



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION III  
2443 WARRENVILLE RD. SUITE 210  
LISLE, IL 60532-4352

July 25, 2014

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: FERMI POWER PLANT, UNIT 2  
NRC INTEGRATED INSPECTION REPORT 05000341/2014003

Dear Mr. Plona:

On June 30, 2014, the U.S. Nuclear Regulatory Commission (NRC) completed an integrated inspection at your Fermi Power Plant, Unit 2. On July 9, 2014, the NRC inspectors discussed the results of this inspection with Mr. W. Colonnello and other members of your staff. The inspectors documented the results of this inspection in the enclosed inspection report.

The NRC inspectors documented three findings of very low safety significance (Green) in this report. Two of these findings involved violations of NRC requirements. The NRC is treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2.a of the NRC Enforcement Policy.

If you contest the violations 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.

If you disagree with a cross-cutting aspect assignment or a finding not associated with a regulatory requirement 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.

J. Plona

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In accordance with Title 10 of the *Code of Federal Regulations* 2.390, "Public Inspections, Exemptions, Requests for Withholding," 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), accessible from the NRC Website at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

**/RA/**

Michael A. Kunowski, Chief  
Branch 5  
Division of Reactor Projects

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

Enclosure:  
Inspection Report 05000341/2014003  
w/Attachment: Supplemental Information

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

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

Report No: 05000341/2014003

Licensee: DTE Electric Company

Facility: Fermi Power Plant, Unit 2

Location: Newport, MI

Dates: April 1 through June 30, 2014

Inspectors: B. Kemker, Senior Resident Inspector  
P. Smagacz, Resident Inspector  
S. Bell, Health Physicist  
J. Bozga, Reactor Inspector  
R. Morris, Senior Operator Licensing Examiner

Approved by: M. Kunowski, Chief  
Branch 5  
Division of Reactor Projects

Enclosure

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## SUMMARY OF FINDINGS

Inspection Report 05000341/2014003; 04/01/2014 – 06/30/2014; Fermi Power Plant, Unit 2; Operability Determinations and Functionality Assessments, In-Plant Airborne Radioactivity Control and Mitigation, Identification and Resolution of Problems.

This report covers a three-month period of inspection by resident inspectors and announced baseline inspections by regional inspectors. Three Green findings, two of which had an associated non-cited violation (NCV) of the NRC regulations, were identified. 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," dated June 2, 2011. Cross-cutting aspects are determined using IMC 0310, "Components Within the Cross-Cutting Areas," dated December 19, 2013. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy dated July 9, 2013. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process" Revision 5, dated February 2014.

### Cornerstone: Mitigating Systems

- Green. The inspectors identified a finding of very low safety significance. Upon discovery that surveillance testing procedures for safety-related batteries had not fully satisfied the applicable Technical Specification Surveillance Requirements (TSSRs), the licensee incorrectly used the provision of TSSR 3.0.3 to not declare the applicable Limiting Condition for Operation (LCO) not met and enter the appropriate condition(s), as required by TSSR 3.0.1 and Technical Specification (TS) 3.0.2, without considering the distinction between a missed surveillance versus a never-performed surveillance. Because the licensee subsequently completed the battery surveillance satisfactorily and the required actions of TS 3.8.5 Condition were fortuitously met, no violation of TS 3.02 or TS 3.8.5 was identified. The licensee entered this performance deficiency into its corrective action program for evaluation and identification of appropriate corrective actions.

The finding was of more than minor significance because a failure to correctly implement LCO and surveillance requirements has the potential to lead to a more significant safety concern if left uncorrected. Specifically, a failure to declare an LCO not met, enter the applicable condition(s), and follow the applicable actions could reasonably result in operations outside of established safety margins or analyses. The finding was determined to be of very low safety significance because adequate mitigation capability remained, and the issue did not involve a loss of inventory control. The issue also did not involve an actual loss of function of the direct current electrical power system because battery terminal connection resistance measurements were acceptable when subsequently performed. The inspectors determined this finding affected the cross-cutting area of human performance because a conservative bias in decision making was not demonstrated by the licensee's assumption that TSSR 3.0.3 would apply to the never-performed surveillances (H.14). Prior to applying TSSR 3.0.3, the licensee did not appropriately consider the distinction between a late versus a never-performed surveillance and had not prepared a basis to conclude the surveillances had been adequately demonstrated outside of routine surveillances. The licensee's position paper one month after the fact rationalized the assumption without providing objective quality evidence to support its conclusion. (Section 1R15.b.)

- Green. A finding of very low safety significance with an associated non-cited violation of Technical Specification 5.4.1.a was self-revealed on February 6, 2014, when the Division 2 emergency equipment cooling water (EECW) system and its supported systems were inadvertently rendered inoperable. Control Room operators incorrectly positioned the Division 2 EECW isolation override switch to manual override while attempting to place the system in its normal standby configuration, disabling the system's automatic initiation function. The licensee promptly restored the affected systems to an operable status by returning the override switch back to normal. The issue was entered into the licensee's corrective action program for evaluation and additional corrective actions.

The finding was of more than minor significance since it was associated with the human performance attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the mis-positioned control switch rendered the Division 2 EECW system and its supported systems inoperable. The finding was determined to be of very low safety significance during a detailed quantitative Significance Determination Process review since the delta core damage frequency was determined to be less than 1.0E-7/year using the NRC Standardized Plant Analysis Risk model. The inspectors concluded this finding affected the cross-cutting area of human performance since adequate licensee personnel work practices did not support successful human performance (H.12). Specifically, human error prevention techniques, such as pre-job briefing and peer checking, were not adequately used to ensure that the correct procedure section was performed. (Section 4OA2.2.b.)

### **Cornerstone: Occupational Radiation Safety**

- Green. The inspectors identified a finding of very low safety significance with an associated non-cited violation of 10 CFR 20.1703(c)(4)(vii) for defeating a safety feature for the Mururoa V4 MTH2 air-supplied suit (Delta Suit) Respirator, i.e., placement of tape over an escape zipper. This issue was entered into the licensee's corrective action program as Condition Assessment Resolution Document 14-21795. The licensee is currently evaluating necessary changes to its program.

The performance deficiency was determined to be of more than minor safety significance in accordance with Inspection Manual Chapter (IMC) 0612, Appendix B, "Issue Screening," because it was associated with the program and process attribute of the Occupational Radiation Safety Cornerstone and adversely affected the cornerstone objective to ensure worker health and safety from exposure to radioactive material. In accordance with IMC 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," the inspectors determined the finding had very low safety significance because the finding did not involve: (1) as-low-as-is-reasonably achievable planning or work controls, or (2) an overexposure, or (3) a substantial potential for an overexposure, or (4) a compromised ability to assess dose. The inspectors identified that the primary cause of this finding was related to the cross-cutting area of human performance with the aspect of documentation (H.7). Specifically, the licensee failed to create and maintain documentation that is consistent with manufacturer recommendations. The licensee did not ensure the procedure used for this activity was current. (Section 2RS3.1.b.)

## **REPORT DETAILS**

### **Summary of Plant Status**

Fermi Power Plant, Unit 2, was operating at about 20 percent power at the beginning of the inspection period. The licensee had performed a reactor startup from the Cycle 16 refueling outage on March 27, 2014, and was troubleshooting a problem affecting the main generator voltage regulator. The unit was operated at or near full power during the inspection period with the following exceptions:

- On April 5, the licensee synchronized the unit to the electrical grid, completing a 54-day refueling outage. On April 6, when the unit reached 90 percent power, an oil leak was identified on one of the two main power transformers. The licensee reduced power to about 80 percent pending evaluation of the transformer oil leak. The unit was subsequently operated at about 83 percent until April 15 when the licensee began a power reduction for a planned maintenance outage.
- On April 16, the licensee removed the unit from service for a planned maintenance outage to replace one of two main power transformers and complete additional maintenance.
- On April 21, the licensee performed a reactor startup and synchronized the unit to the electrical grid on April 23. The unit reached 98.4 percent power on April 24, and reached 100 percent power on May 5 following testing associated with a 1.6 percent measurement uncertainty recapture (MUR) unit power uprate license amendment.
- On May 15, the licensee reduced power to about 90 percent to perform a control rod pattern adjustment. The unit was returned to 100 percent power later that day.
- On May 18, the licensee reduced power to about 65 percent to perform data collection for reactor recirculation pump flow adjustments. The unit was returned to 100 percent power later that day.
- On May 28, the licensee reduced power to about 90 percent to set mechanical limits for the reactor recirculation pump motor generator sets. The unit was returned to 100 percent power later that day.
- On May 31, the licensee reduced power to about 68 percent to perform a control rod pattern adjustment and main turbine control/stop valve surveillance testing. The unit was returned to 100 percent power the following day.

### **1. REACTOR SAFETY**

#### **Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity**

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

##### .1 Readiness of Offsite and Alternate AC [Alternating Current] Power Systems

##### a. Inspection Scope

The inspectors evaluated the licensee's plant features and procedures for operation and continued availability of offsite and alternate AC power systems. The inspectors interviewed plant personnel and reviewed the licensee's communications protocols between the Transmission System Operator (TSO) and the plant to verify the

appropriate information was being exchanged when issues arose that could impact the offsite power system. Aspects considered in the inspectors' review included:

- The actions to be taken when notified by the TSO that the post-trip voltage of the offsite power system at the plant will not be acceptable to assure the continued operation of the safety-related loads without transferring to the onsite power supply;
- The compensatory actions identified to be performed if it is not possible to predict the post-trip voltage at the plant for the current grid conditions;
- The required re-assessment of plant risk based on maintenance activities that could affect grid reliability, or the ability of the transmission system to provide offsite power; and
- The required communications between the plant and the TSO when changes at the plant could impact the transmission system, or when the capability of the transmission system to provide adequate offsite power is challenged.

During the week of May 12 through 16, the inspectors performed a walkdown of the switchyards to observe the material condition of the offsite power sources and also reviewed the status of outstanding work orders (WOs) to assess whether corrective actions for any degraded conditions were scheduled with the TSO with the appropriate priority.

In addition, the inspectors verified issues related to the availability and reliability of the offsite and alternate AC power systems were entered into the licensee's corrective action program with the appropriate characterization and significance. Selected condition assessment resolution documents (CARDs) were reviewed to verify corrective actions were appropriate and implemented as scheduled.

This inspection constituted one offsite and alternate AC power systems readiness inspection sample as defined in Inspection Procedure (IP) 71111.01.

b. Findings

No findings were identified.

.2 Readiness for Impending Hot Summer Weather Conditions

a. Inspection Scope

The inspectors evaluated the licensee's preparations for hot summer weather conditions, focusing on the supplemental closed cooling water (SCCW) and the Reactor Building closed cooling water (RBCCW) systems. During the weeks of May 18 through 24 and May 25 through 31, the inspectors performed a detailed review of severe weather and plant de-winterization procedures and performed general area plant walkdowns. The inspectors focused on plant-specific design features and implementation of procedures for responding to or mitigating the effects of hot summer weather conditions on the operation of the plant. The inspectors reviewed system health reports and system engineering summer readiness review documents for the above systems.

In addition, the inspectors verified that adverse weather-related issues were entered into the licensee's corrective action program with the appropriate characterization and significance. Selected CARDS were reviewed to verify that corrective actions were appropriate and implemented as scheduled.

This inspection constituted one seasonal extreme weather-readiness inspection sample as defined in IP 71111.01.

b. Findings

No findings were identified.

1R04 Equipment Alignment (71111.04)

.1 Quarterly Partial System Walkdowns (71111.04Q)

a. Inspection Scope

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

- High Pressure Coolant Injection (HPCI) (single train risk significant system);
- Emergency Equipment Cooling Water (EECW) and Emergency Equipment Service Water (EESW) Division 2 during planned maintenance on EECW, EESW, and Control Center Heating, Ventilation & Air Conditioning (CCHVAC) Division 1; and
- Core Spray (CS) Division 1 during planned maintenance on CS Division 2.

The inspectors selected these systems based on their risk significance relative to the Reactor Safety Cornerstones. The inspectors reviewed operating procedures, system diagrams, Technical Specification (TS) requirements, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have rendered the systems incapable of performing their intended functions. The inspectors also walked down accessible portions of the systems to verify system components and support equipment were aligned correctly and were available. The inspectors observed operating parameters and examined the material condition of the equipment to verify there were no obvious deficiencies.

In addition, the inspectors verified equipment alignment problems were entered into the licensee's corrective action program with the appropriate characterization and significance. Selected CARDS were reviewed to verify corrective actions were appropriate and implemented as scheduled.

This inspection constituted three partial system walkdown inspection samples as defined in IP 71111.04.

b. Findings

No findings were identified.

