May 8, 2006

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 05000237/2006003;
05000249/2006003

Dear Mr. Crane:

On March 31, 2006, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Dresden Nuclear Power Station, Units 2 and 3. The enclosed integrated inspection report documents the inspection findings, which were discussed on April 7, 2006, with Mr. D. Bost and other members of your staff.

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

This report documents two NRC identified findings and one self-revealed finding of very low safety significance (Green). Each of these findings was determined to involve a violation of NRC requirements. However, because of the very low safety significance and because they were entered into your corrective action program, the NRC is treating these violations as Non-Cited Violations (NCVs) consistent with Section VI.A.1. of the NRC Enforcement Policy.

If you contest these NCVs, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the 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.

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

Sincerely,

/RA/

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

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

Enclosure: Inspection Report 05000237/2006003; 05000249/2006003
w/Attachment: Supplemental Information

cc w/encl: Site Vice President - Dresden Nuclear Power Station
Dresden Nuclear Power Station Plant Manager
Regulatory Assurance Manager - Dresden
Chief Operating Officer
Senior Vice President - Nuclear Services
Senior Vice President - Mid-West Regional
Operating Group
Vice President - Mid-West Operations Support
Vice President - Licensing and Regulatory Affairs
Director Licensing - Mid-West Regional
Operating Group
Manager Licensing - Dresden and Quad Cities
Senior Counsel, Nuclear, Mid-West Regional
Operating Group
Document Control Desk - Licensing
Assistant Attorney General
Illinois Emergency Management Agency
State Liaison Officer
Chairman, Illinois Commerce Commission

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos:	50-237; 50-249
License Nos:	DPR-19; DPR-25
Report No:	05000237/2006003; 05000249/2006003
Licensee:	Exelon Generation Company
Facility:	Dresden Nuclear Power Station, Units 2 and 3
Location:	Morris, IL 60450
Dates:	January 1 through March 31, 2006
Inspectors:	D. Smith, Senior Resident Inspector M. Sheikh, Resident Inspector L. Ramadan, Acting Resident Inspector, Region III A. Barker, Project Engineer, Region III D. Melendez-Colon, Reactor Engineer, Region III W. Slawinski, Senior Radiation Specialist M. Holmberg, Reactor Inspector T. Bilik, Reactor Engineer G. O'Dwyer, Reactor Engineer T. Ploski, Senior Emergency Preparedness Analyst R. Schulz, Illinois Emergency Management Agency
Approved by:	Mark Ring, Chief Branch 1 Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000237/2006003; 05000249/2006003; 01/01/2006 - 03/31/2006; Exelon Generation Company, Dresden Nuclear Power Station, Units 2 and 3; Maintenance Risk, Operability Evaluation, and Refueling Outage.

This report covers a 3-month period of baseline resident inspection and announced baseline inspections in radiation protection, emergency preparedness, heat sink, Temporary Instruction (TI) 2515/165, "Operational Readiness of Offsite Power and Impact on Plant Risk," and TI 2515/161, "Transportation of Reactor Control Rod Drives in Type A Packages." The inspection was conducted by Region III inspectors and the resident inspectors. Three Green findings, involving Non-Cited 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 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 3, dated July 2000.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

- Green. On February 19 and March 12, 2006, a performance deficiency involving a Non-Cited Violation (NCV) of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified by the inspectors. The finding involved the licensee's failure to follow procedures, in that, approximately 110 safety related welds were not inspected by independent, certified Quality Verification inspectors between December 2, 2002, and May 23, 2003.

  This finding was greater than minor because, if left uncorrected, the finding would become a more significant safety concern. The failure to perform adequate safety-related weld exams could have allowed undetected deficiencies to be placed into or have remained in service. The inspectors determined that the finding could not be evaluated using the SDP in accordance with NRC Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," because the SDP for the Mitigating Systems Cornerstone only applied to degraded systems/components, not to deficiencies associated with the procedures that are designed to detect component degradation. Therefore, the finding was reviewed by regional management in accordance with IMC 0612, Section 05.04c, "Screen for Significance," and was determined to be of very low safety significance. In addressing this issue, the licensee terminated this program, generated an issue report, and planned to inspect 100 percent of the identified welds. (Section 1R13)

- Green. On January 27, 2006, a performance deficiency involving a Non-Cited Violation of 10 CFR 50, Appendix B, Criterion III, Design Control, was identified by the inspectors. The finding involved the licensee's failure to use the plant modification process, when installing new design lighting fixtures, to ensure Seismic Category II over Seismic

Category I requirements were met when installing these fixtures in various areas of the plant, including the Unit 3 emergency diesel generator room.

The finding was greater than minor because, if left uncorrected, the licensee's practice of modifying the plant without using the modification process would become a more significant safety concern because safety related and safe shutdown equipment could become inoperable. Also, the finding impacted the Mitigating Systems Cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events. The finding was of very low safety significance because the licensee determined, through engineering evaluation, that the deficient lighting fixture installations did not adversely affect the operability of any important systems. In addressing this issue, the licensee immediately prevented the installation of additional lighting fixtures without engineering review and approval; thoroughly walked down all areas of the plant to identify the full extent of condition of the problem; corrected all of the deficiencies; and prepared an engineering evaluation to assess the impact of these deficiencies on safety related and safe shutdown equipment. (Section 1R15)

Green. On November 6, 2005, a performance deficiency involving a Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was self revealed when a loss of shutdown cooling occurred while maintenance activities were being performed on the unit auxiliary transformer. Maintenance planning personnel failed to ensure that a revision to work order instructions, associated with the removal of an electrical lead (jumper) from the unit auxiliary transformer, remained bounded by the clearance order boundary for the reserve auxiliary transformer. As a result of lifting the lead, the associated 4160 volt bus de-energized and caused a trip of the A shutdown cooling pump which was providing decay heat removal for the reactor coolant system. In addressing this issue, the licensee conducted an apparent cause evaluation, added this event to their lessons learned database, and generated separate work orders for each transformer.

The finding was greater than minor because, if left uncorrected, the licensee's failure to ensure revised work order instructions remain bounded by the existing clearance order boundary would become a more significant safety concern by resulting in excessive heatup of the reactor coolant system or rendering safety related equipment inoperable. In evaluating this issue through the SDP, the inspectors answered "No" to all three questions that require phase 2 and 3 analyses. The finding did not increase the likelihood of a loss of reactor coolant system inventory; did not degrade the licensee's ability to terminate a leak path or add reactor coolant system inventory; and did not degrade the licensee's ability to recover decay heat removal once it was lost. In addition, the reactor coolant system temperature only increased by two degrees, from 92 degrees to 94 degrees, before shutdown cooling was re-established to the reactor vessel. Therefore, the inspectors determined that this finding was of very low safety significance. (Section 1R20)

B. Licensee-Identified Violations

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).

- On February 14, 2006, power was reduced to 97 percent to remove selected control rod drives for maintenance. The unit was returned to full power on the same day.

- On February 19, 2006, power was reduced to 72 percent to perform turbine valve testing and a control rod pattern adjustment. The unit was returned to full power on the same day.

- On March 25, 2006, power was reduced to 88 percent to perform control rod drive scram time testing. The unit was returned to full power on the same day.

- On March 28, 2006, power was reduced to 72 percent to replace the 2A feedwater regulating valve solenoid due to erratic operation. The unit was returned to full power the next day.

Unit 3 began the inspection period at 912 MWe (95 percent thermal power and 100 percent of rated electrical capacity).

- On February 26, 2006, power was reduced to 68 percent to perform turbine valve testing and a control rod pattern adjustment. The unit was returned to full power on the same day.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R04 Equipment Alignment (71111.04Q and S)

.1 Partial System Walkdowns

a. Inspection Scope

The inspectors selected a redundant or backup system to an out-of-service or degraded train to determine that the system met the design of the Updated Final Safety Analysis Report. Piping and instrumentation diagrams were used to determine correct system lineup and critical portions of the system configuration were verified. Instrumentation, valve configurations, and appropriate meter indications were also observed. The inspectors observed various support system parameters to determine the operational status of systems. 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 train standby gas treatment system; and
- Unit 3 B train standby liquid control system.

This represented two quarterly inspection samples.

b. Findings

No findings of significance were identified.

.2 Complete System Walkdown

a. Inspection Scope

The inspectors performed a complete semi-annual walkdown of the Unit 2 isolation condenser system. The inspectors reviewed the electrical and mechanical system checklists, drawings, and the Updated Final Safety Analysis Report to ensure all vital components in this system were properly aligned. The inspectors reviewed work orders associated with the system to determine whether there were any deficiencies that could affect the ability of the system to perform its safety-related function. The inspectors also reviewed all temporary modifications to verify the operational impact on the system. The inspectors reviewed licensee issue reports (IRs) to review past issues that had been identified and their corrective actions.

This represented one semi-annual inspection sample.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05Q)

.1 Routine Inspection

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 to ensure compliance with the station's Fire Hazard Analysis Report. 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 reactor building, standby liquid control area, elevation 589' (Fire Zone 1.1.2.5.D);
- Unit 3 reactor building, standby liquid control area, elevation 589' (Fire Zone 1.1.1.5.D);

- Unit 2 turbine building, main turbine floor, elevation 561' (Fire Zone 8.2.8.A);
- Unit 2 turbine building, reactor feed pumps room, elevation 517' (Fire Zone 8.2.5.A);
- Unit 3 turbine building, containment cooling service water pumps, elevation 495' (Fire Zone 8.2.2.B);
- Unit 3 turbine building, Unit 3 emergency diesel generator room, elevation 517' (Fire Zone 9.0.B); and
- Unit 3 turbine building, main turbine floor, elevation 561' (Fire Zone 8.2.8.A).

This represented seven quarterly inspection samples.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance (71111.07B)

.1 Biennial Review of Heat Sink Performance

a. Inspection Scope

The inspectors reviewed the performance of the 3A reactor building closed cooling water (RBCCW) heat exchanger (HX) and the 3A containment cooling service water pump vault cooler. One of the reasons for choosing the vault cooler was because of its importance in supporting safety functions. These heat exchangers were also chosen because of their high risk assessment worth in the licensee's probabilistic safety analysis, and because these HXs were never previously chosen for a biennial heat sink review. Failure of the RBCCW HX during operations can initiate a plant transient. While onsite, the inspectors observed the applicable vault cooler testing portions of DOS 1500-02, "Containment Cooling Service Water (CCSW) Pump Test and In-service Test (IST)," Revision 56, for the Unit 3 B CCSW pump completed on March 23, 2006. The inspectors also reviewed completed surveillance tests and associated calculations. The inspectors reviewed the documentation to confirm that the test and/or inspection methodology was consistent with accepted NRC, industry and scientific practices. The inspectors also reviewed documentation to verify that acceptance criteria were consistent with design basis values, as outlined in the Updated Final Safety Analysis Report and Technical Specifications. The inspectors reviewed documentation to verify that the licensee took appropriate actions to verify physical integrity of the heat exchangers. The inspectors reviewed documentation to verify that the licensee had appropriate controls in place to ensure availability of the ultimate heat sink under adverse weather conditions. The inspectors reviewed documentation to verify that the licensee had appropriate inspections of the ultimate heat sink intake structures.

The inspectors reviewed corrective action documents concerning heat exchanger or heat sink performance issues to verify that the licensee had an appropriate threshold for identifying issues. The inspectors also evaluated the effectiveness of the corrective actions for identified issues, including the engineering justification for operability.

