Final Safety Analysis Report (UFSAR) and performance requirements for systems selected for inspection, and verified operator actions were appropriate as specified by plant specific procedures. Cold weather protection, such as heat tracing and area heaters, was verified to be in operation where applicable. The inspectors also reviewed corrective action program (CAP) items to verify the licensee was identifying adverse weather issues at an appropriate threshold and entering them into their CAP in accordance with station corrective action procedures. Specific documents reviewed during this inspection are listed in the Attachment. The inspectors' reviews focused specifically on the following plant systems due to their risk significance or susceptibility to cold weather issues:

- residual heat removal (RHR)/emergency diesel generator (EDG) complex heating system;
- reactor building heating steam; and
- reactor building door seals.

This inspection constituted one winter seasonal readiness preparations sample as defined in Inspection Procedure (IP) 71111.01-05.

##### b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

.1 Quarterly Partial System Walkdowns

a. Inspection Scope

The inspectors performed partial system walkdowns of the following risk-significant systems:

- RHR during shutdown cooling;
- RHR low pressure safety injection lineup; and
- control center heating, ventilating, and air-conditioning system.

The inspectors selected these systems based on their risk significance relative to the Reactor Safety Cornerstones at the time they were inspected. The inspectors attempted to identify any discrepancies that could impact the function of the system and, therefore, potentially increase risk. The inspectors reviewed applicable operating procedures, system diagrams, UFSAR, Technical Specification (TS) requirements, outstanding work orders (WOs), condition reports, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have rendered the systems incapable of performing their intended functions. The inspectors also walked down accessible portions of the systems to verify system components and support equipment were aligned correctly and operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify there were no obvious deficiencies. The inspectors also verified the licensee had properly identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers and entered them into the CAP with the appropriate significance characterization. Documents reviewed are listed in the Attachment.

These activities constituted three partial system walkdown samples as defined in IP 71111.04-05.

b. Findings

No findings of significance were identified.

.2 Semi-Annual Complete System Walkdown

a. Inspection Scope

On October 20, 2009, the inspectors performed a complete system alignment inspection of the main steam and the gland seal steam systems to verify the functional capability of the system. This system was selected because it was considered both safety significant and risk significant in the licensee's probabilistic risk assessment. The inspectors walked down the system to review mechanical and electrical equipment line ups, electrical power availability, system pressure and temperature indications, as appropriate, component labeling, component lubrication, component and equipment cooling, hangers and supports, operability of support systems, and to ensure ancillary equipment or debris did not interfere with equipment operation. A review of a sample of past and outstanding WOs was performed to determine whether any deficiencies

significantly affected the system function. In addition, the inspectors reviewed the CAP database to ensure system equipment alignment problems were being identified and appropriately resolved. Documents reviewed are listed in the Attachment.

These activities constituted one complete system walkdown sample as defined in IP 71111.04-05.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

.1 Routine Resident Inspector Tours (71111.05Q)

a. Inspection Scope

The inspectors conducted fire protection walkdowns which were focused on availability, accessibility, and the condition of firefighting equipment in the following risk-significant plant areas:

- turbine building, first floor steam tunnel and basement;
- auxiliary building, third and fourth floors;
- division 1 RHR service water room; and
- division 2 RHR service water room.

The inspectors reviewed areas to assess if the licensee had implemented a fire protection program that adequately controlled combustibles and ignition sources within the plant, effectively maintained fire detection and suppression capability, maintained passive fire protection features in good material condition, and implemented adequate compensatory measures for out-of-service, degraded or inoperable fire protection equipment, systems, or features in accordance with the licensee's fire plan. The inspectors selected fire areas based on their overall contribution to internal fire risk as documented in the plant's Individual Plant Examination of External Events with later additional insights, their potential to impact equipment which could initiate or mitigate a plant transient, or their impact on the plant's ability to respond to a security event. Using the documents listed in the Attachment, the inspectors verified that fire hoses and extinguishers were in their designated locations and available for immediate use; fire detectors and sprinklers were unobstructed; transient material loading was within the analyzed limits; and fire doors, dampers, and penetration seals appeared to be in satisfactory condition. The inspectors also verified that minor issues identified during the inspection were entered into the licensee's CAP. Documents reviewed are listed in the Attachment to this report.

These activities constituted four quarterly fire protection inspection samples as defined in IP 71111.05-05.

b. Findings

No findings of significance were identified.

.2 Annual Fire Protection Drill Observation (71111.05A)

a. Inspection Scope

On November 25, 2009, the inspectors observed a fire brigade activation in the division 2 switchgear room. Based on this observation, the inspectors evaluated the readiness of the plant fire brigade to fight fires. The inspectors verified that the licensee staff identified deficiencies; openly discussed them in a self-critical manner at the drill debrief, and took appropriate corrective actions. Specific attributes evaluated were: (1) proper wearing of turnout gear and self-contained breathing apparatus; (2) proper use and layout of fire hoses; (3) employment of appropriate fire fighting techniques; (4) sufficient fire fighting equipment brought to the scene; (5) effectiveness of fire brigade leader communications, command, and control; (6) search for victims and propagation of the fire into other plant areas; (7) smoke removal operations; (8) utilization of preplanned strategies; (9) adherence to the pre-planned drill scenario; and (10) drill objectives. Documents reviewed are listed in the Attachment to this report.

These activities constituted one annual fire protection inspection sample as defined in IP 71111.05-05.

b. Findings

No findings of significance were identified.

1R06 Flooding (71111.06)

.1 Underground Vaults

a. Inspection Scope

The inspectors performed a review of Operating Experience Smart Sample OpESS FY2007-02, "Flooding Vulnerabilities Due to Inadequate Design and Conduit/Hydrostatic Seal Barrier Concerns," related to NRC Information Notice 2005-30. The inspectors reviewed the licensee's corrective action documents to verify that the licensee had received and entered Information Notice 2005-30 into their corrective action and operating experience programs. The inspectors reviewed the licensee's evaluation of Information Notice 2005-30 and concluded it was appropriate.

The inspectors reviewed selected underground bunkers/manholes subject to flooding that contained cables whose failure could disable risk-significant equipment. The inspectors determined most cables were not submerged, splices were intact, and appropriate cable support structures were in place. For those submerged cables, they are rated for submergence and are within the life expectancy of the cable. In addition, the licensee has a program in place to replace the cables and re-route the cable tray so that they will not be submerged. In those areas where dewatering devices were used, such as a sump pump, the device was operable and level alarm circuits were set appropriately to ensure the cables would not be submerged. In those areas without dewatering devices, the inspectors verified that drainage of the area was available or that the cables were qualified for submergence conditions. The inspectors also reviewed the licensee's corrective action documents with respect to past submerged cable issues identified in the CAP to verify the adequacy of the corrective actions. The

inspectors performed a walkdown of the following underground bunkers/manholes subject to flooding:

- RHR/EDG cables to reactor building and security manholes inside of protected area

This inspection constituted one underground vault sample as defined in IP 71111.06-05.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Regualification Program (71111.11)

.1 Resident Inspector Quarterly Review (71111.11Q)

a. Inspection Scope

On November 17, 2009, the inspectors observed a crew of licensed operators in the plant's simulator during licensed operator requalification examinations to verify operator performance was adequate, evaluators were identifying and documenting crew performance problems, and training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

- licensed operator performance;
- crew's clarity and formality of communications;
- ability to take timely actions in the conservative direction;
- prioritization, interpretation, and verification of annunciator alarms;
- correct use and implementation of abnormal and emergency procedures;
- control board manipulations;
- oversight and direction from supervisors; and
- ability to identify and implement appropriate TS actions and Emergency Plan actions and notifications.

