April 30, 2004

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 05000237/2004002;
05000249/2004002

Dear Mr. Crane:

On March 31, 2004, the U.S. Nuclear Regulatory Commission completed an integrated inspection at your Dresden Nuclear Power Station, Units 2 and 3. The enclosed report presents the inspection findings which were discussed with Mr. D. Bost and other members of your staff on April 13, 2004.

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

Based on the results of this inspection, there were four self-revealed and one NRC-identified findings of very low safety significance (Green). Two of the findings were determined to involve violations of NRC requirements. However, because of their very low safety significance and because they have been entered into your corrective action program, the NRC is treating these findings as Non-Cited Violations, in accordance with Section VI.A.1 of the NRC's Enforcement Policy. Additionally, two licensee identified violations are listed in Section 4OA7 of this report.

If you contest the subject or severity of a Non-Cited Violation, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulation Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission - Region III, 2443 Warrenville Road, Suite 210, Lisle, IL 60532-4352; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the Resident Inspector Office at the Dresden Nuclear Power Station.

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Sincerely,

/RA/

Mark Ring, Chief
Branch 1
Division of Reactor Projects

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

Enclosure: Inspection Report 05000237/2004002; 05000249/2004002
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
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REGION III

Docket Nos:	50-237; 50-249
License Nos:	DPR-19; DPR-25
Report No:	05000237/2004002; 05000249/2004002
Licensee:	Exelon Generation Company
Facility:	Dresden Nuclear Power Station, Units 2 and 3
Location:	6500 North Dresden Road Morris, IL 60450
Dates:	January 1 through March 31, 2004
Inspectors:	D. Smith, Senior Resident Inspector M. Sheikh, Resident Inspector R. Lerch, Project Engineer P. Pelke, Reactor Engineer W. Slawinski, Senior Radiation Specialist T. Ploski, Senior Emergency Preparedness Inspector A. Dunlop, Reactor Engineer R. Schulz, Illinois Emergency Management Agency
Approved by:	M. Ring, Chief Branch 1 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000237/2004002; 05000249/2004002, 01/01/2004 - 03/31/2004, Exelon Generation Company, Dresden Nuclear Power Station, Units 2 and 3; Personnel Performance Related to Non-routine Evolutions and Events; Post-Maintenance Test and Other Activities.

This report covers a 3-month period of baseline resident inspection and announced baseline inspections on radiation safety, emergency preparedness, and heat sink performance. The inspection was conducted by Region III inspectors and the resident inspectors. Five Green findings, two of which involved 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 severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. Inspector-Identified and Self-Revealed Findings

Cornerstone: Initiating Events

- Green. A self-revealed finding was identified involving the licensee's failure to ensure operations procedures contained proper operating instructions from the vendor manual. The failure to have the proper sequencing order of valves in the operations procedure for swapping between the inservice and standby main turbine lube oil coolers resulted in the automatic scram of Unit 3 on January 30, 2004.

  The finding was more than minor because it affected the initiating events cornerstone objective to limit the likelihood of an initiating event. The finding was determined to be of very low safety significance (Green) because all equipment and systems operated as designed during the scram. The licensee identified a number of corrective actions including revising the procedure to incorporate the vendor manual instructions on the proper valve manipulation sequencing, reviewing other applicable system procedures to ensure the appropriate incorporation of vendor manual information, preparing a consistent briefing sheet for all Exelon plants' use to reinforce the expectations for watch standing and rounds practices. (Section 1R14.b.1)

- Green. A self-revealed finding was identified involving several performance issues which resulted in the initiation of a manual scram on Unit 2 due to high stator water cooling system temperature on December 11, 2003. The performance issues included no process for post-maintenance flushing/purging of instrument air lines to prevent foreign material intrusion into pneumatic systems, failure to schedule post-outage controller tuning, and failure to identify and establish monitoring of stator water cooling generator inlet temperature as a critical parameter.

  The finding was more than minor because it affected the initiating events cornerstone objective to limit the likelihood of an initiating event. The finding was determined to be of very low safety significance (Green) because all equipment and systems operated as designed during the scram. The licensee identified a number of corrective actions

including replacing the stator water cooling temperature control valve controller, identifying critical parameters that require monitoring during non-licensed operator and control room rounds, and establishing requirements for post-maintenance flushing of instrument air lines. (Section 4OA3.1)

- Green. A self-revealed finding was identified involving a performance issue which resulted in the initiation of an automatic scram on Unit 3 on January 24, 2004, due to malfunction of the main turbine master trip solenoid valves. The performance issue was the licensee's failure to adequately evaluate newly designed master trip solenoid valves.

  The finding was more than minor because it affected the initiating events cornerstone objective to limit the likelihood of an initiating event. The finding was determined to be of very low safety significance (Green) because all equipment and systems operated as designed during the scram. The licensee identified a number of corrective actions including immediately replacing the Unit 3 master trip solenoid valves with the original design, scheduling the replacement of the Unit 2 master trip solenoid valves during an upcoming maintenance outage, and training engineering staff on the importance of evaluating critical parameters of newly designed and procured items. (Section 4OA3.2)

Cornerstone: Mitigating Systems

- Green. A self-revealed finding involving a Non-Cited Violation of 10 CFR 50 Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified due to the failure of maintenance workers to properly implement work instructions to reassemble the Unit 3 emergency diesel generator fuel oil pump and discharge piping in January 2004. This human performance deficiency resulted in cracks and leaks on the Unit 3 emergency diesel generator fuel oil pump discharge line and its subsequent failure of the 24 hour endurance test on two occasions in March 2004.

  This finding was more than minor because it affected the mitigating systems cornerstone objectives and affected the availability and reliability of the Unit 3 emergency diesel generator which is a backup emergency power source. The finding was determined to be of very low safety significance (Green) because the Unit 3 emergency diesel generator passed the monthly operability test in January and February 2004, and ran approximately 25.5 hours in a degraded condition on March 3, 2004. Corrective actions by the licensee included the repair of the Unit 3 emergency diesel generator fuel oil pump piping, long term plans to modify the Unit 3 emergency diesel generator fuel oil pump piping, and the review of this event with mechanical maintenance personnel with emphasis on proper maintenance practices. (Section 1R19)

- Green. A finding of very low safety significance was identified by the inspectors involving a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion XVI, for the failure to implement adequate corrective action following the issuance of a previous Non-Cited Violation dated February 6, 2001, in that on May 28, 2002, the licensee again failed to correctly evaluate the test data from performance testing of the Unit 3 isolation condenser. Corrective actions by the licensee included conducting testing of the isolation condenser with a revised methodology and two revisions to the design analysis.

This finding was more than minor because if left uncorrected this issue could become a more significant safety concern. Specifically, the testing deficiencies could allow the acceptance of an isolation condenser that actually had degraded below its design requirements. The issue was of very low safety significance because based on additional testing with a revised methodology as well as the revised analysis, it was concluded that the isolation condenser was capable to perform its design function. (Section 4OA5.2)

B. Licensee Identified Findings

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

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 January 9, 2004, load was reduced to 839 MWe to perform control rod drive maintenance and testing and the unit was returned to full power the same day.

On January 23, 2004, load was reduced to 465 MWe for a required shutdown due to failure of the 120 Vac essential service bus static switch. The shutdown was terminated after successfully bypassing the static switch and the unit was returned to full power the same day.

On February 8, 2004, load was reduced to 710 MWe to perform turbine control valve testing and control rod pattern adjustments, and the unit was returned to full power the same day.

On March 12, 2004, load was reduced to 833 MWe, due to an unexpected increase in air ejector flow. The unit was returned to full power on March 13, 2004.

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

On January 24, 2004, the unit automatically scrammed during turbine weekly testing due to the failure of the master trip solenoid valve. The unit was returned to full power on January 27, 2004.

On January 30, 2004, the unit experienced a turbine trip followed by a reactor scram. The turbine tripped on low turbine header oil pressure while swapping between the inservice and standby lube oil coolers. The unit was returned to full power on February 4, 2004.

On February 15, 2004, load was reduced to 700 MWe to perform control rod pattern adjustments and the unit was returned to full power the same day.

On March 6, 2004, load was reduced to 765 MWe, to perform turbine weekly testing and replace the inboard seal on the 3A reactor feedwater pump. The unit was returned to full power on March 11, 2004

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R04 Equipment Alignments (71111.04)

a. Inspection Scope

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

The inspectors performed one equipment alignment walk-down of the Unit 3 3A core spray system.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

a. Inspection Scope

The inspectors toured plant areas important to safety to assess the material condition, operating lineup, and operational effectiveness of the fire protection system and features. The review included control of transient combustibles and ignition sources, fire suppression systems, manual fire fighting equipment and capability, passive fire protection features, including fire doors, and compensatory measures. The following 11 areas were walked down:

- Unit 2 turbine building, elevation 561' reactor recirculation motor generator sets, (Fire Zone 8.2.8.A);
- Unit 2/3 crib house building, elevation 490'and 509' circulating water pumps room, (Fire Zone 11.3);
- Unit 2/3 reactor building, elevation 613' refueling floor, (Fire Zone 1.1.1.2 and 1.1.2.6);
- Unit 3 turbine building, elevation 517' turbine building trackway, (Fire Zone 8.2.5.E);
- Unit 2 reactor building, elevation 476' southeast corner room, (Fire Zone 11.2.2);
- Unit 3 turbine building, elevation 517' diesel generator room, (Fire Zone 9.0.B);
- Unit 3 turbine building, elevation 495' containment cooling service water pumps, (Fire Zone 8.2.2.B);

- Unit 2 reactor building, elevation 476' 6" high pressure coolant injection pump room, (Fire Zone 11.2.3);
- Unit 3 reactor building, elevation 476'-6" southwest corner room, (Fire Zone 11.1.1);
- Unit 3 reactor building, elevation 476'-6" east low pressure coolant injection corner room, (Fire Zone 11.1.2); and
- Unit 3 reactor building, elevation 476'-6" high pressure coolant injection room, (Fire Zone 11.1.3).

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance (71111.07B)

a. Inspection Scope

The regional specialist inspector reviewed documents associated with maintenance, inspection, and thermal performance testing of the low pressure coolant injection and high pressure coolant injection room coolers (the heat exchangers count as two samples.). These heat exchangers and coolers were chosen based on their support functions to their risk significant systems in the associated rooms, previous concerns with corrosion/erosion of tubes, and discussions with the resident inspectors. While on site, the inspector reviewed completed surveillances, associated calculations, and maintenance work orders; and performed independent calculations to verify that these activities adequately ensured proper heat transfer. The inspector reviewed the documentation to confirm that the test methodology was consistent with accepted industry practices, that test acceptance criteria were consistent with design basis values, and that the test results appropriately considered differences between test and design conditions. The inspector also reviewed documentation to confirm that methods used to inspect the heat exchangers were consistent with expected degradation and that the established acceptance criteria were consistent with accepted industry standards. Heat sink parameters assessed included determination of an adequate ultimate heat sink reservoir, system and subcomponents were free from clogging due to macrofouling, and that the licensee had adequate controls in place for biotic fouling. In addition, the inspector reviewed condition reports concerning heat exchanger or heat sink performance issues to verify that the licensee had an appropriate threshold for identifying issues and to evaluate the effectiveness of the corrective actions to the identified issues. The documents that were reviewed are included at the end of the report.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification (71111.11Q)

a. Inspection Scope

The inspectors observed Crew #5 on February 9, 2004. The scenario consisted of a reactor building ventilation radiation monitor failure, high vibration on a reactor feed pump, a loss of coolant accident in the drywell, and a failure to scram.

The inspectors verified that the operators were able to complete the tasks in accordance with applicable plant procedures and that the success criteria as established in the job performance measures were satisfied.

The inspectors observed the licensee's evaluators to ensure that no inappropriate cues were provided by the evaluators while assessing the operators' performance.

In addition, the inspectors verified that condition reports written regarding licensed operator requalification training were entered into the licensee's corrective action program with the appropriate significance characterization.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12Q)

a. Inspection Scope

The inspectors reviewed the licensee's overall maintenance effectiveness for risk-significant mitigating systems. The inspectors also reviewed whether the licensee properly implemented the Maintenance Rule, 10 CFR 50.65, for the systems. Specifically, the inspectors determined whether:

- the systems were scoped in accordance with 10 CFR 50.65;
- performance problems constituted maintenance rule functional failures;
- the systems have been assigned the proper safety significance classification;
- the systems were properly classified as (a)(1) or (a)(2); and
- the goals and corrective actions for the systems were appropriate.

The above aspects were evaluated using the maintenance rule program. The inspectors also verified that the licensee was appropriately tracking reliability and/or unavailability for the systems.

