

November 2, 2007

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, NRC INTEGRATED  
INSPECTION REPORT 05000341/2007005

Dear Mr. Davis:

On September 30, 2007, 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 September 21, 2007, with you 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 finding of very low safety significance was identified which involved a violation of NRC requirements. However, because this finding was of very low safety significance and because the issue was entered into your corrective program, the NRC is treating this finding as a Non-Cited Violation in accordance with Section VI.A.1 of the NRC's Enforcement Policy. If you contest the subject or severity of this Non-Cited Violation, 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 2 facility.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be made 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/*

Christine A. Lipa, Chief  
Branch 4  
Division of Reactor Projects

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

Enclosure: Inspection Report 05000341/2007005  
w/Attachment: Supplemental Information

cc w/encl: J. Plona, Vice President,  
Nuclear Generation  
K. Hlavaty, Plant Manager  
R. Gaston, Manager, Nuclear Licensing  
D. Pettinari, Legal Department  
Michigan Department of Environmental Quality  
Waste and Hazardous Materials Division  
M. Yudasz, Jr., Director, Monroe County  
Emergency Management Division  
Supervisor - Electric Operators  
State Liaison Officer, State of Michigan  
Wayne County Emergency Management Division

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Letter to J. Davis from C. Lipa dated November 2, 2007

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INSPECTION REPORT 05000341/2007005

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U. S. NUCLEAR REGULATORY COMMISSION

REGION III

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

Report No: 05000341/2007005

Licensee: Detroit Edison Company

Facility: Fermi Power Plant, Unit 2

Location: Newport, Michigan

Dates: July 1 through September 30, 2007

Inspectors: R. Michael Morris, Senior Resident Inspector  
T. Steadham, Resident Inspector  
R. Lerch, Project Engineer  
D. McNeil, Senior License Examiner  
M. Phalen, Health Physicist  
A. Wilson, Reactor Engineer

Approved by: C. Lipa, Chief  
Branch 4  
Division of Reactor Projects

## SUMMARY OF FINDINGS

IR 05000341/2007005; 07/01/2007-09/30/2007; Fermi Power Plant, Unit 2; Operability Evaluations.

This report covers a three month period of inspection by resident inspectors and an announced baseline inspection by regional-based inspectors. One Green finding associated with a Non-Cited Violation (NCV) was identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply 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: Barrier Integrity**

- Green. The inspectors identified an NCV of 10 CFR 50, Appendix B, Criterion V, "Procedures," for the failure to follow procedural requirements for evaluating a preventive maintenance deferral for a main steam line drain valve. The inadequate deferral evaluation contributed to the inadequate response to the valve failing to close which led to conditions warranting a Notification of Unusual Event. The licensee entered the issue into their corrective action program as condition assessment resolution document (CARD) 07-24284, increased the level of management oversight, revised procedures, and trained personnel. The inspectors determined the finding was associated with cross-cutting aspect H.4(b), Human Performance - Work Practices.

This finding was determined to be more than minor because the failure to properly evaluate a preventive maintenance deferral contributed to a significant event, specifically high radiation levels exceeding the emergency action level limit for a notification of unusual event. This finding was determined to be of very low safety significance because it did not represent a degradation of the control room barrier, an actual open pathway in the physical integrity of reactor containment, or an actual reduction in defense-in-depth for the atmospheric pressure control or hydrogen control functions of containment. (Section 1R15.b.1).

### B. Licensee-Identified Violations

One violation of very low safety significance which was identified by the licensee, has been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. This violation and corrective actions are listed in Section 4OA7 of this report.

## REPORT DETAILS

### Summary of Plant Status

Unit 2 operated at or near full power throughout the inspection period until September 28, 2007, when the licensee initiated a reactor shutdown in preparation for refueling outage 12 (RF12). The reactor was shut down at 4:00 a.m. on September 29 and remained shutdown for the remainder of this inspection period.

### 1. REACTOR SAFETY

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

#### 1R04 Equipment Alignments (71111.04Q)

##### a. Inspection Scope

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

- Division I Emergency Battery During Reactor Core Isolation Cooling (RCIC) Outage, performed the week of July 9, 2007;
- Standby Feedwater During RCIC Outage, performed the week of July 9, 2007;
- Division I Standby Gas Treatment (SGT), performed the week of August 13, 2007; and
- Diesel Fire Pump, performed the week of September 10, 2007.

The inspectors selected these systems based on their risk significance. The inspectors reviewed operating procedures, system diagrams, Technical Specification (TS) requirements, 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 were aligned correctly.

In addition, the inspectors verified equipment alignment problems were entered into the corrective action program with the appropriate significance characterization.

These activities completed four quarterly partial system walkdown inspection samples.

##### b. Findings

No findings of significance were identified.

## 1R05 Fire Protection

### .1 Routine Resident Inspector Tours (71111.05Q)

#### a. Inspection Scope

The inspectors conducted fire protection tours of the following risk-significant plant areas:

- Division I Battery Room;
- RCIC Room;
- Turbine Building Basement;
- Cable Separation in Auxiliary Building;
- Reactor Water Cleanup (RWCU) Valve Gallery Room;
- Division I and Division II SGT Rooms; and
- Control Air Compressor Room.

The inspectors verified fire zone conditions were consistent with assumptions in the licensee's Fire Hazards Analysis. The inspectors walked down fire detection and suppression equipment, assessed the material condition of fire fighting equipment, and evaluated the control of transient combustible materials. In addition, the inspectors verified fire-protection-related problems were entered into the corrective action program with the appropriate significance characterization.

These activities completed seven quarterly fire protection inspection samples.

#### b. Findings

No findings of significance were identified

### .2 Fire Protection - Drill Observation (71111.05A)

#### a. Inspection Scope

The inspectors assessed fire brigade performance and the drill evaluators' critique during an unannounced fire brigade drill on July 26, 2007. The drill simulated a fire in the Division I vital battery room. The inspectors focused on the command and control of fire brigade activities, fire fighting and communication practices, material condition and use of fire fighting equipment, and implementation of pre-planned fire fighting strategies.

These activities completed one annual fire protection inspection sample (drill observation).

#### b. Findings

No findings of significance were identified.

1R06 Flood Protection (71111.06)

a. Inspection Scope

The inspectors evaluated the potential for flooding from external factors by reviewing plant design parameters pertinent to controlling the potential for flooding from external means. The evaluation included a review to check for deviations from the descriptions provided in the Updated Final Safety Analysis Report (UFSAR) for features intended to mitigate the potential for flooding from external factors. As part of this evaluation, the inspectors reviewed the conditions of roof drains on the residual heat removal (RHR) building, checked for obstructions that could prevent draining, and checked that the roofs did not contain obvious loose items that could clog drains in the event of a heavy precipitation. 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.

These activities completed one external flood protection inspection sample.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification (71111.11Q)

a. Inspection Scope

On July 24, 2007, the inspectors observed an operations support crew during the annual requalification examination in mitigating the consequences of events in Scenario SS-OP-202-0761, Revision 1, on the simulator. 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.

These activities completed one quarterly licensed operator requalification inspection sample.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness

.1 Routine Evaluations (71111.12Q)

a. Inspection Scope

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

- Diesel Firewater Pump;
- RCIC Oil Level Fluctuations;
- RHR Emergency Diesel Generator (EDG) Ventilation Dampers; and
- Division II SGT.

The inspectors assessed performance issues with respect to the reliability, availability, and condition monitoring of the system. Specifically, the inspectors 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);
- characterizing system reliability issues;
- tracking system unavailability;
- trending key parameters (condition monitoring);
- ensuring 10 CFR 50.65(a)(1) or (a)(2) classification and/or re-classification; and
- verifying appropriate performance criteria for systems classified as (a)(2) and/or appropriate and adequate goals and corrective actions for systems classified as (a)(1).