The crew's performance in these areas was compared to pre-established operator action expectations and successful critical task completion requirements. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one quarterly licensed operator requalification program sample as defined in IP 71111.11.

b. Findings

No findings of significance were identified

.2 Facility Operating History (71111.11B)

a. Inspection Scope

The inspectors reviewed the plant's operating history from December 2007 through November 2009 to identify operating experience that was expected to be addressed by

the Licensed Operator Requalification Training (LORT) program. The inspector verified the identified operating experience had been addressed by the facility licensee in accordance with the station's approved Systematic Approach to Training program to satisfy the requirements of 10 Code of Federal Regulations (CFR) 55.59(c). The documents reviewed during this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

.3 Licensee Requalification Examinations

a. Inspection Scope

The inspectors performed an inspection of the licensee's LORT test/examination program for compliance with the station's Systematic Approach to Training program which would satisfy the requirements of 10 CFR 55.59(c)(4). The reviewed operating examination material consisted of six operating tests, each containing two or three dynamic simulator scenarios and five job performance measures, and one written examination, containing 35 questions (29 common questions, 3 reactor operator only questions, and 3 senior reactor operator only questions). The inspectors reviewed the annual requalification operating test and biennial written examination material to evaluate general quality, construction, and difficulty level. The inspectors assessed the level of examination material duplication from week-to-week during the current year operating test. The examiners assessed the amount of written examination material duplication from week-to-week for the written examination administered in 2009. The inspectors reviewed the methodology for developing the examinations, including the LORT program 2-year sample plan, probabilistic risk assessment insights, previously identified operator performance deficiencies, and plant modifications. The documents reviewed during this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

.4 Licensee Administration of Requalification Examinations

a. Inspection Scope

The inspectors observed the administration of a requalification operating test to assess the licensee's effectiveness in conducting the test to ensure compliance with 10 CFR 55.59(c)(4). The inspectors evaluated the performance of one crew in parallel with the facility evaluators during three dynamic simulator scenarios and evaluated various licensed crew members concurrently with facility evaluators during the administration of several job performance measures. The inspectors assessed the facility evaluators' ability to determine adequate crew and individual performance using objective, measurable standards. The inspectors observed the training staff personnel administer the operating test, including conducting pre-examination briefings, evaluations of operator performance, and individual and crew evaluations upon completion of the operating test. The inspectors evaluated the ability of the simulator to support the examinations. A specific evaluation of simulator performance was

conducted and documented in the section below titled, "Conformance with Simulator Requirements Specified in 10 CFR 55.46." The documents reviewed during this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

.5 Examination Security

a. Inspection Scope

The inspectors observed and reviewed the licensee's overall licensed operator requalification examination security program related to examination physical security (e.g., access restrictions and simulator considerations) and integrity (e.g., predictability and bias) to verify compliance with 10 CFR 55.49, "Integrity of Examinations and Tests." The inspectors also reviewed the facility licensee's examination security procedure, any corrective actions related to past or present examination security problems at the facility, and the implementation of security and integrity measures (e.g., security agreements, sampling criteria, bank use, and test item repetition) throughout the examination process. The documents reviewed during this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

.6 Licensee Training Feedback System

a. Inspection Scope

The inspectors assessed the methods and effectiveness of the licensee's processes for revising and maintaining its LORT program up to date, including the use of feedback from plant events and industry operating experience information. The inspectors reviewed the licensee's quality assurance oversight activities, including licensee training department self-assessment reports. The inspectors evaluated the licensee's ability to assess the effectiveness of its LORT program and their ability to implement appropriate corrective actions. This evaluation was performed to verify compliance with 10 CFR 55.59(c) and the licensee's Systematic Approach to Training program. The documents reviewed during this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

.7 Licensee Remedial Training Program

a. Inspection Scope

The inspectors assessed the adequacy and effectiveness of the remedial training conducted since the previous biennial requalification examinations and the training from the current examination cycle to ensure that they addressed weaknesses in licensed

operator or crew performance identified during training and plant operations. The inspectors reviewed remedial training procedures and individual remedial training plans. This evaluation was performed in accordance with 10 CFR 55.59(c) and with respect to the licensee's Systematic Approach to Training program. The documents reviewed during this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

.8 Conformance With Operator License Conditions

a. Inspection Scope

The inspectors reviewed the facility and individual operator licensees' conformance with the requirements of 10 CFR Part 55. The inspectors reviewed the facility licensee's program for maintaining active operator licenses and to assess compliance with 10 CFR 55.53(e) and (f). The inspectors reviewed the procedural guidance and the process for tracking on-shift hours for licensed operators and which control room positions were granted watch-standing credit for maintaining active operator licenses. The inspectors reviewed the facility licensee's LORT program to assess compliance with the requalification program requirements as described by 10 CFR 55.59(c). Additionally, medical records for 10 licensed operators were reviewed for compliance with 10 CFR 55.53(i). The documents reviewed during this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

.9 Conformance with Simulator Requirements Specified in 10 CFR 55.46

a. Inspection Scope

The inspectors assessed the adequacy of the licensee's simulation facility (simulator) for use in operator licensing examinations and for satisfying experience requirements as prescribed in 10 CFR 55.46, "Simulation Facilities." The inspectors also reviewed a sample of simulator performance test records (i.e., transient tests, malfunction tests, steady state tests, and core performance tests), simulator discrepancies, and the process for ensuring continued assurance of simulator fidelity in accordance with 10 CFR 55.46. The inspectors reviewed and evaluated the discrepancy process to ensure that simulator fidelity was maintained. Open simulator discrepancies were reviewed for importance relative to the impact on 10 CFR 55.45 and 55.59 operator actions as well as on nuclear and thermal hydraulic operating characteristics. The inspectors conducted interviews with members of the licensee's simulator staff about the configuration control process and completed the IP 71111.11, Appendix C, checklist to evaluate whether or not the licensee's plant-referenced simulator was operating adequately as required by 10 CFR 55.46(c) and (d). The documents reviewed during this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

.10 Biennial Written Examination and Annual Operating Test Results (71111.11B)

a. Inspection Scope

The inspectors reviewed the overall pass/fail results of the biennial written examinations, the individual Job Performance Measure operating tests, and the simulator operating tests (required to be given per 10 CFR 55.59(a)(2)) administered by the licensee from October through December 2009 as part of the licensee's operator licensing requalification cycle. These results were compared to the thresholds established in Inspection Manual Chapter 0609, Appendix I, "Licensed Operator Requalification Significance Determination Process." The evaluations were also performed to determine if the licensee effectively implemented operator requalification guidelines established in NUREG 1021, "Operator Licensing Examination Standards for Power Reactors," and IP 71111.11, "Licensed Operator Requalification Program." The documents reviewed during this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

.11 Completion Status

Performance of the above listed inspection activities (.2 - .10) constituted one biennial licensed operator requalification program inspection sample as defined in IP 71111.11B.

1R12 Maintenance Effectiveness (71111.12)

.1 Routine Quarterly Evaluations (71111.12Q)

a. Inspection Scope

The inspectors evaluated degraded performance issues involving the following risk-significant systems:

- diesel fire pump (DFP);
- R3100 vital power;
- B2104 safety and relief valves; and
- A7100 primary containment isolation.

The inspectors reviewed events such as where ineffective equipment maintenance had resulted in valid or invalid automatic actuations of engineered safeguards systems and independently verified the licensee's actions to address system performance or condition problems in terms of the following:

- implementing appropriate work practices;
- identifying and addressing common cause failures;
- scoping of systems in accordance with 10 CFR 50.65(b) of the maintenance rule;

- characterizing system reliability issues for performance;
- charging unavailability for performance;
- trending key parameters for condition monitoring;
- ensuring 10 CFR 50.65(a)(1) or (a)(2) classification or re-classification; and
- verifying appropriate performance criteria for structures, systems, and components/functions classified as (a)(2) or appropriate and adequate goals and corrective actions for systems classified as (a)(1).

The inspectors assessed performance issues with respect to the reliability, availability, and condition monitoring of the system. In addition, the inspectors verified maintenance effectiveness issues were entered into the CAP with the appropriate significance characterization. Documents reviewed are listed in the Attachment to this report.

This inspection constituted four quarterly maintenance effectiveness samples as defined in IP 71111.12-05.

b. Findings

Introduction: The inspectors identified a finding of very low safety significance for the licensee's failure to adhere to self-imposed Maintenance Rule procedural requirements. Contrary to MMR10 Maintenance Rule Conduct Manual—Monitoring, while performing a maintenance rule functional failure (MRFF) evaluation of a DFP functional failure, licensee personnel made a determination that the failure was not maintenance preventable and assigned an incorrect causal code to the event prior to completing and documenting a cause analysis. These actions ultimately led to a delay in licensee identification that the fire protection system had exceeded its performance criteria and delayed presentation of the system's condition to the maintenance rule expert panel for a(1) consideration.

Description: On November 5, 2009, during a review of the effectiveness of licensee maintenance for the fire protection system, inspectors noted that the MRFF evaluation for an August 31, 2009, event involving the DFP's failure to start was based on causal information that differed from the information listed in the CARD. The MRFF evaluation was completed with a causal code assigned to the event that indicated the functional failure was not maintenance preventable. However, the cause determination documented in the CARD would have lent itself to a determination that the functional failure that occurred during the event was maintenance preventable. The inspectors also noted the licensee was required to wait until a causal analysis was completed and documented in the CARD before making a maintenance preventable determination in the MRFF evaluation. Instead, the maintenance preventable determination in the MRFF evaluation had been completed, and the evaluation had been closed out before the causal analysis was finished.