The inspectors reviewed the following two systems:

- Unit 2/3 Core Spray System, and
- Unit 2, Unit 3, and Unit 2/3 Emergency Diesel Generators.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors evaluated the effectiveness of the risk assessments performed before maintenance activities were conducted on structures, systems, and components and verified how the licensee managed the risk. The inspectors evaluated whether the licensee had taken the necessary steps to plan and control emergent work activities. The inspectors completed four evaluations of maintenance activities on the:

- Unit 3 feedwater level control system testing;
- Unit 2 low pressure coolant injection system loop select logic testing;
- Unit 2 high pressure coolant injection system planned maintenance; and
- Unit 3 high pressure coolant injection system planned maintenance.

b. Findings

No findings of significance were identified.

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 and selected licensee event reports focusing on those involving personnel response to non-routine conditions. The review was performed to ascertain that operators' responses were in accordance with the required procedures.

The inspectors reviewed five instances of personnel performance during the following plant events:

- On January 23, 2004, the essential service bus lost its normal power due to the failure of the essential service bus static switch;
- On January 24, 2004, Unit 3 scrammed due to the malfunction of the main turbine master trip solenoid valve;
- On January 30, 2004, Unit 3 automatically scrammed due to a turbine trip while swapping from the inservice main turbine lube oil cooler to the standby cooler;
- On January 30, 2004, following the Unit 3 scram, reactor vessel water level rose high enough to enter the high pressure coolant injection system steam supply line; and
- On March 12, 2004, load was reduced on Unit 2 due to an unexpected increase in air ejector flow.

b. Findings

.1 Unit 3 Automatically Scrammed Due to a Turbine Trip

Introduction: A Green self-revealed finding was identified involving the licensee's failure to ensure operations procedures contained proper vendor manual operating instructions for the main turbine lube oil system when swapping between lube oil coolers. This procedural deficiency resulted in Unit 3 automatically scramming from 100 percent power while swapping between the inservice and standby turbine lube oil coolers.

Description: On January 30, 2004, Unit 3 automatically scrammed due to a turbine trip. The turbine trip was due to low lube oil header pressure which occurred as a result of swapping turbine lube oil coolers.

The licensee initiated a root cause investigation into the scram which revealed that the root cause was due to inadequate guidance contained in Dresden Operating Procedure (DOP) 5100-04, "Turbine Oil Cooler Operation," Revision 4. Also, two major contributors for the event were inappropriate actions by the operators in responding to adverse trends, and the cooler swapping activity was not treated as a high risk evolution.

The root cause report documented that on January 30, 2004, the licensee was in the process of swapping from the inservice 3A turbine lube oil cooler to the standby 3B turbine lube oil cooler. This swapping activity was performed due to the inservice cooler developing a leak into the main turbine lube oil reservoir. Indications of the leak were reflected by upward trends of several plant parameters observed by the non-licensed operators (NLOs) in performing their assigned rounds. However, the operators failed to take appropriate action on these trends. Specifically, an out-of-tolerance reading of the turbine oil continuous filter differential pressure was first noticed on January 24, 2004. The reading was 4.0 pounds per square inch differential (psid), when this parameter normally reads 0.5 psid. It was not until January 30, 2004, when a NLO noticed that the turbine oil continuous filter differential pressure had reached 13.0 psid and the turbine lube oil reservoir had reached approximately 3.0", that the shift manager was notified and decided the lube oil coolers should be swapped to terminate the leak.

The investigation determined that DOP 5100-04 was followed as specified after an in-field briefing and a procedure walk through were conducted. However, the procedure specified an improper valve manipulation sequence for the standby cooler in establishing cooling water, filling of the cooler with oil, and placing the cooler inservice. This valve sequence resulted in containing a fixed volume of oil in the shell side of the cooler which was continuously cooled by service water, while attempting to swap between the coolers. The oil eventually cooled enough to result in a low turbine oil header pressure condition causing a turbine trip.

Analysis: Using Inspection Manual Chapter (IMC) 0612, Appendix B, "Issue Screening," the inspectors determined that this finding was more than minor because it affected the initiating events cornerstone objective to limit the likelihood of an initiating event. The inspectors assessed this finding using IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situation." The inspectors

answered ‘no’ to all the questions in the initiating event column of the Phase 1 Screening Worksheet which determined that this finding was of very low safety significance (Green). This finding was associated with the reactor safety cross-cutting attribute of human performance **(FIN 05000249/2004002-01)**.

Enforcement: Because the main turbine lube oil cooler system was non safety-related, there were no violations of NRC requirements. The licensee initiated several corrective actions for this issue; some of the actions consisted of revising DOP 5100-04 to incorporate the vendor manual instructions on the proper valve manipulation sequencing, reviewing other applicable system procedures to ensure the appropriate incorporation of vendor manual information, and preparing a consistent briefing sheet for all the Exelon sites to reinforce the expectations for watch standing and rounds practices. This finding was entered into the station’s corrective action program as CR 198543.

.2 Water Intrusion in the High Pressure Coolant Injection (HPCI) System Steam Supply Line

On January 30, 2004, Unit 3 automatically scrammed due to a turbine trip while swapping from the inservice main turbine lube oil cooler to the standby cooler. Following the Unit 3 scram, reactor vessel water level rose high enough to enter the HPCI steam supply line.

In responding to the scram, the feedwater level control (FWLC) system automatically lowered its normal setpoint setdown reactor vessel level position of +30 inches to +5 inches, and the feed regulating valves (FRVs) opened further to 63 percent. This increased feedwater flow. Due to the subsequent dynamics in the reactor vessel, actual reactor vessel water level was lower than the new setpoint value of +5 inches; therefore, the FWLC system sent a signal to the FRVs to open. However, due to the increasing trend in reactor vessel water level due to the wider open position of the FRVs and the heat up of the previously injected feedwater, the FRVs could not reposition closed fast enough to prevent water from rising and entering the steam supply line.

The HPCI steam supply line taps off the reactor pressure vessel at +62 inches (pipe centerline). The HPCI system was declared inoperable because the HPCI turbine was not designed to operate with any amount of water. Subsequent evaluation conducted by engineering personnel under engineering change #347075 determined that 61.7 gallons of water had entered the HPCI steam supply line because this was the amount of water drained from the HPCI turbine inlet drain pot. The licensee walked down the HPCI system and did not identify any evidence of pipe support damage.

In order to fully evaluate the potential problems caused by the water intrusion in the HPCI steam supply line, the licensee focused on four scenarios and the availability of other emergency core cooling systems with HPCI inoperable. The four scenarios consisted of two design basis accidents (malfunction of the electrohydraulic control system and tripping of both reactor recirculation pumps) and two transients (reactor recirculation pump shaft failure and reactor recirculation pump shaft seizure).

The licensee determined that the root cause of this event was low margin in the FWLC system to accommodate changes to the post-scram vessel level response. Also, extended power uprate's contribution to FWLC system response was not evaluated. The licensee's corrective action includes re-designing the FWLC system post-scram response by the end of July 2004. This is an Unresolved Item (URI) pending the completion of the licensee's evaluation and the inspectors' review of that evaluation. **(URI 05000237/2004002-02; 249/2004002-02)**

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

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

- Condition Report #197890 - Unit 2 main steam isolation valve solenoid operated valve coil plungers.

b. Findings

No findings of significance were identified

1R19 Post Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed post-maintenance test results to confirm that the tests were adequate for the scope of the maintenance completed and that the test data met the acceptance criteria. The inspectors also reviewed the tests to determine if the systems were restored to the operational readiness status consistent with the design and licensing basis documents. The inspectors reviewed ten post-maintenance testing activities involving risk significant equipment in the mitigating and initiating events systems cornerstones:

- Replaced pressure indicator 3-0263-156;
- Replaced Unit 2 main steam line high flow switch, 2-0261-2B;
- Replaced solenoid process sample air operator valve, AOV 3-9207B;
- Replaced Unit 3 reactor building supply air damper isolation valve, AO 3-5741A;
- Replaced scram solenoid pilot valve for control rod drive R-8, WO#00582917;
- Performed maintenance on the Unit 2/3 emergency diesel generator;
- Removed foreign material found in Unit 3 emergency diesel generator fuel oil pump discharge line;
- Repaired the Unit 3 emergency diesel generator fuel oil pump discharge line leaks;
- Replaced the Unit 3 emergency diesel generator fuel oil pump and piping; and
- Replaced Unit 2 reactor pressure electromatic relief valve pressure switch, 2-203-3B.

b. Findings

Introduction: A Green self-revealed finding involving a Non-Cited Violation (NCV) of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified for the failure to implement instructions and accomplish those instructions to properly install the Unit 3 emergency diesel generator fuel oil pump discharge piping in January 2004. This human performance deficiency resulted in misalignment of the fuel oil pump discharge piping and the subsequent failure of the Unit 3 emergency diesel generator 24 hour endurance run on two occasions in March 2004.

Description: On March 1, 2004, the licensee conducted a surveillance test in accordance with procedure DOS 6600-12, "Diesel Generator Tests Endurance and Margin/Full Load Rejection/Emergency Core Cooling System/Hot Restart," Revision 29. The Unit 3 emergency diesel generator was shut down 12.5 hours into the surveillance due to a fuel oil leak from a crack in the fuel oil pump discharge line. The crack was repaired using the original fuel oil pump discharge pipe nipple, and the Unit 3 emergency diesel generator was restarted to perform its 24 hour endurance run on March 2, 2004. On March 3, 2004, another fuel leak from a crack was reported, at a different location in the fuel oil pump's discharge piping line,19 hours into the endurance run. The shift manager decided to allow the emergency diesel generator to run an additional 6.5 hours, after the leak was identified, before shutting it down again due to the leak increasing in size. The crack was repaired using the original fuel oil pump discharge pipe nipple, and the emergency diesel generator was restarted to perform its 24 hour endurance run on March 5, 2004.

The licensee performed an investigation into this issue and concluded that the failures were attributed to poor maintenance performed on the emergency diesel generator fuel oil pump and piping in January 2004.

On January 20, 2004, the licensee performed a planned maintenance outage on the Unit 3 emergency diesel generator. During this maintenance, a decision was made to replace the Unit 3 emergency diesel generator fuel oil pump. This activity was accomplished using Work order #00427719-01 instructions. Work order #00427719-01, Step F.3, required maintenance workers to replace the engine driven fuel oil pump per applicable steps of procedure DMS 6600-03, "Diesel Generator Mechanical Inspection and Preventative Maintenance," Revision 11. Specifically, Step I.16.k of this procedure instructed the workers, in part, to install unions and fittings on the pump inlet and discharge. However, maintenance workers performing this activity failed to recognize that the fuel oil pump discharge pipe nipple was worn and required replacement to ensure the emergency diesel generator fuel oil pump was properly aligned when reassembled. Therefore, the fuel oil pump was reassembled using the old fuel oil pump discharge nipple and subsequent post maintenance testing was conducted on January 23, 2004.

During post maintenance testing following the installation of the new fuel oil pump, the Unit 3 emergency diesel generator tripped after approximately 5 minutes due to low fuel oil system pressure because internal foreign material exclusion pipe plugs were left in the inlet and outlet of the fuel oil pump's piping unions. The fuel oil pump and

associated piping were disconnected and the plugs were removed from the piping. Subsequently, the emergency diesel generator was satisfactorily tested.

Work order #00427719-01, had also instructed maintenance workers to document the use of foreign material exclusion covers, and directed the first line supervisor to perform a final cleanliness inspection to ensure the system was free of foreign material. Neither of these actions were performed.

As a result, mounting the fuel oil pump and piping with foreign material in the inlet and outlet of the discharge line caused disassembly and assembly of the fuel oil pump and piping additional times, which increased the wearing of the fuel oil pump discharge piping. Therefore, during this maintenance activity over-tightening of the piping occurred due to using the original pipe nipple which ultimately contributed to the misalignment of the piping.

The licensee's apparent cause evaluation determined that misalignment due to over-tightening of the fuel oil pump piping into the new pump, during the January 2004 maintenance work activities, had increased stress on the pump's discharge piping. With this condition established, the fuel oil pump piping threads and connections experienced a fatigue failure during the testing of the emergency diesel generator in March 2004.

Corrective actions by the licensee included the repair of the Unit 3 emergency diesel generator fuel oil pump piping, review of this event with mechanical maintenance personnel with emphasis on proper maintenance practices, and long term plans to modify the Unit 3 emergency diesel generator fuel oil pump piping.

Analysis: Using IMC 0612, Appendix B, "Issue Screening," the inspectors determined that this event was more than minor because it affected the mitigating systems cornerstone objectives and affected the availability and reliability of the Unit 3 emergency diesel generator which was a backup emergency power source. Using IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," the inspectors answered "no" to all the questions in the mitigating systems column of the Phase 1 worksheet of the SDP worksheet and determined that the finding was of very low safety significance because the Unit 3 diesel ran for approximately 25.5 hours on March 3, 2004, and other emergency diesel generators were operable at the time of this event. The performance deficiency associated with this event was the failure of the licensee to implement instructions of the work order #00427719-01 associated with maintenance activities done on the fuel oil pump and piping of the U3 emergency diesel generator in January 2004. This failure resulted in misalignment and induced stresses in the piping that led to failure of the fuel oil pump discharge line on March 2, and March 3, 2004.

