

April 29, 2005

Mr. Christopher M. Crane  
President and Chief Nuclear Officer  
Exelon Nuclear  
Exelon Generation Company, LLC  
4300 Winfield Road  
Warrenville, IL 60555

SUBJECT: DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3  
NRC INTEGRATED INSPECTION REPORT 05000237/2005003;  
05000249/2005003; 0720037/2005003

Dear Mr. Crane:

On March 31, 2005, the NRC completed an inspection at your Dresden Nuclear Power Station, Units 2 and 3. The enclosed report presents the inspection findings which were discussed with Mr. D. Bost and other members of your staff on April 15, 2005.

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

Based on the results of this inspection, one NRC identified finding and one self-revealed finding of very low safety significance were identified. Each of these findings involved a violation of NRC requirements. However, because of their very low safety significance and because they have been entered into your corrective action program, the NRC is treating these issues as Non-Cited Violations, in accordance with Section VI.A.1 of the NRC's Enforcement Policy.

If you contest any Non-Cited Violation, 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, D.C. 20555-0001; with copies to the Regional Administrator, Region III, 2443 Warrenville Road, Suite 210, Lisle, IL 60532-4352; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001; and the NRC Resident Inspector at the Dresden Nuclear Power Station.

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Sincerely,

*/RA/*

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

Docket Nos. 50-237; 50-249;72-037  
License Nos. DPR-19; DPR-25;DPR-02

Enclosure: Inspection Report 05000237/2005003; 05000249/2005003; 0720037/2005003  
w/Attachment: Supplemental Information

cc w/encl: Site Vice President - Dresden Nuclear Power Station  
Dresden Nuclear Power Station Plant Manager  
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Senior Vice President - Mid-West Regional  
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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos: 50-237; 50-249; 72-037  
License Nos: DPR-19; DPR-25; DPR-02

Report No: 05000237/2005003; 05000249/2005003  
07200037/2005003

Licensee: Exelon Generation Company

Facility: Dresden Nuclear Power Station, Units 1, 2 and 3

Location: 6500 North Dresden Road  
Morris, IL 60450

Dates: January 1 through March 31, 2005

Inspectors: C. Phillips, Senior Resident Inspector  
D. Smith, Senior Resident Inspector  
M. Sheikh, Resident Inspector  
D. Tharp, Resident Inspector, Clinton  
W. Slawinski, Senior Radiation Specialist  
R. Landsman, Project Inspector, Decommissioning Branch  
M. Gryglak, Decommissioning Inspector, Decommissioning  
Branch  
R. Schulz, Illinois Emergency Management Agency

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

Enclosure

## SUMMARY OF FINDINGS

IR 05000237/2005003; IR 05000249/2005003, IR 07200037/2005003 01/01/2005 - 03/31/2005, Exelon Generation Company, Dresden Nuclear Power Station, Units 1, 2 and 3; Post Maintenance Testing, Surveillance Testing, routine integrated report.

This report covers a 3-month period of baseline resident inspection; announced baseline inspections on radiation material processing and transportation; and announced inspection of independent spent fuel storage installation activities. The inspection was conducted by Region III inspectors and the resident inspectors. Two findings or violations were identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be 'green' or be assigned 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 3, dated July 2000.

### A. Inspector Identified Findings

#### **Cornerstone: Mitigation Systems**

Green. On March 3, 2005, a performance deficiency involving a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion XVI, was identified by the inspectors. The licensee had implemented inadequate corrective actions for a significant condition adverse to quality that occurred on January 19, 2001; and no corrective actions were assigned to prevent recurrence of a significant condition adverse to quality that occurred on November 29, 2004. Both events involved the failure of the Unit 2 emergency diesel generator air start regulating valve due to corrosion build up on the valve stem. The primary cause of this finding was related to the cross-cutting issue of Problem Identification and Resolution.

The finding was greater than minor because it impacted the Mitigating System Cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events and because it affected the reliability of a safety related component. After the inspectors questioned the lack of corrective actions for the November 29, 2004 event, the licensee created an action item to review the cause of the event and create corrective actions. In addition, the licensee wrote IR [Issue Report] 308526, "IR 277466 Significance Not Properly Identified." The purpose of this IR was to identify why this event was not entered into the corrective action system. This review had not been completed by the end of the inspection period. The finding was of very low safety significance because the emergency diesel generator started upon demand. (Section 1R19)

Green. On January 5, 2005, a performance deficiency involving a Non-Cited Violation of Technical Specification 5.4.1 was self revealed when instrument maintenance technicians were performing Dresden Instrument Surveillance 700-02, "APRM/RBM [average power range monitor/rod block monitor] Flow Instrumentation Total Drive Flow Adjustment," Revision 16. The technicians misadjusted the recirculation flow signal to the reactor protection system which required entry into Technical Specification 3.3.1.1

Limiting Condition for Operation A.1 and C.1 for Average Power Range Monitor Channels 1, 2, and 3 Flow Bias Trips. The instrument maintenance technicians were using the averaging function of a Fluke 189 digital multi-meter. The technicians had not been trained on how to use the function and the procedure did not provide instructions on how to use the multi-meter. The mis-use of the averaging function resulted in the adjusting the recirculation flow converter signal too high.

The finding was greater than minor because it impacted the Mitigating System Cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events and because it affected the procedure quality of a surveillance test procedure. The finding was of very low safety significance because it impacted the reactor protection system for a time period of less than 1 minute. The surveillance test procedure was changed to include instructions on how to use the averaging function of a digital multi-meter and the instrument maintenance technicians were briefed on this event and trained on how to use the averaging function of the digital multi-meter. (Section 1R22)

B. Licensee Identified Findings

No findings of significance were identified.

## REPORT DETAILS

### Summary of Plant Status

Unit 2 began the inspection period at 912 MWe (95 percent thermal power and 100 percent of rated electrical capacity).

- Beginning February 2, 2005, load was reduced at various times to investigate higher than expected reactor pressure vessel steam moisture carryover. The unit returned to full power on February 19, 2005.
- On March 12, 2005, load was reduced to 72 percent power for turbine valve testing, control scram time testing, and control rod pattern adjustment. The unit returned to full power on March 13, 2005.
- On March 24, 2005, the unit scrammed due to the malfunction of the A electro-hydraulic control pressure regulator, and returned to full power March 27, 2005.
- On March 29, 2005, load was reduced to 79 percent power for control rod pattern adjustment, and returned to full power on March 30, 2005.

Unit 3 began the inspection period at 822 MWe (100 percent thermal power).

- On February 27, 2005, load was reduced to 55 percent to perform turbine valve testing, control rod scram time testing, and a control rod pattern adjustment; and returned to full power on February 28, 2005.

## **1. REACTOR SAFETY**

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

#### 1R04 Equipment Alignment (71111.04Q)

##### .1 Partial System Walkdowns

###### a. Inspection Scope

The inspectors selected a redundant or backup system to an out-of-service or degraded train, reviewed documents to determine correct system lineup, and verified critical portions of the system configuration. Instrumentation valve configurations and appropriate meter indications were also observed. The inspectors observed various support system parameters to determine the operational status. Control room switch positions for the systems were observed. Other conditions, such as adequacy of housekeeping, the absence of ignition sources, and proper labeling were also evaluated.

The inspectors performed partial equipment alignment walkdowns of the:



- Unit 2/3 “B” standby gas treatment system;
- Unit 2 Division 1 low pressure coolant injection system; and
- Unit 3 “B” electro-hydraulic control system.

