



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

January 28, 2013

Mr. Joseph Plona
Senior Vice President and
Chief Nuclear Officer
DTE Electric Company
Fermi 2 - 210 NOC
6400 North Dixie Highway
Newport, MI 48166

**SUBJECT: FERMIL POWER PLANT, UNIT 2 - NRC INTEGRATED INSPECTION
REPORT 05000341/2012005**

Dear Mr. Plona:

On December 31, 2012, the U.S. Nuclear Regulatory Commission (NRC) completed an integrated inspection at your Fermi Power Plant, Unit 2. The enclosed inspection report documents the inspection results which were discussed on January 8, 2013, with Mr. K. Scott, Plant Manager, and other members of your staff.

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

Based on the results of this inspection, two self-revealed findings of very low safety significance (Green) were identified. One of the findings involved a violation of NRC requirements. Additionally, two licensee-identified violations are listed in Section 4OA7 of this report. However, because of their very low safety significance, and because the issues were entered into your corrective action program, the NRC is treating the issues as non-cited violations (NCVs) in accordance with Section 2.3.2 of the NRC Enforcement Policy.

If you contest the violation or significance of these NCVs, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission - Region III, 2443 Warrenville Road, Suite 210, Lisle, IL 60532-4352; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the Resident Inspector Office at the Fermi Power Plant.

J. Plona

-2-

If you disagree with the cross-cutting aspect assigned to any finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region III, and the NRC Resident Inspector at the Fermi Power Plant.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records System (PARS) component of NRC's Agencywide Document Access and Management System (ADAMS). ADAMS is accessible from the NRC Website at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Jamnes L. Cameron, Chief
Branch 6
Division of Reactor Projects

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

Enclosure: Inspection Report 05000341/2012005
w/Attachment: Supplemental Information

cc w/encl: Distribution via ListServ™

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

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

Report No: 05000341/2012005

Licensee: Detroit Edison Company

Facility: Fermi Power Plant, Unit 2

Location: Newport, MI

Dates: October 1 through December 31, 2012

Inspectors: R. Morris, Senior Resident Inspector
R. Jones, Resident Inspector
J. Beavers, Emergency Preparedness Inspector
M. Bielby, Senior Operations Engineer, Lead Inspector
T. Briley, Reactor Engineer
B. Kemker, Senior Resident Inspector, Clinton
J. Nance, Resident Inspector, Perry
P. Smagacz, Reactor Engineer
D. Szwarc, Reactor Inspector
M. Jones, Jr., Reactor Engineer

Approved by: J. Cameron, Chief
Branch 6
Division of Reactor Projects

Enclosure

TABLE OF CONTENTS

SUMMARY OF FINDINGS	1
REPORT DETAILS	3
SUMMARY OF PLANT STATUS.....	3
1. REACTOR SAFETY	3
1R01 Adverse Weather Protection (71111.01)	3
1R04 Equipment Alignment (71111.04)	4
1R05 Fire Protection (71111.05).....	5
1R06 Flooding (71111.06)	6
1R11 Licensed Operator Requalification Program (71111.11)	6
1R12 Maintenance Effectiveness (71111.12)	8
1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13)	10
1R15 Operability Determinations and Functional Assessments (71111.15).....	11
1R18 Plant Modifications (71111.18).....	12
1R19 Post-Maintenance Testing (71111.19)	12
1R20 Outage Activities (71111.20)	13
1R22 Surveillance Testing (71111.22).....	14
1EP4 Emergency Action Level and Emergency Plan Changes (71114.04).....	15
1EP6 Drill Evaluation (71114.06)	15
4. OTHER ACTIVITIES	16
4OA1 Performance Indicator Verification (71151)	16
4OA2 Identification and Resolution of Problems (71152).....	17
4OA3 Follow-Up of Events and Notices of Enforcement Discretion (71153).....	20
4OA5 Other Activities	24
4OA6 Management Meetings	26
4OA7 Licensee-Identified Violations.....	26
SUPPLEMENTAL INFORMATION	1
KEY POINTS OF CONTACT.....	1
LIST OF ITEMS OPENED, CLOSED AND DISCUSSED.....	2
LIST OF DOCUMENTS REVIEWED.....	3
LIST OF ACRONYMS USED	11

SUMMARY OF FINDINGS

Inspection Report 05000341/2012005; 10/01/2012 – 12/31/2012; Fermi Power Plant, Unit 2; Maintenance Effectiveness and Follow-Up of Events.

This report covers a 3-month period of inspection by resident inspectors and announced baseline inspections by regional inspectors. Two Green findings were identified by the inspectors. One of the findings was considered a non-cited violation (NCV) of NRC regulations. The significance of inspection findings is indicated by their color (i.e., greater than Green, or Green, White, Yellow, Red) and determined using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process (SDP)" dated June 2, 2011. Cross-cutting aspects are determined using IMC 0310, "Components Within the Cross-Cutting Areas," dated October 28, 2011. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy dated June 7, 2012. 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: Initiating Events

- Green. A self-revealed finding of very low safety significance and associated NCV of Technical Specification 5.4.1.a was identified for the licensee's failure to establish and implement procedures recommended by Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Specifically, the licensee failed to control the three factors identified by the root cause evaluation team within their refueling outage (RF)-15 south reactor feed pump turbine (SRFPT) overhaul maintenance instructions and post-maintenance testing instructions; and within the operating procedures for the reactor feed pumps during synchronizing the main generator to the electrical grid following recovery from repairs performed on main unit transformer 2B. The south reactor feed pump (SRFP) catastrophically failed, and as a result, the reactor was shut down because of decreasing condenser vacuum.

The inspectors determined the failure to control the presence of three factors in concert: (1) no turbine diaphragm alignment with tight clearances; (2) automatic admission of steam with challenging thermal properties; and (3) less than adequate post-maintenance testing, was a performance deficiency that required evaluation using the SDP. The inspectors determined this finding was more than minor because it was associated with the equipment performance attribute of the Initiating Events Cornerstone and impacted the cornerstone objective of limiting the likelihood of those events that upset plant stability. This finding was determined to be of very low safety significance because, following IMC 0609, Table 4a, "Characterization Worksheet for Initiating Events, Mitigating Systems, and Barrier Integrity Cornerstones," the inspectors concluded the finding did not require quantitative assessment. Therefore, the finding was determined to be of very low safety significance. This finding has a cross-cutting aspect in the area of Human Performance, Work Practices, supervisory and management oversight aspect because the licensee failed to appropriately oversee the overhaul of the SRFPT by a vendor, and the post maintenance testing and operation of the SRFPT during and after RF-15 (H.4 (c)). (Section 4OA3.1)

Cornerstone: Mitigating Systems

- Green. A finding of very low safety significance was self-revealed for failing to adequately inspect and identify, and then correct severe degradation of the motor operator for E4150F002 [HPCI turbine steam supply inboard containment isolation valve], which failed on July 23, 2012, when operators were attempting to place the high pressure coolant injection (HPCI) system into standby. The failure analysis of the motor identified the severe degradation. The apparent cause evaluation team identified three apparent and contributing causes for the severe degradation: first, prolonged moisture from steam leaks or other water sources; second, improper end ring coatings; and third, failing to identify a degraded condition during a video probe inspection.

The inspectors determined the failure to adequately inspect and identify, and then correct severe degradation of the motor operator for E4150F002 was a performance deficiency that required an SDP evaluation. The inspectors determined this finding was more than minor because it was associated with the configuration control attribute of the Mitigating Systems Cornerstone and impacted the cornerstone objective of ensuring the capability of systems to prevent undesirable consequences (i.e., core damage). This finding was determined to be of very low safety significance because, following IMC 0609, Appendix E, Table 4a, "Characterization Worksheet for Initiating Events, Mitigating Systems, and Barrier Integrity Cornerstones," all questions were answered 'no.' Therefore, the finding was determined to be of very low safety significance (Green).

This finding has a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program, appropriate corrective actions aspect because the licensee failed to adequately inspect and identify, and then correct severe degradation of the motor operator for E4150F002 (P.1 (d)). (Section 1R12.1)

B. Licensee-Identified Violations

Two violations of very low safety significance that were identified by the licensee have been reviewed by inspectors. Corrective actions planned or taken by the licensee have been entered into the licensee's corrective action program. These violations and corrective action tracking numbers are listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

Fermi Unit 2 entered the inspection period at 68 percent power with one feedwater pump operable. This is the maximum allowed power with one feedwater pump operating. A manual reactor scram due to hydrogen leakage into the main generator stator water cooling system occurred on November 7, 2012. Startup commenced on December 31, 2012, and the unit was off-line at 8 percent power at the end 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 the plant's design features and implementation of procedures were sufficient to protect mitigating systems from the effects of adverse weather. Documentation for selected risk-significant systems was reviewed to ensure these systems would remain functional when challenged by inclement weather. During the inspection, the inspectors focused on plant specific design features and the licensee's procedures used to mitigate or respond to adverse weather conditions. Additionally, the inspectors reviewed the Updated Final Safety Analysis Report (UFSAR) and performance requirements for systems selected for inspection, and verified operator actions were appropriate as specified by plant specific procedures. Cold weather protection, such as heat tracing and area heaters, was verified to be in operation where applicable. The inspectors also reviewed corrective action program items to verify the licensee was identifying adverse weather issues at an appropriate threshold and entering them into their corrective action program in accordance with station corrective action procedures. Specific documents reviewed during this inspection are listed in the Attachment to this report. The inspectors' reviews focused specifically on the following plant systems due to their risk significance or susceptibility to cold weather issues:

- Cold weather preparations and a walkdown prior to high winds from tropical storm Sandy.

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

b. Findings

No findings were identified.

1R04 Equipment Alignment (71111.04)

.1 Quarterly Partial System Walkdowns

a. Inspection Scope

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

- Residual heat removal (RHR) mechanical draft cooling tower system;
- Division 2 emergency equipment cooling water (EECW); and
- Non-interruptible Air Supply (NIAS).

