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

January 30, 2009

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 05000341/2008-005

Dear Mr. Davis:

On December 31, 2008, the U.S. Nuclear Regulatory Commission (NRC) completed an integrated inspection at your Fermi Power Plant, Unit 2. The enclosed report documents the inspection findings, which were discussed on January 14, 2009, with Mr. K. Hlavaty 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, two NRC-identified findings of very low safety significance were identified, one of which involved a violation of NRC requirements. However, because of its very low safety significance, and because the issue was entered into your corrective action program, the NRC is treating the issue as a Non-Cited Violation (NCV) in accordance with Section VI.A.1 of the NRC Enforcement Policy.

If you contest the subject or severity of this NCV, 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 available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

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

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

Enclosure: Inspection Report 05000341/2008-005
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
G. Williams, Director, Monroe County
Emergency Management Division
Supervisor - Electric Operators
T. Strong, State Liaison Officer
Wayne County Emergency Management Division

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Letter to J. Davis from J. Giessner dated January 30, 2009

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U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50-341
License No:	NPF-43
Report No:	05000341/2008-005
Licensee:	Detroit Edison Company
Facility:	Fermi Power Plant, Unit 2
Location:	Newport, MI
Dates:	October 1 through December 31, 2008
Inspectors:	R. M. Morris, Senior Resident Inspector T. C. Steadham, P.E., Resident Inspector M. Bielby, Senior Operations Engineer R. Jickling, Senior Emergency Preparedness Inspector M. Jones, Reactor Inspector J. Rutkowski, Senior Resident Inspector, Davis-Besse A. Wilson, Resident Inspector, Davis-Besse R. Winter, Reactor Inspector
Approved by:	J. Giessner, Branch Chief Branch 4 Division of Reactor Projects

Enclosure

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SUMMARY OF FINDINGS

IR 05000341/2008-005; 10/01/2008 – 12/31/2008; Fermi Power Plant, Unit 2; Annual Heat Sink Performance; Surveillance Testing; and Other Activities.

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

A. NRC-Identified and Self-Revealed Findings

Cornerstone: Mitigating Systems

- Green. A finding of very low safety significance was identified by the inspectors for the failure to test and/or inspect the safety-related non-interruptible air supply (NIAS) control air compressor (CAC) aftercoolers in accordance with Generic Letter (GL) 89-13 commitments. The licensee inspected the heat exchangers every 10 to12 years which was not in accordance with their GL 89-13 commitment to frequently inspect them. This finding was entered into the licensee's corrective action program (CAP) as condition assessment and resolution document (CARD) 08-27672. Corrective actions planned included changing the frequency to comply with the licensee's GL 89-13 commitment. No violation of regulatory requirements occurred.

  The finding was determined to be more than minor because the finding was associated with the Mitigating Systems Cornerstone attribute of Procedure Quality and affected the cornerstone objective of ensuring the reliability and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was of very low safety significance because the finding was confirmed not to result in a loss of operability or functionality. No cross-cutting aspect was assigned because this issue is not indicative of current plant performance. (Section 1R07.1(1))

- Green. A finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," was identified by the inspectors for the failure to perform adequate testing for both the Division 1 and 2 CACs. Specifically, the licensee failed to incorporate appropriate acceptance criteria and failed to include appropriate test methodology in the test procedures for the safety-related CACs. Corrective actions planned included revising and/or re-performing the test procedures as necessary.

  The finding was more than minor because the finding was associated with the Mitigating Systems Cornerstone attribute of Procedure Quality and affected the cornerstone objective of ensuring the reliability and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was of very low safety significance because the finding was confirmed not to result in a loss of operability or

functionality. No cross-cutting aspect was assigned because this issue is not indicative of current plant performance. (Section 1R22.1(1))

B. Licensee-Identified Violations

No violations of significance were identified.

REPORT DETAILS

Summary of Plant Status

Fermi Unit-2 started this inspection period at full power where it remained there until December 7, 2008, when power was reduced to 65 percent to perform a rod pattern adjustment and stop valve testing. The plant was returned to 100 percent power that evening and remained there for the rest of the inspection period.

1. REACTOR SAFETY

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

1R01 Adverse Weather Protection (71111.01)

.1 Winter Seasonal Readiness Preparations

a. Inspection Scope

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

- Residual heat removal (RHR)/emergency diesel generator (EDG) complex heater and heater control systems; and
- Reactor building heating steam and ventilation controls.

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

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

.1 Quarterly Partial System Walkdowns

a. Inspection Scope

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

- Control center heating, ventilation, and air conditioning (CCHVAC) pump and valve lineup.

The inspectors selected this system based on its risk significance relative to the reactor safety cornerstones at the time it was inspected. The inspectors attempted to identify any discrepancies that could impact the function of the system and, therefore, potentially increase risk. The inspectors reviewed applicable operating procedures, system diagrams, UFSAR, Technical Specification (TS) requirements, outstanding work orders, condition reports, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have rendered the system incapable of performing its intended function. The inspectors also walked down accessible portions of the system 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.

This inspection constituted one partial system walkdown sample as defined in IP 71111.04-05.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

.1 Routine Resident Inspector Tours (71111.05Q)

a. Inspection Scope

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

- Reactor water cleanup (RWCU), heat exchanger room;
- Reactor building, fourth floor;
- Main control room and computer room, ventilation ductwork ceiling area; and
- RWCU, mezzanine.

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

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

b. Findings

No findings of significance were identified.

1R07 Annual Heat Sink Performance (71111.07)

.1 Heat Sink Performance

a. Inspection Scope

The inspectors reviewed the licensee's testing of Division 1 NIAS CAC aftercooler heat exchangers to verify that 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.

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

b. Findings

(1) Inadequate Heat Exchanger Inspection Frequency

Introduction: A Green finding of very low safety significance was identified by the inspectors for the failure to test and/or inspect the Division 1 and 2 NIAS CAC

aftercoolers in accordance with GL 89-13 commitments. No violation of regulatory requirements occurred.