In addition, stepping through the licensee's Maintenance Rule process further revealed that when an MRFF evaluation is left without a maintenance-preventable determination for over 30 days, the licensee is required to default the evaluation to maintenance preventable, and measure the system against performance criteria accordingly. Because the MRFF evaluation had been closed out with a non-maintenance-preventable causal code, the procedural 30-day deadline passed unrecognized. Up to this point, the fire protection system had already accumulated two maintenance-preventable functional failures (MPFFs), and was in danger of exceeding its performance criteria which

required the system have less-than-or-equal-to two MPFFs per two cycles. Following the maintenance rule procedures correctly would have caused the fire protection system to exceed its performance criteria at the 30-day deadline, which would have prompted the licensee to consider the system for a(1) classification in September 2009.

Due in part to the inspector's questions approximately 65 days after the event, the cause of the functional failure was later determined to be maintenance preventable. While, by procedure the failure should already have been characterized as an MPFF for timely a(1) evaluation purposes, this later determination led to the formal characterization of the failure as maintenance preventable. This third accumulated MPFF caused the system to formally exceed its performance criteria, which confirmed the necessity of a 10 CFR 50.65 a(1) evaluation.

During the licensee's investigation of this issue, an additional instance of a similar maintenance rule procedural noncompliance was identified. In this instance, the MRFF was determined to be a functional failure, and the event was characterized as non-maintenance preventable in the evaluation. Again, the cause had not yet been determined. In this case, while the licensee had failed to follow the Maintenance Rule monitoring procedure, the cause of the functional failure was subsequently determined, and the event was verified as non-maintenance preventable. However, in 2007, a failure to appropriately monitor the performance of the degraded feedwater and RHR injection check valve component class against licensee-established goals in accordance with licensee maintenance rule monitoring and get-well-plan procedures, resulted in a violation of 10CFR 50.65a(1) requirements.

Fermi Nuclear Plant UFSAR Section 17.2.2.2.1 states, "Fermi Conduct Manuals identify the requirements and implementing procedures that management has mandated to be followed." MMR10 Maintenance Rule Conduct Manual—Monitoring says in Section 4.5, "If the System Engineer has determined that a functional failure has occurred, then cause analysis is required to determine if the failure is 'Maintenance Preventable.'" Section 4.5 continues, "the maintenance preventable determination is made only after the cause analysis is complete and documented in the CARD." Section 4.5.4 states, "If the cause is unknown after 30 days, then the functional failure will default to Maintenance Preventable with a cause code of L1, 'Pending Cause Analysis Results.'" Additionally, Section 4.5.4—1 states, "when a functional failure is changed to maintenance preventable, the performance criteria should be reviewed by the person making the change to determine if it has been exceeded."

Contrary to these procedural requirements, while performing an MRFF evaluation of a DFP functional failure, licensee personnel made a determination that the failure was not maintenance preventable before completing and documenting a cause analysis for the event and coded as M2 prior to the completion of the causal analysis. Subsequent to the inspector's questioning of the determination, the licensee reevaluated the classification code in the Maintenance Rule Program and determined the failure should have been coded as potentially maintenance preventable L1.

Additionally, the causal analysis was still incomplete and undocumented 30 days after the event; however, due to the incorrect non-maintenance preventable coding, the functional failure was not defaulted to a maintenance preventable call as required by procedure. This procedural violation delayed the evaluation of the system against performance criteria, and ultimately delayed presentation of the system's condition to the

maintenance rule expert panel for a(1) consideration. The system was placed in a(1) status on January 12, 2010.

Analysis: The inspectors determined the failure of licensee personnel to adhere to maintenance rule procedures was a performance deficiency warranting a significance evaluation in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Disposition Screening," issued on December 4, 2008. The inspectors determined the finding was more than minor in accordance with IMC 0612, Appendix E, Example 4.a, example for more than minor, because maintenance rule procedural noncompliance continues to be an issue at Fermi, and if left uncorrected, the failure to adhere to Maintenance Rule procedures would have the potential to lead to a more significant safety concern. Specifically, not following procedural requirements specified in the Fermi Maintenance Rule Conduct Manual has the potential to lead to the failure to monitor degraded equipment in a(1) status when required, which may prevent that equipment from receiving the maintenance attention necessary to improve its condition.

The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," Table 4a, for the Mitigating Systems cornerstone. The finding was determined to be of very low significance (Green) because the finding was a procedural compliance issue that was confirmed not to result in loss of operability or functionality; it did not result in a loss of system safety function, and did not screen as potentially risk significant due to external initiating events.

This finding has a cross-cutting aspect in Human Performance—Work Practices human error prevention techniques (H.4(a)). Self and peer checking would have revealed that the Maintenance Rule Functional Failure evaluation was not performed in accordance with the Maintenance Rule Conduct Manual (MMR10) requirements. Additionally, proper documentation of activities when the MRFF evaluation was initially performed would have prevented the 30 day requirement from being missed, and the MRFF evaluation would not have been closed out in the CARD.

Enforcement: The inspectors determined that no violation of regulatory requirements had occurred, because although Maintenance Rule procedural adherence is required by Fermi's UFSAR, it is not required by 10 CFR Part 50 Appendix B or the administrative section of Fermi's TSs which invokes RG 1.33, "Quality Assurance Program Requirements." Additionally, the cause evaluation most likely, even without inspector intervention, would have eventually determined that the failure was maintenance preventable, prompting action from the expert panel. The delay in assessing was a violation of the site's own procedures. The licensee entered this issue into their CAP as CARD 09-28649, corrected the causal code for the MRFF, and initiated the a(1) evaluation process for the affected system. At the time of this report, the licensee was in the process of developing and implementing additional corrective actions in accordance with their CAP (FIN 0500341/2009005-01).

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

.1 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors reviewed the licensee's evaluation and management of plant risk for the maintenance and emergent work activities affecting risk-significant and safety-related equipment listed below to verify the appropriate risk assessments were performed prior to removing equipment for work:

- risk during plant start-up;
- risk during RCIC testing; and
- risk during division 1 emergency equipment cooling water (EECW)/service water safety system outage.

These activities were selected based on their potential risk significance relative to the Reactor Safety Cornerstones. As applicable for each activity, the inspectors verified risk assessments were performed as required by 10 CFR 50.65(a)(4) and were accurate and complete. When emergent work was performed, the inspectors verified the plant risk was promptly reassessed and managed. The inspectors reviewed the scope of maintenance work, discussed the results of the assessment with the licensee's probabilistic risk analyst or shift technical advisor, and verified plant conditions were consistent with the risk assessment. The inspectors also reviewed TS requirements and walked down portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met.

These maintenance risk assessments and emergent work control activities constituted three samples as defined in IP 71111.13-05.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

.1 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following issues:

- CARD 09-24840, Increase H2 Leakage into Stator Cooling Water System;
- CARD 09-25416, Feedwater DCS Power Supply Distribution Voltage Spikes;
- CARD 09-28504, Fuse Coordination; and
- CARD 09-28850, Reactor Recirculation Motor Generator Set 'A' Scoop Tube Positioner Locked.

The inspectors selected these potential operability issues based on the risk significance of the associated components and systems. The inspectors evaluated the technical adequacy of the evaluations to ensure TS operability was properly justified and the

subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the TS and UFSAR to the licensee's evaluations to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations. Additionally, the inspectors also reviewed a sampling of corrective action documents to verify that the licensee was identifying and correcting any deficiencies associated with operability evaluations. Documents reviewed are listed in the Attachment to this report.

This operability inspection constituted four samples as defined in IP 71111.15-05.

b. Findings

No findings of significance were identified.

1R18 Plant Modifications (71111.18)

.1 Permanent Plant Modifications

a. Inspection Scope

The following engineering design package was reviewed and selected aspects were discussed with engineering personnel:

- reactor recirculation pump 'B' replacement.

This document and related documentation were reviewed for adequacy of the associated 10 CFR 50.59 safety evaluation screening, consideration of design parameters, implementation of the modification, post-modification testing, and relevant procedures, design, and licensing documents were properly updated. The inspectors observed ongoing and completed work activities to verify installation was consistent with the design control documents. The modification removed the recirculation pump motor and reactor coolant seal and installed a new model pump motor. Documents reviewed in the course of this inspection are listed in the Attachment to this report.

This inspection constituted one permanent plant modifications sample as defined in IP 71111.18-05.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

.1 Post-Maintenance Testing

a. Inspection Scope

The inspectors reviewed the following post-maintenance (PM) activities to verify procedures and test activities were adequate to ensure system operability and functional capability:

- integrated plant computer system testing after modifications;
- WO 28409910, RHR Mechanical Draft Cooling Tower Fan 'C' PMT; and
- WO 30753591 and WO 307535050, EDG 12 Load Not Stable during Surveillance Test.

