



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

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

July 25, 2012

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 05000237/2012003;  
05000249/2012003

Dear Mr. Pacilio:

On June 30, 2012, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Dresden Nuclear Power Station, Units 2 and 3. The enclosed report documents the inspection results which were discussed on June 26, 2012, with Mr. S. Marik and other members of your staff.

The inspections 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.

One NRC-identified and one self-revealing finding of very low safety significance (Green) were identified during this inspection. These findings did not involve a violation of NRC requirements. Additionally, four licensee-identified violations which were determined to be of very low safety significance are listed in this report. The NRC is treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2 of the Enforcement Policy.

If you contest these NCVs, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with copies to the Regional Administrator, Region III; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Dresden Nuclear Power Station. In addition, if you disagree with a cross-cutting aspect assignment 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 Agencywide Document Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at [http://www.nrc.gov/reading\\_rm/adams.html](http://www.nrc.gov/reading_rm/adams.html) (the Public Electronic Reading Room).

Sincerely,

**/RA/**

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

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

Enclosure: Inspection Report 05000237/2012003; 05000249/2012003  
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: 05000237/2012003; 05000249/2012003

Licensee: Exelon Generation Company, LLC

Facility: Dresden Nuclear Power Station, Units 2 and 3

Location: Morris, IL

Dates: April 1 through June 30, 2012

Inspectors: C. Phillips, Senior Resident Inspector  
G. Roach, Senior Resident Inspector  
D. Meléndez-Colón, Resident Inspector  
T. Briley, Acting Resident Inspector  
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Approved by: J. Cameron, Chief  
Branch 6  
Division of Reactor Projects

Enclosure

## TABLE OF CONTENTS

SUMMARY OF FINDINGS.....	1
REPORT DETAILS .....	3
Summary of Plant Status .....	3
1. REACTOR SAFETY.....	3
1R01 Adverse Weather Protection (71111.01).....	3
1R04 Equipment Alignment (71111.04) .....	4
1R05 Fire Protection (71111.05).....	5
1R06 Flooding (71111.06) .....	7
1R11 Licensed Operator Requalification Program (71111.11) .....	8
1R12 Maintenance Effectiveness (71111.12) .....	13
1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13) .....	13
1R15 Operability Determinations and Functional Assessments (71111.15) .....	14
1R18 Plant Modifications (71111.18) .....	15
1R19 Post-Maintenance Testing (71111.19).....	15
1R22 Surveillance Testing (71111.22).....	16
1EP6 Drill Evaluation (71114.06) .....	17
4. OTHER ACTIVITIES .....	18
4OA1 Performance Indicator Verification (71151) .....	18
4OA2 Identification and Resolution of Problems (71152) .....	20
4OA3 Follow-Up of Events and Notices of Enforcement Discretion (71153).....	23
4OA6 Management Meetings.....	25
4OA7 Licensee-Identified Violations.....	25
SUPPLEMENTAL INFORMATION.....	1
Key Points of Contact .....	1
List of Items Opened, Closed and Discussed .....	3
List of Documents Reviewed .....	4
List of Acronyms Used.....	11

## SUMMARY OF FINDINGS

Inspection Report (IR) 05000237/2012003, 05000249/2012003; 04/01/2012 – 06/30/2012; Dresden Nuclear Power Station, Units 2 & 3; Flooding and Follow Up of Events and Notices of Enforcement Discretion.

This report covers a 3-month period of inspection by resident inspectors and announced baseline inspections by regional inspectors. One NRC identified and one self-revealing finding were identified during this inspection. The findings did not involve violations of NRC requirements. 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: Initiating Events**

Green. A finding of very low safety significance was self-revealed when a human performance error resulted in the loss of the Bus 41 which caused a trip of all circulating water hot canal lift pumps. The licensee performed a rapid down power on both Units 2 and 3 and secured the 3C circulating water pump. The lift pump Bus 41 was restored and the lift pumps were restarted. The licensee conducted all hands meetings to enforce why the actions taken prior to this event were incorrect. This was not a violation of NRC requirements.

The finding was determined to be more than minor because the finding could be reasonably viewed as a precursor to a significant event. Specifically, the loss of the lift pump bus resulted in securing a circulating water (CW) pump on Unit 3 and rapid load reductions on both units to prevent a loss of vacuum. The loss of vacuum could have resulted in a reactor scram. A rapid load reduction was performed on Unit 2 in preparation of securing a Unit 2 CW pump, but the lift station was restored before the securing of the Unit 2 CW pump became necessary. The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," Table 4a, for the Initiating Events Cornerstone. This event was a transient initiator that could have resulted in a reactor scram. The inspectors answered 'No' to the question: "Does the finding contribute to both the likelihood of a reactor trip AND the likelihood that mitigation equipment or functions will not be available?" Therefore, the finding was screened as having very low safety significance, (Green). This finding has a cross-cutting aspect in the area of human performance, work practices, because licensee personnel did not use sufficient human error prevention techniques. Specifically, the placement of the lead in the wrong position at the completion of work was contrary to the work instructions in WO1507014-01. Stronger physical boundaries could have been established to prevent placing the lead in the wrong position. (H.4(a)) (Section 4OA3.1)

## **Cornerstone: Mitigating Systems**

Green. A finding of very low safety significance was identified by the inspectors for leaving the containment cooling service water (CCSW) vault door open and unattended. The licensee immediately closed the door, posted the door as difficult to close, and lubricated the door to make the door easier to close. The inspectors determined that leaving the CCSW vault door open and unattended was contrary to the Technical Requirements Manual 3.7.o.2 which required the CCSW vault and vault door to be operable. However, this did not involve a violation of NRC requirements.

The finding was determined to be more than minor because the finding was associated with the Mitigating System Cornerstone attribute of protection against external events and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," Table 4a, for the Mitigating System Cornerstone. The vault door was designed to mitigate the effect of internal flooding caused by a condenser boot failure. Question 5 asks, does the finding screen as potentially risk significant due to flooding. The inspectors answered yes, because with the door failed, two trains of a multi-train system were degraded (see Table 4b). The Region III Senior Risk Analyst (SRA) was contacted to perform a Phase 3 analysis. The SRAs performed a phase 3 SDP evaluation of the finding using the Risk-Informed Inspection Notebook for Dresden. The transient without the power conversion system (TPCS) initiator was used as a surrogate for the flooding initiator. This is conservative because the internal flood frequency is less than the frequency of TPCS. The SRAs solved the worksheet assuming the duration of the condition was less than 3 days and the CCSW system was unavailable. The result was a finding of very low safety significance (Green). The dominant sequence is a flood-induced transient with loss of the power conversion system and failure of containment heat removal, followed by random failures of the isolation condenser, shutdown cooling and late inventory injection. The inspectors did not identify a cross-cutting aspect associated with this finding. (Section 1R06)

## **B. Licensee-Identified Violations**

### **Cornerstones: Initiating Events and Mitigating Systems**

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

## **REPORT DETAILS**

### **Summary of Plant Status**

#### Unit 2:

On May 23, 2012, operators reduced power to approximately 88 percent electrical due to an unplanned circulating water discharge canal lift station trip. Operators restored power to 100 percent on the same day.

On May 26, 2012, Unit 2 had unplanned losses due to a load reduction to approximately 98 percent electrical when a circulating water pump was secured for lift station pump lube water line flushes. Later that same day, operators reduced power to approximately 44 percent electrical for planned turbine valve testing, 10 percent scram time testing, and sequence exchange. Operators restored power to 100 percent on May 27, 2012.

The unit operated at or near 100 percent power during the balance of the inspection period, with the exception of operators reducing power routinely for planned control rod pattern adjustments and testing activities.

#### Unit 3:

On May 19, 2012, operators reduced power to approximately 58 percent electrical for planned turbine valve testing, 10 percent scram time testing, and sequence exchange. Operators restored power to 100 percent on May 20, 2012.

On May 23, 2012, operators reduced power to approximately 85 percent electrical due to an unplanned lift station trip. Operators restored power to 100 percent on the same day.

The unit operated at or near 100 percent power during the balance of the inspection period, with the exception of operators reducing power routinely for planned control rod pattern adjustments and testing activities.

## **1. REACTOR SAFETY**

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

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

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

##### a. Inspection Scope

The inspectors verified that plant features and procedures for operation and continued availability of offsite and alternate alternating current (AC) power systems during adverse weather were appropriate. The inspectors reviewed the licensee's procedures affecting these areas and the communications protocols between the transmission system operator (TSO) and the plant to verify that the appropriate information was being exchanged when issues arose that could impact the offsite power system. Examples of aspects considered in the inspectors' review included:

- The coordination between the TSO and the plant during off-normal or emergency events;
- The explanations for the events;
- The estimates of when the offsite power system would be returned to a normal state; and
- The notifications from the TSO to the plant when the offsite power system was returned to normal.