Enforcement: Title 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Work order #00427719-01, Step F.3, instructed maintenance workers to replace the emergency diesel generator engine driven fuel oil pump per the applicable step of Procedure DMS 6600-03; "Diesel Generator Mechanical Inspection and Preventative

Maintenance", Revision 11. Specifically, Step I.16.k of procedure DMS 6600-03 required, in part, that maintenance workers install unions and fittings on pump inlet and discharge.

Contrary to the above, on January 20 - 23, 2004, maintenance workers failed to follow Step I.16.k of DMS 6600-03 to properly install unions and fitting on the pump's inlet and discharge piping. Specifically, the workers used the previously installed fuel oil pump discharge nipple, which resulted in over-tightening of the piping. This over-tightening condition subsequently caused misalignment and cracks in the fuel oil pump discharge line.

Because this issue is of very low safety significance and has been entered into the licensee's corrective action program as CR 205779 and CR 205340, this violation is being treated as a Non-Cited Violation (**NCV 05000249/2004002-03)**, consistent with Section VI.A, of the NRC Enforcement Policy.

1R20 Refueling and Outage Activities (71111.20)

a. Inspection Scope

The inspectors reviewed and evaluated several outage activities on Unit 3 during forced outages on January 24 and 30, 2004. The evaluation was performed to ensure that the licensee appropriately considered risk factors during the development and execution of planned activities. The inspectors conducted walkdowns of systems vital to maintaining the unit in a safe/shutdown condition. The inspectors also ensured that Technical Specification requirements were verified to have been met for changing modes.

b. Findings

No findings of significance were identified.

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 the 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 reviewed four surveillance testing activities:

- DOS 0500-08 Main Steam Line Isolation Valve Closure Scram Circuit Functional Test, Revision 26,
- DOS 6600-12, Diesel Generator Tests, Endurance and Margin/Full Load Rejections/ECCS/Hot Restart, Revision 29
- DOS 1400-05, Unit 3 Core Spray System Pump Operability and Quarterly Inservice Testing with Torus Available, and

- DOS 0500-25, Reactor Protection System Channels A1, A2, B1 and B2 Automatic Scram Contactor Test, Revision 07.

b. Findings

No findings of significance were identified.

1R23 Temporary Modification (71111.23)

a. Inspection Scope

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

- Temporary Configuration Change Package No. 345918, Revision 0, "Determ Alarm Inputs from Technical Specification 2-6241-502, 503, and 504, ISO Phase Bus Duct Outdoor Temperature Switches."

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

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

a. Inspection Scope

The inspector discussed with corporate office and Dresden Nuclear Power Station Emergency Preparedness (EP) staffs the operation, maintenance, and periodic testing of the ANS in the Dresden Station's Emergency Planning Zone (EPZ) to determine whether the ANS equipment was adequately maintained and tested in accordance with Emergency Plan commitments and procedures. The inspector also reviewed records of 2002 and 2003 preventative and non-scheduled maintenance activities and a sample of 2003 ANS operability test results.

The inspector also discussed and reviewed records associated with two changes to the EPZ's siren system that were coordinated with offsite officials and Federal Emergency Management Agency (FEMA) staff. The inspector determined that one change was approved by FEMA and then implemented in Summer 2003 and that the second change was under evaluation by FEMA staff.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspector reviewed and discussed with EP staff the procedures that included the primary and alternate methods of initiating an ERO activation to augment the onshift ERO, plus provisions for maintaining the ERO call-out roster and for periodically updating the ERO's Telephone Directory. The inspector also reviewed critiques and a sample of corrective action program records of unannounced, off-hours staff augmentation drills, which increased in frequency in Fall 2002, that were conducted between June 2002 and December 2003 to determine the adequacy of the drills' critiques and associated corrective actions. The inspector also reviewed the critique of an actual drive-in, off-hours, unannounced augmentation drill conducted in Spring 2003. The inspector reviewed documents that summarized management's expectations for members of the Dresden's Station's ERO.

The inspector also reviewed training records of a random sample of 36 Dresden Station ERO members, who were assigned to key and support positions, to determine whether they were currently trained for their assigned ERO positions.

b. Findings

No findings of significance were identified.

1EP4 Emergency Action Level and Emergency Plan Changes

a. Inspection Scope

The inspector reviewed the current Letters of Agreement (LOA), which were maintained onsite, with the seven offsite support organizations listed in Revisions 15 through 17 of the Dresden Station Annex to Exelon's Standardized Emergency Plan to determine whether possible changes in any agreement may have decreased the effectiveness of the licensee's emergency planning.

The inspector also reviewed a sample of reference documents that were associated with several emergency action level refinements and other changes identified in Revisions 15 through 17 of the Dresden Annex to determine whether these changes adequately incorporated information from these reference documents.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspector reviewed Nuclear Oversight staff's 2003 audits of the EP program to verify that these independent assessments met the requirements of 10 CFR 50.54(t).

The inspector also reviewed a sample of critique reports and corrective action documents that were associated with the 2002 biennial exercise, as well as various EP drills conducted in 2002 and 2003 in order to verify that the licensee fulfilled its drill commitments and to evaluate the licensee's efforts to identify, track, and resolve concerns identified during these activities.

b. Findings

No findings of significance were identified.

1EP6 Drill and Training Evaluations (71114.06)

.1 March 16, 2004, Emergency Preparedness Performance Indicator Drill

a. Inspection Scope

The inspectors observed station personnel during a licensee only participation emergency preparedness drill exercise on March 16, 2004, to determine the effectiveness of drill participants and the adequacy of the licensee's critique in identifying weaknesses and failures. The drill scenario involved damage to the crib house, hostages taken inside the crib house by an intruder; and control of control room staff taken by a disgruntled operator.

b. Findings

No findings of significance were identified.

.2 Evaluation of Operating Crew #5 Training Evolution

a. Inspection Scope

The inspectors observed Crew #5 on February 9, 2004. The scenario consisted of a reactor building ventilation radiation monitor failure, high vibration on a reactor feed pump, a loss of coolant accident in the drywell, and a failure to scram.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS3 Radiation Monitoring Instrumentation and Protective Equipment (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 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, and other temporary and fixed area radiation monitors including continuous air monitors (CAMs) associated with jobs with the potential for workers to receive 50 millirem committed effective dose equivalent (CEDE). Whole body counters and radiation detection instruments utilized for release of personnel and equipment from the radiologically controlled area 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 Turbine, Reactor and Off-Gas Filter Buildings to verify they were located as described in the UFSAR, were optimally positioned relative to the potential source(s) of radiation they were intended to monitor and to verify that control room instrument readout and high alarm setpoints for those ARMs were consistent with UFSAR information. 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 in good physical condition. Additionally, the inspectors observed the licensee’s instrument calibration unit and the radiation sources used for instrument checks to assess their material condition, and discussed their use with RP staff to determine if they were used adequately. Licensee personnel were also observed performing source checks of selected instruments.

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 for assessment of internal exposures to verify that the instruments had been calibrated as required by the licensee's procedures, consistent with industry standards. The inspectors also reviewed alarm setpoints for selected ARMs to verify that they were established consistent with the UFSAR and Technical Specifications. Specifically, the inspectors reviewed calibration procedures and the most recent calibration records and/or source characterization/output verification documents for the following radiation monitoring instrumentation and instrument calibration equipment:

- Unit 2 Refuel Floor High Range ARM;
- Unit 2 Traversing In-Core Probe (TIP) Cubicle ARM;
- Unit 2 and 3 Drywell High Radiation Monitors (two monitors per unit);
- Unit 2 Charcoal Adsorber Vault ARM;
- J. L. Shepherd Model 89-400 Instrument Calibrator;
- Electrometer and the associated ion chambers used for measuring the output of the instrument calibrator;
- Unit 3 TIP Drive Area ARM;
- Unit 3 Reactor Water Cleanup Area ARM;
- Unit 2 and 3 Drywell CAMs;
- Portable survey (AMP-100 ion chamber) instruments used for underwater surveys (several instruments); and
- Fastscan Whole Body Counter.

The inspectors discussed the operability and maintenance of the high radiation sampling system (HRSS) with chemistry supervision and reviewed HRSS surveillance records to determine if system function was demonstrated consistent with the licensee's chemistry procedures and Technical Specifications. Surveillance test results were reviewed for the September 2002 through September 2003 period, at which time the HRSS system was eliminated from the plant's Technical Specifications as a required post accident sampling system, as authorized in license amendment Nos. 197/190.

The inspectors determined what actions were taken when, during calibration or source checks, an instrument was found significantly out of calibration by more than 50 percent. Should that occur, the inspectors verified that the licensee's actions would include a determination of the instruments's previous usages and the possible consequences of that use since the prior calibration. The inspectors also reviewed the licensee's 10 CFR Part 61 source term information 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.

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 condition reports (CRs) 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. Internal exposure occurrences in 2003 with dose consequence greater than approximately 20 millirem CEDE were reviewed to determine if the affected personnel were properly monitored utilizing calibrated equipment and if the data was analyzed and internal exposures properly assessed in accordance with licensee procedures. Licensee self-assessments and CRs were also reviewed to verify that deficiencies and problems with radiation protection instrumentation and respiratory protection equipment 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. 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:

1. Initial problem identification, characterization, and tracking;
2. Disposition of operability/reportability issues;
3. Evaluation of safety significance/risk and priority for resolution;
4. Identification of repetitive problems;
5. Identification of contributing causes; and
6. Identification and implementation of effective corrective actions.

The inspectors determined if the licensee's self-assessment activities were identifying and addressing repetitive deficiencies or significant individual deficiencies in problem identification and resolution.

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 instruments recently used and for those designated for use had not lapsed, and that source response checks on radiation detection instruments staged and ready for use were current. The inspectors also discussed instrument calibration methods and source response check practices with radiation protection staff and observed staff complete instrument operability checks prior to use.

These reviews represented one inspection sample.

b. Findings

No findings of significance were identified.

.6 Self-Contained Breathing Apparatus (SCBA) Maintenance and User Training

a. Inspection Scope

The inspectors reviewed aspects of the licensee's respiratory protection program for compliance with the requirements of Subpart H of 10 CFR Part 20, and to determine if self-contained breathing apparatus (SCBA) were properly maintained and ready for emergency use. The inspectors reviewed the status, maintenance and surveillance records of SCBAs staged and ready for use in the plant and assessed the licensee's capability for refilling and transporting SCBA air bottles to and from the control room and operations support center (OSC) during emergency conditions. The inspectors verified that all control room staff designated for the active on-shift duty roster and for the station's fire brigade were trained and qualified in the use of SCBAs including personal bottle change-out. The inspectors also reviewed respiratory protection training and qualification records for plant maintenance, radiation protection and chemistry staffs designated as potential OSC emergency responders, to assess compliance with the licensee's emergency plan and the requirements of 10 CFR 50.47. A licensee-identified violation of its emergency plan's respiratory protection qualification requirements is described in Section 4OA7.

The inspectors walked down the SCBA air bottle filling station and selected SCBA equipment storage locations in various areas of the plant, and examined several SCBA units to assess their condition to verify that air bottle hydrostatic tests were current, and to verify that bottles were pressurized to meet procedural requirements. The inspectors reviewed records of SCBA equipment inspection and functional testing and observed a RP technician complete a functional test to determine if these activities were performed consistent with procedure. The inspectors also ensured that the required, periodic air cylinder hydrostatic testing was documented and up to date, and that the Department of Transportation required retest air cylinder markings were in place for several randomly selected SCBA units. Additionally, the inspectors reviewed vendor training certificates for those individuals involved in the repair of SCBA pressure regulators to determine if those personnel that performed maintenance on components vital to equipment function

were qualified. The most recent vital component (regulator) test records were reviewed by the inspectors for all SCBA equipment currently designated for emergency use.

These reviews represented two inspection samples.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification (71151)

.1 Initiating Events and Mitigating Systems

The inspectors reviewed a sample of plant records and data against the reported PIs in order to determine the accuracy of the indicators:

Unit 2:

- Unplanned transients, January 2003 through January 2004; and
- Unplanned scrams January 2003 through January 2004.

Unit 3:

- Unplanned transients, January 2003 through January 2004; and
- Unplanned scrams January 2003 through January 2004.

b. Findings

No findings of significance were identified.