These activities were selected based upon the structure, system, or component's ability to impact risk. The inspectors evaluated these activities for the following (as applicable): the effect of testing on the plant had been adequately addressed; testing was adequate for the maintenance performed; acceptance criteria were clear and demonstrated operational readiness; test instrumentation was appropriate; tests were performed as written in accordance with properly reviewed and approved procedures; equipment was returned to its operational status following testing (temporary modifications or jumpers required for test performance were properly removed after test completion); and test documentation was properly evaluated. The inspectors evaluated the activities against TS, the UFSAR, 10 CFR Part 50 requirements, licensee procedures, and various NRC generic communications to ensure the test results adequately ensured that the equipment met the licensing basis and design requirements. In addition, the inspectors reviewed corrective action documents associated with PM tests to determine whether the licensee was identifying problems and entering them in the CAP and that the problems were being corrected commensurate with their importance to safety. Documents reviewed are listed in the Attachment to this report.

This inspection constituted three PM testing samples as defined in IP 71111.19-05.

b. Findings

No findings of significance were identified.

1R20 Outage Activities (71111.20)

.1 Other Outage Activities

a. Inspection Scope

The inspectors evaluated outage activities for an unscheduled outage that began on September 30, 2009, and continued through November 11, 2009. The inspectors reviewed activities to ensure the licensee considered risk in developing, planning, and implementing the outage schedule.

The inspectors observed or reviewed the reactor shutdown and cooldown, outage equipment configuration and risk management, electrical lineups, selected clearances,

control and monitoring of decay heat removal, control of containment activities, startup and heatup activities, and identification and resolution of problems associated with the outage.

This inspection constituted one other outage sample as defined in IP 71111.20-05.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

.1 Surveillance Testing

a. Inspection Scope

The inspectors reviewed the test results for the following activities to determine whether risk-significant systems and equipment were capable of performing their intended safety function and to verify testing was conducted in accordance with applicable procedural and TS requirements:

- 44.010.100, 101, 102, and 103, Source Range Monitor Functional Test with Rod Block, (routine);
- 28.504.02, DFP Engine Operability Test, (routine);
- 28.504.07, DFP Engine Monthly Operability Test, (routine);
- 24.202.01, Section 5.1, HPCI Pump and Valve Operability Test at 1025 psi (IST);
- 24.307.16, Section 5.1, EDG 13 Slow Start, (routine); and
- 27.207.03, Division 1 EECW Throttled Valve Flow Verification, (routine).

The inspectors observed in-plant activities and reviewed procedures and associated records to determine the following:

- did preconditioning occur;
- were the effects of the testing adequately addressed by control room personnel or engineers prior to the commencement of the testing;
- were acceptance criteria clearly stated, demonstrated operational readiness, and consistent with the system design basis;
- plant equipment calibration was correct, accurate, and properly documented;
- as-left setpoints were within required ranges; and the calibration frequency were in accordance with TSs, the UFSAR, procedures, and applicable commitments;
- measuring and test equipment calibration was current;
- test equipment was used within the required range and accuracy; applicable prerequisites described in the test procedures were satisfied;
- test frequencies met TS requirements to demonstrate operability and reliability; tests were performed in accordance with the test procedures and other applicable procedures; jumpers and lifted leads were controlled and restored where used;
- test data and results were accurate, complete, within limits, and valid;
- test equipment was removed after testing;

- where applicable for inservice testing activities, testing was performed in accordance with the applicable version of Section XI, American Society of Mechanical Engineers code, and reference values were consistent with the system design basis;
- where applicable, test results not meeting acceptance criteria were addressed with an adequate operability evaluation or the system or component was declared inoperable;
- where applicable for safety-related instrument control surveillance tests, reference setting data were accurately incorporated in the test procedure;
- where applicable, actual conditions encountering high resistance electrical contacts were such that the intended safety function could still be accomplished;
- prior procedure changes had not provided an opportunity to identify problems encountered during the performance of the surveillance or calibration test;
- equipment was returned to a position or status required to support the performance of its safety functions; and
- all problems identified during the testing were appropriately documented and dispositioned in the CAP.

Documents reviewed are listed in the Attachment to this report.

This inspection constituted five routine surveillance testing samples, and one inservice testing sample as defined in IP 71111.22, Sections -02 and -05.

b. Findings

No findings of significance were identified.

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

.1 Emergency Action Level and Emergency Plan Changes

a. Inspection Scope

Since the last NRC inspection of this program area, Emergency Plan Revision 36, Emergency Plan Revision 37 and procedure EP-101 "Classification of Emergencies," Revision 36, were implemented. These documents were implemented based on the licensee's determination, in accordance with 10 CFR 50.54(q), that the changes resulted in no decrease in effectiveness of the Plan, and that the revised Plan as changed continues to meet the requirements of 10 CFR 50.47(b) and Appendix E to 10 CFR Part 50. The inspectors conducted a sampling review of the Emergency Plan changes and a review of the Emergency Action Level changes to evaluate for potential decreases in effectiveness of the Plan. However, this review does not constitute formal NRC approval of the changes. Therefore, these changes remain subject to future NRC inspection in their entirety.

This emergency action level and emergency plan changes inspection constituted one sample as defined in IP 71114.04-05.

b. Findings

No findings of significance were identified.

## 2. RADIATION SAFETY

### Cornerstone: Public Radiation Safety

#### 2PS2 Radioactive Material Processing and Transportation (71122.02)

##### .1 Radioactive Waste System

###### a. Inspection Scope

The inspectors reviewed the liquid and solid radioactive waste system description in the UFSAR for information on the types and amounts of radioactive waste (radwaste) generated and disposed. The inspectors reviewed the scope of the licensee's audit program with regard to radioactive material processing and transportation programs to verify that it met the requirements of 10 CFR 20.1101(c).

This inspection constituted one sample as defined in IP 71122.02-5.

###### b. Findings

No findings of significance were identified.

##### .2 Radioactive Waste System Walk-downs

###### a. Inspection Scope

The inspectors performed walkdowns of the liquid and solid radwaste processing systems to verify the systems agreed with the descriptions in the UFSAR and the Process Control Program and to assess the material condition and operability of the systems. The inspectors reviewed the status of radwaste processing equipment that was not operational and/or was abandoned in place. The inspectors reviewed the licensee's administrative and physical controls to ensure the equipment would not contribute to an unmonitored release path or be a source of unnecessary personnel exposure.

The inspectors reviewed changes to the waste processing system to verify the changes were reviewed and documented in accordance with 10 CFR 50.59 and to assess the impact of the changes on radiation dose to members of the public. The inspectors reviewed the current processes for transferring waste resin into shipping containers to determine if appropriate waste stream mixing and/or sampling procedures were utilized. The inspectors also reviewed the licensee's methods for waste concentration averaging to determine if representative samples of the waste product were provided for the purposes of waste classification, as required by 10 CFR 61.55.

This inspection constituted one sample as defined in IP 71122.02-5.

###### b. Findings

No findings of significance were identified.

### .3 Waste Characterization and Classification

#### a. Inspection Scope

The inspectors reviewed the licensee's radiochemical sample analysis results for each of the licensee's waste streams, including dry active waste, spent resins, and filters. The inspectors also reviewed the licensee's use of scaling factors to quantify difficult-to-measure radionuclides (e.g., pure alpha or beta emitting radionuclides). The reviews were conducted to verify the licensee's program assured compliance with 10 CFR 61.55 and 10 CFR 61.56, as required by Appendix G of 10 CFR Part 20. The inspectors also reviewed the licensee's waste characterization and classification program to ensure the waste stream composition data accounted for changing operational parameters and thus remained valid between the annual sample analysis updates.

This inspection constituted one sample as defined in IP 71122.02-5.

#### b. Findings

No findings of significance were identified.

### .4 Shipment Preparation and Shipment Manifests

#### a. Inspection Scope

The inspectors reviewed the documentation of shipment packaging, radiation surveys, package labeling and marking, vehicle inspections and placarding, emergency instructions, determination of waste classification/isotopic identification, and licensee verification of shipment readiness for five non-excepted material and radwaste shipments made in 2008 and 2009. The shipment documentation reviewed consisted of:

- two surface contaminated objects and one low specific activity-II shipments to waste processors; and
- two type-B(U) packages.

For each shipment, the inspectors determined if the requirements of 10 CFR Parts 20 and 61 and those of the Department of Transportation (DOT) in 49 CFR Parts 170-189 were met. Specifically, records were reviewed and staff involved in shipment activities was interviewed to determine if packages were labeled and marked properly, if package and transport vehicle surveys were performed with appropriate instrumentation, if radiation survey results satisfied DOT requirements, and if the quantity and type of radionuclides in each shipment were determined accurately. The inspectors also determined whether shipment manifests were completed in accordance with DOT and NRC requirements, if they included the required emergency response information, if the recipient was authorized to receive the shipment, and if shipments were tracked as required by 10 CFR Part 20, Appendix G.

This inspection constituted one sample as defined in IP 71122.02-5.

