October 30, 2002

Mr. John L. Skolds, President
Exelon Nuclear
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: DRESDEN NUCLEAR POWER STATION
USNRC INSPECTION REPORT 50-237/02-12; 50-249/02-12

Dear Mr. Skolds:

On September 30, 2002, the U.S. Nuclear Regulatory Commission (USNRC) completed an inspection at your Dresden Nuclear Power Station, Units 2 and 3. The enclosed report presents the inspection findings which were discussed with Mr. R. Hovey and other members of your staff on September 24, 2002.

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

Based on the results of this inspection, the inspectors identified three issues of very low safety significance (Green). These issues were determined to involve violations of USNRC requirements. However, because of their very low safety significance and because they have been entered into your corrective action program, the USNRC is treating these issues as Non-Cited Violations, in accordance with Section VI.A.1 of the USNRC's Enforcement Policy. If you deny these Non-Cited Violations, you should provide a response with the basis for your denial, within 30 days of the date of this inspection report, to the U. S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555-0001; with copies to the Regional Administrator, Region III; the Director, Office of Enforcement, U. S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001; and the NRC Resident Inspectors at the Dresden Nuclear Power Station.

During this past year, in response to the terrorist attacks on September 11, 2001, the USNRC issued an Order and several threat advisories to commercial power reactors to strengthen licensees' capabilities and readiness to respond to a potential attack. The USNRC established a deadline of September 1, 2002, for licensees to complete modifications and process upgrades required by the Order. In order to confirm compliance with this Order, the USNRC issued Temporary Instruction 2515/148 and over the next year, the USNRC will inspect each licensee in accordance with this Temporary Instruction. The USNRC continues to monitor overall security controls and may issue additional temporary instructions or require additional inspections should conditions warrant.

In accordance with 10 CFR 2.790 of the USNRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the USNRC Public Document Room or from the Publicly Available Records (PARS) component of USNRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

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 50-237/02-12;
50-249/02-12

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Dresden Nuclear Power Station Plant Manager
Regulatory Assurance Manager - Dresden
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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos:	50-237; 50-249
License Nos:	DPR-19; DPR-25
Report No:	50-237/02-12; 50-249/02-12
Licensee:	Exelon Generation Company
Facility:	Dresden Nuclear Power Station, Units 2 and 3
Location:	6500 North Dresden Road Morris, IL 60450
Dates:	July 1, 2002 through September 30, 2002
Inspectors:	D. Smith, Senior Resident Inspector B. Dickson, Resident Inspector R. Lerch, Project Engineer P. Pelke, Reactor Engineer E. Duncan, Senior Resident Inspector, LaSalle W. Slawinski, Senior Radiation Specialist M. Sheikh, NRC Nuclear Safety Intern/Fuel Cycle Inspector (DNMS) R. J. Leemon, Decommissioning Inspector, (DNMS) R. Zuffa, Illinois Department of Nuclear Safety C. Mathews, Illinois Department of Nuclear Safety D. Zemel, Illinois Department of Nuclear Safety
Approved by:	Mark Ring, Chief Branch 1 Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000237-02-12, IR 05000249-02-12, Exelon Generation Company, on 9/30/2002, Dresden Nuclear Power Station, Units 2 and 3. Equipment Alignment, Fire Protection, Radiation Monitoring Instrumentation and Protective Equipment.

This report covers a 3-month period of baseline resident inspection and an announced baseline inspection on radiation protection. The inspection was conducted by Region III inspectors and the resident inspectors. Three findings involving three Non-Cited Violations (NCV) 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. <u>Inspection Findings</u>

Cornerstone: Mitigating Systems

Green. The inspectors identified that the licensee routinely failed to follow the procedure for installing, inspecting and removing scaffolding as indicated by several examples of incorrectly installed scaffolding. This finding was repetitive and indicated weakness in problem identification and resolution.

This finding was considered more than minor because the inspectors’ continued identification of this issue during the inspection period demonstrated routine failure to follow the scaffolding installation and inspection procedure. The finding was determined to be of very low safety significance because all of the safety-related equipment affected by the scaffolding remained fully capable of performing all of their safety functions. This finding was dispositioned as a Non-Cited Violation. (1R04)

Green. The inspectors identified that the licensee failed to follow the procedure for ensuring timely fire watch response. This finding was repetitive and indicated weakness in problem identification and resolution.

This finding was considered more than minor because the inspectors’ continued identification of this issue demonstrated that failure to follow the fire watch procedure was a repetitive problem. This finding was considered to be of very low safety significance because no fire occurred and there was no actual impact on equipment or personnel safety. This finding was dispositioned as a Non-Cited Violation. (1R05)

Cornerstone: Emergency Preparedness

Green. The inspectors identified a Non-Cited Violation of Technical Specification 5.5.3 for the failure to fully implement the program for post accident sampling to ensure the capability to obtain containment (drywell) atmosphere samples under accident conditions, as required by chemistry procedures (Section 2OS3.2). The finding included a cross-cutting element as a contributing factor related to the licensee's problem identification and corrective actions because the problem was identified by the licensee but not adequately evaluated or promptly corrected.

The finding was determined to be of very low safety significance because the high radiation sampling (post accident sampling) system, which included equipment for containment air sampling, was installed consistent with the licensee's Updated Final Safety Analysis Report, the equipment was recently demonstrated to be operable, and because alternate means of sampling the containment atmosphere and assessing core degradation under accident conditions were available. (2OS3)

B. **<u>Licensee-Identified Violations</u>**

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 corrective action tracking numbers are listed in Section 40A7 of this report.