Description: The CAC aftercoolers are closed-cycle, shell and tube air-to-water heat exchangers that utilize emergency equipment cooling water (EECW) on the shell side and are, therefore, included in the licensee's GL 89-13 program. GL 89-13 provides an exemption from the testing requirements for closed-cycle heat exchangers only if the chemistry control programs are confirmed to be adequate.

The licensee's response to GL 89-13 dated January 26, 1990, stated, in part, that they would develop a program based on the NRC recommended program described in Enclosure 2 of GL 89-13. The NRC recommended program allowed for frequent regular maintenance on the heat exchanger in lieu of testing. The initial frequency was to be once per year for a minimum of three years. The licensee created two preventative maintenance (PM) tasks to clean the CAC aftercoolers with an initial frequency of once every three years; however, through interviews with licensee staff, the inspectors learned that the PM frequency for the CAC aftercooler cleaning was changed, for unknown reasons, sometime before 1989 to once every 10 years, with a 25 percent float.

The Division 1 CAC aftercooler was cleaned under work request (WR) Q309940127 for the first time on September 28, 1998, when the tube bundle and aftercooler shell were cleaned. The aftercooler has not been cleaned since then. The Division 2 CAC aftercooler was last cleaned under WR Q312010100 on April 18, 2003. Notes from that WR indicate the exterior of the tube bundle and in between the tubes was dirty with a "sooty" appearance.

As documented in CARD 00-15292, on April 7, 2000, the adequacy of the chemistry control programs for the EECW system was confirmed not to be adequate as evidenced by the existence of black iron oxide in the water which plugged three room coolers. Corrective actions included chemically treating the water with a corrosion inhibitor and installing side stream filters to remove corrosion products.

The inspectors reviewed the vendor technical manual for the aftercoolers which recommended a yearly inspection of the aftercooler tube bundle because the baffling arrangement in the shell would have a tendency to settle out debris in the circulating water. The inspectors concluded that the licensee did not properly evaluate the change in periodicity of the aftercooler cleaning PM to once every ten years considering the history of aftercooler fouling and the vendor recommendations. Furthermore, the inspectors concluded that a frequency of once every 10 to 12 years was not "frequent" and was, therefore, not in accordance with the licensee's GL 89-13 commitments.

The licensee entered this issue into their CAP as CARD 08-27672. Corrective actions planned included changing the test/inspection frequency to once per five years and performing an inspection or performance test on both after coolers during the next available opportunity.

Analysis: The inspectors determined that the failure to test and/or inspect the Division 1 and 2 NIAS CAC aftercoolers in accordance with GL 89-13 commitments was a performance deficiency.

The finding was determined to be more than minor because the finding was associated with the Mitigating Systems Cornerstone attribute of Procedure Quality and affected the cornerstone objective of ensuring the reliability and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to perform frequent testing and/or inspection of the CAC aftercoolers could affect the ability of the aftercoolers to adequately perform their intended function because component degradation could go undetected.

The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," Table 4a for the Mitigation Systems Cornerstone because the finding was confirmed not to result in a loss of operability or functionality.

This finding did not have a cross-cutting aspect because the change in PM frequency was made over ten years ago.

Enforcement: No violation of regulatory requirements occurred because this issue represents failure to implement an NRC commitment. This finding was entered into the licensee's CAP as CARD 08-27672 (FIN 05000341/2008005-01).

1R11 Licensed Operator Requalification Program (71111.11)

.1 Resident Inspector Quarterly Review (71111.11Q)

a. Inspection Scope

On November 19, the inspectors observed a crew of licensed operators in the plant's simulator during licensed operator requalification examinations to verify that operator performance was adequate, evaluators were identifying and documenting crew performance problems, and training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

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

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

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

b. Findings

No findings of significance were identified.

.2 Annual Operating Test Results 71111.11B

a. Inspection Scope

The inspectors reviewed the overall pass/fail results of the individual Job Performance Measure operating tests, and the simulator operating tests (required to be given per 10 CFR 55.59(a)(2)) administered by the licensee from November 2008 through December 2008 as part of the licensee's operator licensing requalification cycle. These results were compared to the thresholds established in IMC 0609, Appendix I, "Licensed Operator Requalification Significance Determination Process." The evaluations were also performed to determine if the licensee effectively implemented operator requalification guidelines established in NUREG 1021, "Operator Licensing Examination Standards for Power Reactors," and 71111.11, "Licensed Operator Requalification Program." The documents reviewed during this inspection are listed in the Attachment.

This inspection constituted one incomplete sample as defined in IP 71111.11B.

b. Findings

No findings of significance 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:

- Primary containment radiation monitoring system; and
- R1400 electrical breaker issues.

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

- implementing appropriate work practices;
- identifying and addressing common cause failures;
- scoping of systems in accordance with 10 CFR 50.65(b) of the maintenance rule;
- characterizing system reliability issues for performance;
- charging unavailability for performance;
- trending key parameters for condition monitoring;
- ensuring 10 CFR 50.65(a)(1) or (a)(2) classification or re-classification; and

- verifying appropriate performance criteria for structures, systems, and components/functions classified as (a)(2) or appropriate and adequate goals and corrective actions for systems classified as (a)(1).

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

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

b. Findings

No findings of significance 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 Division 2 EECW/ultimate heat sink safety system outage (SSO) and emergent Division 2 CCHVAC fan corrective maintenance;
- Risk during underground cable excavation;
- Risk during EDG-14 SSO;
- Risk during RHR SSO; and
- Risk during Division 2 EECW/emergency equipment service water (EESW) SSO.

These activities were selected based on their potential risk significance relative to the Reactor Safety Cornerstone. As applicable for each activity, the inspectors verified that 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.

This inspection constituted five maintenance risk assessments and emergent work control samples as defined in IP 71111.13-05.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

.1 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following issues:

- CARD 08-25830, Valve disc failed to move when stroked with actuator;
- CARD 08-26528, Document basis for EDG room heaters being non-safety related;
- CARD 08-26651, Division 2 CCHVAC fan failed to start;
- CARD 08-26854, Turbine building HVAC unable to maintain negative pressure;
- CARD 08-22081, Core spray system evaluation; and
- CARD 08-27941, NRC Part 21 Notification – Tyco Electronics E7024 Time-delay relays.

