



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION III  
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LISLE, IL 60532-4352

May 23, 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  
PROBLEM IDENTIFICATION AND RESOLUTION INSPECTION  
REPORT 05000237/2012007; 05000249/2012007**

Dear Mr. Pacilio:

On April 20, 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 results of this inspection, which were discussed on April 26, 2012, with Mr. D. Czufin, and other members of your staff.

This inspection was an examination of activities conducted under your license as they relate to problem identification and resolution and compliance with the Commission's rules and regulations and the conditions of your license. Within these areas, the inspection involved examination of selected procedures and representative records, observations of activities, and interviews with personnel.

Based on the inspection sample, the inspection team concluded that the implementation of the corrective action program and overall performance related to identifying, evaluating, and resolving problems at Dresden was adequate. Licensee identified problems were entered into the corrective action program at a low threshold. Problems were generally prioritized and evaluated commensurate with the safety significance of the problems. Corrective actions were generally implemented in a timely manner commensurate with their importance to safety and addressed the identified causes of problems. Lessons learned from industry operating experience were effectively reviewed and applied when appropriate. Audits and self-assessments were effectively used to identified problems and appropriate actions.

Based on the results of this inspection, one NRC-identified finding of very low safety significance was identified. The finding involved a violation of NRC requirements. However, because of the very low safety significance, and because the issue was entered into your corrective action program, the NRC is treating the issue as a Non-Cited Violation (NCV) in accordance with Section 2.3.2 of the NRC Enforcement Policy.

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

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

Sincerely,

***/RA by John E. Rutkowski for/***

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 05000237/2012007; 05000249/2012007  
w/Attachment: Supplemental Information

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

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

Report No: 05000237/2012007; 05000249/2012007

Licensee: Exelon Generation Company, LLC

Facility: Dresden Nuclear Power Station, Units 2 and 3

Location: Morris, IL

Dates: April 2 through 20, 2012

Inspectors: R. Orlikowski, Project Engineer (Team Lead)  
Z. Falevits, Senior Reactor Inspector  
V. Meghani, Reactor Inspector  
T. Briley, Resident Inspector (acting)  
H. Freeman, Senior Reactor Inspector

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

Enclosure

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## SUMMARY OF FINDINGS

Inspection Report (IR) 05000237/2012007; 05000249/2012007; [04/02/2012 – 04/20/2012]; Dresden Nuclear Power Station, Units 2 & 3; Problem Identification and Resolution (PI&R).

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

### **Problem Identification and Resolution**

Based on the inspection sample, the inspection team concluded that the implementation of the corrective action program and overall performance related to identifying, evaluating, and resolving problems at Dresden was adequate. Licensee identified problems were entered into the corrective action program at a low threshold. Problems were generally prioritized and evaluated commensurate with the safety significance of the problems. Corrective actions were generally implemented in a timely manner commensurate with their importance to safety and addressed the identified causes of problems. Lessons learned from industry operating experience were effectively reviewed and applied when appropriate. Audits and self-assessments were effectively used to identify problems and appropriate actions. On the basis of interviews conducted during the inspection, workers at the site expressed freedom to enter safety concerns into the Corrective Action Program.

There was one Green finding identified by the team during the inspection. The finding related to identification and removal of corrosion from the 2/3 Diesel Fire Pump battery terminals and was similar to a finding identified during a 2011 Fire Protection inspection at Dresden. The finding had a cross-cutting aspect in the area of PI&R.

#### **A. NRC-Identified and Self-Revealed Findings**

##### **Cornerstone: Mitigating Systems**

- **Green**. The inspectors identified a finding of very low safety significance (Green) and associated NCV of Technical Specifications for the licensee's failure to adequately implement the diesel fire pump (DFP) battery surveillance procedure. Specifically, the licensee failed to identify and remove corrosion on the DFP battery terminals, which was contrary to the surveillance procedure that implemented the fire protection program. A similar NCV was previously cited by the NRC on October 17, 2011, and documented in inspection report 05000237/2011008; 05000249/2011008, "Failure to Identify Diesel Fire Pump Battery Terminal Corrosion." The licensee entered the issue into their corrective action program and planned to clean the battery terminals. In addition, the licensee planned to replace the 2/3 DFP batteries in July 2012.

The inspectors determined that the finding was more than minor because, if left uncorrected, the presence of corrosion in conjunction with identified voltage issues for two battery cells could affect the reliability of the diesel fire pump. This finding was of very low safety significance because the DFP had started as part of a recent routine surveillance. This finding has a cross-cutting aspect in the area of PI&R because the licensee failed to identify the battery corrosion accurately and in a timely manner commensurate with their safety significance. [IMC 0310 P.1(a)] (Section 40A2.1.B(3))

**B. Licensee-Identified Violations**

No violations were identified.

## REPORT DETAILS

### 4. OTHER ACTIVITIES

#### 4OA2 Problem Identification and Resolution (71152B)

The activities documented in Sections .1 through .4 constituted one biennial sample of problem identification and resolution as defined in Inspection Procedure (IP) 71152.

#### .1 Assessment of the Corrective Action Program Effectiveness

##### a. Inspection Scope

The inspector reviewed the licensee's Corrective Action Program (CAP) implementing procedures and attended CA program meetings to assess the implementation of the CAP by site personnel.

The inspectors reviewed risk and safety significant issues in the licensee's CAP since the last NRC Problem Identification and Resolution (PI&R) inspection in March 2010. The selection of issues ensured an adequate review of issues across NRC cornerstones. The inspectors used issues identified through NRC generic communications, department self assessment, licensee audits, operating experience reports, and NRC documented findings as sources to select issues. Additionally, the inspectors reviewed issue reports generated as a result of facility personnel's performance in daily plant activities. In addition, the inspectors reviewed Issue Reports (IRs) and a selection of completed investigations from the licensee's various investigation methods, which included root cause, apparent cause, equipment apparent cause, common cause, and quick human performance investigations.

The inspectors selected the Low Pressure Coolant Injection (LPCI) system for a detailed review. The inspectors' review was to determine whether the licensee staff were properly monitoring and evaluating the performance of the system through effective implementation of station monitoring programs. A 5 year review was performed to assess the licensee staff's efforts in monitoring for system degradation due to aging aspects. The inspectors also performed partial system walkdowns of the LPCI system.

During the reviews, the inspectors determined whether the licensee staff's actions were in compliance with the facility's corrective action program and 10 CFR 50, Appendix B, requirements. Specifically, the inspectors determined if licensee personnel were identifying plant issues at the proper threshold, entering the plant issues into the station's CAP in a timely manner, and assigning the appropriate prioritization for resolution of the issues. The inspectors also determined whether the licensee staff assigned the appropriate investigation method to ensure the proper determination of root, apparent, and contributing causes. The inspectors also evaluated the timeliness and effectiveness of corrective actions for selected issue reports, completed investigations, and NRC findings, including Non-Cited Violations (NCVs).

b. Assessment

(1) Effectiveness of Problem Identification

Issues were generally being identified at a low threshold, evaluated appropriately, and corrected in the CAP. Workers were familiar with the CAP and felt comfortable raising concerns. This was evident by the large number of CAP items generated annually; which were reasonably distributed across the various departments. A shared, computerized database was used for creating individual reports and for subsequent management of the processes of issue evaluation and response. These processes included determining the issue's significance, addressing such matters as regulatory compliance and reporting, and assigning any actions deemed necessary or appropriate.

The inspectors determined that the station was generally effective at trending low level issues to prevent larger issues from developing. The licensee also used the CAP to document instances where previous CAs were ineffective or were inappropriately closed.