This review resulted in the completion of two biennial inspection samples.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification (71111.11Q)

a. Inspection Scope

The inspectors observed an evaluation of operating crew #2 on March 27, 2006. The scenario consisted of a loss of motor control center 25-1, 480 volt, reactor building ventilation radiation monitor failure upscale, standby gas treatment system failure to start, bus 21 (4 KV) trip, core power oscillations, and anticipated transient without scram. The inspectors evaluated the licensee's performance against the requirements of 10 CFR 55.59 by verifying that the operators were able to complete the tasks in accordance with applicable plant procedures. 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.

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

a. Inspection Scope

The inspectors evaluated the implementation of the licensee's maintenance risk program with respect to the effectiveness of the risk assessments performed before maintenance activities were conducted on structures, systems, and components and verified that the licensee managed the risk in accordance with 10 CFR 50.65, "Maintenance Rule." 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 2/3 A standby gas treatment system planned maintenance;
- Unit 3 emergency diesel generator 2 year preventative maintenance;
- Unit 3 B standby liquid control system pump accumulator nitrogen charging valve replacement;
- Motor control center, 28-1, for MOV 2-1501-11A, Unit 2 containment cooling heat exchanger A shell side bypass motor operator valve inspection;
- Unit 2 isolation condenser unplanned isolation due to problems experienced during restoration of differential pressure switches;
- Unit 2 primary containment isolation valve 1601-20A planned maintenance;

- Unit 3 A standby liquid control system pump bladder replacement and check valve inspection;
- Unit 2 high pressure coolant injection system planned work; and
- Weld inspections not performed by certified inspectors.

This represented nine inspection samples.

b. Findings

Failure to Perform Weld Inspections by Independent Certified Quality Verification Inspectors

(Closed) URI 05000-237,249/2003-002-02: Adequacy of Site Welding Program

Introduction: The inspectors identified a Non-Cited Violation (NCV) of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings." The finding was related to the performance of weld inspections by non-independent, non-certified "peer" inspectors. The issue involved a weld inspection-sampling program employed from December 2, 2002, to May 23, 2003, during which approximately 110 safety related welds were completed without the performance of an inspection by independent, certified quality verification (QV) inspectors.

Description: During the weeks of February 19, 2006, and March 12, 2006, the inspectors identified that the licensee's QV inspectors had not performed weld examinations of a number of safety related welds as required by procedure. The licensee had instead deferred the performance of the inspections to "peer" reviewers; other welders who had been working in conjunction with the welder of record. The "peer" reviewers were not qualified to perform these weld examinations or independent of the activities requiring inspection.

The licensee had elected to implement a weld inspection sampling program which remained in effect from December 2, 2002, to May 23, 2003. The program was terminated after the inspectors raised concerns regarding the appropriateness of the program. United States of America Standard (USAS) B31.1.0 - 1967, "Power Piping," Chapter V, to which the licensee is committed, required that all welds be inspected. Under the sampling program, Nuclear Oversight Procedure NO-AA-300-001-1002, Revision 001, "Qualification Verification Welding Performance Monitoring Program," established the acceptance of "peer" inspection of safety related welds. However, NO-AA-300-001, Revision 000, "Inspection Planning and Execution of Quality Inspection Activities," and NO-AA-300-001-1001, Revision 002, "Nuclear Oversight Independent Inspection Plan," required that inspections be performed by qualified, independent, QV inspectors certified to the requirements of the Exelon Nuclear Oversight Training, Qualification, and Certification procedures. Also, these documents required that QV inspectors perform independent inspections and verifications in accordance with these established inspection plans. The "peer" reviewers had received only 8 hours of augmented training, and were neither independent nor certified to the requirements of the Exelon Nuclear Oversight Training, Qualification, and Certification procedures.

The inspectors noted instances in which safety-related welds were accepted by the peer welding inspectors and later rejected when inspected by independent, certified QV inspectors. The rejected welds which were identified were repaired/reworked prior to returning the system to service. The licensee documented these issues in several corrective action documents (AR00140353, AR00153300, AR00153235, and AR00161535). In addressing this issue, the licensee terminated this program, generated an issue report, and planned to inspect 100 percent of the identified welds.

Analysis: The inspectors determined that the failure of independent, certified QV inspectors to perform the weld inspections on approximately 110 safety-related welds, as required by procedures, was a performance deficiency, warranting a significance determination. The inspectors reviewed this finding against the guidance contained in Appendix B, "Issue Screening," of Inspection Manual Chapter (IMC) 0612, "Power Reactor Inspection Reports," dated September 30, 2005. The inspectors concluded that the finding was greater than minor because, if left uncorrected, the finding would become a more significant safety concern. The inspectors were concerned that the failure to perform adequate safety-related weld exams could have allowed undetected deficiencies to be placed into or remain in service, which would have the potential to render safety related systems inoperable, specifically the high pressure coolant injection (HPCI) system which had welds that were not inspected by QV inspectors. This finding impacted the Mitigating System (MS) Cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to mitigating events to prevent undesirable consequences. The primary cause of this finding was related to the cross-cutting area of human performance because supervisory and senior management personnel from various departments failed to challenge the appropriateness of this program with respect to safety-related welds.

The inspectors determined that the finding could not be evaluated using the SDP in accordance with NRC IMC 0609, "Significance Determination Process," because the SDP for the MS Cornerstone only applied to degraded systems/components, not to deficiencies associated with the procedures that are designed to detect component degradation. Therefore, regional management reviewed this finding in accordance with IMC 0612, Section 05.04c, "Screen for Significance," and determined that the finding was of very low safety significance (Green). Specifically, the inspectors were unaware of specific examples of actual degradation that had been missed due to this issue, and not later identified and corrected prior to returning the equipment to service.

Enforcement: Title 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality shall be prescribed by documents, instructions, procedures, or drawings and shall be accomplished in accordance with these instructions, procedures, or drawings.

United States of America Standard B31.1.0 - 1967, "Power Piping," Chapter V, to which the licensee is committed, requires that all welds be inspected.

Exelon procedure NO-AA-300-001, Revision 000, "Inspection Planning and Execution of Quality Inspection Activities," Section 1.1 under "Purpose," states that "this procedure describes the planning, implementation, and organizational process for the company's independent inspection program to verify that activities affecting quality conform to documented commitments as established in the Quality Assurance Program."

Section 2.3, Terms and Definitions, states that Independent Inspection is defined as "Inspections, examinations, measurements, or tests of material, products, or activities performed for each work operation where necessary to assure quality. This type of activity requires an independent individual who is not responsible for performing or supervising the work and is certified/qualified to the discipline."

Section 4.3.2, under "Independent Inspection Process," states that, "Independent inspections for acceptance shall be performed by qualified individuals certified to the requirements of the Exelon Nuclear Oversight Training, Qualification, and Certification procedure or approved equal."

Section 3.4, "Quality Verification Inspectors," states that inspectors will "perform independent inspections and verifications in accordance with established inspection plans."

Exelon Inspection Plan NO-AA-300-001-1001, Revision 2, "Nuclear Oversight Independent Inspection Plan," states in Sections 2.1 and 2.2, "Terms and Definitions for Non-Routine Maintenance and Routine Maintenance," that inspections of these activities "shall be performed by certified QV independent inspectors."

Contrary to the above, between December 2, 2002, and May 23, 2003, the licensee did not accomplish activities in accordance with required procedures; in that, approximately 110 safety-related weld inspections were not performed by independent, certified QV inspectors. In addressing this issue, the licensee terminated this program, generated an issue report, and planned to inspect 100 percent of the identified welds.

Because of the very low safety significance of this finding and because the issue was entered into the licensee's corrective action program as Action Request 00469044, it is being treated as a NCV consistent with Section VI.A.1 of the NRC Enforcement Policy (**NCV 05000237/2006003-01; 05000249/2006003-01**).

Unresolved Item 05000237;249/2003-002-02, "Adequacy of Site Welding Program" is closed.

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

a. Inspection Scope

The inspectors reviewed personnel performance during planned and unplanned plant evolutions. The review was performed to ascertain that operators' responses were in accordance with the required procedures.

.1 Unexpected Increase in Unit 2 Drywell Activity

On February 25, 2006, the licensee identified that the Unit 2 drywell activity began trending upward. Iodine I-131, and Beta were used to monitor drywell activity. The reading increased from approximately 2.5 E-11 uCi/cc to 8.9 E-11 uCi/Cc for Beta and 1.2 E-12 to 8.7 E-12 for Iodine 131. The licensee prepared an adverse condition monitoring and contingency plan for addressing this issue. Although drywell activity had increased slightly, the licensee had not noted an increase in the reactor coolant system (RCS) leakage. However, subsequently on March 25, 2006, the licensee noted a slight increase in RCS leakage, in that, the drywell floor drain leakage had increased from approximately .12 gallon per minute (gpm) to .221 gpm. The Resident Inspectors reviewed the licensee's action plan and contingency actions.

.2 Onsite Wells Reveal Unexpected Increase in Tritium Concentration

On January 3 and 19, 2006, the licensee identified that one of the site's 53 onsite wells indicated an increase in tritium concentration. As a result, the licensee increased the well's sampling frequency from quarterly to bi-weekly, and eventually to daily. On February 11, 2006, the licensee determined that a potential leak most likely existed in the high pressure coolant injection (HPCI) system suction piping, based on the well's sample result indicating 486,000 pCi/L. Therefore, the licensee isolated the HPCI system suction piping and subsequently realigned the HPCI system from the condensate storage tanks to the torus. The licensee narrowed the leak location to a section of HPCI piping that had not been replaced in 2004. Seventy-five feet of approximately one hundred and seventy-five feet of HPCI piping was replaced in 2004 after a leak was identified in the piping. The licensee performed several pressurization tests of the HPCI suction, return, and cross-tie piping without successfully locating the leak. In addition, the NRC obtained split samples and conducted independent analysis on the samples. No discrepancies were identified. The licensee planned to replace all the HPCI suction, return, and cross-tie piping.

This represented two inspection samples.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed operability evaluations (OE) to ensure that operability was properly justified and the component or system remained available, such that any non-conformance conditions were in compliance with Generic Letter 91-18, "Information

to Licensees Regarding Two NRC Inspection Manual Sections on Resolution of Degraded and Nonconforming Conditions and on Operability." The review included issues involving the operability of:

- Operability Evaluation # 06-001, Unit 2, Unit 3, and Unit 2/3 emergency diesel generator rooms ventilation fan;
- Engineering Change # 359908; Non-seismically mounted lighting fixtures in various areas of the plant; and
- Engineering Change # 358233; Core spray flaws affects pipe leakage.

This represented three inspection samples.

b. Findings

.1 Installation of Various Lighting Fixtures Without Engineering Evaluation or Modification

Introduction: One Green finding involving a Non-Cited Violation of 10 CFR 50, Appendix B, Criterion III, Design Control, was identified by the inspectors. The finding involved the licensee's failure to utilize the plant modification process to ensure newly installed lighting fixtures met Seismic Category II over Seismic Category I requirements.