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

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

b. Findings

No findings of significance were identified.

1R18 Plant Modifications (71111.18)

.1 Permanent Plant Modifications

a. Inspection Scope

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

- EDP 33771, Replace Division 1 and 2 NIAS room coolers and associated EECW piping.

This document and related documentation were reviewed for adequacy of the associated 10 CFR 50.59 safety evaluation screening, consideration of design parameters, implementation of the modification, post-modification testing, and relevant procedures, design, and licensing documents were properly updated. The inspectors observed completed work activities to verify that installation was consistent with the design control documents. The modification replaced both room coolers in the NIAS room with new units and replaced all EECW piping in the room with larger size piping. These modifications were necessary to improve room cooling capability because the old room coolers were susceptible to clogging with corrosion products in the EECW system.

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

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

.1 Post-Maintenance Testing

a. Inspection Scope

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

- Work Order (WO) 25995973, Semi-annual combustion turbine generator 11-1 post-maintenance tests;
- WO 286679655, Center station air compressor failed to start on first and second attempts;
- WO 28031788, RHR service water to reactor pressure vessel (RPV) injection check valve;
- Post-maintenance test for EDG-11 SSO;
- WR Q320080100, Replace suction and discharge valves on Division 1 NIAS compressor; and
- Post-maintenance test for P4400-F605A valve actuator maintenance.

These activities were selected based upon the structure, system, or component's ability to impact risk. The inspectors evaluated these activities for the following (as applicable): the effect of testing on the plant had been adequately addressed; testing was adequate for the maintenance performed; acceptance criteria were clear and demonstrated operational readiness; test instrumentation was appropriate; tests were performed as written in accordance with properly reviewed and approved procedures; equipment was returned to its operational status following testing (temporary modifications or jumpers required for test performance were properly removed after test completion), and test documentation was properly evaluated. The inspectors evaluated the activities against TSs, 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 that the problems were being corrected commensurate with their importance to safety. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

An NCV for the failure to perform adequate testing related to WR Q320080100 is documented in Section 1R22.1 of this report. No additional findings of significance were identified.

1R22 Surveillance Testing (71111.22)

.1 Surveillance Testing

a. Inspection Scope

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

- Procedure 27.129.04, Division 1 NIAS leakage/usage and compressor performance test (Routine);
- EECW / EESW pump and valve testing (Routine); and
- Procedure 24.202.01, E4150F600 high pressure coolant injection (HPCI) turbine steam supply line bypass valve test.

The inspectors 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 and demonstrate operational readiness consistent with the system design basis;
- was plant equipment calibration correct, accurate, and properly documented;
- were as-left setpoints within required ranges, and was the calibration frequency in accordance with TSs, the UFSAR, procedures, and applicable commitments;
- were measuring and test equipment calibrations current;
- was test equipment used within the required range and accuracy; were applicable prerequisites described in the test procedures satisfied;
- were tests performed in accordance with the test procedures and other applicable procedures;
- were test data and results accurate, complete, within limits, and valid;
- was test equipment removed after testing;
- where applicable, were test results not meeting acceptance criteria addressed with an adequate operability evaluation or the system or component declared inoperable;

- had prior procedure changes provided an opportunity to identify problems encountered during the performance of the surveillance or calibration test;
- was equipment returned to a position or status required to support the performance of its safety functions; and
- were all problems identified during the testing appropriately documented and dispositioned in the CAP

Documents reviewed are listed in the Attachment to this report.

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

b. Findings

(1) Inadequate Control Air Compressor Capacity Test Program

Introduction: A Green finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," was identified by the inspectors for the failure to adequately test the Division 1 and 2 safety related NIAS CACs and the failure to properly evaluate the results of the Division 1 test.

Description: During normal operation, control air to both safety-related and nonsafety-related components is supplied by the nonsafety-related control air system. During certain abnormal and emergency situations, the control air system would isolate from those safety-related components and the safety-related NIAS system would supply the required control and instrument air. UFSAR Sections 7.6.1.17.1 and 9.3.1.2 stated that the NIAS compressors automatically started when the control air system pressure dropped to 85 psig and that NIAS would be isolated from the station air and other non-safety-related plant systems if pressure dropped to 75 psig.

Licensee Procedures 27.129.01 and 27.129.02 provided the steps necessary to verify proper automatic functions of Division 1and 2 CACs, respectively, as required by UFSAR Section 9.3.1.4. The acceptance criteria contained in both procedures were that the CACs automatically started between 80 and 90 psig and that NIAS isolated between 70 and 80 psig. Consequently, those acceptance criteria were non-conservative with respect to the UFSAR requirements and were, therefore, not appropriate.

During the week of December 1, 2008, the licensee removed Division 1 NIAS from service to perform maintenance under WR Q320080100. On December 3, 2008, the licensee performed Procedure 27.129.02, "Division 2 Control Air Compressor Auto Start Test," as part of the return-to-service post-maintenance testing for the system. The acceptance criteria were 80-90 psig and 70-80 psig as described above with no notes in the procedure to indicate whether the compressor started or if NIAS isolated consistent with the description in the UFSAR.

The inspectors also identified a deficiency with other NIAS test procedures. Licensee Procedure 27.129.04, "Division 1 NIAS Leakage/Usage – Compressor Performance Test," measured the capacity of the Division 1 NIAS CAC during each refueling outage. Procedure 27.129.05 was similarly performed for the Division 2 NIAS CAC. Both procedures utilized the ideal gas law to determine the change in air mass in an air receiver over a measured time span to calculate compressor capacity in standard cubic

feet per minute (SCFM). To accomplish this, an operator would start and load the respective CAC, measure the time it took for the compressor to unload (which usually took two to four minutes), and then measure the ambient air temperature. The licensee calculated the compressor capacity from the increase in receiver air mass from the change in receiver pressure and ambient temperature.