Observations

Nuclear Oversight

The inspectors determined that Nuclear Oversight (NOS) personnel were identifying plant issues at the proper threshold, entering the plant issues into the station's CAP in a timely manner. However, the licensee extended a number of times the originally assigned due dates for resolution of several issues. For example, on January 10, 2012, NOS issued Escalation letter #12-01 citing Dresden's Electrical Maintenance Group for ineffective implementation of the In-Storage Maintenance (ISM) process. The Electrical Maintenance Group initiated followup corrective actions to address the NOS findings. Also, Common Cause Analysis (CCA) 01254964 was initiated by NOS on February 24, 2012, to document an adverse trend in Preventive Maintenance (PM) not being properly identified resulting in equipment reliability challenges.

Findings

No findings were identified.

(2) Effectiveness of Prioritization and Evaluation of Issues

The inspectors concluded that the station was generally effective at prioritizing issues commensurate with their safety significance. The inspectors observed that the majority of issues identified were of low-level and were either closed to trend, closed to actions taken, or characterized at a level appropriate for a condition evaluation. Issues were being appropriately screened by both the Station Oversight Committee (SOC) and Management Review Committee (MRC). There were no items in the operations, engineering, or maintenance backlogs that were risk-significant, individually or collectively. The inspectors did identify deficiencies in Dresden Nuclear Power Station's prioritization and evaluation of several issues.



## Observations

### Preventive Maintenance Deficiencies Related to Lack of Periodic Replacement of Aging Critical HFA and Agastat Relays

The inspectors reviewed corrective actions generated to address critical R20 type HFA relays and other relay PM deficiencies as documented in numerous IRs, Equipment Apparent Cause Evaluations (EACEs) and CCAs. The team noted that numerous IRs have been issued that documented problems with ensuring that all plant installed critical safety-related (SR) HFA and other manufacturer relays have assigned PM tasks to periodically replace the critical relays. This periodic replacement was required by the licensee's Predictive Centered Maintenance (PCM) Template and applicable vendor recommendations.

The inspectors reviewed the following cause evaluations performed to identify the apparent and contributing cause(s) of component failures associated with installed HFA and Agastat relays (some classified as critical, normally energized).

- EACE 1242095-03; GE [General Electric] HFA Relay Failure Results in the Inability to Start the 3A RFP [Reactor Feed Pump];
- EACE 01076914-03; 2A RWCU [Reactor Water Cleanup] Pump Trip - U2; and
- EACE1136770-02; 3A Core Spray Pump Fails to Start within Acceptance Criteria. (Due to failure of the electronic Agastat (Tyco ETR and FTR series) pump start relay and resistive control switch contacts).

The inspectors also reviewed CCA 01254964, initiated by NOS on August 24, 2011, to document an adverse trend in PM not being properly identified resulting in equipment reliability challenges. NOS recommended a CCA be performed for Dresden EACEs completed between August 2009 and August 2011. The CCA concluded that relay failures evaluated in the EACEs reviewed were one of two top contributors of common failure issues with 13 out of 69 items or 19 percent of total failures.

The following are examples of IRs issued to document equipment problems caused by relay failures due to high relay contact resistance:

- IR 924681, LPCI 2-1501-38A MOV [Motor Operated Valve] would not close;
- IR 973104, 3A RWCU Pump Tripped; and
- IR 1026125, Bus 29 Cubicle 3B Breaker Failed to Close following Electrical Maintenance Department (EMD) PM.

The following are examples of IRs issued to document equipment problems caused by relay failures due to deficient PMs:

- IR 1076914, 2A RWCU Recirc. Pump Trip-Unit 2 (HFA relay had bad coil);
- IR 1242095, No Standby Light for 3A RFP When in Standby; and
- IR 1123492, HCCT 1A Pump Relay Appears to be Defective.

The following are examples of IRs issued to document equipment problems caused by deficient PMs:

- IR 1079909, Loss of U3 ESS Normal AC/DC;
- IR 1218276, Unexpected U3 Half SCRAM Due to 3B RBS Bus Trip; and
- IR 1226454, U2 SBO UPS Inverter Failed.

IR 1254964-13 was generated on September 8, 2011, to document deficient relay PMs on System 73 (480VAC Transformer/SWGR) and on System 78 (480V MCC). The licensee's review identified that 10 year replacement was not established as required by the PCM Template for relays classified as SR critical 3 category relays and that no PMs were performed on under voltage relays located at Bus 38. IR 01329930 and SR 76377 were initiated on February 24, 2012, to address these PM deficiencies.

The inspectors noted that NRC finding FIN 05000237/2011004-03; 05000249/2011004-03, "Inadequate Relay Preventive Maintenance," was issued for inadequate PMs on the failed HFA relay. The failure of the HFA relay resulted in the inability to start the 3A reactor feed pump.

In addition, IR 1136770 was issued on November 11, 2010, to document that, "3A Core Spray Pump Fails to Start within Acceptance Criteria." The failure was attributed to failure of the electronic Agastat (now called Tyco ETR and FTR relay series) pump start relay and resistive control switch contacts. EACE 1136770-02 identified the most likely cause for the relay failure was the lack of PM to periodically replace the Agastat relay. Manufacturer qualified life of this relay is 10 years, and the manufacturer recommends replacement every 10 years based on Institute of Electrical and Electronic Engineers (IEEE) qualifications. Also, the most likely identified cause for the high resistance of the switch contact was lack of PM to periodically burnish the contacts or replace the switch. The Licensee's extent of cause review stated that there are other Agastat electronic time delay relays (TDRs) installed at Dresden and that a CA was created to review and address this issue. An action for Plant Engineering Group Supervisors was recommended to assign each system manager actions to review their systems for TYCO ETR and FTR series TDRs and issue a Service Request to create PMs for replacement of the critical relays on the appropriate time frequency. This CAP item had been extended four times since January 2011 and the last specified due date was June 29, 2012.

The inspectors were informed that the licensee planned to review the following systems, to identify category 3 HFA and Agastat relays and determine which relays needed periodic replacements: Heating Ventilation and Air-conditioning (HVAC), Station Blackout (SBO), and Standby Gas Treatment (SBGT). A number of relay replacement due dates had been extended for replacement of the relays.

The inspectors noted that a number of Action Tracking Items (ATIs) were initiated to review all relays within U2 and U3 systems logic to determine which relays were critical and if they have periodic replacement PMs. For example, ATI 1076914-19 was issued to review all critical normally energized relays in LPCI logic. The review identified that not all critical relays had the required periodic replacement PMs assigned. The licensee identified that six critical relays in each Unit were not correctly classified as critical and therefore did not have periodic replacements PMs. SR 70086 was initiated to generate the required PMs and to replace these relays during the next few outages in Units 2 and 3. Other ATIs were generated for other systems being evaluated. This effort had been going on since about 2002.

In response to the inspector's question, the licensee performed an initial review of the standby gas treatment system and identified that this system had 30 HFA relays of which eight were normally energized and are believed to be greater than 10 years old. A licensee review of work history showed that these eight energized relays have not been replaced in the past and no documentation could be located by the licensee to indicate that these relays had failed in the past.

The inspectors questioned the licensee regarding the operability of plant installed critical HFA, Agastat and other types of important to safety relays that were past their qualified life of 10 years. The licensee stated that these relays are periodically tested by performance of Logic Functional Surveillance Testing at which time it is checked that the relays pick up and drop out as required.

The inspectors noted that there was no owner responsible for coordinating the critical relays, electrolytic capacitors, and other important to safety components review effort to ensure that all components with deficient PM replacement periods have been identified and addressed (implemented in the field). This is required to comply with Exelon's PCM template and vendor requirements.