This represented three inspection samples.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

a. Inspection Scope

The inspectors toured plant areas important to safety to assess the material condition, operating lineup, and operational effectiveness of the fire protection system and features. The review included control of transient combustibles and ignition sources, fire suppression systems, manual fire fighting equipment and capability, passive fire protection features, including fire doors, and compensatory measures. The following areas were walked down:

- Unit 2 turbine building, elevation 517' computer room and auxiliary electrical room, (Fire Zone 6.2);
- Unit 2 turbine building, elevation 495' containment cooling service water pumps, (Fire Zone 8.2.2.A);
- Unit 2 reactor building, elevation 589' isolation condenser area, (Fire Zone 1.1.2.5.A);
- Unit 3 turbine building, elevation 495' containment cooling service water pumps, (Fire Zone 8.2.2.B);
- Unit 2/3 turbine building, elevation 534' Lube oil reservoir area, (Fire Zone 8.2.6.C);
- Unit 2 reactor building, elevation 476' high pressure coolant injection room, (Fire Zone 11.2.3);
- Unit 3 reactor building, elevation 476' high pressure coolant injection room, (Fire Zone 11.1.3);
- Unit 3 reactor building, elevation 589' isolation condenser area, (Fire Zone 1.1.1.5A)
- Unit 2/3 crib house, elevation 517', ground floor, (Fire Zone 11.3); and
- Unit 2/3 crib house, elevation 509', service water pumps room, (Fire Zone 11.3).

This represented ten inspection samples.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Regualification (71111.11Q)

a. Inspection Scope

The inspectors observed an evaluation of an operating crew on February 7, 2005. The scenario consisted of a loss of instrument air (recoverable), feedwater level control system setpoint drift, feedwater system vibration, unisolable feed line break in drywell, and high pressure coolant injection system start failure. The inspectors verified that the operators were able to complete the tasks in accordance with applicable plant procedures and that the success criteria as established in the job performance measures were satisfied. The inspectors observed the licensee's evaluators to ensure that no inappropriate cues were provided by the evaluators while assessing the operators' performance. In addition, the inspectors verified that issue reports written regarding licensed operator requalification training were entered into the licensee's corrective action program with the appropriate significance characterization.

This represented one inspection sample.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors reviewed the licensee's handling of performance issues and the associated implementation of the Maintenance Rule (10 CFR 50.65) to evaluate maintenance effectiveness for the selected systems. The following system were selected based on being designated as risk significant under the Maintenance Rule, being in the increased monitoring (Maintenance Rule category a(1)) group, or due to an inspector identified issue or problem that potentially impacted system work practices, reliability, or common cause failures:

- Unit 2 emergency diesel generator system; and
- Unit 3 isolation condenser system.

The inspectors verified the licensee's categorization of specific issues, including evaluation of the performance criteria, appropriate work practices, identification of common cause errors, extent of condition, and trending of key parameters. Additionally, the inspectors reviewed the licensee's implementation of the maintenance rule requirements, including a review of scoping, goal-setting, performance monitoring, short-term and long-term corrective actions, functional failure determinations associated with the condition reports reviewed, and current equipment performance status.

This represented two inspection samples.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors evaluated the effectiveness of the risk assessments performed before maintenance activities were conducted on structures, systems, and components and verified how the licensee managed the risk. The inspectors evaluated whether the licensee had taken the necessary steps to plan and control emergent work activities. The inspectors also verified that equipment necessary to complete planned contingency actions was staged and available. The inspectors completed evaluations of maintenance activities on the:

- Unit 2 Division 2 low pressure coolant injection containment cooling system logic system functional testing;
- Unit 3 Division 2 low pressure coolant injection emergency core cooling system initiation logic system functional testing;
- Unit 3 Division 1 low pressure coolant injection emergency core cooling system loop select logic system functional testing and Unit 2/3 "A" standby gas treatment damper control failure;
- Unit 2 Division 2 low pressure coolant injection and containment cooling service water out for planned maintenance;
- Unit 3 "A" electro-hydraulic control system failure; and
- Unit 2 Division 1 and 2 low pressure coolant injection unavailable for surveillance.

This represented six inspection samples.

b. Findings

No findings of significance were identified.

1R14 Personnel Performance Related to Non-routine Evolutions and Events (71111.14)

Unit 2 Forced Outage

On March 24, 2005, Unit 2 scrambled due to the malfunction of the A electro-hydraulic control system pressure regulator, and returned to full power March 27, 2005.

The inspectors performed the following activities daily:

- attended control room operator and outage management turnover meetings to verify that the current shutdown risk status was well understood and communicated;
- performed walkdowns of the main control room to observe the alignment of systems important to safe/shutdown risk condition;
- observed portions of power ascension; and
- ensured that Technical Specification requirements were verified to have been met for changing modes.

b. Finding

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed operability evaluations to ensure that operability was properly justified and the component or system remained available, such that no unrecognized increase in risk occurred. The review included issues involving the operability of:

- Unit 2 steam dryer high moisture carry over (ECs 346368 and 353315);
- Unit 2 core spray line break detection (IR 294408);
- Common mode electrical bus failure of 23, 24, 33, and 34 (IR 297540);
- Unit 3 “B” Master trip solenoid valve light out (IR 299936);
- 2B containment cooling service water heat exchanger outlet valve controller (IR 301450);
- Non-conforming condition discovered on containment cooling service water room coolers (IR 278234);
- Secondary containment differential pressure slow to recover and causing high standby gas treatment flow (IR 298901); and
- Unit 2/3 “B” standby gas treatment system flow oscillations (OE 05-001).

This represented eight inspection samples.

b. Findings

No findings of significance were identified.

1R16 Operator Workarounds (71111.16)

a. Inspection Scope

The inspectors assessed one operator workaround issue to determine the potential effects on the functionality of the corresponding mitigating system:

- Dresden Operating Abnormal Procedure 5700-0, “Loss of Heating Steam Boilers”

During this inspection, the inspectors reviewed numerous existing problems with the heating steam boilers and heating steam piping in regard to how the loss of heating steam would impact safety related equipment.

This represented one inspection sample.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modification (71111.17A)

a. Inspection Scope

The inspectors reviewed Modification Engineering Change (EC) 6602, "Core Spray Lower Sectional Replacement," and the associated installation work orders. The inspectors interviewed several members of the licensee's engineering staff and the General Electric on-site liaison and project manager for the modification installation.

This represented one inspection sample.

b. Findings

Introduction: The inspectors identified an unresolved item regarding the installation and testing of a modification to core spray piping inside the vessel and outside the core shroud of Unit 3.

Description: During the Fall 2004 refueling outage, the licensee performed a core spray lower sectional piping replacement modification (EC 6602). The sectional replacement was intended to replace piping inside the reactor vessel annulus that was susceptible to intergranular stress corrosion cracking (IGSCC) due to the environment and original welded materials (Type 304 stainless steel). The IGSCC could result in leakage from the piping into the annulus rendering core spray inoperable. The modification was designed by General Electric using IGSCC resistant materials with mechanical connections in lieu of eight previously welded connections to further mitigate susceptibility to IGSCC.