The inspectors also verified that plant procedures addressed measures to monitor and maintain availability and reliability of both the offsite AC power system and the onsite alternate AC power system prior to or during adverse weather conditions. Specifically, the inspectors verified that the procedures addressed the following:

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

Documents reviewed are listed in the Attachment to this report. The inspectors also reviewed corrective action program (CAP) items to verify that the licensee was identifying adverse weather issues at an appropriate threshold and entering them into their CAP in accordance with station corrective action procedures.

This inspection constituted one readiness of offsite and alternate AC power systems sample as defined in Inspection Procedure (IP) 71111.01-05.

b. Findings

No findings were identified.

1R04 Equipment Alignment (71111.04)

.1 Quarterly Partial System Walkdowns

a. Inspection Scope

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

- Unit 3 Division II containment cooling service water/low pressure coolant injection (CCSW/LPCI) while Division I was out of service (OOS) for planned maintenance;
- Unit 3 Division I CCSW during Division II OOS for planned maintenance; and



- Unit 3 high pressure coolant injection (HPCI) during isolation condenser (IC) OOS for auto initiation logic system functional test.

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, Updated Final Safety Analysis Report (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 were identified.

1R05 Fire Protection (71111.05)

.1 Routine Resident Inspector Tours (71111.05Q)

a. Inspection Scope

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

- Fire Zone 1.1.1.5A, Unit 3 Isolation Condenser Area, Elevation 589’;
- Fire Zone 1.1.2.5A, Unit 2 Isolation Condenser Area, Elevation 589’;
- Fire Zone 11.2.2, Unit 2 Southeast Corner Room, Elevation 476’;
- Fire Zone 7.0.B, Unit 3 250V Battery Room, Elevation 551’; and
- Fire Zone 6.2, Unit 2/3 Computer Room & Auxiliary Electrical 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 five quarterly fire protection inspection samples as defined in IP 71111.05-05.

b. Findings

No findings were identified.

.2 Annual Fire Protection Drill Observation (71111.05A)

a. Inspection Scope

On May 10, 2012, the inspectors observed an unannounced fire brigade activation (drill). 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 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 3 CCSW Vault

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

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

#### b. Findings

##### Inspectors Found Unit 3 Containment Cooling Service Water Vault Flood Door Open and Unattended

Introduction: A finding of very low safety significance was identified by the inspectors for the failure to ensure the Unit 3 CCSW vault door was closed when it was unattended.

Description: On May 24, 2012, the inspectors identified that the Unit 3 CCSW vault flood door was open and unattended. The vault contains the 3A and 3C CCSW pumps. Mechanical maintenance personnel were in the process of performing work on the 3C CCSW pump but were not present at the time the inspectors arrived at the vault. The door appeared to be closed and was hard to operate. The inspectors could see light through the door and determined that the door was in fact partially open.

The inspectors interviewed a mechanical maintenance worker who stated that she could not rotate the door closing device any further and thought the door was closed.

Analysis: The inspectors determined that leaving the CCSW vault door open and unattended was contrary to Technical Requirements Manual 3.7.o.2 which required the CCSW vault and vault door to be operable and was a performance deficiency.

The finding was determined to be more than minor because the finding was associated with the Mitigating System Cornerstone attribute of protection against external events

and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the door exists to protect one pump from each subsystem from a flooding event caused by a failure of the condenser boot seal. With the door open and unattended the door cannot perform this function.

The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," Table 4a for the Mitigating System Cornerstone. The vault door was designed to mitigate the affect of internal flooding caused by a condenser boot failure. Question 5 asks "does the finding screen as potentially risk significant due to flooding?" The inspectors answered 'Yes', because with the door failed, two trains of a multi-train system were degraded (see Table 4b). The Region III Senior Risk Analyst (SRA) was contacted to perform a Phase 3 analysis. The SRAs performed a phase 3 SDP evaluation of the finding using the Risk-Informed Inspection Notebook for Dresden. The transient without the power conversion system (TPCS) initiator was used as a surrogate for the flooding initiator. This is conservative because the internal flood frequency is less than the frequency of TPCS. The SRAs solved the worksheet assuming the duration of the condition was less than 3 days and the CCSW system was unavailable. The result was a finding of very low safety significance (Green). The dominant sequence is a flood-induced transient with loss of the power conversion system and failure of containment heat removal, followed by random failures of the isolation condenser, shutdown cooling and late inventory injection.

The inspectors did not identify a cross-cutting aspect associated with this finding. The door was not fully closed because it was difficult to close and was mistaken for being closed by a mechanical maintenance worker. This did not fit any description of a cross-cutting item in Inspection Manual Chapter 0310.

Enforcement: No violation of regulatory requirements occurred. Because this finding does not involve a violation and has very low safety significance, it is identified as **FIN 05000249/2012003-01**, "Inspectors Found Unit 3 CCSW Vault Flood Door Open and Unattended."

1R11 Licensed Operator Regualification Program (71111.11)

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

a. Inspection Scope

On May 9, 2012, the inspectors observed a crew of licensed operators in the plant's simulator during licensed operator regualification training to verify that operator performance was adequate, evaluators were identifying and documenting crew performance problems, and training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

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

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

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

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

b. Findings

No findings were identified.

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

a. Inspection Scope

On April 5, 2012, the inspectors observed a surveillance test on Unit 2 and a briefing for a surveillance test on Unit 3, plus work groups checking in for other work. This was an activity that required heightened awareness or was related to increased risk. The inspectors evaluated the following areas:

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

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

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

b. Findings

No findings were identified.

.2 Requalification Examination Results (71111.11A)

a. Inspection Scope

The inspectors reviewed the pass/fail results of the individual biennial written tests administered by the licensee during calendar year 2011. The inspectors also reviewed

the results for the operating and simulator tests required to be given annually per 10 CFR 55.59(a)(2) administered by the licensee during calendar year 2012. The overall written examination and operating test results were compared with the significance determination process in accordance with Inspection Manual Chapter (IMC) 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process."

Completion of this portion of the inspection constitutes one annual licensed operator requalification inspection sample as defined in Inspection Procedure (IP) 71111.11(A).

b. Findings

No findings were identified.

.3 Biennial Requalification Written Examination Quality

a. Inspection Scope

The inspectors reviewed the licensee's program for development of the Licensed Operator Requalification Training (LORT) Program biennial written examination to assess the licensee's ability to develop and administer examinations that are acceptable for meeting the requirements of 10 CFR 55.59(a). The inspectors reviewed the methodology used to construct the examinations including content, level of difficulty, and general quality of the examination materials. The inspectors also assessed the level of examination material duplication from week-to-week for the examination administered in calendar year 2011. The examination material was also compared with the material administered during calendar year 2009.

b. Findings

No findings were identified.

.4 Annual Requalification Operating Test Quality

a. Inspection Scope

The inspectors reviewed the licensee's program for development of the LORT Program annual operating tests to assess the licensee's ability to develop and administer operating tests that are acceptable for meeting the requirements of 10 CFR 55.59(a). The inspectors reviewed the methodology used to construct the tests including content, level of difficulty, and general quality of the examination materials. The inspectors also assessed the level of examination material duplication from week-to-week, and the amount of repeat material being used from the operating tests administered in calendar year 2011.

b. Findings

No findings were identified.

.5 Licensee Administration of Requalification Examinations

a. Inspection Scope

The inspectors observed the administration of the annual operating tests to assess the licensee's effectiveness in conducting the examinations, including the conduct of pre-examination briefings, evaluations of individual operator and crew performance, and post-examination analysis. The inspectors evaluated the performance of two simulator crews in parallel with the facility evaluators during performance of four dynamic simulator scenarios, and evaluated various licensed crew members concurrently with facility evaluators during the administration of several Job Performance Measures (JPMs).

b. Findings

No findings were identified.

.6 Requalification Examination Security

a. Inspection Scope

The inspectors conducted an assessment of the licensee's processes related to examination physical security and integrity (e.g., predictability and bias) to verify compliance with 10 CFR 55.49, "Integrity of Examinations and Tests." The inspectors reviewed the facility licensee's examination security procedure, and observed the implementation of physical security controls (e.g., access restrictions and simulator I/O controls) and integrity measures (e.g., sampling criteria, bank use, and test item repetition) throughout the inspection period. The inspectors reviewed the operating test to assure no unanticipated disclosure of examination material to the examinees.

b. Findings

The licensee identified that the plant-specific simulator's operating system was creating Sequence of Events (SOE) files and saving the files on the simulator's hard drive. The licensee identified that the SOE files contained examination materials for examinations required by 10 CFR Part 55. Because the files were uncontrolled, the files were considered compromised and a violation of 10 CFR 55.49 occurred. This finding is of very low safety significance (Green) and an associated NCV is documented in Section 4OA7 of this report. No other findings were identified.

.7 Licensee Remedial Training Program

a. Inspection Scope

The inspectors assessed the adequacy and effectiveness of the remedial training conducted since the last requalification examinations and the training planned for the current examination cycle to ensure that they addressed weaknesses in licensed operator or crew performance identified during training and plant operations. The inspectors reviewed remedial training procedures and individual remedial training plans.

b. Findings

No findings were identified.

