



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

November 4, 2010

Mr. Michael J. Pacilio
Senior Vice President, Exelon Generation Company, LLC
President and Chief Nuclear Officer (CNO), Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

**SUBJECT: DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3
INTEGRATED INSPECTION REPORT 05000237/2010-004;
05000249/2010-004**

Dear Mr. Pacilio:

On September 30, 2010, the U.S. Nuclear Regulatory Commission (NRC) completed an integrated inspection at your Dresden Nuclear Power Station, Units 2 and 3. The enclosed report documents the results of this inspection, which were discussed on October 13, 2010, with Mr. S. Marik, and other members of your staff.

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

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

If you contest the subject or severity of an NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission - Region III, 2443 Warrenville Road, Suite 210, Lisle, IL 60532-4352; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the Resident Inspector Office at the Dresden Nuclear Power Station. In addition, if you disagree with the cross-cutting aspect assigned to any finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region III, and the NRC Resident Inspector at the Dresden Nuclear Power Station.

M. Pacilio

-2-

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

Sincerely,

/RA/

Mark A. Ring, Chief
Branch 1
Division of Reactor Projects

Docket Nos. 50-237; 50-249
License Nos. DPR-19; DPR-25

Enclosure: Inspection Report 05000237/2010-004; 05000249/2010-004
w/Attachment: Supplemental Information

cc w/encl: Distribution via ListServ

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos: 05000237; 05000249
License Nos: DPR-19; DPR-25

Report No: 05000237/2010-004; 05000249/2010-004

Licensee: Exelon Generation Company, LLC

Facility: Dresden Nuclear Power Station, Units 2 and 3

Location: Morris, IL

Dates: July 1 through September 30, 2010

Inspectors: C. Phillips, Senior Resident Inspector
D. Meléndez-Colón, Resident Inspector
J. Draper, Reactor Engineer
E. Coffman, Reactor Engineer
D. Sand, Reactor Engineer
T. Go, Health Physicist

Approved by: M. Ring, Chief
Projects Branch 1
Division of Reactor Projects

Enclosure

TABLE OF CONTENTS

SUMMARY OF FINDINGS	1
REPORT DETAILS	3
Summary of Plant Status.....	3
1. REACTOR SAFETY	3
1R01 Adverse Weather Protection (71111.01).....	3
1R04 Equipment Alignment (71111.04Q and S)	4
1R05 Fire Protection (71111.05Q and A)	5
1R06 Flooding (71111.06)	7
1R11 Licensed Operator Requalification Program (71111.11).....	8
1R12 Maintenance Effectiveness (71111.12).....	9
1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13)	9
1R15 Operability Evaluations (71111.15)	10
1R18 Plant Modifications (71111.18).....	13
1R19 Post-Maintenance Testing (71111.19)	14
1R22 Surveillance Testing (71111.22)	15
2. RADIATION SAFETY	16
2RS4 Occupational Dose Assessment (71124.04).....	16
2RS7 Radiological Environmental Monitoring Program (71124.07).....	21
4. OTHER ACTIVITIES.....	23
4OA1 Performance Indicator Verification (71151).....	23
4OA2 Identification and Resolution of Problems (71152)	26
4OA3 Follow-Up of Events and Notices of Enforcement Discretion (71153)	29
4OA6 Management Meetings.....	29
SUPPLEMENTAL INFORMATION	1
Key Points of Contact.....	1
List of Items Opened, Closed and Discussed.....	2
List of Documents Reviewed	3
List of Acronyms Used	9

SUMMARY OF FINDINGS

IR 05000237/2010-004, 05000249/2010-004; 07/01/2010 – 09/30/2010; Dresden Nuclear Power Station, Units 2 & 3; Operability Evaluations, Identification and Resolution of Problems.

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

A. NRC-Identified and Self-Revealed Findings

Cornerstone: Mitigating Systems

- Green. The inspectors identified a finding of very low safety significance (Green) and associated NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for the licensee's failure to assure that conditions adverse to quality associated with pre-conditioning were promptly identified and corrected. The licensee's corrective actions included actions for Engineering to evaluate all the Technical Specification functions that do not have test valves installed on their pressure switches and justify the potential unacceptable preconditioning as acceptable or take other actions as appropriate. The licensee entered this finding into the corrective action program as issue report (IR) 1120159.

The finding was determined to be more than minor because it impacted the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors did not identify any cross-cutting aspect associated with this finding. The inspectors evaluated the finding using IMC 0609, "Significance Determination Process," Attachment 4, "Phase 1 – Initial Screening and Characterization of Findings." The inspectors answered "No" to all questions in the Mitigation System Cornerstone column of Table 4a, "Characterization Worksheet for IE, MS, and BI Cornerstones," therefore, the finding screened as Green (very low safety significance). (Section 4OA2.3)

Cornerstone: Barrier Integrity

- Green. The inspectors identified a finding of very low safety significance (Green) and associated NCV of 10 CFR Part 50, Appendix B, Criterion XV, "Nonconforming Materials, Parts, or Components" for the installation of a commercially dedicated part for use in a safety-related system which failed testing acceptance criteria on October 6, 2008. The licensee's corrective actions included replacing the nonconforming material on November 11, 2009. The licensee made procedure changes to clarify the requirements for documentation of the technical justification of accepting discrepancies. The licensee entered this finding into the corrective action program as issue report (IR) 1068559.

The finding was determined to be more than minor because the finding was similar to IMC 0612, Appendix E, Example 5c (dated August 11, 2009). The inspectors determined the finding could be evaluated using IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," Table 4a for the Barrier Integrity Cornerstone. The inspectors answered all four questions in Table 4a, "No," therefore, the inspection finding screened as having very low safety significance. This finding has a cross-cutting aspect in the area of Human Performance - Decision Making. Specifically, there was a systematic process to ensure that discrepancies identified in the commercial grade dedication process were properly resolved, which was not followed. H.1(a) (Section 1R15)

B. Licensee-Identified Violations

No violations of significance were identified.

REPORT DETAILS

Summary of Plant Status

Unit 2

On September 11, 2010, power was reduced to approximately 63 percent electrical output for a control rod sequence change, control rod drive scram time testing, and turbine valve testing. The unit returned to full power on September 12, 2010.

Unit 3

On July 3, 2010, power was reduced to approximately 85 percent for a control rod pattern adjustment. The unit returned to full power on July 4, 2010.

On August 1, 2010, power was reduced to approximately 85 percent for a control rod pattern adjustment. The unit returned to full power on the same day.

On August 13, 2010, power was reduced to approximately 94 percent due to high demineralizer temperature caused by prolonged high intake temperature. The unit returned to full power on August 14, 2010.

On September 4, 2010, power was reduced to approximately 69 percent for feedwater regulating valve maintenance, control rod drive scram time testing and turbine valve testing. The unit returned to full power on the same day.

On September 6, 2010, power was reduced to approximately 86 percent for a control rod pattern adjustment. The unit returned to full power on the same day.

On September 25, 2010, power was reduced to approximately 92 percent for a control rod pattern adjustment. The unit returned to full power on the same day.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

.1 Readiness for Impending Adverse Weather Condition – Severe Thunderstorm Watch

a. Inspection Scope

Since thunderstorms with potential tornados and high winds were forecast in the vicinity of the facility for July 12, 2010, the inspectors reviewed the licensee's overall preparations/protection for the expected weather conditions. On July 12, 2010, the inspectors walked down the main power transformers, in addition to the licensee's emergency alternating current (AC) power systems, because their safety-related functions could be affected or required as a result of high winds or tornado-generated missiles or the loss of offsite power. The inspectors evaluated the licensee staff's preparations against the site's procedures and determined that the staff's actions were adequate. During the inspection, the inspectors focused on plant-specific design features and the licensee's procedures used to respond to specified adverse weather

conditions. The inspectors also toured the plant grounds to look for any loose debris that could become missiles during a tornado. The inspectors evaluated operator staffing and accessibility of controls and indications for those systems required to control the plant. Additionally, the inspectors reviewed the Updated Final Safety Analysis Report (UFSAR) and performance requirements for systems selected for inspection, and verified that operator actions were appropriate as specified by plant specific procedures. The inspectors also reviewed a sample of corrective action program (CAP) items to verify that the licensee identified adverse weather issues at an appropriate threshold and dispositioned them through the CAP in accordance with station corrective action procedures.

This inspection constituted one readiness for impending adverse weather condition sample as defined in Inspection Procedure (IP) 71111.01-05.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04Q and S)

.1 Quarterly Partial System Walkdowns

a. Inspection Scope

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

- Unit 2/3 diesel fire pump during Unit 1 diesel fire pump out-of-service (OOS) for planned maintenance;
- 2B instrument air compressor with 2A instrument air compressor OOS; and
- 3A core spray (CS) train during 3B CS train OOS for planned maintenance.

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

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

b. Findings

No findings of significance were identified.

.2 Semi-Annual Complete System Walkdown

a. Inspection Scope

On July 26, 2010, the inspectors performed a complete system alignment inspection of the Unit 3 station blackout diesel generator system to verify the functional capability of the system. This system was selected because it was considered both safety-significant and risk-significant in the licensee's probabilistic risk assessment. The inspectors walked down the system to review mechanical and electrical equipment line-ups, electrical power availability, system pressure and temperature indications, as appropriate, component labeling, component lubrication, component and equipment cooling, hangers and supports, operability of support systems, and to ensure that ancillary equipment or debris did not interfere with equipment operation. A review of a sample of past and outstanding WOs was performed to determine whether any deficiencies significantly affected the system function. In addition, the inspectors reviewed the CAP database to ensure that system equipment alignment problems were being identified and appropriately resolved. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05Q and A)

.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:

- Fire Zone 18.6, station blackout battery room (U2 125VDC Alt. Battery Room), elevation 541';
- Fire Zone 11.2.3, Unit 2 high pressure coolant injection pump room, elevation 476';
- Fire Zone 1.3.1, Unit 3 shutdown cooling pump room, elevation 517'; and
- Fire Zone 1.3.2, Unit 2 shutdown cooling pump room, elevation 517'.