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

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

b. Findings

No findings were identified.

.2 Semi-Annual Complete System Walkdown

a. Inspection Scope

On October 6, 2012, the inspectors performed a complete system alignment inspection of the main feedwater pump electrical and instruments and controls after SRFPT isolation to verify the functional capability of the system. This system was selected because it was considered risk significant in the licensee's probabilistic risk assessment. The inspectors walked down the system to review mechanical and electrical equipment lineups; electrical power availability; system pressure and temperature indications, as appropriate; component labeling; component lubrication; component and equipment cooling; hangers and supports; operability of support systems; and to ensure ancillary equipment or debris did not interfere with equipment operation. A review of a sample of past and outstanding work orders was performed to determine whether any deficiencies

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

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

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

.1 Routine Resident Inspector Tours (71111.05Q)

a. Inspection Scope

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

- RHR/emergency diesel generator (EDG) building, division 2 side;
- Auxiliary building, fifth floor, standby gas treatment, division 1 and 2;
- Reactor building, sub-basement and basement, division 2 core spray;
- Reactor building, second floor, mezzanine; and
- Reactor building, first floor, steam tunnel.

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

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

b. Findings

No findings were identified.

1R06 Flooding (71111.06)

.1 Underground Vaults

a. Inspection Scope

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

- The east security cable manholes and the west RHR/EDG manholes which were potentially impacted by the November 1 oil spill response and storm drain flushing.

Specific documents reviewed during this inspection are listed in the Attachment to this report.

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

b. Findings

No findings were identified.

1R11 Licensed Operator Regualification Program (71111.11)

.1 Resident Inspector Quarterly Review of Licensed Operator Regualification (71111.11Q)

a. Inspection Scope

On November 20, 2012, the inspectors observed a crew of licensed operators in the plant's simulator during licensed operator regualification training to verify operator performance was adequate, evaluators were identifying and documenting crew performance problems, and training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

- licensed operator performance;
- crew's clarity and formality of communications;
- ability to take timely actions in the conservative direction;
- prioritization, interpretation, and verification of annunciator alarms;
- correct use and implementation of abnormal and emergency procedures;
- control board manipulations;

- oversight and direction from supervisors; and
- ability to identify and implement appropriate TS actions and Emergency Plan actions and notifications.

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

This inspection constituted one quarterly licensed operator requalification program simulator sample as defined in IP 71111.11 and satisfied the inspection program requirement for the resident inspectors to observe a portion of an in-progress annual requalification operating test during a training cycle in which it was not observed by the NRC during the biennial portion of this IP.

b. Findings

No findings were identified.

.2 Resident Inspector Quarterly Observation of Heightened Activity or Risk (71111.11Q)

a. Inspection Scope

On November 1, 2012, the inspectors observed operators perform procedure 42.302.04, "Division 2 4160V bus 65E/13EC, Undervoltage Logic System Functional." On November 7, 2012, the inspectors observed operators perform scram abnormal operating procedure following a manual scram due to increasing hydrogen gas leakage observed in the main generator. These were activities that required heightened awareness or were related to increased risk. 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 procedures;
- control board and equipment manipulations;
- oversight and direction from supervisors; and
- ability to identify and implement appropriate TS actions.

The performance in these areas was compared to pre-established operator action expectations, procedural compliance and task completion requirements. Documents reviewed are listed in the Attachment to this report.

These inspections constituted one quarterly licensed operator heightened activity/risk sample as defined in IP 71111.11.

b. Findings

No findings were identified.

.3 Annual Operating Test Results (71111.11A)

a. Inspection Scope

The inspectors reviewed the overall pass/fail results of the Annual Operating Test, administered by the licensee from November 5 through December 7, 2012, required by 10 CFR 55.59(a). The results were compared to the thresholds established in IMC 0609, Appendix I, "Human Performance Operator Requalification Significance Determination Process," to assess the overall adequacy of the licensee's operator +requalification training program to meet the requirements of 10 CFR 55.59.

This inspection constitutes one annual licensed operator requalification inspection sample as defined in IP 71111.11-05.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12)

.1 Routine Quarterly Evaluations (71111.12Q)

a. Inspection Scope

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

- A7100 primary containment isolation;
- Maintenance Rule periodic a(3) evaluation; and
- E4100 high pressure coolant injection.

The inspectors reviewed events such as where ineffective equipment maintenance had or could have 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 corrective action program 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, and a continuation of one quarterly maintenance effectiveness sample initiated and counted as a sample in the third quarter (NRC Inspection Report 05000341/2012-004).

b. Findings

Introduction: A finding of very low safety significance (Green) was self-revealed for failing to adequately inspect and identify, and then correct severe degradation of the motor operator for E4150F002, which failed on July 23, 2012, when operators were attempting to place the HPCI system into standby. The failure analysis of the motor identified severe degradation. The apparent cause evaluation (ACE) team identified three apparent and contributing causes for the severe degradation: first, prolonged moisture from steam leaks or other water sources; second, improper end ring coatings; and third, failing to identify a degraded condition during a video probe inspection.

Description: On July 23, 2012, during plant startup operators were unable to place the HPCI system into standby due to the failure of E4150F002, the HPCI turbine steam supply inboard containment isolation valve. The failure was determined to be caused by an electrical failure of the motor operator. The failure was due to a buildup of galvanic corrosion between the opposite drive end and the rotor body interface which caused the shorting ring to deflect radially outwards and eventually allow the fins to make contact with the stator windings during operation. The failure analysis attributed the general and galvanic corrosion observed to have been caused by prolonged exposure to high temperatures and high humidity, along with the potential introduction of moisture through the T-drains.

This motor had a magnesium alloy rotor, which had been the subject of previous NRC Information Notices 2006-26 and 2008-20. The apparent cause evaluation team identified four mechanisms which had been responsible for other magnesium rotor motor failures: (1) prolonged moisture from steam leaks or other water sources; (2) improper end ring coatings; (3) failure to identify a degraded condition during a video probe inspection; and (4) thermal stresses due to excessive stroking or overloading. The team concluded the apparent cause of this motor failure was mechanism (1), prolonged moisture from steam leaks or other water sources. Packing leakage had been noted during the reactor pressure valve hydrostatic test conducted earlier this year. The leakage had been reviewed and accepted by the Leakage Review Board. Further, condensation had been observed during inspections performed as part of the troubleshooting inspections performed to determine the cause of the failure.

In addition, mechanisms (2) and (3) were identified as contributing causes of this failure. Mechanism (2), improper end ring coatings was possible. This valve motor had been procured from Commonwealth Edison in 1994. No inspections were performed until a video probe inspection was performed in 2009 using Boiling Water Reactor (BWR) Owners Group guidelines, and some blistering was noted. Since this could have resulted

from end ring coating defects, the ACE team concluded this was a contributing cause. Further, the evaluation team assigned a contributing cause to mechanism (3), failure to identify a degraded condition during a video probe inspection. The valve was inspected in 2009 using a video probe. Some degradation was observed and the next inspection was scheduled for RF-17 (or approximately 6 years). The BWR Owners Group guidelines TP-09-005 suggested 10 years between inspections unless degradation is observed, and then recommended a frequency of 2 years for the subsequent inspection. Had the 2 years recommended in the Owners Group guidance been used, the inspection would have been scheduled for 2011 and may have detected the extent of corrosion and blistering observed in the failure analysis report, and the motor could have been repaired or replaced prior to the July failure.

Analysis: The inspectors determined the failure to adequately inspect and identify, and then correct severe degradation of the motor operator for E4150F002 was a performance deficiency that required an SDP evaluation. The inspectors determined this finding was more than minor because it was associated with the configuration control attribute of the Mitigating Systems Cornerstone and impacted the cornerstone, objective of ensuring the capability of systems to prevent undesirable consequences, i.e., core damage. This finding was determined to be of very low safety significance because, following IMC 0609, Appendix E, Table 4a, "Characterization Worksheet for Initiating Events, Mitigating Systems, and Barrier Integrity Cornerstones," all questions were answered 'no.' Therefore, the finding was determined to be of very low safety significance (Green).

This finding has a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program, appropriate corrective actions aspect because the licensee failed to adequately inspect and identify, and then correct severe degradation of the motor operator for E4150F002 (P.1 (d)).

Enforcement: No violation of NRC requirements was identified for this performance deficiency. Failure of E4150F002 (FIN 05000341/2012005-01).

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

.1 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

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

- Risk during reactor water cleanup area and nonregenerative heat exchanger discharge temperature functional test; logic functional for division 2 EDG emergency start and auto trip/bypass circuits; turbine building heating ventilation and air conditioning outage; mechanical draft cooling tower fan coordinated manual control switch repair; and EDG 14 jacket cooling pump seal replacement;
- Risk during EDG 11 safety system outage;

- Risk during Equipment Out Of Service calculation for division 1 RHR valve position indication verification test and low pressure coolant injection pump and valve surveillance; risk during bus 65E undervoltage and EDG 13 surveillance; high winds expected for tropical storm Sandy; integrated plant computer system cyber-security modification; division 2 EECW maintenance; bus 65E breaker E9 planned maintenance; and
- Risk during reactor shutdown to mode 4.

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

Specific documents reviewed during this inspection are listed in the Attachment to this report.

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

b. Findings

No findings were identified.

1R15 Operability Determinations and Functional Assessments (71111.15)

.1 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following issues:

- Operational Decision Making Issue(ODMI) 12-007, "Degraded 64B and 64C Ammeter Phase Selector;"
- Corrective action and resolution document (CARD) 12-25847, "Main Unit Transformer 2B Oil Leak;"
- CARD 12-27504, "Seismic Analysis on Panel H11P903;" and
- CARD 12-30194, "Workmanship Quality Issues Noted in Control Rod Drive Mechanisms during Offsite Inspection."