.8 Conformance with Operator License Conditions

a. Inspection Scope

The inspectors reviewed the licensed operator's records to assess compliance with 10 CFR 55.53 and 10 CFR 55.59 regarding training attendance, maintaining an active license and medical fitness. All licensed operator training attendance was reviewed and all licensed operator active/inactive license conditions were reviewed. Twelve licensed operator medical files were reviewed for accuracy. The inspectors assessed the licensee's program for ensuring that licensed operators meet the conditions of their licenses.

b. Findings

The licensee identified that they had failed to notify the U.S. Nuclear Regulatory Commission (NRC) within 30 days of a permanent disability for a licensed operator in accordance with 10 CFR 50.74(c). This finding of very low safety significance (Green) and an associated Non-Cited Violation (NCV) is documented in Section 4OA7 of this report.

The licensee identified that they had failed to notify the NRC within 30 days of a termination of any operator or senior operator in accordance with 10 CFR 50.74(b). This finding of very low safety significance (Green) and an associated NCV is documented in Section 4OA7 of this report.

No additional findings were identified.

.9 Simulator Performance

- a. The inspectors assessed the adequacy of the licensee's simulation facility (simulator) for use in operator licensing examinations and for satisfying experience requirements. The inspectors reviewed a sample of simulator performance test records (e.g., transient tests, malfunction tests, scenario based tests, post-event tests, steady state tests, and core performance tests), simulator discrepancies, and the process for ensuring continued assurance of simulator fidelity in accordance with 10 CFR 55.46. The inspectors reviewed and evaluated the simulator discrepancy corrective action process to ensure that simulator fidelity was being maintained. Open simulator discrepancies were reviewed for importance relative to the impact on 10 CFR 55.45 and 55.59 operator actions as well as on nuclear and thermal hydraulic operating characteristics.

b. Findings

No findings were identified.

.10 Problem Identification and Resolution

The inspectors completed IP 71111.11B, Sections 03.02, 03.03, 03.04, 03.05, 03.06, 03.07, 03.08, and Section 03.09 respectively. Section 03.10, "Problem Identification and Resolution," was not completed, but completion is expected before the end of the biennial period.



1R12 Maintenance Effectiveness (71111.12)

.1 Routine Quarterly Evaluations (71111.12Q)

a. Inspection Scope

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

- Unit 2 Isolation Condenser; and
- Unit 3 High Pressure Coolant Injection

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

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

- Unit 3 Yellow Risk during Division I LPCI OOS for planned maintenance;

- Unit 3 Yellow Risk during 24 month TS isolation condenser auto-actuation surveillance;
- Unit 2 Yellow Risk during 24month LPCI emergency core cooling system (ECCS) loop select circuitry logic system functional test;
- Unit 3 Yellow Risk during Division II LPCI OOS for planned maintenance; and
- Unit 2 Yellow Risk during unplanned HPCI outage.

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.

Specific documents reviewed during this inspection are listed in the Attachment to this report. These maintenance risk assessments and emergent work control activities constituted five samples as defined in IP 71111.13-05.

b. Findings

No findings were identified.

1R15 Operability Determinations and Functional Assessments (71111.15)

a. Inspection Scope

The inspectors reviewed the following issues:

- Issue Report (IR) 1327328, "Coatings Have Not Been Applied To Safety-Related Level III Standards of ER-AA-330-008;"
- IR 1356752, "Review of Quad Cities Rx Hi Pressure Scram (IR 01355763);"
- IR 1357305, "U3 EDG Consumption Test – Exceeded Fuel Consumption Rate;" and
- IR 1364609, "Result of 4KV BKR Delayed Closing Failure Analysis Report."

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.

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

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18)

a. Inspection Scope

The inspectors reviewed the following modification:

- EC 387124, "Place Temporary Sump Pumps Between Fuel Pool Gates"

The inspectors reviewed the configuration changes and associated 10 CFR 50.59 safety evaluation screening 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, as applicable, observed ongoing and completed work activities to ensure that the modifications were installed as directed and consistent with the design control documents; the modifications operated as expected; post-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. As applicable, the inspectors verified that relevant procedure, design, and licensing documents were properly updated. Lastly, the inspectors discussed the plant modification with operations, engineering, and training personnel to ensure that the individuals were aware of how the operation with the plant modification in place could impact overall plant performance. Documents reviewed in the course of this inspection are listed in the Attachment to this report.

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

b. Findings

No findings 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:

- Work Order (WO) 1020637, "MM D3 4Y TS/IST Disassemble & Insp 3-1501-65B;"
- WO 1493511-01, "Overhaul of 3C CCSW Pump Recommended;"
- WO 114624713, "MM Inspect D3 EDG Cooling Water Check Valve 3-3930-501;" and
- WO 1543373-01, "MM Steam Leak Found on HPCI ASME Code Class Piping."

These activities were selected based upon the structure, system, or component's ability to impact risk. The inspectors evaluated these activities for the following (as applicable): the effect of testing on the plant had been adequately addressed; testing was adequate for the maintenance performed; acceptance criteria were clear and demonstrated operational readiness; test instrumentation was appropriate; tests were performed as written in accordance with properly reviewed and approved procedures; equipment was returned to its operational status following testing (temporary modifications or jumpers required for test performance were properly removed after test completion); and test documentation was properly evaluated. The inspectors evaluated the activities against TSS, the UFSAR, 10 CFR Part 50 requirements, licensee procedures, and various NRC generic communications to ensure 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 four post-maintenance testing samples as defined in IP 71111.19-05.

b. Findings

No findings 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:

- WO 1511334, "OP D3 Qtr TS CS Pmp Test with Torus Avail for IST Data Surv" (IST);
- WO 1336058, "EM D3 24M TS 125V Battery Charger 3, 4 Hour Load Test" (Routine);
- WO 1334864, "D2 24M TS SDV Hi Level Chan Func Test & Trip Unit Cal" (Routine);
- WO 1339009, "D3 IMD 24M TS Isolation Condenser Auto-Actuation" (Routine); and
- WO 1537966, "D2 1M TS 250 VDC Station Batt Insp (In Lieu of Wkly Insp)" (Routine).

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 was in accordance with TSs, the UFSAR, procedures, and applicable commitments;
- measuring and test equipment calibration was current;
- test equipment was used within the required range and accuracy; applicable prerequisites described in the test procedures were satisfied;
- test frequencies met TS requirements to demonstrate operability and reliability; tests were performed in accordance with the test procedures and other applicable procedures; jumpers and lifted leads were controlled and restored where used;
- test data and results were accurate, complete, within limits, and valid;
- test equipment was removed after testing;
- where applicable for inservice testing activities, testing was performed in accordance with the applicable version of Section XI, American Society of Mechanical Engineers code, and reference values were consistent with the system design basis;
- where applicable, test results not meeting acceptance criteria were addressed with an adequate operability evaluation or the system or component was declared inoperable;
- where applicable 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 four routine surveillance testing samples and one inservice testing sample as defined in IP 71111.22, Sections -02 and -05.

b. Findings

No findings were identified.

1EP6 Drill Evaluation (71114.06)

.1 Emergency Preparedness Drill Observation

a. Inspection Scope

The inspectors evaluated the conduct of a routine licensee emergency drill on May 3, 2012, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors observed

emergency response operations in the Technical Support Center/ Operations Support Center to determine whether the event classification, notifications, and protective action recommendations were performed in accordance with procedures. The inspectors also attended the licensee drill critique to compare any inspector-observed weakness with those identified by the licensee staff in order to evaluate the critique and to verify whether the licensee staff was properly identifying weaknesses and entering them into the corrective action program. As part of the inspection, the inspectors reviewed the drill package and other documents listed in the Attachment to this report.

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

b. Findings

No findings were identified.

.2 Training Observation

a. Inspection Scope

The inspector observed a simulator training evolution for licensed operators on May 9, 2012, which required emergency plan implementation by a licensee operations crew. This evolution was planned to be evaluated and included in performance indicator data regarding drill and exercise performance. The inspectors observed event classification and notification activities performed by the crew. The inspectors also attended the post-evolution critique for the scenario. The focus of the inspectors' activities was to note any weaknesses and deficiencies in the crew's performance and ensure that the licensee evaluators noted the same issues and entered them into the corrective action program. As part of the inspection, the inspectors reviewed the scenario package and other documents listed in the Attachment to this report.

This inspection of the licensee's training evolution with emergency preparedness drill aspects constituted one sample as defined in IP 71114.06-05.

b. Findings

No findings were identified.

4. **OTHER ACTIVITIES**

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

4OA1 Performance Indicator Verification (71151)

.1 Safety System Functional Failures

a. Inspection Scope

The inspectors sampled licensee submittals for the Safety System Functional Failures performance indicator (PI) for Dresden Nuclear Power Station Units 2 and 3 covering the period from the first quarter 2011 through the first quarter 2012. To determine the

accuracy of the PI data reported during this period, PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, dated October 2009, and NUREG-1022, "Event Reporting Guidelines 10 CFR 50.72 and 50.73" definitions and guidance, were used. The inspectors reviewed the licensee's operator narrative logs, operability assessments, maintenance rule records, maintenance work orders, issue reports, event reports, and NRC Integrated Inspection Reports for the period of first quarter 2011 through the first quarter 2012 to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Documents reviewed are listed in the Attachment to this report.

