UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
2443 WARRENVILLE ROAD, SUITE 210
LISLE, IL 60532-4352

October 20, 2010

EA-09-267

Mr. Jack M. Davis
Senior Vice President and
Chief Nuclear Officer
Detroit Edison Company
Fermi 2 - 210 NOC
6400 North Dixie Highway
Newport, MI 48166

SUBJECT: FERMI POWER PLANT, UNIT 2 INTEGRATED INSPECTION REPORT 05000341/2010004

Dear Mr. Davis:

On September 30, 2010, the U.S. Nuclear Regulatory Commission (NRC) completed an integrated inspection at your Fermi Power Plant, Unit 2. The enclosed report documents the results of this inspection, which were discussed on October 6, 2010, with J. Plona, Fermi 2 Site Vice-President, and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, no findings were identified.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records System (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Website 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 05000341/2010004
w/Attachment: Supplemental Information

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50-341
License No:	NPF-43
Report No:	05000341/2010004
Licensee:	Detroit Edison Company
Facility:	Fermi Power Plant, Unit 2
Location:	Newport, MI
Dates:	July 1 through September 30, 2010
Inspectors:	R. Morris, Senior Resident Inspector R. Jones, Resident Inspector M. Mitchell, Health Physicist J. Bozga, Reactor Engineer C. Zoia, Operations Engineer
Observers:	V. Myers, Health Physicist
Approved by:	J. Giessner, Chief Branch 4 Division of Reactor Projects

Enclosure

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SUMMARY OF FINDINGS

Inspection Report (IR) 05000341/2010004, 07/01/2010 – 09/30/2010; Fermi Power Plant, Unit 2; routine integrated IR.

This report covers a 3-month period of inspection by resident inspectors and announced baseline inspections by regional inspectors. 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

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness, Public Radiation Safety

No findings were identified.

B. Licensee-Identified Violations

No violations were identified.

REPORT DETAILS

Summary of Plant Status

Fermi Unit 2 started this inspection period at 100 percent power and remained there until August 28, 2010, when power was reduced to 68 percent for rod pattern adjustment. The plant returned to 100 percent power on August 29. Power was reduced to 69 percent for a rod pattern adjustment on September 18 and returned to 100 percent power on September 19. Another rod pattern adjustment was performed on September 25. Power was reduced to 80 percent power and returned to 100 percent power on September 26. The plant remained at 100 percent power until the end of the inspection period.

1. REACTOR SAFETY

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

1R01 Adverse Weather Protection (71111.01)

.1 Summer Seasonal Readiness Preparations

a. Inspection Scope

The inspectors performed a review of the licensee's preparations for summer weather for selected systems, including conditions that could lead to an extended drought.

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. Specific documents reviewed during this inspection are listed in the Attachment. 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. The inspectors' reviews focused specifically on the following plant systems:

- reactor building closed cooling water system;
- supplemental closed cooling water system; and
- turbine building cooling water system.

This inspection constituted one seasonal adverse weather sample as defined in Inspection Procedure (IP) 71111.01-05.

b. Findings

No findings were identified.

.2 External Flooding

a. Inspection Scope

The inspectors evaluated the design, material condition, and procedures for coping with the design basis probable maximum flood. The evaluation included a review to check for deviations from the descriptions provided in the UFSAR for features intended to mitigate the potential for flooding from external factors. As part of this evaluation, the inspectors checked for obstructions that could prevent draining, checked that the roofs did not contain obvious loose items that could clog drains in the event of heavy precipitation, and determined that barriers required to mitigate the flood were in place and operable. Additionally, the inspectors performed a walkdown of the protected area to identify any modification to the site which would inhibit site drainage during a probable maximum precipitation event or allow water ingress past a barrier. The inspectors also walked down underground bunkers/manholes subject to flooding that contained multiple train or multiple function risk-significant cables. The inspectors also reviewed the abnormal operating procedure for mitigating the design basis flood to ensure it could be implemented as written.

This inspection constituted one external flooding sample as defined in IP 71111.01-05.

b. Findings

No findings 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:

- standby feedwater (SBFW) system;
- division 2 emergency equipment cooling water (EECW); and
- division 2 emergency equipment service water (EESW).

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 Specifications (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 to this report.

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

b. Findings

No findings were identified.

.2 Semi-Annual Complete System Walkdown

a. Inspection Scope

On September 16, 2010, the inspectors performed a complete system alignment inspection of the spent fuel pool cooling system 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 that 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 to this report.

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

b. Findings

No findings 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;
- turbine building, basement, SBFW pipe tunnel and sump area;
- reactor building basement and sub-basement; southeast corner room;

- division 1 emergency diesel generator (EDG)/residual heat removal (RHR) complex; and
- reactor building basement and sub-basement, northwest corner 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 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 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 five quarterly fire protection inspection samples as defined in IP 71111.05-05.

b. Findings

No findings were identified.

1R06 Flooding (71111.06)

.1 Internal Flooding

a. Inspection Scope

The inspectors reviewed selected risk important plant design features and licensee procedures intended to protect the plant and its safety-related equipment from internal flooding events. The inspectors reviewed flood analyses and design documents, including the UFSAR, engineering calculations, and abnormal operating procedures to identify licensee commitments. The specific documents reviewed are listed in the Attachment to this report. In addition, the inspectors reviewed licensee drawings to identify areas and equipment that may be affected by internal flooding caused by the failure or misalignment of nearby sources of water, such as the fire suppression or the circulating water systems. The inspectors also reviewed the licensee's corrective action documents with respect to past flood related items identified in the CAP to verify the adequacy of the corrective actions. The inspectors performed a walkdown of the following plant area(s) to assess the adequacy of watertight doors and verify drains and sumps were clear of debris and were operable, and that the licensee complied with its commitments:

- reactor building, basement and first floor

This inspection constituted one internal flooding sample as defined in IP 71111.06-05.

b. Findings

No findings were identified.

.2 Underground Vaults

a. Inspection Scope

The inspectors selected underground bunkers/manholes subject to flooding that contained cables whose failure could disable risk-significant equipment. The inspectors determined the cables were not submerged, splices were intact, and appropriate cable support structures were in place. 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 drainage of the area was available, or 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 cable manholes and security cable manholes.

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

b. Findings

No findings were identified.

1R07 Annual Heat Sink Performance (71111.07)

.1 Heat Sink Performance

a. Inspection Scope

The inspectors reviewed the licensee's testing of fuel pool cooling and cleanup (FPCCU) heat exchangers to verify potential deficiencies did not mask the licensee's ability to detect degraded performance, to identify any common cause issues that had the potential to increase risk, and to ensure the licensee was adequately addressing problems that could result in initiating events that would cause an increase in risk. The inspectors reviewed the licensee's observations as compared against acceptance criteria, the correlation of scheduled testing and the frequency of testing, and the impact of instrument inaccuracies on test results. Inspectors also verified that test acceptance criteria considered differences between test conditions, design conditions, and testing conditions. Documents reviewed for this inspection are listed in the Attachment to this document.