Because the mass of air in the receiver was inversely proportional to the temperature, and because the air temperature would have increased as the receiver was pressurized, the change in receiver air mass would have been less than what was calculated. Consequently, the calculated compressor capacity would have been non-conservative. Because many factors could have affected the actual air receiver temperature, the error inherent in the test could have been as high as 40 percent.

The capacities recorded in the most recent tests were 104 and 119 SCFM for the Division 1 and 2 CACs, respectively. Utilizing this test data, the inspectors re-performed the compressor capacity calculations assuming a temperature increase from adiabatic compression. The inspectors concluded that the Division 1 and 2 CAC capacities could have been as low as 74 and 83 SCFM, respectively. Because the acceptance criterion was 100 SCFM, the inspectors questioned the operability of the compressors and the adequacy of the tests.

The licensee entered these testing issues into their CAP as CARDs 08-27833 and 08-28269 and concluded that although the test procedures did not adequately monitor compressor performance, both divisions remained operable. Per Design Calculation DC-4931, Revision G, "Non-Interruptible Air System Calculation," the maximum NIAS air demand was 95 SCFM. This value included 45 SCFM for the main steam isolation valve leakage control system which was abandoned in 2006. Therefore, the actual maximum NIAS demand was 50 SCFH which was less than the revised compressor capacities that the inspectors calculated.

The inspectors were also concerned that the error could mask component degradation that would otherwise warrant corrective actions. With such a large margin of error, the licensee's ability to obtain meaningful CAC performance trend data was compromised. Although licensee procedure MES-51, "Preventive Maintenance Program," required engineering to monitor the as-found condition of components and adjust the PM frequency as necessary, the ability to perform that monitoring was adversely affected by the inadequate capacity test. Corrective actions planned by the licensee included revising and re-performing the tests as necessary.

Analysis: The inspectors determined that the failure to perform adequate testing for both the Division 1 and 2 CACs was contrary to regulatory requirements and was a performance deficiency.

The finding was determined to be more than minor because the finding was associated with the Mitigating Systems Cornerstone attribute of Procedure Quality and affected the cornerstone objective of ensuring the reliability and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the large error with the test methodology adversely affected the licensee's ability to properly measure and trend compressor performance to identify potential component degradation.

The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, “Significance Determination Process,” Attachment 0609.04, “Phase 1 - Initial Screening and Characterization of Findings,” Table 4a, for the Mitigation Systems Cornerstone because the finding was confirmed not to result in a loss of operability or functionality. The inspectors determined that the most significant contributor to this finding was related to human performance errors that occurred when the licensee originally developed the test procedures in the late 1990’s. Therefore, no cross-cutting aspect was assigned because this issue is not indicative of current plant performance.

Enforcement: 10 CFR Part 50, Appendix B, Criterion XI, “Test Control,” requires, in part, that a test program shall be established to assure all testing required to demonstrate structures, systems, and components will perform satisfactorily in service is identified and performed in accordance with written test procedures which incorporate the requirements and acceptable limits contained in applicable design documents.

Contrary to the above, on November 11, 2007, the licensee failed to establish a test program that demonstrated the Division 1 CAC, a safety-related component, would perform its intended safety function. Specifically, the procedure used to measure CAC performance was not adequate for the intended purpose. Additionally, on December 3, 2008, the licensee failed to ensure that the Division 2 NIAS operated in accordance with the design bases. Because this violation was of very low safety significance and because it was entered into the licensee’s CAP as CARDs 08-27833 and 08-28269, this violation is considered to be an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy (NCV 05000341/2008005-02).

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

.1 Emergency Action Level and Emergency Plan Changes

a. Inspection Scope

Since the last NRC inspection of this program area, Emergency Plan, Revisions 34 and 35, and implementing procedure EP-101, "Classification of Emergencies," Revision 35, were implemented based on your determination, in accordance with 10 CFR 50.54(q), that the changes resulted in no decrease in effectiveness of the Plan, and that the revised Plan as changed continues to meet the requirements of 10 CFR 50.47(b) and Appendix E to 10 CFR Part 50. The inspectors conducted a sampling review of the Emergency Plan changes and a review of the Emergency Action Level changes to evaluate for potential decreases in effectiveness of the Plan. However, this review does not constitute formal NRC approval of the changes. Therefore, these changes remain subject to future NRC inspection in their entirety.

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

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

.1 Mitigating Systems Performance Index - Emergency AC Power System

a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index (MSPI) - Emergency AC Power System performance indicator (PI) for the period from the fourth quarter 2007 through the second quarter 2008. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the Nuclear Energy Institute (NEI) Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, were used. The inspectors reviewed the licensee's operator narrative logs, MSPI derivation reports, issue reports, event reports, and NRC integrated inspection reports for the period of the fourth quarter 2007 through the second quarter 2008 to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings of significance were identified.

.2 Mitigating Systems Performance Index - Residual Heat Removal System

a. Inspection Scope

The inspectors sampled licensee submittals for the MSPI – RHR system PI for the period from the second quarter 2007 through the second quarter 2008. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, MSPI derivation reports, event reports, and NRC integrated inspection reports for the period of the second quarter 2007 through the second quarter 2008 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 RHR system sample as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

.3 Mitigating Systems Performance Index - Cooling Water Systems

a. Inspection Scope

The inspectors sampled licensee submittals for the MSPI - Cooling Water Systems PI for the period from the second quarter 2007 through the second quarter 2008. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, MSPI derivation reports, event reports, and NRC integrated inspection reports for the period of the second quarter 2007 through the second quarter 2008 to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings of significance were identified.

.4 Reactor Coolant System Leakage

a. Inspection Scope

The inspectors sampled licensee submittals for the reactor coolant system (RCS) leakage PI for the period from the first quarter 2007 through the third quarter 2008. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, were used. The inspectors reviewed the licensee's operator logs, RCS leakage tracking data, issue reports, event reports, and NRC integrated inspection reports for the period of the first quarter 2007 through the third quarter 2008 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. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one RCS leakage sample as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

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

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

a. Inspection Scope

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, that adequate attention was being given to timely corrective actions, and that adverse trends were identified and addressed. Attributes reviewed included: the complete and accurate identification of the problem; that timeliness was commensurate with the safety significance; that 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 that 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 of significance were identified.