This inspection constituted two safety system functional failures samples as defined in IP 71151-05.

b. Findings

No findings were identified.

.2 Mitigating Systems Performance Index - Emergency Alternating Current Power System

a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index (MSPI) - Emergency AC Power System performance indicator for Unit 2 and Unit 3 for the period from the second quarter 2011 through the first quarter 2012. To determine the accuracy of the PI data reported during this period, 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, MSPI derivation reports, issue reports, event reports and NRC Integrated Inspection Reports for the period of June 2011 through May 2012 to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings were identified.

.3 Mitigating Systems Performance Index - High Pressure Injection Systems

a. Inspection Scope

The inspectors sampled licensee submittals for the MSPI - High Pressure Injection Systems performance indicator for Units 2 and 3 for the period from the second

quarter 2011 through the first quarter 2012. To determine the accuracy of the PI data reported during this period, 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 June 2011 through the May 2012 to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Documents reviewed are listed in the Attachment to this report.

This inspection constituted two MSPI high pressure injection system samples as defined in IP 71151-05.

b. Findings

No findings were identified.

4OA2 Identification and Resolution of Problems (71152)

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

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

a. Inspection Scope

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 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 were identified.

.3 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a review of the licensee's CAP and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors' review was focused on repetitive equipment issues, but also considered the results of daily inspector CAP item screening discussed in Section 4OA2.2 above, licensee trending efforts, and licensee human performance results. The inspectors' review nominally considered the 24-month period of January 1, 2010, through December 31, 2011, although some examples expanded beyond those dates where the scope of the trend warranted.

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

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

b. Findings

No findings were identified.

.4 Selected Issue Follow-Up Inspection: Issue Report 1246225, "U2/3 Diesel Generator Trip"

a. Inspection Scope

During a review of items entered in the licensee's CAP, the inspectors recognized a corrective action item documenting the 2/3 emergency diesel generator (EDG) high temperature trip documented in IR 1246225, "U2/3 Diesel Generator Trip." The inspectors chose this issue for an in-depth review due to the safety and risk significance of the emergency diesel generators. The inspectors reviewed the troubleshooting activities and equipment apparent cause evaluation (EACE), as documented in IR 1247466, "NRC Question Unit 2 and Unit 3 EDG," to verify that the licensee was appropriately addressing the issue in their corrective action program.

On August 1, 2011, the Unit 2/3 emergency diesel generator tripped on high temperature after being started and loaded during the performance of DOS 6600-12, "Diesel Generator Tests: Endurance and Margin/Full Load Rejection/ECCS/Hot Restart." Troubleshooting was performed. An instrumented run revealed that the high temperatures were the result of either fouled heat exchangers or a failure of the thermostatic valve elements. There were no adverse trends identified in the Unit 2/3 EDG's temperatures prior to this run.

The EDG was removed from service and the heat exchangers were inspected and verified clean. The thermostatic valve elements were replaced. A subsequent post-maintenance test run demonstrated that the EDG had been returned to serviceable condition.

The failed elements were sent to Engine Systems (the original vendor) for failure analysis. The testing revealed that there were no functional problems with the elements in their as-tested state, but aggressive scratches were identified on the valve sleeves that may indicate that there was some foreign substance impinging on the valve sleeves and hampering their movement within the valve body.

The licensee determined that the apparent cause of the failure of the thermostatic control valve to control engine temperature in the proper range was due to foreign material causing the sleeve portion of the element to restrict movement of the sleeve on one or two of the elements.

The inspectors verified that the corrective actions addressed all emergency diesel generators and station black out (SBO) diesel generators (DG).

The inspectors determined that the licensee's documentation of the Unit 2/3 EDG trip on high temperature in the CAP was complete and accurate. The inspectors also determined that the classification and prioritization of the resolution of the issue was appropriate commensurate with its safety significance.

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

b. Findings

No findings were identified.

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

##### .1 Loss of Lift Station due to Human Performance Error

Introduction: A finding of very low safety significance was self-revealed when a human performance error resulted in the loss of Bus 41 which caused a trip of all circulating water discharge canal lift pumps.

Description: On May 23, 2012, Operations Analysis Department (OAD) personnel were performing set point revisions to the lift pump upper bearing temperature alarms per an approved engineering change under Work Order (WO) 1507014-01, "Revise 2/3-4453-A-F Lake Lift PMP MTR Upper Bearing Setpoint," when the Bus 41 main feed breaker tripped resulting in a loss of all lift pumps. The lift pumps raise circulating water discharge canal water and lift it up to the cooling lake. With all lift pumps tripped discharge canal level would rise rapidly. Circulating water pumps need to be secured and power needs to be rapidly reduced. This can result in a loss of condenser vacuum and a reactor scram.

In the process of lifting numerous leads to perform the work, the OAD technician noted that one of the terminals had two leads attached which were not in accordance with the work package instructions. During discussion with another OAD technician, the two determined it would be acceptable to lift leads at another location. The two technicians neither contacted their supervisor nor made an effort to have the work instructions changed and reviewed. The technicians turned over the work in the field. When the leads were restored after the setpoint change was made the technician landing the lead placed the lead in the wrong place which caused the main feed breaker for Bus 41 to trip open and cause a loss of all the lift pumps.

Analysis: The inspectors determined that the placement of the lead in the wrong position at the completion of work was contrary to the work instructions in WO 1507014-01 and was a performance deficiency.

The finding was determined to be more than minor because the finding could be reasonably viewed as a precursor to a significant event. Specifically, the loss of the lift pump bus resulted in securing a circulating water (CW) pump on Unit 3 and rapid load reductions on both units to prevent a loss of condenser vacuum. The loss of vacuum could have resulted in a reactor scram. A rapid load reduction was performed on Unit 2 in preparation of securing a Unit 2 CW pump, but the lift station was restored before securing the Unit 2 CW pump became necessary. The inspectors concluded this finding was associated with the Initiating Events Cornerstone.

The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," Table 4a, for the Initiating Events Cornerstone. This event was a transient initiator that could have resulted in a reactor scram. The inspectors answered 'No' to the question; "Does the finding contribute to both the likelihood of a reactor trip AND the likelihood that mitigation equipment or functions will not be available?" Therefore, the finding was screened as having very low safety significance (Green).

This finding has a cross-cutting aspect in the area of human performance, work practices because licensee personnel did not use sufficient human error techniques.

Specifically, the placement of the lead in the wrong position at the completion of work was contrary to the work instructions in WO 1507014-01. Stronger physical boundaries could have been established to prevent placing the lead in the wrong position. (H.4(a))

Enforcement: No violation of regulatory requirements occurred. Because this finding does not involve a violation and has a very low safety significance, it is identified as **FIN 05000237/2012003-02; 05000249/2012003-02**, "Loss of Lift Station due to Human Performance Error."

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

.2 (Closed) Licensee Event Report 05000237, 05000249/2011-001-00; "Loss of Containment Cooling Service Water due to Stop Log Installation"

On May 17, 2011, licensee personnel identified that stop logs had been installed, contrary to original work documents, in both suction sources in Bay 13 of the plant's crib house. This rendered CCSW inoperable in Dresden Unit 2 and Unit 3 and caused both units to have an unplanned entry to a TS 8-hour action statement to restore a CCSW system. Upon identification of the issue, the stop logs were removed; CCSW in each unit was inoperable for a period of approximately 4 hours. The inoperability of all CCSW also resulted in the loss of a decay heat removal safety function. The licensee made an 8-hour non-emergency notification (Event Number 46857) in accordance with 10 CFR 50.72(b)(3)(v), for an "Event or Condition That Could Have Prevented Fulfillment of a Safety Function."

Subsequent investigation by the licensee determined that the front line work supervisor and involved work planner failed to recognize the impact of installing stop logs in Bay 13 and failed to recognize that adding the addition of stop logs to this work package was more than a minor change and, in accordance with plant procedures, required additional review. The licensee also determined that adding stop logs to Bay 13 elevated plant risk to an Orange level and that this level of risk, by plant procedures, required senior plant management review and approval as well as a Corporate Challenge and readiness review. Licensee corrective actions included developing signage at the entry point for Bay 13 to advise of the potential consequences for installing stop logs, reemphasizing review requirements for more than minor changes in work packages, and developing a procedure for using divers in cleaning and inspecting Bay 13.

This event involved a failure to perform an adequate risk assessment as required by 10 CFR 50.65(a)(4) and was more than minor per minor example 7.e (Maintenance Rule) since the activity would have put the plant into a higher risk cavity. The enforcement aspects of this finding are discussed in Section 4OA7. Documents reviewed as part of this inspection are listed in the Attachment to this report.

This Licensee Event Report (LER) is closed.