.2 Emergency Preparedness

a. Inspection Scope

The inspector reviewed the licensee's records associated with the PIs listed below. The inspector verified that the licensee accurately reported the indicators in accordance with relevant procedures and Nuclear Energy Institute guidance endorsed by NRC. Specifically, the inspector reviewed licensee records associated with PI data reported to the NRC for the period January 2003 through September 2003. 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 2003 biennial exercise, and drills; revisions of the roster of personnel assigned to key emergency response organization positions; and results of periodic alert and notification operability tests. The following PIs were reviewed:

Common

- Alert and Notification (ANS) System Reliability;
- Emergency Response Organization (ERO) Drill Participation; and
- Drill and Exercise Performance.

b. Findings

No findings of significance were identified.

Cornerstone: Barrier Integrity

.3 Reactor Safety Strategic Area

a. Inspection Scope

The inspectors sampled the licensee's submittals for the PI and periods listed below. The inspectors used PI definitions and guidance contained in Revision 2 of Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," to verify the accuracy of the PI data. The following PI was reviewed:

- Reactor Coolant System Specific Activity for Units 2 and 3

The inspectors reviewed Chemistry Department records including selected isotopic analyses for the period June 2003 through January 2004, to verify that the greatest Dose Equivalent Iodine (DEI) values determined during steady state operations for those months corresponded with the values reported to the NRC. The inspectors also reviewed selected DEI calculations to verify that the appropriate conversion factors were used in the assessment as required by the licensee's procedure. Additionally, the inspectors observed a chemistry technician collect a reactor water sample to verify the sampling technique for consistency with the licensee's procedure. Further, sample analyses and DEI calculation methods were discussed with chemistry staff to determine their adequacy.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

.1 Routine Review of Identification and Resolution of Problems

a. Inspection Scope

The inspectors routinely reviewed issues during baseline inspection activities and plant status reviews, to verify that issues were entered into the licensee's corrective action system at an appropriate threshold, adequate attention was given to timely corrective actions, and adverse trends were identified and addressed.

b. Findings

No findings of significance were identified.

.2 Inadequate Oversight and Implementation of Containment Cooling Service Water Seismic Modification

The Updated Final Safety Analysis Report, Section 9.2.5.1, specifies that the design objective of the ultimate heat sink is to provide sufficient cooling water to the station to permit operation of the containment cooling service water (CCSW) system when the normal heat sink (the Kankakee River) is unavailable. The CCSW pumps are located on the 465 elevation in the turbine building and take suction from bay 13 at elevation 498 in the crib-house.

The Kankakee River provides the intake canal with its water supply source. A failure of the Dresden Island Lock and Dam would cause the water level in bay 13 to drop below the suction piping for the CCSW system. As a result, the CCSW system would not be able to supply sufficient cooling water to safety related components needed to safely shutdown the plant, including the CCSW heat exchanger which removes decay heat from the suppression pool.

In order to compensate for this vulnerability, the licensee completed a seismic modification of the CCSW system in November 2003. This modification included two portable submersible pumps with diesel power packs, 700 to 800 feet of 10 inch diameter hose, couplers, and elbows to provide an alternate CCSW cooling water supply capability. The licensee would lower the pumps into the intake canal, route hoses through the plant, and connect the hoses to the CCSW piping upstream of the CCSW heat exchanger in the event of a small break loss of cooling accident coincident with the failure of the Dresden Island Lock and Dam.

Procedure DOA 0010-01, Revision 16, “Dresden Lock and Dam Failure,” requires that the submersible pumps, diesel power packs, and hoses be stored in an area that can withstand a seismic event. On September 30, 2003, the components arrived on site. On November 18, 2003, the inspectors identified that the components had been stored adjacent to a non-seismic building and within 30 feet of an above ground gasoline tank since September 30, 2003. The licensee initiated CR 188065 to document this storage deficiency and moved the components to an acceptable seismic location on November 26, 2003.

Upon further review of CR 188065, corrective actions taken, and associated documentation, the inspectors identified that the CCSW seismic modification had not been adequately tested per Exelon Topical Report EGC-1A, Revision 70, Chapter 11, Test Control, before the modification was turned over to operations in November 2003. Specifically, modification was not tested as a unit. The only test that was done was a single pump dry test. Engineering Evaluation, EC 341461, stated, “routing hoses through the plant increased the risk of equipment damage or a plant trip if a hose should uncouple or break.” The inspectors determined that this routing concern necessitated the further testing to ensure equipment performance. The licensee initiated CR 194756 to document this issue and will perform a demonstration test in April 2004.

.3 Failure of Supervisory Personnel to Generate Condition Reports

There were six examples this quarter where licensee personnel, specifically first line supervision, failed to ensure that the station's corrective action program was adhered to for known deficient plant conditions. In each of the examples, supervisory personnel failed to initiate a condition report for a deficiency until prompted by the inspectors. Also, in the first quarter of 2003, the inspectors identified several examples where the licensee had failed to generate condition reports for known plant deficiencies and generated condition reports, in an untimely manner, even after prompting by the inspectors which were documented in Inspection Report 50-237/249/03-02. The licensee's performance improved in this area during the second and third quarter of 2003; however, during the fourth quarter of 2003, there were several examples for which the licensee failed to write condition reports for deficient conditions, which the inspectors discussed during the quarterly exit on January 13, 2004, as observations. In addition, the licensee's cyclical performance in this area was discussed during the 2004 Problem Identification and Resolution Inspection team exit on February 2, 2004.

1) Onshift Crew Failure to Generate Tracking Mechanism

On February 17, 2004, the inspectors questioned a control room log entry documenting the unexpected swapping of the Unit 3 hydrogen addition system programmable logic controller to its backup. Neither a CR nor a service work request had been written. The licensee generated a service work request on February 17, 2004, and subsequently captured this deficiency in CR 206791on March 8, 2004.

2) Onshift Crew Failure to Document the Inappropriate Closure of a Deficient Condition

On February 24, 2004, the inspectors had follow up discussions with onshift operations personnel regarding the reasons for the Unit 3 hydrogen addition system programmable logic controller swapping to its backup. The inspectors were informed that the service work request which had been written on February 17, 2004, was closed to open work order (WO) 641907. However, WO 641907 was subsequently closed on February 23, 2004, to WO 650211 which had been completed on January 15, 2004. The licensee had not generated a CR for the inappropriate closure of WO 641907. The licensee generated CRs 203830 and 206791 on February 24, 2004.

3) Potential to Exceed Transient Combustible Permit

On March 2, 2004, the inspectors observed a chemistry technician storing empty resin barrels, which were on wooden pallets, in the Unit 3 trackway. A transient combustible permit was established for the pallets and barrels. However, the chemistry technician had exceeded the limits specified by the permit. However, due to the chemistry technician and the inspectors discussing the issue, the chemistry technician never left the pallets and barrels unattended.

The inspectors discussed this issue with the plant manager on March 4, 2004; however, the licensee did not generate CR 207540 for this deficiency until March 10, 2004. The licensee informed the inspectors that the CR was late because the chemistry technician did not believe there was a concern since the inspectors prevented the chemistry technician from exceeding the permit requirements.

4) Incomplete Followup Actions Taken for Equipment Inappropriately Stored in the Maintenance Shops

On March 4, 2004, the inspectors had discussions with nuclear oversight personnel regarding CR 187667. This CR, which had been generated on November 21, 2003, documented a number of deficiencies in the identification and control of materials in the electrical and mechanical maintenance shops. Some of the deficiencies involved the improper storage of safety related and non-safety related parts in a safety related cabinet, and storage of safety related parts requiring climate control in the maintenance shops even though a method did not exist for controlling the environmental conditions. Although the inspectors expressed concerns over the lack of proper follow-up actions, to ensure these parts were not inadvertently installed in the plant, the licensee did not generate CR 209343 on these concerns and establish control for these parts until March 18, 2004.

5) Inappropriate Actions Taken for Plant Deficient Conditions

On March 11, 2004, the inspectors informed the work execution center supervisor of several plant deficiencies which included wooden pallets in the Unit 2 trackway. On March 15, 2004, the work execution center supervisor informed the inspectors that he was coordinating with the appropriate station personnel to remove the pallets. The inspectors asked if a fire transient combustible permit was needed for the wooden pallets. After determining that a permit was required, the work execution supervisor stated that he would place the permit if the pallets were not removed within the next couple of hours. The licensee generated CR 208871 for these deficiencies on March 17, 2004.

6) No Action Taken for Missing Radiation Protection Survey and Inappropriately Placed Survey

On March 11, 2004, the inspectors requested a copy of a radiation protection survey that was performed on March 8, 2004, for the Unit 3 east control rod drive hydraulic control unit. The survey had been performed to remove clearance tags for control rod drive R-8. The licensee subsequently located the survey in a radiation protection technician's locker.

On March 8, 2004, prior to the radiation protection technician performing the survey to remove the tags, the operators questioned why a survey had to be re-performed when a survey had been recently completed to hang the tags on March 1, 2004. At that time, the radiation protection technician informed his supervisor that the survey could not be located; however, the radiation protection

supervisor did not take actions to generate a condition report or perform a thorough search for the missing March 1, 2004, survey.

As a result of the inspectors' discussion with the radiation protection supervisor on March 11, 2004, the licensee determined that the radiation protection technician on duty on March 1, 2004, decided to use historical dose information of the area to brief the operators for removing the tags. The radiation protection supervisor generated CR 207784 on March 11, 2004, documenting these problems.

The licensee agreed with the inspectors' concerns and has taken the following actions to ensure that all station personnel understand the requirements of initiating CRs for plant deficiencies as specified by the station's corrective action program. Specific actions taken included: 1) the Site Vice President issued a memorandum addressed to all station managers discussing his expectations for implementing the corrective action program; 2) the Plant Manager discussed several of the issues identified by the inspectors during the March 23, 2004, senior leadership team meeting; and 3) supervisors included a message from the Site Vice President, discussing the purpose of the corrective action program, in the February 24, 2004, tailgate packages.

4OA3 Event Follow-up (71153)

a. Inspection Scope

The inspectors reviewed licensee event reports (LERs) to ensure that issues documented in these reports were adequately addressed in the licensee's corrective action program. The inspectors also 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 Licensee Event Reports. Also, the inspectors reviewed Unresolved Items to determine if the licensee was in violation of any regulatory requirement.

b. Findings

.1 (Closed) LER 50-237/2003-007: "Unit 2 Manual Scram Due to High Stator Water Cooling System Temperature"

Introduction: A Green self-revealed finding was identified involving several performance issues which resulted in the initiation of a manual scram. The performance issues included no process for post-maintenance flushing/purging of instrument air lines to prevent foreign material intrusion into pneumatic systems, failure to schedule post-outage controller tuning, and failure to identify and establish monitoring of stator water cooling (SWC) generator inlet temperature as a critical parameter.

Description: On December 11, 2003, with Unit 2 at 96 percent power, the main generator commenced an automatic run-back when SWC temperature exceeded

83 degrees C. Operators initiated a manual scram in accordance with Dresden Abnormal Procedure DOA 7400-01 because the capacity of 8½ main turbine bypass valves was exceeded during the runback. All plant systems responded normally to the scram.

The licensee initiated a root cause investigation which identified that on October 17, 2003, during the Unit 2 refueling outage, the SWC temperature control valve (TCV) temperature controller was replaced. The followup tuning of the controller was scheduled during startup because the system must be under load. On October 26, 2003, a new tee was installed in the instrument air system and none of the downstream instruments including the SWC TCV temperature controller's air supply line were isolated. In addition, the licensee did not flush the air header after the work to ensure debris did not exist in the air line.

On November 11, 2003, during startup of the unit, the tuning of the controller could not be performed, as scheduled, because of a lack of instrument mechanic resources. However, the licensee did not reschedule the work. Also, during the startup, the SWC TCV temperature controller was not performing per design; however, this abnormal operation went unnoticed because the parameter was not monitored nor trended by operations or system engineering personnel.

On December 11, 2003, an operator on rounds identified abnormal operation of the SWC TCV controller. The shift manager decided that the shift did not have to take any immediate actions for main turbine generator protection based on these conditions. Subsequently, the abnormal operation of the SWC TCV controller necessitated the manual scram.

A failure analysis was conducted by the TCV controller vendor which concluded that the controller failure was attributed to internal foreign material (instrument air desiccant). This foreign material was released when the instrument air piping was disturbed during the new tee installation.

Based on the licensee's determination of the root cause and contributing causes, one Green finding was identified involving several performance issues which resulted in the initiation of a manual scram. The performance issues included the lack of a process for post-maintenance flushing/purging of instrument air lines to prevent foreign material intrusion into pneumatic systems, failure to schedule post-outage controller tuning, and failure to identify and establish monitoring of SWC generator inlet temperature as a critical parameter.