.2 Semi-Annual Complete System Walkdown (71111.04S)

a. Inspection Scope

The inspectors performed a complete system alignment inspection of the emergency diesel generators (EDGs) to verify the functional capability of the on-site emergency AC power system. This system was selected because it was considered both safety significant and risk significant in the licensee's probabilistic risk assessment. The inspectors walked down the EDGs to review mechanical and electrical equipment lineups, electrical power availability, pressure and temperature indications, component labeling, component lubrication, component and equipment cooling, hangers and supports, operability of support systems, and to ensure ancillary equipment or debris did not interfere with equipment operation. A review of a sample of past and outstanding WOs was performed to determine whether any deficiencies significantly affected the system function.

The inspectors used the guidance contained in Operating Experience Smart Sample (OpESS) FY2008-01, "Negative Trend and Recurring Events Involving Emergency Diesel Generators," during this inspection to focus attention on the licensee's assessment and resolution of vibration-induced failure of EDG piping and tubing.

This inspection constituted one complete system walkdown inspection sample as defined in IP 71111.04.

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

.1 Routine Resident Inspector Tours (71111.05Q)

a. Inspection Scope

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

- Turbine Building Basement, Standby Feedwater System Area;
- Turbine Building Basement, Pipe Tunnel;
- Turbine Building Second Floor Mezzanine, Third 52" Manifold Area;
- Torus Room, Bottom Floor;
- Auxiliary Building Fourth Floor, Computer Room and Ventilation Area Above Control Room; and
- Auxiliary Building Fifth Floor, Division 2 CCHVAC Room.

The inspectors reviewed these fire 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

Protection 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. 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.

In addition, the inspectors verified fire protection related problems were entered into the licensee's corrective action program with the appropriate characterization and significance. Selected CARDS were reviewed to verify corrective actions were appropriate and implemented as scheduled.

This inspection constituted six quarterly fire protection inspection samples as defined in IP 71111.05AQ.

b. Findings

No findings were identified.

1R06 Flooding (71111.06)

.1 Internal Flooding

a. Inspection Scope

The inspectors reviewed selected plant design features and licensee procedures intended to protect the plant and its safety-related equipment from internal flooding events. The inspectors reviewed flooding analyses and design documents, including the Updated Final Safety Analysis Report (UFSAR), engineering calculations, and abnormal operating procedures to identify licensee commitments. In addition, the inspectors reviewed licensee drawings to identify areas and equipment that may be affected by internal flooding caused by the failure or misalignment of nearby sources of water, such as the fire suppression or the service water systems.

The inspectors performed a walkdown of accessible portions of the following plant areas to assess the adequacy of watertight doors and verify drains and sumps were clear of debris and were functional, and the licensee complied with its commitments:

- Reactor Building Sub-Basement, Northeast and Southeast Quadrants, and HPCI Pump Room.

In addition, the inspectors verified internal flooding related problems were entered into the licensee's corrective action program with the appropriate characterization and significance. Selected CARDS were reviewed to verify corrective actions were appropriate and implemented as scheduled

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

b. Findings

No findings were identified.

1R07 Heat Sink Performance (71111.07)

.1 Annual Heat Sink Performance (71111.07A)

a. Inspection Scope

The inspectors reviewed the licensee's examination of the EDG 13 jacket water, lube oil, and air cooler heat exchangers. The inspectors assessed the as-found and as-left condition of the heat exchangers by direct observation and document reviews to verify that no deficiencies existed that would adversely impact the heat exchangers' ability to transfer heat to the EDG service water system and to ensure that the licensee was adequately addressing problems that could affect the performance of the heat exchangers. The inspectors observed portions of inspection and cleaning activities, eddy current tube examination activities, and reviewed documentation to verify that the inspection acceptance criteria specified in procedure MES 54, "Heat Exchanger Component Monitoring Program," Revision 4, were satisfactorily met.

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

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program (71111.11)

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

a. Inspection Scope

The inspectors observed licensed operators during evaluated simulator training on June 10. The inspectors assessed the operators' response to the simulated events focusing on alarm response, command and control of crew activities, communication practices, procedural adherence, and implementation of Emergency Plan requirements. The inspectors also observed the post-training critique to assess the ability of the licensee's evaluators and the operating crew to self-identify performance deficiencies. The crew's performance in these areas was compared to pre-established operator action expectations and successful critical task completion requirements.

The inspectors used the guidance contained in OpESS FY2010-02, "Sample Selections for Reviewing Licensed Operator Examinations and Training Conducted on the Plant-Referenced Simulator," during this inspection to focus attention on the licensee's training for complex transients and/or complicated scrams.

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

b. Findings

No findings were identified.

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

a. Inspection Scope

On March 28, the inspectors observed licensed operators in the Control Room remove the residual heat removal (RHR) system from shutdown cooling mode and start reactor recirculation pumps in preparation for plant startup from the refueling outage. In addition, on April 24, the inspectors observed licensed operators in the Control Room perform a brief plant down power for a control rod pattern adjustment and recovery from loss of heater drain pumps during ascension to full power following startup from a planned maintenance outage. These activities required heightened awareness, additional detailed planning, and involved increased operational 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 (or 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.

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

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors evaluated the licensee's handling of selected degraded performance issues involving the following risk significant structures, systems, and components (SSCs):

- CARD 13-28248, Trip of South Condenser Pump Forces Unplanned Reactor Downpower;
- CARD 14-20891, Received 3D18 Integrated Process Computer System Monitored Inputs Abnormal for Point C11DC0129 Rod Position Information System Inoperative; and
- CARD 13-25913, Found Marriage Block Separated from Actuator.

The inspectors assessed performance issues with respect to the reliability, availability, and condition monitoring of the SSCs. Specifically, the inspectors independently verified the licensee's handling of SSC performance or condition problems in terms of:

- appropriate work practices;
- identifying and addressing common cause failures;
- scoping of SSCs in accordance with 10 CFR 50.65(b);
- characterizing SSC reliability issues;
- tracking SSC unavailability;
- trending key parameters (condition monitoring);
- 10 CFR 50.65(a)(1) or (a)(2) classification and reclassification; and
- appropriateness of performance criteria for SSC functions classified (a)(2) and/or appropriateness and adequacy of goals and corrective actions for SSC functions classified (a)(1).

In addition, the inspectors verified problems associated with the effectiveness of plant maintenance were entered into the licensee's corrective action program with the appropriate characterization and significance. Selected CARDS were reviewed to verify corrective actions were appropriate and implemented as scheduled.

This inspection constituted three quarterly maintenance effectiveness inspection samples as defined in IP 71111.12.

b. Findings

No findings were identified.

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

a. Inspection Scope

The inspectors reviewed the licensee's evaluation and management of plant risk for 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:

- Planned maintenance during the week of April 6-12 including Division 2 EDG, Emergency Core Cooling System (ECCS) logic functional testing, and Reactor Water Cleanup system differential flow testing;
- Planned maintenance during the week of May 5-9 including the Division 2 Switchgear and Battery Charger Room Coolers, #3 General Service Water Pump, and Measurement Uncertainty Recapture (MUR) power uprate testing;
- Planned and emergent maintenance during the week of May 12-16 on EDG 11, control rod blade recovery in the Spent Fuel Pool, and severe weather;
- Emergent maintenance during the week of May 19-24 on EDG 11; and
- Planned maintenance during the week of June 23-27 on the Division 1 CS system.

These activities were selected based on their potential risk significance relative to the Reactor Safety Cornerstones. As applicable for each of the above activities, the inspectors reviewed the scope of maintenance work in the plant's daily schedule,

reviewed Control Room logs, verified plant risk assessments were completed as required by 10 CFR 50.65(a)(4) prior to commencing maintenance activities, discussed the results of the assessment with the licensee's Probabilistic Risk Analyst and/or Shift Technical Advisor, and verified plant conditions were consistent with the risk assessment assumptions. The inspectors also reviewed TS requirements and walked down portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid, redundant safety-related plant equipment necessary to minimize risk was available for use, and applicable requirements were met.

In addition, the inspectors verified maintenance risk-related problems were entered into the licensee's corrective action program with the appropriate characterization and significance. Selected CARDS were reviewed to verify corrective actions were appropriate and implemented as scheduled.

This inspection constituted five maintenance risk assessment inspection samples as defined in IP 71111.13.

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15)

a. Inspection Scope

The inspectors reviewed the following issues:

- Review of Degraded/Non-conforming Conditions Prior to Plant Startup Following the Cycle 16 Refueling Outage;
- CARD 14-22796, Potential Mispositioned Component, Intermediate Range Monitor 'G' Signal Cable Found Disconnected from Preamp;
- CARD 14-20833, Mispositioned Component Event – Division 2 EECW Isolation Override Switch;
- CARD 14-23817, No As-Found Local Leak Rate Test on E5150-F008 during RF [Refueling Outage] 16;
- CARD 14-21704; E1100F050B Failed Pressure Isolation Valve Leakage Test; and
- CARD 14-22855, DC [Direct Current] Procedures Do Not Meet Surveillance Requirements.

The inspectors selected these potential operability/functionality issues based on the risk significance of the associated components and systems. The inspectors verified the conditions did not render the associated equipment inoperable/non-functional or result in an unrecognized increase in plant risk. When applicable, the inspectors verified the licensee appropriately applied TS limitations, appropriately returned the affected equipment to an operable status, and reviewed the licensee's evaluation of the issue with respect to the regulatory reporting requirements. 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 evaluation. When applicable, the inspectors also verified the licensee appropriately assessed the functionality of SSCs that perform specified functions described in the

UFSAR, Technical Requirements Manual, Emergency Plan, Fire Protection Plan, regulatory commitments, or other elements of the current licensing basis when degraded or nonconforming conditions were identified.

In addition, the inspectors verified that problems related to the operability or functionality of safety-related and risk significant plant equipment were entered into the licensee's corrective action program with the appropriate characterization and significance. Selected CARDS were reviewed to verify that corrective actions were appropriate and implemented as scheduled.

This inspection constituted six operability determination inspection samples as defined in IP 71111.15.

b. Findings

Incorrect Application of TS Surveillance Requirement (TSSR) 3.0.3 to Never-Performed Battery Surveillances

Introduction: The inspectors identified a finding of very low safety significance. Upon discovery that surveillance testing procedures for safety-related batteries had not fully satisfied the applicable TSSRs, the licensee incorrectly used the provision of TSSR 3.0.3 to not declare the applicable Limiting Condition for Operation (LCO) not met.

Discussion: On March 26, 2014, the licensee discovered that its surveillance testing procedures to satisfy TSSRs 3.8.4.2 and 3.8.4.5 did not include taking battery terminal connection resistance measurements. TSSR 3.8.4.2 requires the verification of no visible corrosion at battery terminals and connectors or the verification that each battery cell-to-cell and terminal connection resistance is  $\leq 1.5E-4$  ohms every 92 days. The licensee had been taking quarterly resistance measurements rather than the visual verification of no corrosion to satisfy this TSSR. TSSR 3.8.4.5 requires the verification that each battery cell-to-cell and terminal connection resistance is  $\leq 1.5E-4$  ohms every 18 months. The licensee's surveillance testing procedures measured the resistance of each of the 57 cell-to-cell connections quarterly, but did not include measurements of the two terminal connections.

Upon discovery, the licensee incorrectly used the provision of TSSR 3.0.3 to not declare the applicable LCO not met and enter the appropriate condition(s), as required by TSSR 3.0.1 and TS 3.0.2. TSSR 3.0.1 requires, in part, TSSRs to be met during the modes or other specified conditions in the applicability for individual LCOs. The failure to perform a surveillance within the specified frequency shall be a failure to meet the LCO except as provided in TSSR 3.0.3. TSSR 3.0.3 states, in part, if it is discovered that a surveillance was not performed within its specified frequency, then compliance with the requirement to declare the LCO not met may be delayed, from the time of discovery, up to 24 hours or up to the limit of the specified frequency, whichever is greater. This delay period is permitted to allow performance of the surveillance. TS 3.0.2 requires, in part, that upon discovery of a failure to meet an LCO, the required actions of the associated conditions shall be met.

The licensee initiated WOs and promptly performed the required battery terminal connection resistance measurements. The results were acceptable. The sum of the battery cell-to-cell resistance measurements had sufficient margin, such that when the battery terminal connection resistance measurements were finally added, the result was

still  $\leq 1.5E-4$  ohms for each of the batteries. The licensee documented in the Control Room log its entry into TSSR 3.0.3 on March 26 at 5:54 p.m. and exit from TSSR 3.0.3 on March 27 at 3:13 a.m. upon satisfactory completion of battery terminal connection resistance measurements.

The inspectors challenged the licensee's application of TSSR 3.0.3 since it was apparent the licensee had not considered the distinction between a missed surveillance versus a never-performed surveillance. As stipulated in Inspection Manual Chapter (IMC) 0326, "Operability Determinations & Functionality Assessments for Conditions Adverse to Quality or Safety," Appendix A, "Surveillances," Section A.03, "Missed Technical Specification Surveillance," TSSR 3.0.3 may not be applied when a licensee discovers that a TS surveillance has never been performed. This is because establishing a frequency for a TSSR must include an initial performance of the surveillance, which the licensee had not done for the battery terminal connection resistance measurements.