#### Operator Sensitivity to Spurious or Repeat Control Room Alarms

The team identified a potential decline in operations sensitivity to spurious or repeat control alarms and dispatching non-licensed operators in a timely manner. The team reviewed licensee corrective actions to NRC finding 05000237/2011002-07; 05000249/2011002-07, which was a finding of very low safety significance (Green) for bypassing the 3B Circulating Water Pump lower bearing temperature computer alarm without first verifying the instrument reading. The 3B Circulating Water Pump lower bearing subsequently failed due to low oil level.

An EACE for the 3B Circulating Water Pump lower bearing failure, documented in IR 1159133, "Secured 3B Pump due to Oil Loss," developed three lessons learned: 1) When alarms are received that have been spurious in the past do not assume the current alarm is also spurious. 2) During times when control room activities require focused attention, do not delay dispatching operators to the field any longer than necessary to check off-normal equipment conditions. 3) When receiving a turnover that includes information regarding possible equipment conditions, do not delay follow-up including dispatching operators to perform field checks.

One of the corrective actions as a result of NRC finding 2011002-07 included distributing a communication to all operators with the 3B Circulating Water Pump lower bearing failure lessons learned. The team questioned the lasting effects of the lessons learned communicated to the operators, in particular having a high sensitivity to alarms coming in that may or may not be spurious and the timeliness of dispatching non-licensed operators to the field. The team noted several examples of operators not exhibiting the expected behaviors with regard to alarm response. Most recently, in February 2012 the licensee failed to respond in a timely manner to a computer alarm warning that the average power range monitors (APRM) gain adjustment factor settings were not within limits during a Unit 2 downpower resulting in APRM 4, 5, and 6 being inoperable simultaneously. The Nuclear Station Operator, the Unit Supervisor, the Reactivity Manager, and the Qualified Nuclear Engineer were all aware that the alarm had sounded but no action was taken to verify the extent of or correct the problem until after the next

shift took over. This issue was documented in NRC Integrated Inspection Report 2012002 as FIN 05000237/2012002-09.

The team also noted that the Safety Parameter Display System (SPDS) computer alarm indicator was constantly flashing for Unit 2 in the main control room. When questioned, one of the unit supervisors did not know the purpose of the alarm or why it was flashing, indicating that it had always been there. Additional operator interviews indicated that the SPDS computer alarm was flashing because a computer point was in a constant alarm state. This issue was determined to be minor because a separate annunciator panel would provide a horn and light for any new computer alarm that may occur.

Future licensee corrective actions to the potential decline in operations sensitivity to spurious or repeat control alarms and dispatching non-licensed operators in a timely manner include, but are not limited to, incorporating enhanced focus on alarm response standards and expectations during operator training.

#### Review of Issue Reports Associated With Degraded Grease Identified In Motor Operator Valves and Condition Reports Associated With Degraded Magnesium Rotors

The inspectors found that, for the IRs reviewed, the licensee did not consistently evaluate the degraded condition or the operability of the component. Some of the operability evaluations provided objective evidence why a potentially degraded condition was deemed operable while other evaluations merely indicated that the component passes its last surveillance test and was therefore operable.

For example, IR 01143050, which documented an evaluation of degraded grease (Grade 4) in MOV 3-2301-5. It provided objective evidence that while the color of the grease had turned dark brown with a hint of purple, the grease became soft and slippery when pressed between the fingers, there was no evidence of wear particles or burnt smell present, and the grease properly covered the gears. Based upon the appearance of the grease and diagnostic testing performed in refueling outage D3R21, the evaluation concluded that the motor operator would be operable for another operating cycle. The team concluded that this evaluation was appropriate for the identified condition.

However, IR 01279882 documented an evaluation of degraded grease (also Grade 4) in MOV 2-0205-24. The issue report stated that “during performance of the diagnostic test . . . the as-found stem lube was graded as a 4. The as-found thrust was lower than expected due to the poor stem lube.” This indicates a degraded condition of the performance of the valve operator. The evaluation stated that MOV 2-0205-24 passed all surveillances, including quarterly valve timing and remained operable. The team concluded that this evaluation was not based upon objective evidence to predict future operability.

Additionally, IR 01289045 documented minor galvanic corrosion at the interface of the magnesium end ring and end lamination of the rotor in MOV 2-1201-1. The operable basis stated that “the 2-1201-1 valve is required to close within 45 seconds to perform its active safety function, during a LOCA. This valve does not have a safety-related requirement to open. This valve was successfully stroked during D2R22.” The evaluation did not provide any reference as to whether the stroke time had changed from previous surveillance tests. Once again, the inspectors concluded that this evaluation

was not based upon objective evidence to predict future operability until the next refueling outage.

### Findings

No findings were identified.

#### (1) Effectiveness of Corrective Actions

The effectiveness of corrective actions for the items reviewed by the inspectors was generally appropriate for the identified issues. Over the 2 year period encompassed by the inspection, the inspectors identified no significant examples where problems recurred. While no significant examples were identified, the inspectors did identify an observation regarding the timeliness of work order completion related to the LPCI system. Additionally, during review of the effectiveness of licensee corrective actions to address a previously identified NRC finding documented in inspection report as NCV 2011008-02, the team identified that the actions taken by the licensee did not prevent recurrence.

### Observations

#### Untimely Completion of Assignments/Work Requests

One of the challenges identified through LPCI system health reports was the deficient maintenance work orders older than 24 months. During the review of sample issue reports, the inspectors also noted the following instances of assignments or work requests open for a long time that could all be indicative of a weakness in planning, funding, or resources. All of these examples were determined to be minor and did not rise to the level of an NRC finding.

- AR 01055863-02: The corrective action was to revise the Emergency Core Cooling System (ECCS) corner room heating calculations related to an NCV documented in 2010003 NRC inspection report. The assignment due date has been revised six times and it appears that it will be revised due to lack of resources. The original due date was May 13, 2010, and the current due date is June 30, 2012. The reasons for the delays cited were lack of funding, emerging work and other priorities.
- AR 01074868: Main control room received 903-3 panel alarm for LPCI pump overload with no pumps in operation. Work Request (WR) 337790 was generated to perform the necessary repair in June 2010. Because the alarm cleared and has not occurred again, the WR has not been completed but remains open.
- AR 01062334-02: LPCI 3-1501-38A valve moved without operator input – a complex trouble shooting plan was developed with recommendation to perform specific steps in June 2010 during the quarterly ISTs. No action has been taken yet and the problem has not recurred.

## Findings

### Failure to Identify and Remove Unit 2/3 Diesel Fire Pump Battery Terminal Corrosion

Introduction: The inspectors identified a finding of very low safety significance (Green) and associated NCV of Technical Specifications for the licensee's failure to implement the diesel fire pump battery surveillance procedure. Specifically, the licensee failed to identify visual corrosion on the Unit 2/3 diesel fire pump (DFP) battery terminals. This was contrary to the DFP and security diesel starting batteries surveillance and procedure requirements.

Description: During review of the licensee's corrective actions to address issues identified by the NRC and documented as an NCV, the inspectors reviewed completed CA Assignment #10 of AR 01283859, dated January 20, 2012, which was performed to address NCV 05000237/2011008-02; 05000249/2011008-02, "Failure to Identify Diesel Fire Pump Battery Terminal Corrosion." Specifically, on April 3, 2012, the inspectors performed a field walk down of the Unit 2/3 DFP battery and identified corrosion on at least six battery cell terminals and inter-cell electrical connections (i.e. #2, 4, 11, 23, 25 & 29) of the Unit 2/3 diesel fire pump battery. The inspectors were aware that terminal post corrosion was previously identified on these battery terminals and is a common problem for aging batteries. Corroded inter-cell connections and post connectors can fail when exposed to the design basis discharge current.