Analysis: Using IMC 0612, Appendix B, "Issue Screening," the inspectors determined that this finding was more than minor because it affected the initiating events cornerstone objective to limit the likelihood of an initiating event. The inspectors completed a significance determination of this issue using IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations." The inspectors answered "no" to all questions in the initiating event column of the Phase 1 Screening Worksheet and therefore concluded that the issue was of very low safety significance (Green). This finding was associated with the reactor safety cross-cutting attribute of human performance (**FIN 05000237/2004002-04**).

Enforcement: No violations of NRC requirements occurred because the finding involved non-safety related equipment. The licensee entered this issue into the station's corrective action program as CR 190360. The licensee identified a number of corrective actions including replacing the SWC TCV controller, identifying critical parameters that require monitoring during NLO and control room rounds, and establishing requirements for post-maintenance flushing of instrument air lines.

.2 (Closed) LER 50-249/2004-001: Unit 3 Automatic Scram During Testing of the Main Turbine Master Trip Solenoid Valves.

Introduction: A Green self-revealed finding was identified involving a performance issue which resulted in the initiation of an automatic scram. The performance issue was the licensee's failure to adequately evaluate procured main turbine master trip solenoid valves (MTSVs) for their intended application.

Description: On January 24, 2004, with Unit 3 in Mode 1, an automatic scram occurred while performing Dresden Operating Surveillance (DOS) 5600-02, "Periodic Main Turbine, Electro-Hydraulic Control, and Generator Tests," Revision 69. The main turbine MTSVs malfunctioned during the testing which resulted in the depressurization of the emergency trip supply (ETS) hydraulic header. The ETS header maintained the stop valves full open. The depressurization of the ETS header caused the main turbine stop valves to momentarily close below the full open position which sent a signal to the reactor protection system to scram the reactor. All plant systems responded as designed.

The licensee initiated a root cause investigation into the circumstances surrounding this event, and submitted the Unit 3 MTSVs for failure analysis. The root cause investigation identified that on October 10, 2003, during the Unit 2 refueling outage, the licensee replaced the old type Vickers spool 'A' MTSV and the 'B' MTSV with the newly designed poppet-type MTSVs. On December 2003, during the Unit 3 forced maintenance outage, the Unit 3 main turbine MTSVs 'A' and 'B' were replaced with the newly designed MTSVs.

Prior to installation of the new MTSVs in both units, the vendor modified several parameters on the newly designed valves. Specifically, the vendor modified the following internal aspects of the MTSVs' assembly: 1) replaced the proximity position switch with a magnetic "go-switch;" 2) modified the target area at the end of the switch rod by 65 percent; and 3) changed material of the switch adapter from carbon steel to stainless steel. However, the licensee did not adequately evaluate these modified aspects of the newly designed valve, and failed to ensure final testing of modified valves was performed.

Following the scram, the root cause investigation determined that the 'A' MTSV tested slow for repositioning, 200 msec versus the 'B' valve which was closer to the expected 40-60 msec range response time. Examination by the licensee, of the internal valves assembly discovered that the target area and the switch rod were deformed. Slow response time of the 'A' MTSV in combination with deformation of the switch assembly resulted in slow repositioning of the MTSV, which caused the hydraulic fluid pressure port of the electrohydraulic control (EHC) system to align with the drain port. This

alignment configuration developed a drain path for the hydraulic fluid which led to the depressurization of the ETS header and the subsequent momentary closure of the stop valves from the full open position. Also, the investigation determined that engineering personnel did not recognize critical design differences between the new and the old type valves which included port overlaps and out of specification response time.

Based on the licensee's determination of the root cause of this event, one Green finding was identified involving several performance issues which resulted in the initiation of an automatic scram. The performance issues included the failure of the licensee to adequately evaluate procured main turbine master trip solenoid valves for their intended application.

Analysis: Using IMC 0612, Appendix B, "Issue Screening," the inspectors determined that this finding was more than minor because it affected the initiating events cornerstone objective to limit the likelihood of an initiating event. Using IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," the inspectors answered "no" to all the questions in the initiating event column of the Phase 1 screening worksheet and determined that the finding was of very low safety significance (Green) because all equipment responded as designed during the scram. (**FIN 05000249/2004002-05**)

Enforcement: No violations of NRC requirements occurred because the finding involved non-safety related equipment. The licensee entered this issue into the corrective action program. The licensee identified a number of corrective actions including immediately replacing the Unit 3 poppet solenoid MTSVs with the old original MTSVs. The licensee planned to replace the Unit 2 MTSVs during an upcoming maintenance outage, and had completed an engineering evaluation that permitted the suspension of MTSV testing until replacement of the MTSVs. Finally, the licensee initiated an action item to train engineering staff, including procurement engineering, on the importance of evaluating critical parameters.

4OA4 Cross-Cutting Aspects of Findings

.1 A finding described in Section 1R14 of this report had, as its primary cause, a human performance deficiency, in that the licensee failed to ensure the operations procedure, DOP 5100-04, "Turbine Oil Cooler Operation," contained proper operating instructions from the vendor manual. As a result, a Unit 3 automatic scram occurred when swapping the inservice lube oil cooler with the cooler that was in standby.

.2 A finding described in Section 1R19 of this report had as its primary cause, a human performance deficiency, in that maintenance workers failed to properly implement work instructions to properly reassemble the Unit 3 emergency diesel generator fuel oil pump and discharge piping. This human performance deficiency eventually resulted in cracks and leaks on the Unit 3 emergency diesel generator fuel oil pump discharge line and subsequent failure of its 24 hour endurance run on two occasions in March 2004.

.3 A finding described in Section 4OA3 of this report had, as its primary cause, a human performance deficiency, in that it involved several performance issues which resulted in the initiation of a Unit 2 manual scram. The performance issues included the lack of a

process for post-maintenance flushing/purging of instrument air lines to prevent foreign material intrusion into pneumatic systems, failure to schedule post-outage controller tuning, and failure to identify and establish monitoring of stator water cooling generator inlet temperature as a critical parameter.

.4 A finding described in Section 4OA3 of this report had as its primary cause, a human performance deficiency, in that it involved several performance issues which resulted in the initiation of a Unit 3 automatic scram. The performance issues included failure to adequately evaluate newly designed master trip solenoid valves for their intended application.

.5 A finding described in Section 40A5 of this report had, as its primary cause, a human performance deficiency, in that it involved the licensee's failure to correctly evaluate the test data from performance testing of the Unit 3 isolation condenser. This failure resulted in the licensee having to re-perform a calculation.

4OA5 Other Activities

.1 (Closed) Temporary Instruction (TI) 2515/154: Spent Fuel Material Control and Accounting at Nuclear Power Plants.

The inspectors completed Phase I and Phase II of the subject temporary instruction and provided the appropriate documentation to NRC management as required by the temporary instruction.

.2 (Closed) Unresolved Item 05000237/2002017-02; 05000249/2002017-02: Isolation Condenser Performance Testing Deficiencies

a. Inspection Scope

The inspectors assessed an Unresolved Item regarding the licensee's failure to correctly implement adequate corrective action following a previous Non-Cited Violation to evaluate the test data from performance testing of the Unit 3 isolation condenser. The inspectors identified a number of concerns with calculation DRE 02-0020, "Isolation Condenser Heat Removal Capacity Validation."

The licensee conducted testing with a revised methodology as well as revising the analysis to correct the identified testing deficiencies. The NRC reviewed the condition reports initiated to address these concerns, the revised calculations, subsequent isolation condenser testing, and the stress report performed on the isolation condenser.

b. Findings

Introduction

The inspectors identified that the licensee failed to implement adequate corrective action in accordance with 10 CFR Part 50, Appendix B, Criterion XVI, following issuance of a previous Non-Cited Violation (NCV) in that the licensee again failed to correctly evaluate the test data from performance testing of the Unit 3 isolation condenser. The issue was

considered to be of very low safety significance and was dispositioned as a Severity Level IV NCV.

Description

On February 6, 2001, the NRC issued a violation of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," (NCV 05000237/2001006-01; 05000249/2001006-01). Specifically, the licensee had failed to appropriately evaluate test data associated with Unit 3 isolation condenser performance testing. One of the test evaluation deficiencies was that the licensee failed to properly consider the eductor effect of the reactor recirculation pump running during the test causing a nonconservative overestimation of the isolation condenser's performance during design conditions. The licensee considered this deficiency appropriately addressed by calculation DRE 02-0020, Revision 0, which was completed on May 28, 2002. During a subsequent inspection, as documented in NRC Inspection Report 05000237/2001006-01; 05000249/2001006-01, the inspectors identified the following deficiencies with calculation DRE 02-0020, which were nonconservative, applicable to both units, and repetitive of the previous deficiency:

(1) The licensee failed to properly calculate the eductor effect of the reactor recirculation pump running during the test, because they failed to recognize that some of the pressure energy of a fluid element in the suction pipe would be converted to kinetic energy when the pump was running.

(2) The licensee failed to realize there were design conditions requiring the isolation condenser safety function in which no reactor recirculation pumps would be running, (e.g., after a complete loss of offsite power).

This again caused a nonconservative overestimation of the isolation condenser's performance during design conditions.

The inspectors also identified additional concerns in the Unresolved Item with calculation DRE 02-0020 including that the licensee did not have an analysis for the thermal shock of 100 degree water (or less) being injected into the isolation condenser and contacting the tubes that would be at least 540 degrees Fahrenheit.

As a result of these concerns, the licensee revised DRE 02-0020 and conducted additional testing of the isolation condenser using a revised test methodology. The inspectors reviewed the testing results and DRE 02-0020, Revision 1, during a December 2003 inspection and determined that the revised calculation was based on the pre-extended power uprate values versus the extended power uprate values. The licensee initiated CR 189002 to address this additional concern. During this inspection, the licensee provided calculation DRE 02-0020, Revision 1A, to the inspector that adequately incorporated the extended power uprate values. Based on the revised testing methodology and the revised analysis, it was concluded that the isolation condenser remained operable.

Subsequent to the inspection, the licensee was able to locate the original stress analysis report on the isolation condenser. This analysis determined that the stress on the tubes due to initiation of makeup water as low as 70 degrees Fahrenheit on the hot uncovered

tubes remained within the acceptable stress limits for the designed number of thermal cycles of the isolation condenser.

Analysis

The inspectors determined that the two analysis deficiencies constituted an inadequate corrective action and represented 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 Disposition Screening." The inspectors concluded that the issue was more than minor because the finding, if left uncorrected, could become a more significant safety concern. The finding involved the attribute of equipment performance and could have affected the mitigating systems objective of ensuring the availability of systems that respond to initiating events to prevent undesirable consequences because the testing deficiencies could allow, as acceptable, an isolation condenser that actually had degraded below its design requirements.

As a result, the inspectors reviewed this issue in accordance with IMC 0609, "Significance Determination Process (SDP)." The inspectors determined that this issue potentially affected the NRC's Mitigating Systems Cornerstone of ensuring the availability of systems that respond to initiating events such as loss of offsite power. Based on the additional testing with a revised methodology as well as the revised analysis, it was concluded that the isolation condenser remained operable. Therefore, the failure to implement adequate corrective actions to test the methodology and analysis was of very low safety significance (Green). The finding was assigned to the mitigating system's cornerstone for both units.

Enforcement

10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," required, in part, that in the case of significant conditions adverse to quality, measures shall assure that the cause of the condition is determined and corrective actions taken to preclude repetition. Contrary to the above, following issuance of an NCV on February 6, 2001, for a failure to appropriately evaluate test data associated with Unit 3 isolation condenser performance testing, a safety-significant condition adverse to quality, the licensee did not adequately determine the cause or take appropriate corrective actions to preclude repetition. Specifically, similar to the original NCV, the licensee's subsequent calculation DRE 02-0020, Revision 0, completed on May 28, 2002, did not properly consider the eductor effect of the reactor recirculation pump running during the test, causing a nonconservative overestimation of the isolation condenser's performance during design conditions.

Because this issue is of very low safety significance and has been entered into the licensee's corrective action program as CRs 134241, 134640, and 189002, this violation is being treated as an NCV, consistent with Section VI.A, of the NRC Enforcement Policy **(NCV 05000237/2004002-06; 05000249/2004002-06)**.

4OA6 Meetings

Interim Exit Meetings

- Emergency preparedness program and performance indicators inspection meeting with Mr. D. Bost on January 16, 2004.

- Occupational radiation safety program for radiation monitoring instrumentation and protective equipment with Mr. D. Wozniak on February 6, 2004. Follow-up telephone conversations were held with Messrs. Nestle, Quealy and Griffin on February 13, 2004, to discuss the licensee-identified violation documented in Section 4OA7 below.

- Biennial heat sink with Mr. D. Wozniak on March 26, 2004.

4OA7 Licensee Identified Violations

The following violations of very low significance were identified by the licensee and are violations of NRC requirements which meet the criteria of Section VI of the NRC Enforcement Manual, NUREG-1600, for being dispositioned as NCVs.