Title 10 of the Code of Federal Regulation Part 50, Appendix B, Criterion III, Design Control, states in part, that measures shall be established to assure that applicable regulatory requirements and the design basis, as defined in § 50.2 and as specified in the license application, for those structures, systems, and components to which this appendix applies are correctly translated into specifications, drawings, procedures, and instructions. These measures shall include provisions to assure that appropriate quality standards are specified and included in design documents and that deviations from such standards are controlled.

The Exelon Quality Assurance Manual, Topical Report, Revision 75, states in part in Chapter 11, Test Control, Section 2.1.1 that the test program covers all required tests including the demonstration of satisfactory performance following plant maintenance or modifications. Section 2.7 states in part, "The Company performs test following plant modification or significant changes in operating procedures to confirm that the modification or changes produces the expected results."

The licensee did not perform any post modification testing to verify that leakage from core spray piping into the annulus was within the design limits. The inspectors considered that the failure to perform a performance test might be considered minor provided that the licensee could provide adequate assurance that the modification had been installed properly to preclude leakage into the annulus. The inspectors wanted to see documented evidence within the installation work instructions that the modification was properly installed.

As part of Modification EC 6602, the inspectors reviewed GENE-0000-0021-4342-04, "Dresden Nuclear Power Station, Unit 3 Core Spray Line Lower Sectional Replacement Leakage Analysis," Revision 1. This analysis listed maximum gaps where mechanical components were joined together to prevent excess leakage outside the core shroud. These gaps, if exceeded, could render one or more trains of the core spray system inoperable. The work instructions used to perform the modification installation did not include verification that the maximum gaps between mechanical joints described in the leakage analysis were not exceeded. The inspectors asked the licensee to demonstrate how they ensured that the maximum gaps between mechanical joints described in the leakage analysis were not exceeded. The licensee was unable to show documentation that verified that the modification was installed with less than or equal to the maximum gaps between mechanical joints described in the leakage analysis.

The licensee's ability to satisfactorily demonstrate the proper installation of the core spray piping to ensure that leakage from the piping into the annulus region did not render either or both trains of the core spray system inoperable was an Unresolved Item. **(URI 05000249/2005003-01)**

1R19 Post Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed post-maintenance test results to confirm that the tests were adequate for the scope of the maintenance completed and that the test data met the acceptance criteria. The inspectors also reviewed the tests to determine if the systems were restored to operational readiness status consistent with the design and licensing basis documents. The inspectors reviewed post-maintenance testing activities associated with the following:

- Unit 3 emergency diesel generator following governor adjustments;
- Unit 3 "A" electro-hydraulic control system following vibration analysis;
- Unit 2 emergency diesel generator system following planned maintenance;
- Unit 2 emergency diesel generator cooling water pump following 2 year preventative maintenance;
- Unit 2 containment cooling service water system following flow controller replacement;
- Unit 2 "B" low pressure coolant injection system following pump mechanical seal replacement; and

- Unit 2 “A” standby gas treatment system following flow controller pneumatic tubing replacement.

This represented seven inspection samples.

b. Findings

Introduction: A Green finding involving a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion XVI, was identified by the inspectors. The inspectors identified that there were inadequate corrective actions to prevent recurrence for a significant condition adverse to quality that occurred on January 19, 2001; and there were no corrective actions assigned to prevent recurrence of a significant condition adverse to quality that occurred on November 29, 2004. Both events involved the failure of the Unit 2 emergency diesel generator air start regulating valve due to corrosion build up on the valve stem.

Description: On November 29, 2004, the Unit 2 Emergency Diesel Generator (EDG) was started for the scheduled monthly operability surveillance. The starting air regulating valve failed such that it was relieving pressure via the main valve seat, through a pressure relief tube. The pressure relief path reduced starting air system pressure to about 150 psig before operators isolated the system. Although the regulating valve blew down, the engine started normally and was subsequently secured due to the air regulating valve failure. The licensee wrote issue report (IR) 277466 which stated that the air start regulating valve was leaking. The licensee replaced the air start regulating valve on the Unit 2 EDG and also the regulating valves on the Units 3 and 2/3 EDGs. The regulating valve was sent out to undergo testing at the Exelon PowerLabs Division under project number DRE-34545. The PowerLabs report was sent to the licensee on December 3, 2004. The report stated that several problems were found internal to the regulating valve, but that the primary cause of the failure was due to the build up of aluminum oxide deposits on the valve stem from the corrosion of the internals of the regulator materials.

The regulating valve maintained a pressure of at least 175 psig downstream of the valve to allow starting of the EDG. When the EDG started and the downstream pressure began to drop, the air regulating valve opened attempting to maintain the downstream pressure. The valve had a reverse seating disc. Air pressure acts on a diaphragm and opens the valve against pressure from a spring underneath the valve disc. The valve stem was hollow. A relief mechanism attached to the diaphragm fit inside the valve stem. If downstream pressure became too high the diaphragm would lift the relief mechanism out of the valve stem providing a relief port out of the hollow valve stem until downstream pressure decreased. The failure occurred because corrosion products on the main valve stem prevented the closing of the main valve seat under normal spring pressure. When pressure equalized across the valve and the diaphragm returned to its normal position the relief device came out of the stuck valve stem causing the upstream air to blow down through the stuck open valve and out the relief device. The build up of the corrosion products was considered a time

dependent mechanism. The PowerLabs report made several recommendations as to how to address the problem.

The regulating valve that failed was last replaced in February 2003, as a two year preventive maintenance item. The valve had also been replaced in January 2001, after failing in service under similar circumstances as the November 2004 regulating valve failure. The inspectors attempted to review the corrective action documents from the January 2001 failure. The inspectors identified that this failure had not been entered into the corrective action program in 2001. The system engineer took the initiative to send the valve to Engine Systems, Inc. for a failure analysis. The manufacturer had issued a 10 CFR Part 21 report for a different failure mechanism in September 2002. The valves that were replaced in February 2003 were purchased in November 2002 after the Part 21 was issued. Therefore, this failure was not related to the 2002 Part 21.

In February 2005, the inspectors were observing scheduled maintenance on the Unit 2 EDG and observed that a hoist mounted on a rail in the overhead of the Unit 2 EDG room was making hard contact with the air start line piping. The inspectors were concerned about the potential for foreign material, caused by corrosion of the air start line, to enter and impact the operation of the air start regulating valve. The inspectors attempted to review the corrective actions associated with IR 277466 from the regulating valve failure in November 2004. The inspectors identified that there were no assignments to perform a root or apparent cause of the failure nor were there any corrective actions associated with the regulating valve failure in the corrective action program. Sending the valve to PowerLabs was done on the initiative of the system engineer. However, there was no assigned action item in the corrective action program to evaluate what had been found during the PowerLabs review of the failure and formulate any necessary corrective actions.

Analysis: The inspectors determined that the failure to have adequate corrective actions associated with repetitive failures of safety-related equipment was a performance deficiency warranting a significance evaluation. The inspectors concluded that the finding was greater than minor in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," issued on June 20, 2003, because it impacted the Mitigating System Cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events and because it affected the reliability of a safety related component. The EDG started before the regulating valve failed. Upon the regulating valve failing, air pressure in the receiver blew down to about 150 psig, from a normal pressure range of 225-260 psig, before the operator could shut the air receiver isolation valve and stop the reduction in the air receiver pressure. The design of the air start system is to have sufficient air available to attempt to start the EDG three times. An air pressure of about 175 psig was necessary to start the U2 EDG per the basis of Technical Specification 3.8.3, Action C.1. Therefore, if the EDG had failed to start, the air receiver capacity would not have been sufficient to make another start attempt. The primary cause of this finding was related to the cross-cutting issue of Problem Identification and Resolution.