In response to the inspectors' questions, the licensee prepared a position paper and provided it to the inspectors on April 28, concluding that entry into TSSR 3.0.3 was appropriate and consistent with the guidance in IMC 0326. In the position paper, the licensee concluded that a reasonable expectation existed for meeting TSSRs 3.8.4.2 and 3.8.4.5, despite the absence of terminal connection resistance measurements, because of the comprehensive nature of other periodic and conditional testing and inspection performed on the batteries. The licensee further concluded that a reasonable expectation of operability existed for the batteries without having performed the terminal connection resistance measurements; and therefore, entry into the applicable condition(s) of LCO 3.8.5, "DC Sources – Shutdown," was not required. It should be noted that on March 26, Fermi Unit 2 was shut down for a refueling outage; hence LCO 3.8.5 rather than LCO 3.8.4, "DC Sources – Operating," was applicable.

The inspectors discussed the station's position paper and the IMC 0326 guidance with the NRC staff in the Office of Nuclear Reactor Regulation and in the Regional Office. There are three sentences in the guidance section that discusses the application of TSSR 3.0.3 to a missed surveillance. The first sentence states: "SR 3.0.3 may not be applied when a licensee discovers that a TS surveillance has never been performed." The staff noted that because the battery terminal connection resistances to satisfy TSSRs 3.8.4.2 and 3.8.4.5 were never measured, this sentence by itself would mean that the licensee could not apply the provision of TSSR 3.0.3. The second sentence states: "In cases where a specified safety function or a necessary and related support function required for operability has never been performed, then a reasonable expectation of operability does not exist." Therefore, because the battery terminal connection resistance measurements to satisfy the TSSRs had never been performed, a reasonable expectation of operability for the station batteries did not exist.

However, the third and last sentence of the guidance provides a caveat which states: "However, SR 3.0.3 would apply should the licensee determine that a TS surveillance had been demonstrated outside of routine surveillances, e.g., for post-maintenance testing, or for testing resulting from normal or off-normal plant operations." Therefore, had the licensee ever measured the battery terminal connection resistances outside of the routine surveillances (e.g., for post-maintenance testing) it would have been acceptable per the IMC 0326 guidance to apply TSSR 3.0.3. For example, when the batteries were installed or when preventive maintenance was performed during refueling

outages, had the post-maintenance testing included resistance measurements of the battery terminal connections then those measurements would be an adequate basis for the licensee to apply TSSR 3.0.3. However, no post-maintenance testing or other testing documents were produced that would demonstrate the battery terminal connection resistances were ever measured.

10 CFR 50.36 provides the requirements or criteria for the TSSRs "...to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met." The NRC staff acknowledged the licensee's position that it did perform a lot of testing of the batteries, all of which are intended to provide on a continuing basis a reasonable expectation of operability. However, while the cell-to-cell resistances were being measured all along, the battery terminal connection resistances were never measured to satisfy the TSSRs. As such, despite the very small contribution of terminal connection resistances to the overall battery resistance, the two terminal connections on each battery were never shown to be operable as defined by successfully completing the TSSRs. The TSSRs to measure the resistances of the battery cell-to-cell and terminal connections along with all of the other TSSRs to demonstrate operability of the station batteries exist because each one was determined to be necessary to meet 10 CFR 50.36. Unless otherwise specified in the TSs, all of the TSSRs must individually be satisfied.

Since applying the provision of TSSR 3.0.3 was not appropriate for the never performed battery surveillances, the licensee should have immediately declared LCO 3.8.5 not met, and entered Condition A when the issue was discovered on March 26. Technical Specification 3.8.5, Condition A, requires that with one or more required DC electrical power subsystems inoperable, immediately declare the affected required feature(s) inoperable, or (1) immediately suspend core alterations, and (2) immediately suspend movement of recently irradiated fuel assemblies in the secondary containment, and (3) immediately suspend operations with a potential for draining the reactor vessel, and (4) immediately initiate action to restore required DC electrical power subsystems to operable status. The inspectors noted that from the time the licensee discovered the never-performed surveillances until they were satisfactorily completed, the four actions of the second part of the "or" statement in TS 3.8.5 Condition A were met; and therefore, no violation of TS 3.0.2 and TS 3.8.5 was identified.

The failure to satisfy TSSRs 3.8.4.2 and 3.8.4.5 was a licensee-identified issue. Based on review of the examples of minor issues in IMC 0612, "Power Reactor Inspection Reports," Appendix E, "Examples of Minor Issues," the inspectors concluded the licensee's failure to comply with TSSRs 3.8.4.2 and 3.8.4.5 constitutes a minor violation that is not subject to enforcement action in accordance with the NRC's Enforcement Policy. The inspectors noted examples 4l and 4m described scenarios in which all the required surveillance testing was not performed and yet there was no safety impact because subsequent testing demonstrated the systems or components were operable. The licensee entered the violation of TSSRs 3.8.4.2 and 3.8.4.5 into its corrective action program as CARD 14-22855.

Analysis: The inspectors determined the licensee's incorrect use of TSSR 3.0.3 for the never-performed battery surveillances and its failure to immediately declare LCO 3.8.5 not met when the issue was discovered was a performance deficiency warranting a significance evaluation. The inspectors reviewed the examples of minor issues in

IMC 0612, Appendix E, dated August 11, 2009, and found no examples related to this issue. Consistent with the guidance in IMC 0612, Appendix B, "Issue Screening," dated September 7, 2012, the inspectors determined the finding was of more than minor safety significance because a failure to correctly implement LCO and surveillance requirements has the potential to lead to a more significant safety concern if left uncorrected. Specifically, a failure to declare an LCO not met, enter the applicable condition(s), and follow the applicable actions could reasonably result in operations outside of established safety margins or analyses. Since the issue involved surveillance testing on safety-related batteries, the inspectors concluded this issue was associated with the Mitigating Systems Cornerstone. The inspectors performed a significance screening of this finding using the guidance provided in IMC 0609, "Significance Determination Process," Appendix G, "Shutdown Operations Significance Determination Process," dated May 9, 2014. In accordance with Attachment 1, "Shutdown Operations Significance Determination Process Phase 1 Operational Checklists for Both PWRs [Pressurized Water Reactors] and BWRs [Boiling Water Reactors]," Checklist 8, "BWR Cold Shutdown or Refueling Operation Time to Boil > 2 Hours: RCS [Reactor Coolant System] Level < 23 Feet Above Top of Flange," the inspectors determined this finding was a licensee performance deficiency of very low safety significance (Green) and would not require a quantitative assessment because adequate mitigation capability remained, and the issue did not involve a loss of inventory control.

The inspectors determined this finding affected the cross-cutting area of human performance because a conservative bias in decision making was not demonstrated by the licensee's assumption that TSSR 3.0.3 would apply to the never-performed surveillances (H.14). Prior to applying TSSR 3.0.3, the licensee did not appropriately consider the distinction between a missed surveillance versus a never-performed surveillance and had not prepared a basis to conclude the surveillances had been adequately demonstrated outside of routine surveillances. The licensee's position paper one month after the fact rationalized the assumption without providing objective quality evidence to support its conclusion. (IMC 0310, H.14)

Enforcement: No violation of regulatory requirements was identified. Because the required actions of TS 3.8.5 Condition A were fortuitously met, no violation of TS 3.0.2 or TS 3.8.5 was identified. This issue is considered to be a finding. **(FIN 05000341/2014003-01, Incorrect Application of TSSR 3.0.3 to Never-Performed Battery Surveillances)**. The licensee entered this finding into its corrective action program as CARD 14-25242 for evaluation and identification of corrective actions.

1R18 Plant Modifications (71111.18)

.1 Permanent Modifications

a. Inspection Scope

The inspectors reviewed the engineering analyses, modification documents, and design change information associated with the following permanent plant modifications:

- EDP 36969, MUR Implementation; and
- EDP 28935, Leak Shielding for Division 1 RHR Containment Spray Piping.

During this inspection, the inspectors evaluated the implementation of the design modifications and verified, as appropriate:

- The compatibility, functional properties, environmental qualification, seismic qualification, and classification of materials and replacement components were acceptable;
- The structural integrity of the SSCs would be acceptable for accident/event conditions;
- The implementation of the modifications did not impair key safety functions;
- No unintended system interactions occurred;
- The affected significant plant procedures, such as normal, abnormal, and emergency operating procedures, testing and surveillance procedures, and training were identified and necessary changes were completed;
- The design and licensing documents were either updated or were in the process of being updated to reflect the modifications;
- The changes to the facility and procedures as described in the UFSAR were appropriately reviewed and documented in accordance with 10 CFR 50.59;
- The system performance characteristics, including energy needs affected by the modifications continued to meet the design basis;
- The modification test acceptance criteria were met; and
- The modification design assumptions were appropriate.

Completed activities associated with the implementation of the modifications, including testing, were also inspected, and the inspectors discussed the modifications with the responsible engineering and/or operations staff.

In addition, the inspectors verified problems related to the installation of permanent plant modifications were entered into the licensee's corrective action program with the appropriate characterization and significance. Selected CARDS were reviewed to verify corrective actions were appropriate and implemented as scheduled.

This inspection constituted two permanent plant modification inspection samples as defined in IP 71111.18.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

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

- WO 36806032, EDG Vacuum Gauge Post-Maintenance Test;
- WO 38379759, EDG Discharge Check Valve Relief Valve Post-Maintenance Test; and
- WO 37860354, Rework Pump T4100C041.

The inspectors reviewed the scope of the work performed and evaluated the adequacy of the specified post-maintenance testing. The inspectors verified the post-maintenance testing was performed in accordance with approved procedures; the procedures contained clear acceptance criteria that demonstrated operational readiness, and the acceptance criteria was met; appropriate test instrumentation was used; the equipment was returned to its operational status following testing; and the test documentation was properly evaluated.

In addition, the inspectors verified problems associated with post-maintenance testing were entered into the licensee's corrective action program with the appropriate characterization and significance. Selected CARDS were reviewed to verify corrective actions were appropriate and implemented as scheduled.

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

b. Findings

No findings were identified.

1R20 Refueling and Other Outage Activities (71111.20)

.1 Planned Outage PO-14-01

a. Inspection Scope

The inspectors evaluated the licensee's conduct of outage activities during planned maintenance outage PO-14-01, which began on April 16. The licensee shut down the unit to replace one of two main power transformers, which had developed an oil leak. The unit was restarted on April 21 and was synchronized to the electrical grid on April 23.

The inspectors reviewed configuration management to verify the licensee maintained defense-in-depth commensurate with the shutdown risk plan and reviewed outage work activities to ensure correct system lineups were maintained for key mitigating systems. Other outage activities evaluated included the licensee's control of the following:

- SSCs that could cause unexpected reactivity changes;
- flow paths, configurations, and alternate means for reactor coolant system (RCS) inventory addition;
- RCS level instrumentation;
- radiological work practices;
- switchyard activities and the configuration of electrical power systems in accordance with the TSs and shutdown risk plan; and
- SSCs required for decay heat removal and for establishing alternate means for decay heat removal, including instrumentation.

The inspectors observed portions of the plant cooldown, including the transition to shutdown cooling, to verify the licensee controlled the plant cooldown in accordance with the TSs. The inspectors also observed portions of the restart activities including reactor startup and plant heat up to verify TS requirements and administrative procedure

requirements were met prior to changing operational modes or plant configurations. Major restart inspection activities performed included:

- verification that primary and secondary containment integrity was established prior to entry into Mode 2; and
- inspection of the drywell to assess material condition and search for loose debris, which, if present, could block floor drains or be transported to the suppression pool.

In addition, the inspectors reviewed a sample of issues the licensee entered into the corrective action program related to outage activities to verify identified problems were being entered with the appropriate characterization and significance. Selected CARDS were reviewed to verify the corrective actions were appropriate and implemented as scheduled.

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

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed surveillance testing 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 MES 28, Leakage Reduction and Primary Containment Leakage Rate Programs, Section 3.0, Leakage Reduction Program;
- Procedure 24.208.02, Division 1 EESW and EECW Makeup Pump and Valve Operability Test; and
- Procedure 24.203.02, Division 1 CS Pump and Valve Operability Test.

The inspectors observed selected portions of the test activities to verify the testing was accomplished in accordance with plant procedures. The inspectors reviewed the test methodology and documentation to verify equipment performance was consistent with safety analysis and design basis assumptions, 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, and appropriate testing acceptance criteria were satisfied. When applicable, the inspectors also verified test results not meeting acceptance criteria were addressed with an adequate operability evaluation or the system or component was declared inoperable.

In addition, the inspectors verified surveillance testing problems were entered into the licensee's corrective action program with the appropriate characterization and significance. Selected CARDS were reviewed to verify that corrective actions were appropriate and implemented as scheduled.