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

#### 4OA6 Management Meetings

##### .1 Exit Meeting Summary

On June 26, 2012, the inspectors presented the inspection results to Mr. S. Marik, Station Plant Manager, 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. Proprietary material received during the inspection was returned to the licensee.

##### .2 Interim Exit Meetings

On April 29, 2012, the results of the LORT inspection were presented to Mr. B. Kapellas, Dresden Nuclear Power Station Operations Director, 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.

#### 4OA7 Licensee-Identified Violations

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

##### .1 Examination Security Not Maintained on Facility Simulator

Title 10 CFR 55.49, "Integrity of Examinations and Tests," requires, in part, that the licensee shall not engage in activities that compromises the integrity of any application, test, or examination required by 10 CFR Part 55. Contrary to the above, on March 30, 2012, at the Clinton Power Station, the licensee identified that the control room simulator's plant process computer model was saving Sequence of Events (SOE) files on a routine basis. A licensee investigation determined that the same condition existed at Dresden Nuclear Power Station. The licensee determined that some of the files contained examination materials that were related to examinations required by 10 CFR Part 55. The integrity of a test or examination is considered compromised if any activity, regardless of intent, affected, or, but for detection, would have affected the equitable and consistent administration of the test or examination. Because the files were uncontrolled and available to anyone with computer access, the NRC considered the examination materials to be compromised. The licensee was able to demonstrate that the files were not readily viewable and required interpretation. Therefore, the inspectors believed that no individuals had an unfair advantage in taking any NRC-related examinations. This issue was documented in the facility's CAP as IR 1348182. Corrective actions for this issue included revising the simulator's system software to delete the SOE files being generated by the simulator. The licensee's corporate procedure TQ-QC-201-0113, "Simulator Examination Security Actions Checklist," has added steps to ensure the SOE files are deleted during simulator shutdowns.

The inspectors determined that the failure to control SOE files generated by the facility's simulator was a performance deficiency that required a Significance Determination Process (SDP) evaluation. The inspectors determined that this finding impacted the Mitigating Systems Cornerstone and consulted IMC 0609 Appendix I to assess the impact of this issue on examination security. The inspectors concluded that an

examination compromise had occurred, but that the facility had taken immediate compensatory actions to prevent recurrence of this condition. Based on circumstances described above and the licensee's corrective actions, the inspectors concluded that this finding was of very low safety significance (Green).

.2 Failure to Notify the NRC of an Existing Licensed Operator Medical Condition

Title 10 CFR 50.9, "Completeness and accuracy of information," requires, in part, that the licensee provide complete and accurate information in all material respects. Contrary to the above, the facility licensee submitted an application for an operating license for a station employee that was not complete and accurate. During the month of August 2008, a Dresden Nuclear Power Station employee was diagnosed with sleep apnea and was prescribed a CPAP (Continuous Positive Airway Pressure) device to aid in correcting sleep patterns. The employee was subsequently enrolled in the Dresden Nuclear Power Station initial licensed operator training program to obtain an NRC operator's license. The employee did not report the use of the CPAP device to the site nurse when she was preparing the applicant's medical certification in conjunction with the employee's application to the NRC to become a licensed operator. This prescribed device was used to treat sleep apnea and was a condition requiring notification of the NRC. The employee was unaware of the requirement to report the use of CPAP devices.

The employee was issued an NRC operating license on April 7, 2011, without a requirement to use therapeutic devices as directed. The NRC issued the operator's license without knowing about the operator's medical condition. If the NRC had been informed of this medical condition, the NRC would have required a medical restriction be included on the operator's license. This was a potential violation of 10 CFR 50.9, "Completeness and Accuracy of Information." On April 8, 2011, the operator notified the site nurse of his prescription for a CPAP device. On April 14, 2011, the facility licensee notified the NRC of the need to add this condition to the operator's license. On April 14, 2011, the NRC amended the operator's license to include the license condition, "must use therapeutic devices as prescribed to maintain medical qualifications." Since the license had previously been issued without the license condition, and the NRC doctor determined that the license needed to be revised, the original license submission was incomplete/inaccurate. As such, this was a violation of 10 CFR 50.9.

Because this issue impacted the ability of the NRC to perform its regulatory oversight function, the regulatory significance was determined using the traditional enforcement process. The inspectors determined that the operator's medical condition did not adversely affect the operator's ability to safely operate the facility even though the operator's license was incorrect. As such, the NRC determined this was a Severity Level IV violation, which may be dispositioned as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy.

Corrective actions included a resubmitted NRC Form 396 for the operator, documenting the issue in an action request report (IR 1351463), and performing an apparent cause evaluation. Additionally, the licensee conducts annual training regarding operator license restrictions, including the use of prescribed medication, therapeutic devices, and reporting of medical conditions.

The inspectors' review of this issue was considered to be a part of the original inspection effort, and, as such, did not constitute any additional inspection samples.

.3 Licensee Failed to Notify the NRC of a Change in Operator License Status

The licensee identified that they had failed to notify the NRC within 30 days of a termination of any operator or senior operator in accordance with 10 CFR 50.74(b). A licensed operator retired on April 8, 2011. On June 6, 2011, it was discovered by the station staff that they had failed to notify the NRC of the licensed operator's retirement and the need to expire the operator's license. The facility licensee is required to report the termination of any operator or senior operator in accordance with 10 CFR 50.74(b).

Because this issue impacted the ability of the NRC to perform its regulatory oversight function to terminate the operator's license in a timely manner, the regulatory significance was determined using the traditional enforcement process. The inspectors determined that the operator's retirement did not adversely affect the safety of the facility even though the operator's license was not correctly expired. As such, the NRC determined this was a Severity Level IV violation, which may be dispositioned as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy.

Corrective actions included a request to expire the operator's license, documenting the issue in an action request report (IR 1223526), reviewing all operator licenses for the previous 6 months, and performing an apparent cause evaluation.

The inspectors' review of this issue was considered to be a part of the original inspection effort and, as such, did not constitute any additional inspection samples.

.4 Loss of Containment Cooling Service Water due to Stop Log Installation

10 CFR 50.65(a)(4) requires that prior to performing maintenance activities, the licensee shall assess and manage the risk that may result from the proposed maintenance activities. Contrary to that, licensee personnel inappropriately modified a work package for activities on May 17, 2011, for divers to clean and inspect water intake Bay 13 without assessing and managing the change in risk. The work package change added stop logs to the bay which caused CSSW in Dresden 2 and Dresden 3 to be inoperable. Inoperability of all CSSW would cause an Orange risk condition as defined by licensee plant procedures and required additional reviews prior to work execution. Those additional reviews did not occur and stop logs were installed for approximately 4 hours. The violation was classified as having a very low safety significance (Green) in accordance with IMC 0609, Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process." The incremental risk for having CSSW inoperable for four hours was evaluated by the NRC Region III Senior Risk Analysts as having a low risk significance. The licensee documented the issue and their investigation in IR 1217178, "Bay 13 Isolated Due to Both Sets of Stop Logs Installed."

ATTACHMENT: SUPPLEMENTAL INFORMATION

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### Licensee

D. Czufin, Site Vice President  
S. Marik, Station Plant Manager  
D. Anthony, NDES Manager  
J. Biegelson, Engineering  
H. Bush, Radiation Protection Manager  
J. Cady, Radiation Protection Manager  
P. Chambers, Examination Author  
K. Cox, Simulator Coordinator  
P. DiGiovanna, Training Director  
H. Do, Corporate ISI Manager  
D. Doggett, Emergency Preparedness Coordinator  
H. Dodd, Nuclear Oversight Manager  
J. Fox, Design Engineer  
J. Freeman, Corporate Engineering  
G. Gates, Operations  
D. Glick, Radioactive Material Shipping Specialist  
G. Graff, NOS Manager  
M. Hosain, Site EQ Engineer  
R. Johnson, Chemistry  
L. Jordan, Training Director  
B. Kapellas, Operations Director  
C. Kent, Operations Support Manager  
D. Ketchledge, Engineering  
J. Knight, Director, Site Engineering  
M. Knott, Instrument Maintenance Manager  
J. Kish, Site ISI  
S. Kvasnicka, NDE Level III  
D. Leggett, Chemistry Manager  
G. Lupia, Corporate Buried Pipe Engineer  
T. Mohr, Supervisor, Engineering Programs  
P. Mankoo, Chemistry Manager  
M. McDonald, Maintenance Director  
G. Morrow, Operations  
T. Mohr, Engineering Program Manager  
P. O'Brien, Regulatory Assurance – NRC Coordinator  
D. O'Flanagan, Security Manager  
M. Otten, Operations Training Manager  
M. Pavey, RP Specialist  
P. Quealy, Emergency Preparedness Manager  
R. Ruffin, Licensing Engineer  
D. Schiavoni, Engineering  
J. Sipek, Work Management Director  
R. Stachniak, Engineering  
R. Sisk, Buried Pipe Program Owner