The inspectors reviewed areas to assess if the licensee had implemented a fire protection program that adequately controlled combustibles and ignition sources within the plant, effectively maintained fire detection and suppression capability, maintained passive fire protection features in good material condition, and implemented adequate compensatory measures for out-of-service, degraded or inoperable fire protection

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

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

b. Findings

No findings of significance were identified.

.2 Annual Fire Protection Drill Observation (71111.05A)

a. Inspection Scope

On July 14, 2010, the inspectors observed fire brigade activation for fire drill scenario number 22, "Unit 1 Warehouse Fire." Based on this observation, the inspectors evaluated the readiness of the plant fire brigade to fight fires. The inspectors verified that the licensee staff identified deficiencies; openly discussed them in a self-critical manner at the drill debrief, and took appropriate corrective actions. Specific attributes evaluated were:

- proper wearing of turnout gear and self-contained breathing apparatus;
- proper use and layout of fire hoses;
- employment of appropriate fire fighting techniques;
- sufficient firefighting equipment brought to the scene;
- effectiveness of fire brigade leader communications, command, and control;
- search for victims and propagation of the fire into other plant areas;
- smoke removal operations;
- utilization of pre-planned strategies;
- adherence to the pre-planned drill scenario; and
- drill objectives.

Documents reviewed are listed in the Attachment to this report.

These activities constituted one annual fire protection inspection sample as defined in IP 71111.05-05.

b. Findings

No findings of significance were identified.

1R06 Flooding (71111.06)

.1 Internal Flooding

a. Inspection Scope

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

- Unit 2 and Unit 3 reactor buildings.

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

b. Findings

Introduction: The inspectors identified two unresolved items (URIs) regarding internal flooding. The first was the failure to address NRC concerns regarding a reactor building closed cooling water (RBCCW) line break in the Unit 3 reactor building. Second, was the failure to seal holes in the floor above the emergency core cooling system (ECCS) corner rooms on both units. These holes would bypass berms built around the corner room stairway openings apparently designed to prevent flooding into the rooms.

Description: During a walkdown of the Unit 2 and Unit 3 reactor buildings the inspectors identified:

- That there were RBCCW pipes directly above the bermed areas surrounding the safety-related busses 23-1, 24-1, 33-1, and 34-1. If those pipes were to fail the bermed area around the busses would hold water in potentially resulting in the failure of power to all the low pressure ECCS pumps.
- That there were holes in the floor on both units, which would allow flood water to bypass the berms around the stairways to the ECCS corner rooms. The holes in the floor could also potentially result in a loss of all ECCS pumps.

In regard to the first observation, the inspectors reviewed a letter from the NRC to Commonwealth Edison (the licensee) dated August 20, 1982. The subject was, "SEP [Systematic Evaluation Program] Topic III-5.B, Pipe Break Outside Containment - Dresden Nuclear Power Station Unit 2." The enclosure to the letter was the NRC's Safety Evaluation Report (SER) for SEP Topic III-5.B. In the safety evaluation, the NRC reviewed the licensee's response to a previous NRC concern about the failure of the

RBCCW piping above the 23-1 and 24-1 switchgear on Unit 2. The licensee responded that there were several holes in the floor inside the bermed area around busses 23-1 and 24-1. The largest hole had a one and one-half inch lip around it. The licensee stated that the lip would be notched and that the holes would be sufficient to let the water drain before it could get high enough to impact the safety-related busses. There was no mention of Unit 3 in the safety evaluation.

The inspectors identified that on Unit 3 there was only one hole (not several) in the floor inside the bermed area around busses 33-1 and 34-1 and that hole had a one and one-half inch lip around it which was not notched. This configuration did not appear to be evaluated at the time the SER was written. The licensee performed an evaluation after the inspectors brought this condition to their attention. The review of the licensee's evaluation is an unresolved item. **(URI 05000237/2010004-01; 05000249/2010004-01)**

In regard to the second observation, the inspectors reviewed DR PSA-012, "Internal Flood Evaluation Summary and Notebook," dated May 2009. This document supported the licensee's probabilistic risk assessment, but was not part of the licensing basis. This document stated that the berms around the ECCS corner room stairs were credited in the internal flooding analysis. A review of the licensing basis to determine the design requirements of the ECCS corner room stairway berms was an unresolved item. **(URI 05000237/2010004-02; 05000249/2010004-02)**

These issues are considered unresolved items pending further NRC review.

1R11 Licensed Operator Regualification Program (71111.11)

a. Inspection Scope

On July 13, 2010, and again on August 9, 2010, the inspectors observed a crew of licensed operators in the plant's simulator during licensed operator requalification examinations to verify that operator performance was adequate, evaluators were identifying and documenting crew performance problems, and training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

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

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

This inspection constituted two quarterly licensed operator requalification program samples as defined in IP 71111.11.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

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

- U2 Instrument Air issue reports (IRs) 1052857 and 1052865; and
- 2/3 'A' and 'B' trains of standby gas treatment (SBGT) system.

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

- implementing appropriate work practices;
- identifying and addressing common cause failures;
- scoping of systems in accordance with 10 CFR 50.65(b) of the maintenance rule;
- characterizing system reliability issues for performance;
- charging unavailability for performance;
- trending key parameters for condition monitoring;
- ensuring 10 CFR 50.65(a)(1) or (a)(2) classification or re-classification; and
- verifying appropriate performance criteria for structures, systems, and components (SSCs)/functions classified as (a)(2), or appropriate and adequate goals and corrective actions for systems classified as (a)(1).

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

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

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

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

- 3B core spray planned maintenance;
- Both units on YELLOW risk due to adverse weather in area;
- Unit 2 125VDC alternate battery after 20 year replacement; and
- U3 on YELLOW risk during 3A standby liquid control pump accumulator replacement.

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

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

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed the following issues:

- IR 1089223, "Wall Thickness of Fire Protection Line is Below Requirement";
- IR 989741, "Nonconforming Condition of Material on CCSW [containment cooling service water] Pipe Cap";
- IR 1094902, "Apparent Valve Seat Leakage 3 DGCW [diesel generator cooling water] Flow Directing Valves";
- IR 1103680, "Sprinkler Preaction System Air Pressure Low"; and
- IR 1113218, "MOV [motor operated valve] 3-2301-4 Failed to Fully Open."

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

associated with operability evaluations. Documents reviewed are listed in the Attachment to this report.

These operability inspections constituted five samples as defined in IP 71111.15-05.

b. Findings

(1) Installation of Nonconforming Material Into a Safety-Related System

Introduction: A finding of very low safety significance and associated non-cited violation of 10 CFR Part 50, Appendix B, Criterion XV, "Nonconforming Materials, Parts, or Components," was identified by the inspectors for the installation of a commercially dedicated part for use in a safety-related system which failed testing acceptance criteria.

Description: Licensee Issue Report (IR) 826395, "U2 CCSW [containment cooling service water] Piping Division 1 LPCI [low pressure coolant injection] Heat Exchanger Leak," dated October 3, 2008, documented two through wall leaks in the Unit 2 safety-related CCSW. The licensee purchased commercial grade pipe caps on October 4, 2008, and intended to dedicate these caps for use to repair a leak on the Unit 2 safety-related CCSW. On October 4, 2008, the licensee's testing agency (Power Labs) identified that one of the caps (ID# 2816747) failed the acceptance criteria, designated by the licensee as a critical characteristic, for Rockwell Hardness. The acceptance criteria for Rockwell Hardness was 69 while the actual test result was 66. This was documented in a report from Power Labs to Dresden Station, Document Number 53804100, Project Number DRE-16424.

The licensee performed the receipt inspection for the above mentioned pipe cap on October 4, 2008, (Return Ticket # 23804100, Catalog ID # 1145996-2). The licensee accepted the discrepant part per the Over, Short, Damaged and Discrepant Resolution (OSD&D) process described in Section 4.10 in SM-AA-300-1001, "Procurement Engineering Process and Responsibilities," Revision 10. The OSD&D process required that warehouse receiving personnel generate an OSD&D report to document problems identified during receipt that require resolution. A procurement engineer was required to investigate and evaluate the discrepancy via a pre-determined solution and document the basis of the resolution. Items that screened out of this process (i.e., no pre-determined solution) were required to be sent to Design Engineering for disposition in accordance with CA-AA-11, "Nonconforming Materials, Parts, and Components Process."

The licensee's OSD&D document (44908) stated that the cap was acceptable for this application per a telecon discussion with a member of Procurement Engineering. Licensee procedure CC-AA-11, "Nonconforming Materials, Parts, or Components," Revision 4, Section 5, "Documentation," states: "the company identifies nonconforming items and documents their disposition. Each disposition is technically justified and traceable to each item. Appropriate documentation is retained." No technical justification was documented or referenced for accepting the failed material.