IR 0135220, dated April 10, 2012, documented and evaluated the corrosion on the 2/3 DFP battery terminals identified by the NRC, and that a loose connection on the positive post of cell #21 was identified by the licensee during this followup inspection of the battery terminals. A work request was generated to tighten the loose connection. The inspectors were also informed that the previously identified voltage issues on two of the battery cells would be corrected when the batteries are scheduled to be replaced in July 2012.

The inspectors noted that the DFP monthly surveillance was last performed on March 21, 2012, and the last quarterly surveillance was performed on February 22, 2012, under work order (WO) 01438993-01, "D2/3 QTR TSTR [Technical Specification Technical Requirements] Diesel Fire PP [pump] Batt. Surv." and Procedure DES 8300-13, "Unit 1 and 2/3 Diesel Fire Pump and Security Diesel Starting Batteries Surveillance and Manual Procedure," Revision 18. Step I.15.c of Procedure DES 8300-13 required that the battery be inspected for signs of corrosion and be cleaned as required. The inspectors reviewed the completed work order package and determined that although corrosion was present, step I.15.c had been marked as having been completed with no deficiencies noted.

The inspectors noted that as part of licensee's corrective action to address the finding in NCV 05000237/2011008-02; 05000249/2011008-02, on November 30, 2011, the licensee thoroughly cleaned the battery terminals and removed the existing corrosion using WO 1476504-01. An electrical shop briefing was held and maintenance procedure DES-8300-13, was revised to state, "if corrosion is found on battery post and cannot be cleaned due to inaccessibility notify Supervisor and document in IR." However, during interviews of maintenance personnel, the inspectors noted that the EMD technicians who performed the battery surveillances had not yet received sufficient training on how to recognize the presence of corrosion. The formal training had been scheduled for later

this year. The inspectors also noted that the maintenance procedure was not revised to include specific guidance on how to identify different types of corrosion (i.e. white, brown, or green in color).

Based on the amount of corrosion identified by the inspectors during this inspection, and interviews with electrical personnel, the inspectors concluded that maintenance personnel had not properly completed Step I.15.c of Procedure DES 8300-13 because they failed to recognize the existing corrosion.

On April 10, 2012, the licensee initiated IR 01352200, "2/3 Diesel Fire Pump Battery Corrosion," to evaluate the condition of the cell terminals on the battery. The licensee subsequently informed the inspectors that the batteries are scheduled to be replaced in July 2012.

Analysis: The inspectors determined that the licensee's failure to implement the DFP battery surveillance procedure was contrary to Technical Specifications and was a performance deficiency. Specifically, the licensee's failure to identify corrosion on the diesel fire pump battery terminals was contrary to surveillance procedure DES 8300-13, a surveillance procedure for implementing the fire protection program.

The inspectors determined that the finding was more than minor because, if left uncorrected, the presence of corrosion in conjunction with identified voltage issues for two battery cells could affect the reliability of the diesel fire pump. Specifically, the diesel fire pump battery surveillance procedure specified that the battery terminals were to be inspected for signs of corrosion and be cleaned as required. If left uncorrected, the presence of corrosion in conjunction with the identified voltage issues for two battery cells and the loose connection on cell #21 could affect the reliability of the diesel fire pump.

In accordance with Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," Attachment 0609.04, "Phase I - Initial Screening and Characterization of Findings," Table 3b, the inspectors determined the finding degraded the fire protection defense-in-depth strategies. Therefore, screening under IMC 0609, Appendix F, "Fire Protection Significance Determination Process," was required. The inspectors determined that the finding represented a low degradation because the diesel fire pump had successfully started as part of a routine surveillance performed during the last Quarterly Surveillance on February 22, 2012. Therefore, the inspectors determined that the finding screened as having very low safety significance (Green) in Task 1.3.1 of IMC 0609, Appendix F.

This finding has a cross-cutting aspect in the area of Problem Identification and Resolution, because the licensee failed to identify the battery corrosion accurately and in a timely manner commensurate with their safety significance. [P.1(a)]

Enforcement: Technical Specification 5.4.1.c requires, in part, that written procedures be established, implemented, and maintained covering activities related to fire protection program implementation. Procedure DES 8300-13, "Unit 1 and 2/3 Diesel Fire Pump and Security Diesel Starting Batteries Surveillance and Manual Procedure," Revision 18, was a procedure which implemented the fire protection program. Step I.15.c of Procedure DES 8300-13 required that the battery terminals be inspected for signs of corrosion and cleaned as required.

Contrary to the above, on April 3, 2012, the licensee failed to implement Procedure DES 8300-13. Specifically, the licensee had credited Step I.15.c of Procedure DES 8300-13 as having been completed on March 21, 2012, as part of the last monthly surveillance performed on the 2/3 diesel fire pump. However, the inspectors identified corrosion on the battery terminals for the 2/3 diesel fire pump on April 3, 2012, which had indicated that Step I.15.c of Procedure 8300-13 had not been properly implemented.

Because this violation was of very low safety significance and it was entered into the licensee's CAP as IR 01349878 and IR 01352200, this violation is being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy **(NCV 05000237/2012007-01; 05000249/2012007-01, Failure to Identify and Remove Diesel Fire Pump Battery Terminal Corrosion)**.

.2 Assessment of the Use of Operating Experience

a. Inspection Scope

The inspectors reviewed the licensee's implementation of the facility's Operating Experience (OE) program. Specifically, the inspectors reviewed implementing OE program procedures, attended CAP meetings to observe the use of OE information, completed evaluations of OE issues and events, and selected monthly assessments of the OE composite performance indicators. The inspectors' review was to determine whether the licensee was effectively integrating OE experience into the performance of daily activities, whether evaluations of issues were proper and conducted by qualified personnel, whether the licensee's program was sufficient to prevent future occurrences of previous industry events, and whether the licensee effectively used the information in developing departmental assessments and facility audits. The inspectors also assessed if corrective actions, as a result of OE experience, were identified and effectively and timely implemented.

b. Assessment

In general, OE was effectively used at the station. The inspectors observed that OE was discussed as part of the daily station and pre-job briefings. Industry OE was effectively disseminated across the various plant departments and no issues were identified during the inspectors' review of licensee OE evaluations. During interviews, several licensee personnel commented favorably on the use of OE in their daily activities.

Findings

No findings were identified.

.3 Assessment of Self-Assessments and Audits

a. Inspection Scope

The inspectors assessed the licensee staff's ability to identify and enter issues into the CAP, prioritize and evaluate issues, and implement effective corrective actions, through efforts from departmental assessments and audits.



b. Assessment

The inspectors concluded that self-assessments, NOS audits, and other assessments were typically effective at identifying most issues. The inspectors concluded that these audits and self-assessments were generally completed in a methodical manner by personnel knowledgeable in the subject area. Corrective actions associated with the identified issues were implemented commensurate with their safety significance.

The inspectors also observed that issues identified in self-assessments and audits were captured in the CAP. For example, the NOS organization was effective in identifying a number of issues needing management attention and utilized a low threshold placing these findings into the CAP.

Findings

No findings were identified.