Selected staff involved in shipment activities were interviewed by the inspectors to determine if they had adequate skills to accomplish shipment related tasks and to determine if the shippers were knowledgeable of the applicable regulations to

satisfy package preparation requirements for public transport with respect to NRC Bulletin 79-19, "Packaging of Low-Level Radioactive Waste for Transport and Burial," and 49 CFR Part 172 Subpart H. Also, lesson plans for safety training and function specific training for radiation protection technicians and for hazardous material (hazmat) level two employees were reviewed for compliance with the hazardous material training requirements of 49 CFR 172.704. Additionally, the hazmat training test and the test results for selected radiation protection staff were reviewed by the inspectors for adequacy.

This inspection constituted one sample as defined by IP 71122.02-5.

b. Findings

No findings of significance were identified.

.5 Identification and Resolution of Problems

a. Inspection Scope

The inspectors reviewed condition reports, audits and self assessments that addressed radioactive waste and radioactive materials shipping program deficiencies since the last inspection to verify the licensee had effectively implemented the CAP and that problems were identified, characterized, prioritized and corrected. The inspectors also verified that the licensee's self-assessment program was capable of identifying repetitive deficiencies or significant individual deficiencies in problem identification and resolution.

The inspectors reviewed corrective action reports from the radioactive material and shipping programs since the previous inspection, interviewed staff and reviewed documents to determine if the following activities were being conducted in an effective and timely manner commensurate with their importance to safety and risk:

- initial problem identification, characterization, and tracking;
- disposition of operability/reportability issues;
- evaluation of safety significance/risk and priority for resolution;
- identification of repetitive problems;
- identification of contributing causes;
- identification and implementation of effective corrective actions;
- resolution of NCVs tracked in the corrective action system; and
- implementation/consideration of risk-significant operational experience feedback.

This inspection constituted one sample as defined in IP 71122.02-5.

b. Findings

No findings of significance were identified.

#### 4. OTHER ACTIVITIES (OA)

##### 4OA1 Performance Indicator Verification (71151)

###### .1 Mitigating Systems Performance Index - Emergency AC Power System

###### a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index (MSPI) - Emergency AC Power System performance indicator (PI) for the period from the third quarter 2007 through the third quarter 2009. To determine the accuracy of the performance index data reported during those periods, performance index definitions and guidance contained in the Nuclear Energy Institute (NEI) Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, were used. The inspectors reviewed the licensee's operator narrative logs, MSPI derivation reports, issue reports, event reports, and NRC Integrated Inspection Reports for the period of November 2007 through November 2009 to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one MSPI emergency AC power system sample as defined in IP 71151-05.

###### b. Findings

No findings of significance were identified.

###### .2 Mitigating Systems Performance Index - Residual Heat Removal System

###### a. Inspection Scope

The inspectors sampled licensee submittals for the MSPI - RHR System PI for the period from the third quarter 2007 through the third quarter 2009. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the Nuclear Energy Institute (NEI) Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, MSPI derivation reports, event reports, and NRC integrated inspection reports for the period of November 2007 through November 2009 to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in

This inspection constituted one MSPI residual heat removal system sample as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

.3 Mitigating Systems Performance Index - Cooling Water Systems

a. Inspection Scope

The inspectors sampled licensee submittals for the MSPI - Cooling Water Systems PI for the period from the third quarter 2007 through the third quarter 2009. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, MSPI derivation reports, event reports, and NRC Integrated Inspection Reports for the period of December 2007 through December 2009 to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one MSPI cooling water system sample as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

**Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness, Public Radiation Safety, Occupational Radiation Safety, and Physical Protection**

.1 Routine Review of Items Entered into the Corrective Action Program

a. Inspection Scope

As part of the various baseline IPs discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify they were being entered into the licensee's CAP at an appropriate threshold, adequate attention was being given to timely corrective actions, and adverse trends were identified and addressed. Attributes reviewed included: the complete and accurate identification of the problem; timeliness was commensurate with the safety significance; evaluation and disposition of performance issues, generic implications, common causes, contributing factors, root causes, extent-of-condition

reviews, and previous occurrences reviews were proper and adequate; and the classification, prioritization, focus, and timeliness of corrective actions were commensurate with safety and sufficient to prevent recurrence of the issue. Minor issues entered into the licensee's CAP as a result of the inspectors' observations are included in the attached List of Documents Reviewed.

These routine reviews for the identification and resolution of problems did not constitute any additional inspection samples. Instead, by procedure they were considered an integral part of the inspections performed during the quarter and documented in Section 1 of this report.

b. Findings

No findings of significance were identified.

.2 Daily Corrective Action Program Reviews

a. Inspection Scope

In order to assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the licensee's CAP. This review was accomplished through inspection of the station's daily condition report packages.

These daily reviews were performed by procedure as part of the inspectors' daily plant status monitoring activities and, as such, did not constitute any separate inspection samples.

b. Findings

No findings of significance were identified.

.3 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a review of the licensee's CAP and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors' review was focused on the licensee's human performance results, but also considered the results of daily inspector CAP item screening discussed in Section 4OA2.2 above, licensee trending efforts, and repetitive equipment issues. The inspectors' review nominally considered the 6 month period of July 1, 2009, through December 31, 2009, although some examples expanded beyond those dates where the scope of the trend warranted.

The review also included issues documented outside the normal CAP in major equipment problem lists, repetitive and/or reworks maintenance lists, departmental problem/challenges lists, system health reports, quality assurance audit/surveillance reports, self-assessment reports, and Maintenance Rule assessments. The inspectors compared and contrasted their results with the results contained in the licensee's

CAP trending reports. Corrective actions associated with a sample of the issues identified in the licensee's trending reports were reviewed for adequacy.

The inspectors reviewed the following items focusing on the human performance issues:

- Third Quarter 2009 Fermi Nuclear Quality Assurance Report – The inspectors reviewed the licensee's evaluation of the "Functional Area Performance" noting the assessment was insightful and provided detailed examples of the staff's performance. The inspectors' observations were consistent with the issues in the report.
- First, Second, and Third Quarter 2009 Performance Improvement Reports – The inspectors noted there was improvement in the area of human performance but the licensee still had several human errors caused by component mispositions. The licensee responded to the mispositions aggressively.

This inspection constituted one semi-annual trend inspection sample as defined in IP 71152-05.

b. Observations

During 2009 the licensee had 15 misposition issues, 10 of them occurring in the second half of the year. The events occurred in both the operations and maintenance organizations. Most of the mispositions have occurred outside of the planned and unplanned outages. One of the mispositions occurred during the restoration of division 1 EECW to standby following clearing of protective tagging associated with the safety system outage. The Operations Department performed an apparent cause evaluation for the division 1 EECW makeup pump keylock found in the "OFF" position. Plant management recognizes the trend and has initiated a common cause analysis to look at all of the issues for the past year.

c. Findings

No findings of significance were identified

.4 Selected Issue Follow-Up Inspection: CARD 09-27133, Division 1 Emergency Equipment Cooling Water Pump Failed to Start during Auto/Manual Initiation of Division 1 Emergency Equipment Cooling Water

a. Inspection Scope

On September 15, 2009, division 1 EECW pump failed to start during a planned surveillance test. Operators manually tripped the north reactor recirculation pump, reduced power to 55 percent and placed the plant in single loop operations. The licensee entered this issue into the licensee's CAP as CARD 09-27133. The licensee determined that the 480 volts ABB breaker 72C-3D failed to close due to mechanical binding. During a historical review of breaker events at the site, the licensee found this breaker failed with an unexplained failure-to-close in 2004. In addition, the licensee found two other Q1 breakers (72F-3A and 72EB-2D) and three non-Q breakers had histories of unexplained failure-to-close in the past. Altogether, these ABB breakers had accounted for 11 unexplained failure-to-close events.

The licensee replaced breaker 72C-3D with a spare upgraded ABB breaker. This breaker was upgraded with a wider close roller to prevent the primary close latch from slipping off the close roller. During forced outage 09-02, the licensee also replaced breakers 72F-3A and 72EB-2D as mentioned above with upgraded breakers. As part of the corrective action, the licensee is planning to install the wider rollers on all Q1 and non-Q K-600s and K-1600s breakers during the next refurbishment preventive maintenance and to accelerate the current refurbishment schedules for breakers that have not been upgraded that are load sequenced, auto-closed, or tied to time-sensitive operation action.

The inspectors discussed the evaluations and associated corrective actions with licensee personnel and verified the following attributes during their review of the root cause evaluation:

- complete and accurate identification of the problem in a timely manner commensurate with its safety significance and ease of discovery;
- consideration of the extent of condition, generic implications, common cause and previous occurrences;
- classification and prioritization of the resolution of the problem, commensurate with safety significance;
- identification of the root and contributing causes of the problem; and
- identification of corrective actions, which were appropriately focused to correct the problem.