.2 Daily Corrective Action Program Reviews

a. Inspection Scope

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

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

b. Findings

No findings of significance were identified.

.3 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a review of the licensee's CAP and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors' review was focused on the licensee's human performance results, but also considered the results of daily inspector CAP item screening discussed in Section 4OA2.2 above, licensee trending efforts, and repetitive equipment issues. The inspectors' review nominally considered the six month period of July 1, 2008, through December 31, 2008, although some examples expanded beyond those dates where the scope of the trend warranted.

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

The inspectors reviewed the following items focusing on the current human performance cross-cutting issues:

- Second and Third Quarter 2008 Station Trend Report – The inspectors noted there was a decreasing number of CARDs coded as human performance documentation/procedures and human error problems; and
- Third Quarter 2008 Nuclear Quality Assurance Quarterly Report – The inspectors reviewed the licensee's evaluation of the "Functional Area Performance" noting the assessment was insightful and provided detailed examples of the staff's performance. The issues in the report were consistent with the inspectors' observations.

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

b. Findings

No findings of significance were identified.

.4 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 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 operator workarounds. The documents listed in the Attachment were reviewed to accomplish the objectives of the inspection. 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 inspection constituted one operator workaround annual inspection sample as defined in IP 71152-05.

b. Findings

No findings of significance were identified.

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

.1 Unplanned HPCI Inoperability Due to Bypass Valve Abnormalities

a. Inspection Scope

The inspectors reviewed the plant and licensee response to a valve failure that rendered HPCI inoperable on December 4, 2008. The licensee was performing a routine HPCI surveillance test when operators lost valve position indication to the HPCI turbine steam supply line bypass valve, E4150F600, while attempting to open the valve. Because this valve is a primary containment isolation valve that is required to remain open when HPCI is in standby and the ability of the valve to close was suspect, the licensee closed the HPCI steam supply inboard containment isolation valve, E4150F002, which rendered HPCI inoperable and the licensee made an eight-hour report pursuant to 10CFR50.72. Troubleshooting identified an auxiliary relay in the motor control center with degraded contacts. The relay was replaced and the valve was restored to service.

The inspectors reviewed the events and circumstances surrounding the event, immediate operator actions, troubleshooting, repairs, and subsequent return to service to ensure applicable procedures, TSs, design requirements, and applicable regulatory requirements were met. The inspectors reviewed the repairs made to the valve, including post-maintenance testing, to ensure the cause of the failure was identified and appropriate corrective actions were completed. The inspectors reviewed system operating procedures, design drawings, TSs, the UFSAR, and other documents to ensure the HPCI design basis requirements were maintained.

Documents reviewed in this inspection are listed in the Attachment.

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

b. Findings

No findings of significance were identified.

4OA5 Other Activities

.1 Quarterly Resident Inspector Observations of Security Personnel and Activities

a. Inspection Scope

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

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

b. Findings

No findings of significance were identified.

.2 Follow-up of Backfit Activities

a. Inspection Scope

As documented in Inspection Report 05000341/2008008, the inspectors identified a concern with respect to the adequacy of the degraded voltage protection scheme. In correspondence dated June 11, 1981, the licensee described the time delay settings for the degraded voltage relays; however, they did not discuss the impact of receiving a safety injection signal during degraded voltage conditions. At that time, the NRC did not identify this oversight, and had subsequently determined the degraded voltage scheme was acceptable. As documented in Inspection Report 05000341/2008008, the inspectors determined that the current degraded voltage protection scheme is inadequate in that the time delay relay settings for the degraded voltage relays for both divisions could impact the emergency core cooling system injection timing requirements. Additionally, for a short period of time under degraded voltage conditions, voltage could be too low for proper operation of safety-related motors but high enough to prevent EDG start. After further review, the inspectors determined that the provisions of 10 CFR 50.109(a)(4), were applicable and that a modification was necessary to bring a facility into compliance with the rules or orders of the NRC. The licensee was requested to respond with a description of the intended actions to address the noncompliance including a proposed schedule to complete those actions.

In a letter dated August 4, 2008, from J. Plona (ADAMS Accession No. ML0822502561), the licensee stated the installation of the modification which will bring the plant into full compliance with General Design Criteria 17 will be completed by the end of the

fourteenth refueling outage in 2010. As stated in Inspection Report 05000341/2008008, this issue was not dispositioned as a violation because the NRC had accepted the inadequate degraded voltage protection scheme in 1981 and in 1985. However to ensure actions are completed to correct the condition, this issue is considered open pending completion of the licensee's modification. (VIO 05000341/2008005-03)

.3 Implementation of Temporary Instruction 2515/176, "Emergency Diesel Generator TS Surveillance Requirements Regarding Endurance and Margin Testing"

a. The objective of Temporary Instruction (TI) 2515/176 was to gather information to assess the adequacy of nuclear power plant EDG endurance and margin testing as prescribed in plant-specific TSs. The inspectors reviewed the licensee's TSs, procedures, and calculations and interviewed licensee personnel to complete the TI. The information gathered for this TI was forwarded to the Office of Nuclear Reactor Regulation for further review and evaluation on December 17, 2008. This TI is complete at Fermi Power Plant, Unit 2; however, this TI 2515/176 will not expire until August 31, 2009. Additional information may be required after review by the Office of Nuclear Reactor Regulation.

b. Findings

No findings of significance were identified.

4OA6 Management Meetings

.1 Exit Meeting Summary

On January 14, 2009, the inspectors presented the inspection results to Mr. K. Hlavaty 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 TI 2515/176 with Mr. R. Johnson, Manager Nuclear Licensing, and other licensee staff via telephone on November 24, 2008.
- The licensed operator requalification training biennial written examination and annual operating test results with Mr. M. Doucet, Operations Training Manager, on December 22, 2008.
- The annual review of Emergency Action Level and Emergency Plan changes with the licensee's Radiological Emergency Response Planning Supervisor and Coordinator, Ms. R. Zipfel and Mr. G. Garber, via telephone on December 22, 2008.