The licensee installed the discrepant cap in a safety-related system on October 6, 2008, under Work Order 1173168. The inspectors brought this discrepancy to the licensee's attention on October 6, 2009, which was documented in IR 976565, "IEMA Questions Regarding CCSW Line 2-1510-16 Repairs." There was no explanation why it was acceptable to install the discrepant material in any of the documentation associated with

IR 976565. The licensee also wrote IR 989741, "Nonconforming Condition of Material on CCSW Pipe Cap," on November 6, 2009. There was no explanation why it was acceptable to install the discrepant material in any of the documentation associated with IR 989741. The licensee wrote IR 989464, "IEMA Inspector Questions Related to OSD&D Process," on November 25, 2009. Assignment 2 to IR 989464 explained the rationale for allowing the installation of the discrepant material as: ASTM A234 only provided a maximum hardness of 194HB and no minimum hardness was specified. The tested value of the material equated to 117HB and, therefore, the material was not in violation or nonconformance with the code.

However, licensee procedure SM-AA-300-1001, "Procurement Engineering Process and Responsibilities," Revision 10, Section 4.3, required the development of critical characteristics and acceptance criteria for those characteristics needed for commercial grade dedication. As mentioned above, the OSD&D process was entered because of the failure of the material to pass the critical characteristic test acceptance criteria for Rockwell Hardness. There was no pre-solved answer to this discrepancy. Procedurally, it did not appear that the procurement engineer was qualified to make the decision that it was acceptable to install the discrepant material as-is. Hardness is an indication of material tensile strength. Too low of a hardness number could indicate that the strength of the material was insufficient for the application. This would be required to be evaluated by Design Engineering as required by procedure SM-AA-300-1001.

The licensee replaced the discrepant pipe cap with an acceptable cap on November 11, 2009, using WO 1284224.

Analysis: The inspectors determined that installation of a commercially dedicated part for use in the safety-related containment cooling service water system, which failed testing acceptance criteria, was contrary to the requirements of 10 CFR Part 50, Appendix B, Criterion XV, "Nonconforming Materials, Parts, or Components," and was a performance deficiency.

The finding was determined to be more than minor because the finding was similar to IMC 0612, Appendix E, Example 5c (dated August 11, 2009). The example was similar in that the licensee had tested a component, the component failed the acceptance criteria, and the licensee installed the component and returned the system to service. Therefore, this performance deficiency also impacted the Barrier Integrity Cornerstone objective of ensuring the integrity of containment to protect the public from radionuclide releases caused by accidents or events.

The inspectors determined the finding could be evaluated using IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," Table 4a for the Barrier Integrity Cornerstone. The containment cooling service water system primarily provides cooling to the torus water to ensure the conditions within the torus stay within the system design criteria. Failure to ensure the functionality of the containment cooling service water system could ultimately result in containment failure. Fortunately, the pipe cap installed did not fail in-service and adversely affect the containment cooling service water system function. Therefore, the inspectors answered "No" to all four questions in Table 4a, and the inspection finding screened as having very low safety significance (Green).

This finding has a cross-cutting aspect in the area of Human Performance - Decision Making. Specifically, there was a systematic process to ensure discrepancies identified in the commercial grade dedication process were properly resolved, which was not followed. The procurement engineer made a decision to accept the discrepant material without a valid reviewed technical justification for not adhering to the acceptance criteria for the established critical characteristics as required by procedure SM-AA-300-1001. H.1(a)

Enforcement: Title 10 of the Code of Federal Regulations, Part 50, Appendix B, Criterion XV, "Nonconforming Materials, Parts, or Components," states, in part, "Measures shall be established to control materials, parts, or components which do not conform to requirements in order to prevent their inadvertent use or installation. These measures shall include, as appropriate, procedures for identification, documentation, segregation, disposition, and notification to affected organizations. Nonconforming items shall be reviewed and accepted, rejected, repaired or reworked in accordance with documented procedures."

One of the licensee procedures used to implement 10 CFR Part 50, Appendix B, Criterion XV, was SM-AA-300-1001, "Procurement Engineering Process and Responsibilities," Revision 10.

Contrary to the above, on October 6, 2008, the licensee installed material in the Unit 2 safety-related CCSW system that did not conform to specified requirements. Specifically, the licensee provided test acceptance criteria to a third party test laboratory for the material to be commercially dedicated for installation into the CCSW system. The material failed the acceptance criteria, which made it non-conforming to established requirements and, therefore, unacceptable for installation. The failed material was installed in the safety-related application anyway based on an inadequate evaluation. The non-conforming material was replaced on November 11, 2009. The licensee made procedure changes to clarify the requirements for documentation of the technical justification of accepting discrepancies. Because this violation was of very low safety significance, was not repetitive or willful, and it was entered into the licensee's corrective action program as Issue Reports 976565, 989464, 989741, 1021503, and 1109252, this violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the NRC Enforcement Policy. (**NCV 05000237/2010004-03; 05000249/2010004-03, Installation of Nonconforming Material Into a Safety-Related System**)

1R18 Plant Modifications (71111.18)

.1 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed the following temporary modification(s):

- Engineering Change 377264, "Install Jumper to Bypass the U3 RWCU [reactor water clean-up system] Auxiliary Pump Cooler RBCCW [reactor building closed cooling water] Outlet Temperature Switch 3-1291-4."

The inspectors compared the temporary configuration changes and associated 10 CFR 50.59 screening and evaluation information against the design basis, the UFSAR, and the TS, as applicable, to verify that the modification did not affect the

operability or availability of the affected system(s). The inspectors also compared the licensee's information to operating experience information to ensure that lessons learned from other utilities had been incorporated into the licensee's decision to implement the temporary modification. The inspectors, as applicable, performed field verifications to ensure that the modifications were installed as directed; the modifications operated as expected; modification testing adequately demonstrated continued system operability, availability, and reliability; and that operation of the modifications did not impact the operability of any interfacing systems. Lastly, the inspectors discussed the temporary modification with operations, engineering, and training personnel to ensure that the individuals were aware of how extended operation with the temporary modification in place could impact overall plant performance. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

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

- Unit 1 diesel fire pump planned maintenance;
- 3B core spray (CS) planned maintenance – 3B CS pump seal replacement;
- Replace 3A standby liquid control pump accumulator and repair threaded connection leak;
- Repair/Replace main steam line high flow switch 3-0261-2D;
- 2/3A standby gas treatment planned maintenance; and
- 2B core spray (CS) planned maintenance – 2B CS pump seal replacement.

These activities were selected based upon the structure, system, or component's ability to impact risk. The inspectors evaluated these activities for the following (as applicable): the effect of testing on the plant had been adequately addressed; testing was adequate for the maintenance performed; acceptance criteria were clear and demonstrated operational readiness; test instrumentation was appropriate; tests were performed as written in accordance with properly reviewed and approved procedures; equipment was returned to its operational status following testing (temporary modifications or jumpers required for test performance were properly removed after test completion); and test documentation was properly evaluated. The inspectors evaluated the activities against TS, the UFSAR, 10 CFR Part 50 requirements, licensee procedures, and various NRC generic communications to ensure that the test results adequately ensured that the equipment met the licensing basis and design requirements. In addition, the inspectors reviewed corrective action documents associated with post-maintenance tests to determine whether the licensee was identifying problems and entering them in the CAP

and that the problems were being corrected commensurate with their importance to safety. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

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

- Quarterly U3 diesel generator cooling water pump IST [in-service testing] surveillance;
- Unit 3 reactor coolant system (RCS) unidentified leakage rate trend;
- Unit 3 quarterly core spray pump test with torus available;
- 2/3 diesel generator fuel oil storage tank sample; and
- 2/3 diesel fire pump flow capacity test.

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

- did preconditioning occur;
- were the effects of the testing adequately addressed by control room personnel or engineers prior to the commencement of the testing;
- were acceptance criteria clearly stated, demonstrated operational readiness, and consistent with the system design basis;
- plant equipment calibration was correct, accurate, and properly documented;
- as-left setpoints were within required ranges; and the calibration frequency were in accordance with TSs, the UFSAR, procedures, and applicable commitments;
- measuring and test equipment calibration was current;
- test equipment was used within the required range and accuracy; applicable prerequisites described in the test procedures were satisfied;
- test frequencies met TS requirements to demonstrate operability and reliability; tests were performed in accordance with the test procedures and other applicable procedures; jumpers and lifted leads were controlled and restored where used;
- test data and results were accurate, complete, within limits, and valid;
- test equipment was removed after testing;
- where applicable for in-service testing activities, testing was performed in accordance with the applicable version of Section XI, American Society of Mechanical Engineers code, and reference values were consistent with the system design basis;

- where applicable, test results not meeting acceptance criteria were addressed with an adequate operability evaluation or the system or component was declared inoperable;
- where applicable for safety-related instrument control surveillance tests, reference setting data were accurately incorporated in the test procedure;
- where applicable, actual conditions encountering high resistance electrical contacts were such that the intended safety function could still be accomplished;
- prior procedure changes had not provided an opportunity to identify problems encountered during the performance of the surveillance or calibration test;
- equipment was returned to a position or status required to support the performance of its safety functions; and
- all problems identified during the testing were appropriately documented and dispositioned in the CAP.

Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstones: Occupational and Public Radiation Safety

2RS4 Occupational Dose Assessment (71124.04)

This inspection constituted one complete sample as defined in IP 71124.04.

.1 Inspection Planning (02.01)

a. Inspection Scope

The inspectors reviewed the results of radiation protection program audits related to internal and external dosimetry (e.g., licensee's quality assurance (QA) audits, self-assessments, or other independent audits) to gain insights into overall licensee performance in the area of dose assessment and focus the inspection activities consistent with the principle of "smart sampling."