The above constituted completion of one in-depth problem identification and resolution sample as defined in IP 71152-05.

b. Findings

No findings of significance were identified.

.5 Diesel Fire Pump Fuel Oil Return Line Component Failure Issue

a. Inspection Scope

Inspectors reviewed CARDS 09-26811 and 09-27514 which detailed two events 26 days apart involving the DFP, where, while running the engine, raw fuel was seen dripping from a flange on the engine exhaust line. In the first case, maintenance activities were completed on the DFP fuel oil pump and the pump was shut down to allow for repair. The vendor recommended the pump not be run again until the problem was corrected. The licensee initially concluded all six fuel injectors were in need of replacement. However, during repair activities involving the removal of the fuel injectors, workers noticed indications that a check valve in the fuel oil return line was causing oil to leak back into the engine. In response, the licensee replaced the check valve, changed the fuel oil, and changed the fuel filter. They did not perform a failure analysis on the valve to determine why it had failed, in order to ensure the problem was fixed.

The DFP was returned to service, and a few weeks later the event recurred. In this case the DFP was tripped because, as determined by the Shift Manager, the DFP could not run without fear of a fire starting on the engine. This time the team completely disassembled the fuel oil return line and discovered a compression fitting located

upstream of the check valve contained a previously unknown internal rubber seal that was significantly degraded due to service age. The licensee determined particles from the rubber component were being shed toward the downstream check valve, where they would get caught, and prevent the check valve from seating. The licensee replaced this rubber piece and a similar component on the engine to correct the problem. While no failure analysis was required to be performed for the initial event, performing a more in depth causal evaluation at that time may have allowed for detection of the true cause of the oil leak issues. Considering the vendor's recommendation not to run the pump until the problem was fixed, and the fact that the pump had to be tripped due to fire hazard concerns as a result of this condition, emphasis on correct identification and resolution of the failure mechanism would have been appropriate.

This inspection constituted one sample in problem identification and resolution as defined in IP 71152-05.

b. Findings

No findings of significance were found.

4OA3 Follow-Up of Events and Notices of Enforcement Discretion (71153)

.1 Unplanned Shutdown – Hydrogen In-Leakage to Stator Water Cooling System

a. Inspection Scope

The inspectors reviewed the plant's response to the unplanned shutdown and followed activities during the outage to correct the hydrogen in-leak to the stator water cooling system. The inspectors observed the shutdown on September 30, 2009, and the cooldown on October 1. The inspectors observed the removal and replacement of the main turbine generator rotor, outage repair activities, and subsequent startup and return to power on November 11. For more information see 4OA3.2. Documents reviewed in this inspection are listed in the Attachment.

This event follow-up review was included as an inspection sample in Inspection Report 05000341/2009004 and did not constitute any additional inspection sample.

b. Findings

No findings of significance were identified.

.2 (Closed) Licensee Event Report 05000341/2009-002, Manual Reactor Scram Due to Hydrogen Leakage into the Stator Water Cooling System

This event, which occurred on September 30, 2009, at 11:09 EDT, was in response to hydrogen gas leakage into the stator water cooling system from the main generator. The reactor mode switch was taken to shutdown and the main turbine generator was manually tripped. The reactor protection system performed as expected and all control rods fully inserted into the core. Reactor water level reached a low level of approximately 122 inches above the top of active fuels and recovered to normal level automatically without operator intervention. Reactor water level was maintained above Level 2 and, as expected, none of the primary containment isolations or safety injection

systems initiations associated with Level 2 occurred. The main steam isolation valves remained open and the reactor feedwater system automatically restored and maintained reactor water level. The main steam bypass valves opened and automatically controlled reactor pressure. There was no increase in reactor dome pressure and no safety relief valves actuated. All primary containment isolations and actuations for reactor water Level 3 occurred as expected. The manual scram was inserted due to hydrogen leakage from the generator hydrogen cooling system into the stator water cooling system that exceeded a predetermined maximum allowable operational leakage rate. The inspectors reviewed the site personnel and plant response to the event to ensure all safety systems and operators responses were as expected. The inspectors also reviewed the immediate reporting requirements to ensure they were in accordance 10CFR 50.72. A leak in the generator stator water cooling system was located and repaired in accordance with the generator manufacturer's recommendations. Documents reviewed as part of this inspection are listed in the Attachment. This Licensee Event Report is closed.

This event follow-up review constituted one sample as defined in IP 71153-05.

a. Findings

No findings of significance were identified.

40A5 Other Activities

.1 Quarterly Resident Inspector Observations of Security Personnel and Activities

a. Inspection Scope

During the inspection period, the inspectors conducted observations of security force personnel and activities to ensure that the activities were consistent with licensee security procedures and regulatory requirements relating to nuclear plant security. These observations took place during both normal and off-normal plant working hours.

These quarterly resident inspector observations of security force personnel and activities did not constitute any additional inspection samples. Rather, they were considered an integral part of the inspectors' normal plant status review and inspection activities.

b. Findings

No findings of significance were identified.

.2 Independent Spent Fuel Storage Installation

An inspection of the licensee's Independent Spent Fuel Storage Installation pre-operational inspection activities was begun and will continue into the next quarter. These inspector observations did not constitute any additional inspection samples for this quarter.

#### 4OA6 Management Meetings

##### .1 Exit Meeting Summary

On January 5, 2010, the inspectors presented the inspection results to J. Plona, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors confirmed that none of the potential report input discussed was considered proprietary.

##### .2 Interim Exit Meetings

Interim exits were conducted for:

- The results of radioactive material processing and transportation inspection with Plant Manager, T. Conner, on November 6, 2009;
- The results of the LORT program inspection with Mr. J. Plona, Site Vice President, Mr. J. Davis, Manager Nuclear Training, and other members of the Fermi 2 Operations Department and Nuclear Training staff, on December 4, 2009;
- The LORT biennial written examination and annual operating test results with Mr. T. Barrett, Operations Training Supervisor, via telephone on December 17, 2009; and
- The annual review of Emergency Action Level and Emergency Plan changes with the licensee's Emergency Preparedness Specialist, Mr. G. Garber and Licensing Manager, Glen Ohlemacher, via telephone on December 22, 2009.

The inspectors confirmed that none of the potential report input discussed was considered proprietary. Proprietary material received during the inspection was returned to the licensee.

ATTACHMENT: SUPPLEMENTAL INFORMATION

**SUPPLEMENTAL INFORMATION**

**KEY POINTS OF CONTACT**

Licensee

J. Plona, Site Vice President  
T. Conner, Plant Manager  
T. Barrett, Operations Training Supervisor  
J. Davis, Manager, Nuclear Training  
G. Garber, Emergency Preparedness Specialist  
E. Kokosky, Radiation Protection Manager  
K. Masserant, Radwaste Supervisor  
G. Ohlemacher, Licensing and Environmental Supervisor  
B. Weber, Principal Technical Specialist

Nuclear Regulatory Commission

J. Giessner, Branch 4, Chief, Division of Reactor Projects

**LIST OF ITEMS OPENED, CLOSED AND DISCUSSED**

Opened/Closed

0500341/2009005-01	FIN	Failure to Adhere to Self-imposed Maintenance Rule Procedural Requirements
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Closed

05000341/2009-002	LER	Manual Reactor Scram Due to Hydrogen Leakage into the Stator Water Cooling System
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## LIST OF DOCUMENTS REVIEWED

The following is a list of documents reviewed during the inspection. Inclusion on this list does not imply that the NRC inspectors reviewed the documents in their entirety, but rather, that selected sections of portions of the documents were evaluated as part of the overall inspection effort. Inclusion of a document on this list does not imply NRC acceptance of the document or any part of it, unless this is stated in the body of the inspection report.