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 reviewed a sampling of corrective action documents to verify the licensee was identifying and correcting any deficiencies associated with operability evaluations. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18)

.1 Plant Modifications

a. Inspection Scope

The inspectors reviewed the following modifications:

- EDP-36982, "South Reactor Feed Pump/Turbine (SRFPT) Mechanical Isolations,"
- EDP-36984, "SRFPT Electrical and I&C Isolations, and 50.59 evaluation."

This inspection was a continuation from NRC Inspection Report 05000341/2012-004; further inspection is documented under Section 4OA2.5. This does not constitute a sample as defined in IP 71111.18-05.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19)

.1 Post-Maintenance Testing

a. Inspection Scope

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

- Control rod 58-43 friction testing;
- Work Order (WO) 35128354, "Division 2 EECW Make-up Pump Discharge Check Valve Failed;"
- WO 35662332, "Reactor Building 1, Steam Tunnel Blowout Panel Seal Repair;" and
- Reactor cooling system hydro after control rod drive mechanism replacement.

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 TSSs, 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 corrective action program 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 four post-maintenance testing samples as defined in IP 71111.19-05.

b. Findings

No findings were identified.

1R20 Outage Activities (71111.20)

.1 Other Outage Activities

a. Inspection Scope

The inspectors evaluated outage activities for an unscheduled outage that began on November 7, 2012, and continued through December 31, 2012. The inspectors reviewed activities to ensure the licensee considered risk in developing, planning, and implementing the outage schedule.

The inspectors observed or reviewed the reactor shutdown and cooldown, outage equipment configuration and risk management, electrical lineups, selected clearances, control and monitoring of decay heat removal, control of containment activities, personnel fatigue management, startup and heatup activities, and identification and resolution of problems associated with the outage. The inspectors observed the activities involving the replacement of three control rod drive mechanisms and main generator repairs.

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

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

.1 Surveillance Testing

a. Inspection Scope

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

- Procedure 24.321.07, “Operability of 480V bus 72CF Automatic Throwover Scheme” (routine);
- RCS leakage following reactor scram (RCS leakage);
- Procedure 43.401.207, “Local Leakage Rate Testing for Control Rod Drive Hatch T2301-X006” (IST); and
- Procedure 23.425.01, “Activities for closing drywell for forced outage” (IST).

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

- did preconditioning occur;
- the effects of the testing were adequately addressed by control room personnel or engineers prior to the commencement of the testing;
- acceptance criteria were clearly stated, demonstrated operational readiness, and were consistent with the system design basis;
- plant equipment calibration was correct, accurate, and properly documented;
- as-left setpoints were within required ranges; and the calibration frequency was in accordance with TSs, the UFSAR, procedures, and applicable commitments;
- measuring and test equipment calibration was current;
- test equipment was used within the required range and accuracy; applicable prerequisites described in the test procedures were satisfied;
- test frequencies met TS requirements to demonstrate operability and reliability; tests were performed in accordance with the test procedures and other applicable procedures; jumpers and lifted leads were controlled and restored where used;
- test data and results were accurate, complete, within limits, and valid;
- test equipment was removed after testing;
- where applicable for inservice testing activities, testing was performed in accordance with the applicable version of Section XI, American Society of Mechanical Engineers code, and reference values were consistent with the system design basis;
- where applicable, test results not meeting acceptance criteria were addressed with an adequate operability evaluation or the system or component was declared inoperable;
- where applicable, actual conditions encountering high resistance electrical contacts were such that the intended safety function could still be accomplished;
- prior procedure changes had not provided an opportunity to identify problems encountered during the performance of the surveillance or calibration test;

- equipment was returned to a position or status required to support the performance of its safety functions; and
- all problems identified during the testing were appropriately documented and dispositioned in the corrective action program.

Documents reviewed are listed in the Attachment to this report.

This inspection constituted one routine surveillance testing sample, two inservice testing samples, and one reactor coolant system leak detection inspection sample, as defined in IP 71111.22, Sections -02 and -05.

b. Findings

No findings were identified.

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

.1 Emergency Action Level and Emergency Plan Changes

a. Inspection Scope

The regional staff performed an in-office review of the latest revisions of the Emergency Plan and various Emergency Plan Implementing Procedures located under ADAMS Accession Number ML12045A430 as listed in the Attachment.

The licensee transmitted the Emergency Plan Implementing Procedures' revisions to the NRC pursuant to the requirements of 10 CFR Part 50, Appendix E, Section V, "Implementing Procedures." The NRC review was not documented in a safety evaluation report and did not constitute approval of licensee-generated changes; therefore, this revision is subject to future inspection. The specific documents reviewed during this inspection are listed in the Attachment.

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

b. Findings

No findings were identified.

1EP6 Drill Evaluation (71114.06)

.1 Emergency Preparedness Drill Observation

a. Inspection Scope

The inspectors evaluated the conduct of a routine licensee emergency drill on October 16, 2012, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the Emergency Offsite Facility and Technical Support Center to determine whether the event classification, notifications, and protective action recommendations were performed in accordance with procedures. The inspectors also attended the licensee drill critique to compare any

inspector-observed weakness with those identified by the licensee staff in order to evaluate the critique and to verify whether the licensee staff was properly identifying weaknesses and entering them into the corrective action program. As part of the inspection, the inspectors reviewed the drill package and other documents listed in the Attachment to this report.

This emergency preparedness drill inspection constituted one sample as defined in IP 71114.06-05.

b. Findings

No findings were identified.

4. **OTHER ACTIVITIES**

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

4OA1 Performance Indicator Verification (71151)

.1 Mitigating Systems Performance Index - Residual Heat Removal System (MS-09)

a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index (MSPI) - Residual Heat Removal System performance indicator for the period from the third quarter 2011 through the third quarter 2012. To determine the accuracy of the performance index data reported during those periods, performance index definitions and guidance contained in the Nuclear Energy Institute (NEI) Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, dated October 2009, was 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 third quarter 2011 through the third quarter 2012 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 performance index 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 residual heat removal system sample as defined in IP 71151-05.

b. Findings

No findings were identified.

.2 Mitigating Systems Performance Index - Cooling Water Systems (MS-10)

a. Inspection Scope

The inspectors sampled licensee submittals for the MSPI - Cooling Water Systems performance indicator for the period from the third quarter 2011 through the third quarter 2012. To determine the accuracy of the performance index data reported during those periods, performance index definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, dated October 2009, was 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 October 2011 through September 2012 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 were identified.

4OA2 Identification and Resolution of Problems (71152)

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

a. Inspection Scope

As part of the various baseline inspection procedures discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify they were being entered into the licensee's corrective action program at an appropriate threshold, adequate attention was being given to timely corrective actions, and adverse trends were identified and addressed. Attributes reviewed included: identification of the problem was complete and accurate; timeliness was commensurate with the safety significance; evaluation and disposition of performance issues, generic implications, common causes, contributing factors, root causes, extent-of-condition reviews, and previous occurrences reviews were proper and adequate; and the classification, prioritization, focus, and timeliness of corrective actions were commensurate with safety and sufficient to prevent recurrence of the issue. Minor issues entered into the licensee's corrective action program as a result of the inspectors' observations are included in the Attachment to this report.

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

b. Findings

No findings were identified.

.2 Daily Corrective Action Program Reviews

a. Inspection Scope

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

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

b. Findings

No findings were identified.

.3 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a review of the licensee's corrective action program and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors' review was focused on licensee human performance issues, but also considered the results of daily inspector corrective action program item screening discussed in Section 4OA2.2 above, and licensee trending reports. The inspectors' review nominally considered the 6-month period of July 2012 through December 2012, although some examples expanded beyond those dates where the scope of the trend warranted.

The review also included issues documented outside the normal corrective action program including human performance steering committee and human performance department coordinator meetings, site/department/crew clock resets, human performance metrics, quality assurance audit/surveillance reports, self-assessment reports, interviews with management, and Maintenance Rule assessments. The inspectors compared and contrasted their results with the results contained in the licensee's corrective action program 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 2012 performance improvement plans for several departments. The inspectors noted there have been several improvement plans during the past couple of years. The plans put forward during the current year are a culmination of lessons learned from the past programs and are more uniform among the various departments.

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

b. Findings

No findings 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, 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 to this report were reviewed to accomplish the objectives of the inspection procedure. The inspectors reviewed both current and historical operational challenge records to determine whether the licensee was identifying operator challenges at an appropriate threshold, had entered them into their corrective action program and proposed or implemented appropriate and timely corrective actions which addressed each issue. Reviews were conducted to determine if any operator challenge could increase the possibility of an Initiating Event, if the challenge was contrary to training, required a change from long-standing operational practices, or created the potential for inappropriate compensatory actions. Additionally, all temporary modifications were reviewed to identify any potential effect on the functionality of Mitigating Systems, impaired access to equipment, or required equipment uses for which the equipment was not designed. Daily plant and equipment status logs, degraded instrument logs, and operator aids or tools being used to compensate for material deficiencies were also assessed to identify any potential sources of unidentified operator workarounds.

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

b. Findings

No findings were identified.

.5 Selected Issue Follow-up Inspection: Operation with South Reactor Feed Pump Out of Service

a. Inspection Scope

The inspectors selected a safety evaluation performed pursuant to 10 CFR 50.59 related to the operation at reduced power with the SRFP out of service to determine if the evaluation was adequate. The inspectors reviewed the safety evaluation and associated documents and discussed the timeframe for restoration of the SRFP with licensee personnel. The feedwater system is currently in a degraded condition as a result of the SRFP being out of service. As such, the plant is limited to operation at reduced power due to the reduced feedwater flow.