This inspection constituted two inservice tests and one RCS leakage detection test for a total of three surveillance testing inspection samples as defined in IP 71111.22.

b. Findings

No findings were identified.

**2. RADIATION SAFETY**

2RS3 In-Plant Airborne Radioactivity Control and Mitigation (71124.03)

The inspection activities supplement those documented in NRC Inspection Report 05000341/2014002 and constitute a partial sample as defined in IP 71124.03.

.1 Use of Respiratory Protection Devices (02.03)

a. Inspection Scope

The inspectors evaluated selected respiratory protection devices staged for use and devices in use. The inspectors assessed the physical condition of the device components as necessary (mask or hood, harnesses, air lines, regulators, air bottles, etc.) and reviewed their correct usage by workers. During an earlier inspection period, the inspectors identified the licensee using tape on a Mururoa V4 MTH2 (Delta Suit Respirator). Unresolved Item (URI) 05000341/2014002-05 was established to evaluate the usage of this practice. During this period, the inspectors further evaluated the usage of the Delta Suit Respirator by the licensee. Findings

b. Findings

Disabled Respirator Safety Feature

(Closed) URI 05000341/2014002-05, "Use of Delta Suit Respirator"

Introduction: The inspectors identified a finding of very low safety significance with an associated non-cited violation (NCV) of 10 CFR 20.1703(c)(4)(vii) for defeating a safety feature for the Mururoa V4 MTH2 air-supplied suit (Delta Suit) Respirator.

Description: On February 25, 2014, the inspectors observed the usage of the Delta Suit Respirator during the change out of control rod drive mechanisms under the reactor vessel. The inspectors observed that an escape feature of the respirator, which extends from mid-arm up over the head and down to mid-arm on the opposite side was defeated by the placement of tape rendering this escape feature inoperable. This escape device is an integral feature of the respirator established by the manufacturer. The Delta Suit respirator is not a National Institute of Occupational Safety and Health approved respirator. The licensee did not apply to the NRC to use a protection factor for this respirator.

The inspectors reviewed Regulatory Guide 8.15, "Acceptable Programs for Respiratory Protection," Revision 1. This document provides guidance for Respiratory Protection Programs. In the introduction section of this guide, it states in part, "Whether or not credit is taken for use of the device to reduce intake and dose, 10 CFR 20.1703 applies whenever respiratory protection devices are used." The inspectors determined that

Section 4.12.1 allows the usage of this respirator without a protection factor. However, Section 4.12.1 further states, in part, "...the equipment must be stored, maintained, and tested (as applicable) in accordance with the manufacturer's recommendations and the licensee's Respirator Maintenance and Quality Assurance Program."

The inspectors reviewed licensee procedure 65.000.737, "Set-Up, Operation, Shutdown, and Disassembly of a Breathing Air System – Reactor Building." This procedure did not contain information on the safety features of this respirator, nor did it contain information regarding the usage of tape on the respirator.

Analysis: The inspectors determined that defeating a safety feature of the Delta Suit Respirator was a performance deficiency, the cause of which was reasonably within the licensee's ability to foresee and correct, and should have been prevented. This finding was not subject to traditional enforcement since the incident did not result in a significant safety consequence, did not impact the NRC's ability to perform its regulatory function, and was not willful.

The performance deficiency was determined to be of more than minor safety significance in accordance with IMC 0612, Appendix B, "Issue Screening," because it was associated with the program and process attribute of the Occupational Radiation Safety Cornerstone and adversely affected the cornerstone objective to ensure worker health and safety from exposure to radioactive materials. The inspectors also reviewed the guidance in IMC 0612, Appendix E, "Examples of Minor Issues," and did not find any similar examples. In accordance with IMC 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," dated August 19, 2008, the inspectors determined that the finding had very low safety significance (Green) because the finding did not involve: (1) as-low-as-is-reasonably achievable planning or work controls, or (2) an overexposure, or (3) a substantial potential for an overexposure, or (4) a compromised ability to assess dose.

The inspectors identified that the primary cause of this finding was related to the cross-cutting area of human performance with the aspect of documentation (H.7). Specifically, the licensee failed to create and maintain documentation that is consistent with manufacturer recommendations. The licensee did not ensure the procedure used for this activity was current.

Enforcement: 10 CFR 20.17.03(c)(4)(vii) requires information on quality assurance be contained within procedures for the Respiratory Protection Program. Contrary to this, as of February 25, 2014, the inspectors observed the use of a Delta Suit Respirator with an inoperable escape feature, i.e., a taped-over zipper, and licensee procedure 65.000.737, "Set-Up, Operation, Shutdown, and Disassembly of a Breathing Air System – Reactor Building," did not contain information on this feature or other respirator safety features nor authorize the use of tape on the suit. Because of the very low safety significance, this violation is being treated as an NCV consistent with Section 2.3.2 of the NRC Enforcement Policy (**NCV 05000341/2014003-02, Disabled Respirator Safety Feature**). This violation was entered into the licensee's corrective action program as CARD 14-21795.

URI 05000341/2014002-05 is closed.

## 2RS5 Radiation Monitoring Instrumentation (71124.05)

This inspection constituted one complete inspection sample as defined in IP 71124.05.

### .1 Inspection Planning (02.01)

#### a. Inspection Scope

The inspectors reviewed the plant UFSAR to identify radiation instruments associated with monitoring area radiological conditions including airborne radioactivity, process streams, effluents, materials/articles, and workers. Additionally, the inspectors reviewed the instrumentation and the associated TS requirements for post-accident monitoring instrumentation, including instruments used for remote emergency assessment.

The inspectors reviewed a listing of in-service survey instrumentation including air samplers and small article monitors, along with instruments used to detect and analyze workers' external contamination. Additionally, the inspectors reviewed personnel contamination monitors and portal monitors, including whole body counters, to detect workers' internal contamination. The inspectors reviewed this list to assess whether an adequate number and type of instruments were available to support operations.

The inspectors reviewed licensee and third-party evaluation reports of the Radiation Monitoring Program since the last inspection. These reports were reviewed for insights into the licensee's program and to aid in selecting areas for review ("smart sampling").

The inspectors reviewed procedures that govern instrument source checks and calibrations, focusing on instruments used for monitoring transient high radiological conditions, including instruments used for underwater surveys. The inspectors reviewed the calibration and source check procedures for adequacy and as an aid to smart sampling.

The inspectors reviewed the area radiation monitor alarm setpoint values and setpoint bases as provided in the TSs and the UFSAR.

The inspectors reviewed effluent monitor alarm setpoint bases and the calculational methods provided in the Offsite Dose Calculation Manual (ODCM).

#### b. Findings

No findings were identified.

### .2 Walkdowns and Observations (02.02)

#### a. Inspection Scope

The inspectors walked down effluent radiation monitoring systems, including at least one liquid and one airborne system. Focus was placed on flow measurement devices and all accessible point-of-discharge liquid and gaseous effluent monitors of the selected systems. The inspectors assessed whether the effluent/process monitor configurations aligned with ODCM descriptions and observed monitors for degradation and out-of-service tags.

The inspectors selected portable survey instruments that were in use or available for issuance and assessed calibration and source check stickers for currency as well as instrument material condition and operability.

The inspectors observed licensee staff performance as the staff demonstrated source checks for various types of portable survey instruments. The inspectors assessed whether high-range instruments were source checked on all appropriate scales.

The inspectors walked down area radiation monitors and continuous air monitors to determine whether they were appropriately positioned relative to the radiation sources or areas they were intended to monitor. Selectively, the inspectors compared monitor response (via local or remote Control Room indications) with actual area conditions for consistency.

The inspectors selected personnel contamination monitors, portal monitors, and small article monitors and evaluated whether the periodic source checks were performed in accordance with the manufacturer's recommendations and the licensee's procedures.

b. Findings

No findings were identified.

.3 Calibration and Testing Program (02.03)

Process and Effluent Monitors

a. Inspection Scope

The inspectors selected effluent monitor instruments (such as gaseous and liquid) and evaluated whether channel calibration and functional tests were performed consistent with Radiological Effluent TSs/ODCM. The inspectors assessed whether: (a) the licensee calibrated its monitors with National Institute of Standards and Technology traceable sources; (b) the primary calibrations adequately represented the plant nuclide mix; (c) when secondary calibration sources were used, the sources were verified by the primary calibration; and (d) the licensee's channel calibrations encompassed the instrument's alarm setpoints.

The inspectors assessed whether the effluent monitor alarm setpoints were established as provided in the ODCM and station procedures.

For changes to effluent monitor setpoints, the inspectors evaluated the basis for changes to ensure that an adequate justification existed.

b. Findings

No findings were identified.

Laboratory Instrumentation

a. Inspection Scope

The inspectors assessed laboratory analytical instruments used for radiological analyses to determine whether daily performance checks and calibration data indicated that the

frequency of the calibrations was adequate and there were no indications of degraded instrument performance.

The inspectors assessed whether appropriate corrective actions were implemented in response to indications of degraded instrument performance.

b. Findings

No findings were identified.

Whole Body Counter

a. Inspection Scope

The inspectors reviewed the methods and sources used to perform whole body count functional checks before daily use of the instrument and assessed whether check sources were appropriate and aligned with the plant's isotopic mix.

The inspectors reviewed whole body count calibration records since the last inspection and evaluated whether calibration sources were representative of the plant source term and that appropriate calibration phantoms were used. The inspectors looked for anomalous results or other indications of instrument performance problems.

b. Findings

No findings were identified.

Post-Accident Monitoring Instrumentation

a. Inspection Scope

The inspectors selected containment high-range monitors and reviewed the calibration documentation since the last inspection.

The inspectors assessed whether an electronic calibration was completed for all range decades above 10 rem/hour and whether at least one decade at or below 10 rem/hour was calibrated using an appropriate radiation source.

The inspectors assessed whether calibration acceptance criteria were reasonable, accounting for the large measuring range and the intended purpose of the instruments.

The inspectors selected effluent/process monitors that were relied on by the licensee in its emergency operating procedures as a basis for triggering emergency action levels and subsequent emergency classifications, or to make protective action recommendations during an accident. The inspectors evaluated the calibration and availability of these instruments.

The inspectors reviewed the licensee's capability to collect high-range, post-accident iodine effluent samples.

As available, the inspectors observed electronic and radiation calibration of these instruments to assess conformity with the licensee's calibration and test protocols.

b. Findings

No findings were identified.

Portal Monitors, Personnel Contamination Monitors, and Small Article Monitors

a. Inspection Scope

For each type of these instruments used on site, the inspectors assessed whether the alarm setpoint values were reasonable under the circumstances to ensure that licensed material was not released from the site.

The inspectors reviewed the calibration documentation for each instrument selected and discussed the calibration methods with the licensee to determine consistency with the manufacturer's recommendations.

b. Findings

No findings were identified.

Portable Survey Instruments, Area Radiation Monitors, Electronic Dosimetry, and Air Samplers/Continuous Air Monitors

a. Inspection Scope

The inspectors reviewed calibration documentation for at least one of each type of instrument. For portable survey instruments and area radiation monitors, the inspectors reviewed detector measurement geometry and calibration methods and had the licensee demonstrate use of its instrument calibrator as applicable. The inspectors conducted comparison of instrument readings versus an NRC survey instrument if problems were suspected.

As available, the inspectors selected portable survey instruments that did not meet acceptance criteria during calibration or source checks to assess whether the licensee had taken appropriate corrective action for instruments found significantly out of calibration (e.g., greater than 50 percent). The inspectors evaluated whether the licensee evaluated the possible consequences of instrument use since the last successful calibration or source check.

b. Findings

No findings were identified.

Instrument Calibrator

a. Inspection Scope

As applicable, the inspectors reviewed the current output values for the licensee's portable survey and area radiation monitor instrument calibrator unit(s). The inspectors assessed whether the licensee periodically measures calibrator output over the range of the instruments used through measurements by ion chamber/electrometer.

The inspectors assessed whether the measuring devices had been calibrated by a facility using National Institute of Standards and Technology traceable sources and whether correction factors for these measuring devices were properly applied by the licensee in its output verification.

b. Findings

No findings were identified.

Calibration and Check Sources

a. Inspection Scope

The inspectors reviewed the licensee's 10 CFR Part 61, "Licensing Requirements for Land Disposal of Radioactive Waste," source term to assess whether calibration sources used were representative of the types and energies of radiation encountered in the plant.

b. Findings

No findings were identified.

.4 Problem Identification and Resolution (02.04)

a. Inspection Scope

The inspectors evaluated whether problems associated with radiation monitoring instrumentation were being identified by the licensee at an appropriate threshold and were properly addressed for resolution in the licensee's corrective action program. The inspectors assessed the appropriateness of the corrective actions for a selected sample of problems documented by the licensee that involved radiation monitoring instrumentation.

b. Findings

No findings were identified.