This annual heat sink performance inspection constituted one sample as defined in IP 71111.07-05.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program (71111.11)

.1 Resident Inspector Quarterly Review (71111.11Q)

a. Inspection Scope

On September 16, 2010, 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 were identified.

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:

- B3100, Reactor Recirculation System;
- E5100, Reactor Core Isolation Cooling; and
- T2300, Primary Containment.

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 systems, structures, 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 three quarterly maintenance effectiveness samples as defined in IP 71111.12-05.

b. Findings

No findings were identified.

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 combustion turbine generator (CTG) 11-1 and SBFW;
- risk during control rod scram testing and loss of control air compressor room cooler;
- risk during division 1 non-interruptible air system maintenance; FPCCU heat exchanger cleaning, and division 1 standby gas treatment system safety system outage;
- risk during division 2 EECW/EESW/ultimate heat sink (UHS) system outage; EDG 12 undervoltage circuits, slow start and load test; and
- risk during division 1 EECW/EESW/UHS 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 five samples as defined in IP 71111.13-05.

b. Findings

No findings were identified.

1R15 Operability Evaluations (71111.15)

.1 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following issues:

- condition assessment resolution document (CARD) 10-24829, EDG 11 Upper Crankshaft Thrust Out of Specifications;
- CARD 10-25403, Evaluate EECW Heat Exchanger Design Basis Function Concurrent with Fouling from Mayflies;
- TE-ANL-10-049: Evaluation and Characterization of Wind Phenomena against Plant Design, Revision A;
- CARD 10-27615, Main Turbine First Stage Pressure Gage Reading Low, Out of Green Band;
- CARD 10-28090, Reactor Building Superstructure Re-analysis; and
- TE-N21-10-076, SBFW Pumps Test Isolation Valve Will Not Open Enough to Allow Sufficient Test Flow.

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 TSs 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 reviewed a sampling of corrective action documents to verify 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 six samples as defined in IP 71111.15-05.

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18)

.1 Permanent Plant Modifications

a. Inspection Scope

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

- walkdown of changes to Procedure 20.000.18, Control of the Plant from the Dedicated Shutdown Panel.

This document and related documentation were reviewed for adequacy of the associated 10 CFR 50.59 safety evaluation screening, consideration of time required design parameters, implementation of the procedure changes, post modification timing verification, and relevant procedures and licensing documents were properly updated. The inspectors reviewed the five modifications performed since the last time study and verified the accuracy of the procedure modifications. Documents reviewed in the course of this inspection are listed in the Attachment to this report.

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

b. Findings

Introduction: On August 11 and 13, 2010, the inspectors walked down the dedicated shutdown system abnormal operating procedure 20.000.18. The inspectors identified an unresolved item (URI) for inadequacy of the procedures utilized to control the plant from the dedicated shutdown panel. Specifically, the inspectors identified that at the minimum staffing complement of non-licensed nuclear operators as defined in MOP03, Section 3.4.1, the outside rounds operator, who is the available nuclear operator designated to fulfill the position as the nuclear operator for dedicated shutdown, would not be able to complete the required actions to restore reactor pressure vessel makeup within 29 minutes, as required by the licensee's feasibility study.

Description: At minimum staffing complement of non-licensed nuclear operators as defined in MOP03, Section 3.4.1, the outside rounds operator is the only available nuclear operator during a fire emergency that would require utilization of the dedicated shutdown panel for safe shutdown. The outside rounds operator could be at a location outside the protected area at the initiation of the abnormal event. The fire protection engineering evaluation (FPEE) 05-0012 assumes initial conditions based upon the safe shutdown nuclear operators starting from the main control room and proceeding with the non-supervisory reactor operator assigned to the dedicated shutdown panel and commencing implementation of the abnormal operating procedure 20.000.18. A delay of 7 minutes and 22 seconds was estimated by the licensee for the time it would take the

outside rounds operator to proceed to the dedicated shutdown panel. Thus, the time to restore reactor pressure vessel makeup, which is defined as required by the FPEE within 29 minutes of initiation of the dedicated shutdown panel, would be estimated to be 33 minutes (rounded). It appears the Standard Operating Procedure 20.000.18 is inadequate in meeting the objective to restore reactor pressure vessel makeup. The licensee documented the issue in Card 10-27645. There is no current safety concern as an extra operator is on shift to cover the requirements. Further, procedures are being revised to ensure the operator is inside of the power block.

This item is being held as an unresolved item (URI 05000341/2010004-01) pending evaluation of the timing and manning issues by the licensee.

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:

- Procedure 44.030.252, Emergency Core Cooling System Reactor Vessel Water Level (Levels 2, 3, and 8), Division 2 Channel B Functional Test following Division 2 Automatic Depressurization System Logic Channel B High Dry Well Press Bypass Relay Replacement;
- control air compressor room cooler failure Post Maintenance testing;
- control rod testing after hydraulic unit accumulator replacement;
- Sequence of Events 10-4: N Turbine Building Heating Ventilation and Air Conditioning (HVAC) Exhaust Fan Test Data Gathering; and
- site acceptance test procedure for software modifications to spent fuel bridge.

These activities were selected based upon the systems, structures, and components' 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 the equipment met the licensing basis and design requirements. In addition, the inspectors reviewed corrective action documents associated with post-maintenance tests to determine whether the licensee was identifying problems and entering them in the CAP and the problems were being

corrected commensurate with their importance to safety. Documents reviewed are listed in the Attachment to this report.

This inspection constituted five post-maintenance testing samples as defined in IP 71111.19-05.

b. Findings

No findings were identified.

1R20 Outage Activities (71111.20)

.1 Outage Activities

a. Inspection Scope

The inspectors evaluated outage preparation activities as follow-up for an unresolved item (URI) in IR 2010-011. The inspectors reviewed engineering design documents and engineering analysis for the reactor building structure. The follow-up will continue into the next inspection period.

This inspection does not constitute an outage sample.

b. Findings

No findings 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:

- Procedure 24.204.06, Division 2 Low Pressure Coolant Injection System and Suppression Pool Cooling/Spray Pump, (in-service testing);
- Procedure 24.107.03, Section 5.2, SBFW Pump “A” Flow Test, (routine); and
- Control Center HVAC Surveillance 24.413, (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 in-service 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 two routine surveillance testing samples and one inservice testing sample as defined in IP 71111.22, Sections -02 and -05.

b. Findings

No findings were identified.

1EP6 Drill Evaluation (71114.06)

.1 Emergency Preparedness Drill Observation

a. Inspection Scope

The inspectors evaluated the conduct of routine licensee emergency drills on July 20, and September 21, 2010, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the simulator control room and technical support system to determine whether the event classifications, notifications, and protective action recommendations were performed in accordance with procedures.

The inspectors also attended the licensee drill critiques to compare any inspector-observed weaknesses with those identified by the licensee staff in order to evaluate the critiques and to verify whether the licensee staff was properly identifying weaknesses and entering them into the CAP. As part of these inspections, the inspectors reviewed the drill packages and other documents listed in the Attachment to this report.

These emergency preparedness drill inspections constituted two samples as defined in IP 71114.06-05.

b. Findings

No findings were identified.