The inspectors completed a Phase 1 significance determination of this issue using IMC 0609, "Significance Determination Process," Appendix A, Attachment 1, dated December 1, 2004. The inspectors concluded that the finding impacted the mitigating system cornerstone. The inspectors answered NO to all five questions under the Mitigating System Cornerstone column, and the issue screened as having very low safety significance (Green).

Enforcement: 10 CFR Part 50, Appendix B, Criterion XVI required, in part, that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected. In the case of significant conditions adverse to quality, the measures shall assure that the cause of the condition is determined and corrective action taken to preclude repetition. The identification of the significant condition adverse to quality, the cause of the condition, and the corrective action taken shall be documented and reported to appropriate levels of management. The licensee's Quality Assurance Topical Report (NO-AA-10), Revision 75, Appendix D, Paragraph 2.117, defined a significant condition adverse to quality, in part, as "large deviations from expected plant performance of safety-related structures, systems, or components;" and "recurring deficiencies or errors that cannot be dispositioned or brought into conformance by established corrective action systems." Contrary to the above, the inspectors identified that on January 19, 2001, the Unit 2 EDG air start regulating valve failed due to corrosion of its valve stem which was a large deviation from expected plant performance. The licensee took action to assure the cause of the condition was determined but took inadequate action to prevent recurrence. The Unit 2 EDG air start regulating valve again failed on November 29, 2004, for the same cause as the January 19, 2001 event. The licensee took action to determine the cause of the failure, but as of March 3, 2005, took no corrective actions to prevent recurrence nor assigned any actions to evaluate the cause of the failure to assess corrective actions to prevent recurrence. After the inspectors questioned the lack of corrective actions, the licensee created an action item to review the cause of the event and create corrective actions. In addition, the licensee wrote IR 308526, "IR 277466 Significance Not Properly Identified." The purpose of this IR was to identify why this event was not properly entered into the corrective action system. This review had not been completed by the end of the inspection period. Because this violation was of very low safety significance and it was entered into the licensee's corrective action program (IR 277466 and 308526), this violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy. **(NCV 05000237/2005003-02)**

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors observed surveillance testing on risk-significant equipment and reviewed test results. The inspectors assessed whether the selected plant equipment could perform its intended safety function and satisfy the requirements contained in TS. Following the completion of each test, the

inspectors determined that the test equipment was removed and the equipment returned to a condition in which it could perform its intended safety function.

The inspectors observed surveillance testing activities and/or reviewed completed packages for the tests, listed below, related to systems in the Initiating Event, Mitigating Systems, and Barrier Integrity Cornerstones:

- Unit 3 DIS 1500-05, "Division 2 Low Pressure Coolant Injection Emergency Core Cooling System Initiation Logic System Functional Testing";
- Unit 3 DIS 1500-32, "Division 1 Low Pressure Coolant Injection Emergency Core Cooling System Loop Select Logic System Functional Testing";
- Unit 2 DIS 700-02, "Average Power Range Monitor/Rod Block Monitor Flow Instrumentation Drive Flow Adjustment";
- Unit 2 DIS 1500-7, "Reactor Vessel Pressure Switch Calibration";
- Units 2/3 DOS 6600-08, "Diesel Generator Cooling Water Pump Quarterly and In- Service Testing";
- Unit 2 Appendix A, "Reactor Coolant System Drywell Floor Drain and Drywell Equipment Drain Leakage;" and
- Unit 3 DIS 0250-02, "Main Steam Line Low Pressure Isolation Switch Calibration."

This represented seven inspection samples.

b. Findings

Introduction: A Green finding involving a Non-Cited Violation of Technical Specification 5.4.1 was self revealed when instrument maintenance technicians were performing surveillance procedure DIS 700-02, "APRM/RBM [average power range monitor/rod block monitor] Flow Instrumentation Total Drive Flow Adjustment," Revision 16. The technicians misadjusted the recirculation flow signal to the reactor protection system which required entry into technical specification 3.3.1.1 Limiting Condition of Operation, Actions A.1 and C.1 for APRM Channels 1, 2, and 3 Flow Bias Trips.

Description: Instrument maintenance technicians were adjusting a recirculation flow converter using a digital multi-meter (DMM) with an averaging function. As the technicians adjusted the flow converter signal from a low set point to a high set point they did not reset the averaging function of the DMM. The control room operators received the Unit 2 neutron monitor flow off normal alarm during the adjustment. The technicians were not trained on how to use the DMM and the associated averaging function and thought that the DMM would self-adjust when they increased the flow signal. The surveillance procedure did not have any instructions on how to use the averaging function of the DMM.

Analysis: The inspectors determined that the failure to have adequate instructions for performing a surveillance test that impacted safety-related equipment was a performance deficiency warranting a significance evaluation.

The inspectors concluded that the finding was greater than minor in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," issued on June 20, 2003, because it impacted the Mitigating System Cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events and because it affected the procedure quality of a surveillance test procedure.

The inspectors completed a Phase 1 significance determination of this issue using IMC 0609, "Significance Determination Process," Appendix A, Attachment 1, dated December 1, 2004. The inspectors concluded that the finding impacted the mitigating systems cornerstone because the instrument maintenance technicians adjusted the core flow signal for the APRM flow biased trip setpoint too high. This action impacted, but did not prevent, the ability of the reactor protection system to respond to a transient temporarily. The inspectors answered NO to all five questions under the Mitigating System Cornerstone column, and the issue screened as having very low safety significance (Green).

Enforcement: Technical Specification 5.4.1 required, in part, that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, dated February 1978. Regulatory Guide 1.33, Revision 2, Appendix A, dated February 1978, Paragraph 8.b.2.I listed surveillance tests for the reactor protection system. Contrary to the above, on January 5, 2005, Surveillance test procedure DIS 0700-02, "APRM/RBM Flow Instrumentation Total Drive Flow Adjustment," Revision 16, allowed instrument maintenance technicians to use a DMM, Fluke Model 189, to perform the test procedure without adequate instructions as to how to use the averaging function of the DMM. The instrument maintenance technicians were not trained prior to the performance of the surveillance test procedure on how to use the averaging function. As immediate corrective action, the flow converter setpoints were returned to within specification about 1 minute after the "Rod Out Block and Neutron Monitor Flow Unit Off Normal," alarm annunciated and identified the problem. The surveillance procedure was changed to include instructions on how to use the averaging function of the DMM Fluke Model 189, and all instrument maintenance technicians were briefed of this event and trained on how to use the DMM averaging function. Because this violation was of very low safety significance and it was entered into the licensee's corrective action program (IR 287839), this violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy. **(NCV 05000249/2005003-03)**

1R23 Temporary Modification (71111.23)

a. Inspection Scope

The inspectors screened two active temporary modification and assessed the effect of the temporary modification on safety-related systems. The inspectors also determined if the installation was consistent with system design:

- Overcurrent trip for buses 23, 24, 33, and 34 (temporary change configuration package [TCCP] 353670 and TCCP 353669); and
- Addition of a Temporary Sample Point for U2 Feedwater Heater Drain Chemistry to troubleshoot the increased moisture carryover on U2 (TCCP EC 353770).

This represented two inspection samples.

b. Findings

No findings of significance were identified.