Description: On January 27, 2006, the inspectors were conducting a walkdown as part of the Problem Identification and Resolution Inspection. During the walkdown the inspectors noted that, in the Unit 3 emergency diesel generator (EDG) room, fluorescent lighting fixtures had been replaced by mercury vapor lighting fixtures. The method in which the lighting fixtures were attached to the mounting supports did not appear appropriate, and the light fixtures were in close proximity to equipment in the room. In addition, the inspectors noted that the power cable for one of the lighting fixtures was coiled around a mounting rod which was supporting several safety related cable trays. The inspectors discussed these issues with operations supervision and questioned the adequacy of the engineering evaluation which allowed these unusual lighting fixture installations. The licensee generated issue report (IR) #446645. As a result, engineering department personnel were assigned to conduct a walkdown of the plant to identify all lighting deficiencies and assess the impact of those deficiencies on important plant equipment.

On February 8, 2006, engineering supervision informed the inspectors that the modification documentation for the lighting fixture could not be retrieved and that walkdowns were still in progress. However, the licensee was able to obtain documentation for lighting fixture installations in the Unit 2 and 3 torus basement area. At that time, engineering was just conducting a walkdown in the Unit 3 EDG room. The inspectors concluded that engineering department personnel should have evaluated the acceptability of Unit 3 EDG room lighting fixture installations in a more timely manner or corrected the conditions. This conclusion was based on the licensee's inability to retrieve documentation supporting the acceptability of the lighting fixture installations. The inspectors discussed the concerns with a staff shift manager, who immediately had maintenance department personnel crimp the open 'S' hook which was supporting a lighting fixture in the Unit 3 EDG room. The shift manager initiated IR #451966, documenting the inspectors' concern with the untimely response by engineering

department personnel. Although engineering department personnel were assigned to conduct the walkdown, licensee senior management failed to properly prioritize the issue to ensure the actions were timely and appropriate.

All noted deficiencies were corrected upon the licensee's completion of the walkdown. The walkdown identified that lighting deficiencies existed in seven areas, primarily in the Unit 2 and 3 EDG rooms, and involved deficiencies such as uncrimped S-hooks and the use of inappropriate mounting supports. These lighting fixtures had been installed over or in near proximity to safety related or safe shutdown equipment. As a result, the licensee generated IR #452353. Although the deficiencies were corrected, a formal evaluation by engineering department personnel was required to determine the historical operability of safety related and safe shutdown equipment.

The licensee generated engineering change evaluation #359908 which concluded that the installed lighting fixtures would not have adversely impacted safety related or safe shutdown equipment based on the light weight of the lighting fixture, height the lighting fixture would fall, sturdiness of potentially impacted equipment, seismic qualification of equipment, and adequacy of the seismic design of the potentially impacted equipment, such as panels and relays.

Discussions with the licensee indicated that base work orders (WOs), some with multiple tasks, allowed the installation of the lighting fixtures since 2000. These WOs did not contain design input to ensure Seismic Category II over Seismic Category I requirements were met. These base WOs were subsequently replaced by a "Beautification Project" administrative WO in October 2002. This WO allowed the repair and replacement of all lighting fixtures to be conducted as minor maintenance as specified by maintenance procedure MA-AA-716-003, "Tool Pouch/Minor Maintenance," Revision 1. Documentation of work performed was not required under this procedure. Therefore, the licensee was unable to retrieve any documentation of the work in the Unit 3 EDG room because the work was performed under this procedure.

The inspectors concluded that it was inappropriate to have performed and continue to perform work on specific lighting fixtures that can potentially affect safety related or safe shutdown equipment as minor maintenance. The licensee agreed with the inspectors. The licensee should have utilized Corporate Procedure, CC-AA-102, Revision 5, "Design Input and Configuration Change Impact Screening," for ensuring Seismic Category II over Seismic Category I requirements were met during the lighting fixture installations. Procedural step 4.1.10.2 requires the configuration change preparer "...determine any potential seismic interaction between added/modified components and new/existing safety related or safe shutdown components or structures..." Procedural step 4.1.10.5 requires the configuration change preparer to identify any Seismic Category II over Seismic Category I (anti-fall down) structures or components when making a configuration change to the facility. The plant configuration change process was not utilized when performing the base or beautification project WOs.

In addressing this issue, the licensee immediately prevented the installation of any more lighting fixtures without engineering review and approval; thoroughly walked down the plant to identify the full extent of condition of this issue; corrected the deficiencies; and prepared an engineering evaluation to assess the impact of the deficiencies on safety

related and safe shutdown equipment. Based on this event and eight other seismic issues involving various site departments over the last 6 months, the inspectors were concerned that station personnel appeared to lack a general understanding of seismic requirements. These concerns were discussed with the plant manager on several occasions. Three issues were discussed during the fourth quarter 2005 resident inspectors' exit meeting, and five instances occurred during the first quarter of 2006.

Analysis: The inspectors determined that the licensee's failure to ensure Seismic Category II over Seismic Category I requirements were met during the installation of lighting fixtures in various plant areas was a performance deficiency warranting a significance evaluation. The inspectors concluded that the finding was greater than minor in accordance with Inspection Manual Chapter (IMC) 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," issued on September 30, 2005. The finding, involving the licensee's practice of modifying the plant without using the plant modification process, if left uncorrected, would become a more significant safety concern because safety related and safe shutdown equipment could become inoperable. The finding impacted the Mitigating Systems Cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events. The primary cause of this finding was related to the cross-cutting issue of human performance because management personnel in various departments were involved in the decision to bypass the plant modification process when installing these lighting fixtures.

The inspectors completed a Phase 1 significance determination for this issue using IMC 0609, "Significance Determination Process," Appendix A, Attachment 1, dated December 1, 2004. The inspectors determined that this finding impacted the Mitigating Systems Cornerstone. The inspectors answered "No" to all five questions under the Mitigating System Cornerstone column. The finding was not a design or qualification deficiency confirmed not to result in loss of function per Generic Letter 91-18; did not represent a loss of system safety function; did not represent actual loss of safety function of a single train for greater than its Technical Specification allowed outage time; did not represent an actual loss of safety function of one or more non-Technical Specification trains of equipment designated as risk-significant per 10 CFR 50.65 for greater than 254 hours; did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. Therefore, the issue screened as having very low safety significance (Green).

Enforcement: Appendix B, 10 CFR 50, Criterion III, "Design Control," requires that measures shall be established to assure that applicable regulatory requirements and the design basis are correctly translated into specifications, drawings, procedures, and instructions.

Corporate Procedure, CC-AA-102, Revision 5, "Design Input and Configuration Change Impact Screening," procedural step 4.1.10.2 requires the configuration change preparer to "...determine any potential seismic interaction between added/modified components and new/existing safety related or safe shutdown components or structures..." Procedural step 4.1.10.5 requires the configuration change preparer to identify any Seismic Category II over Seismic Category I (anti-fall down) structures or components when making a configuration change to the facility.

Contrary to the above, from 2000 through 2005, the licensee failed to ensure that base and beautification project work orders properly considered Seismic Category II over Seismic Category I design input. Specifically, during the installation of new lighting fixtures in several areas of the plant, the station modification process was bypassed by the licensee. The failure to ensure seismic requirements were met for the installation of lighting fixtures in the Unit 3 emergency diesel generator room, that had the potential to impact safety related and safe shutdown equipment, was a violation. Because of the very low safety significance of this finding and because the issue has been entered into the licensee's corrective action program as IRs # 452353, 446645, 451966, 457728, 452619, this violation is being treated as a Non-Cited Violation (NCV), consistent with Section VI.A.1, of the NRC Enforcement Policy (**NCV 05000237/2006003-02; 05000249/2006003-02)**.

.2. Adequacy of All Three Emergency Diesel Generator Ventilation Systems

a. Inspection Scope

The inspectors reviewed Operability Evaluation 06-001, Revision 1, "Unit 2, Unit 3, and Unit 2/3 Emergency Diesel Generator Room Ventilation Fan," and the associated issue reports (IRs). The inspectors interviewed several members of the licensee's engineering staff.

b. Findings

Introduction: The inspectors identified an unresolved item regarding the ventilation systems for all three EDGs. The flow rate of each EDG ventilation fan was never tested to ensure adequate cooling was provided to the rooms.

Description: On June 24, 2005, the licensee identified that the Unit 2, Unit 3, and Unit 2/3 EDG ventilation system capacities had not been evaluated since initial operation. The ventilation fan flow was not verified by any surveillance, and no documentation was found to demonstrate that each ventilation system's flow rate was within the acceptable flow range as specified in calculation DG-1, Revision 001 B, "Diesel Generator Room Ventilation Load Verification."

As a corrective action, the licensee planned to perform a ventilation system flow test for each EDG vent fan. The Unit 3 EDG ventilation system flow test was not performed until January 27, 2006, and revealed an actual flow rate of 37,756 standard cubic feet per minute (scfm). The design flow rate of the ventilation fan as specified in calculation DG-1 was 56,000 scfm. The purpose for maintaining this flow rate was to meet the mild environment qualification for equipment in the room of 120EF, with an outside temperature of 93EF.

The licensee initiated an operability evaluation which documented that with a flow of 37,756 scfm, the Unit 3 EDG room temperature could reach 126EF with an outside air temperature of 93EF. With the lower measured ventilation flow rate the outside temperature could not exceed 86EF and still maintain the EDG's room as a mild environment. This temperature was often exceeded during the summer months.

Subsequently, on March 14, 2006, the Unit 2 EDG ventilation system was tested, resulting in a flowrate of 42,300 scfm. The design flow rate was determined to be 56,000 scfm to maintain the 120EF room temperature with an outside temperature of 93EF. The licensee stated that with an actual flow rate of 42,300 scfm, the Unit 2 EDG room temperature could increase to 123EF with an outside air temperature of 93EF. Therefore, with this lower ventilation flow rate the outside temperature could not exceed 90EF and still maintain the EDG's room qualified as a mild environment. Also, on March 15, 2006, the licensee tested the Unit 2/3 EDG ventilation fan; the system's flow rate was 34,856 scfm as opposed to its designed flow rate of 49,000 scfm, with the outside temperature design bases of 93EF. At this reduced flow rate, the room temperature could increase up to 133EF which was 13EF above the design bases room temperature of 120EF. In this case, the outside temperature could not exceed 80EF in order to maintain the EDG room at its design bases mild environment temperature. This temperature was often exceeded during the summer months.

The licensee stated that the EDG room high alarm set-points of 117EF had never alarmed during summer testing and that the fans were inspected every 2 years. However, the inspectors could not find any surveillance records which documented the outside temperatures during testing of the EDGs. Neither could the licensee retrieve any records that revealed that the ventilation system had been inspected for blockage. Therefore, the inspectors concluded that the licensee did not have an adequate technical justification for determining that the EDGs would meet their design bases mild environment temperature of 120EF with an outside temperature of 93EF.

The licensee was continuing the test program for the three EDG ventilation systems at the end of the inspection period. In addition, the licensee was still evaluating the impact of lower than expected ventilation flow rates. The inspectors considered this issue to be an unresolved item pending completion of testing and evaluation efforts.
(URI 05000237/20060003-03; 05000249/2006003-03)

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 in Technical Specifications or other design documents. The inspectors also reviewed the tests to determine if the systems were restored to the operational readiness status consistent with the design and licensing basis documents. The inspectors reviewed post-maintenance testing activities associated with the following:

- Unit 2, Replaced automatic switch company solenoid valve for the torus to reactor building vacuum relief air operated valve 2-1601-20A;
- Unit 3, Performed planned maintenance on emergency diesel generator;
- Unit 3, Disassemble and inspect 3A standby liquid control pump discharge check valve 3-110143A and Inspection bladder on 3A standby liquid control accumulator;

- Unit 2, Repaired high pressure coolant injection system motor operated valve 2-2301-14 motor;
- Unit 2, Replaced accumulator for control rod drive hydraulic control unit D4; and
- Unit 2, Replaced Automatic Switch Company solenoid valve for the drywell air sampling isolation valve, 2-9205.