2. RADIATION SAFETY

2RS1 Radiological Hazard Assessment and Exposure Controls (71124.01)

The inspection activities constitute a partial sample as defined in IP 71124.01-05.

.1 Inspection Planning (02.01)

a. Inspection Scope

The inspectors reviewed all licensee performance indicators (PIs) for the Occupational Exposure Cornerstone for follow-up. The inspectors reviewed the results of radiation protection program audits (e.g., licensee's quality assurance audits or other independent audits). The inspectors reviewed any reports of operational occurrences related to occupational radiation safety since the last inspection. The inspectors reviewed the results of the audit and operational report reviews to gain insights into overall licensee performance.

b. Findings

No findings were identified.

.2 Radiological Hazard Assessment (02.02)

a. Inspection Scope

The inspectors reviewed the last two radiological surveys from selected plant areas. The inspectors evaluated whether the thoroughness and frequency of the surveys are appropriate for the given radiological hazard.

The inspectors conducted walkdowns of the facility, including radioactive waste processing, storage, and handling areas to evaluate material conditions and performed independent radiation measurements to verify conditions.

b. Findings

No findings were identified.

.3 Contamination and Radioactive Material Control (02.04)

a. Inspection Scope

The inspectors observed locations where the licensee monitors potentially contaminated material leaving the radiologically controlled area and inspected the methods used for control, survey, and release from these areas. The inspectors observed the performance of personnel surveying and releasing material for unrestricted use and evaluated whether the work was performed in accordance with plant procedures and whether the procedures were sufficient to control the spread of contamination and prevent unintended release of radioactive materials from the site. The inspectors assessed whether the radiation monitoring instrumentation had appropriate sensitivity for the type(s) of radiation present.

The inspectors reviewed the licensee's criteria for the survey and release of potentially contaminated material. The inspectors evaluated whether there was guidance on how to respond to an alarm that indicates the presence of licensed radioactive material.

The inspectors reviewed the licensee's procedures and records to verify that the radiation detection instrumentation was used at its typical sensitivity level based on appropriate counting parameters. The inspectors assessed whether or not the licensee has established a de-facto "release limit" by altering the instrument's typical sensitivity through such methods as raising the energy discriminator level or locating the instrument in a high-radiation background area.

The inspectors selected several sealed sources from the licensee's inventory records and assessed whether the sources were accounted for and verified to be intact (i.e., they were not leaking their radioactive content).

The inspectors evaluated whether any transactions, since the last inspection, involving nationally tracked sources were reported in accordance with 10 CFR 20.2207.

b. Findings

No findings were identified.

.4 Radiological Hazards Control and Work Coverage (02.05)

a. Inspection Scope

The inspectors examined the licensee's physical and programmatic controls for highly activated or contaminated materials (nonfuel) stored within spent fuel and other storage pools. The inspectors assessed whether appropriate controls (i.e., administrative and physical controls) were in place to preclude inadvertent removal of these materials from the pool.

The inspectors examined the posting and physical controls for selected high radiation areas (HRAs) and very high radiation areas (VHRAs) to verify conformance with the Occupational PI.

b. Findings

No findings were identified.

.5 Risk-Significant High Radiation Area and Very High Radiation Area Controls (02.06)

a. Inspection Scope

The inspectors discussed with the Radiation Protection Manager (RPM) the controls and procedures for high-risk HRAs and VHRAs. The inspectors discussed methods employed by the licensee to provide stricter control of VHRA access as specified in 10 CFR 20.1602, "Control of Access to Very High Radiation Areas," and Regulatory Guide 8.38, "Control of Access to High and Very High Radiation Areas of Nuclear Plants." The inspectors assessed whether any changes to licensee procedures substantially reduce the effectiveness and level of worker protection.

The inspectors discussed the controls in place for special areas that have the potential to become VHRAs during certain plant operations with first-line health physics supervisors (or equivalent positions having backshift health physics oversight authority). The inspectors assessed whether these plant operations require communication beforehand with the health physics group, so as to allow corresponding timely actions to properly post, control, and monitor the radiation hazards including re-access authorization.

The inspectors evaluated licensee controls for VHRAs and areas with the potential to become a VHRA to ensure that an individual was not able to gain unauthorized access to the VHRA.

b. Findings

No findings were identified.

.6 Radiation Worker Performance (02.07)

a. Inspection Scope

The inspectors reviewed radiological problem reports since the last inspection that found the cause of the event to be human performance errors. The inspectors evaluated whether there was an observable pattern traceable to a similar cause. The inspectors assessed whether this perspective matched the corrective action approach taken by the licensee to resolve the reported problems. The inspectors discussed with the RPM any problems with the corrective actions planned or taken.

b. Findings

No findings were identified.

.7 Radiation Protection Technician Proficiency (02.08)

a. Inspection Scope

The inspectors reviewed radiological problem reports since the last inspection that found the cause of the event to be radiation protection technician error. The inspectors evaluated whether there was an observable pattern traceable to a similar cause. The inspectors assessed whether this perspective matched the corrective action approach taken by the licensee to resolve the reported problems.

b. Findings

No findings were identified.

.8 Problem Identification and Resolution (02.09)

a. Inspection Scope

The inspectors evaluated whether problems associated with radiation monitoring and exposure control were being identified by the licensee at an appropriate threshold and were properly addressed for resolution in the licensee CAP. The inspectors assessed the appropriateness of the corrective actions for a selected sample of problems documented by the licensee that involve radiation monitoring and exposure controls. The inspectors assessed the licensee's process for applying operating experience to their plant.

b. Findings

No findings were identified.

2RS2 Occupational As-Low-As-Is-Reasonably-Achievable Planning and Controls (71124.02)

The inspection activities constitute a partial sample as defined in IP 71124.02-05.

.1 Inspection Planning (02.01)

a. Inspection Scope

The inspectors reviewed pertinent information regarding plant collective exposure history, current exposure trends, and ongoing or planned activities in order to assess current performance and exposure challenges. The inspectors reviewed the plant's 3-year rolling average collective exposure.

The inspectors reviewed the site-specific trends in collective exposures (using NUREG 0713, "Occupational Radiation Exposure at Commercial Nuclear Power Reactors and Other Facilities," and plant historical data) and source term (average contact dose rate with reactor coolant piping) measurements (using Electric Power Research Institute (EPRI) TR-108737, "BWR Iron Control Monitoring Interim Report," issued December 1998, and/or plant historical data, when available).

The inspectors reviewed site-specific procedures associated with maintaining occupational exposures as-low-as-is-reasonably-achievable (ALARA), which included a review of processes used to estimate and track exposures from specific work activities.

b. Findings

No findings were identified.

.2 Radiological Work Planning (02.02)

a. Inspection Scope

The inspectors selected the following work activities of the highest exposure significance.

- Radiation Work Permit (RWP) 10-3007, Drywell Scaffolding, Revision 0;
- RWP 10-3012, Drywell In-Service Inspection Weld Inspections, Revision 0; and
- RWP 10-5001, Refuel Floor, Revision 0.