In addition, the inspectors verified maintenance effectiveness issues were entered into the corrective action program with the appropriate significance characterization.

These activities completed four quarterly maintenance effectiveness inspection samples.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors reviewed the licensee's evaluation and management of plant risk for the maintenance and operational activities affecting risk-significant and safety-related equipment listed below:

- RCIC Steam Admission Valve Repairs the Week of July 9, 2007;
- Transformer 2B Cleaning the Week of July 9, 2007;
- EDG 11 and RHR Division I Work the Week of July 23, 2007;
- RCIC and SGT System Unexpected Outage the Week of August 13, 2007;
- RCIC Unplanned Outage the Week of August 20, 2007; and
- Division II Bus 65F Undervoltage Testing the Week of September 10, 2007.

These activities were selected based on their potential risk significance relative to the reactor safety cornerstones. As applicable for each activity, the inspectors reviewed the scope of maintenance work, discussed the results of the assessment with the licensee's probabilistic risk analyst and/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 activities completed six quarterly maintenance risk assessment and emergency work control inspection samples.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed the following documents to ensure the condition did not render the involved equipment inoperable or result in an unrecognized increase in plant risk. Additionally, the inspectors verified whether the licensee appropriately applied TS limitations and appropriately returned the affected equipment to an operable status:

- CARD 07-23750, Water in RCIC Oil;
- CARD 07-24055, Emergency Equipment Cooling Water Backup Heat Exchanger Mounting;
- CARD 06-27779, Environmental Qualification for Qualified Life of Grayboot Connector;
- EDG-14 Air Coolant Temperature Control Loop Preventive Maintenance (PM) Deferral;
- Reactor Building Closed Cooling Water Heat Exchanger Cleaning PM Deferral; and;

- CARD 04-22965, Fire Protection Non-Compliance in Quality and Location of Detectors and Affects on Operability Impacts per UFSAR and Technical Requirements Manual.

The inspectors reviewed the technical adequacy of the licensee's operability evaluations to determine if operability was justified. The inspectors verified the licensee considered other degraded conditions and their impact on compensatory measures for the condition being evaluated. The inspectors referred to the final safety analysis report and other design basis documents during the review.

While reviewing the Reactor Building closed cooling water heat exchanger cleaning PM deferral referenced above, the inspectors identified a potential procedural compliance issue applicable to other PM deferral evaluations. Consequently, the inspectors reviewed an additional 16 PM deferral evaluations on risk-significant equipment performed between February 2007 and August 2007 and 6 PM deferral evaluations performed within the previous five years where the component failed after the PM was deferred. The inspectors ensured the evaluations were technically adequate, did not affect equipment operability, and were completed in accordance with the licensee's procedure for performing the evaluations. The inspectors reviewed the maintenance history of the affected equipment, environmental qualification requirements, TSs, UFSAR, applicable vendor recommendations, and available industry operating experience. The inspectors verified the licensee considered other degraded conditions and their impact on compensatory measures for the condition being evaluated.

These activities completed six operability evaluation inspection samples.

b. Findings

b.1 Inadequate Preventive Maintenance Deferral Evaluations

Introduction: The inspectors identified an NCV of 10 CFR 50, Appendix B, Criterion V, "Procedures," for the failure to follow procedural requirements for evaluating preventive maintenance deferrals.

Description: Licensee Conduct Manual MES51, Revision 4, "Preventive Maintenance Program," required the categorization of the probability and consequences of equipment failure be evaluated as part of a risk matrix when engineering personnel evaluated PM deferrals. Depending on the consequences and risk, the evaluation would either be approved, rejected, or approved after further review and the consideration of mitigating or contingency actions where appropriate. Additionally, 10 other required questions were to be considered and documented for each deferral evaluation. Upon review of the 23 selected PM deferral evaluations, the inspectors determined that only three properly referenced the risk matrix. Additionally, other concerns were noted with many of the deferral evaluations such as the failure to consider the likelihood of component failure before the proposed new critical completion date and the consequences of failure.

For example, PM deferral approval number 1210178 evaluated the acceptability of deferring a valve actuator overhaul on the “C” main steam line drain valve B2100F080C. The evaluation concluded that the function loss, consequences of loss, adverse effects, regulatory impact, and the probability of failure prior to the new critical date were all “None.” Additionally, the results of the risk matrix review were not documented in the evaluation. Through interviews, the inspectors learned that the risk matrix was not considered during the evaluation. However, the failure of this valve to close coincident with initiating hydrogen water chemistry during a plant startup in February 2005, caused a high secondary containment radiation level resulting in conditions warranting a Notification of Unusual Event.

Because the licensee did not perform an adequate evaluation of the PM deferral for the B2100F080C actuator overhaul, the consequences of the valve failing to close were not identified and appropriate mitigating or contingency actions were, therefore, not developed. Had the licensee identified the potential for high radiation level conditions due to the valve failing to close, appropriate mitigating actions to prevent the subsequent emergency conditions could have been implemented.

Analysis: The inspectors determined the failure to follow procedures for evaluating PM deferrals was a performance deficiency. This finding was determined to be more than minor in accordance with Inspection Manual Chapter (IMC) 0612, “Power Reactor Inspection Reports,” Appendix B, issued September 20, 2007. The inspectors reviewed the examples of minor and more-than-minor issues in IMC 0612, Appendix E, issued September 20, 2007, and determined none of the examples were relevant to this issue. The inspectors, therefore, reviewed the list of questions in Section 3 of IMC 0612, Appendix B, and determined the issue was more than minor because the finding could reasonably be viewed as a precursor to a significant event. Specifically, the inadequate deferral evaluation contributed an inadequate response to the drain valve failing to close which led to conditions warranting a Notification of Unusual Event. The inspectors assessed the finding using the Phase 1 SDP and determined the finding was associated with the Barrier Integrity Cornerstone. The finding did not represent a degradation of either the control room barrier, an actual open pathway in the physical integrity of reactor containment, or an actual reduction in defense-in-depth for the atmospheric pressure control or hydrogen control functions of containment; therefore, this finding screened as Green.

Once the issue was identified, it was entered into the licensee’s corrective action program as CARD 07-24284. Additionally, the licensee was reviewing other weaknesses in the PM program identified by another outside organization under CARD 07-22831. Corrective actions included a major revision to Conduct Manual MES51 and training on the new procedural requirements. The licensee also increased the level of management involvement in PM deferral reviews. The inspectors determined the finding is associated with a cross-cutting aspect in the area of Human Performance, Work Practices because licensee personnel failed to follow procedures for evaluating PM deferrals (H.4(b)).

Enforcement: 10 CFR 50, Appendix B, Criterion V, “Procedures,” required activities affecting quality be accomplished in accordance with written procedures. Deferring

maintenance on safety-related equipment was an activity affecting quality. Licensee Conduct Manual Procedure MES51, Revision 0, "Preventive Maintenance Program," step 5.7.7 required, at a minimum, 10 specific aspects to be considered for each PM deferral evaluation. Contrary to the above, on November 29, 2004, the licensee failed to properly evaluate 8 of the 10 required aspects on deferring the valve actuator overhaul for B2100F080C, a safety-related component. Because this finding is of very low safety significance and because it was entered into the licensee's corrective action program as CARD 07-24284, this violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000341/2007005-01, Inadequate Preventive Maintenance Deferral Evaluations.

1R17 Permanent Plant Modifications (71111.17)

a. Inspection Scope

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

- EDP-30530, Installation of Backup Emergency Equipment Cooling Water Heat Exchangers.