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

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

K. Hlavaty, Plant Manager, Fermi 2
M. Doucet, Operations Training Manager
G. Garber, Radiological Emergency Response Planning Specialist
R. Johnson, Manager Nuclear Licensing
J. Moyers, Manager, Nuclear Quality Assurance
K. Scott, Manager, Maintenance
S. Stasek, Director, Projects
G. Strobel, Manager, Operations
R. Zipfel, Radiological Emergency Response Planning Supervisor

Nuclear Regulatory Commission

J. Giessner, Branch Chief, Branch 4

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened

05000341/2008005-03	VIO	Inadequate Degraded Voltage Protection Scheme

Opened & Closed

05000341/2008005-01	FIN	Inadequate Heat Exchanger Inspection Frequency (Section 1R07.1(1))
05000341/2008005-02	NCV	Inadequate Control Air Compressor Capacity Test Program (Section 1R22.1(1))

LIST OF DOCUMENTS REVIEWED

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

Section 1R01 - Adverse Weather Protection

- CARD 07-01972; Load Breaker Found Tripped; 12/25/2007
- 2008 Cold Weather Preps; Listing dated 10/20/2008

Section 1R04 - Equipment Alignment (71111.04)

- Drawing 6M721-5736-2, Control Center A/C Water System, Revision R
- Drawing 6M721-5736-3, Control Center A/C Water System, Revision I

Section 1R05 - Fire Protection

- Advent Engineering EVAL-DE0035-02; Revision 0
- CARD 02-18786; Ceiling Tiles Not Clipped in Place; 08/23/2002
- CARD 08-25107; NRC Question on Fire Detector Coverage in Beam Pocket Above DW Personnel Air Lock; 08/08/2008
- CARD 08-26946; Adverse Trend in Performance of R1400 Due to Breakers Failing to Close; 10/21/2008
- CARD 08-27517; Detector T82N415 Not in Compliance with NFPA 72E (1974); 11/12/2008
- CARD 08-27599; Zone 4 (RBB SE Quad) Fire Watch Issue; 11/14/2008
- CARD 08-27603; Potential Trend Fire Detection CARDS; 11/14/2008
- Fire Protection Engineering Evaluation FPEE 05-0019; Evaluation of Operability of TRM Required Fire Detection Systems Non-Compliance with NFPA 72D & E Requirements; 01/20/2006
- Fire Protection Engineering Evaluation FPEE-05-0030; Reactor Building Southwest Corner Room Basement & Sub-Basement (Fire Zone 02RBSW) Fire Detector Analysis; 12/20/2005
- Procedure 28.507.01; Fire Barrier Inspection; Revision 8
- Proposed Resolutions for Fermi 2 Fire Detection and Alarm System Non-compliance with NFPA 72E (1974) and NFPA 72D (1975) Requirements; 06/30/2008
- Work Request 000Z022447; Ceiling Tiles Not Clipped in Place; 09/30/2002

Section 1R07 - Annual Heat Sink Performance

- CARD 00-15292; Black Iron Oxide found to be plugging tubes in Division 1 CAC Room Cooler; 04/07/2000
- CARD 08-27672; NRC concern regarding the NIAS system; 11/17/2008
- CARD 08-27833; NIAS Compressor Tests, non-conservative; 11/21/2008
- Engineering Functional Analysis EFA-P50-03-002; 11/02/2002
- IPTE Evaluation 96-10, Revision 0; 09/26/1996
- PM Event Change Justification Q309, Q312, Change Period; 06/12/1990
- Test Review and Approval Request, SOE No. 95-14; 06/12/1995
- WR Q309940127; Clean Inside Surface of Aftercooler Shell; 09/27/1998
- WR Q312010100; Clean Inside Surface of Aftercooler Shell; 02/22/1999

- WR Q312900419; Clean Inside Surface of Aftercooler Shell; 05/02/1990
- WR Q314060100; NIAS South Aftercooler Drain Trap; 05/02/2007
- WR Q320080100; Replace Suction and Discharge Valves with New or Refurbished Valves; 02/16/2007

Section 1R11 - Licensed Operator Requalification Program

- Fermi 2 Evaluation Scenario SS-OP-904-1013; Recirculator Pump Trip / 72M Bus Trip / Loss of All High Pressure Feed / ED; Revision 3, 12/02/2008
- Nuclear Training Work Instruction 5.12; Conduct of Simulator Assessments a& Evaluations; Revision 9
- Results – Licensed Operator Examination Results – 2008

Section 1R12 - Maintenance Effectiveness

- Procedure MMR 10; Monitoring; Revision 5
- Procedure MMR Appendix F; Maintenance Rule Performance Criteria; Revision 8
- System Health Fermi 2; 2008Q2, R1400 Switchgear and Breakers
- Current System Status 2008Q2, System R1400; Switchgear and Breakers

Section 1R13 - Maintenance Risk Assessments and Emergent Work Control

- Protected System Form, Job instructions for PST Event DD17 for Division II RHR/RHRSW Outage; 12/09/2008