The inspectors were concerned with the licensee's long-term operation at or near 68 percent power. Specifically, the inspectors questioned the licensing basis for long-term operation with a single reactor feed pump. Operation with a single reactor feed pump increases the possibility of a reactor scram and complications resulting from the scram. To address the inspectors' concerns, the licensee stated in a letter to the Regional Administrator, U.S. Nuclear Regulatory Commission - Region III, dated November 16, 2012, they intended to restore the SRFP to service during the first quarter of 2013, but these plans are contingent upon the successful refurbishment and testing of the SRFPT. Nevertheless, the licensee stated the SRFP would be restored no later than prior to plant startup following RF-16, scheduled for the first quarter of 2014. At that point the plant will be able to resume operation at 100 percent licensed power.

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

b. Findings

No findings were identified.

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

.1 (Closed) Licensee Event Report (LER) 05000341/2012-003: Reactor Scram Due to Degrading Condenser Vacuum

a. Inspection Scope

The inspectors reviewed the plant's response to a reactor scram occurring on June 25, 2012. After completing repairs to main unit transformer 2B, reactor power was raised to approximately 22 percent and the unit was synchronized to the power grid. Shortly after operations began to increase power, multiple vibration-related alarms were received for the SRFP, and the pump tripped. The SRFP had catastrophically failed and as a result, condenser vacuum was decreasing. Operations performed a manual scram by taking the mode selector switch to shutdown. All automatic actuations and isolations occurred as designed.

The unit remained shut down in forced outage 12-02 and plant configuration changes were installed to isolate the SRFP from plant systems. The unit was restarted on July 22, 2012, increased power to 2 percent, and returned to a shutdown condition to repair a valve motor. The unit subsequently restarted on July 27, 2012, and achieved 68 percent power on July 30, 2012, using the north reactor feed pump.

The inspectors reviewed the root cause investigation report for this event. Documents reviewed as part of this inspection are listed in the Attachment to this report. This LER is closed.

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

b. Findings

Introduction: A self-revealed Green finding and associated NCV of TS 5.4.1.a was identified for the licensee's failure to establish and implement procedures recommended by Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Specifically, the

licensee failed to control the three factors identified by the root cause evaluation team within their RF-15 SRFPT overhaul maintenance instructions and post-maintenance testing instructions; and within the operating procedures for the reactor feed pumps during synchronizing the main generator to the electrical grid following recovery from repairs performed on main unit transformer 2B. The SRFP catastrophically failed and as a result, the reactor was shut down because of decreasing condenser vacuum.

Description: On June 25, 2012, after completing repairs to main unit transformer 2B, reactor power was raised to approximately 22 percent and the unit was synchronized to the power grid, and power ascension proceeded. Shortly after operations began to increase power, multiple vibration-related alarms were received for the SRFP, and the pump tripped. The SRFP had catastrophically failed and as a result, condenser vacuum was decreasing. Operations performed a manual scram by taking the mode selector switch to shutdown. A root cause evaluation team was identified to investigate the causes for the failure of the SRFPT documented in CARD 12-25544. The root cause evaluation team identified the cause of the SRFPT failure as the presence of three factors in concert: 1) no turbine diaphragm alignment with tight clearances; 2) automatic admission of steam with challenging thermal properties; and 3) less-than-adequate post-maintenance testing. The SRFPT had been overhauled by a vendor during the spring RF-15, and reassembled with tighter-than-design clearances between the diaphragm seals and rotor shaft. No alignment of the diaphragm had been included as a requirement in the overhaul specifications or following review of as-left clearance measurements. This resulted in a hard mechanical rub, which remained undetected following the overhaul. Additionally, the post-maintenance testing specified following the rebuild and refurbishment during RF-15 was not adequate to identify and resolve rubs.

A series of operational experience exists at Fermi regarding the SRFPT experiencing high vibrations followed by manual tripping, or catastrophic failure. Many of these issues resulted from problems with getting out moisture in the steam lines or turbine casings, and not entering the turbine, i.e., high pressure steam or reheat steam drainage. This reflects some piping configuration differences between the two pumps regarding long horizontal runs for the reheat steam to the SRFPT. At certain times in the past, the SRFPT has had longer warm-up requirements than its sibling. However, at the time of the recent failure, there were no differences in the operational guidance regarding placing the north or south feed pump in service first. Thus, with a wealth of operational experience, there was no recognition in the operating procedures that the north reactor feed pump turbine (NRFPT) should be placed in service first preferentially.

For the RF-15 overhaul, the original equipment manufacturer (Delaval, now Siemens) was not able to provide a field representative to support the RF-15 overhaul schedule for the SRFP. The maintenance instructions did not provide acceptance criteria for the clearances between the turbine rotor and the diaphragm seals. These clearances were tighter than design, and they were tighter on one side of the rotor than the other, i.e., they were not concentric. These clearances were identified and discussed, but were accepted. Further, the additional problems caused by non-concentric tight clearances were not recognized, leading to a failure to identify the need to perform an alignment of the diaphragm seals. Additionally, the post-maintenance testing was not robust enough to identify the presence of hard rubs between the rotor and diaphragm seals following overhaul.

Analysis: The inspectors determined the failure to control the presence of three factors in concert: 1) no turbine diaphragm alignment with tight clearances; 2) automatic admission of steam with challenging thermal properties; and 3) less than adequate post-maintenance testing, was a performance deficiency that required evaluation using the SDP. The inspectors determined this finding was more than minor because it was associated with the equipment performance attribute of the Initiating Events Cornerstone and impacted the cornerstone objective of limiting the likelihood of those events that upset plant stability. This finding was determined to be of very low safety significance because, following IMC 0609, Table 4a, "Characterization Worksheet for Initiating Events, Mitigating Systems, and Barrier Integrity Cornerstones," concluded the finding did not require quantitative assessment. Therefore, the finding was determined to be of very low safety significance (Green).

This finding has a cross-cutting aspect in the area of Human Performance, Work Practices, supervisory and management oversight aspect because the licensee failed to appropriately oversee the overhaul of the SRFPT by a vendor, and the post-maintenance testing and operation of the SRFPT during and after RF-15 (H.4 (c)).

Enforcement: Technical Specification 5.4.1.a requires written procedures be established, implemented, and maintained for the activities specified in Regulatory Guide 1.33, Revision 2, Appendix A. Regulatory Guide 1.33, Revision 2, Appendix A, Item 4.0, requires procedures for startup, shutdown, and operation of the feedwater system; and item 9 requires procedures for performing maintenance. Contrary to the above, the licensee first failed to provide adequate maintenance instruction guidance for acceptance of as-left clearances between the turbine rotor and diaphragm seals, including issues regarding concentricity and requirements to align the diaphragm seals. Second, the licensee failed to provide adequate post-maintenance testing robust enough to identify the presence of hard rubs. Finally, the procedures did not provide sufficient guidance to the operators to manage the challenging thermal properties of the transition to reheat steam being automatically applied to the SRFPT as opposed to the historically more normal power ascension using the NRFPT, including response to SRFPT shaft vibration reading greater than .4 mils. The licensee included this issue in their corrective action program as CARD 12-25544. Because this violation was of very low safety significance and it was entered into the licensee's corrective action program, this violation is being treated as an NCV, consistent with the Enforcement Policy. Inadequate Implementation of Overhaul, Post-Maintenance Testing, and Operation of South Reactor Feed Pump Turbine (NCV 05000341/20120005-02).

.2 (Closed) Licensee Event Report (LER) 05000341/2012-004: Operation or Condition Prohibited by Technical Specification 3.3.3.1

The inspectors reviewed the August 27, 2012, engineering review of Environmental Qualification & Surveillance due to cable connector assemblies connected to position indication limit switches for ¾ inch valve B3100-F019, reactor recirculation sample inboard isolation valve, had exceeded the Environmentally Qualified life. Environmentally Qualified subject matter experts could not assure the limit switch cable connector assemblies could have endured the design basis accident. The cable connector assemblies are to be replaced during the next refueling outage. The licensee identified there was a violation of procedural adherence during a change in the preventative maintenance program that caused the Environmentally Qualified issue. No new findings were identified in the inspector's review. This finding constitutes a violation

of minor significance that is not subject to enforcement action in accordance with Section 2.3.2 of the NRC's Enforcement Policy. The licensee documented the problem in CARD 12-27089. This LER is closed.

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

.3 (Closed) Licensee Event Report (LER) 05000341/2012-005: Reactor Scram Due to Loss of 120 kV Power

The inspectors reviewed the plant's response to an automatic reactor scram due to the loss of the division 1 120 kilovolt (kV) switchyard occurring on September 14, 2012, resulting in the loss of the feedwater and condensate system. All plant systems responded to the scram as designed. Offsite power was restored to the electrical buses that evening. The unexpected loss of the 120kV switchyard was due to animal intrusion (bird). No findings were identified following review of this licensee event report (LER). Documents reviewed in this inspection are listed in the Attachment to this report. This LER is closed.

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

.4 Manual Reactor Scram due to Hydrogen Leakage into the Stator Water Cooling System

a. Inspection Scope

The inspectors reviewed the plant's response to a manual scram occurring on November 7, 2012. The reactor mode switch was taken to shutdown and the main turbine generator was manually tripped in response to excessive hydrogen gas leakage into the stator water cooling system from the main turbine generator. The scram was uncomplicated. Two control rods did not respond as expected. One control rod stopped at position 02 and was manually inserted by the operator. The second stopped at position 02 and then fully inserted into the core within the next two minutes with no additional operator action. Other plant systems responded as designed. The leak in the stator water cooling system was located and repaired. Three control rod mechanisms were replaced. Documents reviewed in this inspection are listed in the Attachment to this report.

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

b. Findings

No findings were identified.

.5 Oil Spill from Oil/Water Separator

a. Inspection Scope

The inspectors reviewed the plant's response to an oil spill that occurred on November 1, 2012. During fire water header flushing operations, an oil/water mix was observed coming up from the oil water separator and oil storage sumps. The oil/water mix became mixed with the flushing water and ran into the storm water drain. Subsequently, an oil sheen was observed at storm water outfall 002, which discharges into the Fermi overflow canal and, subsequently, into Swan Creek. Flushing operations

were stopped. An oil containment boom was deployed at outfall 002 to contain the release. On November 2, 2012, Marine Pollution Control flushed the storm water system drain with fire header water to remove residual water and performed additional remediation. Documents reviewed in this inspection are listed in the Attachment to this report.