- On February 16, 2004, operating crew #5 was tested and evaluated during a training dynamic simulator scenario. The licensee's evaluators failed the crew at the completion of the scenario. Two of the crew members were returned to licensed duties without remediation and re-evaluation. One of the two crew members returned to licensed duties was assigned to and performed on-shift duties. Title 10 of Federal Code of Regulations (CFR) Part 55.59.c. states in part that the licensee shall have a Commission approved requalification training program. The requirement to have a Commission approved requalification training program was partially implemented by procedure TQ-AA-106, "Licensed Operator Requal Training Program," Revision 18, Step 4.5.1 that required that individuals that fail to meet the minimum standards during evaluations shall be removed from all licensed duties... and Step 4.5.2 which required that successful completion of remediation and re-evaluation prior to returning the individual to licensed duties. The failure to remediate and re-evaluate the operators before returning them to licensed duties was a violation of 10 CFR 55.59.c. The violation was more than minor because one of the two operators returned to and performed on-shift duties. The violation is of very low safety significance because when the licensee identified the error, the two operators were subsequently removed from licensed activities and demonstrated the ability to successfully complete re-mediation and re-evaluation activities.

* Title 10 CFR 50.54(q) requires that the licensee follow and maintain an Emergency Plan which meets the standards in 10 CFR 50.47(b) and the requirements of Appendix E of this part. Title 10 CFR 50.47(b)(11) requires that the emergency response plan establish means for controlling radiological exposure to emergency workers. The licensee's Standardized Radiological Emergency Plan, EP-AA-1000 (Revision 14), Part II, "Planning Standards and Criteria," implements the requirements of 10 CFR 50.47(b). That part of the

emergency plan requires that at least 50 percent of personnel from various departments, including the Maintenance Department, who are potential responders to the Operations Support Center (OSC) as Damage Control Team members be qualified in the use of respiratory protection equipment. However, the 50 percent criteria was not met for electrical and mechanical maintenance staffs and overall for the Maintenance Department for periods in 2003 through January 2004, as described in the licensee's focused area self-assessment report issued December 17, 2003, and documented in CR 200613. The violation is of very low safety significance because it does not represent a functional failure to implement the planning standard of 10 CFR 50.47(b)(11).

ATTACHMENT: SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

R. Bauman, ISI Coordinator
D. Bost, Site Vice President
J. DeYoung, Corporate Emergency Planning Specialist
G. Dorsey, Chemistry Manager
L. Dyas, Engineering
E. Flick, Acting Engineering Director
J. Fox, Design Engineer
R. Gadbois, Shift Operations Superintendent
D. Galanis, Design Engineering Manager
V. Gengler, Dresden Site Security Director
J. Griffin, Regulatory Assurance - NRC Coordinator
J. Hansen, Regulatory Assurance Manager
J. Henry, Operations Director
C. Kolotka, Operational Chemistry Supervisor
S. McCain, Corporate Emergency Preparedness Manager
D. Nestle, Radiation Protection Technical Support Manager
M. Phalen, Emergency Planning Coordinator
P. Quealy, Emergency Preparedness Manager
R. Rybak, Acting Regulatory Assurance Manager
J. Sipek, Nuclear Oversight Director
N. Starcevich, Radiation Protection Instrument Coordinator
B. Svaleson, Maintenance Director
S. Taylor, Radiation Protection Manager
D. Wozniak, Plant Manager

NRC

C. Pederson, Director, Division of Reactor Safety
M. Ring, Chief, Division of Reactor Projects, Branch 1

IEMA

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

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

05000249/2004002-01	FIN	Failure to ensure operations procedures contained proper operating instructions from the vendor manual.
05000237;2004002-02	URI	Water intrusion in the high pressure coolant injection system steam supply line.
05000249/2004002-03	NCV	Failure to implement instruction and accomplish those instructions to properly align the Unit 3 emergency diesel generator pump and discharge piping of the fuel oil pump in January 2004
05000237/2004002-04	FIN	Several Performance Issues Which Resulted in the Initiation of a Manual Scram Due to High Stator Water Cooling (SWC) System Temperature on December 11, 2003
05000249/2004002-05	FIN	Several performance issues which resulted in an automatic scram due to malfunction of the main turbine master trip solenoid valves during turbine weekly testing.
05000237/2004002-06; 05000249/2004002-06	NCV	Failure to Implement Adequate Corrective Action

Closed

05000249/2004002-01	FIN	Failure to ensure operations procedures contained proper operating instructions from the vendor manual.
05000249/2004002-03	NCV	Failure to implement instruction and accomplish those instructions to properly align the Unit 3 emergency diesel generator pump and discharge piping of the fuel oil pump in January 2004
05000237/2004002-04	FIN	Several Performance Issues Which Resulted in the Initiation of a Manual Scram Due to High Stator Water Cooling (SWC) System Temperature on December 11, 2003
05000249/2004002-05	FIN	Several performance issues which resulted in an automatic scram due to malfunction of the main turbine master trip solenoid valves during turbine weekly testing
05000237/2004002-06; 05000249/2004002-06	NCV	Failure to Implement Adequate Corrective Action

05000237/2002017-02; 05000249/2002017-02	URI	Isolation Condenser Performance Testing Deficiencies
50-249/2004-001	LER	Unit 3 Automatic Scram During Testing of the Main Turbine Master Trip Solenoid Valves
50-237/2003-007	LER	Unit 2 Manual Scram Due to High Stator Water Cooling System Temperature

Discussed

None

LIST OF ACRONYMS USED

ADAMS	Agencywide Documents Access and Management System
ANS	Alert and Notification System
ARM	Area Radiation Monitor
CAM	Continuous Air Monitor
CCSW	Containment Cooling Service Water
CEDE	Committed Effective Dose Equivalent
CFR	Code of Federal Regulations
CR	Condition Report
DEI	Dose Equivalent Iodine
DIS	Dresden Instrument Surveillance
DMS	Dresden Maintenance Staff
DOP	Dresden Operating Procedure
DOS	Dresden Operating Surveillance
DRP	Division of Reactor Projects
DRS	Division of Reactor Safety
EDG	Emergency Diesel Generator
EHC	Electrohydraulic Control
EP	Emergency Preparedness
ERO	Emergency Response Organization
EPZ	Emergency Planning Zone
ETS	Emergency Trip Supply
FIN	Finding
FEMA	Federal Emergency Management Agency
FRV	Feed Regulating Valve
FWLC	Feedwater Level Control
HPCI	High Pressure Coolant Injection
HRSS	High Radiation Sampling System
IMC	Inspection Manual Chapter
LER	Licensee Event Report
LOA	Letters of Agreement
MTSV	Master Trip Solenoid Valve
MWe	megawatts electrical
NCV	Non-Cited Violation
NLO	Non-Licensed Operator
NRC	Nuclear Regulatory Commission
OA	Other Activities
OSC	Operations Support Center
PARS	Public Availability Records
PI	Performance Indicator
RP	Radiation Protection
SCBA	Self-Contained Breathing Apparatus
SDP	Significance Determination Process
SWC	Stator Water Cooling
SWR	Service Work Request
TCV	Temperature Control Valve
TIP	Traversing In-core Probe

UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item
WO	Work Order

LIST OF DOCUMENTS REVIEWED

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

1R04 Equipment Alignment

DOP 1400-M1/E1, "Unit 3 Core Spray System," Revision 17

1R05 Fire Protection

Dresden Updated Fire Hazards Analysis

Dresden Unit 3 Pre-Fire Plan U3RB-21

Dresden Unit 3 Pre-Fire Plan U3RB-22

CR 208178; State of the XL3 fire detection system; March 13, 2004

CR 208098; Safe shutdown light # 209 located in the Unit 2 diesel generator room failed preventative maintenance; March 12, 2004

CR 207902; Various deficiencies in the Unit 2/3 cribhouse; March 12, 2004

CR 207845; Fire header leak; March 11, 2004

CR 207579; Safe shutdown light inoperable; March 11, 2004

CR 204559; Fire protection strainer 2/3-4102-9; March 10, 2004

CR 207540; Potential to exceed permitted fire loading in Unit 3 trackway; March 4, 2004

CR 205975; Fire main small leak; March 4, 2004

CR 205887; Nuclear oversight identified unapproved chemical storage area; March 3, 2004

CR 205596; Halon bottles failed to meet acceptable criteria; March 2, 2004

CR 205242; Fire alarm at lift station; March 1, 2004

CR 204497; Safety - flammable liquids stored outside of flammable cabinet; February 26, 2004

CR 204138; Safe shutdown light 231A found inoperable; February 25, 2004

CR 204137; NRC concern; February 25, 2004

CR 203936; Storage enhancement for spare self-contained breathing apparatus masks in fire carts; February 25, 2004

CR 199656; Unit 2/3 diesel fire pump work not bundled properly; February 5, 2004

CR 199354; Potential degraded fire barrier around unit 1 diesel fire pump; February 4, 2004

CR 198693; Unit 2/3 boilerhouse fire protection header susceptible to freezing; January 31, 2004

U2/3C-124, Exelon Nuclear Dresden 2/3 Fire Pre-plan, Revision 5

U2/3C-125, Exelon Nuclear Dresden 2/3 Fire Pre-plan, Revision 5

U2/3RB-32, Exelon Nuclear Dresden 2/3 Fire Pre-plan, Revision 5

U2RB-3, Exelon Nuclear Dresden Unit 2 Fire Pre-plan, Revision 5

U3TB-73, Exelon Nuclear Dresden Unit 3 Fire Pre-plan, Revision 5

U3TB-69, Exelon Nuclear Dresden Unit 3 Fire Pre-plan, Revision 5

1R07 Heat Sink Performance

BSA-D-00-01; Dresden 2/3 Emergency Core Cooling System Room Temperature Response With Loss of Room Cooler; Revision 0

DRE97-0063; High Pressure Coolant Injection Turbine Pump Room Cooling Load Calculation; Revision 1 and 1A

DRE98-0077; Dresden High Pressure Coolant Injection Room Thermal Response With Reduced Room Cooler Capability; Revision 0

DRE00-0013; Evaluation of Ability of Safety Related Equipment Located in Low Pressure Coolant Injection/Core Spay Rooms to Perform Their Functions at Post Loss of Cooling Accident Elevated Temperatures; Revision 1

DRE01-0041; Updated EQ Zone Parameter Tables Following Implementation of Extended Power Uprate; Revision 0

NDIT SEC-DR-98-054; Transmittal of High Pressure Coolant Injection Room Cooler Capacity at Low Cooling Flow Conditions; dated March 25, 1998

DCP 2103-06; Cooling and Service Water Chemical Injection System; Revision 26

DCP 1008-04; Heat Exchanger Inspection Program; Revision 6

ER-AA-340-1002; Service Water Heat Exchanger and Component Inspection Guide; Revision 1

GL 89-13 Program Basis Document, Appendix C, Summary of Ongoing Activities; Revision 2

Bay 13 Inspection Report; dated December 3, 2003

Eddy Current Results; Unit 2 HPCI Room Cooler, March 26, 2002; Unit 3 HPCI Room Cooler, November 11, 2002; 2A LPCI Room Cooler September 13, 2001; 2B LPCI Room Cooler September 5, 2001; 3A LPCI Room Cooler October 16, 2002; 3B LPCI Room Cooler October 10, 2002

DCP 1008-04 Heat Exchanger Inspection Results; 2A LPCI Room Cooler September 10, 2001; 2B LPCI Room Cooler September 5, 2001; 3B LPCI Room Cooler October 13, 2002

ER-AA-340-1002 Heat Exchanger Inspection Data Sheet; 2B LPCI Room Cooler, dated October 29, 2003

CR133213; Findings from Heat Sink Assessment; dated November 26, 2002

CR136019; High Pressure Coolant Injection System Availability Without the HPCI Room Cooler Fan; dated December 16, 2002

CR148613; New High Pressure Coolant Injection Room Cooler Unable to Mate With Service Water Piping; dated March 11, 2003

CR167124; High Pressure Coolant Injection Room Cooler Vibrating Excessively; dated July 10, 2003

CR192793; Low Pressure Coolant Injection Room Cooler Trip; dated December 29, 2003

CR194722; Previously Identified Problem Lead to a Smoked Component; dated January 12, 2004

CR205850; Overly Conservative Requirement Discovered in GL 89-13 P.D.; dated March 3, 2004

CR211023; Calculations Appear to be Inadequately Cross-Referenced; dated March 26, 2004 (NRC- identified issue)

FASA 84491-05; FASA on Generic Letter 89-13 Program; dated March 7, 2002

FASA 142206-03; Implementation and Effectiveness of GL. 89-13 Program; dated March 14, 2003

FASA 142206-03; Effectiveness of GL. 89-13 Heat Exchanger Inspections; dated October 9, 2003