Section 1R15 – Operability Evaluations

- CARD 06-25390; Division II CCHVAC Return Air Fan Motor Noise; 08/21/2006
- CARD 08-26854; Center Train of TBHVAC unable to maintain TB Pressure Negative; 10/16/2008
- CARD 07-21360; 50.59 Screen Changes May By pass Review of Other Regulated Plans and Programs; 03/08/2007
- CARD 07-27968; E1100F078 Does Not Indicate Dual When Stroked in 24.206.06; 12/12/2007
- CARD 08-20407; Generic Letter 2008-01 Response, “Managing Gas Accumulation in Emergency Core Cooling; Decay Heat Removal, and Containment Spray Systems”; 01/22/2008
- CARD 08-22081; NRC Generic Letter 2008-01 Core Spray System Evaluation; 03/27/2008
- CARD 08-23896; E1100F078 RHRSW to RPV Emergency Injection Check Valve Indicates Dual in Control Room; 06/12/2008
- CARD 08-24598; Applicability Determination for Plant Change Did Not Adequately Document Reviews; 07/16/2008
- CARD 08-25830; Valve Disc Failed to Move When Stroked with Actuator; 09/08/2008
- CARD 08-25629; VAS Redundant Annunciator Window Power Supply Failure
- CARD 08-26081; P44F400A Valve Stem Condition; 09/17/2008
- CARD 08-26449; Evaluate Applicability Determination Process; 09/30/2008
- CARD 08-26651; Division II CCHVAC Return Air Fan Tripped on Start; 10/08/2008
- CARD 08-26854; Center Train of TBHVAC Unable to Maintain TB Pressure Negative; 10/16/2008
- Drawing 5M721-6273, Revision 0; Anchor Valve Co 21 – 600# Exercisable Check Valve Pressure Seal, Butt Weld Ends; 04/28/2004
- Drawing 6M721-2083, Revision BJ; Diagram RHR Division 2; 03/14/2005

- Engineering Functional Analysis E21-08-010; Miss-Located Vent in Division 1 Core Spray Injection Pipe; 10/24/2008
- Operator Logs (Selected) from 06/01/2008 to 10/22/2008
- Procedure ARP 2D90; CSS Div I/II Fill Line Press Low; Revision 8
- Procedure MOP08; Operator Aids; Revision 5
- Procedure 23.203; Core Spray System; Revision 43
- Procedure 24.203.01; CSS Discharge Piping Filled and Valve Position Verification; Revision 26
- Procedure 24.206.06; Division 2 LPCI and Suppression Pool Cooling/Spray Pump and Valve Operability Test
- Technical Evaluation TE-E21-08-060; Evaluate Miss-Located Vent in Division I Core Spray Injection Pipe; 10/13/2008
- WR 28031788; E1100F078 RHRSW to RPV Emergency Injection Check Valve Indicates Dual in Control Room; 09/08/2008
- WR 28878291; Division 2 CCHVAC Return Air Fan Tripped on Start; 10/08/2008
- WR D263050100; Motor Control Centers and Dist. Cabinets 480 Volt Motor Control Center No. 72F-5A; 01/10/2006

Section 1R18 - Plant Modifications

- EDP-33881; Replace Cooling Coil and Associated Supply and Return Piping and Valves for Each Divisional Cooler; Revision 0, 11/16/2006
- Test Review and Approval Request SOE No.:07-05; 01/02/2007

Section 1R19 - Post-Maintenance Testing

- CARD 08-25634; Center Station Air Compressor Failed to Start on First and Second Attempts; 08/30/2008
- CARD 08-25527; Breaker for the East Station Air Compressor Failed to Close on Start; 08/26/2008
- CARD 08-28470; Level #4 Grease in MOV P4400F605A; 12/18/2008
- Design Basis Document R11-00; CTG Generator 11-1; Revision A
- Plan of the Day; Monday, September 22, 2008
- Troubleshooting Data Sheet; WR 28390111, Breaker 72N-4D Did Not Close; 08/27/2008
- SOP 23.324 Supervisory Control – 120 Kv Switchyard and CTG 11 Generators; Revision 66
- WO 25383437; Perform SOP Run of CTG 11-1
- WO 25590051; Defective Switch Requires Replacement – Auxiliary Electrical Peaker CTG 11-1
- WO 25995973; Semi-Annual Inspection of CTG 11-1
- WO 25995980; Perform CTG 11-1 Output Breaker Inspection (Bus 1-2A, Position A2)
- WO 26000558; Perform 24.307.45 EDG 11 Fast Start Followed by Load Reject; 11/21/2008
- WO 27692911; CTG 11-1, Replace, Calibrate Replacement 63HR Hydraulic Ratchet Pressure Switch
- WO 28664655; Center Station Air Compressor Failed to Start on First and Second Attempts; 08/30/2008
- WO 29162723; Perform 27.129.02; 12/03/2008
- WO Q879080100; Perform Maxi Periodic MOV Inspection and MPM Stroke Test; 12/12/2008

Section 1R22 - Surveillance Testing

- CARD 08-28491; P4400F603A (Division 1 EECW Supply Isolation Valve) did not stroke "closed" when pushbutton was pressed during performance of 24.207.05; 12/19/2008
- Design Calculation DC-4931; Non-Interruptible Control Air System Calculations; 08/05/2005
- Deviation Event Report 96-1057; Adequacy of the Control Air Compressors to Perform Their Functions; 08/29/1996
- Job ID, AG81000318; Perform 267.129.04 Division I NIAS Leakage / Usage – Compressor Performance Test; 03/22/2000
- Job ID, AG81011106; Division I NIAS Leakage / Usage – Compressor Performance Test; 11/20/2001
- Job ID, AG81030327; Perform 27.129.04 Division I NIAS Leakage / Usage – Compressor Performance Test; 03/20/2003
- Job ID, AG81030328; Perform 27.129.04 Division I NIAS Leakage / Usage – Compressor Performance Test; 04/24/2003
- Job ID, AG81041022; Perform 27.129.04 Division I NIAS Leakage / Usage – Compressor Performance Test; 11/20/2004
- Job ID, AG81060425; Perform 27.129.04 Division I NIAS Leakage / Usage – Compressor Performance Test; 03/25/2006
- Job ID, AG81070920; Perform 27.129.04 Division I NIAS Leakage / Usage – Compressor Test; 09/29/2007
- Job ID, AG81980815; Perform 27.129.04 Division I NIAS Leakage / Usage – Compressor Performance Test; 08/31/1998
- Job ID, AG82030328; Perform 27.129.05 Division II NIAS Leakage / Usage – Compressor Performance Test; 04/21/2003
- Job ID, AG82041022; Perform 27.129.05 Division II NIAS Leakage / Usage – Compressor Performance Test; 11/22/2004
- Job ID, AG82060425; Perform 27.129.05 Division II NIAS Leakage / Usage – Compressor Performance Test; 10/19/2006
- Job ID, AG82070920; Perform 27.129.05 Division II NIAS Leakage / Usage – Compressor Performance Test; 10/03/2007
- Procedure 23.129; Station and Control Air System; Revision 87
- Procedure 24.207.08; Division 1 EECW Pump and Valve Operability Test; Revision 70
- Procedure 24.208.02; Division 1 EESW and EECW Makeup Pump and Valve Operability Test; Revision 55
- Procedure 27.129.01; Division I Control Air Compressor Auto Start Test; Revision 19
- Procedure 27.129.04; Division I NIAS Leakage / Usage – Compressor Performance Test; Revision 5
- Procedure 35.306.009; Motor Power Monitoring Using the Viper 20 System; Revision 2
- Procedure 35.306.018; Spectrum Technology Motor Control Center Load Compartment; Revision 8
- Procedure 35.318.017; Inspection and Testing of Multi-Contact Auxiliary Relays; Revision 43
- Procedure 42.000.02; Thermal Overload Relay Calibration; Revision 36
- Procedure ARP 7D51; Division I Control Air System Trouble; Revision 14
- WR 29168387; Replace CR1 relay. Contingency, replace overload relays with heaters; Revision 1, 12/05/2008
- Surveillance Performance, Procedure 24.202.01; Perform Partial 24.202.01 for PMT of E4150F600 Only; 12/05/2008
- Surveillance Performance, Procedure 24.202.01; Partial to Stroke Time Test E4150F600; 12/05/2008
- WR J168050100; Calibrate Division I Control Air Compressor; 05/03/2005