L. Torres, Engineering  
D. Walker, CAP Manager

Nuclear Regulatory Commission

S. West, Director, Division of Reactor Projects  
J. Cameron, Chief, Division of Reactor Projects, Branch 6

IEMA

R. Zuffa, Illinois Emergency Management Agency

## LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

### Opened

05000249/2012003-01	FIN	Inspectors Found Unit 3 Containment Cooling Service Water (CCSW) Vault Flood Door Open and Unattended (1R06)
05000237/2012003-02 05000249/2012003-02	FIN	Loss of Lift Station due to Human Performance Error (4OA3.1)

### Closed

05000249/2012003-01	FIN	Inspectors Found Unit 3 Containment Cooling Service Water Vault Flood Door Open and Unattended (1R06)
05000237/2012003-02 05000249/2012003-02	FIN	Loss of Lift Station due to Human Performance Error (4OA3.1)
05000237/2011-001-00 05000249/2011-001-00	LER	Loss of Containment Cooling Service Water due to Stop Log Installation

## 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.

### 1R01 Adverse Weather Protection (71111.01)

- IR 112474-16, "SOER 99-1, Loss of Grid Effectiveness Assessment"
- DOA 6500-12, "Low Switchyard Voltage," Revision 23
- OP-AA-108-107-1001, "Station Response to Grid Capacity Conditions," Revision 4
- WC-AA-107, "Seasonal Readiness," Revision 10
- OP-AA-108-107-1002, "Interface Procedure Between COMED/PECO and Exelon Generation (Nuclear/Power) for Transmission Operations," Revision 6
- WC-AA-101, "On-Line Work Control Process," Revision 18

### 1R04 Equipment Alignment (71111.04)

- U3 Div II CCSW/LPCI while Div I is OOS for planned maintenance
- DOP 1500-M1, "Unit 3 LPCI and Containment Cooling Valve Checklist," Revision 31
- DOP 1500-E1, "Unit 3 LPCI and CCSW System Electrical," Revision 13
- M-29, "Diagram of L.P. Coolant Injection Piping," Revision CH
- DOP 1500-E-1, "Unit 3 LPCI and CCSW System Electrical," Revision 13
- DOP 1500-M1, "Unit 3 LPCI and Containment Cooling Valve Checklist," Revision 31
- IR 1324859, "LPCI SR Coating Instructions Do Not Follow The Procedure"
- DOP 2300-M1/E1, "Unit 3 HPCI System Checklist," Revision 37
- DOP 2300-01, "High Pressure Coolant Injection (HPCI) System Standby Operation," Revision 51

### 1R05 Fire Protection (71111.05)

- 131 U3RB-31, Pre-Fire Plan, Unit 3 Isolation Condenser Elevation 589', Revision 1
- 115 U2RB-12, Pre-Fire Plan, Unit 2 Isolation Condenser Elevation 589', Revision 1
- 103 U2RB-3, Pre-Fire Plan, Unit 2 Southeast Corner Room Elevation 476', Revision 2
- IR 1377431, "Fire Protection – NRC Walk Down"
- 143 U2TB-46, Unit 2/3 Comp Room & Auxiliary Electrical Room, Elevation 517', Revision 2
- OP-AA-201-009, Control of Transient Combustible Material, Revision 11
- IR 1378827, "NRC Resident Inspector Plant Walkdown"
- 120 U3RB-23, Pre-Fire Plan, Unit 3 Rx Ground Floor Elev. 517', Revision 3
- OP-AA-201-003, "Fire Drill Performance," Revision 12
- OP-AA-201-005, "Fire Brigade Qualification," Revision 8
- OP-AA-201-008, "Pre-Fire Plan Manual," Revision 3
- IR 1365332, "Fire Protection - Fire Drill Observation"
- IR 1365251, "Fire Protection – Fire Drill"

### 1R06 Flooding (71111.06)

- IR 1370249, "NRC Concern"
- IR 1372569, "NRC Senior Resident Inspector Question – CCSW Vault Doors"

## 1R11 Licensed Operator Regualification Program (71111.11)

- OP-AA-101-111-1101, Operations Standards and Expectations, Rev 10
- DOS 1500-02, Containment Cooling Service Water Pump Test and Inservice Test (IST), Revision 78
- DTS 5750-03, Control Room Habitability System Inleakage Inspection Procedure, Revision 6
- 2011 Biennial Written Examination, Week 1 and Week 5
- 2011 Annual Operating Test, 6 JPMs, Week 1
- 2011 Annual Operating Test, 2 Dynamic Simulator Scenarios, Week 1
- 2012 Annual Operating Test, 6 JPMs, Week 2
- 2012 Annual Operating Test, 2 Dynamic Simulator Scenarios, Week 2
- 2012 Annual Operating Test, 2 Dynamic Simulator Scenarios, Week 5
- Simulator Testing Review Board Minutes; February 24, 2012
- Simulator Testing Report Update; TQ-AA-306-JA-02; April 29, 2011
- Computer Real Time Test; TQ-AA-306-JA-02, Attachment 1; January 31, 2011
- Steady State Tests; TQ-AA-306-JA-02, Attachment 2; February 25, 2011
- Normal Operating Tests; TQ-AA-306-JA-02, Attachment 3; January 10, 2011
- Simulator Malfunction Tests; TT1- TT8; Multiple; March 11, 2011
- FASA Self-Assessment Report, Dresden Station 2012 Pre-71111.11 Inspection Assignment No. 01297166-03
- OP-AA-150-102; "NRC Active License Maintenance"; Revision 9
- Remedial Training Packages; March 2010 - April 2012
- Crew/Individual Simulator Evaluation Forms for "Failures" and "Pass with Remediation"
- Remedial Training Notification and Action on Failure Packages
- Performance Review Committee Data Sheets
- TQ-AA-150-F06; "Simulator Evaluation Form – Shift Manager"; various dates in 2011 (2 forms)
- TQ-AA-150-F08; "Simulator Evaluation Form – Individual," various dates in 2011 (8 forms)
- TQ-AA-150-F09; "Simulator Evaluation Form – Crew," various dates in 2011 (2 forms)
- Exam No. 6, Bi-Annual Written Test for 2011
- ARP No. 1, Bi-Annual Written Test for 2011
- LMS Training Attendance Report for LORT; March 2010 - April 2012
- IR 1359159; "NLO Group Manning Below Minimum Manning per HR-AA-2009"
- Twelve (12) Licensed Operator License Packages:
  - OP-AA-105-101, Attachment 5, various
  - OP-AA-101-101, Attachment 1, various
  - Individual's License
  - NRC Form 398
  - NRC Form 396
- TQ-AA-150; "Operator Training Programs"; Revision 5
- OP-DR-102-106; "Operator Response Time Program at Dresden," Revision 00
- OP-DR-103-102-1002; "Strategies for Successful Transient Mitigation," Revision 8
- Written Examinations and Answer Keys; 4 Exams reviewed; various dates in 2012
- Simulator Scenario Guides; 6 Scenarios reviewed; various dates in 2011-2012
- Job Performance Measures; 18 JPMs reviewed; various dates in 2011-2012
- TQ-AA-150-F06; "Simulator Evaluation Form – Shift Manager," multiple, dated April 25, 2012
- TQ-AA-150-F07; "Simulator Evaluation Form – STA or IA," multiple, dated April 25, 2012
- TQ-AA-150-F08; "Simulator Evaluation Form – Individual," multiple, dated April 25, 2012
- TQ-AA-150-F09; "Simulator Evaluation Form – Crew," multiple, dated April 25, 2012
- EP-MW-114-100-F-01; "Nuclear Accident Reporting System (NARS) Form, Revision F"; multiple, dated April 25, 2012
- UFSAR Section 8.3.1.7, "Analysis of Station Voltages"

- EP-AA-1004; "Radiological Emergency Plan Annex for Dresden Station," Revision 28, Recognition Category Fission Product Barriers, FC2-Loss or Potential Loss and RC2-Loss
- IR 1359491, "RCA Access Issues Associated with REMS"