**4. OTHER ACTIVITIES**

**Cornerstones: Mitigating Systems and Barrier Integrity**

4OA1 Performance Indicator Verification (71151)

.1 Mitigating Systems Performance Index (MSPI) - High Pressure Injection Systems

a. Inspection Scope

The inspectors reviewed a sample of plant records and data against the reported MSPI - High Pressure Injection Systems Performance Indicator. To determine the accuracy of the performance indicator data reported, performance indicator definitions and guidance contained in Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, were used. The inspectors reviewed the MSPI derivation reports, Control Room logs, Maintenance Rule database, Licensee Event Reports, and maintenance and test data from July 2013 through March

2014, to validate the accuracy of the performance indicator data reported. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's corrective action program database to determine if any problems had been identified with the performance indicator data collected or transmitted for this performance indicator.

This inspection constituted one MSPI - High Pressure Injection Systems Performance Indicator verification inspection sample as defined in IP 71151.

b. Findings

No findings were identified.

.2 Reactor Coolant System Leakage

a. Inspection Scope

The inspectors verified the RCS Leakage Performance Indicator. The inspectors reviewed the licensee's RCS leakage tracking surveillance test data from April 2013 through March 2014 to validate the accuracy of the licensee's submittals. To determine the accuracy of the performance indicator data reported during this period, performance indicator definitions and guidance contained in NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, were used. The inspectors also reviewed the licensee's corrective action program database to determine if any problems had been identified with the performance indicator data collected or transmitted for this performance indicator.

This inspection constituted one RCS Leakage Performance Indicator verification inspection sample as defined in IP 71151.

b. Findings

No findings were identified.

4OA2 Identification and Resolution of Problems (71152)

.1 Routine Review of Identification and Resolution of Problems

a. Inspection Scope

As discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify they were being entered into the licensee's corrective action program at an appropriate threshold, adequate attention was being given to timely corrective actions, and adverse trends were identified and addressed. Some minor issues were entered into the licensee's corrective action program as a result of the inspectors' observations; however, they are not discussed in this report.

This inspection was not considered to be an inspection sample as defined in IP 71152.

b. Findings

No findings were identified.

.2 Annual In-depth Review Samples

a. Inspection Scope

The inspectors selected the following issue for in-depth review:

- CARD 14-20833, Mispositioned Component Event – Division 2 EECW Isolation Override Switch.

As appropriate, the inspectors verified the following attributes during their review of the licensee's corrective actions for the above CARD and other related CARDS:

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

The inspectors discussed the corrective actions and associated evaluations with licensee personnel.

This inspection constituted one annual in-depth review inspection sample as defined in IP 71152.

b. Findings

Mis-Positioned Control Switch Inadvertently Rendered the Division 2 EECW System and Supported Systems Inoperable

Introduction: A finding of very low safety significance with an associated non-cited violation of TS 5.4.1.a was self-revealed on February 6, 2014, when the Division 2 EECW system and its supported systems were inadvertently rendered inoperable. Control Room operators incorrectly positioned the Division 2 EECW isolation override switch to manual override while attempting to place the system in its normal standby configuration, disabling the system's automatic initiation function.

Discussion: On February 6, Control Room operators inadvertently rendered the Division 2 EECW system inoperable while securing the system from operation and restoring it to its normal standby configuration after warming the Division 2 ultimate heat sink reservoir by incorrectly positioning the Division 2 EECW isolation override switch to manual override. This action disabled the automatic initiation function for the system. As a result, systems that are supplied cooling by the Division 2 EECW system were also rendered inoperable. The operators promptly recognized the error when an unexpected

control board alarm annunciated. The Control Room Supervisor recognized the unexpected alarm, evaluated the system condition, and directed the operators to place the override switch back to normal. The override switch was repositioned and the system restored to an operable status within one minute.

Three Control Room operators were involved with this configuration control event. The Control Room Supervisor discussed the task details with two licensed reactor operators and assigned one of the operators to prepare and perform the task. The second reactor operator was assigned to do a peer check of the first operator's performance of the task. A formal pre-job brief was not conducted in accordance with Operations Department Expectation (ODE) 4, "Organizational Improvement," Revision 48, before the task was performed.

The licensee completed an apparent cause evaluation for the mis-positioned control switch and concluded the direct cause for the event was Control Room operators had utilized the wrong section of procedure 23.127, "Reactor Building Closed Cooling Water/Emergency Equipment Cooling Water System," Revision 129, to perform the task. The correct section of the procedure to use was Section 7.3, "RBCCW Restoration Following EECW Division 2 System Auto/Manual Initiation," rather than Section 8.3, "Division 2 EECW Shutdown." The licensee determined the apparent cause was Control Room operators had failed to adequately use human performance tools while preparing and executing the task. A formal pre-job brief was not conducted by the Control Room Supervisor, the task preview by the reactor operator who was assigned the task had insufficient rigor and his uncertainty with the procedure section to be used was not appropriately resolved, and the peer check by the second reactor operator was not effective since it did not validate the correct procedure section was being used.

Corrective actions identified by the licensee in the apparent cause evaluation included:

- immediate stand down with all plant operators focusing on standards for task preview, pre-job briefs, and role of peer checkers;
- a temporary standard implemented for senior reactor operator validation of the correct procedure section to be used prior to execution of tasks;
- revision of procedure 23.127, "Reactor Building Closed Cooling Water/Emergency Equipment Cooling Water System," to add a step for specific Control Room Supervisor permission to operate the isolation override switch and for verification of entry into the applicable TS Action requirement; and
- revision of the title for section 7.3 of procedure 23.127 from "Restoration Following EECW Division 2 System Auto/Manual Initiation" to "RBCCW Restoration and EECW Division 2 System Return to Standby Following Auto/Manual Initiation" to provide a clearer description of the procedure section's intended result.

For an inoperable EECW/EESW subsystem, TS 3.7.2, "EECW/EESW System and Ultimate Heat Sink," required that the affected subsystem be restored to an operable status within 72 hours. Inoperability of the Division 2 EECW/EESW subsystem also rendered multiple supported systems inoperable including: HPCI, RHR, CS, and standby gas treatment. Because the control board annunciator alarmed allowing Control Room operators to promptly recognize and correct the mis-positioned control switch, the total time Division 2 EECW and its supported systems were inoperable was less than one minute. Control Room operators declared the Division 2 EECW subsystem and

supported systems inoperable and logged entry into the applicable TS Action requirements. Although only momentary, the unplanned inoperability of the single-train HPCI system was initially determined by the licensee to be a loss of safety function of a system needed to mitigate the consequences of an accident and the licensee appropriately made the required eight-hour non-emergency event notification to the NRC Operations Center in accordance with 10 CFR 50.72(b)(3)(v)(D). Subsequently, on April 4, the licensee retracted this notification based on an engineering evaluation that concluded EECW cooling to the HPCI Room cooler was not needed for the brief time it was unavailable, and therefore the HPCI system was operable with the degraded/non-conforming condition. The inspectors reviewed the licensee's engineering evaluation and agreed with its conclusion.

Analysis: The inspectors determined that the licensee's failure to correctly implement procedure 23.127 to align the Division 2 EECW system in its normal standby configuration following operation was a performance deficiency warranting a significance evaluation. The inspectors reviewed the examples of minor issues in IMC 0612, "Power Reactor Inspection Reports," Appendix E, "Examples of Minor Issues," and noted in Example 4b that a procedure performance error would not be considered of minor safety significance when there is an adverse consequence resulting from it. Consistent with the guidance in IMC 0612, Appendix B, "Issue Screening," the inspectors determined that the finding was associated with the human performance attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the mis-positioned control switch rendered the Division 2 EECW system and its supported systems inoperable. The inspectors performed a significance screening of this finding using the guidance provided in IMC 0609, "Significance Determination Process," Appendix A, "The SDP for Findings At-Power," dated June 19, 2012. In accordance with Exhibit 2, "Mitigating Systems Screening Questions," the inspectors determined it would be appropriate to perform a detailed risk evaluation conservatively assuming a loss of function of the single-train HPCI system.

The Region III Senior Reactor Analyst evaluated the finding using the Fermi 2 Plant Standardized Plant Analysis Risk Model, Version 8.20, and Systems Analysis Programs for Hands-on Integrated Reliability Evaluations, Version 8.0.9.0. The exposure time for the unavailability of the Division 2 EECW system was conservatively assumed to be one hour. The result was a delta core damage frequency of less than 1.0E-10/year, which is a finding of very low safety significance (Green). The dominant sequence involved a large-loss-of-coolant accident with a failure of low pressure injection. The finding was not evaluated for delta large early release frequency or external events since the internal events delta core damage frequency was less than 1E-7/year.

The inspectors concluded this finding affected the cross-cutting area of human performance since adequate licensee personnel work practices did not support successful human performance (H.12). Specifically, human error prevention techniques, such as pre-job briefing and peer checking, were not adequately used to ensure that the correct procedure section was performed.

Enforcement: Technical Specification 5.4.1.a requires, in part, that written procedures be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, dated February 1978.

Section 4.i of Regulatory Guide 1.33 recommends procedures for startup, operation, and shutdown of the safety-related closed cooling water system. Operations procedure 23.127, "Reactor Building Closed Cooling Water/Emergency Equipment Cooling Water System," Revision 129, implemented Section 4.i and contained instructions for securing the Division 2 EECW system from operation and restoring it to its normal standby configuration.

Contrary to the above, on February 6, 2014, the licensee failed to correctly implement procedure 23.127 to shut down the Division 2 EECW system and align it to its normal standby configuration. Licensed reactor operators using the incorrect section of the procedure positioned the Division 2 EECW isolation override switch to manual override, disabling the system's automatic initiation function. Consequently, the Division 2 EECW system and its supported systems were inadvertently rendered inoperable. Because of the very low safety significance, this violation is being treated as a non-cited violation consistent with Section 2.3.2 of the NRC Enforcement Policy **(NCV 05000341/2014003-03, Mis-Positioned Control Switch Inadvertently Rendered the Division 2 EECW System and Supported Systems Inoperable)**. The licensee entered this violation into its corrective action program as CARD 14-20833.

.3 Semi-Annual Trend Review

a. Inspection Scope

The inspectors reviewed repetitive or closely related issues documented in the licensee's corrective action program to look for trends not previously identified. This included a review of the licensee's quarterly trend coding and analysis reports to assess the effectiveness of the licensee's trending process. The inspectors also reviewed selected CARDS regarding licensee-identified potential trends to verify that corrective actions were effective in addressing the trends and implemented in a timely manner commensurate with the significance.

In addition, the inspectors toured selected areas of the plant and evaluated the licensee's corrective actions to address an adverse performance trend in plant housekeeping identified by the inspectors during the last semi-annual trend review.

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

b. Assessment and Observations

No findings were identified.

(1) Overall Effectiveness of Trending Program

The inspectors determined that the licensee's trending program was generally effective at identifying, monitoring, and correcting adverse performance trends. This has been reflected in the licensee's quarterly trend coding and analysis reports. The inspectors reviewed several common cause evaluations performed by the licensee to evaluate potential adverse performance and equipment trends. In general, these evaluations were performed well and identified appropriate corrective actions to address adverse trends that were identified. However, a few less than adequate condition evaluations were noted by the inspectors and discussed with the licensee. As discussed below,

the inspectors identified a continuing adverse performance trend involving plant housekeeping, which has not yet been adequately addressed by the licensee's corrective action program.

(2) Continuing Adverse Performance Trend in Housekeeping Issues Identified During Plant Walkdowns by the Inspectors

The inspectors noted that an adverse performance trend has continued involving plant housekeeping. The inspectors first identified and documented this adverse performance trend during the previous semi-annual trend review in the 4th quarter of 2013.

Throughout the months of August – October 2013, the inspectors toured many areas of the plant, some of which were not frequently accessed by plant staff, and found improper housekeeping, material restraint, fire loading, lighting, and equipment storage issues that had not been identified by the licensee's staff and corrected. Plant areas walked down included the Torus Room, Auxiliary Building Mezzanine, Cable Spreading Room, Drywell, and Reactor Building. In response to the inspectors' identification of these housekeeping issues, the licensee captured this adverse performance trend in CARD 13-26082, "Emerging Trend," for evaluation and identification of corrective actions on August 29, 2013. As stated in CARD 13-26082: "Site standards have slipped in work practices which result in plant cleanliness issues. Site standards have degraded in supervisory oversight of cleanliness and housekeeping. Employees have accepted sub-standard conditions as normal."

During this inspection period, the inspectors reviewed the status of the licensee's evaluation and corrective actions associated with CARD 13-26082 and noted that a single action in the CARD to determine the extent of the emerging trend and whether site culture was contributing to conditions was not due to be completed until June 27. The inspectors questioned licensee management whether taking nine months to determine if there was an adverse performance trend was timely.

During the months of February – May 2014, which included a refueling outage and a planned maintenance outage, the inspectors toured many of the same areas of the plant to note whether there had been any improvement. Plant areas walked down included the Torus Room, Turbine Building, Reactor Building, HPCI Pump Room, and Drywell. The inspectors found that general housekeeping in these areas of the plant remained poor. Again, the inspectors found improper housekeeping, material restraint, lighting, and equipment storage issues that had not been identified by the licensee's staff and corrected. Specific observations from the inspectors' tours of the Drywell are described below.