The inspectors reviewed the most recent National Voluntary Laboratory Accreditation Program (NVLAP) accreditation report on the vendor's most recent results to determine the status of the contractor's accreditation.

A review was conducted of the licensee procedures associated with dosimetry operations, including issuance/use of external dosimetry (routine, multi-badging, extremity, neutron, etc.), assessment of internal dose (operation of whole body counter, assignment of dose based on derived air concentration-hours, urinalysis, etc.), and evaluation of and dose assessment for radiological incidents (distributed contamination, hot particles, loss of dosimetry, etc.).

The inspectors evaluated whether the licensee had established procedural requirements for determining when external and internal dosimetry is required.

b. Findings

No findings of significance were identified.

.2 External Dosimetry (02.02)

a. Inspection Scope

The inspectors evaluated whether the licensee's dosimetry vendor is NVLAP accredited and if the approved irradiation test categories for each type of personnel dosimeter used are consistent with the types and energies of the radiation present and the way the dosimeter is being used (e.g., to measure deep dose equivalent, shallow dose equivalent, or lens dose equivalent).

The inspectors evaluated the onsite storage of dosimeters before their issuance, during use, and before processing/reading. The inspectors also reviewed the guidance provided to radiation workers with respect to care and storage of dosimeters. The inspectors assessed whether non-NVLAP accredited passive dosimeters (e.g., direct ion storage sight read dosimeters) were used according to licensee procedures that provide for periodic calibration, application of calibration factors, usage, reading (dose assessment) and zeroing.

The inspectors assessed the use of active dosimeters (electronic personal dosimeters (EPD)) to determine if the licensee uses a "correction factor" to address the response of the EPD as compared to the passive dosimeter for situations when the EPD must be used to assign dose and whether the correction factor is based on sound technical principles.

The inspectors reviewed dosimetry occurrence reports or corrective action program documents for adverse trends related to electronic dosimeters, such as interference from electromagnetic frequency, dropping or bumping, failure to hear alarms, etc. The inspectors assessed whether the licensee had identified any trends and implemented appropriate corrective actions.

b. Findings

No findings of significance were identified.

.3 Internal Dosimetry (02.03)

Routine Bioassay (In-Vivo)

a. Inspection Scope

The inspectors reviewed procedures used to assess the dose from internally deposited nuclides using whole body counting equipment. The inspectors evaluated whether the procedures addressed methods for differentiating between internal and external contamination, the release of contaminated individuals, the route of intake, and the assignment of dose.

The inspectors reviewed the whole body count process to determine if the frequency of measurements was consistent with the biological half-life of the nuclides available for intake.

The inspectors reviewed the licensee's evaluation for use of its portal radiation monitors as a passive monitoring system to determine if instrument minimum detectable activities were adequate to determine the potential for internally deposited radionuclides sufficient to prompt additional investigation.

The inspectors selected several whole body counts and evaluated whether the counting system used had sufficient counting time/low background to ensure appropriate sensitivity for the potential radionuclides of interest. The inspectors reviewed the radionuclide library used for the count system to determine its appropriateness. The inspectors evaluated whether any anomalous count peaks/nuclides indicated in each output spectra received appropriate disposition. The inspector's reviewed the licensee's 10 CFR Part 61 data analyses to determine whether the nuclide libraries included appropriate gamma-emitting nuclides. The inspectors evaluated how the licensee accounts for hard-to-detect nuclides in the dose assessment.

b. Findings

No findings of significance were identified.

Special Bioassay (In-Vitro)

a. Inspection Scope

There was no internal dose assessments obtained using in-vitro monitoring for the inspectors to review. The inspectors reviewed and assessed the adequacy of the licensee's program for in-vitro monitoring (i.e., urinalysis and fecal analysis) of radionuclides (tritium, fission products, and activation products), including collection and storage of samples.

The inspectors reviewed the vendor laboratory QA program and assessed whether the laboratory participated in an industry recognized cross-check program including whether out-of-tolerance results were resolved appropriately.

b. Findings

No findings of significance were identified.

Internal Dose Assessment – Airborne Monitoring

a. Inspection Scope

The inspectors reviewed the licensee's program for airborne radioactivity assessment and dose assessment, as applicable, based on airborne monitoring and calculations of derived air concentration. The inspectors determined whether flow rates and collection times for air sampling equipment were adequate to allow lower limits of detection to be obtained. The inspectors also reviewed the adequacy of procedural guidance to assess internal dose if respiratory protection was used.

b. Findings

No findings of significance were identified.

Internal Dose Assessment – Whole Body Count Analyses

a. Inspection Scope

The inspectors reviewed several dose assessments performed by the licensee using the results of whole body count analyses. The inspectors determined whether affected personnel were properly monitored with calibrated equipment and that internal exposures were assessed consistent with the licensee's procedures.

b. Findings

No findings of significance were identified.

.4 Special Dosimetry Situations (02.04)

Declared Pregnant Workers

a. Inspection Scope

The inspectors assessed whether the licensee informs workers, as appropriate, of the risks of radiation exposure to the embryo/fetus, the regulatory aspects of declaring a pregnancy, and the specific process to be used for (voluntarily) declaring a pregnancy.

The inspectors selected individuals who had declared pregnancy during the current assessment period and evaluated whether the licensee's radiological monitoring program (internal and external) for declared pregnant workers is technically adequate to assess the dose to the embryo/fetus. The inspectors reviewed exposure results and monitoring controls employed by the licensee and with respect to the requirements of 10 CFR Part 20.

b. Findings

No findings of significance were identified.

Dosimeter Placement and Assessment of Effective Dose Equivalent for External Exposures

a. Inspection Scope

The inspectors reviewed the licensee's methodology for monitoring external dose in non-uniform radiation fields or where large dose gradients exist. The inspectors evaluated the licensee's criteria for determining when alternate monitoring, such as use of multi-badging, was to be implemented.

The inspectors reviewed dose assessments performed using multi-badging to evaluate whether the assessment was performed consistently with licensee procedures and dosimetric standards.

b. Findings

No findings of significance were identified.

Shallow Dose Equivalent

a. Inspection Scope

The inspectors reviewed shallow dose equivalent dose assessments for adequacy. The inspectors evaluated the licensee's method (e.g., VARSKIN or similar code) for calculating shallow dose equivalent from distributed skin contamination or discrete radioactive particles.

b. Findings

No findings of significance were identified.

Neutron Dose Assessment

a. Inspection Scope

The inspectors evaluated the licensee's neutron dosimetry program, including dosimeter types and/or survey instrumentation.

The inspectors reviewed neutron exposure situations (e.g., independent spent fuel storage installation operations or at-power containment entries) and assessed whether: (a) dosimetry and/or instrumentation was appropriate for the expected neutron spectra; (b) there was sufficient sensitivity for low dose and/or dose rate measurement; and (c) neutron dosimetry was properly calibrated.

b. Findings

No findings of significance were identified.

Assigning Dose of Record

a. Inspection Scope

For the special dosimetric situations reviewed in this section, the inspectors assessed how the licensee assigns dose of record for total effective dose equivalent, shallow dose equivalent, and lens dose equivalent. This included an assessment of external and internal monitoring results, supplementary information on Individual exposures (e.g., radiation incident investigation reports and skin contamination reports), and radiation surveys and/or air monitoring results when dosimetry was based on these techniques.

b. Findings

No findings of significance were identified.

.5 Problem Identification and Resolution (02.05)

a. Inspection Scope

The inspectors assessed whether problems associated with occupational dose assessment are being identified by the licensee at an appropriate threshold and are properly addressed for resolution in the licensee corrective action program. The inspectors assessed the appropriateness of the corrective actions for a selected sample of problems documented by the licensee involving occupational dose assessment.

b. Findings

No findings of significance were identified.

2RS7 Radiological Environmental Monitoring Program (71124.07)

This inspection constituted one complete sample as defined in IP 71124.07-05.

.1 Inspection Planning (02.01)

a. Inspection Scope

The inspectors reviewed the annual radiological environmental operating reports and the results of any licensee assessments since the last inspection, to verify that the radiological environmental monitoring program was implemented in accordance with the Technical Specifications (TS) and Offsite Dose Calculation Manual (ODCM). This review included report changes to the ODCM with respect to environmental monitoring, commitments in terms of sampling locations, monitoring and measurement frequencies, land use census, inter-laboratory comparison program, and analysis of data.

The inspectors reviewed the ODCM to identify locations of environmental monitoring stations.

The inspectors reviewed the Final Safety Analysis Report (FSAR) for information regarding the environmental monitoring program and meteorological monitoring instrumentation.

The inspectors reviewed QA audit results of the program to assist in choosing inspection “smart samples” and audits and technical evaluations performed on the vendor laboratory program.

The inspectors reviewed the annual effluent release report and the 10 CFR Part 61, “Licensing Requirements for Land Disposal of Radioactive Waste” report, to determine if the licensee is sampling, as appropriate, for the predominant and dose-causing radionuclides likely to be released in effluents.

b. Findings

No findings of significance were identified.

.2 Site Inspection (02.02)

a. Inspection Scope

The inspectors walked down select air sampling stations and thermo-luminescent dosimeter (TLD) monitoring stations to determine whether they are located as described in the ODCM and to determine the equipment material condition. Consistent with smart sampling, the air sampling stations were selected based on the locations with the highest X/Q, D/Q wind sectors, and TLDs were selected based on the most risk-significant locations (e.g., those that have the highest potential for public dose impact).