The inspectors reviewed the ALARA work activity evaluations, exposure estimates, and exposure mitigation requirements. The inspectors determined whether the licensee reasonably grouped the radiological work into work activities, based on historical precedence, industry norms, and/or special circumstances.

The inspectors assessed whether the licensee's planning identified appropriate dose mitigation features; considered alternate mitigation features; and defined reasonable dose goals. The inspectors evaluated whether the licensee's ALARA assessment had taken into account decreased worker efficiency from use of respiratory protective devices and/or heat stress mitigation equipment (e.g., ice vests). The inspectors determined whether the licensee's work planning considered the use of remote technologies (e.g., teledosimetry, remote visual monitoring, and robotics) as a means to reduce dose and the use of dose reduction insights from industry operating experience and plant-specific lessons learned. The inspectors assessed the integration of ALARA requirements into work procedure and RWP documents.

b. Findings

No findings were identified.

.3 Source Term Reduction and Control (02.04)

a. Inspection Scope

The inspectors used licensee records to determine the historical trends and current status of significant tracked plant source terms known to contribute to elevated facility aggregate exposure. The inspectors assessed whether the licensee had made allowances or developed contingency plans for expected changes in the source term as the result of changes in plant fuel performance issues or changes in plant primary chemistry.

b. Findings

No findings were identified.

.4 Problem Identification and Resolution (02.06)

a. Inspection Scope

The inspectors evaluated whether problems associated with ALARA planning and controls were being identified by the licensee at an appropriate threshold and were properly addressed for resolution in the licensee CAP.

b. Findings

No findings were identified.

3. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

Cornerstone: Barrier Integrity, Mitigating Systems, Public Radiation Safety, Occupational Radiation Safety

.1 Radiological Effluent Technical Specifications/Offsite Dose Calculation Manual Radiological Effluent Occurrences

a. Inspection Scope

The inspectors sampled licensee submittals for the Radiological Effluent Technical Specifications (RETS)/Offsite Dose Calculation Manual (ODCM) Radiological Effluent Occurrences performance indicator for the period of July 2009 through July 2010. The inspectors used PI definitions and guidance contained in the Nuclear Energy Institute (NEI) Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, to determine the accuracy of the PI data reported during those periods. The inspectors reviewed the licensee's issue report database and selected individual reports generated since this indicator was last reviewed to identify any potential occurrences such as unmonitored, uncontrolled, or improperly calculated effluent releases that may have impacted offsite dose. The inspectors reviewed gaseous effluent summary data and the results of associated offsite dose calculations for selected dates between July 2009 and July 2010 to determine if indicator results were accurately reported. The inspectors also reviewed the licensee's methods for quantifying gaseous and liquid effluents and determining effluent dose.

This inspection constituted one RETS/ODCM radiological effluent occurrences sample as defined in IP 71151-05.

b. Findings

No findings were identified.

.2 Reactor Coolant System Specific Activity

a. Inspection Scope

The inspectors sampled licensee submittals for the Reactor Coolant System Specific Activity PI for Fermi 2 for the period from July 2009 to July 2010. 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 6, were used. The inspectors reviewed the licensee's reactor coolant system chemistry samples, TS requirements, issue reports, event reports, and NRC integrated IRs for the period of July 2009 to July 2010, to validate the accuracy of the submittals. 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. In addition to record reviews, the inspectors observed a chemistry technician obtain and analyze a reactor coolant system sample. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one reactor coolant system specific activity sample as defined in IP 71151-05.

b. Findings

No findings were identified.

.3 Occupational Exposure Control Effectiveness

c. Inspection Scope

The inspectors sampled licensee submittals for the Occupational Radiological Occurrences PI for the period from July 2009 to July 2010. 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 6, were used. The inspectors reviewed the licensee's assessment of the PI for occupational radiation safety to determine if indicator related data were adequately assessed and reported. To assess the adequacy of the licensee's PI data collection and analyses, the inspectors discussed with radiation protection staff, the scope and breadth of its data review, and the results of those reviews. The inspectors independently reviewed electronic dosimetry dose rate and accumulated dose alarm and dose reports and the dose assignments for any intakes that occurred during the time period reviewed to determine if there were potentially unrecognized occurrences. The inspectors also conducted walkdowns of numerous locked high and very high radiation area entrances to determine the adequacy of the controls in place for these areas. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one occupational radiological occurrences sample as defined in IP 71151-05.

d. Findings

No findings were identified.

.4 Mitigating Systems Performance Index - High Pressure Injection Systems

e. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index (MSPI) - High Pressure Injection Systems PI for the period of the second quarter 2009 through the second quarter 2010. 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 6, dated October 2009, were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, MSPI derivation reports, event reports and NRC integrated IRs for the period given above 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 high pressure injection system sample as defined in IP 71151-05.

f. Findings

No findings were identified.

.5 Mitigating Systems Performance Index - Heat Removal System

g. Inspection Scope

The inspectors sampled licensee submittals for the MSPI - Heat Removal System PI for the period of the second quarter 2009 through the second quarter 2010. 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 6, dated October 2009, were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports, MSPI derivation reports, and NRC integrated IRs for the period given above 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 heat removal system sample as defined in IP 71151-05.

h. Findings

No findings were identified.

4OA2 Identification and Resolution of Problems (71152)

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

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

a. Inspection Scope

As part of the various baseline inspection procedures 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: identification of the problem was complete and accurate; 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 Attachment to this report.

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 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 were identified.

.3 Annual Sample: Review of Operator Workarounds

a. Inspection Scope

The inspectors evaluated the licensee's implementation of their process used to identify, document, track, and resolve operational challenges. Inspection activities included, but were not limited to, a review of the cumulative effects of the operator workarounds (OWAs) on system availability and the potential for improper operation of the system, for potential impacts on multiple systems, and on the ability of operators to respond to plant transients or accidents.

The inspectors performed a review of the cumulative effects of OWAs. The documents listed in the Attachment were reviewed to accomplish the objectives of the inspection procedure. The inspectors reviewed both current and historical operational challenge records to determine whether the licensee was identifying operator challenges at an appropriate threshold, had entered them into their CAP, and proposed or implemented appropriate and timely corrective actions which addressed each issue. Reviews were conducted to determine if any operator challenge could increase the possibility of an Initiating Event, if the challenge was contrary to training, required a change from long-standing operational practices, or created the potential for inappropriate compensatory actions. Additionally, all temporary modifications were reviewed to identify any potential effect on the functionality of Mitigating Systems, impaired access to equipment, or required equipment uses for which the equipment was not designed. Daily plant and equipment status logs, degraded instrument logs, and operator aids or tools being used to compensate for material deficiencies were also assessed to identify any potential sources of unidentified operator workarounds.

This review constituted one operator workaround annual inspection sample as defined in IP 71152-05.

b. Findings

No findings were identified.

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

.1 (Closed) Licensee Event Report 05000341-2010-001-00, Automatic Reactor Shutdown due to Generator Current Transformer Wiring Failure

At 1627 on March 25, 2010, a reactor scram occurred due to a main turbine trip from 63 percent power. All plant equipment responded as expected and the scram was uncomplicated. Investigation determined the turbine trip relays actuated due to a generator differential current relay trip in the main generator Z phase protection circuit. The cause of the Z phase relay actuation was the result of a shorted current transformer wire in the Z phase terminal bushing enclosure. The wire was repaired and preventative measures were implemented for similar wiring. The plant was started on March 30 and returned to 100 percent power on March 31, 2010.