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

b. Findings

No findings were identified.

4OA5 Other Activities

.1 (Closed) NRC Temporary Instruction 2515/177: Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems (NRC Generic Letter 2008-01)

a. Inspection Scope

During an earlier inspection period, the inspectors verified the licensee implemented or was in the process of implementing the commitments, modifications, and programmatically controlled actions described in the licensee's response to NRC Generic Letter (GL) 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems." This earlier activity was conducted in accordance with Temporary Instruction (TI) 2515/177 and was documented in NRC Inspection Report 05000341/2012003. The TI remained opened for Fermi Power Plant because, at the conclusion of that inspection period, questions remained unresolved regarding the licensee's interactions with the BWR Owners Group to resolve an apparent design deficiency and to address the potential license concern related to the note in TS 3.5.1.

During this inspection period, the inspectors reengaged the licensee regarding the status of the owners group's analysis and the status of their corrective actions. Based on the results documented in NRC Inspection Report 05000341/2012003 and follow-up interviews with the licensee, inspectors have determined the continuing efforts to resolve the TS 3.5.1 emergency core cooling system operating issue in combination with the initiated compensatory actions, appropriately address the immediate concern; therefore, this TI is considered closed for Fermi Power Plant.

The documents reviewed are listed in the Attachment to this report.

b. Findings

One licensee identified violation is documented in Section 4OA7, addressing the lack of supporting analysis for low pressure coolant injection (LPCI) subsystem operability in mode 3, in accordance with TS 3.5.1 "Note" that allows the manual realignment of LPCI.

.2 (Closed) NRC Temporary Instruction (TI) 2515/187: Inspection of Near-Term Task Force Recommendation 2.3 Flooding Walkdowns

a. Inspection Scope

Inspectors accompanied the licensee on a sampling basis during their flooding and seismic walkdowns to verify the licensee's walkdown activities were conducted using the methodology endorsed by the NRC. These walkdowns are being performed at all sites in response to a letter from the NRC to licensees, entitled "Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-Ichi Accident," dated March 12, 2012 (ADAMS Accession No. ML12053A340).

Enclosure 4 of the letter requested licensees to perform external flooding walkdowns using an NRC-endorsed walkdown methodology (ADAMS Accession No. ML12056A050). Nuclear Energy Industry document 12-07 titled, "Guidelines for Performing Verification Walkdowns of Plant Protection Features," (ADAMS Accession No. ML12173A215) provided the NRC-endorsed methodology for assessing external flood protection and mitigation capabilities to verify plant features, credited in the current licensing basis for protection and mitigation from external flood events, are available, functional, and properly maintained. As documented in NRC Inspection Report 05000341/2012004, the inspectors completed the specified actions required by TI 2512/188. No findings were identified during that inspection effort. This TI is being closed in this report.

b. Findings

No findings were identified.

.3 (Closed) NRC TI 2515/188: Inspection of Near-Term Task Force Recommendation 2.3 Seismic Walkdowns

a. Inspection Scope

Inspectors accompanied the licensee on a sampling basis during their flooding and seismic walkdowns to verify the licensee's walkdown activities were conducted using the methodology endorsed by the NRC. These walkdowns are being performed at all sites in response to a letter from the NRC to licensees entitled, "Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-Ichi Accident," dated March 12, 2012 (ADAMS Accession No. ML12053A340).

Enclosure 3 of the March 12, 2012, letter requested licensees to perform seismic walkdowns using an NRC-endorsed walkdown methodology. Electric Power Research Institute document 1025286 titled, "Seismic Walkdown Guidance," (ADAMS Accession No. ML12188A031) provided the NRC-endorsed methodology for performing seismic walkdowns to verify plant features, credited in the current licensing basis for seismic events, are available, functional, and properly maintained. As documented in NRC Inspection Report 05000341/2012004, the inspectors completed the specified actions

required by TI 2512/188. No findings were identified during that inspection effort. This TI is being closed in this report.

b. Findings

No findings were identified.

4OA6 Management Meetings

.1 Exit Meeting Summary

On January 8, 2013, the inspectors presented the inspection results to Mr. K. Scott, Plant Manager, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors confirmed none of the potential report input discussed was considered proprietary.

.2 Interim Exit Meetings

Interim exits were conducted:

- December 6, 2012, the inspection results for the TI 2515/177 were discussed with Mr. M. Caragher.
- December 14, 2012, the licensed operator requalification training annual operating test results were discussed with the Licensed Operator Requalification Lead Instructor, Mr. R. Duke, via telephone.

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

4OA7 Licensee-Identified Violations

- .1 The following violations of very low significance (Green) were identified by the licensee and are violations of NRC requirements which meet the criteria of the NRC Enforcement Policy for being dispositioned as NCVs.

Title 10 CFR 50.65, Maintenance Rule, section (a)(1) requires, in part, that holders of an operating license shall monitor the performance or condition of structures, systems, or components within the scope of the rule as defined by 10 CFR 50.65 (b), against licensee established goals, in a manner sufficient to provide reasonable assurance such structures, systems, or components are capable of fulfilling their intended functions. Contrary to the above, the system engineer for system T2300 primary containment (torus-to-reactor vacuum breakers) failed to perform evaluations of various CARDS that documented as-found conditions outside the torus-to-reactor vacuum breaker acceptance criteria to determine whether maintenance rule functional failures had occurred. The maintenance rule expert panel had determined the T2300 system should be monitored as (a)(1) at the time. CARD 11-30255 was issued for this concern, and the functional failure evaluations were performed. This finding was determined to be of very low safety significance because all the screening questions in IMC 0609, Attachment 04, Table 4a, for the Mitigating Systems Cornerstone were answered 'no.'

- .2 A finding of very low safety significance (Green) and associated violation of 10 CFR, Part 50, Appendix B, Criterion III, "Design Control" was identified by the licensee for the failure to ensure the ECCS mode of operation of RHR would be capable of performing its mitigating function in mode 3 following RHR realignment from its shutdown cooling mode of operation. Specifically, the operability requirements of RHR in mode 3, as defined by TS 3.5.1, were not translated into applicable procedures or specifications of the system in that neither the procedures nor the design prevented the condition that would lead to steam void formation during a loss of coolant accident that initiates at this mode resulting in steam binding of the systems pumps and/or an adverse water hammer. The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems Cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring the capability of systems that respond to initiating events to prevent undesirable consequences. A Phase II SDP was conducted using IMC 0609, Appendix G. The finding screened as very low safety significance. The licensee entered this concern into its corrective action program as CARD 12-24503 and initiated a Condition Evaluation for "TS 3.5.1 ECCS Operating may be non-conservative." In the interim, the licensee has implemented actions to declare the division of RHR inoperable when used in the shutdown cooling mode of operation in mode 3. The safety function is maintained by the other division of RHR. The licensee plans to evaluate the BWR Owners Group analysis of the postulated mode 3 loss of coolant accident scenario and implement permanent procedural, design, and/or licensing basis changes as necessary.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

K. Scott, Plant Manager
T. Barrett, Initial Licensed Operator Training Lead Instructor
S. Berry, Manager, Systems
M. Caragher, Director, Nuclear Engineering
J. Davis, Manager, Nuclear Training
R. Duke, Licensed Operator Requalification Training Lead Instructor
J. Ellis, Manager, Work Management
J. Ford, Director, Organization Effectiveness
R. Keck, Manager, Plant Support Engineering
G. Piccard, Manager, Performance Engineering
Z. Rad, Manager, Licensing
G. Strobel, Manager, Operations
J. Thorson, Manager, Performance Improvement
C. Wolfe, Manager, Projects

Nuclear Regulatory Commission

Jamnes L. Cameron, Chief, Reactor Projects Branch 6

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened and Closed

05000341/2012005-01	FIN	Failure of E4150F002
05000341/2012005-02	NCV	Inadequate Implementation of Overhaul Post-maintenance Testing and Operation of South Reactor Feed Pump Turbine
05000341/2012-004	LER	Operation or Condition Prohibited by Technical Specification 3.3.3.1
05000341/2012-005	LER	Reactor Scram Due to Loss of 120 kV Power

Closed

05000341/2012-003	LER	Reactor Scram Due to Degrading Condenser Vacuum
TI 2515/177	TI	Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems (NRC Generic Letter 2008-01)
TI 2515/187	TI	Inspection of Near-Term Task Force Recommendation 2.3 Flooding Walkdowns
TI 2515/188	TI	Inspection of Near-Term Task Force Recommendation 2.3 Seismic Walkdowns

LIST OF DOCUMENTS REVIEWED

The following is a list of documents reviewed during the inspection. Inclusion on this list does not imply the NRC inspectors reviewed the documents in their entirety, but rather, 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.