This document and related documentation were reviewed for adequacy of the safety evaluation, consideration of design parameters, implementation of the modification, post-modification testing, and relevant procedures, design, and licensing documents were properly updated. The modification installed additional equipment to an existing system.

These activities completed one permanent plant modification inspection sample.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed post-maintenance testing (PMT) activities associated with the following scheduled maintenance:

- RCIC Steam Inlet Valve E5150-F045 Following Maintenance due to Steam Leak;
- RCIC Steam Inlet Bypass Valve E5150-F095 Following Maintenance due to Steam Leak;
- Work Order (WO) A430050100, Inspect/Test 130VDC Relay;
- WO 24630141, Source Range Monitor "A" is Erratic and Period Meter is Spiking;
- WO 25322214, Replace Division II SGT Room Cooler Motor;
- Division II SGT Charcoal Replacement; and
- Low Pressure System Injection Loop Select Function Relay E11A-K32A.

The inspectors reviewed the scope of the work performed and evaluated the adequacy of the specified PMT. The inspectors verified the PMT was performed in accordance with approved procedures, the procedures clearly stated acceptance criteria, and the acceptance criteria were met. The inspectors interviewed operations, maintenance, and engineering department personnel and reviewed the completed PMT documentation.

In addition, the inspectors verified PMT problems were entered into the corrective action program with the appropriate significance characterization.

These activities completed seven PMT inspection samples.

b. Findings

No findings of significance were identified.

1R20 Refueling and Outage Activities (71111.20)

.1 Routine Refueling Outage Inspection Activities

a. Inspection Scope

The inspectors observed the licensee's performance during the 12th refueling outage (RF12) which began on September 28, 2007.

This inspection consisted of a review of the licensee's outage schedule, safe shutdown plan and administrative procedures governing the outage, periodic observations of equipment alignment, and plant and control room outage activities. Specifically, the inspectors determined whether the licensee effectively managed elements of shutdown risk pertaining to reactivity control, decay heat removal, inventory control, electrical power control, and containment integrity.

The inspectors performed the following activities daily during the outage:

- attended control room operator and outage management turnover meetings to verify the current shutdown risk status was well understood and communicated;
- performed walkdowns of the main control room to observe the alignment of systems important to shutdown risk;
- observed the operability of reactor coolant system instrumentation and compared channels and trains against one another;
- performed walkdowns of the turbine, auxiliary, and reactor buildings and the drywell to observe ongoing work activities, to ensure work activities were performed in accordance with plant procedures, and to verify procedural requirements regarding fire protection, foreign material exclusion, and the storage of equipment near safety-related structures, systems, and components were maintained;
- verified the licensee maintained secondary containment in accordance with Technical Specification requirements; and

- reviewed selected issues the licensee entered into its corrective action program to verify identified problems were being entered into the program with the appropriate characterization and significance.

Additionally, the inspectors performed the following specific activities.

- observed new fuel receipt inspections;
- observed the control room staff perform the Unit 2 shutdown and initial cool down;
- observed operators align the RHR system for shutdown cooling;
- monitored a pre-job briefing for a fuel handling evolution;
- monitored refueling activities to verify the licensee adhered to established procedures and TS requirements for handling of irradiated fuel; and
- verified shutdown cooling tagouts.

These activities do not represent completion of an outage/refueling sample because the outage began two days prior to the end of this inspection period. Therefore, activities associated with this refueling outage will be counted as a sample in the fourth quarter inspection report, 05000341/2007006.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

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:

- Local Power Range Monitor Calibration, performed on July 26, 2007;
- Procedure 54.000.03, Control Rod Scram Insert Time Test, performed on July 24, 2007;
- Procedure 24.000.02, Reactor Coolant System Operational Leakage, performed on August 10, 2007;
- Procedure 44.030.270, Emergency Core Cooling System Reactor Steam Dome Pressure, Division II, Channel D, Calibration/Functional Test; performed on August 9, 2007; and
- WO B464070100, Calibration of Reactor Vessel Jet Pump Flow, Loop B, performed on September 12, 2007.

The inspectors reviewed the test methodology and test results to verify equipment performance was consistent with safety analysis and design basis assumptions. In addition, the inspectors verified surveillance testing problems were being entered into the corrective action program with the appropriate significance characterization.

These activities completed four routine and one reactor coolant system leak detection inspection samples.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

The inspectors observed the licensee perform an emergency preparedness drill on August 22, 2007. The inspectors observed activities in the control room simulator, technical support center, and emergency operations facility. The inspectors also attended the post-drill facility critiques in the technical support center and emergency operations facility immediately following the drill as well as the subsequent overall drill critique. The focus of the inspectors' activities was to note any weaknesses and deficiencies in the drill performance and ensure the licensee evaluators noted the same weaknesses and deficiencies and entered them into the corrective action program. The inspectors placed emphasis on observations regarding event classification, notifications, protective action recommendations, and site evacuation and accountability activities. As part of the inspection, the inspectors reviewed the drill package included in the list of documents reviewed at the end of this report.

These activities completed one drill evaluation inspection sample.

b. Findings

No findings of significance were identified.

**2. RADIATION SAFETY**

**Cornerstone: Occupational Radiation Safety**

2OS1 Access Control to Radiologically Significant Areas (71121.01)

.1 Review of Licensee Performance Indicators for the Occupational Exposure Cornerstone

a. Inspection Scope

The inspectors reviewed the licensee's occupational exposure control cornerstone performance indicators (PIs) to determine whether or not the conditions surrounding the PIs had been evaluated and identified problems had been entered into the corrective action program for resolution.

These activities completed one inspection sample.

b. Findings

No findings of significance were identified.

2. Plant Walkdowns and Radiation Work Permit Reviews

a. Inspection Scope

The inspectors identified several radiologically significant work areas within radiation areas, high radiation areas (HRAs), and airborne areas. Specific areas reviewed included the traversing in-core probe (TIP) drive units, open areas of the turbine building, reactor building and the rad-waste building. Additional radiologically significant areas reviewed included:

- North and South Turbine Blowout Panels;
- North Water Box Access;
- Steam Jet Air Ejector Rooms;
- Off-Gas Manifold Area;
- Northeast and Southeast Condenser Pump Bays;
- Condensate Phase Separator Tank and Pump Rooms;
- Waste Surge/Waste Sample Tank Room;
- Waste Clarifier Tank and Pump Rooms;
- Chemical Waste Tank and Pump Rooms 7; and
- Refuel Floor, Including the Spent Fuel Pool (SFP).

Selected work packages and radiation work permits (RWPs) were reviewed to determine if radiological controls including surveys, postings, air sampling data, and barricades were acceptable. Specific items reviewed included:

- RWP 071006, Ship and Receive Radioactive Material - Process Waste and Laundry;
- RWP 071009, Install/Replace Vibration Monitors in the North and South RWCU Pump Rooms;
- RWP 071012, Mini PM on the Hydrogen Recombiner Drywell Outboard Isolation Valve (T4804F605A);
- RWP 071022, TIP Drive Mechanisms "A to E": Clean, Inspect, and Lubricate-Includes TIP Axial Alignment; and
- RWP 071046, Support of the SFP Re-Rack Project.

These activities completed one inspection sample.

The radiologically significant work areas were walked down and independently surveyed to determine if the prescribed RWPs, procedures, and engineering controls were in place, that licensee surveys and postings were complete and accurate, and that air samplers were properly located.

These activities completed one inspection sample.