1EP6 Drill and Training Evaluations (71114.06)

February 7, 2005, Emergency Preparedness Performance Indicator

a. Inspection Scope

The inspectors observed station personnel during a licensee-only-participation emergency preparedness training exercise on February 7, 2005, to determine the effectiveness of drill participants and the adequacy of the licensee's critique in identifying weaknesses and failures. The drill scenario involved the loss of instrument air (recoverable), feedwater level control system setpoint drift, feedwater system vibration, unisolable feed line break in drywell, and high pressure coolant injection system start failure.

This represented one inspection sample.

b. Findings

No findings of significance were identified.

**2. RADIATION SAFETY**

**Cornerstone: Public Radiation Safety**

2PS2 Radioactive Material Processing and Transportation (71122.02)

.1 Radioactive Waste System Description and Waste Generation

a. Inspection Scope

The inspectors reviewed the liquid and solid radioactive waste system descriptions in the Updated Final Safety Analysis Report (UFSAR) and the 2002 and 2003 Annual Radioactive Effluent Release Reports for information on the types and amounts of radioactive waste (radwaste) generated and disposed. The inspectors reviewed the scope of the licensee's audit/self-assessment activities with regard to radioactive material processing and transportation

programs to determine if those activities satisfied the requirements of 10 CFR 20.1101(c).

These reviews represented one inspection sample.

b. Findings

No findings of significance were identified.

.2 Radioactive Waste System Walkdowns

a. Inspection Scope

The inspectors walked down portions of the solid radwaste processing systems to verify that these systems were consistent with the descriptions in the UFSAR and the Process Control Program, and to assess the material condition and operability of the systems. The status of radioactive waste process equipment that was not operational or was abandoned in-place was reviewed along with the licensee's administrative and physical controls in order to ensure that the equipment would not contribute to an unmonitored release, adversely affect operating systems, or be a source of unnecessary personnel exposure. The inspectors also discussed with radiation protection management its ongoing efforts to consolidate the large number of satellite radioactive material/radwaste storage areas and plans to address the lack of a complete inventory for some of the waste storage bays in the Radwaste Building.

The inspectors reviewed the licensee's processes for transferring waste resin into shipping containers (and for dewatering) to determine if appropriate waste stream mixing and sampling was performed so as to obtain representative waste stream samples for analysis. The inspectors evaluated a problem which occurred in 2004, that involved a small quantity of spent resin found loose inside a shipping cask (outside the primary container) upon its receipt at a low level waste disposal facility to ensure that the licensee's resin sluicing, waste processing and packaging methods were adequate. The inspectors also reviewed the licensee's practices for the collection of area smear surveys to represent the dry-active waste (DAW) stream and the method used for determining the radionuclide mix of various filter media to ensure they were representative of the intended radwaste stream. Additionally, the inspectors reviewed the methodologies for quantifying gamma emitting radionuclide waste stream content, for determining waste stream tritium concentrations and for waste concentration averaging to ensure that representative samples of the waste products were provided for the purposes of waste classification pursuant to 10 CFR 61.55.

These reviews represented one inspection sample.

b. Findings

No findings of significance were identified.

.3 Waste Characterization and Classification

a. Inspection Scope

The inspectors reviewed the licensee's methods and procedures for determining the classification of radioactive waste shipments including the use of scaling factors to quantify difficult-to-measure radionuclides (e.g., pure alpha or beta emitting radionuclides and those that decay by electron capture). The inspectors reviewed the licensee's radiochemical sample analysis results for each of the licensee's waste streams which consisted of ion exchange (bead-type) resins, various filter media, concentrator waste, DAW, and activated metals. The reviews were conducted to verify that the licensee's program assured compliance with 10 CFR 61.55 and 10 CFR 61.56, as required by Appendix G of 10 CFR Part 20. The inspectors also reviewed the licensee's waste characterization and classification program to ensure that reactor coolant chemistry data was periodically evaluated to account for changing operational parameters that could potentially affect waste stream classification and thus validate the continued use of existing scaling factors between annual sample analysis updates.

These reviews represented one inspection sample.

b. Findings

No findings of significance were identified.

.4 Shipment Preparation and Shipment Manifests

a. Inspection Scope

The inspectors reviewed the documentation of shipment packaging, surveying, package labeling and marking, vehicle checks and placarding, emergency instructions, and licensee verification of shipment readiness for nine non-excepted radioactive material and radwaste shipments made in 2003 and 2004. The inspectors verified that the requirements specified in the Certificate of Compliance were met for selected shipments made in Type B casks. These shipments included:

- Contaminated Equipment in a Strong Tight Container;
- Control Rod Drives in a Type A Container;
- Dewatered Spent Resin in a Type B Cask;
- Spent Filters in a Type B Cask;
- Irradiated Metals in a Type B Cask;
- Irradiated Metals in a Type A Container;
- Spent Resin in a Strong Tight Container;
- Spent Resin in a Type B Cask; and
- Dry Active Waste in a Sea-Land (Strong Tight) Container.

The inspectors selectively verified that the requirements of 10 CFR Parts 20 and 61, and those of the Department of Transportation (DOT) in 49 CFR Parts 170-

189 were met for each shipment. Specifically, records were reviewed and some of the staff involved in shipment activities were interviewed to verify that packages were labeled and marked properly, that package and transport vehicle surveys were performed with appropriate instrumentation and survey results satisfied DOT requirements, and that the quantity and type of radionuclides in each shipment were determined accurately. The inspectors also verified that shipment manifests were completed in accordance with DOT and NRC requirements, included the required emergency response information, that the recipient was authorized to receive the shipment, and that shipments were tracked as required by 10 CFR Part 20. The inspectors also reviewed the licensee's transportation security plan required by 49 CFR 172.800/802 and discussed its implementation with the licensee's shipping specialist.

The inspectors observed a radiation protection technician perform surveys of an outgoing Type B shipment of spent resin which was being prepared for shipment to a waste processor. The technician and the licensee's primary shipper were questioned by the inspectors to verify that they had adequate skills to accomplish shipment related tasks, to determine if the shippers were knowledgeable of the applicable regulations and whether shipping personnel demonstrated adequate skills to satisfy package preparation requirements for public transport with respect to NRC Bulletin 79-19, "Packaging of Low-Level Radioactive Waste for Transport and Burial," and 49 CFR Part 172 Subpart H. Additionally, the lesson plan used for training station laborers involved in radioactive material shipping was reviewed for compliance with the hazardous material training requirements of 49 CFR 172.704.

These reviews represented two inspection samples.

b. Findings

No findings of significance were identified.

.5 Identification and Resolution of Problems for Radwaste Processing and Transportation

a. Inspection Scope

The inspectors reviewed selected condition reports, an audit and a self-assessment report that addressed the radioactive waste and radioactive materials shipping program since the last inspection to verify that the licensee had effectively implemented the corrective action program and that problems were identified, characterized, prioritized, and corrected. The inspectors also verified that the licensee's oversight mechanisms collectively were capable of identifying repetitive deficiencies or significant individual deficiencies in problem identification and resolution.

The inspectors also selectively reviewed other corrective action reports generated since the previous inspection that dealt with the radioactive material or radwaste shipping program, and interviewed staff and reviewed documents to

determine if the following activities were being conducted in an effective and timely manner commensurate with their importance to safety and risk:

- Initial problem identification, characterization, and tracking;
- Disposition of operability/reportability issues;
- Evaluation of safety significance/risk and priority for resolution;
- Identification of repetitive problems;
- Identification of contributing causes;
- Identification and implementation of effective corrective actions; and
- Implementation/consideration of risk significant operational experience feedback.