The LER was reviewed by the inspectors and no findings of significance were identified and no violation of NRC requirements occurred. Documents reviewed as part of this inspection are listed in the Attachment. This Licensee Event Report (LER) is closed.

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

.2 (Closed) Licensee Event Report 05000341-2010-002-00, Automatic Reactor Scram and Loss of Offsite Power due to Severe Weather

On June 6, 2010, at 0238 a category EF1 tornado caused a loss of division 2 offsite power, and the loss of blow-out panels on the auxiliary building. The reactor protection system initiated an automatic reactor scram and main turbine trip from 100 percent power. The main generator tripped on the loss of division 2 offsite power. All safety-related systems operated as expected in response to the event and the EDGs provided power to division 2 equipment. The plant was stabilized and personnel began inspections of the plant site. An ALERT was declared at 0417 on June 6 due to damage to the auxiliary building fifth floor blow-out panels during the severe weather. The ALERT was terminated at 0220 on June 7 and repairs to the building commenced.

The damage to 120 kV division 1 and 345 kV division 2 offsite power was repaired and all offsite circuits were restored prior to reactor restart. Repairs were also made to important station structures including the auxiliary building east wall, the turbine building roof and south roll-up door, and the cooling towers. Materials from the openings in the auxiliary building wall and turbine building roof were surveyed to verify no radioactive material was present. Interior surfaces near the openings were also checked for contamination. Grab samples for airborne activity were also taken in the vicinity of each opening. All operating air monitoring filters were removed and analyzed for radionuclides. No radionuclide activity was detected.

The main generator was synchronized to the grid at 1921 on June 16 following repairs to offsite power and station structures. The LER was reviewed by the inspectors and no findings of significance were identified and no violation of NRC requirements occurred.

Documents reviewed as part of this inspection are listed in the Attachment. This LER is closed.

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

4OA5 Other Activities: Licensed Operator Medical Examinations (92702)

(Closed) NOV 05000341/2009010-01(DRS) Failure to Provide Complete and Accurate Information Regarding License Operator Medical Examinations

.1 Documentation Reviews (02.01)

a. Inspection Scope

The inspector, in accordance with inspection procedure 92702, “Followup on Corrective Actions for Violations and Deviations,” reviewed the licensee’s root cause analysis, procedure changes resulting from the corrective actions identified, changes to the Quality Assurance Audit Planning Guide, and changes to the Medical Job Familiarization Guide to determine if adequate barriers were in place to prevent omitting two medical examination requirements in the future; tactile discrimination and the ability to detect the odor of products of combustion.

b. Findings

No findings were identified. It was determined that past performance deficiencies were adequately reviewed and appropriate procedural barriers were established to prevent omitting medical examination requirements in the future.

.2 Onsite Inspection (02.02)

a. Inspection Scope

The inspector reviewed a sample of licensed operator medical records to verify that the two previously omitted medical examination requirements were included in current records.

b. Findings

No findings were identified.

4OA6 Management Meetings

.1 Exit Meeting Summary

On October 6, 2010, the inspectors presented the inspection results to J. Plona, Fermi 2 Site Vice-President, 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 the follow-up inspection to licensed operator medical examinations were discussed with Operations Training Manager, Mr. D. Coseo, and Mr. J. Flint, Licensing, on August 12, 2010.

- The radiological hazard assessment and exposure controls, and occupational ALARA planning and controls inspections were discussed on August 27, 2010, with Mr. T. Conner, Plant Manager.

The inspectors confirmed that none of the potential report input discussed was considered proprietary.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

J. Plona, Fermi 2 Site Vice President
T. Conner, Plant Manager
D. Coseo, Operations Training Manager
M. Caragher, Engineering Director
J. Fline, Licensing
R. Johnson, Licensing Manager
E. Kokosky, Radiation Protection Manager
J. Stroud, Site Nurse
C. Walker, Operations Director

Nuclear Regulatory Commission

R. Orlikowski, Acting Chief, Reactor Projects Branch 4
J. Giessner, Chief, Reactor Projects Branch 4

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened

0500341 2010-004-01	URI	Inadequate procedures to control the plant from the dedicated shutdown panel

Closed

0500341 2010-001-00	LER	Automatic Reactor Shutdown due to Generator Current Transformer Wiring Failure
0500341 2010-002-00	LER	Automatic Reactor Scram and Loss of Offsite Power due to Severe Weather
05000341/2009-010-01	NOV	Failure to Provide Complete and Accurate Information Regarding License Operator Medical Examinations

Discussed

None.

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 IR.

Section 1R01 – Adverse Weather Protection

- CARD 09-29842; Increase in EDG 12 Jacket Coolant Expansion Tank Level; 12/24/2009
- CARD 09-29284; EDG 14 Jacket Coolant Expansion Tank Level High; 12/04/2009
- CARD 10-26097; Procedure 27.000.06, Hot Weather Operations, suggested timeline not followed; 07/19/2010
- Procedure 27.000.06; Hot Weather Operations; Revision 2
- WO 27643514; Perform 27.000.06, Attachment 3, Hot Weather System Readiness Review Checklist(s); 11/01/2009

Section 1R04 – Equipment Alignment

- Drawing 6M721-5715-3; Standby Feedwater System Functional Operating Sketch; Revision M
- Drawing 6M721-5706-3; RHR Service Water Make Up Decant and Overflow Systems; Revision Z
- Drawing 6M721-5712-1; Fuel Pool Cooling and Clean Up System; Revision R
- Drawing 6M721-5712-2; Fuel Pool Filter Demin System; Revision I
- Drawing 6M721-5729-2, Emergency Equipment Cooling Water (Division II) Functional Operating Sketch; Revision AU
- Procedure 23.107.01, Attachment 1; Standby Feedwater System Valve Lineup; 02/22/06
- Procedure 23.708, Attachment 1, FPCCU Valve Lineup; 01/09/07
- Procedure 24.207.02; EECW/EESW Valve Lineup Verification; Revision 42

Section 1R05 – Fire Protection

- Drawing 6A721-2401; Fire Protection Evaluation Reactor Building Sub-Basement Plan, EL 540’0”; Revision L
- Drawing 6A721-2402; Fire Protection Evaluation Reactor and Auxiliary Buildings Basement Plan, EL 562’0”; Revision P
- Procedure FP-RB-B-4d; Reactor Building Basement Southeast Corner Room, Zone 4, EL. 564’0”; Revision 3
- Procedure FP-RB-SB-2a; Reactor Building Sub-Basement Northwest Corner Room, Zone 2, EL 540’0”; Revision 3
- Procedure FP-RB-B-2b; Reactor Building Basement Northwest Corner Room, Zone 2, EL 562’0”; Revision 3
- Procedure FP-RB-SB-4c; Reactor Building Sub-Basement Southeast Corner Room, Zone 4, EL. 540’0”; Revision 3
- Procedure FP-TB; Turbine Building; Revision 7