The inspectors reviewed selected RWPs and associated radiological controls used to access these and other radiologically significant areas, and evaluated the work control instructions and control barriers that were specified in order to determine if the controls and requirements provided adequate worker protection. Site TS requirements for HRAs and locked HRAs were used as standards for the necessary barriers. Electronic dosimeter alarm set points for both integrated dose and dose rate were evaluated for conformity with survey indications and plant policy. The inspectors attended pre-job briefings to determine if instructions to workers emphasized the actions required: (1) when their electronic dosimeters noticeably malfunctioned or alarmed; and (2) under what conditions would the workers stop the job.

These activities completed one inspection sample.

The inspectors reviewed job planning records and interviewed licensee representatives to determine if there were airborne radioactivity areas in the plant with a potential for individual worker internal exposures of >50 millirem committed effective dose equivalent. Barrier integrity and engineering controls performance, such as high efficiency particulate filtration ventilation system operation and use of respiratory protection, were evaluated for worker protection. Work areas having a history of, or the potential for, airborne transuranic isotopes were reviewed to determine if the licensee had considered the potential for transuranic isotopes and provided appropriate worker protection.

These activities completed one inspection sample.

The adequacy of the licensee's internal dose assessment process for internal exposures >50 millirem committed effective dose equivalent was assessed to determine if affected personnel were properly monitored utilizing calibrated equipment, that the data was analyzed, and that internal exposures were properly assessed in accordance with licensee procedures.

These activities completed one inspection sample.

The inspectors reviewed the licensee's physical and programmatic controls for highly activated and/or contaminated materials (non-fuel) stored within the SFP.

These activities completed one inspection sample.

b. Findings

No findings of significance were identified.

### .3 Problem Identification and Resolution

#### a. Inspection Scope

The inspectors reviewed the licensee's self-assessments and condition reports related to the access control program to determine if identified problems were entered into the corrective action program for resolution.

These activities completed one inspection sample.

Corrective action reports related to access controls and HRA radiological incidents (non-performance indicator occurrences identified by the licensee in HRAs (<1Rem/hr) were reviewed. Staff members were interviewed and corrective action documents were reviewed to determine if follow-up activities were being conducted in an effective and timely manner, commensurate with their importance to safety and risk based on the following:

- 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.

These activities completed one inspection sample.

The inspectors evaluated the licensee's process for problem identification, characterization, and prioritization, and determined if problems were entered into the corrective action program and resolved. For repetitive deficiencies and/or significant individual deficiencies identified in the problem identification and resolution process, the inspectors determined if the licensee's self-assessment activities also identified and addressed these deficiencies.

These activities completed one inspection sample.

The inspectors discussed performance indicators with the radiation protection (RP) staff and reviewed data from the licensee's corrective action program to determine if there were any performance indicators for the occupational exposure cornerstone that had not been reviewed. There were none to evaluate.

These activities completed one inspection sample.

#### b. Findings

No findings of significance were identified.

.4 Job-In-Progress Reviews

a. Inspection Scope

The inspectors evaluated selected jobs being performed in radiation areas, potential airborne radioactivity areas, and HRAs for observation of work activities that presented the greatest radiological risk to workers and included areas where radiological gradients were present. This involved work that was estimated to result in higher collective doses and included replacement of vibration monitors on the RWCU pumps, preparation for troubleshooting the "C" TIP drive housing, preventive maintenance on the hydrogen recombiner drywell outboard isolation valve, and other selected work areas.

The inspectors reviewed radiological job requirements including RWP and work procedure requirements, and attended as-low-as-is-reasonably-achievable (ALARA) job briefings. Job performance was observed with respect to these requirements to determine if radiological conditions in the work areas were adequately communicated to workers through pre-job briefings and radiological condition postings.

These activities completed one inspection sample.

The inspectors also evaluated the adequacy of radiological controls including required radiation, contamination and airborne surveys for system breaches and for entry into locked HRAs and HRAs. RP job coverage, including direct visual surveillance by RP technicians along with remote monitoring and teledosimetry systems, and contamination control processes, was evaluated to determine if workers were adequately protected from radiological exposure.

These activities completed one inspection sample.

Work in HRAs having significant dose rate gradients was evaluated to evaluate the application of dosimetry to effectively monitor exposure to personnel and to determine if licensee controls were adequate. The inspectors evaluated RP job coverage which required control of worker locations based on radiation survey data and real time monitoring using teledosimetry in order to maintain personnel radiological exposure ALARA.

These activities completed one inspection sample.

b. Findings

No findings of significance were identified.

.5 High Risk Significant, High Dose Rate High Radiation Area, and Very High Radiation Area Controls

a. Inspection Scope

The inspectors reviewed the licensee's procedures and practices for high risk, high dose rate HRAs, and for very high radiation area access to determine if workers were adequately protected from radiological overexposure. Discussions were held with RP technicians and management concerning high dose rate HRA and very high radiation area controls and procedures. This was done to determine if any procedure modifications had substantially reduced the effectiveness and level of worker protection.

These activities completed one inspection sample.

The inspectors evaluated the controls including procedure Radiation Protection Conduct Manual MRP06, "Accessing and Control of High Radiation, Locked High Radiation and Very High Radiation Areas at Fermi 2," Revision 9, that were in place for special areas that had the potential to become very high radiation areas during certain plant operations. Discussions were held with RP technicians and managers to determine how the required communications between the RP group and other involved groups would occur beforehand, in order to allow corresponding timely actions to properly post and control the radiation hazards.

These activities completed one inspection sample.

During plant walkdowns, the posting and locking of entrances to high dose rate HRAs, and very high radiation areas were reviewed for adequacy.

These activities completed one inspection sample.

b. Findings

No findings of significance were identified.

.6 Radiation Worker Performance

a. Inspection Scope

During job performance observations, the inspectors evaluated radiation worker performance with respect to stated RP work requirements. This included field observations of station personnel accessing and working in a multiple hazard work environment (i.e., the work zone was a HRA, contaminated area, confined space area, high noise area, and elevated temperature area). The inspectors also evaluated whether workers were aware of the significant radiological conditions in their workplace, the RWP controls and limits in place, and that their performance had accounted for the level of radiological hazards present.

These activities completed one inspection sample.

Radiological problem reports, which found that the cause of an event resulted from radiation worker errors, were reviewed to determine if there was an observable pattern traceable to a similar cause and to determine if this perspective matched the corrective action approach taken by the licensee to resolve the reported problems.

These activities represented one inspection sample.

b. Findings

No findings of significance were identified.

.7 Radiation Protection Technician Proficiency

a. Inspection Scope

The inspectors observed and evaluated RP technician performance with respect to RP work requirements. This was done to evaluate whether the technicians were aware of the radiological conditions in their workplace, the RWP controls and limits in place, and if their performance was consistent with their training and qualifications with respect to the radiological hazards and work activities.

These activities completed one inspection sample.

Radiological problem reports, which found that the cause of an event was RP technician error, were reviewed to determine if there was an observable pattern traceable to a similar cause and to determine if this perspective matched the corrective action approach taken by the licensee to resolve the reported problems.

These activities completed one inspection sample.

b. Findings

No findings of significance were identified.

**4. OTHER ACTIVITIES (OA)**

4OA1 Performance Indicator Verification (71151)

a. Inspection Scope

The inspectors sampled the licensee's PI submittals for the periods listed below. The inspectors used PI definitions and guidance contained in Revision 5 of Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," to verify the accuracy of the PI data. The following indicators were reviewed:

- Occupational Exposure Control Effectiveness.

The inspectors reviewed the licensee's assessment of the PI for occupational radiation safety to determine if indicator related data was adequately assessed and reported during the previous four quarters. The inspectors compared the licensee's PI data with the condition report database, reviewed radiological restricted area exit electronic dosimetry transaction records and discussed data collection and analysis methods for PIs with licensee representatives.

These activities completed one inspection sample.