1R01 – Adverse Weather Protection

- DTE Memo, Kramer to Hemmele; Cold Weather Readiness for 2012; 10/31/2012
- National Data Buoy Center; NWS Forecast; 10/28/2012
- ODMI-09-007d; Drywell Temperature Control; 05/21/2012
- ODMI-10-008; Operation of the South TBHVAC Exhaust Fan; 06/06/2012
- Procedure 27.000.07; Cold Weather Operations; Revision 4
- WO 31567828; Perform 27.000.07, Attachment 3, Cold Weather System Readiness Review Checklist

1R04 – Equipment Alignment

- Drawing 6M721N-2009; Cooling Tower Fan Overspeed Protection System Installation RHR Complex; Revision H
- Drawing 6M721N-2045; Cooling Tower Fan Overspeed Protection RHR Complex; Revision F
- Drawing I-2021-01; Combination Operating Panel H11P804, Wiring Diagram; Revision D
- Drawing I-2312-08; Reactor Feed Pump Turbine Alarm Schematic North and South; Revision D
- Drawing M-5730-3; Non-Interruptible Control Air System, Division I and II; Revision AI
- Drawing M-5730-4; Interruptible Control Air System Functional Operating Sketch; Revision D
- EDP 36984.001; Abandon South Reactor Feed Pump Turbine; Revision D
- EDP Continuation Sheet, EDP-36984; Index Item No. 004; Revision E
- Procedure 23.129; Station and Control Air System; Revision 100
- Procedure 35.208.002; RHRSW Mechanical Draft Cooling Tower Fan Brake Nitrogen System Maintenance; Revision 6
- WR 34734554; Implement At-Risk EDP 36984, I&C Work; 07/11/2012

1R05 – Fire Protection

- Drawing 6A721-2405; Fire Protection Evaluation Reactor and Auxiliary Buildings; Revision Y
- Fermi NQA Report 12-03; July – September 2012
- Procedure FB-RB-2-10c; Reactor Building, Second Floor Cable Tray Area, Zone 10, El. 613'6"; Revision 3
- Procedure FP-AB-5-16a; Fire Protection Pre Plan, Auxiliary Building North Standby Gas Treatment Room; Zone 16 Elv. 677'6"
- Procedure FP-RB-B-4d; Fire Protection Pre Plan, Reactor Building Basement Southeast Corner Room, Zone 4, El. 560'0"; Revision 3
- Procedure FB-RB-SB-4c; Fire Protection Pre-Plan, Reactor Building Sub-Basement Southeast Corner Room, Zone 4, El.540'0"
- Procedure 28.507.01; Fire Barrier Inspection; Revision 10
- UFSAR 9A.4.1.6; First Floor, Fire Zone 05RB, El. 583' 6", Reactor Building Steam Tunnel

1R06 – Flood Protection

- CARD 12-28928; Oil Spill from Oil/Water Separator; 11/01/2012
- DTE letter, M. Hana to J. Russell, Michigan Department of Environmental Quality; 11/09/2012
- Spill or Release Report and Notification Form; Oil Spill from Oil/Water Separator; 11/01/2012
- Crew Level Reset Briefing; CARD 12-28928, Oil Spill from Oil/Water Separator; 11/29/2012

1R11 – Licensed Operator Requalification Program

- Enrico Fermi 2 LOR 2013, Crew Summary Sheet; 11/20/2012
- Fermi 2 Evaluation Scenario SS-OP-904-1212; Uncoupled Rod, Instrument Malfunction, Torus Leak, RPV Flooding; Revision 0
- Fermi 2 Evaluation Scenario SS-OP-904-1210; RHR Pump Breaker Failure/Loss of 64C/Recirc Pump Trip/ATWS; Revision 0
- Procedure 42.302.04; Surveillance Procedure, Logic System Functional Test of Division 2 4160v Emergency Bus 65E and 13 EC Undervoltage Circuits; Revision 40
- WO 31687537; Perform 42.302.04, Division 2 Bux 65E/13EC 4160V Undervoltage Logic Functional; 11/01/2012

1R12 – Maintenance Effectiveness

- Apparent Cause Evaluation; Loss of Indication for E4150F002; 07/12/2012
- CARD 10-29453; T2300F409 Opened with Torus Pressure at .01 psig; 10/24/2010
- CARD 10-30683; T2300F410 Torus-to-Reactor Building Vacuum Breaker Isolation Valve, Will Not Close; 11/15/2010
- CARD 11-21256; T2300F409 Opened and Will Not Close; 02/03/2011
- CARD 11-29680; T5000F456, PCRMS Radiation Monitor Inlet INBD Isolation Valve, Failed to Stroke while Performing 24.408.03; 10/27/2011
- CARD 11-30255; Incomplete Maintenance Rule Evaluations for RB-Torus Vacuum Breaker Calibration Issues; 11/15/2011
- CARD 11-30497; Received 2D36, NSSS Isolation Channel D and Half Isolation; 11/24/2011
- CARD 12-20722; A7100 Near a(1) Under Maintenance Rule; 01/27/2012
- CARD 12-25718; Perform Common Cause Analysis of MRGG Codes in 2012 Q1 Bubble Chart; 07/02/2012
- CARD 12-26184; Blown Fuses for E4150F002 While Placing HPCI in Standby IAW 23.202 and 22.000.02; 07/23/2012
- CARD 12-28552; Maintenance Rule Assessment Report Frequency; 10/17/2012
- CARD 12-28590; Common Cause Evaluation Needed for Ineffective Get Well Plans; 10/19/2012
- CARD 12-29296; Reevaluation of Maintenance Preventable Determination for CARD 12-26184, E4150F002 Motor Failure; 11/16/2012
- CARD 12-30168; Maintenance Rule Expert Panel Has Determined the A7100 System Is a(1) Under Maintenance Rule; 12/21/2012
- CARD Manager Quality Checklist; 06/13/2011
- DTE Memo TMEA-11-0006, J. Thorson to M. Caragher; Quick Hit Self Assessment Results on Maintenance Rule Scoping; 04/04/2011
- DTE Memo, E. Sorg to G. Piccard; 2012 Maintenance Rule Periodic Assessment; 10/19/2012
- Human Performance Briefing Sheet; CARD 12-29296, Reevaluation of Maintenance Preventable Determination for CARD 12-26184, E4150F002 Motor Failure; 11/16/2012
- Instrument Calibration Specification Sheet; PIS Number T23N010A; 09/04/2012
- Maintenance Rule Functional Failure Evaluation 110203-01; System ID A7100; 03/12/2012

- Maintenance Rule Functional Failure Evaluation 120723-01; System ID: A7100, Doc ID 1369676; Versions 4, 10/10/2012 and Version 5, 01/03/2013
- Maintenance Rule Functional Failure Evaluation 120723-01; Doc ID 1369036, Version 4; System ID E4100; 09/07/2012 and 01/03/2013
- Maintenance Rule Presentation; SSC At or Near Performance Criteria
- Procedure MMR Appendix D; Guidelines for Determining Functional Failures and Maintenance Preventable Functional Failures; Revision 12
- Program Health Report Fermi 2, Maintenance Rule; Second, Third, and Fourth Quarters, 2011
- Schulz Electric Co. Failure Analysis Report for Detroit Edison / Fermi, Report N-6220-FA, Revision 0, Purchase Order Number 4700567081; 08/15/2012
- System Health, Fermi 2, HPCI System; Second Quarter 2011, First Quarter, 2012
- WO 26962780; Perform Motor Inspection; 04/10/2009

1R13 – Maintenance Risk Assessments and Emergent Work Control

- CARD 11-24943; Bus 64B Ammeter Phase Selector Switch Bad Contacts; 05/14/2011
- CARD 11-30198; 64C Current Indication Phase Selector Switch Making Noise (R14R820); 11/14/2011
- CARD 12-25599; R1400 LIR Assessment – Recommend Operations Not Manipulating Ammeter Switches for 64B and 64C Busses until Switches are Repaired; 06/27/2012
- CARD 12-27876; Light Wisp of Smoke and Minor Arcing Coming from the Phase Selector Switch for 64C amp Meter; 09/22/2012
- Fermi 2 Nuclear Power Plant T+1 Performance Analysis Review; 10/15-21/2012
- Fermi 2 Plan of the Day; 10/05/2012, 10/08-12/2012, 10/29-11/2/2012
- Fermi 2 Control Room Narrative Log; 10/25-26/2012, 10/29/2012, 11/02/2012
- National Data Buoy Center; NWS Forecast; 10/28/2012
- Scheduler's Evaluation for Fermi 2; 10/08-23/2012, 10/29-11/2/2012

1R15 – Operability Evaluations

- Briefing Sheet: RCE Update – Control Rods Failed to Fully Insert during Manual Scram (CARD 12-29078);
- CARD 12-25847; Oil Leak on MUT 2B; 07/10/2012
- CARD 12-27504; Seismic Analysis on Panel H11P903; 09/11/2012
- CARD 12-30177; NRC Question – Review Training and Implementing Guidance for EP-101, Classification of Emergencies; 12/21/2012
- CARD 12-30194; Workmanship Quality Issues Noted in CRD Mechanisms during Offsite Inspection; 12/23/2012
- CARD 12-30199; Possible Foreign Material in CRDMs Installed in the RPV; 12/23/2012
- ODE-15; Compensatory Monitoring Plan, Attachment 1, Revision 3
- ODMI 12-007; Degraded 64B and 64C Ammeter Selector Switches; Revision 0
- ODMI 12-009; MUT 2B Oil Leak; Revision 0
- Safety Tagging Record 2012-004742; 64C amp Meter Selector Switch; 10/11/2012
- Technical Evaluation TE-U93-12-060; Removal of Shield Wall 65a and TB2 Floor Plugs above SRFPT; Revision 0

1R19 – Post-Maintenance Testing

- Briefing Sheet: CR 58-43 Scram Time Slow at Position 48
- CARD 12-235676; Reactor Building Steam Tunnel Blow Out Panel Seal Dmage; 04/21/2012

- WO 35066177; Perform 24.208.03, Division 2 EESW and EECW Makeup Pump and Valve Operability Test; Revision 65
- WO 35128354; Division 2 EECW m/up Pump Discharge Check;
- WO 35422443; -4-58-43 Scram Time Slow at Position 48; 10/04/2012
- WO 35556900; Perform Procedure 24.208.03, Section 5.3; Revision 65
- WO 35662332; Reactor Building 1, Steam Tunnel Blowout Panel Seal Repair