#### 1R12 Maintenance Effectiveness (71111.12)

- IR 1112847, "Review of 2-1301-1 Stroke Length Data"
- IR 1142554, "Unit 3 Isolation Condenser Operability Review Results"
- IR 1219123, "Engine Coolant Not Circulating and Burnt"
- IR 1277894, "MOV 2-1301-1 Magnesium rotor Degraded"
- Unit 2 Isolation Condenser Out-Of-Service List for 2010-2012
- Isolation Condenser Failure Report 2010-2012
- ER-AA-310-1004, "Maintenance Rule – Performance Monitoring," Revision 10
- Maintenance Rule Expert Panel Meeting Notes- September 30, 2011
- IR 1003387, "Oil Leak on Return Piping of Unit 3 HPCI Main Pump"
- IR 1004015, "U3 HPCI Piping Requires UT Inspection from NER NC-09-035"
- IR 0846801, "Breaker Trip for the 3-2301-4 Breaker"
- IR 0925237, "HPCI Operation and Modification Enhancement Opportunity"
- IR 0598719, "HPCI Inlet Drn Pot Outlet Piping Down Stream of 3-2301-55 VL"
- IR 0598940, "U3 HPCI Extent of Condition NDE from Pipe Leak"
- IR 1034221, "Evaluation of HPCI Oil Particulates"
- IR 1076127, "Leak Past 3-2301-28 Continues Following Maintenance"
- IR 1113512, "Defective Contact on HGA ZZA-2330-152 in 903-3 Panel"
- IR 1135857, "U3 HPCI Turbine Steam Chest Flange Wear"
- IR 1144376, "2-2301-4 Stroke Time in Alert Range"
- IR 1299266, "MR – Deficient Justification for Retaining System (A)(2)"
- IR 1314936, "Unit 3 HPCI Discharge X-Area Venting"
- IR 1344854, "Megger Reading for the U3 HPCI EOP"
- IR 1357058, "U3 HPCI Venting ACMP – Venting Time Limits Exceeded"
- IR 1013839 "Unit Three HPCI Turb Exh Drn Pot Lvl Hi"
- IR 1143002, "Unit 3 HPCI Historical Functionality Review Results"
- IR 1143050, "MOV 3-2301-5 Evaluation of Degraded Grease"
- IR 1032550, "U3 HPCI Aux Oil Pmp Mtr Not Torqued to Seismic Requirement"
- IR 1142530, "3-2301-6 Stroke Time in Alert Range"
- IR 1145521, "Check Valve Failed Inspection (follow-up IR)"
- IR 1152867, "Abnormal U3 HPCI Pump Parameters during Low Pressure Run"
- IR 1135936, "NDE Indications Discovered in HPCI Control Valve #4"
- IR 1034523, "HPCI LOC & GSC Flow less Than Design Due to Assumption"
- IR 0137916, "HPCI unavailability for online risk not accounted for"
- IR 0798158, "MOV 3-2301-8 Thermal Binding Review"
- IR 0853730, "Historical Effect of Valve 3-2301-7 Leakage"
- IR 0670697, "3-2301-4 Valve Thermal Overloads Tripped"
- IR 1113218, "MOV 3-2301-4 Failed to Fully Open"
- IR 1191195, "U3 HPCI Room Cooler Coil Tube Failures"
- IR 1233845, "Unit 3 HPCI Room Cooler Leak"

#### 1R15 Operability Determinations and Functional Assessments (71111.15)

- DGP 01-01
- DGP 02-01
- IR 1359678, "Unit 3 EDG Fuel Oil Consumption Test Documentation"

- DOS 6600-14, "Diesel Oil Transfer Pump Operation and Fuel Consumption Test," Revision 16
- WO 1335337, "D3 2Y Reg Fuel Consumption Test"
- Technical Specification 3.8.1, Surveillance Requirement 3.8.1.4
- IR 1308790, "Unexpected Alarm – 3A Circulating Water (CW) Pump Trip. 3A CW Pump Failed to Start on Demand & Then Started with no Operator Action"
- ER-AA-330-008, "Exelon Service Level I, and Safety-Related (Service Level III) Protective Coatings," Revision 8
- IR 1327328, "NOS ID Protective Coating Applied to LPCI HX Finding"
- IR 0395016, "2B LPCI HX Upper Channel Head has One Pit Requiring Repair"
- IR 0990209, "2A LPCI HX Top Coverplate Coating Bubbled"
- IR 1032566, "CAPCO Quality Closure Concern: ACIT 990209 02"
- IR 0101522, "DRE Lic. Renewal Commitments (10CFR54) – LAR dated 1-3-03"
- IR 1324859, "LPCI SR Coating Instructions Do Not Follow The Procedure"

#### 1R18 Plant Modifications (71111.18)

- DFP 0800-06, "Spent Fuel Pool to Reactor Gate Removal and Installation," Revision 13
- WO 1495230-02, "MM Install T-Mod to Pump Water from Fuel Pool Gate Area"
- IR 1364883, "NRC Resident Inspector Question"
- Abnormal Component Position Sheet (ACPS) # 12-034
- CC-AA-112

#### 1R19 Post-Maintenance Testing (71111.19)

- 3-1501-64A/B (min-flow check valves) are being inspected
- 3-1501-65A/B min flow manual valves are being replaced.
- WO 1020637, "MM D3 4Y TS/IST Disassemble & Insp 2-1501-65B"
- WO 1125528, "Replace Valve 3-1501-64B"
- IR 1353494, "Failure of MOV 3-1501-11A to Stroke Closed"
- IR 1353383, "Loss of Control Room Light Indication for 3-1501-11A"
- WO 1493511-01, "Overhaul of 3C CCSW Pump Recommended"
- WO 1493511-03, "CMO PMT Perform Vibration Analysis 3C CCSW Pump"
- WO 1493511-04, "OP PMT Perform Pump Operability on 3-1501-44C CCSW Pump"
- WO 1493511-05, "OP PMT Verify No Leaks @ System Press 3-1501-44C CCSW Pump"
- WO 1307761-17, "CR MM Inspect D3 EDG Cooling Water Check Valve 3-3930-501"
- Reconciliation Evaluation #64550
- WO 1543373-06, "Op Perform PMT Check For Leaks"
- IR 1372909, "NRC Concern: HPCI PMT Following Leak Repair"

#### 1R22 Surveillance Testing (71111.22)

- WO 01511334, "OP D3 Qtr TS CS Pmp Test with Torus Avail. for IST Data Surv."
- DOS 1400-05, "Core Spray System Pump Operability and Quarterly IST Test with Torus Available," Revision 44
- M-27, "Diagram of Core Spray Piping," Revision AAN
- IR 1362165, "3B Core Spray PP Pressure"
- DES 8300-37, "Inspection and Maintenance of 125 Volt Main Battery Chargers," Revision 10
- DES 8300-56, "125 Volt DC Battery Charger Capacity Test for Charger 3-83125-3," Revision 5
- MA-DR-8300-1001, "Battery Systems Supplemental Information," Revision 1
- MA-AA-721-1001, "Station Battery Testing Strategies," Revision 1
- WO 1334847, "EM D3 2Y PM INSP 125V Battery Charger"
- WO 1336058, "EM D3 24M TS 125V Battery Charger 3, 4 Hour Load Test"

- IR 1358507, "DES 8300-28, U2 125VDC Batt Service Test Needs Enhanced"
- IR 1358732, "U3 Battery Charger Shutdown During Test Setup"
- IR 1358751, "Surveillance Testing Voltage Under Acceptance Criteria"
- IR 1359131, "Relay Failed Testing After Installation on Unit 3 125 Charge"
- WO 01334864, "D2 24M TS SDV Hi Level Chan Func Test & Trip Unit Cal"
- DIS 0500-32
- DIS 1300-03, "Isolation Condenser Initiation and Isolation Logic System Functional Test," Revision 21
- 12E-3506, Sheet 1, "Schematic Diagram Primary Containment Isol. System Isolation Condenser Control Logic," Revision AF
- 12E-3506, Sheet 2, "Schematic Diagram Primary Containment Isol. System Isolation Condenser Control Logic," Revision AG
- 12E-3506, Sheet 3, "Schematic Diagram Primary Containment Isol. System Isol. Condenser Control Logic," Revision AB
- M-28, "Diagram of Isolation Condenser Piping," Revision LP
- IR 1372293, "NRC SR. Resident Concern Identified"
- IR 1372182, "NRC Observation of U2 250 VDC Monthly Battery Surveillance"

#### 40A1 Performance Indicator Verification (71151)

- LER 249/2010-001-00, "Oscillation Power Range Meter Power Supply Failure During Maintenance Results in Unit 3 Automatic Reactor Scram"
- LER 249/2010-002-01, "Main Steam Isolation Valve (MSIV) Leakage Exceeds Technical Specification Allowable Limits"
- LER 249/2010-003-00, "Steam Leak Results in HPCI Inoperability"
- LER 237/2011-001-00, "Loss of Containment Cooling Service Water System due to Stop Log Installation"
- LER 249/2011-001-01, "Control Rod Block Instrumentation Failure"
- LER 237/2011-002-00, "Steam Leak Results in HPCI Inoperability"
- LER 237/2011-003-00, "MSIV Closure Times Outside of Technical Specifications Limits"
- LER 237/2011-004-00, "Personnel Error Results in Control Room Emergency Ventilation Air Conditioning System Inoperability"
- Operations Log Entries January 2011 - May 2012
- NEI 99-02, "Regulatory Assessment Performance Indicator Guidance", Revision 6
- Dresden Nuclear Power Station, Units 2 and 3 Integrated Inspection Reports 2011-002, 2011-003, 2011-004, 2011-005, and 2012-002
- EACE1250901, "HPCI 2-2301-29 Return to Condenser Valve Body Leaks"
- Adverse Condition Monitoring and Contingency Plan, "HPCI Discharge Piping Temperature Monitoring," Revision 06
- IR 1224557, "Work Request Needed to Repair EDG AMOT Valve"
- IR 1224977, "Unexpected Alarms on Unit 3 During Unit 2 EDG Surveillance Run"
- IR 1228228, "Unit 3 EDG Test Data Indicates a Potential Heat Exchanger Problem"
- IR 1231888, "Elevated Unit 3 EDG Jacket Water Temperature"
- IR 1234476, "Unit 3 EDG Jacket Water Temperatures Resolution"
- IR 1246225, "Unit 2/3 Diesel Generator Trip"
- IR 1250901, "HPCI Return to Condenser Leak From Valve Body"
- IR 1251015, "2/3 EDG Lube Oil Circulating Pump Making Abnormal Noise"
- IR 1379087, "NRC Question: Safety System Functional Failure Evaluation of HPCI Steam Leak"