### Section 1R01 – Adverse Weather Protection

- Procedure 27.000.07, Attachment 2; Cold Weather Preparations Checklist; 11/27/2009
- Procedure 27.000.07, Attachment 3; System Readiness Review Checklist; 08/27/2009
- WO 26986608; Perform 27.000.07 Att. 3 Cold Weather System Readiness Review Checklists; 02/01/2009

### Section 1R04 – Equipment Alignment

- Drawing 6M721-5706-2; RHR Division 1; Revision W
- Drawing 6M721-5717-1; Main and Reheat Steam System; Revision BK
- Drawing 6M721-5717-5; Steam Leads and Turbine Drips and Drains Functional Operating Sketch; Revision AB
- Drawing 6M721-2002; Main and Reheat Steam System (P&ID); Revision BG
- Drawing 6M721-5717-6; Gland Steam Sealing System Functional Operating Sketch; Revision T
- Drawing 6M721-5717-2; Main Turbine Extraction Steam System Functional Operating Sketch; Revision U

### Section 1R05 – Fire Protection

- Drawing 6A721-2412; Fire Protection Evaluation, Turbine Building, Basement Floor Plan; Revision F
- Drawing 6A721-2413; Fire Protection Evaluation, Turbine Building, First Floor; Revision K
- Fire Brigade Drill, Scenario No. 13; 11/25/2009
- Fire Brigade Drill Record; 11/25/2009
- Fire Brigade Leader Evaluation; 11/25/2009
- Fire Protection Evaluation Turbine Building Floor Plan; Revision 334
- USFAR Figure 9A-7; Fire Protection Evaluation Reactor and Auxiliary Buildings, Cable Spreading Area Plan; Revision 334
- USFAR Figure 9A-14; Fire Protection Evaluation Residual Heat Removal Complex Grade Floor Plan; Revision 334

### Section 1R06 – Flood Protection

- CARD 07-23878; Concern Over Continuous Water Submergence of Underground Cables; 07/12/2007
- CARD 09-29759; Various Cable Manhole Sump Pumps Do Not Appear to be Working; 12/21/2009
- Engineering Functional Analysis R16-07-003; Evaluation of Adequacy of Underground Cables Continuously Submerged in Water to Perform their Intended Safety-Related Function; 07/18/2007
- WO 27918710; Perform Weekly Manhole Water Level Monitoring; 11/30/09

### Section 1R11 – Licensed Operator Requalification Program

- Fermi 2 Evaluation Scenario SS-OP-904-0019
- Fermi 2 Evaluation Scenario SS-OP-904-1053
- Nuclear Training Work Instruction Conduct of Simulator Assessments & Evaluations; Instruction 5.12; Revision 10

### Section 1R12 – Maintenance Effectiveness

- CARD 07-26152; Breaker 65F pos F8 failed to close as expected during 24.305.02
- CARD 07-27926; TWMS N pump failure to start
- CARD 07-28212; R1400 needs to be evaluated for A1 status classification
- CARD 08-00455; Breaker will not close
- CARD 08-20703-15; Create a PM to cycle knife switches (bare copper) not cycled for surveillance
- CARD 08-26759; Charging springs will not charge on 65W W5
- CARD 08-26791-01; Present R1400 to the Expert panel for exceeding MR Expert Panel
- CARD 09-24615; 345 KV SY POS CM Circuit Breaker (ITC owned), opened for no apparent reason after closing IAW 23.300.02 sect 14.2.2
- CARD 09-28588; Missed Procedure Step; 11/05/2009
- CARD 09-28920; DFP Fuel Oil Rubber Grommets Design Basis; 11/17/2009
- CARD 09-29081; Untimely Consideration of System P8000 for Maintenance Rule (a)(1) Classification; 11/24/2009
- Component Health Report Fermi 2, Relief Valves; Third Quarter 2009
- MRFF Evaluation; System ID: A7100; April 23, 2009
- MRFF Evaluation; System ID: B2104; May 18, 2009
- MRFF Evaluation; System ID: E2100; April 15, 2009
- Maintenance Rule, MMR12, Enclosure A; Revision 9
- Maintenance Rule, OOS Evaluation; System ID E4100; December 6, 2007
- Apparent cause evaluation and maintenance rule functional failure evaluation for CARD 08-20204, Loss of Swan Creek Line
- 120kV and 345kV Switchyards System Health Reports; Second Quarter 2008 thru Second Quarter 2009
- Root cause determination for CARD 08-20703; Manual reactor scram inserted following trip of reactor recirculation pumps
- 4160 Volt System Health Reports; Second Quarter 2008 thru Second Quarter 2009
- FBP-68, System Health Program; Revision 0
- 35.306.001; 480 Volt Switchgear Breaker And Relay Control Testing; Revision 36
- 35.318.014; Medium Voltage Switchgear Breaker And Relay Control; Revision 35
- 42.302.03; Channel Functional Test Of Division 2 4160 Volt Bus 65E Undervoltage Circuits; Revision 39
- 35.301.001; 4160 V Switchgear; Revision 34

### Section 1R13 – Maintenance Risk Assessments and Emergent Work Control

- Plan of the Day; December 14 – 16, 2009
- Scheduled Risk Profile Summary (Week of 11/16/2009)
- Scheduler's Evaluation for Fermi 2; December 14 – 19, 2009

### Section 1R15 – Operability Evaluations

- CARD 09-24840; Review of Main Generator Hydrogen Gas Leakage into the Stator Winding System; 06/22/2009
- CARD 09-25416; Feedwater DCS Power Supply Distribution Voltage Spikes
- CARD 09-26642; Increase Frequency of Water Addition to the Stator Water Head Tank; 08/27/2009
- CARD 09-28504; Discrepancy Between the Lists of Bussmann Fuses Curves in Spec. 3071-128-EZ-01 and Bussmann Fuses Procurement, Attachment P-18; 11/02/2009
- CARD 09-28850; RRMG Set 'A' Scoop Tube Locked; 11/14/2009
- Equipment Apparent Cause Evaluation 09-25416; Feedwater DCS Power Supply Distribution Voltage Dips
- Feedwater Control DCS Voltage Dip Fault Tree Analysis CARD 09-25416; 10/29/2009
- Functional Failure Analysis for Reactor Recirculation System; 11/24/2009
- ODMI 09-008; FW DCS Voltage Dipping; 07/24/2009
- ODMI 09-010; Increase H2 Leakage into SCW System; 09/10-2009
- ODMI 09-012; RR MG Set 'A' Scoop Tube Locked; 11/20/2009

### Section 1R18 – Plant Modifications

- B31-00; Design Basis Document: Reactor recirculation system; Revision B
- WO B213070100; Perform 10 year motor inspection/swap
- WO 000Z070370; Support WO for recirculation motor replacement WO 26868968, Replace Reactor Recirculation Pump 'B' Pump Seal

### Section 1R19 – Post-Maintenance Testing

- CARD 09-29829; While Performing 24.307.15 for EDG 12, Observed Lowering Load with No Operator Action; 12/23/2009
- CARD 09-29830; EDG 12 Load not Stable (decreased without demand) during Surveillance Test; 12/23/2009
- CARD 09-29834; 2301A EDG Governor Control Failed Bench Test 35.307.014; 12/24/2009
- CARD 09-29841; EDG 12 DRU Ramp Rate not Functioning Properly; 12/24/2009
- CARD 09-29843; Failed PMT – EDG 12 Load Not Stable after Replacement of Digital Reference Unit; 12/25/2009
- Common Mode Failure Evaluation; 12/24/2009
- Drawing 6I72In-2711-28; Exciter and Voltage Regulator and Governor Control Diesel Generator #12; Revision AB
- Procedure 24.000.01, Attachment 28a; Log Sheet; 12/25 and 27/2009
- Procedures 42.307.01 and .02; Electrical Testing, IN 2715-18
- Procedure 46.205.001; Calibration of RHR Cooling Tower Fan Overspeed Protection System; Revision 27
- Readiness Review for Implementation of Cyber Security Mod # 1 EDP 35632
- WO 29772037; EDP-35632 (Installation Testing); 10/12/2009
- WO 30757102; Perform Procedure 24.307.46, EDG 12 – Fast Start Followed by Load Reject; 12/29/2009
- Work Request (WR) Revision, WR#28409910; Replace Electrolytic Capacitors in Division 1 RHRSW MDCT Fan 'C' Brake Controller; 12/14/2009
- WR Revision, WR#30750591; EDG 12 Load not Stable (decreased without demand) during Surveillance Test; 12/27/2009
- WR Revision, WR#30753050; EDG 12 Local Control Panel

### Section 1R20 - Outage Activities

- Procedure 22.000.05; Temperature/Pressure Data Sheet; 09/30/2009

### Section 1R22 – Surveillance Testing

- DFP Update; 09/30/2009
- Drawing 6I721N-2711-18; Diesel Generator #11, Control Part 1; Revision AE
- Procedure 24.202.01; HPCI Pump and Valve Operability Test at 1025 PSI; Revision 91
- WO 27886658; Perform 27.207.03 Division 1 EECW Throttled Valve Flow Verification; 12/21/2009
- WO 30423912; Perform 44.010.101, Channel 'B' SRM Functionality Test – with Rod Blocks; 10/07/2009
- WO 30423909; Perform 44.010.100, Channel 'A' SRM Functionality Test – with Rod Blocks; 10/07/2009
- WO 30423946; Perform 44.010.102, Channel 'C' SRM Functionality Test – with Rod Blocks; 10/07/2009
- WO 30423980; Perform 44.010.103, Channel 'D' SRM Functionality Test – with Rod Blocks; 10/07/2009