1R20 - Outage Activities

- CARD 12-29149; Equivalent Replacement CRD Seals Have Different Material Composition, Use Not Evaluated; 11/10/2012
- CARD 12-29076; Control Rod 18-39 Failure to Scram to 00; 11/02/2012
- CARD 12-29077; Reactor Scram due to H₂ Inleakage to Stator Water; 11/07/2012
- CARD 12-29078; Control Rod 54-23 Failure to Scram to 00; 11/07/2012
- CARD 12-29415; Blow-Out Panel for Gasket Seal Degraded; 11/21/2012
- CARD 12-29569; Full Scram Received due to IRM A/B Upscale; 11/27/2012
- CRDM Exchange and Press Test Sequence; 12/01-05/2012
- FME Drop Log; WO 3392066; Under Vessel Sub-pile Floor; 12/02/2012
- Foreign Material Control Log; WO 3392006, Under Vessel; 11/19/2012
- Procedure 43.106.002; Control Rod Drive Hydraulic Leakage Monitoring Test on C1103DIT PMT – Leak Check for HCU 42-15 F126; 12/02/2012
- WO 34393684; Perform 43.000.005 Visual Exam (VT-2) During Reactor Vessel System Leakage Test; 12/02/2012
- WO 35647370; Control Rod Scram Insert Time Test; 12/02/2012
- WO 35669969; 04 – Fix/Repair C1103D177 – C11 F126 Packing Leak on HCU 42-15; 11/28/2012
- WR 34456604; Removed PMT step 140.1 to Perform Friction Testing Per 57.000.14 Per Reactor Engineering's Recommendation; 11/20/2012
- WR 35600238; Removed PMT step 180.1 to Perform Friction Testing Per 57.000.14 Per Reactor Engineering's Recommendation; Revision 1, 11/20/2012
- WR 35600238; Inspect the CRDM Inner Filter, and Perform Uncoupling Rod and Tube Assembly Length Checks; Revision 2, 11/28/2012

1R22 – Surveillance Testing

- Procedure 23.425.01; Activities for Closing Drywell for Forced Outage
- Procedure 24.321.07; Operability of 480V Swing Bus 72CF Automatic Throwover Scheme; Revision 10
- Procedure 43.401.207; Local Leak Rate Testing for Control Rod Drive Hatch T2301-X006
- Risk Management Plan for the Performance of 24.321.07 (72CF Throwover Test); 10/15/2012
- UFSAR 5.2.7.3.2; Identified Leakage; Revision 17
- WO 32332025; Perform 23.425.01 Activities for Closing Drywell for Forced Outage; 12/12/2012
- WO 33761956; Perform 24.321.07 480V Swing Bus 72 CF Automatic Throwover Scheme Operability; 10/15/2012
- WO 34394134; Perform 43.401.207 LLRT for CRD Hatch T2301-X006; 12/05/2012
- WO 34430227; Perform 43.401.206 Section 6.1 & 6.2, LLRT for Airlock (X-2); 12/23/2012
- WO 43.401.207; LLRT for CRD Hatch T2301-X006 PMT; 12/12/2012/

1EP4 Emergency Action Level and Emergency Plan Changes

- Fermi 2 Radiological Emergency Response Preparedness Plan; Revision 40

1EP6 – Drill Evaluation

- CARD 12-28502; RERP Gold Team Drill Stopped due to Conflicting Usage of TSC Which Created a Distraction Contrary to FBP-28; 10/16/2012
- DTE Memo, N. Avrakotos to ERO Gold Team Members; Modification of October 16, 2012, Gold Team Drill and October 18 Gold Team Training; NARP-12-0199, 10/08/2012
- DTE Memo, C. Monday to E. Meyer, Gold Team Training/Table Top; 10/16/2012
- Gold Team Training; 2012 Internal OEX
- NARP-12-0199, Modification of October 16, 2012, Gold Team Drill and October 18 Gold Team Training

4OA1 – Performance Indicator Verification

- Fermi 2 Operator Log; 12/01/2011 to 01/01/2012; 01/01/2012 to 02/01/2012; 06/01/2012 to 07/01/2012; 09/01/2012 to 10/01/2012
- Fermi 2 RHR Performance Indicators; 01/2012; 06/2012; 09/2012
- MS09 Review Package 2012 Q3
- MSPI Derivation Report; Cooling Water System; Unavailability Index; 09/2012
- MSPI Derivation Report; Cooling Water System; Unreliability Index; 09/2012
- MSPI Derivation Report; Residual Heat Removal System, Unavailability Index; 09/2012
- MSPI Derivation Report; Residual Heat Removal System, Unreliability Index; 09/2012
- STR 2012-001421; Division 1 RHR Hx Service Water Outlet FCV; 10/30/2012
- STR 2012-001921; Division 2 RHR Hx Service Water Outlet FCV; 10/30/2012
- WO 31358162; Perform 24.205.06 Division 2 RHRSW Pump and Valve Operability; 12/03/2011
- WO 32068475; Perform 42.302.02 Division 1 Bux 64B/11EA 4160v Undervoltage Logic Functional; 09/14/2012

4OA2 – Identification and Resolution of Problems

- 50.59 Evaluation No. 12-0172; Operation at Reduced Power with the South RFP and RFPT Out of Service; Revision 0
- 50.59 Screen No. 12-0172; Operation at Reduced Power with the South RFP and RFPT Out of Service; Revision 0
- Active Operations Challenges Index; 09/14/2012
- CARD 12-24576; Declining Trend Identified in Human Performance – Work Practices in 1Q12; 05/18/2012
- CARD 12-24867; Potential Weakness in Performance Engineering Implementation of Procedures; 05/31/2012
- CARD 12-24868; Performance Engineering Human Performance Trend Based on Observation Way Analysis for March 2012 – April 2012; 05/31/2012
- CARD 12-25544; Reactor Scram Due to Loss of Condenser Vacuum; 06/26/2012
- CARD 12-25545, CARD 12-25545-03; System Engineering Trend Identified via Observation Database; 07/21/2012
- CARD 12-27147; Declining Trend in Human Performance Work Practices – Error Prevention in the NRC Cross-Cutting Areas Matrix of the 2Q12 Performance Improvement Quarterly Trend Report; 08/28/2010

- CARD 12-27226; Ineffective Corrective Actions for CARD 11-26699; 08/30/2012
- CARD 12-28549; Performance Engineering Monthly HU Reset Data Analysis – October 2012; 10/17/2012
- CARD 12-28571; ECR 36708-3 Identifies the Wrong Room for Conduit Installation and Hole Boring; 10/18/2012
- CARD 12-28707; 2012 NSCA – Sufficient Information in Communication of Important Decisions (Observation) 10/24/2012
- Crew Performance Review, Shift 4; 07/06/2012, 08/10/2012, 09/14/2012, 10/19/2012
- Crew Performance Review, Shift 5; 06/08/2012, 07/13/2012, 08/17/2012, 09/21/2012
- DTE Letter NRC-12-0073, J. Conner to U.S. NRC; Plans for Restoration of the South Reactor Feedpump; 11/16/2012
- DTE Memo TMEA-12-0012, J. Yeager to M. Caragher; 2012 Second Quarter Engineering HU Resets; 07/31/2012
- DTE Memo NANT-11-0160, A Snyder to G. Strobel and Kevin McMahon; Level 3 Evaluation: Operations Continuing Training; 12/01/2011
- DTE Memo NANT-12-0119, R. Duke to J. Simone and G. Strobel; Level 3 Evaluation: Tech Spec 3.3.2.2; 09/11/2012
- DTE Memo NANT-12-0127, D. Coeseo to K. McMahon, J. Simone, G. Strobel; Level 3 Evaluation: Operations Tagging Dynamic Learning Activity
- DTE Memo NAPI-12-0052, R. Snow to K. Scott; 2012 Second Quarter Organizational Effectiveness HU Resets; 07/11/2012
- DTE Memo NAPI-12-0053, R. Snow to K. Scott; 2012 Second Quarter Organizational Effectiveness Observations; 07/11/2012
- DTE Memo NAPI-12-0054, R. Snow to K. Scott; 2012 Second Quarter Organizational Effectiveness CARDS; 07/16/2012
- DTE Memo NAPI-12-0077, R. Snow to J. Ford; 2012 Third Quarter Organizational Effectiveness HU Resets; 10/02/2012
- DTE Memo NAPI-12-0078, R. Snow to J. Ford; 2012 Third Quarter Organizational Effectiveness Observations; 10/05/2012
- DTE Memo NAPI-12-0080, R. Snow to J. Ford; 2012 Third Quarter Organizational Effectiveness CARDS; 10/17/2012
- Department Event Free Day Resets Average Days Last 6 Resets, Operational Excellence and Safety Metric 16
- EDP-36982; South Reactor Feed Pump/Turbine Mechanical Isolations; Revision D
- EDP-36984; Abandon South Reactor Feed Pump Turbine I&C Electrical Isolations; Revision E
- Electrical Crew Monthly Review Meeting;
- Fermi 2 “Let’s Talk” Week of October 8, 2012
- Fermi 2 System Engineering, Human Performance Event, CARD 12-25545; 06/26/2012
- Fermi NQA Report 12-01; January – April 2012 Including RF15
- Fermi NQA Report 12-02; May – June 2012
- Human Performance Behaviors, Operational Excellence and Safety Metric 14
- Management Challenge Board Gap Summary – Operations; 10/11/2012
- NQA Quarterly Report; January – March 2010; July – September 2010; April – June 2011
- ODMI-12-005; Extended Plant Operation with Only the North RFPT; Revision 0
- Open Operator Challenges; 09/2012
- Operations DSEM; September 2012
- Operations Improvement; ODE-4 Enclosure B, Revision 39
- Percent of Required Paired Management Observations Completed, Organizational Excellence Metric 28

- Procedure 22.000.03; Power Operation 25 percent to 100 percent to 25 percent Revisions 87, 88, and 89
- Procedure Use and Adherence Behaviors, Organizational Excellence Metric 27
- Shift Manager Daily Operational Focus Meeting; 12/12/2012
- Technical Evaluation TE-N21-12-062; Power Generation System Review for Extended Time at Reduced Power; Revision 0