This represented six inspection samples.

b. Findings

No findings of significance were identified.

1R20 Refueling and Other Outage Activities (71111.20)

a. Inspection Scope

The inspectors reviewed an event that occurred during the Unit 2 Fall 2005 refueling outage. The event involved the licensee's actions of revising work order instructions that resulted in the temporary loss of shutdown cooling to the reactor vessel. The inspectors reviewed the licensee's documentation for this event and interviewed licensee plant personnel to determine if any regulatory requirements were not met during the event.

b. Findings

(Closed) Unresolved Item 05000237/2005013-02: Inadequate Work Order Package Caused Temporary Loss of Shutdown Cooling

Introduction: A Green finding involving a Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was self revealed when the Unit 2 shutdown cooling system was temporarily lost, after revising work order (WO) instructions. The resultant work order instructions were not within the scope of the work order clearance boundary.

Description: On November 6, 2005, the licensee was removing an electrical lead as part of a permanent modification to address a single point vulnerability associated with the protective relaying circuitry for the safety related 4160 volt buses, 23 and 24. Electrical maintenance personnel lifted an electrical lead which ultimately resulted in the loss of shutdown cooling on Unit 2 due to the de-energization of 4160 volt and 480 volt buses. Bus 23 fed the A shutdown cooling pump which was aligned to the reactor vessel.

The licensee conducted an apparent cause evaluation which determined that the cause of the loss of shutdown cooling was due to a human performance error on the part of maintenance department personnel. The electricians noted a discrepancy between the specified drawing that was used and the WO instructions. The drawing specified the de-termination of two jumpers; however, the WO did not include this direction. One jumper was connected to the unit auxiliary transformer (UAT) while the other jumper was connected to the reserve auxiliary transformer (RAT). The WO package was

subsequently revised by a maintenance planner based on prior discussions between different workers.

The WO was tied to a clearance order which had placed the reserve auxiliary transformer out-of-service (OOS). Thus, only the RAT was de-energized, but the UAT was energized while the electricians were performing the work. However, the planner did not recognize that the instructions in the WO revision were not supported by the clearance order for the RAT OOS. As a result, when the electricians lifted the electrical lead associated with the UAT, Bus 23 de-energized, followed by the loss of Buses 23-1, 4160 volts, and Bus 28, 480 volts and the initiation of Group II and Group III isolations.

At the time of this event, the A shutdown cooling system pump was aligned to the reactor vessel providing decay heat removal. Upon the loss of Bus 23, the A shutdown cooling pump tripped. Power was always available to the B and C shutdown cooling pumps through the Unit 3 cross-tie breakers. In responding to the event, the onshift crew restored shutdown cooling, approximately 35 minutes later, upon starting the B shutdown cooling pump. During this time, the reactor coolant system temperature only increased from 92EF to 94EF. In addressing this issue, the licensee conducted an apparent cause evaluation, added this event to their lessons learned database, and generated separate work orders for each transformer.

Analysis: The inspectors determined that the licensee's failure to ensure that the revised WO instructions remained bounded by the existing reserve auxiliary transformer clearance order boundary was a performance deficiency warranting a significance evaluation. This failure resulted in the temporary loss of shutdown cooling which was providing decay heat removal for the reactor coolant system. The inspectors concluded that the finding was greater than minor in accordance with Inspection Manual Chapter (IMC) 0612, "Power Reactor Inspection reports," Appendix B, "Issue Screening," issued on September 30, 2005, because, if left uncorrected, the licensee's failure to ensure work was properly evaluated could become a more significant safety concern resulting in excessive heatup of the reactor coolant system or rendering safety related equipment inoperable. The primary cause of this finding was related to the cross-cutting issue of human performance because personnel from a number of departments were ineffective in preventing this event.

The inspectors evaluated this issue using IMC 0609, Appendix G, "Shutdown Operations Significance Determination Process," dated May 25, 2004. The inspectors completed phase 1, Checklist 7, "Boiling Water Reactor Refueling Operation with RCS Level > 23," and answered "No" to all three questions that require phase 2 and 3 analyses. The finding did not increase the likelihood of a loss of reactor coolant system inventory; did not degrade the licensee's ability to terminate a leak path or add reactor coolant system inventory; and did not degrade the licensee's ability to recover decay heat removal once it was lost. Therefore, the inspectors determined that this finding was of very low safety significance (Green).

Enforcement: Appendix B, 10 CFR 50, Criterion V, Instructions, Procedures, and Drawings required that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings of a type appropriate to the circumstances. Contrary to the above, on November 6, 2005, a maintenance planner revised the work

order instructions for removing an electrical lead from the unit auxiliary transformer such that the instructions were no longer appropriate to the circumstances. The revised instructions no longer remained bounded by the existing reserve auxiliary transformer clearance order. As a result, the unit auxiliary transformer de-energized and the associated 4160 volt bus lost power. This error was considered a violation and ultimately resulted in the tripping of the A shutdown cooling system which was aligned to the reactor vessel for decay heat removal. In addressing this issue, the licensee conducted an apparent cause evaluation, added this event to their lessons learned database, and generated separate work orders for each transformer.

Because of the very low safety significance of this finding and because the issue was entered into the licensee's corrective action program, the finding is being treated as an NCV consistent with Section VI.A.1 of the NRC Enforcement Policy (**NCV 05000237/2006003-04; 05000249/2006003-04**).

Unresolved Item 05000237/2005013-02: "Inadequate Work Order Package Caused Temporary Loss of Shutdown Cooling" is closed.

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 Technical Specifications. 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 2 DOS 1400-05, Revision 32, "Core Spray System Pump Operability and Quarterly Inservice Testing Test with Torus Available;"
- Unit 2/3 Reactor Coolant System Leakage Appendix A, Revision 102, Unit NSO Daily Surveillance Log;
- Unit 2 DOS 6608-08, Revision 36, Diesel Generator Cooling Water Pump Quality and Comprehensive/Pressure Test for Operational Readiness and In-service Test (IST) Programs;
- Unit 2 DOS 1400-02, Revision 27, "Core Spray System Valve Operability and Timing;"
- Unit 3 DOS 1400-07, Revision 17, "Emergency Core Cooling System Venting;"
- Unit 2 DMS 40-01, Revision 15, IST Program Relief Valve Surveillance; and
- Unit 2 DIS 0201-01, Revision17, "Reactor Vessel 600 PSI Scram Bypass Pressure Switch Calibration."

This represented a total of seven inspection samples, of which two were In Service Testing, one was Reactor Coolant System Leak Detection, and four were Routine Surveillance.

b. Findings

No findings of significance were identified.

1EP2 Alert and Notification System (ANS) Testing (71114.02)

a. Inspection Scope

The inspectors reviewed and discussed with corporate office and Dresden Station Emergency Preparedness (EP) staffs records on the operation, maintenance, and testing of the ANS in the Dresden Station's Emergency Planning Zone to determine whether the ANS equipment was adequately maintained and tested during 2004 and 2005 in accordance with emergency plan commitments and procedures. The inspectors reviewed records of ANS tests conducted in January through September 2005. The inspectors also reviewed correspondence and discussed the status of modifications to the ANS to determine whether these ongoing modifications were being adequately coordinated with State and Federal Emergency Management Agency (FEMA) officials.

These activities completed one inspection sample.

b. Findings

No findings of significance were identified.

1EP3 Emergency Response Organization (ERO) Augmentation Testing (71114.03)

a. Inspection Scope

The inspectors reviewed implementing procedures that contained details on the primary and alternate methods of initiating an ERO activation to augment the on-shift ERO. The inspectors also discussed the provisions for maintaining the Station's ERO roster and the ERO telephone directory. The inspectors reviewed records of the Dresden Station's unannounced, off-hours augmentation drills, which were conducted between January 2004 and October 2005, to determine the adequacy of the drills' critiques and resulting corrective actions. The inspectors reviewed and discussed trending program outputs and other actions implemented in recent months to reduce the dependence on the participation of Station ERO members, who were not members of a given week's on-call team, to the overall success of off-hours augmentation drills conducted during 2004 and 2005. The inspectors also reviewed training records of a random sample of 36 Station ERO members, who were assigned to key and support positions, to verify that they were currently trained for their assigned positions. The inspectors reviewed the ERO roster to verify that good numbers of personnel were assigned to each key and

support position. The inspectors also reviewed a sample of records that summarized the respiratory protection qualification status of certain ERO members to determine whether sufficient numbers of personnel were qualified to use respiratory protection equipment during 2005.

These activities completed one inspection sample.

b. Findings

No findings of significance were identified.

1EP4 Emergency Action Level (EAL) and Emergency Plan Changes (71114.04)

a. Inspection Scope

The inspectors reviewed site-specific letters of agreement with the seven local offsite support organizations, which were listed in Appendix 2 of Revision 19 of the Dresden Station Annex of Exelon's Standardized Emergency Plan, to determine whether these agreements were adequately detailed and in effect through December 2006. The inspectors also reviewed changes to Unusual Event EAL MU-11's threshold value statement, which were made in May 2005 and December 2005, to determine whether incorrect wording changes introduced in May 2005 were more than editorial in nature and, therefore, may have decreased the effectiveness of the emergency plan prior to their correction in December 2005.

These activities completed one inspection sample.

b. Findings

No findings of significance were identified.

1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies (71114.05)

a. Inspection Scope

The inspectors reviewed Nuclear Oversight (NOS) staff's 2004 and 2005 audits of the licensee's EP program to verify that these independent assessments met the requirements of 10 CFR 50.54(t). The inspectors also reviewed records of EP drills and exercises conducted during 2004 and 2005 to verify that the licensee fulfilled its drill and exercise commitments. The inspectors assessed the adequacy of critique reports on the two actual emergency events that occurred since January 2004. Samples of corrective action program records and completed corrective actions were reviewed to determine whether NOS-identified concerns, drill and exercise critique concerns, and EP concerns associated with the actual emergency declarations were adequately addressed. The inspectors also reviewed and discussed corrective action program records, a surveillance procedure, and a work order that were associated with problems identified with the Dresden Station's public address system and the ongoing efforts to determine the scope of needed system repairs.

These activities completed one inspection sample.

b. Findings

No findings of significance were identified.

1EP6 Drill and Training Evaluations (71114.06)

March 27, 2006, Emergency Preparedness Performance Indicator Training Evolution Exercise

a. Inspection Scope

The inspectors observed a training evolution of operating crew #2 on March 27, 2006. The drill scenario involved a loss of motor control center 25-1, 480 volt, reactor building ventilation radiation monitor failure upscale, standby gas treatment failure to start, bus 21 (4 KV) trip, core power oscillations, and anticipated transient without scram. This observation was compared against the emergency plan requirements to determine the effectiveness of drill participants and the adequacy of the licensee's critique in identifying weaknesses and failures.

This represented one inspection sample.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS1 Access Control to Radiologically Significant Areas (71121.01)

.1 High Radiation Area and Locked High Radiation Area Access Controls

a. Inspection Scope

The inspectors reviewed the licensee's practices for the identification of transient high radiation areas and the control of access into these areas. The inspectors assessed compliance with the licensee's Technical Specifications, the requirements of 10 CFR Part 20, and the guidance contained in Regulatory Guide 8.38. In particular, the inspectors evaluated a condition previously identified by the licensee in October 2005, (documented in assignment report (AR) 00390225) associated with the radiological conditions and the radiological controls in areas beneath the traversing in-core probe (TIP) rooms during TIP runs. Specifically, the inspectors reviewed the licensee's actions including radiation surveys and dose rate calculations, following its identification of reduced shielding in the floor of the TIP rooms.