- Reactor Coolant System Specific Activity.

The inspectors reviewed chemistry department records including isotopic analyses for selected dates in 2006 through May 2007 to determine if the greatest dose equivalent iodine values determined for Unit 2 during steady state operations corresponded to the values reported to the NRC. The inspectors also reviewed selected dose equivalent iodine calculations including the application of dose conversion factors as specified in plant TSs. Additionally, the inspectors accompanied a chemistry technician and observed the collection, preparation and analysis of RCS samples to evaluate compliance with the licensee's sampling procedures. Further, sample analyses and calculation methods were discussed with chemistry staff to determine their adequacy relative to TSs, licensee procedures and industry guidelines.

These activities completed one inspection sample.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

.1 Routine Review of Identification and Resolution of Problems

a. Inspection Scope

As 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 corrective action system at an appropriate threshold, adequate attention was being given to timely corrective actions, and adverse trends were identified and addressed.

b. Findings

No findings of significance were identified.

.2 Annual In-Depth Review: CARD 07-23750, Water in RCIC Turbine Oil

a. Inspection Scope

The inspectors reviewed the events and circumstances surrounding the discovery of water in the RCIC turbine oil on July 5, 2007, because unexplained oil level fluctuations were a subject of the inspectors' semi-annual trend review in Section 4OA2.2 of inspection report 05000341/2007004. The licensee entered the issue into their corrective action program as CARD 07-23750 and completed an apparent cause evaluation. The inspectors reviewed the apparent cause evaluation to ensure the cause of the condition was thoroughly evaluated, appropriate corrective actions were either taken or planned, and corrective actions were appropriately prioritized.

These activities completed one problem identification and resolution review inspection annual sample.

b. Findings

No findings of significance were identified related to the problem identification and resolution aspect of this inspection; however, one licensee-identified violation related to this issue is documented in Section 4OA7 of this report.

4OA3 Followup of Events and Notices of Enforcement Discretion (71153)

.1 Water in RCIC Lube Oil System

a. Inspection Scope

On July 5, 2007, the inspectors responded to a notification that operations declared the RCIC pump inoperable due to high water content found in a turbine oil sample. The licensee formed an emergent issues team and determined that two leaking steam admission valves allowed steam to enter the turbine casing where it then passed through the shaft seals into the bearing oil reservoirs. The oil then drained to the lube oil sump reservoir at the base of the turbine.

The inspectors reviewed the facts and circumstances surrounding the issue including the most probable time period when the water intrusion began. The inspectors performed independent calculations to estimate water leakage rates and reviewed the physical piping configuration to determine when pump availability would likely have been compromised. The inspectors independently assessed the increase in plant risk due to the unavailability of the RCIC pump during the steam admission valve repairs as documented in Section 1R13 of this report. In addition, the inspectors performed an in-depth review of the problem identification and resolution aspects of this issue as identified in Section 4OA2.2 of this report.

The inspectors collected the information necessary to communicate the issue details to regional management for a determination of the appropriate agency response. The inspectors communicated the details regarding the event to management, risk analysts

and others in the Region as input to Management Directive 8.3 for determining the need for a supplemental inspection. No additional inspection resources were deemed necessary.

These activities completed one event follow-up inspection sample.

b. Findings

No findings of significance were identified related to the event classification aspects of this inspection; however, one licensee-identified violation related to this issue is documented in Section 4OA7 of this report.

.2 Pressurization of Non-Interruptible Air Supply

a. Inspection Scope

On September 5, 2007, maintenance personnel were performing installation of hot taps and line stops on the station air system with vendor support. The isolation valves were unable to isolate the west air receiver tank so maintenance could be performed on the receiver tank. Licensee maintenance personnel were to support the vendor who installed two 2-inch hot taps, one 6-inch hot tap, and two 8-inch hot taps per two work packages. Three line stops were to be installed, two 8-inch line stops for isolation of the west station air receiver tank isolation valves and one 6-inch line stop for isolation and repair work of the west station air compressor isolation valve.

Through interviews, review of operations logs, and a review of the licensee's investigation, the inspectors determined that the following sequence of event occurred. Maintenance notified operations that the hot taps had been completed and they were ready to install the line stops per the work packages. Operations gave permission for maintenance to proceed with this work. Operations then stopped work on the 6-inch line stops when they realized the system lineup would not support the work. With maintenance support, the vendor installed two 8-inch line stops which isolated the west station air receiver tank. Upon installation of the second line stop, the equalizing valve was opened in order to seat the line stop. When the equalizing valve was opened, the west station air receiver was bled down causing the operating station air compressor to sense low system pressure. The sensed low station air pressure was due to a common pressure sensing header across both station air receivers.

As the workers bled down the west station air receiver tank in order to seat the line stop, the operating compressor continued to sense low system pressure and operated to restore system pressure. At 2053, operations received Division I and Division II control air dryer high pressure alarms and investigated the alarms. At 120 psig the station air compressor and system relief valves lifted relieving the actual high system pressure. Operations stopped the work in the field. The workers closed the equalizing valve and station air returned to normal pressure.

The inspectors reviewed the events and circumstances surrounding this issue to determine the effect, if any, on safety-related or risk-significant equipment. The

inspectors determined that the safety-related non-interruptible air system was potentially affected. Upon review of the system design and lineup at the time of the pressure transient, the inspectors determined that the transient was within the design limits for the non-interruptible air system.

The inspectors collected the information necessary to communicate the issue details to regional management for a determination of the appropriate agency response. The inspectors communicated the details regarding the event to management, risk analysts and others in the Region as input to Management Directive 8.3 for determining the need for a supplemental inspection. No additional inspection resources were deemed necessary.

These activities completed one event follow-up inspection sample.

b. Findings

No findings of significance were identified.

4OA6 Exit Meetings

.1 Exit Meeting Summary

On September 21, 2007, the inspectors presented the inspection results to Mr. J. Davis and other members of licensee management at the conclusion of the inspection. The inspectors asked the licensee whether any material examined during the inspection should be considered proprietary. No proprietary information was identified.

.2 Interim Exit Meetings

An interim exit meeting was conducted as follows:

- Occupational radiation safety program for access control to radiologically significant areas with Mr. J. Davis and other members of licensee management at the conclusion of the inspection on July 27, 2007.

4OA7 Licensee-Identified Violation

The following violation of very low safety significance (Green) was identified by the licensee and is a violation of NRC requirements which met the criteria of Section VI.A of the NRC Enforcement Policy.

- 10 CFR 50, Appendix B, Criterion XVI, requires that conditions adverse to quality be promptly identified and corrected. Contrary to this, from approximately February 2007 to July 5, 2007, the licensee failed to promptly identify and correct moisture intrusion into the RCIC turbine oil system. On July 5, 2007, the licensee discovered high water content in the RCIC turbine oil system during routine oil sampling. Review of the oil use database indicated water was leaking into the turbine oil system since at least February 2007. This was identified in

the licensee's corrective action program as CARD 07-23750. The licensee drained, flushed, refilled the oil system, and performed corrective maintenance on two turbine steam admission valves. This finding was of very low safety significance because a subsequent evaluation determined the high water content did not result in a loss of operability per Part 9900, "Technical Guidance, Operability Determination Process for Operability and Functional Assessment."