Section 1R06 – Flood Protection

- CARD 07-20204; Flush the Reactor Building Equipment Drain and Floor Drain Header Piping; 01/12/2007

- CARD 10-24512; Watertight Penetration Seals; 06/02/2010
- CARD 10-26737; Develop PMs for the Electrical Manhole Dewatering Pumps; 08/04/2010
- CARD 10-27087; NQA Surveillance Report 10-1006 Reveals Programmatic Breakdown of the Manhole Dewatering System Maintenance and Monitoring Strategies; 08/14/2010
- CARD 10-27671; Compensatory Actions Identified for Manhole Dewatering System – Update Weekly PST Event MH03; 08/31/2010
- Design Specification 3071-128-EG; Electrical Engineering Standard Specification Boxes; Revision AK
- Drawing 5E721-2837-10C; Class 1 Conduit Support Tabulation Sheet Reactor Building EL 562'-0" Basement; Revision E
- Drawing 5E721-2837-10D; Class 1 Conduit Support Tabulation Sheet Reactor Building EL 562'-0" Basement; Revision E
- Drawing 5I721-2612-32; Auto Temp Control System, Panel H21 P537; Revision L
- Drawing 5I721-2612-27; Auto Temp Control System, Panel H21P532; Revision L
- Drawing 6E721-2838-10F; Class 1 Conduit As-Built Install Sect. Power, Control and Instrumentation Reactor Building S.E. Quad – El 540'-0" & 562'-0"; Revision F
- Drawing 6I721-2201-01; Residual Heat Removal Pump "A" E1102C002A; Revision T
- Drawing 6I721-2211-02; Core Spray Pump "B" E2101C001B; Revision I
- Drawing 6I721-2211-09; Core Spray Minimum Flow Bypass Valves A & B; E2150F031A and F031B; Revision Q
- Drawing 6I721-2251-12; R/W System Reactor Building Equipment Drain Sump 74, Pumps G1103C037A and B; Revision J
- Drawing 6I721-2538-2; Excess Flow Check Valves Test Panels H21-P402C; Revision D
- Drawing 6I721-2838-10B; Class I Conduit As-Built Install Sects Power, Control and Instrumentation Reactor Building N.E. Quad – Elevation 540'-0" and 562'-0"; Revision J
- Fermi 2 UFSAR 3.6.2.3.4.1.2; Reactor/Auxiliary Building – Sub-basement Flooding; Revision 16
- Nuclear Plant Event Notification Form; 07/20/2010
- Nuclear Plant Event Technical Data; Drill; 07/20/2010
- Nuclear QA Surveillance Report 10-1006
- Procedure 20.000.01; Acts of Nature; Revision 39
- WO Log; Sumps; 05/15/09 - 05/15/2010
- WO Log; Sump Pumps; 05/15/09 – 05/15/2010
- WO Log; Water Tight Doors; 05/15/09 – 05/15/2010
- WO F547080100; Inspect and Megger the Motor and Associated Motor Leads to the Bucket; 09/13/2008
- WO 29342619; Lube & Inspect Reactor/Auxiliary Building Water Tight Doors; 12/20/2009

Section 1R07 – Annual Heat Sink Performance

- CARD 10-27334; RB-3 Jib Hoist; 08/23/2010
- CARD 10-27377; Fuel Pool Heat Exchanger B Internal As-Found and As-Left Condition; 08/24/2010
- CARD 10-27378; Documentation of As-found Condition of a FPCCU Heat Exchanger; 08/24/2010
- CARD 20-27379; Green Team ATOM Absence; 08/24/2010
- Fermi 2 Heat Exchanger Program Health Report, First Quarter 2010
- Heat Exchanger IR; FPCCU Heat Exchanger A
- WR 000Z062740; Replace Channel Cover Gasket Due to Failed PMT; 08/20/12010

Section 1R11 – Licensed Operator Requalification Program

- Fermi 2 Evaluation Scenario SS-OP-904-0183; SRVs Inoperable / Jet Pump Failure / RPV Flooding; Revision 4
- Fermi 2 Evaluation Scenario SS-OP-904-1016; 2B Transformer Leak / Turbine Vibration / Trubine Trip with CF Flashover / ATWS ; Revision 2

Section 1R12 – Maintenance Effectiveness

- CARD 08-21741; T23N010B Failed Calibration, AFCC2; 03/12/2008
- CARD 08-22430; Evaluate System T2300 “Primary Containment” for (a)(1) under the Maintenance Rule; 04/11/2008
- Design Basis Document T23-00; Primary Containment; Revision A
- Maintenance Rule Functional Failure Evaluation, System ID – B3100; 28-Jun-2010
- Maintenance Rule Functional Failure Evaluation, System ID - E5100; 20-Aug-2010
- Maintenance Rule Functional Failure Evaluation, System ID – T2300; 23-Apr-2009
- Root Cause Determination for CARD 08-21741; 04/09/2008
- System Status; System T2300, Primary Containment; Second, Third, and Fourth Quarters 2009, and First Quarter 2010
- Technical Evaluation TE-T23-08-017; Secondary Containment to Torus Vacuum Breakers Functionality; March 14, 2008

Section 1R13 – Maintenance Risk Assessments and Emergent Work Control

- Fermi 2 Plan of the Day; July 14, July 30, August 30, September 1-3, 2010
- Fermi 2 Plan of the Day; July 30, 2010
- Fermi 2 Plan of the Day; September 13, 15, 16,and 17, 2010
- Fermi 2, T+1 Performance Analysis Review, Work Week 1038; 09/13-19/2010
- Scheduled Risk Profile Summary (Week of 8/30/2010
- Scheduler’s Evaluation for Fermi 2; 07/12/2010
- Scheduler’s Evaluation for Fermi 2; 08/16/2010 – 08/20/2010
- Scheduler’s Evaluation for Fermi 2; 08/30/2010 – 09/03/2010
- Scheduler’s Evaluation for Fermi 2; 09/03/2010 – 09/09/2010

Section 1R15 – Operability Evaluations

- ALC: Archive Narrative Log; 06/11/2010
- CARD 04-24254; Higher than Expected Pressure Drops in Division 1 and 2 EESW; 09/16/2004
- CARD 04-24254-01; Perform Maintenance Necessary to Clean Unit and Restore Original Pressure Drop; 01/31/2005
- CARD 04-24254-02; Clean P4400B001B; 07/01/2005
- CARD 04-24254-03; Inclusion of Temperature Effects on Hx dP; 02/18/2005
- CARD 04-24254-05; Prepare and Issue INPO OER Discussing Cause on EECW Heat Exchanger Plugging; 08/30/2005
- CARD 04-24254-06; Implement Modification to Prevent Channel Plugging; 09/19/2005
- CARD 10-24829; EDG 11 Upper Crankshaft Thrust Out of Specifications
- CARD 10-25403; Evaluate EECW Heat Exchanger Design Basis Function Concurrent with Fouling from Mayflies
- CARD 10-27615; Main Turbine First Stage Pressure Gage Reading Low Out of Green Band; 08/30/2010