This review represented one inspection sample.

b. Findings

No findings of significance were identified.

2OS3 Radiation Monitoring Instrumentation (71121.03)

.1 Inspection Planning

a. Inspection Scope

The inspectors reviewed the Dresden Station Updated Final Safety Analysis Report, (UFSAR) to identify applicable radiation monitors associated with measuring transient high and very high radiation areas, including those used in remote emergency assessment. The inspectors identified the types of portable radiation detection instrumentation used for job coverage of high radiation area work, including instruments used for underwater surveys, fixed area radiation monitors used to provide radiological information in various plant areas, and continuous air monitors used to assess airborne radiological conditions and consequently work areas with the potential for workers to receive a 50 millirem or greater committed effective dose equivalent (CEDE). Contamination monitors, whole body counters and those radiation detection instruments utilized for the release of personnel and equipment from the radiologically controlled area (RCA) were also identified.

These reviews represented two inspection samples.

b. Findings

No findings of significance were identified.

.2 Walkdowns of Radiation Monitoring Instrumentation

a. Inspection Scope

The inspectors conducted walkdowns of selected area radiation monitors (ARMs) in the Unit 2 and 3 Reactor Building and the Unit 2 and 3 Filter Building to verify that they were located as described in the UFSAR and were optimally positioned relative to the potential source(s) of radiation they were intended to monitor. Walkdowns were also conducted of those areas where portable survey instruments were calibrated/repaired and maintained for radiation protection (RP) staff use to determine if those instruments designated “ready for use,” were sufficient in number to support the radiation protection program, had current calibration stickers, were operable, and were in good physical condition. Additionally, the inspectors observed the licensee’s portable survey instrument calibration unit and the radiation sources used for operability checks of various radiation measuring instruments to assess their material condition and discussed their use with RP staff to determine if they were used adequately. Licensee personnel demonstrated the methods for performing source checks of portable survey instruments and for source checking personnel contamination and portal monitors located at the egress to the RCA.

These reviews represented one inspection sample.

b. Findings

No findings of significance were identified.

.3 Calibration and Testing of Radiation Monitoring Instrumentation

a. Inspection Scope

The inspectors selectively reviewed radiological instrumentation associated with monitoring transient high and/or very high radiation areas, instruments used for remote emergency assessment, and radiation monitors used to identify personnel contamination and for assessment of internal exposures to verify that the instruments had been calibrated as required by the licensee's procedures, consistent with industry and regulatory standards. The inspectors also reviewed alarm setpoints for selected ARMs, for personnel contamination monitors and for portal (egress) monitors to verify that they were established consistent with the UFSAR or Technical Specifications, as applicable, and were consistent with industry practices and regulatory guidance. Specifically, the inspectors reviewed calibration procedures and the most recent calibration records for the following radiation monitoring instrumentation and instrument calibration equipment:

- Unit 2 and 3 Drywell High Range (Accident) Radiation Monitors;
- Unit 2 and 3 Drywell Continuous Air Monitors;
- Unit 2 and 3 Refuel Floor High Range ARMs;
- Small Article Monitors used at RCA Egresses;
- Unit 2 Isolation Condenser ARM;
- Unit 2 TIP Cubicle ARM;
- Unit 2 Radwaste Pump Room ARM;
- Unit 3 Charcoal Adsorber Vault ARM;
- Unit 3 Filter Building ARM;
- Portal (Gamma) Monitors used at RCA and Plant Egresses;
- Personnel Contamination Monitors used at RCA egress;
- Portable Survey Instruments used for Underwater Surveys;
- Instrument Calibrator (and the associated instruments used to measure calibrator output); and
- Whole Body Counter.

The inspectors determined what actions were taken when, during calibration or source checks, an instrument was found significantly out of calibration or exceeded as-found acceptance criteria. Should that occur, the inspectors verified that the licensee's actions would include a determination of the instrument's previous usages and the possible consequences of that use since the prior calibration. The inspectors also discussed with RP staff the Dresden Station 10 CFR Part 61 source term (radionuclide mix) to determine if the calibration sources used were representative of the plant source term and that difficult to detect nuclides were scaled into whole body count dose determinations.

The inspectors discussed the operability of the high radiation sampling system (HRSS) with chemistry supervision and reviewed surveillance records for 2004 and 2005, to determine if system capability was verified consistent with regulatory commitments described in NRC correspondence for License Amendment No.197 (Unit 2) and License Amendment No. 190 (Unit 3). Those amendments eliminated the HRSS system as a required post accident sampling system from the plant's Technical Specifications, provided the licensee maintained and developed contingency plans for obtaining and analyzing highly radioactive samples of reactor coolant, suppression pool and containment atmosphere.

These reviews represented one inspection sample.

b. Findings

No findings of significance were identified.

.4 Problem Identification and Resolution

a. Inspection Scope

The inspectors reviewed licensee corrective action program documents (assignment reports (ARs)) and any special reports that involved personnel contamination monitor alarms due to personnel internal exposures to verify that identified problems were entered into the corrective action program for resolution. Licensee self-assessments, audits and ARs were also reviewed to verify that problems with radiological instrumentation were identified, characterized, prioritized, and resolved effectively using the corrective action program.

The inspectors reviewed corrective action program reports related to exposure significant radiological incidents that involved radiation monitoring instrument deficiencies since the last inspection in this area, as applicable. Members of the radiation protection staff were interviewed and corrective action documents were reviewed to verify that follow-up activities were being conducted in an effective and timely manner commensurate with their importance to safety and risk based on the following:

- 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; and
- Identification and implementation of effective corrective actions.

The inspectors determined if the licensee's self-assessment, audit and/or field observation activities completed for the 2 year period that preceded the inspection were identifying and addressing repetitive deficiencies or significant individual deficiencies in problem identification and resolution, as applicable.

These reviews represented three inspection samples.

b. Findings

No findings of significance were identified.

.5 Radiation Protection Technician Instrument Use

a. Inspection Scope

The inspectors selectively verified that calibrations for those survey instruments previously used to perform job coverage surveys and for those currently designated for use had not lapsed. The inspectors reviewed instrument issue logs for selected dates in February and March 2006 to verify that response checks of portable survey instruments and checks of instruments used for unconditional release of materials and workers from the RCA were completed prior to instrument use or daily, as required by the licensee's procedure. The inspectors also discussed instrument calibration methods and source response check practices with radiation protection staff and observed staff complete instrument source checks prior to use.

These reviews represented one inspection sample.

b. Findings

No findings of significance were identified.

Cornerstone: Public Radiation Safety

2PS1 Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems (71122.01)

.1 Followup on Underground Line Leak From Condensate Storage Tanks

a. Inspection Scope

The inspectors completed an interim review of the licensee's water sampling results and sampling locations following its identification of an apparent underground pipe leak associated with the condensate storage tanks (CSTs) in January 2006. According to the licensee, the leak originated in an older section of underground piping that carries water from the CSTs to the high pressure coolant injection system, which had been scheduled to be replaced in the summer of 2006. Tritium and other radionuclide sampling results were reviewed for January, February and March 2006. The purpose of the review was to determine whether the licensee identified the leak in a timely manner and performed appropriate groundwater sampling to characterize the extent and magnitude of the plume. Additionally, the inspectors reviewed the licensee's remediation plan and actions to prevent the leaked water from migrating offsite. Sampling results reviewed included samples collected from monitoring wells located within the protected area (within facility fence-line), sample results from protected area storm drains, samples from areas excavated to repair the leaking line, and selected licensee monitoring wells located outside the protected area south of the plant. The sampling data was reviewed to determine if samples were collected from representative locations so as to demonstrate Technical Specification and 10 CFR Part 20 radionuclide

concentration limits in unrestricted areas were met and to determine if the licensee's interim characterization and sampling was adequate to evaluate the radiological impact of this leak consistent with 10 CFR 20.1501.

These reviews represented one inspection sample.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

a. Inspection Scope

Cornerstone: Initiating Events

The inspectors sampled the licensee's records associated with the two initiating event performance indicators (PI) listed below for Units 2 and 3. Specifically, the inspectors looked at the period from the first quarter of 2004 through the fourth quarter of 2005. To verify the accuracy of the PI data reported during that period, PI definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 3, were used to verify the basis in reporting for each data element. The inspectors reviewed portions of the operations logs and raw PI data developed from the monthly operating reports and discussed methods for compiling and reporting the PIs with cognizant licensee personnel. The inspectors compared graphical representations from the most recent PI report to the raw data to verify that the data was correctly reflected in the report. Licensee event reports (LERs) issued during the referenced time frame, operating logs, and the unit nuclear station operator daily surveillance log for reactor coolant system leakage were also reviewed. All data reviewed covered the period from January 2004 through December 2005. The inspectors discussed methods for compiling and reporting the PIs with cognizant licensee personnel.

- Unplanned Scrams per 7000 Critical Hours, Units 2 and 3
- Scrams with Loss of Normal Heat Removal, Units 2 and 3

Cornerstone: Barrier Integrity

- Reactor Coolant System Leakage, Units 2 and 3

The inspectors sampled the licensee's records associated with the barrier integrity PI listed above for Units 2 and 3. The inspectors used PI definitions and guidance contained in Revision 3 of Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," to verify the accuracy of the performance indicator data reported to the NRC. Specifically, the inspectors reviewed

licensee records associated with PI data reported for the period of January 2004 through December 2005. Reviewed records included: operating logs, licensee event reports (LERs) and unit NSO daily surveillance log for reactor coolant system leakage for the referenced time frame.

This represented six inspection samples.

b. Findings

No findings of significance were identified

Cornerstone: Emergency Preparedness

.1 Emergency Preparedness Strategic Areas

a. Inspection Scope

The inspectors reviewed the licensee's records associated with the three EP performance indicators (PIs) listed below. The inspectors verified that the licensee accurately reported these indicators in accordance with relevant procedures and Nuclear Energy Institute guidance endorsed by the NRC. Specifically, the inspectors reviewed licensee records associated with PI data reported to the NRC for the period January 2005 through September 2005. Reviewed records included: procedural guidance on assessing opportunities for the three PIs; assessments of PI opportunities during pre-designated Control Room Simulator training sessions, the 2005 biennial exercise, and integrated emergency response facility drills; revisions of the roster of personnel assigned to key ERO positions; and results of ANS operability tests. The following PIs were reviewed:

- Alert and Notification System;
- ERO Drill Participation; and
- Drill and Exercise Performance.

These activities completed three inspection samples.

b. Findings

No findings of significance were identified.

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. 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.

This represents one quarterly in-depth review.

b. Findings

No findings of significance were identified.