These reviews represented one inspection sample.

b. Findings

No findings of significance were identified.

**4. OTHER ACTIVITIES (OA)**

4OA2 Identification and Resolution of Problems (71152)

.1 Routine Quarterly Review

a. Inspection Scope

As discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that they were being entered into the licensee's corrective action system at an appropriate threshold, that adequate attention was being given to timely corrective actions, and that adverse trends were identified and addressed. Minor issues entered into the licensee's corrective action system as a result of inspectors' observations are generally denoted in the report. In addition, in order to help identify repetitive equipment failures or specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the licensee's corrective action program. This review was accomplished by reviewing daily issue reports and attending daily issue report review meetings.

b. Findings

No findings of significance were identified.

4OA3 Event Follow-up (71153)

.1 (Closed) LER 50-237;249/2004-006-00: Units 2 and 3 Main Turbine Generator Rotor Cracks

On October 31, 2004, during a Unit 3 refueling outage, the licensee inspected the Unit 3 main turbine generator rotor and identified a crack in the shaft near the



rotor coupling. Both units had been experiencing increasing trends in vibration levels on main turbine generator bearings 9 and 10 since May 2004. The licensee removed Unit 2 from service to conduct an inspection of its rotor and identified a crack in the same general location and of a similar configuration. The licensee determined the cause of the rotor cracks to be intermittent oscillating torsional loading on the generator rotor which produced a torsional fatigue failure mode. However, the licensee was unable to determine the cause of the intermittent oscillating torsional loading. Both main turbine generator rotors were sent off-site for inspection and replacement of the cracked end of the shaft with new stub shafts. The LER was reviewed by the inspectors and no findings were identified. This LER is closed.

- .2 (Closed) Unresolved Item 05000237/2004010-01 (DRP); 05000249/2004010-01 (DRP): Units 2 and 3 UFSAR indicate that there are multiple pumps available to supply make up water to the Unit 2 and Unit 3 Isolation Condensers

The Updated Final Safety Analysis Report (UFSAR) Section 3.4.1.1, "External Flood Protection Measures," stated that if forecasted flood levels exceed 517 feet, 150 gallon per minute emergency makeup pumps are connected to the fire system. The licensee has since went to the use of one portable diesel driven pump in response to a flooding event. However, the 10 CFR 50.59 screening performed did not address the change in the number and type of pumps.

Upon further investigation into this issue, the inspectors concluded that the use of only one pump to supply makeup water to both the Unit 2 and Unit 3 Isolation condensers during a design basis flood event was acceptable as determined in calculation DRE99-0035. Subsequently, the licensee submitted an UFSAR change to reflect the use of one pump. The inspectors reviewed the licensee's 10 CFR 50.59 review of the change to the UFSAR and had no concerns. This item is considered closed.

#### 4OA4 Cross-Cutting Findings

- .1 A finding described in 1R19 of this report had, as its primary cause, Problem Identification and Resolution, in that there were inadequate corrective actions to prevent recurrence for a significant condition adverse to quality that occurred on January 19, 2001; and there were no corrective actions assigned to prevent recurrence of a significant condition adverse to quality that occurred on November 29, 2004. Both events involved the failure of the Unit 2 emergency diesel generator air start regulating valve due to corrosion build up on the valve stem.

#### 4OA5 Other Activities

- .1 Preoperational Testing of an Independent Spent Fuel Storage Installation (ISFSI) (60854.1)
- a. Inspection Scope

The inspectors evaluated whether the licensee had effectively implemented procedures to weld the multi-purpose canister (MPC) lid and secondly, to remove the lid. The inspection focused on the activities of a new welding contractor, PCI Energy Services, for the Dresden and Quad Cities Station new ISFSI campaigns. The inspectors observed welding, non-destructive examination (NDE), and lid removal dry-runs on MPC mockups in the contractor's shop. The inspectors verified that the work was performed as specified in the general project instructions, PI-900343-04, "Closure Welding of Multi-Purpose Canister," and PI-900343-05, "Canister Cutter-Operation." The inspectors reviewed the procedures and compared them to the requirements specified in the Certificate of Compliance, the Technical Specifications, and the Safety Analysis Report.

b. Findings

No findings of significance were identified.

4OA6 Meetings

.1 Interim Exit Meetings

Interim exit was conducted for:

- Public radiation safety radioactive waste processing and transportation program inspection with Mr. D. Wozniak on February 4, 2005, and a followup telephone conversation with Mr. S. Taylor on February 9, 2005.
- Independent Spent Fuel Storage Installation with the Dry Cask Project Managers, Mr. M. Mikota of Dresden, and Mr. D. Moore of Quad Cities, on March 16, 2005.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## KEY POINTS OF CONTACT

### Licensee

D. Bost, Site Vice President  
D. Wozniak, Plant Manager  
S. Bell, Shipping Specialist  
H. Bush, Radiological Engineering Manager  
R. Conklin, Radiation Protection Supervisor  
J. Fox, Design Engineer  
R. Gadbois, Operations Director  
D. Galanis, Design Engineering Manager  
V. Gengler, Dresden Site Security Director  
J. Griffin, Regulatory Assurance - NRC Coordinator  
P. Salas, Regulatory Assurance Manager  
R. Kalb, Chemistry ODCM Coordinator  
T. Loch, Supervisor, Design Engineering  
M. McGivern, System Engineer  
M. Mikota, Dry Cask Project Manager, Dresden  
D. Moore, Dry Cask Project Manager, Quad Cities  
D. Nestle, Radiation Protection Technical Manager  
M. Overstreet, Radiation Protection Supervisor  
R. Quick, Security Manager  
N. Spooner, Site Maintenance Rule Coordinator  
B. Surges, Operations Requalification Training Supervisor  
G. Bockholdt, Maintenance Director  
S. Taylor, Radiation Protection Director

### NRC

M. Ring, Chief, Division of Reactor Projects, Branch 1

### IEMA

R. Schulz, Illinois Emergency Management Agency  
R. Zuffa, Resident Inspector Section Head, Illinois Emergency Management Agency

## LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

### Opened

05000249/2005003-01	URI	Install U3 Core Spray Lower Sectional Replacement
05000237/2005003-02	NCV	Inadequate Corrective Actions for a Significant Condition Adverse to Quality Involving the Failure of the Unit 2 Emergency Diesel Generator Air Start Regulator
05000249/2005003-03	NCV	Performance Deficiency While Performing Surveillance Procedure DIS 700-02, "APRM/RBM [average power range monitor/rod block monitor] Flow Instrumentation Total Drive Flow Adjustment," Revision 16

### Closed

05000237/2005003-02	NCV	Inadequate Corrective Actions for a Significant Condition Adverse to Quality Involving the Failure of the Unit 2 Emergency Diesel Generator Air Start Regulator
05000249/2005003-03	NCV	Performance Deficiency While Performing Surveillance Procedure DIS 700-02, "APRM/RBM [average power range monitor/rod block monitor] Flow Instrumentation Total Drive Flow Adjustment," Revision 16
50-237;50-249/2004-006-00	LER	Units 2 and 3 Main Turbine Generator Rotor Cracks
05000237/2004010-01 05000249/2004010-01	URI	Units 2 and 3 UFSAR indicate that there are multiple pumps available to supply make up water to the Unit 2 and Unit 3 Isolation Condensers