(3) Drywell Inspections

The licensee's post-outage clean-up (or cleanliness verification) of the Drywell basement from the refueling and planned maintenance outages was poor. The inspectors found loose debris in the basement that should have been removed by the licensee prior to the inspectors' closeout inspections. Duct tape, plastic cable ties, paper, and other miscellaneous debris were not adequately removed at the end of the outages. The inspectors also found loose debris inside several of the downcomers leading from the Drywell basement to the suppression pool. The inspectors discussed their concern with licensee management that during a design-basis event, loose debris present in the Drywell could be transported to the suppression pool and possibly affect the operation of

the ECCS and reactor core isolation cooling (RCIC) system pumps. The inspectors previously found a similar condition during the Drywell closeout inspection at the end of the planned outage in September 2013. The licensee initiated CARD 13-26700 at that time to evaluate the cause and implement corrective actions. The inspectors concluded that corrective actions from the CARD, which were simply “tailgating-type” actions, were not effective. The amount of debris found was not enough to significantly challenge operability of the ECCS and RCIC system; therefore, no finding of significance was identified.

#### 4OA6 Management Meetings

##### .1 Resident Inspectors’ Exit Meeting

The inspectors presented the inspection results to Mr. W. Colonnello and other members of the licensee’s staff at the conclusion of the inspection on July 9, 2014. The licensee acknowledged the findings presented. Proprietary information was examined during this inspection, but is not specifically discussed in this report.

##### .2 Interim Exit Meeting

An interim exit was conducted for:

- The In-Plant Airborne Radioactivity Control and Mitigation and Radiation Monitoring Instrumentation inspection with Mr. K. Scott and other members of the licensee’s staff at the conclusion of the inspection on May 16, 2014.

The licensee acknowledged the issues presented. The inspectors confirmed none of the potential report input discussed was considered proprietary.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### Licensee

S. Berry, Manager, Outage & Work Management  
B. Bertossi, Radiation Protection Supervisor  
R. Breymaier, Supervisor, Engineering Programs  
M. Caragher, Director, Nuclear Engineering  
W. Colonnello, Director, Plant Support  
T. Conner, Vice-President, Nuclear Generation  
D. Coseo, Supervisor, Regulatory Compliance  
P. Crane, Superintendent, Production  
J. Davis, Production Superintendent, Outage Scheduling  
J. Ford, Director, Organization Effectiveness  
S. Hassoun, Supervisor, Licensing and Environment  
D. Hemmele, Superintendent, Operations  
E. Kokosky, Manager, Nuclear Quality Assurance  
R. LaBurn, Manager, Radiation Protection  
A. Mann, Production Superintendent, Outage Management  
A. Manoharan, Engineer, Regulatory Compliance  
J. May, Chemistry Supervisor  
G. Patzsch-Velaquez, Engineering Programs  
J. Pendergast, Principal Engineer, Regulatory Compliance  
L. Petersen, Manager, Plant Support Engineering  
G. Piccard, Manager, Systems Engineering  
Z. Rad, Manager, Licensing  
K. Scott, Director, Nuclear Production  
G. Strobel, Manager, Operations  
J. Thorson, Manager, Performance Engineering & Fuels  
H. Yeldell, Manager, Maintenance

## LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

### Opened

05000341/2014003-01	FIN	Incorrect Application of TSSR 3.0.3 to Never-Performed Battery Surveillances (Section 1R15.b.)
05000341/2014003-02	NCV	Disabled Respirator Safety Feature (Section 2RS3.1.b.)
05000341/2014003-03	NCV	Mis-Positioned Control Switch Inadvertently Rendered the Division 2 EECW System and Supported Systems Inoperable (Section 4OA2.2.b.)

### Closed

05000341/2014003-01	FIN	Incorrect Application of TSSR 3.0.3 to Never-Performed Battery Surveillances (Section 1R15.b.)
05000341/2014003-02	NCV	Disabled Respirator Safety Feature (Section 2RS3.1.b.)
05000341/2014002-05	URI	Use of Delta Suit Respirator (Section 2RS3.1.b.)
05000341/2014003-03	NCV	Mis-positioned Control Switch Inadvertently Rendered the Division 2 EECW System and Supported Systems Inoperable (Section 4OA2.2.b.)

## LIST OF DOCUMENTS REVIEWED

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

- CARD 13-28196; SCCW Chill Water Pump B Failed to Start
- CARD 13-28649; Determine Susceptibility of Lightning Arresters
- CARD 14-20204; North SCCW Chiller Main Compressor Oil Seal Leak
- CARD 14-24295; Due to Weather Conditions, Primary and Secondary Delta T Is High
- Correspondence, DTE NRC-12-0059, T. Conner to USNRC D.C., Fermi 2 90-Day Response to NRC Bulletin 2012-01: Design Vulnerability in Electric Power System; October 24, 2012
- Drawing 6SD721-2500-01; Plant 4160V and 480V System Service; Revision AY
- Drawing 6SD721-2500-02; 13.8KV; Revision AM
- Procedure 20.300.PHASE; Loss of Phase; Revision 0
- Procedure 23.127.01; RBCCW Supplemental Cooling System
- Procedure 27.000.05; Operator Rounds; Revision 30
- Procedure 27.000.06; Hot Weather Operations; Revision 4
- Procedure 27.322; Mayfly Infestation Preparation Plan; Revision 13
- System Status; S4000/S2000/S3100; 2013 Quarter 3
- WO 37212107; Remove Temporary Modification 13-0036, Block Open RWHVAC Plenum Doors
- WO 37682597; SCCW Chill Water Pump B Failed to Start
- WO 37976542; North SCCW Chiller Main Compressor Oil Seal Leak

### 1R04 – Equipment Alignment

- CARD 12-21934; EDG 11 Air Leak at Air Start Solenoid Valve
- CARD 12-22182; Abnormal Air Pressure Drop During EDG 13 Start
- CARD 12-25408; EDG 13 Speed Anomalies
- CARD 13-25909; EDG 12 Generator Phase C Temperature High
- CARD 13-25912; EDG 12 Engine Room Ventilation Damper Failure
- CARD 13-25913; Found Marriage Block Separated from Actuator
- CARD 13-26272; R3000 System Near MR a(1) and Exceeds Unavailability Threshold
- CARD 13-26909; Repeated Inability to Perform Troubleshooting on EDG 13
- CARD 13-26911; EDG 13 KVARs Pegged High When Output Breaker Was Closed During Synchronizing the Generator
- CARD 13-26915; Replace Air Coolant System Transmitters on EDG 12 and EDG 13 Due to Rubber Hose Degradation
- CARD 13-27530; Corrosion Found on EDG 11 Standby Jacket Coolant Pump Seal Area
- CARD 13-28894; EDG 11 Jacket Coolant Level Increase During 24-Hour Run
- CARD 14-00083; Fire Alarm Bell Did Not Alarm
- CARD 14-20903; EDG 12 Air Coolant System Temperatures Indicate Full Cooling
- CARD 14-21282; Potential Unnecessary EDG 11 Unavailability
- CARD 14-22590; RF 16 EDG 12 LOP/LOCA Surveillance Fails Output Breaker Closure Time Acceptance Criteria
- CARD 14-22596; Delay in EC3 Breaker Closure Time During EDG 13 LOP Test

- CARD 14-22612; EDG 11 Manually Tripped During Surveillance Test Due to Fire from Turbo Lagging
- CARD 14-23558; Request Work Order to Implement EDP-37087, EDG Room Heat Detector
- CARD 14-25191; Live Load Packing Washers Are Completely Flat on Bottom Stud of Packing Follower
- Correspondence, DTE Memo, C. R. Arndt to M. J. Joseph; Engineering Support Organization Report 13J075-0038; September 24, 2013
- Drawing 6M721-5708-1; HPCI System Functional Operational Sketch, Revision AO
- Drawing 6M721-5720-2; Emergency Equipment Cooling Water (Division II) Functional Operating Sketch; Revision AX
- Drawing 6M721-5734; EDG System; Revision BE
- Operating Experience Smart Sample (OpESS) FY2008-01, "Negative Trend and Recurring Events Involving Emergency Diesel Generators"
- Procedure 23.127; Reactor Building Closed Cooling Water/Emergency Equipment Cooling Water System; Revision 134
- Procedure 23.202; Attachment; Initial HPCI Valve Lineup, August 8, 2012
- Procedure 23.203; Core Spray System; Revision 58
- Procedure 23.307; EDG System; Revision 120
- System Health Report; Core Spray; 1<sup>st</sup> Quarter 2014
- System Status; EDG 11; Fourth Quarter 2013
- WO 31936072; Division 1 Core Spray Discharge Pressure Control Valve Is Cycling for No Apparent Reason
- WO 35600790; On-line Work Scope Control; EDG 13 Monitoring Work Order

#### 1R05 – Fire Protection

- Branch Technical Position CMEB 9.5-1; Guidelines for Fire Protection for Nuclear Power Plants; Revision 2 – July 1981
- CARD 13-21237; NRC Concern – Storage of Equipment in TBB Near SBFW Pumps
- CARD 14-00129; NRC Concern – Fire Door Not Latched
- CARD 14-23462; NRC Identified Issues Noted During Torus Room Walkdown
- CARD 14-23469; Leak on Valve E 1150-F006B
- Drawing 6A721-2409; Fire Protection Evaluation Reactor and Auxiliary Buildings Fifth Floor Plan – El. 677'6" and 684'-6"; Revision U
- Drawing 6M721-5733-1; Fire Protection Functional Operating Sketch; Revision BE
- Drawing 6M721-5733-3; CO<sub>2</sub>, Halon & FM-200 Fire Detection Sys Functional Operating Sketch; Revision M
- Fermi 2 UFSAR; Section 9A.4.1.2, Torus Room, Fire Zone 01RB, Elevation 540'0"; Revision 18
- Fermi 2 UFSAR; Section 9A.4.2.10, Control Room, Fire Zone 09AB, El. 643 Ft 6 In., 655 Ft 6 In., and 677 Ft 6 In.; Revision 18
- Fermi 2 UFSAR; Section 9A.4.2.15, Control Room Ventilation Equipment Room and Standby Gas Treatment Rooms; Revision 18
- Fermi 2 UFSAR; Section 9A.4.4, Radwaste Building; Revision 18
- Fermi 2 UFSAR; Section 9A.4.5, Turbine Building; Revision 18
- Fermi 2 UFSAR; Section 9A.5, Point-by-Point Comparison, Revision 18
- Procedure 25.507.02; Fire Door Surveillance Test, Revision 18
- Procedure 25.507.03; Fire Door Inspection – BOP; Revision 29
- Procedure 35.000.242; Barrier Identification/Classification; Revision 50
- Procedure FP-AB-3M-13; Computer Room, Zone 13, El. 655'6"; Revision 5

- Procedure FP-AB-5-16e; Auxiliary Building Division II Control Center Heating, Ventilating, and Air Conditioning System Equipment Room, Zone 16, El. 677'6"; Revision 2
- Procedure FP-RB-SB-1; Torus Room, Zone 1, El. 540'0"; Revision 3
- Procedure FP-TB; Turbine Building; Revision 9
- Procedure MES35; Engineering Support Conduct Manual, Chapter 35 – Fire Protection; Revision 10

#### 1R06 – Flood Protection

- CARD 05-25383; SEN Internal Flood Design Deficiencies
- CARD 13-26016; Manhole Cover Is Not Watertight Leaving a Pathway for Liquids/Air Out of the RRA
- CARD 14-21816; Fukushima 2.3 Flooding Walkdowns (RF 16): Flood-Tight Door RB-1 (A7000Y033) Degraded Seal and Seal Mating Surface
- Drawing 6M721-2218; Floor & Equipment Drains Sub-Basement Plan Reactor Building; Revision X
- Drawing 6M721-2224; Floor Drains All Floors Auxiliary and Reactor Buildings; Revision Y
- Fermi 2 USFAR 3.11; Environmental Design of Mechanical and Electrical Equipment
- Fermi 2 USFAR 3.4.4.4; Internal Flood Protection
- Procedure 27.702.01; Reactor Building Sump Crosstie Flood Control Valve Test; Revision 7