4OA3 Event Followup (71153)

a. Inspection Scope

The inspectors reviewed one licensee event report (LER) to ensure that the issue documented in the report was adequately addressed in the licensee's corrective action program. The inspectors interviewed plant personnel and reviewed operating and maintenance procedures to ensure that generic issues were captured appropriately. The inspectors reviewed operator logs, the Updated Final Safety Analysis Report, and other documents to verify the statements contained in the LER.

b. Findings

(Closed) Licensee Event Report (LER) 237/2005-004-01: "Unit 2 Main Steam Target Rock Safety/Relief Valve As-Found Setpoint Outside of Technical Specification Allowed Value"

During the Unit 3 Fall 2004 refueling outage, the licensee's test results, from the testing facility, on four main steam safety valves indicated that one of the valves lifted prematurely outside Technical Specification requirements. The valve lifted 1.5 percent low at 1231 pound per square inch (psig) instead of lifting at the required setpoint of 1250 psig. The premature lifting of the Unit 2 main steam Target Rock safety/relief valve was documented in LER 237/2005-004-01 and dispositioned in Inspection Report 05000237/2005010; 05000249/2005010 as a licensee identified violation because the Unit 2 valve was determined to have been inoperable beyond the Technical Specification allowed outage time. The Unit 3 valve was not determined to have been inoperable even though the valve lifted earlier because no physical damage was subsequently identified during disassembly and inspection of the valve.

This LER is closed.

This represented one inspection sample.

4OA5 Other Activities

1. Implementation of Temporary Instruction (TI) 2515/165 - Operational Readiness of Offsite Power and Impact on Plant Risk

a. Inspection Scope

The objective of TI 2515/165, "Operational Readiness of Offsite Power and Impact on Plant Risk," was to confirm, through inspections and interviews, the operational readiness of offsite power systems in accordance with NRC requirements. On March 27 through March 30, 2006, the inspectors reviewed licensee procedures and discussed the attributes identified in TI 2515/165 with licensee personnel. In accordance with the requirements of TI 2515/165, the inspectors evaluated the licensee's operating procedures used to assure the functionality/operability of the offsite power system, as well as, the risk assessment, emergent work, and/or grid reliability procedures used to assess the operability and readiness of the offsite power system.

The information gathered while completing this Temporary Instruction was forwarded to the Office of Nuclear Reactor Regulation for further review and evaluation.

b. Findings

No findings of significance were identified.

.2 Temporary Instruction 2515/161 - Transportation of Reactor Control Rod Drives In Type A Packages

a. Inspection Scope

The inspectors examined site specific records and interviewed the licensee's primary shipper regarding Dresden's use of DOT Specification 7A Type A packaging for the shipment of Control Rod Drive Mechanisms (CRDM). The licensee made five CRDM shipments in Type A packages between 2002 and 2005. The inspectors reviewed the Type A package test documentation and engineering evaluation data maintained by the licensee as required by 49 CFR 173.415(a), and discussed the test results and suitability of the packaging for CRDM shipments.

b. Findings

No findings of significance were identified.

4OA6 Meetings

.1 Exit Meeting

The inspectors presented the inspection results to the Site Vice President, Mr. D. Bost, and other members of licensee management on April 7, 2006. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was discussed.

.2 Interim Exit Meetings

Interim exit meetings were conducted for:

- Emergency Preparedness inspection with Mr. D. Bost on January 13, 2006;
- Occupational radiation safety cornerstone radiation monitoring instrumentation program and aspects off the public radiation safety cornerstone effluent monitoring program with Mr. D. Wozniak on March 17, 2006; and
- Heat Sink Biennial inspection with Mr. D. Bost on March 24, 2006.

ATTACHMENT: SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel

D. Bost, Site Vice President
D. Wozniak, Plant Manager
H. Bush, Radiation Protection, Acting Radiation Protection Manager
S. Taylor, Radiation Protection Manager
R. Conklin, Radiation Protection Supervisor
R. Ford, Emergency Preparedness Manager
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
R. Kalb, Environmental Chemist
J. Kish, ISI Program Owner
M. McGivern, CCSW System Engineer
K. Nedemeyer, GL 89-13 Program Owner
P. Salas, Regulatory Assurance Manager
J. Sanquist, Emergency Preparedness Specialist
P. Selzer, Emergency Preparedness Coordinator

NRC personnel

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

IEMA personnel

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

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

05000237/2006003-01 05000249/2006003-01	NCV	Failure to Perform Weld Inspections by Independent Certified Quality Verification Inspectors
05000237/2006003-02 05000249/2006003-02	NCV	Installation of Various Lighting Fixtures Without Using Plant Modification Process
05000237/2006003-03 05000249/2006003-03	URI	Adequacy of Emergency Diesel Generators Ventilation Systems
05000237/2006003-04	NCV	Revision to Work Order Instructions Resulted in the Temporary Loss of Shutdown Cooling

Closed

05000237/2006003-01 05000249/2006003-01	NCV	Failure to Perform Weld Inspections by Independent Certified Quality Verification Inspectors
05000237/2006003-02 05000249/2006003-02	NCV	Installation of Various Lighting Fixtures Without Using the Plant Modification Process
05000237/2006003-04	NCV	Revision to Work Order Instructions Resulted in the Temporary Loss of Shutdown Cooling
05000237/2003002-02 05000249/2003002-02	URI	Adequacy of Site Welding Program
05000237/2005013-02	URI	Inadequate Work Order Package Caused Loss of Shutdown Cooling
05000237/2005-004-01	LER	Unit 2 Main Steam Target Rock Safety/Relief Valve As-Found Setpoint Outside of Technical Specification Allowed Value

Discussed

None

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.

1R04 Equipment Alignment

-Unit 2 DOP 1300-M1/E1; Unit 2 Isolation Condenser System; Revision 15
-NES-MS-04.5; Pipe Support Analysis; Revision 0
-Drawing M28; Diagram of Isolation Condenser Piping; May 28, 2003
-NES-MS-04.5; Pipe Support Analysis; Revision 0
-AR00316860; Unit 2 Isolation Condenser System Walkdown Results; March 24, 2005
-AR00362442; 3 Valve Stems Broken on Same Valve in Last 10 Years; August 12, 2005
-AR00398022; Bent & Not Secured Rod Hangers on ISO Cond. Vent line; November 11, 2005
-AR00435730; NRC Identified Checklist Question; December 20, 2005
-AR00455287; ISO Vent Pipe Support Bolting Deficiencies; February 17, 2006
-AR00466583; Mercury Vapor Light Transformer: March 15, 2006

1R05 Fire Protection

-IR 451209; NRC Inspector identifies several issues during plant tour; February 27, 2006
-IR 451804; Rag is stuffed in PA load speaker; February 8, 2006
-IR 451809; Rust & peeling paint on exhaust duct and surrounding wall; February 8, 2006

1R07 Heat Sink Performance

-EACE 355995-05; Apparent Cause Evaluation: 2A RBCCW Temperature Control Valve Stem Failure; dated July 23, 2005
-VV-13-001A; Calculation for CCSW Cooler Performance and Effectiveness Curve Essential Calc; dated November 28, 2005
-VV-12; Calculation for CCSW Cooler Cooling Coils Capacity at Various Water Temperature and Water Flow Rate; Revision 0
-SP 92-8-111; Containment Cooling Service Water Vault Cooler Test; dated March 11, 1993
-WO 00335282 01; SEP D3 2Y Com CCSW Pp Cubicle Clr Perf Test completed July 9, 2003; Revision 1
-DTS 1500-04; CCSW pump Cubicle Coolers 2(3)-5700-30AandB completed July 9, 2003, Revision 7
-DTS 1500-04; CCSW pump Cubicle Coolers 2(3)-5700-30AandB completed December 21, 2005; Revision 7
-IR 101522.20.20; License Renewal Commitment- DTS 1500-04 provides performance monitoring; dated January 31, 2005
-Calibration Certificate 001368376; Controlotron Multifunction Flowmeter; dated September 2, 2005
-ER-AA-340-1002; Attachment 1; D3 CCSW Pp Vault "A" Cooler Inspection Data Sheet; May 20, 2004

-WO 364132-01; ER-AA-340-2000, Attachment 2, 3A RBCCW HX Inspection and Work Report; dated November 29, 2005
-WO 340444-01; 3A RBCCW HX Eddy Current Test Report; dated December 2005
-U2/3 DCP 1008-04; Data Sheet 1 HX Inspection/Cleaning Report; March 27, 2001
-NWR 99065330; RBCCW HX 6Y PM Clean Inspect and Eddy Current; March 27, 2001
-VETIP Binder D1110; RBCCW HX EPN 3702
-VETIP Binder D1185; CCSW pump room cooler EPN 5700-30
-EC Eval 348504; Evaluate removal of 2 tubes of 3-5700-30A; Revision 00
-U2/3 DCP 2103-06; Cooling and Service Water Chemical Injection System; Revision. 28
-WO 00862933; Bay 13 Inspection/Cleaning Report; dated January 25, 2006
-U2/3 DOP 4400-07; Circ Water De-icing Operation; Revision 10
-CY-AA-120-410; Circ/Service Water Chemistry; Revision 1
-Plant Health Committee System Presentation; U2 RBCCW; dated December 2005
-Plant Health Committee System Presentation; U3 RBCCW; dated December 2005
-Plant Health Committee System Presentation; U2 CCSW; dated December 2005
-Plant Health Committee System Presentation; U3 CCSW; dated December 2005
-CR 00428575; 3A RBCCW HX partition plate weld; dated November 29, 2005
-AR 00194195; HXs Pass Partition Plate Repairs Deficient; dated January 08, 2003
-AR 00313039; FASA 290770-05 Identified Program Engineering Deficiency; dated March 15, 2005
-AR 00327840; Cleaning of 2/3 Rbccw Hx Tubes Needs to Be Improved; dated April 22, 2005
-AR 00428216; High D/p on 2a Stator Water Cooling Heat Exchanger; dated November 28,2005
-AR 00428741; Repeat Issue: Incorrect Scrapers for Rbccw Hx Tube Cleaning; dated December 11, 2005
-AR 00431435; Hx Inspection Work Order Packages Fasa Identified Weaknesses; dated December 07, 2005
-AR 00432695; Pre-established Viac Lacking Date and Signature; dated December 11, 2005
-AR 00432700; Not All BOP Hx Inspected Using ER-AA-340-2000; dated December 11, 2005
-AR 00432702; Some BOP Hxs Inspected Using Least Best Procedure; dated December 11, 2005
-AR 00432705; Some Completed Hx Inspections Not Part of Wo Package; dated December 11, 2005
-AR 00355995; 2A RBCCW Temperature Control Valve Stem Failure; dated July 23, 2005
-AR 00456237; 3B RBCCW HX NORTH HEAD OXIDE DEPOSITS; dated February 20, 2006
-AR 00457660; U3 RBCCW 3B HX Maint Rule Unavailability Extended; dated February 23, 2006
-AR 00460063; No Hx Inspection Documented When 2/3 6669-a/b Replaced; dated February 28, 2006
-AR 00468996; U2 CCSW pp Vault CLR "B" Cooling Coil has leak; dated March 21, 2006
-TCCP 360118; Temporary CCSW pp vlt coil 2-5700-30B Isolation; dated March 21, 2006
-50.59 Screening 2006-0106; TCCP EC 360118; Revision 0
-TCCP 353888; Temporary CCSW pp vlt coil 2-5700-30B Isolation; dated February 21, 2005
-FASA AT 380051; Focused Area Self-Assessment Heat Sink Performance; dated January 25, 2006
-FASA AT 290770-05; Heat Exchanger Inspections; dated December 14, 2005

AR Generated From Inspection:

-AR 00469854; Validation of Tubes Plugged in 3A CCSW Vault Cooler; dated March 23, 2006