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

- Apparent Cause Evaluation, CARD 12-27089; Containment Isolation Valve Position Indication Cable Assembly (RG 1.97/EQ Sub-component) Not Replaced Per EQ Requirements; 09/27/2012
- Area Walk-By Checklist; B11, Division 1 Switchgear Room; 08/14/2012
- Area Walk-By Checklist; B-15 Relay Room; 08/06/2012
- Area Walk-By Checklist; B-20, near Col. G-11; 08/16/2012
- CARD 12-26229; Individuals Arrived Late for Training; 07/24/2012
- CARD 12-26630; Fukushima Seismic Walkdown NTTF 2.3 – GAI-Tronic above Panel H11P901 Does Not Appear to be Seismically Supported; 08/07/2012
- CARD 12-26837; Drafting Error on Drawing E-2998-05; 08/14/2012
- CARD 12-27089; Containment Isolation Valve Position Indication Cable Assembly (RG 1.97/EQ sub-component) Not Replaced Per EQ Requirements; 08/27/2012
- CARD 12-27093; Repair Light Fixture in Division 1 Switchgear Room; 08/27/2012
- CARD 12-27131; NRC Identified, Flex Conduit Appears to be Too Rigid; 08/28/2012
- CARD 12-27480; NRC question on HPCI Oil Pump; 09/11/2012
- CARD 12-27952; Fukushima Seismic Walkdowns – Cabinets Inspection; 09/25/2012
- CARD 12-27959; Seismic Clearance Between Shutdown Panel and HVAC Duct; 09/25/2012
- CARD 12-28928; Oil Spill from Oil/Water Separator; 11/01/2012
- External Flood Walkdown; Opening List
- LCO 2012-0462D; B3100 Limit Switches for B3100F019 Past EQ Life; 09/26/2012
- LER 2012-003; Reactor Scram Due to Degrading Condenser Vacuum; 06/25/2012
- LER 2012-004; Operation or Condition Prohibited by Technical Specification 3.3.3.1; 08/27/2012
- LER 2012-005; Reactor Scram Due to Loss of 120 kV Power
- PM Change, Event B325; 09/24/1998
- Procedure 23.107; Reactor Feedwater and Condensate Systems; Revision 126
- SWEL 1; Equipment listing
- SWEL #1(Division 1) and SWEL #2 (Division 2) Seismic Walkdown Schedules; 2012
- Seismic Walkdown Checklist; Equipment ID H11P870, Division 2 Misc. DC Relay Panel; 08/07/2012
- Seismic Walkdown Checklist; Equipment ID H11P898B, Division 2 EDG Auto Load Sequencing Cabinet; 08/07/2012
- Seismic Walkdown Checklist; Equipment ID H11P915, PCMS and Misc. Relay Cab, Division 2; 08/07/2012
- Seismic Walkdown Checklist; Equipment ID H21P100, Remote Shutdown Panel; 08/14/2012
- Seismic Walkdown Checklist; Equipment ID H21P628, Dedicated Shutdown Local Control Panel Division 1; 08/14/2012
- Seismic Walkdown Checklist; Equipment ID R3200S020C, Division 1 130 DC Battery Charger 2A1-2; 08/16/2012

4OA5 - Other Activities

- Area Walk-by Checklist; Building AB, HPCI Room; 08/08/2012 and 10/04/2012
- Area Walk-by Checklist; Building AB, A-34, Col. F-11; 10/04/2012
- Area Walk-by Checklist; Reactor Building; A-17, Col. A/B – 13/15; 08/16/2012
- Area Walk-by Checklist; RHR, EDG 11, Col. 6-6₁/ B-d; 08/17/2012
- Area Walk-by Checklist; RHR, EDG 12, Co. C-5.1; 08/17/2012
- Area Walk-by Checklist; RHR, EDG 14, Second Floor; 08/09/2012
- Becht Engineering letter 19583-L-001, F.G.Abatt to DTE, D Powel; Report Documenting Review of DTE Draft Report dated October 11, 2012; 10/19/2012
- CARD 12-27480; NRC question on HPCI Oil Pump; 09/11/2012
- CARD 12-27481; NRC question on HPCI Seismic Walkdown; 09/11/2012
- CARD 12-27521; Fukushima Flood Inspection of Watertight Door RB1; 09/12/2012
- CARD 12-27999; While performing Fukushima Flooding Walkdowns, Inspection of RR Airlock Floor Penetrations E-12350, E-12349, E-12348, and P-12347 Found That No Internal Seal was Present. Further investigation is required; 09/26/2012
- CARD 12-28302; While Performing Fukushima Flooding Walkdowns, Inspection of R1-1 and R1-2 Railroad Air Lock Doors Found Signs of Wear and Pitting in Rail Seal Plugs A-17451, A-17452, A-17453, and A-17454; 10/08/2012
- CARD 12-29233; Seismic Analysis of Anchors on Panel H11P903; 11/14/2012
- EPRI, 2012 Technical Report; Seismic Walkdown Guidance, for Resolution of Fukushima Near-Term Task Force Recommendation 2.3: Seismic
- External Flood Walkdown
- Frequently Asked Questions on Seismic Walkdown Guidance; 08/12/2012
- Seismic Walkdown Checklist; Equipment ID No. E4101C001C, HPCI Turbine Driven Oil Pump; 08/07/2012
- Seismic Walkdown Checklist; Equipment ID No. E4150F001, HPCI Turbine Steam Supply Isolation MOV; 08/07/2012
- Seismic Walkdown Checklist; Equipment ID No. E4150F004, HPCI Booster Pump Suct from CST ISO MOV; 08/07/2012
- Seismic Walkdown Checklist; Equipment ID No. H21P420, Instrumentation Rack for HPCI Division 2 Turb and Pilot Valves; 08/07/2012
- Seismic Walkdown Checklist; Equipment ID No. H21P081, Division 2 EECS Trip Unit Instrument Rock; 10/04/2012
- Seismic Walkdown Checklist; Equipment ID No. H21P083, EECS Trip Unit Cabinet, Division 2; 10/04/2012
- Seismic Walkdown Checklist; Equipment ID No. H21P085; RPS Trip Unit Cabinet A2, Division 2; 10/04/2012
- Seismic Walkdown Checklist; Equipment ID No. H21P087, RPS Trip Unit Cabinet B2, Division 2; 10/04/2012
- Seismic Walkdown Checklist; Equipment ID No. R1400S039B, SWGR Division 2, 480V, ESS Bus 72 ED, V Reg; 08/09/2012
- Seismic Walkdown Checklist; Equipment ID No. R3000D002, EDG 12 Starting Air Compressor; 08/07/2012
- Human Performance Briefing Sheet; CARD 12-27068, NRC Concern during Seismic Walkdowns in Support of NTTF 2.3 Fukushima Walkdowns; 08/27/2012
- Human Performance Briefing Sheet; CARD 12-27069, Preparation for NTTF 2.3 Seismic Walkdowns; 08/27/2012

LIST OF ACRONYMS USED

ACE	Apparent Cause Evaluation
ADAMS	Agencywide Document Access Management System
BWR	Boiling Water Reactor
CARD	Corrective Action Resolution Document
CFR	Code of Federal Regulations
DRP	Division of Reactor Projects
ECCS	Emergency Core Cooling System
EDG	Emergency Diesel Generator
EECW	Emergency Equipment Cooling Water
EPRI	Electric Power Research Institute
FO	Forced Outage
HPCI	High Pressure Coolant Injection
IMC	Inspection Manual Chapter
IP	Inspection Procedure
ISI	Inservice Inspection
kV	Kilovolt
LER	Licensee Event Report
LLRT	Local Leak Rate Testing
LOCA	Loss of Coolant Accident
LPCI	Low Pressure Coolant Injection
MRFF	Maintenance Rule Functional Failure
MSPI	Mitigating Systems Performance Index
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NIAS	Non-Interruptible Air Supply
NRC	U.S. Nuclear Regulatory Commission
NRFP	North Reactor Feed Pump Turbine
PARS	Publicly Available Records System
PI	Performance Indicator
PMT	Post-Maintenance Testing
RCS	Reactor Coolant System
RFO	Refueling Outage
RHR	Residual Heat Removal
RWCU	Reactor Water Cleanup
SDP	Significance Determination Process
SRFP	South Reactor Feed Pump
SRFP	South Reactor Feed Pump Turbine
TI	Temporary Instruction
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
WO	Work Order

J. Plona

-2-

If you disagree with the cross-cutting aspect assigned to any finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region III, and the NRC Resident Inspector at the Fermi Power Plant.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records System (PARS) component of NRC's Agencywide Document Access and Management System (ADAMS). ADAMS is accessible from the NRC Website at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Jamnes L. Cameron, Chief
Branch 6
Division of Reactor Projects

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

Enclosure: Inspection Report 05000341/2012005
w/Attachment: Supplemental Information

cc w/encl: Distribution via ListServ™

DISTRIBUTION:

John Cassidy
RidsNrrDorLp3-1 Resource
RidsNrrPMFermi2 Resource
RidsNrrDirslrib Resource
Chuck Casto
Cynthia Pederson
Steven Orth

Allan Barker
Christine Lipa
Carole Ariano
Linda Linn
DRPIII
DRSIII
Tammy Tomczak
ROPreports.Resource@nrc.gov

DOCUMENT NAME: Fermi Power Plant 2012 005

Publicly Available Non-Publicly Available Sensitive Non-Sensitive

To receive a copy of this document, indicate in the concurrence box "C" = Copy without attach/encl "E" = Copy with attach/encl "N" = No copy

OFFICE	RIII - DRP	RIII - DRP	RIII	RIII
NAME	PSmagacz:rj	JCameron		
DATE	01/25/13	01/28/13		

OFFICIAL RECORD COPY