ATTACHMENT: SUPPLEMENTAL INFORMATION

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### Licensee

J. Davis, Chief Nuclear Officer  
J. Plona, Vice President, Nuclear Generation  
K. Hlavaty, Director, Nuclear Production  
L. Bugoci, CAP Manager  
T. Brown, Manager, Radiation Protection  
M. Caragher, Director, Engineering  
R. Gaston, Manager, Nuclear Licensing  
J. Janssen, PM Maintenance  
J. Korte, Manager, Nuclear Strategy  
J. Moyers, Manager Nuclear Quality Assurance  
J. Piccard, Manager, Radiological Protection/Chemistry  
J. Priest, Radiation Protection Supervisor  
K. Scott, Manager, Operations  
S. Stasek, Director, Nuclear Projects

#### NRC

C. Lipa, Chief, Division of Reactor Projects, Branch 4

## LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

### Opened and Closed

05000341/2007005-01      NCV      Inadequate Preventive Maintenance Deferral Evaluations  
(Section 1R15)

### 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 inspection report.

### **Section 1R04: Equipment Alignment**

Drawing 6M721-5733-1, Revision AS: Fire Protection Functional Operating Sketch  
Drawing M-5715-3, Revision M: Standby Feedwater System Functional Operating Sketch

### **Section 1R05: Fire Protection**

Control Room Personnel Evaluation Form, Shift No. 4, July 26, 2007  
Design Calculation DC-4921, Revision G: Appendix R Calculations; dated April 16, 2007  
Fire Protection Engineering Evaluation FPPE-03-0013: NFPA 13-1980 Noncompliance for  
Auxiliary Building, First Floor and Mezzanine Cable Tray Area Sprinkler System and  
Reactor Building, First Floor Railroad Unloading Area Sprinkler System;  
dated October 13, 2003  
Event Notification Form; dated July 26, 2007,  
Fire Department Support Request Form; dated March 21, 2003  
Procedure 20.000.22, Revision 37: Plant Fires  
Procedure FP-AB-3-14a, Revision 3: Auxiliary Building, East Battery Room,  
Zone 14, Elevation 643' 6"  
Fire Brigade Drill Scenario No. 18: Division I Battery Room 3<sup>rd</sup> Floor Auxiliary Building  
Elevation 643' 6"

### **Section 1R11: Licensed Operator Requalification**

Procedure 20.000.19, Revision 35: Shutdown from Outside the Control Room  
Course LOR Simulator Scenario SS-OP-202-0761

### **Section 1R12: Maintenance Effectiveness**

Archive LCO Log for Diesel Firewater Pump: June 2005 through June 2007  
Archive Narrative Log for Diesel Firewater Pump: July 18, 2005, through June 18, 2007  
CARD 06-20614: Maintenance Rule Functional Failures for Diesel Firewater Pump June 2005  
through June 2007  
CARD 06-23159: RCIC Pump Outboard Bearing Seal Leaking; dated May 5, 2006  
CARD 06-24680: Incorrect Wiring Found on Breaker for Event V360960730;  
dated July 18, 2006  
CARD 06-25404: Evaluation of the impact of Contaminants on ESF Charcoal Filters;  
dated August 22, 2006  
CARD 06-27376: Improper Installation of Raychem; dated November 15, 2006  
CARD 07-20207: UFSAR Statements Not Properly Implemented in Alarm  
Response Procedures; dated January 12, 2007  
CARD 07-20537: AFCC 1 Selected for PM Event F400070100; dated January 30, 2007  
CARD 07-21127: Discharge Damper for X4103C012 South Switchgear Room Damper;  
dated February 26, 2007

CARD 07-21258: RCIC Trip Throttle Valve Will Not Relatch with Motor or Handwheel;  
dated March 4, 2007

CARD 07-21258: Apparent Cause Evaluation, PMT Failure: E5150F059 Would Not Re-Latch  
Following Maintenance

CARD 07-21458: Failed PMT Due to Excessive Deadband in RCIC Turbine Oil Filter Switch;  
dated March 13, 2007

CARD 07-21552: Indication for EDG 11 Switchgear Room Exhaust Damper Shows Dual When  
Closed; dated March 18, 2007

CARD 07-22514: Low Calculated Margin in RHR Complex Division I Pump Room Ventilation  
Fan Flow; dated May 8, 2007

CARD 07-23549: Closed Limit Switch for X4103C012 South Switchgear Room Fan is Sticky;  
dated June 26, 2007

CARD 07-24257: Limit Switch Problems on EDG 11 Engine Room Fans; dated August 1, 2007

Maintenance Rule Functional Failure Evaluation 1303411, Version 2: CARD 07-24282;  
dated August 10, 2007

Maintenance Rule Functional Failure Evaluation 1301843, Version 4: CARD 07-23458;  
dated June 28, 2007

Maintenance Rule Functional Failure Evaluation 1301645, Version 5: CARD 07-23194;  
dated June 21, 2007

Maintenance Rule Functional Failure Evaluation 1277334, Version 3: CARD 06-27306;  
dated November 21, 2006

Maintenance Rule Functional Failure Evaluation 1277330, Version 1: CARD 06-27359;  
dated November 21, 2006

Maintenance Rule Functional Failure Evaluation 1276491, Version 3: CARD 06-26865;  
dated November 6, 2006

Maintenance Rule Functional Failure Evaluation 1274566, Version 1: CARD 06-26411;  
dated October 5, 2006

Maintenance Rule Functional Failure Evaluation 1255944, Version 3: CARD 06-24180;  
dated June 28, 2006

Maintenance Rule Functional Failure Evaluation 1243092, Version 1: CARD 05-27067;  
dated January 3, 2006

Maintenance Rule Functional Failure Evaluation 1242496, Version 1: CARD 05-26790;  
dated December 16, 2005

Maintenance Rule Functional Failure Evaluation 1241343, Version 1: CARD 05-26487;  
dated December 1, 2005

Maintenance Rule Functional Failure Evaluation 1238355, Version 1: CARD 05-00445;  
dated October 24, 2005

Maintenance Rule Functional Failure Evaluation 1238351, Version 3: CARD 05-00445;  
dated October 24, 2005

Maintenance Rule Functional Failure Evaluation 1237615, Version 1: CARD 05-25605;  
dated October 11, 2005

Maintenance Rule Functional Failure Evaluation 1237572, Version 1: CARD 05-25513;  
dated October 11, 2005

Maintenance Rule Functional Failure Evaluation 1237562, Version 1: CARD 05-25413;  
dated October 11, 2005

Maintenance Rule Functional Failure Evaluation 1237208, Version 4: CARD 05-25355;  
dated October 27, 2005

Maintenance Rule Scope Determination for SSCS; dated February 14, 1995  
Temporary Change Notice T11477, Procedure 46.000.197: GEMAC Model 50-563  
Proportional Amplifier Calibration, Revision 25, dated September 13, 2007

**Section 1R13: Maintenance Risk Assessment and Emergent Work Evaluation**

Downpower July 28, 2007, Timeline; dated July 18, 2007  
Fermi Plan of the Day for Division 2/Non-division Work Week; dated July 16, 2007  
Fermi Plan of the Day for Division 2/Non-division Work Week; dated July 20, 2007  
Fermi Plan of the Day for Division 2/Non-division Work Week; dated July 23, 2007  
Fermi Plan of the Day for Division 2/Non-division Work Week; dated July 27, 2007  
Fermi Plan of the Day for Division 2/Non-division Work Week; dated August 13, 2007  
Fermi Plan of the Day for Division 2/Non-division Work Week; dated August 17, 2007  
Fermi Plan of the Day for Division 2/Non-division Work Week; dated August 20, 2007  
Fermi Plan of the Day for Division 2/Non-division Work Week; dated August 24, 2007  
Scheduler's Evaluation for Fermi 2; dated July 17, 2007  
Scheduler's Evaluation for Fermi 2; dated July 18, 2007  
Scheduler's Evaluation for Fermi 2; dated July 19, 2007  
Scheduler's Evaluation for Fermi 2; dated July 25, 2007  
Scheduler's Evaluation for Fermi 2; dated July 26, 2007  
Scheduler's Evaluation for Fermi 2; dated July 27, 2007  
Scheduler's Evaluation for Fermi 2; dated August 13, 2007  
Scheduler's Evaluation for Fermi 2; dated August 15, 2007  
Scheduler's Evaluation for Fermi 2; dated August 17, 2007  
Scheduler's Evaluation for Fermi 2; dated August 20, 2007  
Scheduler's Evaluation for Fermi 2; dated August 22, 2007  
Scheduler's Evaluation for Fermi 2; dated August 24, 2007  
Scramble Recovery Checklist; dated July 17, 2007  
Scramble Recovery Checklist; dated July 18, 2007  
Scramble Recovery Checklist; dated July 19, 2007  
Scramble Recovery Checklist; dated July 25, 2007  
Scramble Recovery Checklist; dated July 26, 2007  
Scramble Recovery Checklist; dated July 27, 2007