1R13 Maintenance Risk Assessments and Emergent Work Control

-Unit 2(3) DOP 1600-01, Revision 21, “Normal Pressure Control of the Drywell or Torus”
-OP-MW-109-101, Revision 5, Attachment 4, “Clearance Preparation and Approval Checklist,” Clearance # 42991 and 43000
-Technical Specifications (TS), 3.1.7
-Updated Final Safety Analysis Report (UFSAR), Section 9.3.5, “Standby Liquid Control System”
-WC-AA-101, Revision 11, “On-line Work Control Process”
-WC-AA-101-1002, Revision 5, “On-line Scheduling Process”
-Risk Assessment for the maintenance job
-Protected Pathway Tracking Sheet (Operator Aid 221, revision 3)
-AR00469044; NRC Concerns with Inspection in 2003; March 21, 2006
-IR00466530; Inaccuracy Noted in Hours Trained; March 15, 2006
-AR00146547; NOS Identifies Welding Performance Indicator Turns Red; February 27, 2003
-AR00140353; NOS Identifies QV Hold Point Incorrectly Placed in WP; January 21, 2003
-AR00153300; NOS Ids Potential Adverse Trend in MMD Weld Performance; April 10, 2003
-AR00153235; NOS/QV Rejects 1 Weld for Underlength & Not Per Design; April 9, 2003
-AR00161535; NOS/QV Identified Incorrect Welds; June 2, 2003
-NO-AA-300-001; Inspection Planning and Execution of Quality Inspection Activities; Revision 0
-NO-AA-300-001-1001; Nuclear Oversight Independent Inspection Plan; Revision 2
-NO-AA-300-001-1002; Quality Verification Welding Performance Monitoring Program; Revision 1
-Module 25 (GNMW25); Welding - Welding Verification; Revision 1
-TQ-AA-112-1008; Nuclear Oversight - Quality Verification Training, Qualification, and Certification; Revision 1
-CC-AA-501-1003; Exelon Nuclear Welding Program Visual Weld Acceptance Criteria; Revision 0
-CC-AA-501-1025; Exelon Nuclear Welding Program Weld End Preparation and Joint Details; Revision 0
-ComEd Special Process Procedures Manual Welding and Brazing; Nuclear Stations Visual Weld Inspection Criteria VI-3; Revision 2
-Exelon Nuclear Special Process Procedures Manual Welding and Brazing; AWS D1.1 Structural Welding - Steel General Requirements; Revision 4
-Exelon Nuclear Special Process Procedures Manual Welding and Brazing; AWS D1.3 Structural Welding Code - Sheet Steel General Requirements; Revision 4
-USAS B31.1.0; Power Piping; 1967
-Exelon Nuclear Special Process Procedures Manual Welding and Brazing; ASME/B31.1 General Welding Requirements

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

-AR00452084; Trends of Local Shallow Tritium Sampling Wells - 1 Anomally; February 9, 2006
-AR00452796; Elevated Tritium Levels Noticed on E-3 Sample point; February 11, 2006

1R15 Operability Evaluations

-AR00451966; NRC Inspectors Concern on IR Response; February 9, 2006
-AR00452619; NRC Questioned Positioning of RP Remote Monitoring Cart; February 10, 2006
-AR00467579; NRC questions ventilation to SBO diesel generators; March 17, 2006
-IR 425169; Increase in Core Spray Flaws Affects Pipe Leakage; dated November 17, 2005
-EC 358233 “Acceptance Review of GE Assessment of Dresden Unit 2 Core Spray Line Crack Leakage,” Revision 0
-EC 35821 “Engineering Acceptance of Dresden 2 CS line Break Leakage Inputs and Assumptions,” Revision 0
-OE 06-001, Revision 001, “6600 Emergency Diesel Generator”
-AR 347338; DG ventilation calculation weaknesses; June 24, 2005
-AR 449319; Unit 3 DG room ventilation fan below design; February 2, 2006
-AR 466360; Measured air flow is lower than design value; March 14, 2006
-AR 466834; 2/3 DG ventilation fan does not meet design flow rate; March 15, 2006

1R19 Post Maintenance Testing

-Technical Specifications (TS), 3.1.7
-Updated Final Safety Analysis Report (UFSAR), section 9.3.5, “Standby Liquid Control System”
-WO 00344167, “D3 TSPR/IST Disassemble & Insp 3-1101-43A per DTP 48"
-WO 00897534, “Ops PMT After Repl ASCO Sol Valve 2-9205-A”
-WO 00736382, “HCU D4 Has Repeating High Water Alarms”
-WO 00880441, “D3 1M TS unit Diesel Generator Operability”
-WO 099023128, “D3 Disassemble and inspect bladder on 3A standby liquid control accumulator”
-WO 0056140-02, “D2 Post-maintenance testing after repair of (HPCI) system MOV (2-2301-14 motor”

1R22 Surveillance Testing

-DOS 1400-07, revision 17, “ECCS Venting”
-WO 00890903, “D3 1M TS HPCI Disch Piping Water Filled Verification”
-WO 99014767, “D2 10 Y TS IST HPCI RV - RPLC/Test - GRP B”

1EP2 Alert and Notification System (ANS) Testing

-Dresden Station Offsite Siren Test Plan; Revision 5
-Exelon Semi-Annual Siren Report; January 2004 through June 2004
-Exelon Semi-Annual Siren Report; July 2004 through December 2004
-Exelon Semi-Annual Siren Report; January 2005 through June 2005
-Braidwood and Dresden Stations’ Warning System Maintenance and Operational Report; September 9, 2004, through December 13, 2004
-Braidwood and Dresden Stations’ Warning System Maintenance and Operational Report; October 3, 2005, through December 13, 2005
-IR 00322323; Semi-Annual Review of Second Half 2004 Siren Maintenance Records
-IR 00366771; Semi-Annual Review of First Half 2005 Siren Maintenance Records

-FEMA Letter to Illinois Emergency Management Agency; Review of Design Study on Proposed Modifications to ANS for the Dresden Station EPZ; dated March 4, 2004

1EP3 Emergency Response Organization (ERO) Augmentation Testing

-EP-AA-112; Emergency Response Organization and Emergency Response Facility Activation and Operation; Revision 10
-EP-AA-112-100; Control Room Operations; Revision 7
-EP-AA-112-100-F-06; Midwest ERO Notification or Augmentation; Revision D
-TQ-AA-113; ERO Training and Qualification; Revision 6
-Records of Unannounced, Off-Hours, Onsite ERO Augmentation Drills; January 2004 through October 2005
-IR 00290987; Five On-Call ERO Members Did Not Participate in January 2005 Off-Hours Augmentation Drill
-AR 00359109; Three On-Call ERO Members Did Not Participate In June 2005 Off-Hours Augmentation Drill
-IR 00359109; Six On-Call ERO Members Did Not Participate in July 2005 Off-Hours Augmentation Drill
-AR 00360864; Verify Accuracy of Data in ERO Call-Out System
-AR 00367727; Review Dresden ERO Members' Commuting Times From Their Residences to Ensure That None Equal or Exceed the Time Limit
-Apparent Cause Evaluation 00348336; Determine Reasons Why Participation of On-Call ERO Team Members Was Often Less Than Expectations During Unannounced, Off-Hours Station ERO Augmentation Drills Conducted in 2004 and 2005
-Examples of Computerized Tools Used to Trend the Participation of Each Dresden Station ERO Member in Unannounced, Off-Hours, ERO Augmentation Drills Since January 2005
-Random Sample of 36 Dresden Station ERO Members' EP Training Records
-Sample of Monthly Respirator and Self-Contained Breathing Apparatus Qualification Records for ERO Members from Six Departments; January through December 2005

1EP4 Emergency Action Level (EAL) and Emergency Plan Changes

-Letters of Agreement with Seven Site-Specific Offsite Support Organizations
-Dresden Station Annex to Exelon Standardized Emergency Plan; Section 3; Revision 19, dated May 2005
-Dresden Station Annex to Exelon Standardized Emergency Plan; Section 3 and Appendix 2; Revision 20, dated December 2005
-IR 00434537; EAL MU-11 Wording Error Self-Identified at Dresden Station and Quad Cities Station

1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies

-Exelon Emergency Plan; Section N - Drill and Exercise Program; Revision 16
-Dresden 2004 Off-Year Exercise Findings and Observation Report; dated April 30, 2004
-Dresden 2005 Exercise Findings and Observation Report; dated April 8, 2005
-Dresden 2004 Semi-Annual Health Physics Drill Report; dated June 3, 2004
-Dresden 2004 Medical and Health Physics Drill Findings and Observations Report; dated August 18, 2004

-Dresden 2005 Medical and Health Physics Drill Findings and Observations Report; dated August 2, 2005
-Dresden 2005 Field Monitoring Team Drills Critique Report; dated November 20, 2005
-AR 00247947; Enhancements Identified During 2004 Annual Medical Drill
-AR 00322559; Develop and Issue a Lessons Learned Required Reading Package on Control Room/Technical Support Center Coordination Issues Identified in 2005 Exercise
-AR 00366890; Assess How to Improve Hospital Notification Timeliness for Transport of a Contaminated, Injured Worker
-IR 00311454; Untimely Initial Notification Call to NRC During 2005 Exercise
-AR 00322488; Revise a Checklist to Ensure that County Liaisons Receive a Pre-Deployment Briefing
-AR 00322489; Develop and Issue a Lessons Learned Required Reading Package on Emergency Operations Facility Functional Work Groups' Coordination Concerns Identified During 2005 Exercise
-AR 00322605; Joint Information Center Staff Performance Concerns in 2005 Exercise
-Required Reading Package 2005-09; Coordination Concerns Between Emergency Operations Facility Work Groups During 2005 Exercise
-Required Reading Package 2005-10; Interfaces with State Responders and Associated Terminology
-EP Newsletter 2005-06; Rumor Control and Public Inquiries
-NRC Event Report 40727; Unit 3 Unusual Event Due to Loss of Offsite Power; dated May 4, 2004
-NRC Event Report 40844; Unusual Event Due to Earthquake Felt Onsite; dated June 28, 2004
-Dresden Station May 5, 2004 Unusual Event Critique Report; dated May 13, 2004
-Dresden Station June 28, 2004 Unusual Event Critique Report; dated July 26, 2004
-AR 00220033; Develop and Issue a Lessons Learned ERO Required Reading Package on the May 5, 2004 Unusual Event
-Required Reading Package; Dresden May 2004 Unusual Event Lessons Learned; dated May 28, 2004
-IR 00220775; ERO Pagers Not Activated During May 2004 Unusual Event
-IR 00232140; ERO Pagers Not Activated During June 2004 Unusual Event
-Internal Memorandum; Notification of ERO in Unusual Event Conditions; dated June 29, 2004
-EP-AA-112-100-F-01; Shift Emergency Director Checklist; Revision D
-NOS Corporate Comparative Audit Report; 2004 Emergency Preparedness 50.54(t) and Meteorology
-Dresden NOS Audit Report; 2004 Emergency Preparedness 50.54(t) and Meteorology
-NOS Corporate Comparative Audit Report; 2005 Emergency Preparedness 50.54(t) and - Meteorology
-Dresden NOS Report; Observation of 2005 Medical Drill
-Focus Area Self-Assessment 287265; Preparations for 2005 Audit of Offsite Agency Interfaces
-Agendas for January 2005 and January 2006 Radiological Emergency Preparedness Meetings with Offsite Officials and Support Agencies
-AR 00225129; Assess Opportunities to Improve ERO Pager Coverage
-IR 00368195; NOS Identified Incomplete Attendance Records for Some EP Drills Conducted in 2002 through Early 2005
-IR 00371012; October 2005 Response to June 2005 Nuclear Safety Review Board Concerns on Dresden Station EP Program
-AR 00327318; NOS Identified Concerns in Updating ERO Training Records