For the air samplers and TLDs selected, the inspectors reviewed the calibration and maintenance records to verify that they demonstrate adequate operability of these components. Additionally, the review included the calibration and maintenance records of select composite water samplers.

The inspectors performed an assessment of whether the licensee has initiated sampling of other appropriate media upon loss of a required sampling station.

The inspectors observed the collection and preparation of environmental samples from different environmental media (e.g., ground and surface water, milk, vegetation, sediment, and soil) as available to verify that environmental sampling is representative of the release pathways as specified in the ODCM and that sampling techniques are in accordance with procedures.

Based on direct observation and review of records, the inspectors assessed whether the meteorological instruments are operable, calibrated, and maintained in accordance with guidance contained in the FSAR, NRC Regulatory Guide 1.23, "Meteorological Monitoring Programs for Nuclear Power Plants," and licensee procedures. The inspectors assessed whether the meteorological data readout and recording instruments in the control room and, if applicable, at the tower were operable.

The inspectors evaluated whether missed and or anomalous environmental samples are identified and reported in the annual environmental monitoring report. The inspectors selected events that involved a missed sample, inoperable sampler, lost TLD, or anomalous measurement to verify that the licensee has identified the cause and has implemented corrective actions. The inspectors reviewed the licensee's assessment of any positive sample results (i.e., licensed radioactive material detected above the lower limits of detection) and reviewed the associated radioactive effluent release data that was the source of the released material.

Inspectors selected structures, systems, or components that involve or could reasonably involve licensed material for which there is a credible mechanism for licensed material to reach ground water, and assessed whether the licensee has implemented a sampling and monitoring program sufficient to detect leakage of these structures, systems, or components to ground water.

The inspectors evaluated whether records, as required by 10 CFR 50.75(g), of leaks, spills, and remediation since the previous inspection are retained in a retrievable manner.

The inspectors reviewed any significant changes made by the licensee to the ODCM as the result of changes to the land census, long-term meteorological conditions, or modifications to the sampler stations since the last inspection. They reviewed technical justifications for any changed sampling locations to verify that the licensee performed the reviews required to ensure that the changes did not affect its ability to monitor the impacts of radioactive effluent releases on the environment.

The inspectors assessed whether the appropriate detection sensitivities with respect to TS/ODCM are used for counting samples (i.e., the samples meet the TS/ODCM required lower limits of detection). The inspectors reviewed quality control of the vendor laboratory analysis of the licensee's radiological environmental monitoring program samples, including the inter-laboratory comparison, and assessed the adequacy of the vendor's program.

The inspectors reviewed the results of the licensee's inter-laboratory comparison program to verify the adequacy of environmental sample analyses performed by the licensee. The inspectors assessed whether the inter-laboratory comparison test included the media/nuclide mix appropriate for the facility. If applicable, the inspectors reviewed the licensee's determination of any bias to the data and the overall effect on the radiological environmental monitoring program.

b. Findings

No findings of significance were identified.

.3 Identification and Resolution of Problems (02.03)

a. Inspection Scope

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

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

.1 Mitigating Systems Performance Index - Heat Removal System

a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index - Heat Removal System performance indicator Unit 2 and Unit 3 for the period from the third quarter 2009 through the second quarter 2010. To determine the accuracy of the performance indicator (PI) data reported during those periods,

PI definitions and guidance contained in the Nuclear Energy Institute (NEI) Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, dated October 2009, were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports, MSPI derivation reports, and NRC Integrated Inspection Reports for the period of July 1, 2009, through June 30, 2010, to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Documents reviewed are listed in the Attachment to this report.

This inspection constituted two MSPI heat removal system samples as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

.2 Mitigating Systems Performance Index - Residual Heat Removal System

a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index - Residual Heat Removal System performance indicator Unit 2 and Unit 3 for the period from the third quarter 2009 through the second quarter 2010. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, dated October 2009, were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, MSPI derivation reports, event reports and NRC Integrated Inspection Reports for the period of July 1, 2009, through June 30, 2010, to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Documents reviewed are listed in the Attachment to this report.

This inspection constituted two MSPI residual heat removal system samples as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

.3 Mitigating Systems Performance Index - Cooling Water Systems

a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index - Cooling Water Systems performance indicator Unit 2 and Unit 3 for the period from the third quarter 2009 through the second quarter 2010. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, dated October 2009, were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, MSPI derivation reports, event reports and NRC Integrated Inspection Reports for the period of July 1, 2009, through June 30, 2010, to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Documents reviewed are listed in the Attachment to this report.

This inspection constituted two MSPI cooling water system samples as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

.4 Radiological Effluent TS/Offsite Dose Calculation Manual Radiological Effluent Occurrences

a. Inspection Scope

The inspectors sampled licensee submittals for the radiological effluent TS/ODCM radiological effluent occurrences PI for the period from the first quarter 2009 through the second quarter of 2010. The inspectors used PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, dated October 2009, to determine the accuracy of the PI data reported during those periods. The inspectors reviewed the licensee's issue report database and selected individual reports generated since this indicator was last reviewed to identify any potential occurrences such as unmonitored, uncontrolled, or improperly calculated effluent releases that may have impacted offsite dose. The inspectors reviewed gaseous effluent summary data and the results of associated offsite dose calculations for selected dates between the first quarter 2009 through the second quarter 2010 to determine if indicator results were accurately reported. The inspectors also reviewed the licensee's methods for quantifying gaseous and liquid effluents and determining effluent dose. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

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

a. Inspection Scope

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

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

b. Findings

No findings of significance were identified.

.2 Daily Corrective Action Program Reviews

a. Inspection Scope

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

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

b. Findings

No findings of significance were identified.

.3 Selected Issue Follow-Up Inspection: Preconditioning of Pressure Switches

a. Inspection Scope

During a review of items entered in the licensee's corrective action program (CAP), the inspectors recognized a corrective action item documenting that pressure switches that support Technical Specification (TS) functions are cycled through their trip setpoint prior to obtaining the as-found trip setpoint data and calibration of the switches since no test valves are installed. The inspectors reviewed available operating experience on this subject, additional CAP documents and related TS and surveillance procedures. This review constituted one in depth problem identification and resolution sample as defined in IP 71152-05.

b. Findings

(1) Failure to Identify and Correct Test Procedures to Assess the As-Found Trip Setpoint for Pressure Switches that Satisfy Technical Specification Functions

Introduction: The inspectors identified a finding of very low safety significance (Green) and associated non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for the licensee's failure to assure that conditions adverse to quality were promptly identified and corrected.

Description: The inspectors reviewed IR 944688, "Test Valves Not Installed on CST Level Switches (HPCI Logic)," and IR 980524, "NRC TIA Unacceptable Preconditioning of Pressure Switches." Issue report 944688 reviewed a previously identified issue at Monticello Nuclear Plant addressing preconditioning of low pressure switches and its applicability to Dresden. The IR identified various Technical Specification functions that did not have test valves installed on their pressure switches; therefore, the pressure switches are cycled through their setpoint prior to obtaining the as-found trip setpoint data and calibration. The inspectors determined, through review of the IR, that the low pressure coolant injection (LPCI) reactor recirculation pump differential pressure switches (dPIS 2(3)-0261-35A/B/C/D/E/F/G/H) were cycled prior to obtaining as-found trip setpoint data during TS surveillance DIS 1500-09, "LPCI Reactor Recirculation Pump A and B Differential Pressure Indicating Switch Channel Calibration and Channel Functional Test." However, the licensee did not recognize in the IR that the pressure switches being cycled constituted pre-conditioning of the pressure switches. Corrective actions were generated for pressure switches on the condensate storage tanks by installing test valves. However, no corrective actions were generated to address the LPCI reactor recirculation pump differential pressure switches.

The inspectors verified that performance of DIS 1500-09, satisfies two surveillance requirements (SRs) per TS 3.3.5.1, "Emergency Core Cooling System (ECCS) Instrumentation," (SR 3.3.5.1.2, "Channel Functional Test," and SR 3.3.5.1.5, "Channel Calibration") and supports SR 3.3.5.1.6, "Logic System Functional Test," and SR 3.5.1.8, "Actuation on an Actual or Simulated Automatic Initiation Signal." The inspectors verified that surveillance DIS 1500-09 had not been performed since IR 944688, was generated on July 22, 2009.

The inspectors determined that the existing testing methodology could mask existing conditions such as sticking contacts, mechanical binding, and setpoint drift that could affect operability.

Issue report 980524, "NRC TIA Unacceptable Preconditioning of Pressure Switches," dated October 10, 2009, performed an operating experience review of NRC Task Interface Agreement (TIA) 2009-006, "Unacceptable Preconditioning of Safety-Related Pressure Switches During Required Surveillance Testing at Monticello," and its applicability to all Exelon sites. Dresden is listed as "to-be-determined."

Analysis: The inspectors determined that the failure to identify the potential for pre-conditioning and to implement corrective actions addressing the as-found trip setpoint for pressure switches performing Technical Specification functions constituted a performance deficiency warranting significance evaluation in accordance with IMC 0612, Appendix B, "Issue Screening." The inspectors determined that the performance deficiency was more than minor because it impacted the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, although issue report 944688 identified various Technical Specification surveillances where pressure switches are cycled through their setpoint prior to obtaining the as-found trip setpoint data and calibration, the licensee did not recognize that this constituted pre-conditioning and did not take corrective actions. The inspectors determined that the existing testing methodology could mask existing conditions such as sticking contacts, mechanical binding, and setpoint drift that could affect operability. The inspectors did not identify any cross-cutting aspect associated with this finding.