#### 1R07 – Annual Heat Sink Performance

- CARD 14-23713; Piece of Debris Found in EDG 13 Air Coolant Heat Exchanger Inlet Side
- CARD 14-23706; NQA-Safety, Hearing Protection Not Being Worn at EDG 13 Engine Bay
- CARD 14-23705; NQA - FME Zone Area Not Properly Controlled Barriers
- CARD 14-23757; UT Measurement Below Maximum Wall Thickness for EDG 13 Lube Oil Heat Exchanger Outlet Channel Cover
- CARD 14-23829; Lube Oil Leak from Body of R3000F111B During EDG 13 Governor Vent Run
- CARD 14-23836; EDG 13 Heat Exchanger Inspection and ECT Results from April 2014 SSO
- Heat Exchanger Inspection Report EDG 13 Jacket Water Cooling Heat Exchanger; PIS: R3001B018
- Heat Exchanger Inspection Report EDG 13 Lube Oil Heat Exchanger, PIS: R3001B003; April 25, 2014
- Heat Exchanger Inspection Report EDG-13 Air Coolant Heat Exchanger, PIS: R3001B026; April 25, 2014
- Procedure MES 54; Heat Exchanger Component Monitoring Program; Revision 4
- WO 34343914; Replace EDG 13 Heat Exchanger Channel Covers
- WO 35151701; Perform Heat Exchanger Inspection
- WO 35301403; EDG 13 Heat Exchanger Eddy Current Test

#### 1R11 – Licensed Operator Requalification Program

- CARD 14-23616; Unexpected Loss of Heater Drains While Lowering Reactor Power
- Procedure 20.107.02; Loss of Feedwater Heating; Revision 24
- Procedure 23.108; Extraction Steam and Heater Drains; Revision 85
- Procedure ARP 5D85; Loss of Heater Drains; Revision 12
- Operating Experience Smart Sample (OpESS) FY2010-02, "Sample Selections for Reviewing Licensed Operator Examinations and Training Conducted on the Plant-Referenced Simulator"

## 1R12 – Maintenance Effectiveness

- Apparent Cause Evaluation for CARD 13-25913; X4103F152, Division 1 EDG 12 Diesel Room Return Air Damper Actuator Marriage Block was Found Separated from the Damper Resulting in a Loss of Function
- Apparent Cause Evaluation for CARD 13-28248; Trip of South Condenser Pump Forces Unplanned Reactor Downpower
- CARD 12-27477; EDG 11 Outside Air Damper Actuator Coupling Came Apart
- CARD 13-22158; R1100 Maintenance Rule Performance Criteria Monitoring
- CARD 13-25618; Division II CCHVAC Surging Causing Amps to Swing
- CARD 13-25850; Evaluate the R3100 System for Maintenance Rule (a)(1) Status
- CARD 13-25913; Found Marriage Block Separated from Actuator
- CARD 13-25913-01; Complete MRFF Review and Attached Copy
- CARD 13-25913-02; Update MRFF Based on the CARD Investigation Results
- CARD 13-25913-07; Re-evaluate R3000 Fault Exposure
- CARD 13-26275; E1156 Not Meeting MR Performance Criteria for July Not Identified
- CARD 13-26276; E1156 Exceed MR Performance Criteria
- CARD 13-27197; Maintenance Rule X4103 Heater Failures Not Being Monitored
- CARD 13-27667; Division 1 CCHVAC Normal Make-up Air Radiation Monitor Flow Switch Failed Upscale
- CARD 13-28248; Trip of South Condenser Pump Forces Unplanned Reactor Downpower
- CARD 13-28647; Evaluate D1100 for MR (a)(1) Status
- CARD 13-26468; A7100 Exceeds Another Maintenance Rule Performance Criteria
- CARD 13-28694; Concerns with Monitoring of Maintenance Rule Systems
- CARD 13-28781; Reactor Building Heating, Ventilation & Air Conditioning (T4100) Near a(1) Due to Exceeding Performance Criteria
- CARD 14-20269; To Evaluate Whether RHR Heating, Ventilation & Air Conditioning System Should be Classified a(1) Maintenance Rule Due to Unit Heater Failures
- Critical Component Failure Clock Reset Screening for CARDS 13-25912 and 13-25913; August 22, 2013
- DC-5496, Volume 1, Attachment 1
- Functional Failure Evaluation Checklist for CARD 12-27477-01, Evaluation 120910-01; September 24, 2012 and October 23, 2012
- Organizational and Programmatic Issue Screen; July 26, 2012
- Maintenance Rule Conduct Manual, MMR Appendix D; Guidelines for Determining Functional Failures and Maintenance Preventable Functional Failures; Revision 15
- Procedure 23.420; RHR Complex Heating and Ventilation; Revision 35
- RHR Complex Dampers, ITT Hydramotors (Division 1)
- Technical Evaluation TE-X41-12-077; X4103F149A/B Inlet Air Damper to Actuator Coupling Came Apart During 24.307.14 EDG Run
- Troubleshooting Datasheet for WO 37152466, CARD 13-25913; September 4, 2013

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

- CARD 14-23249; 44.080.213 Failed Acceptance Criteria Step 6.8.2 Loss of AC Power Did Not Alarm. Turbine Building Vent Exhaust
- CARD 14-24066; Failed Upper Main Bearings
- CARD 14-24162; EDG 11 #2 and #3 Main Caps and Bearing Saddles Found Out of Specification
- CARD 14-24175; Crank Lead
- CARD 14-24176; Missing Gasket

- CARD 14-24185; RRMG Set Scoop Tube Positioner Stop Operability Test Could Not Be Performed IAW 54.000.20
- CARD 14-24237; Lube Oil Leak on EDG 11 #2 Upper Bearing Cap
- CARD 14-24265; EDG 11 Bearings Not Meeting Expected Criteria
- CARD 14-24381; Abnormal Odor Around EDG 11 Control Panel
- CARD 14-25132; T4100B040A Div 1 Switchgear Room AC Unit Has a Failed Compressor
- Core Flow and Power Flow Map
- Fermi 2 Control Room Log
- Procedure 20.000.01; Acts of Nature; Revision 47
- Procedure 23.138.01; Reactor Recirculation System; Revision 108
- Procedure MMR Appendix H; On-Line Core Damage Risk Management Guidelines; Revision 13
- Procedure MMR12; Chapter 12, Equipment Out of Service Risk Management; Revision 16
- Technical Evaluation TE-R30-14-060; EDG Main Bearing Saddle Distances; Revision 0

### 1R15 – Operability Evaluations

- CARD 10-23155; AOV Margin Issue at Low NIAS Air Pressure System Isolation
- CARD 11-30644; TS Curves for Pressure/Temperature for Core Critical and Core Not Critical Determined To Be Non-conservative
- CARD 12-28848; Non-conservative TS for Battery Capacity Based on DC-6480 Volume I, Revision 0
- CARD 13-01025; X4103-F122, Division 1 CO2 RM EDG 12 ISO DMPR Cycling
- CARD 13-20348; Map Concrete Beam Reinforcing for Four RB-5 Beams
- CARD 13-24539; Reactor Coolant Pressure Boundary Component Thermal-Pressure Cycles
- CARD 13-24771; DC 6479 Volume I, Revision 0, Results Indicate That Division 1 Standby Gas Treatment Air Heater Electrical Contractor 121C Does Not Have Sufficient Voltage to Pick Up at Analytical Degraded Voltage Limits
- CARD 13-24841; EDG Steady State Voltage and Frequency TS Ranges
- CARD 13-24973; DC-6475 Volume I and DC-6482 Volume I Motor Operated Valve TOL Sizing
- CARD 13-25403; 2013 Component Design Basis Inspection DC-6480 Volume I Revision A, Battery 28-1 Low Capacity Margin Impact on Design Function
- CARD 13-25504; 2013 Component Design Basis Inspection-ECCS Suction Strainer Modification Calculation Deficiencies
- CARD 13-25759; Found Panel Polarity Incorrect
- CQRD 13-27290; AFCC 4 “Open” Contactor for N2103F001 Has Degraded Pickup Voltage Above Acceptance Criteria
- CARD 13-29041; Recommend Replacement of Pump T4100C041
- CARD 14-20401; ABB 716611K02-K-Line Circuit Breaker Primary Close Latch – 10 CFR Part 21
- CARD 14-20833; Mispositioned Component Event – Division 2 EECW Isolation Override Switch
- CARD 14-21236; Results from the BADGER Test Report Indicate 3 Fuel Storage Rack Panels Have Boron Density Less Than That Assumed
- CARD 14-21704; E1100F050B Failed Pressure Isolation Valve Leakage Test
- CARD 14-22637; Missing Gasket Material in Steam Blowout Panel
- CARD 14-22669; Leakage Identified During Reactor Pressure Vessel Pressure Test on E5150F008
- CARD 14-22736; Unacceptable Steam Erosion on E5150F008
- CARD 14-22796; Potential Mispositioned Component: Intermediate Range Monitor ‘G’ Signal Cable Found Disconnected from Preamp

- CARD 14-22873; Revise MES27 and Startup Checklist to Improve Alignment
- CARD 14-23220; Request PSE Review Adequacy of Fermi 2 Programmatic Implementation of IMC 0326 Timing of Corrective Actions Reviews
- CARD 14-23734; E5150F008 As-found LLRT Not Performed Prior to Corrective Maintenance in RF 16
- CARD 14-23817; NRC Concern – With No As-Found LLRT on E5150F008 During RF 16
- CARD 14-25516; NQA Identified. The Unit Condition Assessment for July 2013, Includes a List of Operable but Degraded or Non-conforming Equipment that is Not Complete
- CARD 14-25242; NRC Finding – Application of SR 3.0.3
- Fermi 2 Control Room Log
- Procedure MES 27, Chapter 27; Verification of System Operability; Revision 16
- Procedure MES 28, Chapter 28; Leakage Reduction and Primary Containment Leakage Programs; Revision 18
- Procedure MQA 11, Chapter 11; Condition Assessment Resolution Document; Revision 37
- Technical Evaluation TE-E41-14-042; Technical Basis for Retraction of NRC Event #49801

#### 1R18 – Plant Modifications

- Calculation No. DC-2972; Piping Stress Analysis M-3159-1; Volume Number III DCD; Revision 0
- Calculation No. DC-0685; Analysis of Pipe Hangers E11-3159-G05, G06, G08 & G09 due to Increasing Design Load per EDP 28935; Revision 0
- CARD 14-22970; Integrated Process Computer System Power to Flow Map is Not in Accordance with MUR Task 201
- CARD 14-22856; Leading Edge Flow Meter Errors Noted on Integrated Process Computer System
- CARD 14-22172; Revise DC-0194 for MUR
- CARD 14-22198; UFSAR Table 6.2-5 Lacks Clear Design Basis
- CARD 14-22040; OPRM Values Missed During the EDP 36969
- CARD 14-24855; NRC Identified – Revise Calculation DC-2972 Vol. III DCD
- CARD 14-25098; NRC Identified – Revise Calculation DC-0685 Vol. V DCD
- Engineering Change Request 369691; Modifications to Support MUR Power Uprate
- Engineering Design Package (EDP) 28935, Lead Shielding For Div. I RHR Containment Spray Piping, Revision 0
- EDP 36969; MUR Power Uprate Implementation
- Fermi 2 USFAR Section 6.2; Containment Systems
- Infrequently Performed Test or Evolution 13-06; MUR Power Uprate Startup
- ML13364A131; Fermi 2 – Issuance of Amendment RE: Measurement Uncertainty Recapture Power Uprate (TAC No. MF0650); February 10, 2014

#### 1R19 – Post-Maintenance Testing

- CARD 14-23829; Lube Oil Leak from Body of R3000F111B During EDG 13 Governor Vent Run
- CARD 14-24925; IST Acceptance Criteria Limits for T4100C041
- Procedure 24.413.01; Division 1 and 2 Control Center Chilled Water Pump and Valve Operability Test; Revision 38
- Procedure 35.CON.022; New Cable Terminations; Revision 38
- WO 36806032; EDG 13 Oil Temperature Switch Is Sticking for R30-NA1-14B
- WO 37860354; Rework Pump T4100C041

- WO 38379759; Replace R3000F11B – Perform Non- American Society of Mechanical Engineers As-Found and As-Left Relief Valve Test

#### 1R20 - Outage Activities

- CARD 14-23116; Trend Card – Change in Drywell Floor Sump Unidentified Leak Rate
- CARD 14-23126; Steam Leak Identified on the North-East Side of the South Reactor Feedpump Control Valve Steam Chest
- CARD 14-23129; LPRM 48-17B Indicates Downscale and Has No Response During LPRM Flux Response Test
- CARD 14-23146; Failed Post-Maintenance Test – ‘A’ Feedwater Line Testable Check Valve
- CARD 14-23158; Posted Greater Than 100 Square Feet Contaminated Area
- CARD 14-23163; Electricians Informed RTC of Oil Leak on Center Phase of Transformer 2B at 90 Percent Power
- CARD 14-23215; Operation Greater Than 24 Hours Between 58-89 Percent. GOP 22.000.03  
NOTE
- CARD 14-23397; RFPs Seem Slow to Respond to Level and Power Changes
- CARD 14-23398; Manual Trip of MTG Due to High Vibes
- CARD 14-23399; Manual Trip of the NRFPT Due to High Vibes Following Reactor SCRAM
- CARD 14-23404; Response Characteristics from the Reactor Feedpump Tuning Seems to Respond Slowly to Reactor Water Level Changes
- CARD 14-23452; Drywell Cooler 1, Tube-to-Tubesheet Leak, North Coil
- Procedure 22.000.02; Plant Startup to 25 Percent Power; Revision 91
- Procedure 22.000.03; Power Operations 25 Percent to 100 Percent to 25 Percent; Revision 95
- Procedure 20.000.04; Plant Shutdown from 25 Percent Power; Revision 72
- Procedure 23.800.07; Reactor Coolant Natural Circulation and Decay Heat Removal; Revision 11