-AR 00271198; Inability to Hear or Understand Public Address Announcements in Certain Unit 3 Areas Identified in November 2004
-Dresden Operating Surveillance Procedure 9000-03; Station Public Address System Test; Revision 1
-AR 00340518; Public Address System Failures Identified in Certain Unit 2 and Unit 3 Areas During System Surveillance Testing in June 2005
-AR 00345363; Inability to Hear or Understand Public Address Announcements in Certain Unit 2 Areas Identified During System Surveillance Testing in June 2005
-AR 00356931; Develop Work Order to Determine Scope of Public Address System Repairs Based on Surveillance Tests Results
-Internal Correspondence; Plant Health Committee Approval of Vendor Support to Assess Plant Public Address System
-WO 822702-01; Evaluate Station Public Address System with Vendor in Late January 2006 through Early February 2006 to Determine Scope of Needed Work and Upgrades

1EP6 Drill and Training Evaluations

-TQ-AA-106-0115, Revision 3, "Simulator demonstration Examination Shift Manager Competency Evaluation Form"
-TQ-AA-106-0113, Revision 3, "Simulator Demonstration Examination Individual Competency Evaluation Form"
-TQ-AA-108-0101, Revision 1, "Simulator Examination STA/IA Competency Evaluation Form"
-TQ-AA-106-0114, Revision 1, "Simulator Demonstration Examination Crew Competency Evaluation Form"
-Simulator Exercise Guide, Revision 00
-AR00452325; E.P. Pagers Did Not Receive Call in Drill Page; February 10, 2006

2OS1 Access Control to Radiologically Significant Areas

-RP-AA-460; Controls for High and Very High Radiation Areas; Revision 9
-AR 00390225; Diamond Plate in Unit-2 TIP Room Not Secured to the Floor; dated October 25, 2005
-Investigation Report and Associated Dose Calculations; Diamond Plate in Unit-2 TIP Room Not Secured to the Floor; dated February 22, 2006

2OS3 Radiation Monitoring Instrumentation

-DRP 5822-08; Sensitivity Checks of Personnel Contamination Monitors; Revision 01
-DRP 5822-07; Calibration, Maintenance and Operation of the IPM-9(D) Whole Body Frisking Monitor; Revision 02
-DRP 5822-10; Operation and Calibration of the Eberline PM-7 Portal Monitors; Revision 01
-RP-DR-712; Calibration and Operational Checks of the Eberline PCM-2 Whole Body Contamination Monitor; Revision 0
-Calibration Data Sheets for IPM-9(D); Monitor No. 286; dated June 3, 2005; Monitor No. 288; dated June 8, 2005; Monitor No. 289, dated June 2, 2005; Monitor No. 290, dated June 8, 2005; Monitor No. 291, dated June 9, 2005; Monitor No. 293, dated June 2, 2005; Monitor No. 294, dated June 17, 2005; Monitor No. 295; dated February 20, 2006

-Calibration Report for PM-7 Portal Monitor No. 1, dated May 11, 2005; Monitor No. 2; dated May 10, 2005; Monitor No. 3, dated May 11, 2005; Monitor No. 4, dated May 9, 2005; Monitor No. 6; dated March 7, 2006; Monitor No. 7; dated February 14, 2006
-Calibration Data Sheet for PCM-2 Monitor No. 472; dated September 1, 2005; Monitor No. 471; dated October 17, 2005
-Calibration Data for Unit 2 TIP Room ARM, Unit 3 Charcoal Adsorber Vault ARM, Unit 2 Radwaste Pump Room ARM and Unit 3 Filter Building (Level 3) ARM; dated various periods in 2005
-Calibration Data Sheet for Small Article Monitor No. 222, dated June 13, 2005; Monitor No. 236; dated June 13, 2005
-Calibration Data Sheet for Bicron Model RSO-50E; dated October 10, 2005
-Calibration Data Sheet for MGP Model AMP-100; dated November 19, 2004
-Calibration Data Sheet for Eberline E-520 Instrument No. 1754; dated July 12, 2005
-Calibration Record for MGP Telepole Instrument No. 074969; dated September 16, 2005
-Calibration Report for the Fastscan Whole Body Counter; dated May 10, 2005
-Calibration Record for Unit 2 Drywell CAM No. 46; dated December 29, 2005; Unit 3 Drywell Cam No. 47; dated December 6, 2005
-Calibration Record for Unit 3 Refuel Floor High Range ARM, dated October 24, 2005; Unit 2 Refuel Floor High Range ARM; dated September 23, 2005
-DIS 1600-16; Drywell High Radiation Monitor Group 2 Isolation Functional and Calibration Tests; Revision 16
-Calibration Record for Unit 3, Channels A and B, Drywell High Radiation Monitor Calibration; dated November 23, 2004
-Calibration Record for Unit 2, Channels A and B, Drywell High Radiation Monitor Calibration; dated November 19, 2005
-Calibration Record and Data Sheets for J.L. Shepherd Instrument Calibrator; dated January 31, 2005 and March 2, 2005
-Rad-Cal Corporation Report of Calibration; Model 2025AC Radiation Monitor (SN 4097) with Model 20X5-3 Ion Chamber (SN 5801) and Model 20X5-180 (SN 7696); dated June 19, 2004
-Self-Assessment Report; Radiation Monitoring Instrumentation; dated February 17, 2006
-CY-DR-150-8900; Annual HRSS Contingency Capability Verification; Revision 0
-AR 00455301; Evaluate the HRSS Procedures and Surveillances; dated February 17, 2006
-Attachment C of CY-DR-150-8900 and Associated Gamma Spectroscopy Analytical Chemistry Results for 2004 and 2005
-AR 00256845; Drywell High Radiation Monitor Reading at Minimum Value; dated September 25, 2004
-AR 00270735; Refuel Floor Area Radiation Monitors; dated November 5, 2004
-AR 00337285; Fuel Pool Channel “A” Radiation High Alarm; dated May 20, 2005
-Nuclear Oversight Field Observation; Instrumentation Program; dated September 9, 2005
-Health Physics Functional Area Audit NOSA-DRE-05-06; dated July 6, 2005

2PS1 Radioactive Liquid Effluent Treatment and Monitoring

-CY-DR-170-2060; On-Site Groundwater and Storm Sewer Monitoring; Revision 2
-Sampling Data for Various Monitoring Wells Located Inside and Outside the Protected Area, data for December 6, 2005 - March 14, 2006
-RWP No. 10006561; CST Piping Leak Radiological Controls; Revision 2
-AR 00452084; Trends of Local Shallow Tritium Sampling Wells; dated January 19, 2006

4OA1 Performance Indicator (PI) Verification

-EP-AA-125-1001; Emergency Preparedness PI Guidance; Revision 3
-LS-AA-2110; Monthly PI Data Elements for ERO Drill Participation; January 2005 through September 2005; Revision 6
-LS-AA-2120; Monthly PI Data Elements for Drill/Exercise Performance; January 2005 through September 2005; Revision 4
-Dresden EPZ Daily and Monthly Siren Operability Reports; January 2005 through September 2005
-Dresden Station First Quarter 2005 PI Drill Scenario
-Dresden Station Second Quarter 2005 PI Drill Report; dated July 12, 2005
-Dresden Station Third Quarter 2005 PI Drill Report; dated November 20, 2005
-Offsite Dose Assessment and Protective Action Recommendation Drill Report; dated November 20, 2005
-IR 00431541; Several DEP Opportunities from Database in First and Second Quarters of 2005 Deleted Due to Insufficiently Detailed Evaluation Records

4OA5 Other Activities - TI 2515/165

-PJM Manual 01, Revision 10, “Control Center Requirements”
-U2/3 DAN 923-2 A-1, Revision 05, “OCB 1-2 / 2-3 Trip”
-U2/3 DAN 923-2 B-1, Revision 07, “345 KV SWYD Sys 1 & Sys 2 125V DC Trouble”
-U2/3 DAN 923-2 A-4, Revision 05, “OCB 4-8 Trip”
-U2/3 DOA 6500-12. Revision 11, “Low Switchyard Voltage”
-U2/3 DGA-12, Revision 55, “Partial or Complete Loss of AC Power”
-OP-AA-108-107-1002, Revision 2, “Interface Agreement Between Exelon Energy Delivery and Exelon Generation for Switchyard Operations”
-WC-AA-8000, Revision 0, “Interface Procedure Between Exelon Energy Delivery (COMED/PECO) and Exelon Generation (Nuclear/Power) for Construction and Maintenance Activities
-U2/3 DOP 6000-03, Revision 02, “Voltage Regulator Operation”
-U2/3 DOP 6400-14, Revision 02, “TR 86 Load Tap Changer Operation”
-U3 DOP 6400-15, Revision 01, “TR 32 Load Tap Changer Operation”
-U2/3 DOP 6400-08, Revision 20, “345 Kv Voltage Control”
-WC-AA-101, Revision 11, Level 3, “On-line Work Control Process”
-U2/3 DOA 6500-11, Revision 3, “4 Kv Bus Overvoltage”

4OA5 Other Activities - TI 2515/161

-AR 00259101; Documentation of DOT Type A Transportation Packages; dated October 1, 2004
-AR 00291406; Radioactive Material Package Not Torqued; dated January 17, 2005
-AR 00283672; General Electric Supplied Control Rod Drive Transport Package Improvements Needed; dated December 17, 2004
-Container Certification Test Results and Engineering Evaluation for Container Products Corporation DOT-7A Type A (Drawing No. 01-1524-2-01 and 01-1524-2-02); dated March 4, 2005

LIST OF ACRONYMS USED

ADAMS	Agencywide Documents Access and Management System
ANS	Alert and Notification System
AR	Action Report
ARM	Area Radiation Monitor
CFR	Code of Federal Regulations
CR	Condition Report
CRDM	Control Rod Drive Mechanism
CST	Condensate Storage Tank
DOS	Dresden Operating Surveillance
DRS	Division of Reactor Safety
EAL	Emergency Action Level
EDG	Emergency Diesel Generator
EP	Emergency Preparedness
EPRI	Electrical Power Research Institute
ERO	Emergency Response Organization
FEMA	Federal Emergency Management Agency
HPCI	High Pressure Coolant Injection System
HRSS	High Radiation Sampling System
IEMA	Illinois Emergency Management Agency
IMC	Inspection Manual Chapter
IR	Inspection / Issue Report
ISI	Inservice Inspection
IST	Inservice Test
LER	Licensee Event Report
MWe	megawatts electrical
NCV	Non-Cited Violation
NOS	Nuclear Oversight
NSO	Nuclear Station Operator
NUREG	Nuclear Regulatory Guide
NRC	Nuclear Regulatory Commission
NRR	Office of Nuclear Reactor Regulation
OE	Operability Evaluation
OOS	Out of Service
PARS	Publicly Available Records
PI	Performance Indicator
QV	quality verification
RAT	reserve auxiliary transformer
RCA	Radiologically Controlled Area
RP	Radiation Protection
SDP	Significance Determination Process
TI	Temporary Instruction
TS	Technical Specification
UAT	unit auxiliary transformer
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item
WO	Work Order