**Section 1R15: Operability Evaluations**

Apparent Cause Evaluation Template and Self-Check List, Card Number 07-23750  
CARD 02-19868: PM Program Enhancement, Risk Assessment Matrix; dated October 7, 2002  
CARD 03-01279: R30NA80 Sensor is Gross Threaded and Leaning  
CARD 05-21423: Cross Threaded Thermowell; dated March 3, 2005  
CARD 06-27779: EQ Qualified Life of Grayboot Connector Will Expire, Must Replace  
During RF12  
CARD 07-23750: RCIC Inoperable Due to Excessive Water Content in RCIC Turbine Oil  
Sample; dated July 5, 2007  
CARD 07-23903: NRC Resident Identified that the Washers for the Mounting Bolts for EECW  
Heat Exchangers C & D are not installed  
CARD 07-23914: RCIC Quad - RBSB; dated July 15, 2007  
CARD 07-24284: NRC Concern - PM Deferrals; dated August 2, 2007  
Design Calculation Number DC-2950: Emergency Equipment Cooling Water System,  
Subsystem, EECW-12; dated April 7, 2000

Design Calculation Number DC-2950: Pipe Stress Analysis of EECW Return Line to Division 1 HX P4400B001C for M-3347-1, M-4624-1 and M-3189-1  
Design Calculation Number DC-6051: P4400B001A / B - Structural Reactions for EECW Heat Exchangers; dated September 18, 1999  
Design Calculation Number DC-6198: Base Plate and Concrete Anchor Design for EECW Backup Heat Exchangers; dated August 23, 2004  
Drawing No. 32299-1862, Revision 1: MX25-BFD Design and Arrangement Drawing  
Drawing No. 6C721-4888, Revision A: Reactor Building EECW Plate Heat Exchanger Base Plate and Supporting Beams Elevation 613' 6"  
Drawing No. 6M721-5709-2, Revision F: RCIC Turbine Lube Oil/Control Oil Functional Operating Sketch  
Drawing No. 6M721-5734, Revision AU: Emergency Diesel Generator System Functional Operating Sketch  
EDP 30530, Revision A: Index Item No. A1, Revision A, dated February 27, 2004  
EDP 30530, Revision A: Index Item No. 4, Revision A, dated February 27, 2004  
Engineering Support Conduct Manual MES 51, Revision 5: Preventive Maintenance Program  
Environmental Qualification Maintenance and Surveillance Requirement for EQ1-EF2-323 Grayboot Models GB-1, GB-2, GB-3  
Environmental Qualification Assessment EQ1-EF2-323-002, Revision 0; 12/5/06  
Oil Addition for E51; dated July 6, 2007  
PM Deferral Approval 1280381; dated January 10, 2007  
PM Deferral Approval 1280625; dated January 22, 2007  
PM Deferral Approval 1280820; dated January 31, 2007  
PM Deferral Approval 1284302; dated February 7, 2007  
PM Deferral Approval 1284309; dated February 7, 2007  
PM Deferral Approval 1299375; dated April 11, 2007  
PM Deferral Approval 1300439; dated May 11, 2007  
PM Deferral Approval 1300521; dated May 15, 2007  
PM Deferral Approval 1300626; dated May 17, 2007  
PM Deferral Approval 1300438; dated May 11, 2007  
PM Deferral Approval 1300477; dated May 14, 2007  
PM Deferral Approval 1287003; dated February 8, 2007  
PM Deferral Approval 1290392; dated February 12, 2007  
PM Deferral Approval 1299500; dated April 19, 2007  
PM Deferral Approval 1299761; dated July 31, 2007  
PM Deferral Approval 1300500; dated May 15, 2007  
PM Deferral Request 1209307; dated November 18, 2004  
PM Deferral Request 1210575; dated November 30, 2004  
PM Deferral Request 1276157; dated January 17, 2007  
Part 7:--Z0 Activity: Z0 Instruction  
Part 7: Pre Sign-On Activity; RR Instruction  
RCIC Surveillance Data  
Review of HX Design Calc DC-6198 and Capacity of 1 ½" O.D. Baseplate Mounting Bolts  
Structural Analysis Report T-N-990901-2, Revision 0: EECW System Heat Exchangers-Fermi 2  
Vendor Manual VME8-1.9.3: Ashcroft/Dresser, Pressure and Temperature Transmitters  
Work Request 000Z050492: WSL Drain Valve would not Close; dated February 9, 2005  
Work Request G174040100: Perform Valve Actuator Overhaul

Work Request H606040100: Perform Valve Internals Overhaul and AOV Diagnostic Testing; dated October 24, 2004

Work Request Viewer, Work Request 000Z061187: Level #4 Grease Refurb Actuator

Work Request Viewer, Work Request D368060100: Perform Maintenance and Calibration on the Air Coolant Temperature Control Loop on EDG #14

### **Section 1R19: Post-Maintenance Testing**

Drawing No. 61721-2045-56, Revision U: Internal and External Diagram RCIC Cabinet H11P621

Drawing No. 61721-2095-30, Revision L: Schematic Diagram Nuclear Instr A & B Testability Modification

Drawing No. 61721-2235-01, Revision V: Schematic Diagram RCIC System Notes, Relay Tabulation, and Power Distribution

Drawing No. 61721-2235-02, Revision S: Schematic Diagram RCIC System Logic Circuit, Part 1

Drawing No. 61721-2235-03, Revision Z: Schematic Diagram RCIC System Logic Circuit, Part 2

Drawing No. 61721-2235-04, Revision O: Schematic Diagram RCIC Turbine Governor and Trip and Throttle Valve and Remote Trip Circuit

Drawing No. 61721-2281-33, Revision G: Outline Division II ECCS Trip Unit Cabinet H21P083

Drawing No. 61721-2282-50, Revision O: Internal and External Wiring Diagram Division II ECCS Trip Unit Cabinet H21-PO83

EDP-35189: Replacement of the RCIC Warm-up Bypass Valve (E5150F095), Revision A

Procedure 35.000.230, Revision 26: Pressure Seal Gate Valve General Maintenance

Performance Evaluation Procedure 47.306.05: VIPER 20 Diagnostic System

Operating Procedure, Revision 2

Operator Log; dated July 9, 2007

PIS E5100M054, Subcomponent View: RCIC K54 Relay

PIS E5100M054, Seismic View: RCIC K54 Relay

Procedure 35.000.216: Valve Repacking; Revision 33

Procedure 35.000.224, Revision 34: Alignment and Tension Adjustment of V-Belt Driven Equipment

Procedure 35.318.017, Revision 43: Inspection Testing of Multi-Contact Auxiliary Relays