Section 1EP4

- Fermi 2 Radiological Emergency Response Plan; Revisions 33, 34, and 35
- EP-101; Classification of Emergencies; Revision 35
- 10 CFR 50.54(q) Evaluations; Revisions 34 and 35

Section 4OA1 Performance Indicator Verification

- CARD 08-23361; EDG 13 Air Coolant Valve Actuator Separated from Valve
- CARD 08-26863; NRC Question on Potential MSPI Failure for EDG 13 ACS Valve/Actuator Pin Mission; 10/16/2008
- Fermi 2, Second Quarter 2008 Trend Report, April – June 2008
- Fermi 2, Third Quarter 2008 Trend Report, July – September 2008
- MSPI Derivation Reports for RHR, RHRSW, and EDGs; 10/23/2008
- Maintenance Rule Database Information (Selected) for RHR, RHRSW, and EDGs.
- Operator Logs (Selected) from 02/01/2007 through 07/01/2008

Section 4OA2

- CARD 08-25565; NRC Backfit Determination on the Degraded Voltage Time Delay Setpoints
- CARD 08-26341; Inadequate Inspection of the Reactor Building Siding in 2004; 09/26/2008
- CARD 08-27375; Technical Review deficiency in the "System Independent Design Verification Process Implemented per Fermi 2 Procedure MES17: for Safety-Related Design Modifications at Fermi 2; 11/06/2008
- CARD 08-27381; Inadequate Zebra Mussel Application; 11/06/2008
- CARD 08-27736; Follow-up on NRC Question Regarding Underground Conduits; 11/19/2008
- Engineering Functional Analysis EFA-R16-07-003; Evaluation of Adequacy of Underground Cables Continuously Submerged in Water to Perform Their Intended Safety-Related Function; 07/18/2007
- Fermi 2 Second Quarter 2008 Trend Report, April – June 2008
- Fermi 2 Third Quarter 2008 Trend Report, July – September 2008
- Fermi NQA Report 08-09; July – September 2008; 10/24/2008
- WR Y750020100; Inspect AB/RB Buildings Metal Siding Fasteners, Replace if Broken or Missing; 06/10/2004
- Open Operator Challenges 2008-009; G51F033 Not Fully Closing; 01/07/2008
- Operations Department Expectation ODE-6; Operator Challenges; Revision 9, 07/17/2008

Section 4OA3

- CARD 08-26551; VAS Control Room False Alarms as a Result of MUX C Failure; 10/03/2008
- CARD 08-25632; Degrading Trend Noted on VAS Ground Fault Detector C97K057 Continues; 08/29/2008
- CARD 08-28129; E4150F600 Valve Lost Indication; 12/04/2008

Section 4OA5

- Design Calculation Number DC-5003; Emergency Diesel Generator Loads Calculation; Revision I
- Procedure 24.307.30; Emergency Diesel Generator No. 11 - 24 Hour Run Followed by Hot Fast Restart; Revision 34

- Procedure 24.307.31; Emergency Diesel Generator No. 12 - 24 Hour Run Followed by Hot Fast Restart; Revision 40
- Procedure 24.307.32; Emergency Diesel Generator No. 13 - 24 Hour Run Followed by Hot Fast Restart; Revision 37
- Procedure 24.307.33; Emergency Diesel Generator No. 14 - 24 Hour Run Followed by Hot Fast Restart; Revision 34

LIST OF ACRONYMS USED

CAC	Control Air Compressors
CAP	Corrective Action Program
CARD	Condition and Assessment Resolution Document
CCHVAC	Control Center Heating, Ventilation, and Air Conditioning
CFR	Code of Federal Regulations
DRP	Division of Reactor Projects
EDG	Emergency Diesel Generator
EDP	Engineering Design Package
EECW	Emergency Equipment Cooling Water
EESW	Emergency Equipment Service Water
GL	Generic Letter
HPCI	High Pressure Coolant Injection
HVAC	Heating, Ventilation, and Air Conditioning
IMC	Inspection Manual Chapter
IP	Inspection Procedure
MSPI	Mitigating Systems Performance Index
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NIAS	Non-Interruptible Control Air System
NRC	U.S. Nuclear Regulatory Commission
PI	Performance Indicator
PM	Planned or Preventative Maintenance
RCS	Reactor Coolant System
RHR	Residual Heat Removal
RPV	Reactor Pressure Vessel
RWCU	Reactor Water Cleanup
SCFM	Standard Cubic Feet per Minute
SDP	Significance Determination Process
SSO	Safety System Outage
TI	Temporary Instruction
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
WO	Work Order
WR	Work Request