- CARD 10-28090; Reactor Building Superstructure Re-analysis; 09/14/2010
- CARD 10-28350; Structural Welding Code Change Incorporated into Work Order; 09/21/2010
- CARD 10-28359; Reactor Building Crane Clip Identified with Surface Indication; 09/21/2010
- CARD 10-28568; NRC Question with TE-N21-10-076; 09/27/2010
- Compensatory Monitoring Plan; Reactor Building Crane / Tornado Watch; 09/23/2010
- Design Calculation DC-6286; EECW HX Performance Requirements with Plugging; Revision 0
- Engineering Change Requests ECR-36592-1 and ECR-36592-2; Modification to the Reactor Building Fifth Floor Superstructure Enclosure; Revision 0
- EDP-29805; Replacement of EECW Heat Exchangers; Revision 0
- EDP-36591; Installation of Additional Reactor Building Crane Bridge Rail Clips; Revisions B and D
- EDP-36592 and EDP-36592-1, Modification to the Reactor Building Fifth Floor Superstructure Enclosure; Revision 0
- Engineering Functional Analysis EFA-T22-10-008; Reactor Building Superstructure Girts; Revision A
- Engineering Functional Analysis EFA-T22-10-009; Reactor Building Crane Rail Clips Underneath the Crane and South Wall Girts; Revision 0
- Fermi Control Room Log – Unit 2; August 30, 2010
- Fermi Operations Conduct Manual MOP05; Control of Equipment; Revision 34
- Fermi Operations Department Expectation ODE-11; CARD Operability Determination Expectations; Revision 3
- TCECE-36592-2; Reactor Building Girt Framing Sections and Details; Revision 0
- TCEDP EDP-36591.001; Installation Sketch, Clip Details; Revision D
- TCEDP EDP-36591.001; Installation Sketch, New East Crane Rail Clips; Revision D
- TCEDP EDP-36591.001; Installation Sketch New West Crane Rail Clips; Revision D
- Technical Evaluation Number TE-ANL-10-049; Evaluation and Characterization of Wind Phenomena Against Plant Design; Revision A
- TE-N21-10-076; SBFW Pumps Test Isolation Valve Will Not Open Enough to Allow Sufficient Test Flow

Section 1R18 – Plant Modifications

- CARD 10-27645; Issues with 20.000.18; 08/31/2010
- Fermi 2 SER; SSER 5.9.5.1; Fire Protection
- Fermi 2 UFSAR; 9A.3; Plant Safe Shutdown
- Fire Protection Engineering Evaluation FPEE-05-0012; Manual Action Feasibility Study for AOP 20.000.18, Revision 36; 07/25/2005
- ODE-9; Manpower Scheduling; Revision 8
- Procedure 20.000.18; Control of the Plant from the Dedicated Shutdown Panel; Revision 45

Section 1R19 – Post-Maintenance Testing

- CARD 10-27297; North TBHVAC Exhaust Fan Vibrating in Excess of Admin Limits during SOE 10-04 Run; 08/20/2010
- Consumable Materials Evaluation; Nashua, 357N Red Tape; 09/25/1997
- EDP=36506; Modification Testing Requirements; Revision 0
- Procedure 35.106.009; Control Rod Drive Hydraulic Control Unit General Maintenance and Repair; Revision 47
- Procedure 44.030.252; ECCS Reactor Vessel Water Level (Levels 1, 2, and 8), Division 2, Channel B Functional Test; Revision 48
- Procedure 54.000.03; Control Rod Scram Insert Time Test; Revision 51

- Technical Evaluation; Item 100075145, TAPE,ADHSV,DUCT,2IN,60YD,CLTH,RED; 20040524
- WO A427100100; Replace Division 2 Ads Logic 'B', Channel 'B', High DW Pressure Bypass Relay; 08/02/2010
- WO 29385678; Perform 44.030.252; ECCS Reactor Water Level 1,2,and 8, Div 2, Channel B, Functional; 08/02/2010
- WO 30106931; 02-31 2009/2010 HCU Accumulator Replacement; 07/31/2010
- WO 30107129; 04- (22-31) 2009/2010 HCU Accumulator Replacement; 07/31/2010
- WO 31624092; EDP-36506 Reprogram Refuel Platform

Section 1R20 - Outage Activities

- CARD 10-24856; Foreign Material Located in the Drywell during Forced Outage 10-02; 06/11/2010
- Foreign Material Control Log; Drywell; 06/11/2010
- NSSS Engineering Assessment of Foreign Materials Found in the Drywell as listed in CARD 10-24856 on 06/11/2010; Revision 0

Section 1R22 – Surveillance Testing

- Procedure 24.107.03; SBFW Pump and Valve Operability and Lineup Verification Test; Revision 37
- Procedure 24.413.01; Division 1 and 2 Control Center Chilled Water Pump and Valve Operability Test; Revision 34
- Procedure 24.413.03; Control Room Emergency Filter Monthly Operability Test; Revision 35
- Procedure 24.413.04; Division 1 Control Room Emergency Filter Auto Transfer Test; Revision 35
- WO T392060100; Perform 24.413.04 (Partial) for Stroke Time T4100F041; 07/21/2010
- WO Y606090100; Perform 24.413.03 (Partial) PMT for T4100D011; 07/21/2010
- WO 29173505; Perform 24.404.06 Division 2 LPCI and Torus Cooling/Spray Pump and Valve Operability Test; 07/01/2010
- WO 29316046; Perform 24.107.03 Section 5.2 SBFW Pump 'A' Flow Test; 07/16/2010
- WO 29714192; Perform 24.413.03 Section 5.3 Division 1 CCHVAC Monthly 15 Minute Flow Test; 07/21/2010
- WO 30367070 / 27332674; Perform 24.413.01 Section 5.1 for Dl CCHVAC Chill Water Pump

Section 1EP6 – Drill Evaluation

- Fermi RERP Drill 2010; July 20, 2010
- Fermi RERP Drill Forms; 09/21/2010

Section 2RS1 Radiological Hazard Assessment and Exposure Controls

- CARD 09-26108; High Radiation Area Boundary Violation; August 7, 2009
- CARD 09-28083; Improper Radworker Practice Removing Pipe Cap from Contaminated System; October 15, 2009
- CARD 09-28885; Audit Finding: Radiation Protection Practices Observed at the Main Control Point Are Not in Accordance with MRP04
- CARD 10-20281; Dose Estimate for Scaffold Build Exceeded; January 12, 2010
- CARD 10-20520; Handling of High Radiation Trash; January 21, 2010
- CARD 10-21079; Unexpected Dose Rates Found in Chemistry Hood Containing Reactor Water Clean-up Resin; February 6, 2010