#### 1R22 – Surveillance Testing

- Fermi 2 UFSAR 5.2.7.8; Leakage Reduction Program; Revision 18
- Leakage Summary Report RF16; March 22, 2014
- Procedure 43.106.002; Control Rod Drive Hydraulic Leakage Monitoring Test; Revision 28
- Procedure 43.202.001; HPCI Leakage Monitoring Test; Revision 28
- Procedure 43.203.001; Division 1 CSS Leakage Monitoring Test; Revision 25
- Procedure 43.203.005; Division 2 CSS Leakage Monitoring Test; Revision 28
- Procedure 43.204.001; RHR Division 1 Leakage Monitoring Test; Revision 29
- Procedure 43.204.002; RHR Division 2 Leakage Monitoring Test; Revision 25
- Procedure 43.206.001; RCIC Leakage Monitoring Test; Revision 29
- Procedure 43.408.001; Division 1 Primary Containment Monitoring System Leakage Test; Revision 30
- Procedure 43.408.002; Division 2 Primary Containment Monitoring System Leakage Test; Revision 31
- Procedure 43.409.001; Division I Post LOCA Thermal Recombiner System Leakage Test; Revision 30
- Procedure 43.409.002; Division 2 Post LOCA Thermal Recombiner System Leakage Test; Revision 29
- Procedure 43.707.001; Reactor Water Clean Up Leakage Monitoring Test; Revision 33
- Procedure 43.714.001; Post Accident Sampling System Leakage Monitoring Test (Air Test); Revision 32
- Procedure 43.714.002; Process Sampling Leakage Monitoring Test; Revision 27

- Procedure 43.714.004; Post Accident Sampling System Leakage Monitoring Test; Revision 24
- Procedure MES 28; Leakage Reduction and Primary Containment Leakage Rate Programs; Revision 18
- Procedure 24.203.02; Division 1 CSS Pump and Valve Operability, and Automatic Actuation; Revision 50
- Procedure 24.208.02; Division 1 EESW and EECW Makeup Pump and Valve Operability Test; Revision 62
- Program Health Report Fermi 2; Leakage Reduction; Fourth Quarter 2013

### 2RS3 – In-Plant Airborne Radioactivity Control and Mitigation

- CARD 14-21795; Delta Suit Process Improvements
- Procedure 65.000.737; Set Up, Operation, Shutdown, and Disassembly of a Breathing Air System – Reactor Building; Revision 11

### 2RS5 – Radiation Monitoring Instrumentation

- Atlantech Whole Body Counter Calibration; November 19, 2013
- Helgeson Whole Body Counter Calibration; November 20, 2013
- Fastscan Whole Body Counter Calibration; November 19, 2013
- Gamma Spectroscopy System Calibrations; various records
- Procedure 64.080.212; Radwaste Building Ventilation Exhaust Process Radiation Monitoring System Calibration; Revision 13
- Procedure 65.000.126; Operation of the Personnel Contamination Monitor (PCM-1B); Revision 5
- Procedure 65.000.143; Operation of IPM9D Monitor; Revision 3
- Procedure 65.000.144; Operation of GEM5 Portal Monitor; Revision 3
- Procedure 65.000.152; Operation of Argos-5AB Personnel Contamination Monitor; Revision 0
- Procedure 65.000.220; Calibration of the Radiation Protection/Chemistry Gamma Spectroscopy System; Revision 10
- Procedure 65.000.519; Radioactive Material Receipt/Source Control; Revision 33
- Procedure 76.000.70; Operation of the Packard Tri-Carb 2100TR; Revision 7
- Procedure 78.000.12; Post-Accident Sampling and Transport; Revision 21
- Procedure 78.000.65; AXM Sampling and Analysis; Revision 15
- System Health Report; Process Radiation Monitoring System; First Quarter 2014
- System Health Report; Area Radiation Monitoring System; First Quarter 2014
- GEM5 Calibration; Serial Number 0512-029; March 11, 2014
- IPM9D Calibration; Serial Number 301; April, 23, 2014
- RAS-1 Pump Calibration; Serial Number 110; April 10, 2014
- H809 Series Air Sampler Calibration; Serial Number 5388; March 12, 2014
- AMS-4 Calibration; Serial Number 1938; February 10, 2014
- SAM11 Calibration; Serial Number 311; April 14, 2014
- AMP100 Calibration; Serial Number 932077; January 20, 2014
- ASP2e/NRD Calibration; Serial Number 667/702423; January 24, 2014
- Telepole Calibration; Serial Number 6603-143; April 22, 2014
- Ludlum 177 Calibration; Serial Number 19644; January 9, 2014
- Ludlum 177 Calibration; Serial Number 19642; May 12, 2014
- RO20 Calibration; Serial Number 298; April 14, 2014
- JL Shepherd Gamma Calibrator Dose Rate Verification; June 23, 2013
- 5XLB Proportional Counter Calibration; Serial Number 0385148; May 13, 2014
- Recalculation of SPING Setpoints; April 30, 2013

- Scaling Factor Report Dated December 9, 2013; January 10, 2014
- Audit Report 13-0111; Quality Assurance Audit of the Radiation Protection Program; September 9, 2013
- NQA Quarterly Assessment Report 13-04; February 11, 2014
- Quick Hit Self-Assessment Report: Radiation Monitoring Instrumentation; April 9, 2014
- Daily Checks H3 Efficiency Data; 2013 – 2014
- Radiochemistry Cross Check Results; 2013
- MCE04; Chemistry and Environmental Monitoring Conduct Manual; Revision 6
- Radwaste Building Ventilation Exhaust Process Radiation Monitoring System Calibration; May 15, 2014
- Area Radiation Monitoring System Channel 15 Calibration; August 5, 2013
- Area Radiation Monitoring System Channel 17 Calibration; August 5, 2013
- Area Radiation Monitoring System Functional Test; January 2, 2014
- Division 1 SGTS Charcoal Sample Withdrawal; November 19, 2013
- Division 1 Standby Gas Treatment Filter Performance Test; November 19, 2013
- Division 2 SGTS Charcoal Sample Withdrawal; August 28, 2013
- Division 2 Standby Gas Treatment Filter Performance Test; August 28, 2013
- Containment Area High Range Radiation Monitor Division 1 Electronic Calibration; October 11, 2013
- Containment Area High Range Radiation Monitor Division 2 Electronic Calibration; August 8, 2013
- Containment Area High Range Radiation Monitor Division 1 Radiation Calibration; February 13, 2014
- Containment Area High Range Radiation Monitor Division 2 Radiation Calibration; February 15, 2014
- CARD 13-26012; NQA Audit Deficiency – RP Instrument Calibration Records Not Reviewed/Approved; August 27, 2013
- CARD 13-26123; NQA Audit Deficiency – RP Counting Equipment Deficiencies with Canberra 5XLB Tennelec; August 30, 2013
- CARD 13-26352; Use of RP Instrumentation in Areas Where Temperatures Exceed Operation Parameters of Instruments; September 10, 2013
- CARD 13-26849; Malfunctioning ED; September 24, 2013
- CARD 13-27316; Attempt to Repair Detector 4 VMS Computer; November 11, 2013

#### 40A1 – Performance Indicator Verification

- DTE Memo TMIS-13-0067; J. Thorson to Z. Rad; NRC/WANO Performance Indicator 2<sup>nd</sup> Quarter 2013 Data Submittal; July 16, 2013
- DTE Memo TMIS-13-0110; J. Thorson to Z. Rad; NRC/WANO Performance Indicator 3<sup>rd</sup> Quarter 2013 Data Submittal; October 15, 2013
- DTE Memo TMIS-14-0008; J. Thorson to Z. Rad; NRC/WANO Performance Indicator 4<sup>th</sup> Quarter 2013 Data Submittal; January 16, 2014
- DTE Memo TMIS-14-0028; J. Thorson to Z. Rad; NRC/WANO Performance Indicator 1<sup>st</sup> Quarter 2014 Data Submittal; April 11, 2014
- Nuclear Energy Institute 99-02 Regulatory Assessment Performance Indicator Guideline; August 31, 2013

#### 40A2 – Identification and Resolution of Problems

- CARD 14-20833; Mispositioned Component Event – Division 2 EECW Isolation Override Switch

- CARD 14-24512; May 28, 2014 PI Meeting with NRC to Discuss Trends
- CARD 13-26082; Emerging Trend
- CARD 14-23493; Items in Drywell Found During Closeout, NRC Concern
- CARD 14-23462; NRC Identified Issues Noted During Torus Room Walkdown
- CARD 13-28668; Increase in Unplanned LCO Entries for the Month of November Due to Fire Doors Failing to Close and Latch
- CARD 14-20160; Trending Data Indicates Increased Out of Service Time Associated with Vital Area Doors for Second Consecutive Month
- CARD 13-22963; Emerging Trend – Barton Switch Failures
- CARD 14-20562; Emerging Trend of Injuries
- CARD 14-21552; Maintenance Human Performance and Safety Trend RF-16
- CARD 13-26233; Emerging Trend – Maintenance Radiological Work Practices Not in Accordance with Site Standards
- CARD 13-24720; Three Critical 2 Preventive Maintenance Activities Partially Completed During the June 24, 2013 Workweek
- CARD 14-23493; Items in Drywell Found During Closeout, NRC Concern
- CARD 13-26700; NRC Concerns Identified During Drywell Closeout Walkdown
- CARD 14-23076; Adverse Human Performance Trend of Refueling Activities During RF-16
- CARD 14-24891; Existing Trend in the Area of Housekeeping
- Apparent Cause Evaluation for CARD 14-20833; Mispositioned Component Event – Division 2 EECW Isolation Override Switch
- Common Cause Analysis for CARD 13-22963; Emerging Trend – Barton Switch Failures
- Common Cause Analysis for CARD 14-21552; Maintenance Human Performance and Safety Trend RF-16
- Common Cause Analysis for CARD 13-26233; Emerging Trend – Maintenance Radiological Work Practices Not in Accordance with Site Standards
- Common Cause Analysis for CARD 13-24720; Three Critical 2 Preventive Maintenance Activities Partially Completed during the June 24, 2013 Workweek
- Common Cause Analysis for CARD 14-23076; Adverse Human Performance Trend of Refueling Activities During RF-16
- Event Notification (Draft); Event # 49801, EECW in Manual Override Due to Human Performance Error
- Procedure 23.127; Reactor Building Closed Cooling Water/Emergency EECW System; Revision 129
- Procedure MQA 18; Quality Assurance Conduct Manual; Chapter 18 – Common Cause Analysis; Revision 1
- Procedure 23.425.01; Primary Containment Procedures; Revision 71
- Technical Evaluation TE-E41-14-042; Technical Basis for Retraction of NRC Event No. 49801; Revision 0
- Fermi 2 4<sup>th</sup> Quarter 2013 – 1st Quarter 2014 Station Trend Report; October 2013 – March 2014

## LIST OF ACRONYMS USED

AC	Alternating Current
ADAMS	Agencywide Document Access Management System
BWR	Boiling Water Reactor
CARD	Condition Assessment Resolution Document
CCHVAC	Control Center Heating, Ventilation & Air Conditioning
CFR	Code of Federal Regulations
CS	Core Spray
DC	Direct Current
ECCS	Emergency Core Cooling System
EDG	Emergency Diesel Generator
EECW	Emergency Equipment Cooling Water
EESW	Emergency Equipment Service Water
HPCI	High Pressure Coolant Injection
IMC	Inspection Manual Chapter
IP	Inspection Procedure
LCO	Limiting Condition for Operation
MSPI	Mitigating Systems Performance Index
MUR	Measurement Uncertainty Recapture
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	U.S. Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
OpESS	Operating Experience Smart Sample
PARS	Publicly Available Records System
PWR	Pressurized Water Reactor
RBCCW	Reactor Building Closed Cooling Water
RCIC	Reactor Core Isolation Cooling
RCS	Reactor Coolant System
RF	Refueling Outage
RHR	Residual Heat Removal
SCCW	Supplemental Closed Cooling Water
SDP	Significance Determination Process
SR	Surveillance Requirement
SSC	Structure, System, and Component
TS	Technical Specification
TSSR	Technical Specification Surveillance Requirement
TSO	Transmission System Operator
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item
WO	Work Order

J. Plona

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Sincerely,

**/RA/**

Michael A. Kunowski, Chief  
Branch 5  
Division of Reactor Projects

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