.4 Assessment of Safety Conscious Work Environment

a. Inspection Scope

The inspectors assessed the licensee's safety conscious work environment through the reviews of the facility's employee concern program implementing procedures, discussions with coordinators of the employee concern program, interviews with personnel from various departments, and reviews of issue reports. The inspectors also reviewed the results from Dresden's Semi-Annual Safety Culture reviews.

b. Assessment

The inspectors determined that the plant staff were aware of the importance of having a strong SCWE and expressed a willingness to raise safety issues. No one interviewed had experienced retaliation for safety issues raised or knew of anyone who had failed to raise issues. All persons interviewed had an adequate knowledge of the CAP process. Based on these limited interviews, the inspectors concluded that there was no evidence of an unacceptable SCWE.

The inspectors determined that the Employee Concerns Program was being effectively implemented. The inspectors noted that the licensee had appropriately investigated and taken constructive actions to address potential cases of harassment and intimidation for raising issues.

Findings

No findings were identified.

4OA6 Management Meetings

.1 Exit Meeting Summary

On April 26, 2012, the inspectors presented the inspection results to Mr. D. Czufin, 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.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### Licensee

D. Czufin, Site Vice President  
S. Marik, Station Plant Manager  
D.J. Walker, CAP Coordinator  
R. Ruffin, Regulatory Assurance  
D. Anthony, NDES Manager  
J. Cady, Radiation Protection Manager  
D. Doggett, Emergency Preparedness Coordinator  
J. Fox, Design Engineer  
G. Graff, Nuclear Oversight Manager  
L. Jordan, Training Director  
B. Kapellas, Operations Director  
J. Knight, Director, Site Engineering  
M. Knott, Instrument Maintenance Manager  
D. Leggett, Regulatory Assurance Manager/Chemistry Manager  
G. Lupia, Corporate Buried Pipe Engineer  
T. Mohr, Supervisor, Engineering Programs  
P. Mankoo, Chemistry Manager  
M. McDonald, Maintenance Director  
T. Mohr, Engineering Program Manager  
P. O'Brien, Regulatory Assurance – NRC Coordinator  
D. O'Flanagan, Security Manager  
M. Otten, Operations Training Manager  
P. Quealy, Emergency Preparedness Manager  
R. Ruffin, Licensing Engineer  
J. Sipek, Work Control Director  
V. Earl, Regulatory Assurance

#### Nuclear Regulatory Commission

J. Cameron, Chief, Division of Reactor Projects, Branch 6

#### IEMA

R. Zuffa, Illinois Emergency Management Agency

**LIST OF ITEMS OPENED, CLOSED AND DISCUSSED**

Opened

05000237/2012007-01 05000249/2012007-01	NCV	Failure to Identify and Remove Diesel Fire Pump Battery Terminal Corrosion (Section 4OA2.1.b(3))
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Closed

05000237/2012007-01 05000249/2012007-01	NCV	Failure to Identify and Remove Diesel Fire Pump Battery Terminal Corrosion (Section 4OA2.1.b(3))
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## LIST OF DOCUMENTS REVIEWED

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

### Work order

- WO 01333612; U2 250 VDC [Volts Direct Current] Battery Data
- WO 01340344; LPCI 3-1501-38A Valve Moves Without Operator Input
- WO 1508993; D2/3 WK Com Review Drywell Temperatures: Perform DTS 1600-38; January 31, 2012
- WO 1512539; D2/3 WK Com Review Drywell Temperatures: Perform DTS 1600-38; February 15, 2012
- WO 1514491; D2/3 WK Com Review Drywell Temperatures: Perform DTS 1600-38; February 22, 2012
- WO 15116311; D2/3 WK Com Review Drywell Temperatures: Perform DTS 1600-38; February 29, 2012
- WO 1456377; D2/3 WK Com Review Drywell Temperatures: Perform DTS 1600-38; July 25, 2011
- WO 1454225; D2/3 WK Com Review Drywell Temperatures: Perform DTS 1600-38; July 19, 2011
- WO 1452381; D2/3 WK Com Review Drywell Temperatures: Perform DTS 1600-38; July 12, 2011
- WO 1450835; D2/3 WK Com Review Drywell Temperatures: Perform DTS 1600-38; July 6, 2011
- 01438993 01; D2/3 QTR TSTR Diesel Fire PP Batt. Surv.; 2/22/2012
- 00482141 01; D2/3 10Y PM SDG Replacement Normally De-Energized Relays; 1/26/2006
- 01176897 01; D2 24M TS [Technical Specification] Div 1 & 2 LPCI Inj ECCS Initiation Circuitry LSFT; 2/9/2011
- 01213935 01; D3 24M TS Div 1 & 2 LPCI Inj ECCS Initiation Circuitry LSFT; 5/12/2011
- 01476504 01; EM Remove Corrosion on 2/3 DFP Battery 2/3-4101; 11/30/2011
- 01494128 01; D2/3 QTR TSTR Diesel Fire PP Batt. Surv. ; 2/22/2012
- 01516543 01; D2/3 1M TSTR Diesel Fire PP Batt. Surv. ; 3/21/2012
- 01213536 01; EM D2 2Y PM Insp. Diesel Generator; 2/14/2011
- 00485003 02; D2 10Y Replacement of Normally De-Energized EDG [Emergency Diesel Generator] Relays (ASR&STR)

### Plant Procedures

- DAN 923-5 G-6; U3 LPSI/CS PP Area Temp HI; Revision 7
- LS-AA-125-1005; Coding And Analysis Manual; Revision 8
- LS-AA-125; Corrective Action Program Procedure; Revision 15
- LS-AA-120; Issue Identification And Screening Process; Revision 14
- OP-DR-103-102-1002; Strategies For Successful Transient Mitigation; Revision 9
- DGP 02-03; Reactor Scram; Revision 96
- DOA 0600-01; Transient Level Control; Revision 52

- SY-DR-101-101-F-19; PA/VA Checks And Watch Tours Imp 1 Watch Tours; Revision 1
- SY-DR-101-101-F-16; Pa Patrol; Revision 0
- SY-DR-101-101-F-18; OCA Patrol; Revision 1
- DTS 1600-38; Drywell EQ [Environmental Qualification] Temperature Monitoring (W-1)
- LS-AA-1012; Safety Culture Monitoring; Revision 2
- LS-AA-118-1002; Exelon Nuclear Midcycle Assessments; Revision 1
- LS-AA-125-1005; Coding and Analysis Manual; Revision 8
- EI-AA-101; Employee Concerns Program; Revision 10
- EI-AA-101-1001; Employee Concerns Program Process; Revision 11
- DOP 0600-06; Feedwater Regulating Valve (FWRV) Operations; Revision 43
- NO-AA-104-1006; Nuclear Oversight Trending and Analysis
- LS-AA-125-1001; Root Cause Analysis Manual
- DES 8300-13; Unit 1 and 2/3 Diesel Fire Pump and Security Diesel Starting Batteries Surveillance and Maintenance Procedure; Revision 17 and 18
- MA-AA-716-210; Performance Centered Maintenance (PCM) Process; Rev. 13
- DES 0500-02; HFA Relay Electrical Maintenance Inspection; Rev. 16
- DES 6600-08; Diesel Generator Electrical Maintenance Surveillance Inspection; Rev. 24
- NO-AA-300-1001; Nuclear Oversight Independent Inspection Plan; Rev. 5