RS-01-208; Additional Information Supporting the License Amendment Request to Permit UPRATE Power Operation at Dresden Nuclear Power Station; dated September 26, 2001

Scoping Evaluation of Dresden 2 and 3 Intake Canal for Dam Failure Scenario; dated September 19, 2001

1R11 Operator Requalification

CR 209259; Nuclear oversight identifies inadvertent exam compromise during Licensed Operator Requalification Training emergency preparedness exam; March 18, 2004

CR 207425; Licensed Operator Requalification Training procedure and Technical Requirement Manual; March 9, 2004

CR 204651; Missed training (excused absence); February 27, 2004

CR 202222; Nuclear oversight identifies operators fail crew out-of-box exercise - no re-evaluation required; February 17, 2004

CR 202119; Team 4 clock reset - training failures; February 16, 2004

CR 200619; Simulator “froze” during out-of-box exercise; February 9, 2004

1R12 Maintenance Effectiveness

DRE-98586; Field Evaluation of a Leak in the Seal Flush Piping for the 2B Core Spray Pump at Dresden Station; dated February 25, 2004

Drawing M-358, Diagram of Core Spray Piping

1R13 Maintenance Risk Assessment

WC-AA-101, “On-line Work Control Process,” Revision 06

DIS 1500-32, “Division I and II Low Pressure Coolant Injection Emergency Containment Cooling System Loop Selection Circuitry Logic System Functional Test,” Revision 0-+2

DRE-98586; Field Evaluation of a Leak in the Seal Flush piping for the 2B Core Spray Pump at Dresden Station; February 25, 2004

CR 207888; Enhancements for Unit 2 high pressure coolant injection limiting condition for operations; March 12, 2004

CR 202183; Document finds of 2B core spray pump repair on seal water line; February 17, 2004

CR 201952; Team 5 self identifies clock reset, failed out of box exercise; February 16, 2004

CR 201892; Nuclear Oversight identifies inadequate program performance review; February 16, 2004

CR 201648; 2B Core spray pump seal cooling line leaking 3 drops per second; February 13, 2004

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

CR 207989; Bypass of off gas treatment for Offsite Dose Calculation Manual tracking; March 12, 2004

CR 203734; Condition report computer uninterrupted power source inverter failed due to apparent water damage; February 24, 2004

CR 199540; Water in the Unit 3 main turbine lube oil system; January 30, 2004

CR 198543; Unit 3 reactor scram due to main turbine trip; January 30, 2004

1R15 Operability Evaluations

EC# 347023, Revision 0; Evaluation of Acceptability of Suspect MSIV Solenoid Plungers Resulting from Part 21 From AVCO

SEP Accident & Transient Topics XV-1, 3, 4, 5, 7, 8, 9, 11, 13, 14, 15, 18, 19 and 20; October 15, 1981

SEP Topics V-10.B, RHR Reliability; V-11.b, RHR Interlock Requirements; and VII-3, Systems Required for Safe Shutdown (Safe Shutdown Systems Report); April 24, 1981

CR 208093; CR 015X auxiliary contactor failure analysis results; March 12, 2004

CR 206950; Nuclear oversight identifies OpEval 04-002 not present in control room file; March 8, 2004

CR 204690, High pressure coolant injection steamline water carryover during design basis events; February 27, 2004

CR 199491; Damaged duct/register 613 supply duct; February 4, 2004

CR 198754; Potential feedwater level control issue impacts Unit 2 high pressure coolant injection; February 1, 2004

CR 197890; Main steam isolation valve solenoid operated valve coil plungers may have defective parts; January 27, 2004

1R19 Post-Maintenance Testing

ACE 197316; Foreign Material Caps Found in New Emergency Diesel Generator Fuel Oil Pump Piping

EACE 205340-01; Unit 3 Diesel Generator Fuel Oil Pump Fuel Leak

DRE-00779, “Discharge Piping Failure Analysis”

DMS 6600-03, “Diesel Generator Mechanical Inspection and Preventative Maintenance,” Revision 11

DIS 0250-03, “Electromatic Relief Valve/Target Rock Valve Pressure Switches Calibration,” Revision 39

DIP 0250-03, “Unit 2/3 Electromatic Target Rock Pressure Controller Repair,” Revision 03

WO# 00664113, “Replace Pressure Wide Wide Indicator,” 3-0263-156 (2/12/04)

WO# 00343657, “Replace the main steam line high flow differential pressure indicator switch 2-0261"

DIP 0250-01, “Unit 2/3 Main Steam Line High Flow Isolation Switch Maintenance,” Revision 06

DIS 263-19, “Reactor Wide Range Pressure Transmitter Calibration and EQ Maintenance Inspection,” Revision 5

WO# 669594-01, Replace emergency relief valve pressure switch, 2-203-3B

WO# 00677381, Clean any debris and excessive grease from switch adjustment

MA-DR-MM-5-66001, Revision 1, “Diesel Generator Post Maintenance Testing Run”

MA-AA-716-008, Revision 1, “Foreign Material Exclusion Program”

DOS 6600-12, Revision 29, “Diesel Generator Test, Endurance and Margin/Full Load Rejection/ECCS/Hot Restart”

DOS 6600-01, Revision 82, “Diesel Generator Surveillance Tests”

DOS 6600-01, Revision 81, “Diesel Generator Surveillance Tests”

Reactivity maneuver plan #D318A-019; “Unit 3 Power Reduction to ~800MWe and Recovery of Control Rod Drive;” Revision 08

FC Out of service #00024901 Remove/replace Scram Solenoid Pilot Valve for Control Rod Drive, Revision 08

DOS 0300-14; “Control Rod Drive Scram Testing at Power;” Revision 03

DOP 0300-09; "Control Rod Drive System Placing a Hydraulic Control Module/Pump In Service," Revision 09

DOS 0300-08; “Control Rod Drive Exercising With Mode Switch in Refuel;” Revision 17

DOS 0040-07; “Verification of Remote Position Indication for Valves Included in Inservice Testing (IST) Program;” Revision 26

DOS 1600-28; “Air Operated Valve Fail Safe and Accumulator Integrity Test;” Revision 09

DOS 1600-05; “Unit 3 Quarterly Valve Timing (W-9);” Revision 29

CR 205779; Unit 3 emergency diesel generator fuel oil system failure; March 3, 2004

CR 205340; Unit 3 diesel generator fuel oil pump fuel leak; March 2, 2004

CR 197333; Foreign material found in diesel generator fuel pump; January 23, 2004

1R22 Surveillance Test

DOS 1400-05, “Core Spray System Pump Operability and Quarterly IST Test with Torus Available,” Revision 29

DOS 6600-12,”Diesel Generator Tests Endurance and Margin/Full Load Rejection/ECCS/Hot Restart,” Revision 29

WO#00649708; “Main Steam Line Isolation Valve Closure Scram Circuit Functional Test;” March 5, 2004

CR 210957; Pump vibration is in the alert range; March 26, 2004

CR 210856; Out of tolerance on starting air compressor pressure switches; March 25, 2004

CR 210032; Procedure needs revision to address battery charger securing; March 22, 2004

CR 209138; 3-0504-A/3-0504-D time delays found out of tolerance by DIS 0500-07; March 18, 2004

CR 208572; PS 3-2380 Unit 3 high pressure coolant injection gland seal pressure alarm found out of calibration; March 16, 2004

CR 209548; Primary containment isolations bypassed during DIS 1300-07; March 19, 2004

CR 209545; Primary containment isolations bypassed during DIS 1300-07; March 19, 2004

CR 208155; Did not meet acceptance criteria for oil temperature; March 13, 2004

CR 207151; Torus level switch 2-2351A failed; March 9, 2004

CR 206780; Unit 3 emergency diesel generator endurance run aborted due to fuel leak; March 3, 2004

CR 205882; Troubleshooting left Unit 2 alternate battery without battery charger cause fail weekly; March 3, 2004

CR 205068; PSL 2-503D Main condenser low vacuum switch; March 1, 2004

CR 205067; PSL 2-503C Main condenser low vacuum switch; March 1, 2004

CR 205064; PSL 3-503D Main condenser low vacuum switch; March 1, 2004

CR 205061; PSL 3-503C Main condenser low vacuum switch; March 1, 2004

CR 205060; PSL 3-503A Main condenser low vacuum switch; March 1, 2004

CR 205340; Unit 3 diesel generator fuel oil pump fuel leak; March 2, 2004

CR 204621; Nuclear Oversight identifies potential enhancement for surveillance procedures; February 27, 2004

CR 204295; Source Range Monitor 21 setpoints out of tolerance, not Tech. Spec.; February 26, 2004

CR 204248; Safety-improperly stored ladder pick; February 25, 2004

CR 203773; LT 2-1341 out of span calibration; February 24, 2004

CR 203569; 20203-3B electromagnetic relief valve pressure controller pressure switch exceeded TS; February 23, 2004

CR 201567; Unit 2 narrow range reactor press transmitter out of calibration; February 13, 2004

CR 201134; Relay found falling apart; February 11, 2004

CR 199942; Condenser lo vacuum switches out of calibration PSL-2-503A, B, and C; February 5, 2004

CR 197316; Foreign material caps found in new emergency diesel generator fuel oil pump piping; January 23, 2004

CR 196761; Out of tolerance TS 6641-529 and 6641-530; January 20, 2004

CR 194957; PS 3-0263-52B Low out of tolerance, TS violation; January 13, 2004

CR 193144; Unit 2 isolation condenser condensate return line Hi flow high switch found low; January 2, 2004

1R23 Temporary Modification

DAN 902-8, G-11, Revision 10

CR 203234; Several unauthorized temporary modifications on Unit 3; February 21, 2004

CR 203207; Door left open, possibly impacting ventilation in Rad Waste; February 21, 2004

CR 200236; Un-approved temp-modification; February 7, 2004

CR 199792; 10% scram testing per DOS 300-14; February 5, 2004

1EP2 Alert and Notification System (ANS) Testing

Exelon Semi-Annual Siren Report, July 2002 through December 2002

Exelon Semi-Annual Siren Report, January 2003 through June 2003

Braidwood/Dresden Warning System Maintenance and Operational Report - September 27 through November 27, 2002; dated December 11, 2002

Braidwood/Dresden Warning System Maintenance and Operational Report - September 22 through November 7, 2003; dated November 17, 2003

Dresden EPZ Daily and Monthly Siren Operability Reports - January 2002 through September 2003

Letter to Federal Emergency Management Agency Region V Staff; Exelon Siren 56-BD; dated July 2, 2003

Dresden Nuclear Power Station Design Study for Elimination of Redundant Sirens and Total Contiguous EPZ Siren Coverage; dated August 2003

1EP3 Emergency Response Organization (ERO) Augmentation Testing

EP-AA-112; Emergency Response Organization/Emergency Response Facility Activation and Staffing; Revision 8

EP-AA-112-100; Control Room Operations; Attachment 2; ERO Augmentation; Revision 5

EP-AA-120; Emergency Plan Administration; Revision 3

EP-AA-1102; ERO Fundamentals; Revision 3

EP-AA-122; Drills and Exercises; Revision 4

Records of Off-Hours, Unannounced Augmentation Drills - June 2002 through December 2003

Internal Memorandum; April 2, 2003 Dresden Station Drive-in Augmentation Drill results; dated April 4, 2003

Training Records of a Random Sample of 36 Station Personnel Assigned to Key or Support ERO Positions

Dresden Station ERO Call-out Roster; dated January 2004

Brochure; EP Fundamentals and Expectations; dated 2003

CR 131008; Pager Issues Identified During October 2002 Augmentation Drill; November 10, 2002

CR 140120; January 2003 Augmentation Drill - Marginal Pass; January 18, 2003

CR 160358; May 2003 Augmentation Drill - Marginal Pass; May 23, 2003

CR 171670; August 2003 Augmentation Drill Results and Improvement Items; August 14, 2003

1EP4 Emergency Action Level and Emergency Plan Changes

Dresden Station Annex to the Exelon Standardized Emergency Plan; Revisions 15, 16, and 17

Letters of Agreement with Seven Local Support Organizations in Effect through December 2004

Dresden Emergency Operations Procedure 300-1; Secondary Containment Control; Revision 7

Procedure EP-AA-123-1003; Core Damage Assessment Methodology Program Technical Basis; Revision 0

Procedure EP-AA-110-301; Core Damage Assessment - Boiling Water Reactors; Revision 2

50.54(q) Review on Revision 17 to the Dresden Station Annex; dated August 12, 2003

1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies

NOSA-DRE-03-04; Emergency Preparedness 50.54(t) and Meteorological Program Audit Report for Dresden Station - May 2003

Nuclear Oversight Corporate Comparative Audit Report; 2003 Emergency Preparedness 50.54(t) and Meteorological Program; dated September 16, 2003