The inspectors evaluated the finding using IMC 0609, "Significance Determination Process," Attachment 4, "Phase 1 – Initial Screening and Characterization of Findings." The inspectors answered "No" to all questions in the Mitigation System Cornerstone column of Table 4a, "Characterization Worksheet for IE, MS, and BI Cornerstones," therefore, the finding screened as Green (very low safety significance).

Enforcement: Title 10 of the Code of Federal Regulations, Part 50, Appendix B, Criterion XVI, "Corrective Action," states, in part, "Measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and non-conformances are promptly identified and corrected."

Contrary to the above requirements, on July 22, 2009, the licensee failed to assure that conditions adverse to quality were promptly identified and corrected. Specifically, issue report 944688 identified that the LPCI reactor recirculation pump differential pressure switches were cycled through their setpoint prior to obtaining the as-found trip setpoint data and calibration, potentially masking conditions such as sticking contacts, mechanical binding, and setpoint drift which could affect operability. The licensee's corrective actions included actions for Engineering to evaluate all the Technical Specification functions that do not have test valves installed on their pressure switches, as identified in IR 944688, and justify the potential unacceptable preconditioning as acceptable, or take other actions as appropriate.

Because this violation was of very low safety significance, was not repetitive or willful, and it was entered into the licensee's corrective action program as IR 1120159, "Task Interface Agreement (TIA) 2009-006," this violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the NRC Enforcement Policy.

(NCV 05000237/2010004-04; 05000249/2010004-04, Failure to Identify and Correct Test Procedures to Assess the As-Found Trip Setpoint for Pressure Switches that Satisfy Technical Specification Functions)

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

.1 (Closed) Licensee Event Report (LER) 05000237/2009-006-00, "Failure of Main Control Room Ventilation Due to Breaker Malfunction"

On November 12, 2009, during a TS surveillance to functionally test the Unit 2 EDG under-voltage and Emergency Core Cooling integrated function capabilities, under-voltage ECCS logic appropriately tripped the breaker supplying power to the control room emergency ventilation system (CREVS). However, following the trip, the CREVS breaker failed to reclose; this could have prevented fulfillment of the structures, systems, or components (SSCs) needed to mitigate the consequences of an accident. The safety significance of this event is minimal since the capability to shut down the plant and maintain it in a safe shutdown condition was not compromised. The licensee also replaced the breaker after discovering the failure and sent the breaker off for failure analysis.

The inspector reviewed the licensee's corrective actions. While the inspector did not identify a performance deficiency and there was no violation of regulatory requirements, the inspector did identify a discrepancy in both the failure analysis report and the subsequent equipment apparent cause evaluation (EACE) for the failed breaker as noted in IR 1112572, "Discrepancy Identified in Failure Report FA-13813003-1." Specifically, handwritten notes found in the Test/Inspection Report section of failure analysis FA-13813003-1 stating that the under voltage test for the close coil intermittently failed, were not carried over to the main section of the failure report and subsequently not noted in the EACE. Consequently, the licensee has revised WO 1085122-01 to replace the close coil and will modify the EACE. The issue is of minor significance since the breaker had not been installed in any cubicles following the failure analysis and was kept separate from the spare breaker stock once it was returned from the vendor.

This LER is closed. However, the licensee plans to write a supplemental LER in the future. Inspectors will review the supplemental LER once it has been submitted.

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

4OA6 Management Meetings

.1 Exit Meeting Summary

On October 13, 2010, the inspectors presented the inspection results to Mr. S. Marik and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors confirmed that none of the potential report input discussed was considered proprietary.

.2 Interim Exit Meetings

Interim exits were conducted for:

- The occupational dose assessment and radiological environmental monitoring program were discussed with Mr. T. Hanley Site Vice President on August 20, 2010.

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

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

T. Hanley, Site Vice President
S. Marik, Station Plant Manager
H. Bush, Radiation Protection Manager
J. J. Cady, Manager of RP Technical Support
R. Conley, RP Technical Specialist
D. Doggett, Emergency Preparedness Coordinator
B. Finlay, Security Manager
D. Glick, Shipping Specialist
G. Graff, Nuclear Oversight Manager
D. Gronek, Operations Director
J. Hansen, Corporate Licensing
G. Ice, Regulatory Assurance – NRC Coordinator
L. Jordan, Training Director
R. Kalb, Senior Environmental Chemistry
B. Kapellas, Work Control Manager
J. Kish, Engineering Programs
J. Knight, Chemistry Manager
D. Leggett, Regulatory Assurance Manager
R. Laburn, Radiation Protection
P. Mankoo, Chemistry Supervisor
M. McDonald, Acting Maintenance Director
P. O'Connor, Licensed Operator Requalification Training Lead
M. Overstreet, Lead Radiation Protection Supervisor
C. Podczerwinski, Maintenance Rule Coordinator
P. Quealy, Emergency Preparedness Manager
E. Rowley, Chemistry
R. Rybak, Regulatory Assurance
J. Sipek, Engineering Director
N. Starcevich, Radiation Protection Instrumentation Coordinator

Nuclear Regulatory Commission

M. Ring, Chief, Division of Reactor Projects, Branch 1
Billy C. Dickson, Plant Support Team Branch Chief, DRS/R111

IEMA

R. Zuffa, Illinois Emergency Management Agency
R. Schulz, Illinois Emergency Management Agency

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened

05000237/2010004-01 05000249/2010004-01	URI	Failure to Address NRC Concerns Regarding a Reactor Building Closed Cooling Water (RBCCW) Line Break in the Unit 3 Reactor Building (1R06)
05000237/2010004-02 05000249/2010004-02	URI	Failure to Seal Holes in the Floor Above the Emergency Core Cooling System (ECCS) Corner Rooms (1R06)
05000237/2010004-03 05000249/2010004-03	NCV	Installation of Nonconforming Material Into a Safety-Related System (1R15)
05000237/2010004-04 05000249/2010004-04	NCV	Failure to Identify and Correct Test Procedures to Assess the As-Found Trip Setpoint for Pressure Switches that Satisfy Technical Specification Functions (40A2.3)

Closed

05000237/2010004-03 05000249/2010004-03	NCV	Installation of Nonconforming Material Into a Safety-Related System (1R15)
05000237/2010004-04 05000249/2010004-04	NCV	Failure to Identify and Correct Test Procedures to Assess the As-Found Trip Setpoint for Pressure Switches that Satisfy Technical Specification Functions (40A2.3)
05000237/2009-006-00	LER	Failure of Main Control Room Ventilation Due to Breaker Malfunction

Discussed

None

LIST OF DOCUMENTS REVIEWED

The following is a partial list of documents reviewed during the inspection. Inclusion on this list does not imply that the NRC inspector 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.

1R04 Equipment Alignment (71111.04Q & S)

- IR 1063246, "Coolant Leak on U2/U3 Fire Pump"
- DFPA 4114-06, Rev 41, "Fire System Yard Loop Inspection"
- Print M-23, Sheets 1 and 5, Diagram of Fire Protection Piping
- M-37, "Diagram of 2B Instrument Air Piping," Revision I.
- DOP 4700-01, "Instrument Air System Startup," Revision 52
- DOP 4700-M2, "2B Instrument Air Compressor (2-4715)," Revision 13
- IR 1093072, "NRC Identifies Discrepancies with 2B IAC Drawing/Procedures"
- IR 01095235, "NRC Question – Various SBO Related Deficiencies"
- IR 01095589, "NRC Identified Interference with Sprinkler Heads"
- DOP 6620-16, "SBO D/G 2(3) Preparation for Standby Readiness," Revision 8
- DOP 6620-E2, "Unit 3 Station Blackout Electrical Checklist," Revision 2
- DOP 6620-M2, "Unit 3 Station Blackout Mechanical Checklist," Revision 3
- M-4361, Sheet 3, "Diesel Generator Engine Lube Oil System Piping and Instrumentation Diagram Station Blackout Building," Revision B
- M-4361, Sheet 4, "Diesel Generator Engine Lube Oil System Piping and Instrumentation Diagram Station Blackout Building," Revision C
- M-4305, "Diesel Generator Fuel Oil Piping and Instrumentation Diagram Station Blackout Building," Revision C
- M-4305B, "Diesel Engine Fuel System Piping & Instrumentation Diagram Station Blackout Building," Revision C
- M-4306, "Diesel Generator Jacket Water Piping & Instrumentation Diagram Station Blackout Building," Revision D
- M-4308, "Piping & Instrumentation Diagram Diesel Generator Starting Air Station Blackout Building," Revision E
- M-4308D, "Diesel Generator Starting Air Piping & Instrumentation Diagram Station Blackout Building," Revision D
- M-4308E, "Piping & Instrumentation Diagram Diesel Generator Air Skid System Station Blackout," Revision C
- M-4308D, "Diesel Generator Starting Air Piping & Instrumentation Diagram Station Blackout," Revision C
- M-358, "Diagram of Core Spray Piping," Revision CK
- DOP 1400-01, "Core Spray System Preparation for Standby Operation," Revision 13
- DOP 1400-M1/E1, "Unit 3 Core Spray System," Revision 21

1R05 Fire Protection (71111.05)

- Appendix No. 1 to Dresden Station Units 2/3 Fire Load Calculation Sheet
- Dresden Generating Station Pre-Fire Plan 3261, Unit 2 125VDC Alternate Battery Room
- OP-AA-201-008, "Pre-Fire Plan Manual," Revision 3
- Fire Protection Reports, Volume 1, "Updated Fire Hazards Analysis"