### Discussed

None

## LIST OF ACRONYMS USED

CFR	Code of Federal Regulations
CR	Condition Report
DAW	Dry-Active Waste
DIS	Dresden Instrument Surveillance
DOA	Dresden Operating Abnormal Procedure
DOS	Dresden Operating Surveillance
DOT	Department of Transportation
DRP	Division of Reactor Projects
DRS	Division of Reactor Safety
EC	Engineering Change
EDG	Emergency Diesel Generator
IEMA	Illinois Emergency Management Agency
IMC	Inspection Manual Chapter
LER	Licensee Event Report
MWe	megawatts electrical
NCV	Non-Cited Violation
NRC	Nuclear Regulatory Commission
OA	Other Activities
PI	Performance Indicator
radwaste	Radioactive Waste
SDP	Significance Determination Process
TCCP	Temporary Change Configuration Package
TS&P	Test, Specification, and Procedure
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item
WO	Work Order

## 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 of portions of the documents were evaluated as part of the overall inspection effort. Inclusion of a document on this list does not imply NRC acceptance of the document or any part of it, unless this is stated in the body of the inspection report.

### 1R04 Equipment Alignment

- DOP 1500-M1, "Unit 2 LPCI and Containment Cooling Valve Checklist," Revision 36
- IR 299936; 'B' Master trip solenoid valve light out; February 14, 2005

### 1R05 Fire Protection

- Dresden Fire Pre-Plan; U2/3C-125, Revision 05
- Dresden Fire Pre-Plan; U2/3C-126, Revision 05
- Dresden Fire Pre-Plan; 4114-04, Revision 21
- AR 229390; Fire protection piping thickness wall below acceptable limit; June 17, 2004
- AR 286841; Perform ACE to document process / human performance breakdowns and implement corrective actions as necessary to prevent recurrence; February 1, 2005
- AR 290319; NRC identified concern - expired fire extinguishers; January 13, 2005
- AR 295067; NRC Identifies deficiencies in U2 HPCI room; January 27, 2005

### 1R11 Operator Requalification

- LT014, "Simulator Exercise Guide," Revision 02, dated June 2004
- DOS 6600-01, "Diesel Generator Surveillance Tests," Revision 88

### 1R12 Maintenance Effectiveness

- AR 157254; Scaffold blocking manual use of 3-1301-3 vlv; May 5, 2003
- AR 161224; Isolation condenser deficiencies found during FASA for SSDI; May 30, 2003
- AR 168960; Potential for water hammer following Group 5 isolation; July 24, 2003
- AR 170389; PM not performed as scheduled due to emergent work; August 5, 2003
- AR 180233; N.O. identifies discrepancy in tube blender specifications; October 9, 2003
- AR 205678; Evaluate this occurrence together with the event on 11/26/03 and determine the cause through further troubleshooting and repair of the 3-1301-3 valve if needed; May 14, 2004
- AR 226150; Iso condenser high temps after valve timing; June 5, 2004
- AR 231794; Isolation condenser 3-1301-3 valve; June 26, 2004
- AR 234347; Isolation condenser system requires a MA a (1) evaluation; July 7, 2004
- AR 306712; 3-1301-3 Valve Leak-by; March 1, 2005

### 1R15 Operability Evaluations

- IR 298901; SEC Cont DP slow to recover and causing high SBTG flow; February 8, 2005
- Drawing No. 277LN001-001, CCSW Subsystem 1, Revision 05
- IR 294408; Core spray line break detection annunciator may not alarm; January 24, 2005
- IR 301450; 2B CCSW controller failed downscale; February 15, 2005
- IR 302977; Lack of sensitivity toward loss of secondary containment; February 18, 2005
- IR 303174; 2/3 B SBTG train flow oscillations; February 18, 2005

1R17 Permanent Plant Modification

- WO 97019448; Install lower sectional replacement piping as required; October 21, 2004
- TS&P No. 0000-0021-4342-06, Revision 0; "Dresden Unit 3 Core Spray Lower Sectional Replacement Test Specification"

1R19 Post Maintenance Testing

- AR 301450; 2B CCSW controller failed downscale; February 15, 2005
- DIS 1500-30, Revision 04; Division II Low Pressure Coolant Injection Containment Cooling System Logic System Functional Test
- WO 317913-01; Replace mechanical seal on 2B LPCI pump 2-1502-B
- WO 591717; D2 2Y PM Insp DG Cooling Water Pump; February 14, 2005
- WO 592884; D2 2Y PM Standby diesel generator inspection; February 15, 2005
- WO 673968; U3 Emergency D/G Governor Unstable; November 21, 2004
- WO 729992-01; Replace 2B LPCI HX DP Controller DPIC 2-1540-3B
- WO 776912-03; CMO perform vibration analysis on the 3-5622-A EHC pump

1R22 Surveillance Testing

- EC 13003, "Analysis of an Increased Reactor Bldg High Temp on Calc NED-4-EIC-0," Revision 000
- DIS 1500-07, "Reactor Vessel Pressure Switch Calibration (LPCI Recirculation Loop Line Break Detection Logic)," Revision 17
- Calculation No. NED-I-EIC-0144, " Reactor Vessel Pressure Switch (LPCI Recirculation Loop Line Break Detection Logic) Setpoint Error Analysis," Revision 0
- EC 13763, "Improved Tech Spec AV Generation for NED-I-EIC-0114," Revision 000
- DES 6600-08, "Diesel Generator Electrical Maintenance Surveillance Inspection," Revision 15
- DMS 6600-02, "Diesel Generator Mechanical Inspection and Preventative Maintenance," Revision 23
- IR 197316; FME Caps found in EDG fuel oil pump piping; January 23, 2004
- IR 285929; U2 EDG Fuel Oil Day Tank Overfill; December 28, 2004
- IR 285935; U2 Emergency Diesel Generator Field Grounded; December 28, 2004
- IR 287839; Flow converter adjusted, received 'off normal' annunciator; February 14, 2005
- IR 297449; D2 TS Value Incorrectly Listed on D3 Data Shts of DIS 250-02; February 3, 2005
- IR 302117; Deficiencies Identified while clearing CO#34112; February 16, 2005
- DOS 0500-03, "APRM Rod Block and Scram Functional Test," Revision 47

- Prompt Investigation, IR 287839
- DIS 0700-02, "APRM/RBM Flow Instrumentation Total Drive Flow Adjustment," Revision 16
- Unit NSO Daily Surveillance Log, Appendix A, Revision 98
- WO 514762; D3 24M TS Div 1 & 2 LPCI Inj ECCS Initiation Circuitry LSFT; December 4, 2004
- WO 516278; D3 24M TS Div 1 & 2 LPCI ECCS Select Circuitry LSFT; November 29, 2004
- WO 752714; D2/3 Qtr TS D/G Cooling Water Pump Test for 1<sup>st</sup> Program Surveillance; January 31, 2005