#### Corrective Action Program Documents Reviewed

- IR 1159133; Secured 3B Circ Water Pump Due To Oil Loss
- IR 1285804; FME: Boroscope Inspections In Drywell Spray Header
- CCA 1069524; Recent NOS RP [Radiation Protection] Elevation Letters in Exelon Fleet
- CCA 1074456; EP Issues that have occurred at Dresden during 2009 and 2010
- CCA 1080695; Determine if there is a common cause for the number of missed opportunities for IR generation
- CCA 1104834; 2010 Mid-year Contaminations
- CCA 1121801; Potential Trend in Poor Quality CAP Action Closures in Passport
- CCA 1123481; Radiation Protection Records Retention
- CCA 1242735; NRC Findings in the Human Performance cross-cutting aspect of Preventative Work Practices
- CCA 1214597; Striving for Excellence in Dresden's Self-Assessment and Benchmarking Programs
- CCA 1190413; CCA for D3R21 FME Issues
- ACE 1173059; Ineffective Corrective Action Identified In CCA 1004596-02"
- ACE 1098874; EOC CRC Issue Identified In The 2010 Ops Tr Comp Self Assess
- IR 1011552; U3 24/48 Vdc Battery Chargers Equalize Charge Timing Out Early
- IR 1012737; Ops Review Of OE 30303
- IR 1014121; Pump Bearings Possibly Bad
- IR 1018434; Minor Packing Leakage Noted By NRC Inspector (3-1199-003)
- IR 1019600; A FDST Leak In RW Tank Farm
- IR 1022863; No Dosimeter Per Requirement - Crew 5 Clock Reset
- IR 1023547; Valve Difficult To Operate
- IR 1028575; The D/G Pre-Start Checks AC Could Use To Be More Descript
- IR 1083826; Reactivity Management Committee Id's Adverse Trend
- IR 1085446; Operations Exceeds Dose Goal For Week Of 6/21/10
- IR 1130021; D3r21II: Fuel Pool Level Control During Outages
- IR 1158372; U3 125vdc SBO Battery Voltage Low
- IR 1179146; U3 HPCI Room Cooler Leak
- IR 1185543; Rising Trend in Torus Water Level.

- IR 1198526; Procedure Conflict With Clearance And Tagging Program
- IR 1211965; Incorrect Fuse Types At Bus 23 And Bus 24
- IR 1220966; 2011 Fire Protection FASA
- IR 1250526; 3b EDG Starting Air Compressor Red Running Light Now Lit
- IR 1261942; Fire Protection-Transient Combustible Trend
- IR 1294568; 11-26-11 Partial HPCI Venting Results
- IR 1308477; Unexpected Half Scram On Unit 2 - Will Not Reset
- IR 1309843; Hot Shutdown Procedure-Path D U3 DSSP 0100-D Revision Needed
- IR 1312934; Initiate Reactivity Management CCA
- IR 1323079; Bushing On Stem Hitting Gland Follower Nut
- IR 1326487; Fire Protection-Fire Marshal Tour
- IR 1076721; RP OpEx: Oe31278 Resin Spill During Sluice Of Resin
- IR 1077085; RP OpEx: Monitor Shipped Without Proper Labeling
- IR 1079690; RP OpEx: Review Alert Declared Halon Actuation EDG Rm
- IR 1088400; Source Not Identified During Semi-Annual Inventory
- IR 1104862; Exposure Trend IR Week Of 08/16/2010
- IR 1133945; D3r21 LL: Drywell Work Stopped - Unexpected Rad Conditions
- IR 1136413; FME Dropped Into U3 'C' Moisture Separator Drain Line
- IR 1180106; PCE (Level 1) In Tb Bldg
- IR 1224796; D3r21 RP Air Sampling Shortfalls
- IR 1273399; Carpenter Receives ED [Electronic Dosimeter] Alarm In High Rad Area
- IR 1280006; D2R22 LL: Poor Radworker Exit Practice
- IR 1293048; Water Found In Mausoleum
- IR 1302214; Dresden Receives Nov From Utah DRC
- IR 1305157; Leak On HPCI Inlet Drain Pot Disc To Condenser
- IR 1305904; ALARA Suggestion
- IR 1320503; Expanded Scope Discovered At Execution
- IR 1318975; Increased Dose Rates On Unit 2 Reactor Building Sample Panel
- IR 01070607; NRC CDBI: LPCI and CS Pump Seals Should be Safety Related
- IR 00967008; 2A LPCI HX Degraded Thermal Performance
- IR 776598-08; Root Cause Report, 3B LPCI HX Inspection Results
- IR 01149933; NOS ID Concern With D3R21 LPCI Relay Replacement Decision
- IR 01144087; LPCI Logic Replacement – Scope Deletion Concerns
- IR 00924681-03; EACE Aux Contact LPCI 2-1501-38A MOV
- IR 00630090; 3C LPCI PP MTR Upper Oil Reservoir Cooling Lines Leaking Oil
- IR 01235623-04; ACE, Unit 3 Isolation Valves for LPCI Suction Pressure Gages Left in Closed Position
- IR 01055863; Add'l Proof Needed to Support Worst Case was Evaluated
- IR 01060243; Additional Information Regarding IR 01055863
- IR 01042748; Non-Conservative Heat Load Used in area Temp Calculation
- IR 00883207; Non-Conservative Analytical Model Used for EQ Temps
- IR 01058543; Gothic Computer Code Error May affect Station Calcs
- IR 01245728; FP Triennial 2011; Wooden Pallet without Permit
- IR 01258369; NRC Identify Oil Rag Roll in Cable Tunnel
- IR 01258376; HSK: NRC Identifies Cart and Tool Bag Left in U3
- IR 01263681; 2011 Triennial Fire Inspection: Combustible Material in Area
- IR 01258254; FP Triennial 2011, Transient Combustible Trend
- IR 01251979; NOS ID: Potentially Unapproved TCCP
- IR 01254925; NOS ID-MR90 TCC Removed W/O Appropriate Task Documentation
- IR 01258766; NOS ID Major Revision to a Calculation Was Not Performed

- IR 01258325; NOS ID: Errors in LEFM Pipe Stress Calc
- IR 01254334; NOS ID PCRA Not Fully Completed
- IR 01144166; NOSA-DRE-11-05 Engineering Design Control
- IR 01145197; Steam Leak on HPCI Turbine During High Pressure HPCI Run
- IR 01063141; U2 250 VDC Battery Data
- IR 01082247; CCP: High Temperature Condition on MPTR2
- IR 01095233; 2B EHC Pump Failed During Pump Start
- IR 01109735; Handwheel Fell Off During Operation of the Valve
- IR 01109938; U2 Drywell O2 Analyzer Flow LO
- IR 01179146; U3 HPCI Room Cooler Leak
- IR 01183798; U1 Diesel fire Pump Inoperable
- IR 01233432; 2A and 2C Reactor Building Floor Sump Breaker Trip
- IR 01278969; Tech Spec Violation – IOOT
- IR 01279774; Tech Spec Violation – IOOT
- IR 01056770; Old Style Fuses Found Installed for 3B LPCI PP close Fuses
- IR 01057272; Leak on Union for CLG WTR to 3B LPCI PP DTP 09 Leak
- IR 01062334; LPCI 3-1501-38A Valve Moves Without Operator Input
- IR 01063387; Rx Bldg Crane Will not Go High Enough to Get Cask to Floor
- IR 01067616; Rx Building Crane Goes Too High in Restricted Mode
- IR 01074868; 903-3 Panel Alarm E-7 (LPCI PP Overload)
- IR 01081500; LPCI Pump Running Alarm will Not Reset
- IR 01082537; U3 LPCI / CS East Corner Room Sump Pumps Will Not Turn Off
- IR 01083708; U3 East LPCI corner Room Temp HI
- IR 01114682; Unexpected alarm U3 LPCI / CS PP Area Temp HI
- IR 01114846; DAN 923-5 G-6 U3 LPCI/CS PP Area Temp HI Requires EQ Review
- IR 01217433; OPEX OE33048 Review
- IR 01218187; Discovered Four Leaks in U2 LP Heater Bay
- IR 1250901; HPCI Return To Condenser Leak From Valve Body
- IR 1159133; Secured 3 Circ Water Pump Due To Oil Loss
- IR 1219414; Receipt Of NRC Integrated Inspection Report 2011-002
- IR 1069168; MOC 3-1301-01 EQ Life Affected By High DW [Drywell] Temperature
- IR 1064681; NRC Resident – Question On U3 DW Ambient Temperature
- IR 1129460; Unit 2 DW Analyzer Low Flow Alarm
- IR 1109938; U2 Drywell O2 Analyzer Flow Lo
- IR 1072010; Various Payroll Problems Causing Morale/Trust Issue
- IR 1075534; Unloader Valve Failed Causing 3c IAC Problems
- IR 1054406; Trip Of 2b IAC – Repeat Issue
- IR 0866445; Inadvertent Secondary Containment Isolation
- IR 1092266; Operations Crew 3 Clock Reset
- IR 1083663; NOS Id: SBO Diesel Bldg Material Condition Deficiencies
- IR 1053230; Ops Team 1 Event Clock Reset
- IR 1080181; Ops Crew 1 Clock Reset
- IR 0980210; NOS Id NLOS Not Using Human Performance Tools
- IR 1111727; Trend On Operations Low Level IRs To Be Pulled
- IR 1087765; Crew 4 Clock Reset – Untimely Response To Cribhouse Level
- IR 1190251; Security – Discrepancy In Record
- IR 1126537; Security – Negative Trend In The Pa Security Equipment PI
- IR 1254515; NOS Id: Adverse Trend In Security Supervisor Not Posted
- IR 1255317; NOS Id Security Equipment Issues Adverse Trend / Low Priority
- IR 1173127; NOS Id ARMA Weaknesses In Security Drill Documentation