- Fire Protection Reports, Volume 2, "Appendix R Conformance (Sections III.G, III.J, and III.L)- Safe Shutdown Report"
- IR 1096546, "NRC Question – U2 HPCI ISI Supt M-3202-32"
- WO 1229795-06, "D3 Ann TSTR Heat/Smoke Detector Oper Test (SDC PP RM/TIP RM)"
- OP-AA-201-008, "Pre-Fire Plan Manual," Revision 3
- DRE97-0105, "Determination of Combustible Loading," Revision 000
- Fire Protection Reports, Volume 1, "Updated Fire Hazards Analysis"
- WO 1056829-01, "D2/3 18M TSTR Fire Door/Oil Spill Barrier Surveillance"
- WO 1218981-06, "EM Ann DATR Heat/Smoke Detector Oper Test (SDC PPRM/TIP RM)"
- OP-AA-201-008, "Pre-Fire Plan Manual," Revision 3
- DRE97-0105, "Determination of Combustible Loading," Revision 000
- Fire Protection Reports, Volume 1, "Updated Fire Hazards Analysis"
- WO 1056829-01, "D2/3 18M TSTR Fire Door/Oil Spill Barrier Surveillance"
- WO 01326628, "D2/3 QTR COM Fire Frill (1st Drill of Qtr.)"
- OP-AA-201-003, "Fire Drill Performance," Revision 11
- OP-AA-201-005, "Fire Brigade Qualification," Revision 7
- IR 1090741, "OPS Crew 3 Fire Drill Lessons Learned"

1R06 Flooding (71111.06)

- UFSAR Section 9.2.2, "Service Water System"
- DR PSA-012, "Dresden Internal Flood Evaluation Summary and Notebook", Rev. 1
- IR 1108059, "NRC Identified Concern"
- IR 1114443, "Unit 2 LPCI Corner Room Ceiling Penetrations not Sealed"
- IR 1114456, "Guard Plates Around Rx Hatchways not Shown on Site Drawings"
- DR-PSA-012, "Internal Flood Evaluation Summary and Notebook"
- Systematic Evaluation Program (SEP), Topic III-5.B, "Pipe Break Outside of Containment"

1R11 Licensed Operator Requalification Program (71111.11Q)

- Observed Simulator Training Scenario No. LT 036 (transferring FWRV from manual to automatic; loss of FW heating; FEF/ATWS; emergency depressurization) and Scenario No. ILTS028, Attachment E (Station Blackout DGA-13)
- OPEX-X, Rev. 12, 3/10 (Spurious ADS Valve Opening; Loss of Reactor Building 250 VDC MCC 2A/B; Feedwater Rupture/ATWS (Hydraulic Lock))

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

- WO 1347273, "MM Replace 3B Core Spray Pump Seal"
- WO 99067063-06, "EM Perform Modified Performance Test U2 125V Alt. Battery"
- IR 1086387, "U2 Alt Battery Replacement"
- CO 84744, Repair/Replace Accumulator
- IR 1103473, "NRC Inspector Identified Procedure Concern"
- WC-AA-101, "On-Line Work Control Process," Revision 17
- OP-DR-103-102-1002, "Strategies for Successful Transient Mitigation," Revision 6
- DOS 1100-04, "Standby Liquid Control System Quarterly/Comprehensive Pump Test for the Inservice Testing (IST) Program," Revision 43
- "Dresden PRA Human Reliability Analysis Notebook," Revision 5

1R15 Operability Evaluations (71111.15)

- IR 1111027, "App. FP Preaction Alarm Resolution Can Not Be Implemented"
- IR 1113512, "Defective Contact on HGA ZZA-2330-153 in 903-3 Panel"
- EC 381402, "Temporary Jumper of Relay 3-2330-153 Contact 3-7 in MOV 3-2301-4 Control Circuit"
- TCCP No. 381402, "Install Temporary Jumper for Relay 3-2330-153 Contact 3-7 in MOV 3-2301-4 Control Circuit"
- UFSAR Section 9.5.5, "Diesel Generator Cooling Water System"
- IR 1108123, "NOS ID – Incomplete Basis Included in DGCW Op Eval"

1R18 Plant Modifications (71111.18)

- WO 759278, "Contingency for failure of RWCU Temp Switch TIS 3-1291-4"
- CC-AA-112, "Temporary Configuration Changes," Revision 16
- CC-MW-112-1001, "Temporary Configuration Change," Revision 9
- IR 1013219, "TCCP #377264 Original Removal Date Past Due"
- 12E-3509, "Schematic Diagram Primary Containment Isolation System Clean-Up System Isolation Logic," Sheet 2, Revision AL
- 12E-3708, "Wiring Diagram Panel 903-4 Part 4," Revision CF
- M-353, "Diagram of Reactor Building Cooling Water Piping," Revision BC

1R19 Post-Maintenance Testing (71111.19)

- DMS 4100-03, Rev 12, "Unit 1 Diesel Driven Fire Pump Surveillance and Preventive Maintenance"
- DFPS 4123-01, Rev 41, "Unit 1 Diesel Fire Pump Operability"
- WO 01345098, "U1 Diesel Fire Pump Operability Surveillance"
- WO 01150389, "U1 Diesel Fire Pump PMT"
- WO 1347273, "MM Replace 3B Core Spray Pump Seal"
- DOS 1400-05, "Core Spray System Pump Operability and Quarterly IST Test with Torus Available," Revision 41
- MA-AB-MM-4-00430, "Core Spray Pump Maintenance," Revision 0
- WO 1309469, "Threaded Connection Leak"
- M-364, "Diagram of Standby Liquid Control Piping," Revision AS
- DOS 1100-04, "Standby Liquid Control System Quarterly/Comprehensive Pump Test for the Inservice Testing (IST) Program," Revision 43
- Drawing M-345, "Diagram of Main Steam Piping," Sheet 1, Revision QF
- Drawing M-345, "Diagram of Main Steam Piping," Sheet 2, Revision QF
- WO 1343940-01, "IM D3 QTR TS Main Steam Line High Flow Switch Calibration"
- WO 1139302-01, "IM Repair/Replace MSL High Flow DPIS Per DIP 0250-01"
- WO 01167199, "D2/3 24M TS 'A' SBTG Flow Cont. Damper Lo Supply Air PS Cal."
- WO 01168290, "D2/3 24M TS 'A' SBTG HEPA Filter Leak Test"
- WO 01168291, "D2/3 24M TS 'A' SBTG Charcoal Freon R-11 Leak Test"
- WO 01364323, "D2/3 1M TS SBTG Charcoal Absorber Moisture Removal"
- WO 01171215, "D2/3 24M TS 'A' SBTG Charcoal Sample Iodine Removal Eff. Test"
- DIS 7500-05, "Standby Gas Treatment System Fan Suction AO Valves Pressure Switch Calibration," Revision 13
- IR 1116888, "NRC Raised Concern About Potential Preconditioning of SBTG"
- MA-AB-MM-4-00430, "Core Spray Pump Maintenance," Revision 0
- IR 1103986, "NRC Identified Issue"

- IR 1108369, "3-0261-2D Failed During DIS 250-01"
- WO 1347274, "MM Replace 2B Core Spray Pump Seal"

1R22 Surveillance Testing (71111.22)

- IR 01053681, "DGCW pump flow rates not adjusted for intake canal level"
- IR 00970616, "DOS 6600-08 needs enhancement"
- IR 01075527, "DOS 6600-08 requires enhancement"
- IR 01088985, "Action detail missing for CA task"
- IR 1071081, "Revise ATD 0400 calculation to determine tube plugging criteria"
- WO 01320889-01, "D3 Qtr. TS EDG Clg. Wtr. Pmp. Test for IST Program Surv"
- DOS 6600-08, Rev 51, "Diesel Generator Cooling Water Pump Quarterly and Comprehensive/Preserve Test for Operational Readiness and In-Service Test (IST) Program"
- Operators Logs from 6 July 10.
- IR 1085665, "DW Equipment Sump AOV Degraded"
- DOP 2000-24, "Drywell Sump Operation Procedure," Revision 23
- DOP 2000-180, "Drywell Sump Operation with Unit On-Line," Revision 00
- WO 01326004, "OP D3 Qtr. TS CS Pump. Test with Torus Avail. for IST Data Surv."
- DOS 1400-05, "Core Spray System Pump Operability and Quarterly IST Test with Torus Available," Revision 41
- IR 1091230, "2/3 DGFO [diesel generator fuel oil] Storage Tank Sample UN-SAT"
- IR 1091511, DFO [diesel fuel oil] Sample Results (Follow-Up To IR 1091230)
- 2/3 EDG Main Tank Fuel Sample Unsat.
- IR 1107190, "2/3 DFP Coolant Reservoir Has No Coolant"
- IR 1085006, "Reduced Flow After Maintenance"
- DOS 0040-02, "Operator Oil Sampling For Offsite Laboratory Analysis," Revision 84
- WO 01264853, "D2/3 AN TSTR/COM Diesel Fire Pump Flow Capacity Test"

2RS4 Occupational Dose Assessment (71124.04)