- CARD 10-21419; Radiation Area Access Boundary Not Restored After Access; February 26, 2010
- CARD 10-24955; Personnel Violating Radiological Postings per MRP04; June 15, 2010
- CARD 10-27522; Evaluate Radiation Protection Release Log for Supervisor Approval Criteria Investigation; August 27, 2010
- Procedure 23.606; Traversing In-Core Probe System; Revision 31
- Procedure 64.713.050; Source Leak Testing; Revision 9
- Procedure 65.000.515; Receipt, Storage, Inventory, Inspection, and Packing of Radioactive Material Shipping Packages; Revision 15
- Procedure 65.000.519; Radioactive Material Receipt/Source Control; Revision 28
- NRC Form 748; National Source Tracking Transaction Report; January 20, 2009
- Quick Hit Self Assessment: Access Control for Radiologically Significant Areas;
- March 16, 2009
- Quick Hit Self-Assessment: ALARA Panning, Access Control and Occupational Exposure Control Effectiveness; September 24, 2009
- Quick Hit Self-Assessment: ALARA Panning, Access Control and Occupational Exposure Control Effectiveness; July 22, 2010
- RWWI-043; Shipping Preparation, Oversight and Document Review; November 4, 2009
- Spent Fuel Pool Non-Fuel Inventory; December 11, 2008
- Survey No. 03614-R10; Reactor Building Fuel Pool Component Cooling Unit Room; August 19, 2010
- Survey No.05222-R09; Reactor Water Cleanup Pump Room; September 7, 2009
- WO 27056593; Perform 64.713.050 Source Leak Test; June 9, 2009
- WO 27875003; Perform 64.713.050 Source Leak Test; December 4, 2009
- WO 29101526; Perform 64.713.050 Source Leak Test; May 27, 2010

Section 2RS2 Occupational ALARA Planning and Controls

- CA 09-28096; Locked High Radiation Area Stay Time Tracking; October 15, 2009
- CA 09-29473; Higher Dose than Budget for High Pressure Core Injection Run; December 11, 2009
- Procedure 63.000.200; ALARA Reviews; Revision 27
- RWP 10-3007; Drywell Scaffolding; Revision 0
- RWP 10-3012; Drywell In-Service Inspection Weld Inspections; Revision 0
- RWP 10-5001; Refuel Floor; Revision 0
- Quick Hit Self-Assessment: ALARA Panning and Controls; March 16, 2009

Section 4OA1 – Performance Indicator Verification

- Archive Narrative Log; 12/01/2009 – 08/02/2010
- Archived Operator Log; 08/01/2009 – 09/01/2009; 11/01/2009 – 12/01/2009; 02/01/2010 – 03/01/2010; and 05/01/2010 – 06/01/2010
- CARD 09-20559; Blown Control Power Fuse Results in Unplanned Division 2 EECW and HPCI Inoperability; 01/28/2009
- COS 116; Chemistry Laboratory Procedure Use Guidelines; Revision 7
- LCO Log for HPCI; 11/26/2008 – 12/01/2009
- LCO Log; 02/01/2010 – 03/01/2010; 05/01/2010 – 06/01/2010
- MGA03; Procedure Use and Adherence; Revision 20
- MSPI Derivation Report; MSPI High Pressure Injection System; 04/08/2010
- MSPI Derivation Report; MSPI Heat Removal System – RCIC, Unreliability Report; June 2010

- Procedure 73.714.01; Plant Process Sampling P33-P405A, Reactor Building Sample Panel; Revision 2
- Procedure 76.000.05; Operation of Chemistry Gamma Spectroscopy Systems; Revision 15
- Procedure 76.000.34; Reactor Coolant Analysis; Revision 10
- Reactor Water Total Isotopic Data; June 2009 to July 2010
- WO 27094435; Perform 24.206.01 RCIC System Pump Operability and Valve Test at 1000 PSIG

Section 4OA2 – Identification and Resolution of Problems

- Active Operations Challenges Indies; 08/17/2010
- Open Operator Challenges (ODE-006); August 2010
- Operator Burdens; 09/09/2009 – 08/10/2010
- Operator Challenges Average Age; 09/09/2010 – 08/10/2010
- Operator Distractions; 09/09/2009 – 08/10/2010
- OWAs, Additional INPO PI 1; 09/09/2009 – 08/10/2010
- OWAs Equipment Reliability Metric 1; 09/09/2009 – 08/10/2010
- Total Operator Challenges; 09/09/2009 – 08/10/2010

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

- Licensee Event Report 2010-001; Automatic Reactor Shutdown due to Generator Current Transformer Wiring Failure; May 19/2010
- Licensee Event Report 2010-002; Automatic Reactor Scram and Loss of Offsite Power Due to Severe Weather; August 3, 2010

Section 4OA5 – Other Activities

- A sample of currently licensed operator medical records
- Root Cause Evaluation Report CARD 09-26243, Fermi Licensed Operator Physical Exam Does Not Meet ANSI Standard; August 2009
- Medical Job Familiarization Guide SAP #32011975/42004025; March 23, 2010
- Audit Planning Guide, APG-25, Operations, Revision 4
- Fermi 2 General Administration Conduct Manual, MGA13, Revision 9, Fermi Medical Requirements.

LIST OF ACRONYMS USED

ADAMS	Agencywide Document Access Management System
ASME	American Society of Mechanical Engineers
CAP	Corrective Action Program
CARD	Condition Assessment Resolution Document
CFR	Code of Federal Regulations
EDG	Emergency Diesel Generator
EDP	Engineering Design Package
EECW	Emergency Equipment Cooling Water
EESW	Emergency Equipment Service Water
FPCCU	Fuel Pool Cooling and Cleanup
FPEE	Fire Protection Engineering Evaluation
HRA	High Radiation Area
HVAC	Heating, Ventilation, and Air Conditioning
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Inspection Report
LER	Licensee Event Report
MSPI	Mitigating Systems Performance Index
NEI	Nuclear Energy Institute
NRC	U.S. Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
OWA	Operator Workaround
PI	Performance Indicator
RETS	Radiological Effluent Technical Specifications
RHR	Residual Heat Removal
RP	Radiation Protection
RPM	Radiation Protection Manager
RWP	Radiation Work Permit
PI	Performance Indicator
SBFW	Standby Feedwater
TS	Technical Specifications
UFSAR	Updated Final Safety Analysis Report
UHS	Ultimate Heat Sink
URI	Unresolved Item
VHRA	Very High Radiation Area
WO	Work Order

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
2443 WARRENVILLE ROAD, SUITE 210
LISLE, IL 60532-4352

EA-09-267 October 20, 2010

Mr. Jack M. Davis
Senior Vice President and
Chief Nuclear Officer
Detroit Edison Company
Fermi 2 - 210 NOC
6400 North Dixie Highway
Newport, MI 48166

SUBJECT: FERMI POWER PLANT, UNIT 2 INTEGRATED INSPECTION REPORT 05000341/2010004

Dear Mr. Davis:

On September 30, 2010, the U.S. Nuclear Regulatory Commission (NRC) completed an integrated inspection at your Fermi Power Plant, Unit 2. The enclosed report documents the results of this inspection, which were discussed on October 6, 2010, with J. Plona, Fermi 2 Site Vice-President, and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, no findings were identified.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records System (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Website 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
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Letter to J. Davis from J. Giessner dated October 20, 2010.

SUBJECT: FERMI POWER PLANT, UNIT 2 INTEGRATED INSPECTION REPORT 05000341/2010004

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