#### 4OA2 Identification and Resolution of Problems (71152)

- IR 1247466, "NRC Question on Unit 2 and 3 EDG"
- EC 386530, "SSPI Fault Exposure Time Evaluation for 2/3 EDG Failure in August 2011"
- CY-DR-120-410, "DGJCW and HRSS Closed Cooling Water System Manipulations," Revision 5
- NES-MS-13.01, "Selection of Control Rod Drive Mechanisms for Preventative Maintenance During Refueling Outages," Revision 1
- IR 1296175, "U2 CRD C-12 Scram Time Adverse Trend"
- IR 1354058, "3-0305-26-55, CRD G-14, Slow Insert / Difficult to Unlatch"
- IR 1350810, "Degrading Condition of CRD D-11"
- IR 1341990, "U3 CRD 3-0305-54-39 Withdraw Stall Flow Trend"
- IR 1335916, "CRD G-14 Double Notched"
- IR 1332257, "Continued Leak on Unit 2 HCU D-11"
- IR 1299654, "High Water Alarm Adverse Trend – U3 CRD HCU H-14 Accumulator"
- IR 1323034, "U2 CRD H-6 Required 300# to Unlatch during DOS 0300-04"
- IR 1323035, "Unit 2 CRD Notch Timing Results"
- IR 1307186, "NOS WANO Assessment: Potential Continuing AFI (ER.1-2)"
- IR 1301182, "Air Leak on Scram Valve Tubing – HCU E-8"
- IR 1296160, "U2 CRD H-4 and J-10 Insert Stall Flows High – Trend"
- IR 1296175, "U2 CRD C-12 Scram Time Adverse Trend"
- IR 1290896, "Emerg In Used to Stop K-06 from Double Notching on U2"
- IR 1290039, "High CRD Stall Flow Issues per DOS 0300-04"
- IR 1289798, "CRD H-10 Fast Out"
- IR 1289662, "HCU G12 (26-47) Has a Packing leak on the 126 Valve"
- IR 1289238, "Two Leaks Identified in CRD Undervessel Area"
- IR 1286185, "CRD R-10 Slow Withdraw from 00-03"
- IR 1267547, "CRD H-08 Double Notch while Withdrawing During Exercising"
- IR 1259377, "U3 CRD Temp Hi"
- IR 1256438, "Unit 2 HCU 38-51 K13 2-0305-103 Flange Leaks"
- IR 1240540, "Leak on Valve Body Seal on 46-15 M-4 CRD HCU (East Bank)"
- IR 1232331, "OE33684 Slow Withdraw CRDS at Peach is Applicable to Dresden"
- IR 1221897, "CRD Issues Identified During Monthly Exercising"
- IR 1208109, "CRD K-10 Temperature Greater than 350 Degrees"
- IR 1202209, "Unexpected Alarm, 902-5 F-3, Rod Drive Temp Hi"
- IR 1198596, "U3 CRD Maintenance Rule Z03-03 and Z03-8 are (A)(2) At Risk"
- IR 1197402, "Unit 2 CRD R-08 Recovered; CRD Mechanism is Degraded"
- IR 1183871, "CRD F-12 is Fast Out, Required Use of Emerg In"
- IR 1180722, "CRD Will not Withdraw Past Notch Position 18"
- IR 1177111, "NOS ID – Potential Continued INPO AFI in ER.1-2"
- IR 1055672, "Temperature Trend on Unit 2 CRD"
- IR 1063847, "Trend of HCU 111 (Nitrogen Fill) Valve Deficiencies"
- IR 1086177, "High Water Alarm Trend on Unit 3 HCU Accumulator P-08"
- IR 1093637, "U-3 CRD O2 Elevated and Increasing"
- IR 1171864, "Adverse Trend Identified on Unit 3 RPIS Issues after D3R21"
- IR 1083826, "Reactivity Management Committee ID's Adverse Trend"
- IR 1073403, "OPEX Review of OE31022 – LPRM Spiking (Perry)"
- IR 1057867, "Unexpected 1/2 Scram U3 (CH A)"
- IR 1045961, "Unit 2 LPRM 48-49C Requires Capacitive Discharge Test"
- IR 1225177, "Unit 2 LPRM 16-17A Return to Bypass"
- IR 1366151, "Master U2 LPRM Quarterly Troubleshooting and Repair"



- IR 1367999, "U3 LPRM 32-57B Requires Further Troubleshooting"
- IR 1325394, "B LEFM Intermittently Fails"
- IR 1305978, "U2 New LPRM Detectors Require 3<sup>rd</sup> IV Curve After D2R22"
- IR 1305130, "Replace U2 IRM 11 UV Cable/Connectors & Install Ferrite Bead"
- IR 1300560, "New LPRM Detectors From D2R22 Require Additional IV Curves"
- IR 1289970, "Unexpected APRM Alarms"
- IR 1288603, "U2 Rod Worth Minimizer Will not Release Rod Block"
- IR 1289083, "LPRM 40-33 A on Unit 2 Spiked Hi"
- IR 1287535, "IRM Complex Troubleshooting Preliminary Results"
- IR 1277368, "D2R22LL: IRM Half Scram occurred During Reactor Shutdown"
- IR 1278744, "Follow up for IR 1277368 Drywell Lighting Causing Spike"
- IR 1260265, "NRC Resident Inspector Concern Identified"
- IR 1255423, "Unit 3 Thermal Limit Trend"
- IR 1252177, "LPRM Plateau is Flat Linning"
- IR 1223186, "U3 IRM Maintenance Rule Function Z0702-1 is (A)(2) At Risk"
- IR 1210381, "Unit 3 IRM 15 Hi and HiHi Alarms"
- IR 1200238, "Momentary Spike of IRM 15"
- IR 1182577, "IRM 15 is Spiking causing Hi and Hi Hi Alarms"
- IR 1186079, "Nucl Fuels Concern Regarding Extended Degraded TIP Operation"
- IR 1133361, "LPRM 16-33B Spiked High, Half-Scram Received"
- IR 1133365, "IRM 12 Spiked High, Channel A Half-Scram"
- IR 1139515, "NOS ID Potential for Loose Dry Tube Affecting IRM 12 Perform"
- IR 1143954, "CCF: IRM 12 Spiking Hi-Hi, 1/2 scram on U3"
- IR 1145088, "U3 IRM Spike"
- IR 1152889, "D3R21LL Reactivity Management – SRM/IRM Performance"
- IR 1175477, "Electrical Interference in Nuclear Instrumentation"
- IR 1289087, "LPRM 24-49 D On Unit 2 Spiked Hi"

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

- IR 1217178, Bay 13 Isolated Due to Both Sets of Stop Logs Installed.
- Drawing 27700-001, CCSW Subsystem 1, Jan 1, 1999

#### 4OA7 Licensee Identified Violations

- LER 05000237, 05000249/2011-001-00; Loss of Containment Cooling Service Water Due to Stop Log Installation

## LIST OF ACRONYMS USED

AC	Alternating Current
ADAMS	Agencywide Document Access Management System
ASME	American Society of Mechanical Engineers
CAP	Corrective Action Program
CCSW	Containment Cooling Service Water
CFR	Code of Federal Regulations
CPAP	Continuous Positive Airway Pressure
CW	Circulating Water
DC	Direct Current
DRP	Division of Reactor Projects
EC	Engineering Change
ECCS	Emergency Core Cooling System
EDG	Emergency Diesel Generator
HPCI	High pressure Coolant Injection
IC	Isolation Condenser
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Inspection Report
IR	Issue Report
JPM	Job performance Measure
LER	Licensee Event Report
LLC	Limited Liability Corporation
LORT	Licensed Operator Requalification Training
LPCI	Low Pressure Coolant Injection
MOV	Motor-Operated Valve
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	U.S. Nuclear Regulatory Commission
OOS	Out of Service
PARS	Publicly Available Records System
PI	Performance Indicator
PM	Planned or Preventative Maintenance
SDP	Significance Determination Process
SOE	Sequence of Events
SRA	Senior Reactor Analyst
SSC	Systems, Structures, and Components
TPCS	Transient Without the Power Conversion System
TS	Technical Specification
TSO	Transmission System Operator
UFSAR	Updated Final Safety Analysis Report
WO	Work Order

M. Pacilio

-2-

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Sincerely,

**/RA/**

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

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

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Letter to M. Pacilio from J. Cameron dated July 25, 2012.

SUBJECT: DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3  
INTEGRATED INSPSECTION REPORT 05000237/2012003;  
05000249/2012003

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