Procedure 35.329.00, Revision 2: General Maintenance of 480 Volt AC Motors

Procedure 46.602.001, Revision 23: SRM Operational Adjustment

Surveillance Performance Form for Procedure No. 24.206.01: RCIC Run

Surveillance Performance Form for Procedure 44.030.252: ECCS - Reactor Vessel

Water Level (Levels 1, 2, and 8), Division 2 Channel B Functional Test

Surveillance Performance Form for Procedure 44.010.104: SRM A Channel Calibration

Maintenance on E5150F095; Revision 65; dated July 16, 2007

Surveillance Procedure 24.206.01: RCIC System Pump and Valve Operability Test; Rev. 65

Work Request Revision Form A430050100; dated July 9, 2007

WO No. 24207433: Disassemble and Repair E5150F045; dated July 6, 2007

WO No. 24630141: 02-SRM A is Erratic and Period Meter is Spiking; dated August 1, 2007

WO No. 24935591: Replace Valve E5150F095; dated July 16, 2007

WO No. 25322214: Division 2 SGT Room Cooler Noise/High Vibrations; dated August 17, 2007

### **Section 1R22: Surveillance Testing**

Calibration Specification Sheet B21K602B-SS; dated September 10, 2007  
CARD 07-25123: B21K602B (NB RPV Jet Pump Flow B Blow Summer) Was Outside of LAT; dated September 12, 2007  
Design Calculation Number DC-4522: Reactor Dome Pressure Instrumentation Surveillance Procedure Validation  
Licensing Change Request 07-054-TSB: Technical Specification Bases, Add Detail to Describe Process for Determining settings for LPRMs using calculations based on TIP data  
Licensing Change Request 07-055-TRM: Technical Requirements Manual, Revise Operability Requirement to Specify the Minimum Number of Scanned Location for LPRM Calibration  
Surveillance Performance Form: Job 0997070729, Perform 54.000.03, Sect 6.1 and 6.5  
Control Rod Scram Insert Time Test  
Surveillance Procedure 54.000.03, Revision 47: Control Rod Scram Insert Time Test  
Surveillance Procedure 44.030.270, Revision 31: ECCS - Reactor Steam Dome Pressure-RHR and CSS Injection Permissive, Division 2, Channel D Functional Test  
Vendor Document: GE Nuclear Energy NEDC-32694P-A, Class III; dated August 1999  
Procedure 46.000.197: GEMAC Model 50-563 Proportional Amplifier Calibration, Revision 25; dated November 24, 1998  
Temporary Change Notice T-11477, Procedure 46.000.197: GEMAC Model 50-563 Proportional Amplifier Calibration, Revision 25; dated September 12, 2007  
WO 0768070808: Perform 44.030.270 ECCS Reactor Steam Dome Pressure (RHR-CSS Inject) Division 2, Channel D, CF  
WO B464070100: Calibrate Reactor Vessel Jet Pump Flow Loop 'B'; Scheduled Start September 12, 2007

### **Section 1EP6: Drill Evaluation**

RERP Drill Package - Scenario 44, August 22, 2007  
Sequence of Events, August 22, 2007

### **Section 2OS1: Access Control to Radiologically Significant Areas**

CARD 06-24908: High Radiation Area Sign Found Down On Floor in Center Heater Drain Pump Room by RPS; dated July 28, 2006  
CARD 07-24065: Purple Paint on Come-Along Tool Found While Performing Rebuild in Building 41 Located Outside RRA; dated July 22, 2007  
Focused Self-Assessment NPRP-07-0134: Access Control for Radiologically Significant Areas; dated July 6, 2007  
Positive Body Count Investigations Selected Records; dated Various 2006 - 2007  
PTP 63.000.100, Revision 23: Radiation Work Permits  
PTP 67.000.101, Revision 24: Performing Surveys and Monitoring Work  
Radiation Protection Conduct Manual MRP06: Accessing and Control of High Radiation, Locked High Radiation and Very High Radiation Areas at Fermi 2, Revision 9  
Radiological Pre-Job Briefing Form: Entry into N/S RWCU Pump Room for Vibes; 07/24/07  
Risk Management Plan: Install Vibration Sensors on North and South RWCU Pumps and Motors; Undated  
RWP 071006, Ship and Receive Radioactive Material: Process Waste and Laundry  
RWP 071009, Install/Replace Vibration Monitors in the North and South Reactor Water Clean Up Pump Rooms

RWP 071012, Mini Preventive Maintenance on the Hydrogen Recombiner Drywell Outboard Isolation Valve (T4804F605A)

RWP 071022, TIP Drive Mechanisms "A to E": Clean, Inspect, and Lubricate. Includes TIP Axial Alignment

RWP 071046, Support of the SFP Re-Rack Project  
Shift Manager's Meeting Agenda; dated July 24, 2007

#### **Section 40A1: Performance Indicator Verification**

Chemistry Data Management Computer Program: RCS Dose Equivalent Iodine; dated May 2006 through July 2007

Chemistry Gamma Spectroscopy: RCS/DEI Data Sheets; dated July 18, 2007

Dose Alarm Trend Report; dated January 01, 2006, through July 26, 2007

PTP 73.714.01, Revision 2: Plant Process Sampling

PTP 74.000.19, Revision 21: Chemistry Routine Surveillances

PTP 76.000.05, Revision 15: Operation of the Chemistry Gamma Spectroscopy Systems

PTP 76.000.34, Revision 10: Reactor Coolant Analysis

Technical Specification 3.4.7, Amendment No. 163; RCS Specific Activity and Bases Documents

WI-RP-009, Rev. 0: Work Instruction for Determining the Radiation Protection NRC Pls

#### **Section 40A2: Identification and Resolution of Problems**

CARD 07-23750: RCIC Inoperable Due to Excessive Water Content in RCIC Turbine Oil Sample; dated July 5, 2007

CARD 06-23159: RCIC Pump Outboard Bearing Seal Leaking; dated May 5, 2006

CARD 07-21258: RCIC Trip Throttle Valve Will Not Relatch with Motor or Handwheel; dated March 4, 2007

CARD 07-21258: Apparent Cause Evaluation, PMT Failure: E5150F059 Would Not Re-Latch Following Maintenance

#### **Section 40A5: Other Activities**

Drawing 6M721-5730-1: Station Air System (Turbine Building); Revision AO

Engineering Design Package EDP-34382: Installation of Line Stops to Allow Repair on the Station Air Compressor Discharge Isolation Valves, the Air Receivers Inlet and Outlet Isolation Valves; dated March 14, 2007

WO 000Z070066: Install Line Stops per EDP-34382

WO 24798527: Install Line Stops to Rework P5000F016B; dated September 5, 2007

Technical Evaluation TE-P50-07-030: Impact of Higher Than Normal Pressure on the Station Air System; dated September 7, 2007

## LIST OF ACRONYMS USED

ALARA	As Low As Is Reasonably Achievable
CARD	Condition Assessment Resolution Document
CFR	Code of Federal Regulations
DRP	Division of Reactor Projects
DRS	Division of Reactor Safety
EDG	Emergency Diesel Generator
EDP	Engineering Design Package
HRA	High Radiation Area
IMC	Inspection Manual Chapter
LER	Licensee Event Report
NCV	Non-Cited Violation
NRC	Nuclear Regulatory Commission
PI	Performance Indicator
PMT	Post-Maintenance Testing
RCIC	Reactor Core Isolation Cooling
RHR	Residual Heat Removal
RP	Radiation Protection
RWCU	Reactor Water Cleanup
RWP	Radiation Work Permit
SDP	Significance Determination Process
SFP	Spent Fuel Pool
SGT	Standby Gas Treatment
TIP	Traversing In-Core Probe
TS	Technical Specifications
UFSAR	Updated Final Safety Analysis Report
WO	Work Order