- IR 1181584; NOS Id: Security Elevation
- IR 1155994; NOS Id: Security Adverse Trend In HU Events
- IR 1250434; Security – Adverse Trend In Security Zone 21 OOS
- IR 1113531; Security – Badging Data Not In PADS
- IR 1118364; Security – Access Request Not Completed
- IR 1124409; Security – ACP Active Vehicle Barrier Has Missing Bolts
- IR 1128332; Security – Secondary Radios Not Operable
- IR 1132295; Security – Truck Exit Lane Jersey Barrier Hit By Semi
- IR 1143234; Security – Firearms Detector #2 Failed Weekly Test
- IR 1161512; Security – Truck Exit Jersey Barrier Bumped By Semi
- IR 1175624; Security – SY-AA-101-112-1002 Rev 1 Implementation
- IR 1176031; Security – SY-AA-102-204 Issue
- IR 1176112; Security – Enhancement Opportunities Identified By NRC
- IR 1191585; Security – STI 12-12A FOID Failed Weekly Test
- IR 1192979; Security – Loss Of Video Capture System
- IR 1213201; Security – SAS Radio Console LLEA Button Hard To Transmit
- IR 1199187; Security – SY-AA-101-137 Rev 8 Implementation
- IR 1225050; Security – STI 14 Failed Test
- IR 1116133; Security 2011 Tracking AR
- IR 1198576; NOS Id: Security Rated Yellow
- IR 1086941; Security – FASA Deficiency Identified
- IR 1072784; Security – Security Door Found Unlocked, But Alarmable
- IR 1047249; Security Officer Failed Second Attempt Qualification
- IR 1109626; Security – Loss Of Primary Radio System
- IR 1053347; Inattentive To Duties
- IR 1105156; Security – NRC Id’s Documents Not Marked As Safeguards
- IR 1101839; Security – Firearms #2 Failed Weekly Test
- IR 1085502; Security – Firearms #2 Would Not Clear Individual For Test
- IR 1080845; Security – Firearms #2 Alarmed During Nightly Testing
- IR 1097708; Security – Work Hour Reviews Not Completed In First Quarter
- IR 1194356; Sec: Human Performance Issues
- IR 1187260; NEI [Nuclear Energy Institute] 08-08: FASA & CIA Deficiencies
- IR 1015289; FASA (SY): SG Inspection – IP 7113002, 7113008, 71151-Pp01
- IR 1135583; FASA (SY): Access Control 71130.02 & FFD [Fitness For Duty] 71130.08  
Insp. Prep
- IR 1190251; Security – Discrepancy In Record
- IR 1215804; Security – ATI Closure Quality Concerns For IR 1190251
- IR 1163235; Security – Loss Of Computers
- IR 1175925; Security – QHPI Rejected By MRC
- IR 1086941; Security – FASA Deficiency Identified
- IR 1130913; Security – Officer Fatigue Assessment
- IR 1154439; FASA 1135583 Deficiency IR Issue 2
- IR 1154434; FASA 1135583 Deficiency IR
- IR 1142339; NRC Challenges Waiver Use
- IR 1091384; Security – Dormant Badge
- IR 1053402; Security – Potential Inattentive Officer
- IR 1051510; Security – Label All Related Security Boxes And Panels In Pa.
- IR 1088742; Security – Review Of Prior RER Actions
- IR 1096780; Sally Port East AVB Barrier Slowly Lowering
- IR 1163852; Security Documentation Not Completed For IR 1139309

- IR 1170863; Documentation For OSHA Recordable Accident Not Generated
- IR 1057326; Security – All BRE Windows Have Glass Separation
- IR 1057274; Security – India BRE Windows Are Fogging Over
- IR 1065053; Security – Action Tracking Item Not Closed
- IR 1085494; Security – Joystick To Call Up Monitors In CAS Not Operable
- IR 1297990; NOSA-DRE-12-02 Security
- IR 1187671; NRC Inspector Discusses Potential Violation
- IR 1117330; FASA (RA): 1<sup>st</sup> Qtr. 2011 Self Assessment/Benchmarking Review
- IR 1242735; Increasing Trend in the HU Cross-Cutting Violations
- IR 1237578; FASA (TR): Training Effectiveness in Addressing Ops Fundamentals
- IR 1317504; FASA (RA): PI&R Inspection
- IR 1237184; Further Insights are needed in Industrial Safety Performance
- IR 1311687; OR7 Issue Resolution Gap Based on Third Quarter Data
- IR 1177831; Review of NRC Information Notice 2011-01 on Commercial Grade
- IR 1083547; Generic Letter 80-10 References Missing from Procedures
- IR 1218997; DOA 0600-01 Entry for Transient Level Control
- IR 1070338; Failure to Monitor EQ Equipment in the DW for Adverse Temps
- IR 12521904; Receipt of NRC 2<sup>nd</sup> Qtr Inspection report 2011-003
- IR 1080695; Some Instances of IRs not Written for Events/Conditions
- IR 1173059; Ineffective Corrective Action Identified in CCA 1004596-02
- IR 1098861; Receipt of NRC Inspection Report 2010003-03
- IR 1229574; New U3 Thermocouple (Recently Connected) is Reading High
- IR 1221041; U2 Drywell T/C [Thermocouple] used to Monitor EQ Temperatures Exceeds Limit
- IR 1183408; T/C used for Monitoring of 3-1001-1A Exceeds EQ Limits
- IR 01090297; GE Type HFA Relay Exhibiting Fogging on Glass Cover
- IR 01343576; HFA Relay Contact Found Open
- IR 01167591; Deficiencies Identified In Maintenance Planning Procedure;
- IR 01235279; Deficiencies In OPEX Selected for Maintenance Work Packages
- IR 01158549; Maintenance Procedure Backlog Indicator Is Red
- IR 01205854; Maintenance 1st Quarter Cap Trend Roll-Up
- IR 01235629; Maintenance Requesting CCA On Proc. Adherence/Document
- IR 01236936; Maintenance Overdue Cap Evaluation
- IR 01142912; NOS ID D3R21 Poor Maintenance Practices With Lifted Leads
- IR 01212205; NOS ID Maintenance Yellow Rating
- IR 01198713; HPCI Maintenance Rule Function Exceeds (A)(1) Limit
- IR 01223186; U3 IRM Maintenance Rule Function Z0702-1 Is (A)(2) At Risk
- IR 01188871; Maintenance Rule Program Going Yellow
- IR 01194776; NOS ID: Rework Evaluations Improperly Cancelled By MRC
- IR 01122649; Indicator PM-03, Station Rework, Not Within Goal
- IR 01166815; Perform CCA On 2010 Station Rework
- IR 01195259; NOS Pre-NIEP Assmnt. QV Insp. Oversight Deficiency
- IR 01057396; Maintenance Department DTSQA Deficiencies
- IR 01280007; 3rd Quarter Maintenance Cap Trend Roll-Up
- IR 01319927; Maintenance 4th Quarter 2011 Trend Results
- IR 01254964; CCA Assignment for PM Identification
- IR 01130750; Maintenance rule Scope OPEX Applicable to Dresden
- IR 01144161; NOSA-DRE-11-11 Maintenance Re-Audit
- IR 01316564; White Residue on Top of 2/3 DFP Battery Cells
- IR 01330513; Surface Corrosion was identified on the DFP Battery Rack