### Section 1EP4 - Emergency Action Level and Emergency Plan Changes

- Fermi Power Plant Emergency Plan; Revision 37
- Fermi Power Plant Emergency Plan; Revision 36
- Fermi Power Plant Emergency Plan; Revision 35
- EP-101; Classification of Emergencies; Revision 35
- EP-101; Classification of Emergencies; Revision 36

### 2PS2 - Radioactive Material Processing and Transportation (71122.02)

- 65.000.506; Shipping Low Specific Activity (LSA) Radioactive Material; Revision 19
- 65.000.508; Shipping Less Than or Equal To A1, A2 Quantities of Radioactive Material; Revision 14
- 65.000.509; Shipping Greater Than A1, A2 Quantities of Radioactive Material; Revision 19
- 65.000.510; Shipping Limited Quantity, Radioactive Material; Revision 22
- 65.000.513; Shipping Radioactive Instruments and Articles; Revision 17
- 65.000.522; Shipping Surface Contaminated Object Radioactive Material; Revision 8
- 65.000.523; Radwaste Shipments; Revision 10
- 20.000.27; Transportation Accidents Involving Radioactive Material from the Fermi Energy Center; Revision 10
- 65.000.614; Shipping Cask USA/9204/B(U)-85; Revision 1
- Audit Report 08-0106; Radiological Material Transportation and Disposal Including Process Control Program; September 8, 2008
- CARD 08-24839; Domestic Hazardous Shipment Inappropriately Forwarded to International Destination; May 20, 2009
- CARD 08-28104; RADMAN Software Error for LSA-1 Material; March 13, 2009
- CARD 09-22936; Outgoing Radioactive Shipment Did Not Meet Regulatory and Procedural Requirements; October 8, 2009
- CARD 09-26843; Radioactive Waste Processing and Transportation Quick Hit Self Assessment – HAZMAT Training; October 9, 2009
- CP-GN-528 and Associated Lesson Plans; Hazardous Material Employee Training; Revision 9

- EF2-08-018; April 11, 2008
- EF2-08-042; June 7, 2008
- EF2-09-053; April 16, 2009
- EF2-09-055; July 28, 2009
- EF2-09-067; May 7, 2009
- Lesson Plan; Radioactive Waste Packaging, Transportation and Disposal Refresher and IATA Training; February 11-14, 2008
- MGA20; Transportation Security Plan; Revision 4
- MRP16; Use Of On Site Storage Facility; Revision 6
- MRP19; Shipping Notifications; Revision 8
- MRP21; Radwaste Shipping Operations; Revision 13
- MRP24; Fermi 2 10CFR61 Compliance Manual; Revision 5
- MRP26; Process Control Program; Revision 2
- MRP27; Management of Low Level Mixed Waste at Fermi 2; Revision 3
- Quick Hit Self-Assessment Report – Radioactive Material Processing and Transportation; September 17, 2009
- RWWI-043; Shipping Preparation, Oversight, and Document Review; Revision 2
- Scaling Factors Report; October 2, 2006
- Oil Scaling Factors Report; September 19, 2008
- Scaling Factors Report; December 16, 2009

#### Section 4OA1 – Performance Indicator Verification

- CARD 09-27744; Missed Unavailability Hours in June of 2009 for Division 1 RHR Pump ‘C’ and Division 2 RHRSW MSPI; 10/05/2009
- MSPI; 2008 MSPI Data; 12/10/2008
- MSPI; Derivation Report; (MS-06 UAI); 11/20/2009
- MSPI; Derivation Report; (MS-06 URI); 11/20/2009
- MSPI; Derivation Report; (MS-10 UAI); 11/20/2009
- MSPI; Derivation Report; (MS-10 URI); 11/20/2009
- MSPI; Derivation Report; Cooling Water Systems (RHRSW UAI); 12/15/2009
- MSPI; Derivation Report; Cooling Water Systems (RHRSW URI); 12/15/2009
- MSPI; Emergency AC Power System
- MSPI; EDG data; 11/18/2009
- MSPI; Heat Removal System
- MSPI; Residual Heat Removal System
- NEI 99-02, Revision 6

#### Section 4OA2 – Identification and Resolution of Problems

- CARD 09-20038; Instrument Isolation V1 for P45R551B, EESW Pump ‘B’ C002B Found Closed; 0/15/2009
- CARD 09-20164; Alarm Response Performed on Incorrect HCU; 01/10/2009
- CARD 09-20348; Mispositioned Component; 01/17/2009
- CARD 09-22096; Near Miss Mispositioned Component; 04/01/2009
- CARD 09-22673; Valves Out of Expected Instrument Lineup Position; 04/12/2009
- CARD 09-22919; Valve Found Not in the Proper Position; 04/17/2009
- CARD 09-23198; Valve Position in the Plant Does Not Agree with Procedure; 04/24/2009
- CARD 09-24152; Valve P5000F154 Mispositioned during Restoration of STR 09-3862
- CARD 09-24793; Mispositioned Component, Center SCCW Chiller Lube Oil Isolation Valve; 06/18/2009

- CARD 09-25990; Valve Mispositioning While Cycling Reactor Building Doors; 08/03/2009
- CARD 09-26814; Mispositioned Component P2100 System; 09/02/2009
- CARD 09-27058; Mispositioned Component, E21F026B Found Not in Service; 09/12/2009
- CARD 09-27068; Mispositioned Component, South AB Forced Draft Flow Transmitter Found Valved Out of Service During Attempted Auxiliary Boiler Run; 09/13/2009
- CARD 09-27069; Mispositioned Component; North AB Atomizing Air Pressure Transmitter Found Valves Out of Service during Auxiliary Boiler Test Run; 09/13/2009
- CARD 09-27133; Division 1 EECW Pump Failed to Start during Auto/Manual Initiation of Division 1 EECW
- CARD 09-27133; Root Cause Team Report: Division 1 EECW Pump Failed to Start
- CARD 09-27133; Post-Scram data and Evaluation
- CARD 09-27133; Troubleshoot datasheet
- CARD 09-27162; Mispositioned Component, Incorrect Breaker Cautioned Tagged on Dist Cab 721-2A-3
- CARD 09-27486; Mispositioned Component; CTG 11 Unit 4 Compartment Heater Circuit; 09/26/2009
- CARD 09-28464; Declining Trend – Work Management Performance
- CARD 09-28674; Mispositioned Component, 72F Voltage Regulator Local/Remote Switch Found in Remote Vice Local; 11/07/2009
- CARD 09-29635; Mispositioned Component, Division 1 EECW Makeup Pump Keylock Found in “OFF”; 12/16/2009
- TE-B31-09-077; Evaluate restart of B3101C001A, North RR Pump
- Drawing 6M721-5717-5A; Steam Leads and Turbine Drips & Drains; Revision G
- Event Trending; 4<sup>th</sup> Quarter 2008 – 3<sup>rd</sup> Quarter 2009
- Fermi 2 Site Clock Reset Briefing Sheet; 12/16/2009
- First Quarter 2009 Performance Improvement Report; January-March 2009
- Second Quarter 2009 Performance Improvement Report; April-June 2009
- Third Quarter 2009 Performance Improvement Report; July-September 2009
- Nuclear Quality Assurance Report 09-08; July-September 2009
- Nuclear Quality Assurance Audit Report 09-0111

#### Section 4OA3 - Follow-Up of Events and Notices of Enforcement Discretion

- Fermi 2 Event Notification 09-0011; Manual Reactor Shutdown Due to Hydrogen In-leakage to Stator Water Cooling System; 09/30/2009
- Licensee Event Report 005000341-2009-002-00; 11/17/2010

## **LIST OF ACRONYMS USED**

AC	Alternating Current
CAP	Corrective Action Program
CARD	Condition Assessment and Resolution Document
CFR	Code of Federal Regulations
DFP	Diesel Fire Pump
DOT	Department of Transportation
DRP	Division of Reactor Projects
EDG	Emergency Diesel Generator
EECW	Emergency Equipment Cooling Water
HPCI	High Pressure Cooling Injection
IP	Inspection Procedure
IST	Inservice Testing
LER	Licensee Event Report
LORT	Licensed Operator Requalification Training
MP	Maintenance Preventable
MPFF	Maintenance Preventable Functional Failure
MRFF	Maintenance Rule Functional Failure
MSPI	Mitigating Systems Performance Index
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
PI	Performance Indicator
PM	Post-Maintenance
PMT	Post Maintenance Test
RHR	Residual Heat Removal
SDP	Significance Determination Process
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
WO	Work Order
WR	Work Request

J. Davis

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Sincerely,

**/RA/**

John B. Giessner, Chief  
Branch 4  
Division of Reactor Projects

Docket No. 50-341  
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Letter to J. Davis from J. Giessner dated February 2, 2010.

SUBJECT: FERMIL POWER PLANT, UNIT 2, INTEGRATED  
INSPECTION REPORT 05000341/2009005

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