### 1R23 Temporary Plant Modifications

- CC-MW-112-1001, Attachment 1, "Temporary Configuration Change Approval TCCP No. 353669, Dresden Unit 2," Revision 2
- CC-MW-112-1001, Attachment 3, "TCCP Installation and Removal Authorizations," Revision 3
- CC-MW-112-1001, Attachment 4, "TCCP Installation / Removal Instructions and Test Requirements," Revision 3
- Design Attribute Review (DAR), EC 353669, Revision 0, "Remove Neutral Overcurrent Relay for Reserve & Main Feeds of Switchgear Buses 23 & 24"
- CC-AA-102, "Operations Department (including Radwaste) Configuration Change Checklist," Revision 9
- EC 353669, "Remove Neutral OC Relay Trip from Reserve & Main Feeds SWGR 23 & 24," dated 2/3/05
- Drawing 12E-2303, "Key Diagram 4160 Switchgears 23 & 24," Revision V
- Drawing 12E-2333, "Relay and Metering Diagram Reserve Auxiliary Transformer 22 & 4160V Switchgear 23 & 24," Revision Q
- Drawing 12E-2342, "Schematic Diagram 4160V Bus 23 Main & Reserve Feed G.C.B.'s," Revision AD
- Drawing 12E-2343, "Schematic Diagram 4160V Bus 24 Main & Reserve Feed G.C.B.'s," Revision AE
- Drawing 12E-2654J, "Internal Schematic & Device Location Diagram 4160V Switchgear Bus 24 Cubicle 14," Revision G
- Drawing 12E-2653G, "Internal Schematic & Device Location Diagram 4160V Switchgear Bus 23 Cubicle 12," Revision F
- CC-MW-112-1001, Attachment 8, "TCC Tag List, TCCP No.: 353669, Dres Unit 2"
- CC-MW-112-1001, Attachment 1, "Temporary Configuration Change Approval TCCP No. 353670, Dresden Unit 3," Revision 2
- CC-MW-112-1001, Attachment 3, "TCCP Installation and Removal Authorizations," Revision 4
- CC-MW-112-1001, Attachment 4, "TCCP Installation / Removal Instructions and Test Requirements," Revision 4
- Design Attribute Review (DAR), EC 353670, Revision 0, "Remove Neutral Overcurrent Relay for Reserve & Main Feeds of Switchgear Buses 33 & 34"
- CC-AA-102, "Operations Department (including Radwaste) Configuration Change Checklist," Revision 9
- EC 353670, "Remove Neutral OC Relay Trip from Reserve & Main Feeds SWGR 33 & 34," dated 2/3/05



- Drawing 12E-3303, "Key Diagram 4160 Switchgears 31, 32, 33 & 34," Revision R
- Drawing 12E-3333, "Relay and Metering Diagram Reserve Auxiliary Transformer 32 & 4160V Switchgear 33 & 34," Revision E
- Drawing 12E-3342, " Schematic Diagram 4160V Bus 33 Main & Reserve Feed G.C.B.'s," Revision X
- Drawing 12E-3343, " Schematic Diagram 4160V Bus 34 Main & Reserve Feed G.C.B.'s," Revision Y
- Drawing 12E-3654C, " Internal Schematic & Device Location Diagram 4160V Switchgear Bus 34 Cubicle 1," Revision F
- Drawing 12E-3653D, "Internal Schematic & Device Location Diagram 4160V Switchgear Bus 33 Cubicle 3," Revision E
- CC-MW-112-1001, Attachment 8, "TCC Tag List, TCCP No.: 353670, Dres Unit 3"
- CC-MW-112-1001, Attachment 1, "TCCP Approval," Revision 4
- CC-MW-112-1001, Attachment 4, "TCCP Installation/Removal Instructions and Test Requirements," Revision 4
- LS-AA-104-1001, "50.59 Review Coversheet Form," Revision 2
- LS-AA-104-1003, "50.59 Screening Form," Revision 1
- CC-AA-201, Attachment 1, "Plant Barrier Impairment Permit," Revision 6
- DWG —18, "Diagram of Heater Drain Piping," Revision AL

#### 1EP6 Drill and Training Evaluations

- IR 257438; Potential inability to meet EP staffing requirements; September 27, 2004

#### 2PS2 Radioactive Material Processing and Transportation

- Annual Radioactive Effluent Release Reports for 2002 and 2003; Tables Summarizing Solid Waste and Irradiated Fuel Shipments; dated April 30, 2003, and April 30, 2004
- Quality Assurance Program Approval for Exelon Generation Company; Revision 10
- RW-AA-100; Process Control Program for Radioactive Wastes; Revision 3
- FO-OP-023-161024; Waste Transfer and Bead Resin/Activated Carbon Dewatering Procedure for Duratek 14-215 or Smaller Liners at Dresden Station; Revision 1
- RP-AA-600-1001; Exclusive Use and Emergency Response Information; Revision 3
- RP-AA-602; Packaging of Radioactive Material Shipments; Revision 8
- RP-AA-602-1001; Packaging of Radioactive Material/Waste Shipments; Revision 4
- Radiation Work Permit 10004880; Unit 2/3 Radwaste Processing and Associated ALARA Briefing Information; Revision 0
- DOP 2000-53; Transfer of Resin from Spent Resin Tank to Contract Vendor Mobile Solidification/Dewatering Unit; Revision 8
- RP-DR-605; 10 CFR 61 Waste Stream Sampling and Analysis; Revision 1
- RP-DR-605; Data Sheet 2; Waste Stream Results Review (For Various Waste Streams); dated various periods in 2003 and 2004
- Report of Analysis (For Various Waste Streams); Teledyne Brown Engineering; dated April 30, 2003, and December 30, 2004
- Lesson Plan, Radioactive Materials Shipping for Laborers; Revision 0
- Shipment Manifest and Associated Documentation for Shipment DM-04-018; Contaminated Equipment; date shipped July 13, 2004
- Shipment Manifest and Associated Documentation for Shipment DM-04-143; Control Rod Drives; date shipped November 10, 2004

- Shipment Manifest and Associated Documentation for Shipment DW-03-052; Dewatered Resin to Low Level Waste Burial Site; date shipped December 5, 2003
- Shipment Manifest and Associated Documentation for Shipment DW-04-003; Spent Filters to Low Level Burial Site; date shipped January 30, 2004
- Shipment Manifest and Associated Documentation for Shipment DW-04-007; Activated Hardware to Low Level Burial Site; date shipped March 17, 2004
- Shipment Manifest and Associated Documentation for Shipment DW-04-009; Activated Hardware to Low Level Burial Site; date shipped February 21, 2004
- Shipment Manifest and Associated Documentation for Shipment DW-04-022; Processed Resin; date shipped April 12, 2004
- Shipment Manifest and Associated Documentation for Shipment DW-04-039; Processed Resin; date shipped July 28, 2004
- Shipment Manifest and Associated Documentation for Shipment DW-04-065; Dry Active Waste; date shipped December 16, 2004
- CR 208079 and Apparent Cause Evaluation Report; Resin Found in Bottom of Cask Upon Arrival at Barnwell; dated March 11, 2004
- CR 288765 and Prompt Investigation Report; Padlock Found Not Securely Locked During Surveillance; dated January 7, 2005
- CR 00259101; Documentation of DOT Type A Transportation Packages; dated October 1, 2004
- CR 00271548; Control Rod Drive Trailer Exceeds Weight Limit and Returns Back to Site; dated November 8, 2004
- Focus Area Self-Assessment Report; Radioactive Material/Waste Shipping; dated January 21, 2005
- Audit Report NOSA-DRE-04-04; Chemistry, Radwaste, and Process Control Program Audit; dated May 25, 2004

#### 4OA5 Other Activities

- PI-900343-04, "Closure Welding of Multi-Purpose Canister"
- PI-900343-05, "Canister Cutter-Operation"