- IR 01349878; Identified 2/3 DFP Battery Corrosion During Walkdown With NRC
- IR 01352200; 2/3 Diesel Fire Pump Battery Corrosion
- IR 01136770; 3A Core Spray Failed to Start within Acceptance Criterion
- IR 01326135; Potential Vulnerability SWYD Single Open Phase Detection
- IR 01316556; 2/3 DFP Starting Battery Cell Broken Fill Cap
- IR 01242095; No Standby Light for 3A RFP when in Standby
- 01076914; 2A RWCU Pump Trip-Unit 2
- 01242095-03; GE HFA Relay Failure Results in the Inability to Start the 3A RFP
- 01061360-02; Maintenance Director Requests ACE on EMD Work Package Quality
- EACE1136770-02; 3A Core Spray Pump Fails to Start within Acceptance Criteria
- EACE 1079909; Essential Service Water- Loss of U3 ESS Normal AC/DC
- 1217178; Re-Open Root Cause Investigation Report per IR 1315283
- 01254964; Review the Past Years of EACEs Performed at Dresden Station to Identify a Common Cause Pertaining to an Adverse Trend in PM not Being Properly Identified Resulting in Equipment Reliability Challenges
- Root Cause Report 1217178; The U2 and U3 CCSW Systems were Simultaneously Rendered Inoperable with the Installation of Both Bays 13 Stop Logs During Preventive Maintenance

#### Miscellaneous

- EC TCCP 376856; Gag the AO 3-1599-61 Valve Open to Allow Torus Water Transfer; Revision 0
- OpEval 10-004; EC 380190; Revision 3
- EC 377021; Op Eval 09-007, Low Pressure Coolant Injection (LPCI) 2-1503-A Heat Exchanger Degraded Thermal Performance; Revision 1
- EC376404; Install Supplemental Chemical Injection System Biocide Chemical into CCSW; Revision 3
- System Health Reports; Low Pressure Coolant Injection (LPCI), U2 and U3; 2011
- Security Department Trending 4Q 2011
- Security Department Trending 3Q 2011
- Security Department Trending 2Q 2011
- Security Department Trending 1Q 2011
- Security Department Trending 4Q 2010
- Security Department Trending 3Q 2010
- Security Department Trending 2Q 2010
- Security Department Trending 1Q 2010
- Relays-Control/Timing PCM Template, 1/21/2002
- Service Request 00076322; P/D Add PMID-RQ: C&D FWH Hi Level Relays, 4/3/2012
- Service Request 00070086; Predefine Add PMID/RQ 10Y FRL LPCI Logic Relay Replacement, 10/27/2010
- GEK-45484B; Instructions-Multi Contact Auxiliary Relay Type HFA151
- GEH-2024F; Instruction- Contact Auxiliary Relay Type HFA51
- 4<sup>th</sup> Quarter 2011 Maintenance Trend Report
- 3rd Quarter 2011 Maintenance Trend Report
- NOSCPA-DR-11-13; Dresden Maintenance Performance Report; 11/10/2011
- Maintenance Performance Indicators by NOS and CFAM; 2/2012
- Letter from Mr. Mike McDonald Dresden Maintenance Director to Mr. David Czufin, Site Vice President, Dresden Station, "NOS Rates Maintenance Performance Red." 1/26/2012

- QCOS 6900-15, Quad Cities Station Non-Safety Related Battery Monthly Surveillance; Rev. 38
- NOSA-DRE-11-04 (AR 1144156); Corrective Action Audit Report Dresden Station April 25 – May 5, 2011; May 12, 2011
- NOSA-DRE-12-01; Maintenance Audit Report Dresden Station 2/6 -2/16/2012; 2/22/2012
- Information Notice No. 82-13; Failures of General Electric Type HFA Relays; 5/10/1982
- Dresden Station – Total On Line Maintenance Backlog; 3/30/2012

## LIST OF ACRONYMS USED

AC	Alternating Current
AR	Action Request
ADAMS	Agencywide Document Access Management System
ALARA	As-Low-As-Is-Reasonably-Achievable
APRM	Average Power Range Monitor
ATI	Action Tracking Item
CA	Corrective Action
CAP	Corrective Action Program
CFR	Code of Federal Regulations
DFP	Diesel Fire Pump
DRP	Division of Reactor Projects
DW	Drywell
EACE	Equipment Apparent Cause Evaluation
ECCS	Emergency Core Cooling System
ED	Electronic Dosimeter
EDG	Emergency Diesel Generator
EMD	Electrical Maintenance Department
FFD	Fitness for Duty
GE	General Electric
HVAC	Heating, Ventilation, and Air Conditioning
IEEE	Institute of Electrical & Electronic Engineers
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Issue Report
ISM	In-Storage Maintenance
LPCI	Low Pressure Coolant Injection
LSFT	Logic System Functional Test
MOV	Motor-Operated Valve
MRC	Management Review Committee
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	U.S. Nuclear Regulatory Commission
OE	Operating Experience
PARS	Publicly Available Records System
PCM	Predictive Centered Maintenance
PI&R	Problem Identification and Resolution
PM	Preventative Maintenance
RFP	Reactor Feed Pump
RP	Radiation Protection
RWCU	Reactor Water Cleanup
SBGT	Standby Gas Treatment
SBO	Station Blackout
SDP	Significance Determination Process
SOC	Site Ownership Committee
SPDS	Safety Parameter Display System
SR	Safety Related
TDR	Time Delay Relay
TS	Technical Specification

TSTR      Technical Specification Technical Requirements  
Vdc      Volts Direct Current  
WO      Work Order

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

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

Sincerely,

*/RA by John E. Rutkowski for/*

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 05000237/2012007; 05000249/2012007  
 w/Attachment: Supplemental Information

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DATE	05/23/12	05/23/12				

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Letter to M. Pacilio from J. Cameron dated May 23, 2012.

SUBJECT: DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3,  
PROBLEM IDENTIFICATION AND RESOLUTION INSPECTION  
REPORT 05000237/2012007; 05000249/2012007

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