- LS-AA-126-1005; Check-in Self-Assessment Report; dated February 5, 2010
- LS-AA-126-1005; Check-in Self-Assessment Report; dated August 17, 2009
- National Institute of Standards and Technology; National Voluntary Laboratory Accreditation Program (NVLAP) 100555-0; Certificate of Accreditation to ISO/IEC; Ionizing Radiation Dosimetry for Mirion Technologies, Inc; dated July 01 2010, through June 30, 2011
- RP-AA-203-1001; Personnel Exposure Investigations; Revision 6
- RP-AA-210; Dosimetry Issue, Usage and Control; Revision 17
- RP-AA-211-2001; RP Position Paper; Performance Verification of Vendor Supplied Thermo-Luminescent Dosimeters (TLD) Relative to ANSI N13.11-2001; Revision 1
- RP-AA-214; Area TLD Surveillance; Revision 3
- RP-AA-270; Prenatal Radiation Exposure; Revision 6
- RP-AA-250; External Dose Assessments from Contamination; Revision 4
- RP-AA-222; Methods for Estimating Internal Exposure from In Vivo and In-Vitro Bioassay Data; Revision 3
- RP-AA-221; Whole Body Count Data Review; Revision 1
- RP-DR-221-1001; Operation of Canberra Fast-scan Whole Body Counter Using Abacos-Plus Software; Revision 0
- HI-2053409; Hi-Trac Neutron Study
- AR-00879736; Individual Received Electronic Dosimeter Dose Rate Alarm; dated February 6, 2009

- AR-0993592; Pipe Fitter Received Internal Uptake during Hotwell Welding; dated November 14, 2009
- AR-00990796; Level 1 PCE- for APM Worker 4k Under Nose from CRD Pit; dated November 9, 2009

2RS7 Radiological Environmental Monitoring Program (71124.07)

- Dresden Nuclear Power Station 2008 Annual radiological Environmental Operating Report; dated May 14, 2010
- Dresden Nuclear Power Station 2009 Annual radiological Environmental Operating Report; dated May 14, 2010
- Dresden Unit 2 and 3; NOS Objective Evidence Report; Chemistry, Radwaste. Effluent and Environmental Monitoring Functional Area Audit; dated May 27, 2010
- Dresden Offsite Dose Calculation Manual (ODCM); Dresden Station Unit 1, 2 and 3; Revision 9
- AR 00804564; NRC Identified Error in the ODCM Critical Distance to the Restricted Boundary; dated August, 5, 2008
- AR 00805261; NRC Identified Potential REMP Sample Preservation Improvement; dated August 7, 2008
- AR 00865665; REMP Compositor Damaged by Ice on Kankakee River; dated January 9, 2009
- AR 01102567; REMP Air Sampler Run Time Meter Not Advancing During NRC Inspection; dated August 17, 2010
- AR01042876; REMP Sampler Lost Power; dated March 12, 2010
- NOS Objective Evidence Report; Chemistry, Radwaste, Effluent and Environmental Monitoring Functional Area Audit

4OA1 Performance Indicator Verification (71151)

- DR-MSPI-01, "Reactor Oversight Program MSPI Bases Document Dresden Nuclear Station," Revision 6
- ER-AA-2008, "Mitigating Systems Performance Index (MSPI) Failure Determination Evaluation," Revision 2
- DR-MSPI-01, "Reactor Oversight Program MSPI Bases Document Dresden Nuclear Station," Revision 6
- IR 1088456, "2A LPCI Pump Suction Pressure Trending"
- IR 1029664, "U2 Temp Hose Connection to CCSW 534 TB Leaking"
- IR 984066, "2B CCSW Pump Packing Leaks"
- LS-AA-2150; NRC Radiological Environmental Technical Specification (RETS) /ODCM Radiological Effluent Occurrences; Revision No. 5
- Monthly Data Elements for NRC RETS /ODCM Radiological Effluent Occurrences from February 2009 through July 2010

4OA2 Identification and Resolution of Problems (71152)

- IR 944688, Test Valves not Installed on CST Level Switches (HPCI Logic)
- IR 980524, "NRC TIA Unacceptable Preconditioning of Pressure Switches"
- IR 1022866, "NRC Questions Work Bundling Impact on Testing"
- IR 1092774, "NRC:TIA 2009-006, Unacceptable Preconditioning"
- IR 1094852, "Review Peach Bottom Preconditioning NCV at Dresden"
- DIS 7500-05, "Standby Gas Treatment System Fan Suction AO Valves Pressure Switch Calibration," Revision 13
- IR 1116888, "NRC Raised Concern About Potential Preconditioning of SGBT"

- DIS 0300-02, "Control Rod Drive Accumulator West Side, Bank 1 Low Pressure Switch and Pressure Indicator Calibration," Revision 18
- DIS 0300-07, "Control Rod Drive Accumulator West Side, Bank 2 Low Pressure Switch and Pressure Indicator," Revision 01
- DIS 0300-08, "Control Rod Drive Accumulator East Side, Bank 3 Low Pressure Switch and Pressure Indicator," Revision 01
- DIS 0300-09, "Control Rod Drive Accumulator East Side, Bank 4 Low Pressure Switch and Pressure Indicator," Revision 01
- DIS 2300-08, "Unit 2 Contaminated Condensate Storage Tank Level Switches Functional Test and Unit 2 Torus Level Switches Functional Test," Revision 22
- DIS 2300-14, "Unit 3 Contaminated Condensate Storage Tank Level Switches Functional Test and Unit 3 Torus Level Switches Functional Test," Revision 14
- IR 1119413, "NRC Questions About SR 3.1.5.1"
- IR 1119532, "HCU Accum Press Switch Cal Procedures – Update Discussion"
- IR 1121377, "HCU C-7 Low Pressure Alarm Problem"
- IR 1122578, "Faulty Pressure Switch on U3 CRD E-14"
- DIS 1500-09, LPCI Reactor Recirculation Pump A and B Differential Pressure Indicating Switch Channel Calibration and Channel Functional Test," Revision 18.

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

- IR 1093469, "Troubleshooting Plan for Bkr- Failed to Reclose After UV"
- IR 992569, "480V Control Room HVAC MCC 29-8 Bkr Failed to Close"
- IR 1021901, "Failure Analysis Results for CREVS MCC 29-8 Feed Breaker"
- WO 757064-01, "EM 4Y PM Inspect 480V Bkr UTC 0001281226"
- WO 99191284, "16Y PM Overhaul 480V Bkr UTC 0001281276"

LIST OF ACRONYMS USED

AC	Alternating Current
ACE	Apparent Cause Evaluation
ADAMS	Agencywide Document Access Management System
ATWS	Anticipated Transient Without Scram
CAP	Corrective Action Program
CCSW	Containment Cooling Service Water
CFR	Code of Federal Regulations
CRD	Control Rod Drive
CREVS	Control Room Emergency Ventilation System
CS	Core Spray
DC	Direct Current
EACE	Equipment Apparent Cause Evaluation
ECCS	Emergency Core Cooling System
EDG	Emergency Diesel Generator
EPD	Electronic Personal Dosimeter
FSAR	Final Safety Analysis Report
FW	Feedwater
HEPA	High-Efficiency Particulate Air
HPCI	High Pressure Coolant Injection
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Inspection Report
IR	Issue Report
ISI	In-Service Inspection
IST	In-Service Testing
LER	Licensee Event Report
LPCI	Low Pressure Coolant Injection
MSPI	Mitigating Systems Performance Index
MOV	Motor-Operated Valve
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	U.S. Nuclear Regulatory Commission
NRR	Office of Nuclear Reactor Regulations
NVLAP	National Voluntary Laboratory Accreditation Program
ODCM	Offsite Dose Calculation Manual
OOS	Out-Of-Service
OSD&D	Over, Short, Damaged and Discrepant Resolution
PARS	Publicly Available Records System
PI	Performance Indicator
PM	Planned, Preventative Maintenance, or Post-Maintenance
PMT	Post-Maintenance Testing
QA	Quality Assurance
RBCCW	Reactor Building Closed Cooling Water
RCS	Reactor Coolant System
RETS	Radiological Effluent Technical Specification
RP	Radiation Protection
SBGT	Standby Gas Treatment
SDP	Significance Determination Process
SER	Safety Evaluation Report

SR	Surveillance Requirement
SSC	Structures, Systems, and Components
TLD	Thermo-Luminescent Dosimeter
TS	Technical Specification
U2	Unit 2
U3	Unit 3
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item
WO	Work Order

M. Pacilio

-2-

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

Sincerely,

IRA/

Mark A. Ring, Chief
Branch 1
Division of Reactor Projects

Docket Nos. 50-237; 50-249
License Nos. DPR-19; DPR-25

Enclosure: Inspection Report 05000237/2010-004; 05000249/2010-004
w/Attachment: Supplemental Information

cc w/encl: Distribution via ListServ

DISTRIBUTION:
See next page

DOCUMENT NAME: G:\DRPIII\1-Secy\1-Work In Progress\DRE 2010 004.docx
 Publicly Available Non-Publicly Available Sensitive Non-Sensitive
To receive a copy of this document, indicate in the concurrence box "C" = Copy without attach/encl "E" = Copy with attach/encl "N" = No copy

OFFICE	RIII	E	RIII	RIII	RIII
NAME	MRing:cs				
DATE	11/04/10				

OFFICIAL RECORD COPY

Letter to M. Pacilio from M. Ring dated November 4, 2010

SUBJECT: DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3
INTEGRATED INSPECTION REPORT 05000237/2010-004;
05000249/2010-004

DISTRIBUTION:

Daniel Merzke

RidsNrrDorLp3-2

RidsNrrPMDresden Resource

RidsNrrDirIrib Resource

Steven West

Steven Orth

Jared Heck

Allan Barker

Carole Ariano

Linda Linn

DRPIII

DRSIII

Patricia Buckley

Tammy Tomczak

[ROPreports Resource](#)