EP Program Health Report, January 2002 through December 2003; dated January 7, 2004

Dresden February 26 Pre-Exercise Findings and Observations Report; dated March 7, 2003

Dresden March 26 Exercise Findings and Observations Report; dated April 16, 2003

White Paper; Dresden Graded EP Exercise - Two Weaknesses Identified; dated April 22, 2003

Internal Memorandum; 2002 Off-Year Exercise Findings and Observations Report; dated June 21, 2002

Internal Memorandum; Dresden 2002 Medical/Health Physics Drill Evaluation Report; dated November 1, 2002

Internal Memorandum; Dresden 2002 Medical/Health Physics Drill Evaluation Report - Revised; dated June 26, 2003

Internal Memorandum; Dresden Station 2003 Medical Drill Findings and Observations Report; dated August 20, 2003

Internal Memorandum; 2002 Emergency Preparedness Assembly Drill; undated

Internal Memorandum; 2003 Assembly and Accountability Drill Findings and Observations Report; dated November 30, 2003

Internal Memorandum; September 2002 Mini-Drill Findings and Observations Report; dated December 20, 2002

Internal Memorandum; Four Fourth Quarter 2003 Mini-Drills Findings and Observations Report; dated December 18, 2003

Internal Memorandum; September 2003 Off-Site Agency Meeting for Braidwood, Dresden, and LaSalle Stations; dated December 31, 2003

CR 150727; Control Room Simulator Tripped During 2003 Graded Exercise; March 26, 2003

CR 153134; Controller Performance Concerns During 2003 Graded Exercise; April 9, 2003

CR 153148; Facilities and Equipment Enhancements Identified During 2003 Exercise; April 9, 2003

CR 153153; Program Administration Concerns Identified During 2003 Exercise; April 9, 2003

CR 159965; Concern With Frequency of Reviewing Letters of Agreement; April 9, 2003

CR 160195; Procedure TQ-AA-113 Apparent Inadequacies; May 23, 2003

CR 160912; Silver Zeolite Cartridge Lesson Learned Not Incorporated; May 29, 2003

CR 161059; Concern With 2002 Medical Drill Critique Report; May 29, 2003

CR 161071; Evaluation of Weekly Duty Team Muster Meeting; May 29, 2003

CR 161076; Adverse Trend in Document Control in Technical Support Center and Operations Support Center; May 29, 2003

CR 183572; Schedule Additional Training for All Senior Reactor Operators on Emergency Classification in 2004; October 29, 2003

2OS3 Radiation Monitoring Instrumentation and Protective Equipment

Updated Final Safety Analysis Report; Chapter 12, Radiation Protection; Revision 4

RP-AA-700; Controls for Radiation Protection Instrumentation; Revision 0
DRP 5800-09; Calibration Frequencies for Radiation Protection Survey Instruments; Revision 4

Listing of In Service Portable Radiation Detection Instruments

DRP 5410-08; Abacos Plus Whole Body Counter Calibration; Revision 1

Calibration Report for the Canberra Fastscan Whole Body Counter System; dated February 19, 2003

DIS 1600-16; Drywell High Radiation Monitor Group 2 Isolation Functional and Calibration Test; Revision 14

DIS 1600-16; Data Sheets 1 and 2; Drywell High Radiation Monitor RIS 2-2419A and B and RIS 3-2419A and B Channel Calibrations; October 26 and 27, 2003, and October 22 and 23, 2002

DIS 1800-05; Unit 2 GEMAC Area Radiation Monitor Calibration; Revision 11

DIS 1800-05; Data Sheet 9, Unit 2 TIP Cubicle ARM Calibration; dated January 28, 2003

DIS 1800-05; Data Sheet 2, Unit 2 Refuel Floor High Range ARM Calibration; dated February 6, 2003

DIS 1800-05; Data Sheet 33, Unit 2 Filter Building Charcoal Adsorber Vault ARM Calibration; dated February 19, 2003

DIS 1800-07; Unit 3 SUMAC Radiation Monitor Calibration; Revision 9

DIS 1800-07; Data Sheet 9, Unit 3 Reactor Water Cleanup ARM Calibration; dated March 6, 2003

DIS 188-07; Data Sheet 10, Unit 3 TIP Drive Area ARM Calibration; dated February 7, 2003

Focus Area Self-Assessment Report; Radiation Monitoring Instrumentation; dated January 28, 2004

Focus Area Self-Assessment Report; Respiratory Protection Program; dated September 22, 2003

Audit No. NOSA-DRE-03-06; Nuclear Oversight Radiation Protection Audit; dated May 16, 2003

RP-DR-900; Calibration of the NMC Wind-2B Continuous Air Monitor; Revision 5

RP-DR-900; Data Sheet 1, Unit 2 and Unit 3 Drywell CAM Calibrations; dated December 31, 2003, and November 19, 2003

DRP 5823-40; Operation and Calibration of the Merlin Gerin AMP-100; Revision 3

DRP 5823-40; Data Sheet 1, AMP-100 (serial no. 5098-112, 5098-118, 5095-053, 5098-121, 5098-168) Calibration Records; Various Periods in 2003

RP-DR-825; Maintenance, Care & Inspection of Respiratory Protective Equipment; Revision 2

RP-DR-826; MSA Self-Contained Breathing Apparatus Inspection; Revision 5

RP -DR-826; Data Sheet 1, MSA SCBA Inspection Checklists; June 2003 - January 2004

MSA SCBA Training & Facility Authorization Certificates for Various Individuals; February 2003

Vendor Test Results for Selected SCBA Equipment (regulator and face piece leak tests and cylinder pressure tests); March and April 2003

March 11, 2003, NRC Letter; Dresden Nuclear Power Station, Units 2 and 3 - Issuance of Amendment No. 197/190

DSBP 1000-37; Attachments B & C, HRSS Operability Program Surveillance Records; September 2002 - September 2003

CR 00199738; Performance of Overload Testing of RP Instruments; dated February 4, 2004

CR 00197981; Procedure non-compliance with RP-AA-700; dated January 23, 2004

Listing of RP and Instrument Maintenance Department instrumentation Related Condition Reports; Calender Year 2003

CR 135433; UP Instruments In Service Past Calibration Due Dates; dated December 12, 2002

CR 162919; Lessons Learned, Air Quality Measurements; dated June 12, 2003

Racal Corporation Calibration Report; Model 1015C Radiation Monitor (Serial No. 1791) with Model 10X5-6 and Model 10X5-180 Ion Chambers; dated May 8, 2003

Shepherd Calibrator Source Characterization Report and Data; dated January 29, 2004

EP-AA-1000; Exelon Nuclear Standardized Radiological Emergency Plan; Part II, Planning Standards and Criteria; Revision 14

Respiratory Protection Qualification Reports for Operations, Radiation Protection, Chemistry and Maintenance Departments; February 2004

Respiratory Protection Level II Training Lesson Plan, MSA SCBA Device; Revision 0

Focus Area Self-Assessment Report; Evaluate Capability of Dresden Station to Implement Adequate Measures to Protect the Public Health and Safety During a Radiological Emergency; dated December 17, 2003

CR 200613; Electrical and Mechanical Maintenance Department Respirator Qualifications Below Expectations; dated February 9, 2004

71151 Performance Indicator Verification

DCP 1019-01; Plant System Sampling; Revision 31

CY-AB-120-100; Reactor Water Chemistry; Revision 5

DCP 3207-01; Gamma Isotopic Analysis; Revision 17

DCP 3207-01; Attachment 13 Data Sheets, Dose Equivalent Iodine Calculations; Various Data Sheets for Units 2/3 June 2003 - January 2004

Reactor Coolant System Isotopic Analysis Results; Various Periods in 2003

EP-AA-125-1001; EP Performance Indicator Guidance; Revision 2

EP-AA-125-1002; ERO Performance - Performance Indicators Guidance; Revision 2

EP-AA-125-1003; ERO Readiness - Performance Indicators Guidance; Revision 2

Dresden Off-Site Siren Test Plan; Revision 4

Dresden EPZ Sirens Daily and Monthly Operability Reports - January 2003 through September 2003

LS-AA-2110; Monthly PI Data Elements for ERO Drill Participation - January 2003 through September 2003; Revision 5

LS-AA-2120; Monthly PI Data Elements for Drill/Exercise Performance - January 2003 through September 2003; Revision 3

CR 140400; An Emergency Classification Decision Not Made During One of Four Drills in December 2002; January 21, 2003

CR 153157; Dresden 2003 Exercise - Two Weaknesses Identified in Classification and Notification; April 9, 2003

CR 205265; Safety system performance indicator goal; March 1, 2004

71152 Problem and Identification Resolution

CR 208993; WR# 132424 inappropriately canceled; February 25, 2004

CR 208462; Main generator hydrogen cooling temperature control valve not controlling in auto; March 15, 2004

CR 208189; Service water radiation monitor low flow condition; March 13, 2004

CR 207784; NRC identified issue; March 11, 2004

CR 206791; NRC identifies inadequate followup on hydrogen addition programmable logic controller issue; February 23, 2004

CR 206092; NRC questioned if Part 21 was needed for breaker spring replacement; March 4, 2004

CR 201533; Water dripping from DW liner sand pocket drain - followup; February 13, 2004

CR 201323; Ineffective corrective action to prevent recurrence for control rod drive poor performance; February 12, 2004

CR 201261; Average power range monitor hi light; February 12, 2004

CR 201103; Extent of condition review from LaSalle seismic monitor issue; February 11, 2004

CR 200977; ATIs 191510-02, -05, -09, and -11 closed improperly; February 11, 2004

CR 200830; Unit 2/3 crib house material condition is unacceptable; February 10, 2004

CR 194822; Continuing electronic document management system (EDMS) print accessing problems; January 13, 2004

CR 194775; Security door violation; January 12, 2004

71153 Event Follow-up

EC Eval# 346877, “Evaluation of Turbine Master Trip Solenoid Testing Frequency”

EC Eval# 348031, “Second Extension of the Testing Interval for the Unit 2 Main Turbine Master Trip Solenoid Valves”

CR 204712; Nuclear oversight identifies operations enhancement - operator corrective actions; February 27, 2004

CR 203734; Condition report computer uninterrupted power source inverter failed due to apparent water damage; February 24, 2004

CR 202281; Nuclear oversight identifies unsupported 50.59 screening conclusion; February 17, 2004

CR 198654; Feed water level control system did not control level below 48 inches after Unit 3 SCRAM; January 30, 2004

CR 197455; Unit 2 master trip solenoid valves test not performed due to Unit 3 turbine trip/scram; January 25, 2004

CR 197332; Unit 3 reactor scram during DOS 5600-02, turbine weekly surveillance; January 24, 2004

CR 190360, Unit 2 manual scram taken during stator cooling runback, dated December 12, 2003

CR 190347, Stator cooling water inlet temperature controller, dated December 11, 2003

LER 50-249/2004-001, “Unit 3 Automatic Scram During Testing of the Main Turbine Master Trip Solenoid Valves”

LER 50-237/2003-007, “Unit 2 Manual Scram Due to High Stator Water Cooling System Temperature,” dated February 9, 2004

DOS 5600-02, “Periodic Main Turbine, Electro-hydraulic Control and Generator Tests

4OA5 Other Activities

CR 200509; Local power range monitor believed to have shipped found in Unit 3 fuel pool; February 9, 2004

BSA-D-95-07; Dresden Isolation Condenser Performance; Revision 0

DRE02-0020; Isolation Condenser Heat Removal Capacity Validation; Revision 1 and 1A

DRE03-0011; Isolation Condenser System Combined DBD and DP Calculation; Revision 00

KPA-SWC-67-132; Stress Report Dresden 2 and 3 Isolation Condenser; Revision 0

DOP 1300-01; "Standby Operation of the Isolation Condenser System;" Revision 29

DOS 1300-01; "Isolation Condenser Five Year Heat Removal Capability Test;" Revision 21; Performed on September 12, 2003

UFSAR Change #04003; Section 5.4.6.3; dated February 3, 2004

50.59 Screening No. 2004-0036; Uncovering of the Isolation Condenser Tubes Prior to Injecting Make-up Water; Revision 0

General Electric Co. Notes on Isolation Condenser Startup Testing (Proprietary)

Letter, Struthers Nuclear & Process Company to General Electric Company; Isolation Condenser; dated June 16, 1971

CR 134241; Inappropriate Design Basis Scenario for IC Operation; dated December 5, 2002

CR 134640; Additional Issues Associated With ISCO Heat Performance Test; dated December 9, 2002

CR 189002; NRC Inspector Identified That Test DOS 1300-01 (9/7/03) Used Non-Conservative Pre-EPU Power Level in Calculations; dated December 3, 2003

CR 210558; Additional Proof Needed to Conclude that Cold Makeup Splash; dated March 24, 2004 (NRC- identified issue)