REPORT DETAILS

Summary of Plant Status

At the beginning of the inspection period, Unit 2 was at 912 MWe (95 percent thermal power and 100 percent of rated electrical capacity). On July 25, 2002, operators reduced power to 675 MWe to repair the suction relief valve on the 2B reactor feedwater pump. The unit was returned to full power the same day. On August 1, 2002, operators reduced power to 760 MWe to perform circulating water flow reversal through the condenser. The unit was returned to full power the same day. On September 1, 2002, operators reduced power to 550 MWe to perform maintenance on the 2B reactor feedwater pump, the 2A feedwater regulating valve, the 2D condensate/condensate booster pump, and the unit common Bus 3 electrical connections. The unit was returned to full power operations the following day. The unit remained at full power operations to the end of the inspection period with the exception of small decreases in power during control rod drive scram time testing and the subsequent replacement of a number of scram solenoid pilot valves.

At the beginning of the inspection period, Unit 3 was at 822 MWe (100 percent thermal power). On July 14, 2002, operators reduced load to 620 MWe to perform rod pattern adjustments. The unit was returned to full power the same day. On July 15, 2002, the main turbine was taken off-line to address the failure of the permanent magnet generator. The unit returned to full power the following day. On July 21, 2002, the unit scrammed on a turbine trip due to the loss of the main turbine shaft main oil pump. The unit returned to full power on July 25, 2002. On August 4, 2002, the operators reduced power to 600 MWe for control rod pattern adjustments, the unit was returned to full power the same day. On August 18, 2002, operators decreased load to 635 MWe for rod pattern adjustments. The unit was returned to full power the same day. The plant entered coastdown operations on August 20, 2002. On September 5, 2002, in order to maximize main turbine output, the licensee removed the “D” feedwater heaters which caused main turbine imbalance issues. On September 8, 2002, the licensee removed the “C” feedwater heaters to alleviate main turbine balance issues and to regain lost load on the main turbine. The unit remained in coastdown operations at the end of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R04 Equipment Alignments (71111.04)

.1 Partial System Walkdowns

a. Inspection Scope

The inspectors selected a redundant or backup system to an out-of-service or degraded train, reviewed electrical and mechanical checklists 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 of the system. 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 verified the system alignment of the following mitigating systems during this period:

- Unit 2/3 emergency diesel generator on August 20, 2002 and
- Unit 2 standby liquid control system on August 13, 2002.

b. Findings

No findings of significance were identified.

.2 Complete System Walkdown

a. Inspection Scope

The inspectors performed a complete walkdown of both divisions of the Unit 2 low pressure coolant injection (LPCI) system. The inspectors compared the LPCI system's in-field valve alignment with the licensee's valve alignment checklist and the available piping and instrument drawing for the system. The inspectors also reviewed the electrical system checklist for this system to ensure all vital components in this system were energized. The inspectors reviewed outstanding work orders associated with the system to determine whether there were any deficiencies that could affect the ability of the system to perform its safety-related function. The inspectors also reviewed all temporary modifications and operator workarounds to verify the operational impact on the system. The inspectors reviewed licensee condition reports (CRs), to verify past issues that had been identified and their corrective actions.

b. Findings

The inspectors identified that the licensee routinely failed to follow the procedure for installing, inspecting and removing scaffolding in close proximity of safety-related equipment. The issue was considered to be of very low safety significance and was dispositioned as a Non-Cited Violation.

During previous walkdowns of the LPCI system, the inspectors noted that scaffolding was installed such that part of the scaffolding was in contact with safety-related portions of the system. These issues were documented in Condition Reports CR number 84998 103679.

Licensee administrative procedure MA-AA-796-024, Revision 0, "Installing, Inspecting, and Removing Scaffolding," provided instructions for installing, inspecting and removing scaffolding throughout the facility. As part of the inspection checklist contained in this procedure, scaffolding inspectors were to verify that seismic clearances were maintained (greater than 2 inches away from safety-related equipment) and that scaffolding was not supported by, connected to, or in contact with safety-related equipment unless evaluated by engineering staff.

During a walkdown of the LPCI system on August 25, 2002, the inspectors identified that scaffolding was installed in contact with the discharge piping from the Unit 3 emergency diesel generator cooling water pump. On September 14, 2002, the inspectors observed scaffolding in contact with a support for multiple reactor protection system conduits and junction boxes. These junction boxes contained instrumentation control cables to multiple scram solenoid pilot valves. An engineering evaluation had not been completed prior to approving this scaffolding for use as required by procedure MA-AA-796-024. Both examples demonstrated failure to follow this procedure. As corrective action, the licensee walked down all plant scaffolding and identified five additional instances where scaffolding was installed in violation of the procedure. Engineering personnel had not evaluated these deficiencies; but were directed to perform the evaluations.

In each scaffolding case, the licensee concluded that the equipment was operable. Therefore, each instance may be considered minor. However, using Inspection Manual Chapter (IMC) 0612, Appendix B, “Issue Dispositioning Screening” and Appendix E “Example of Minor Issues,” Example 4.a., the inspectors determined that this finding was more than minor because the number of examples found demonstrated that workers routinely failed to follow procedure MA-AA-796-024.

Using IMC 0609, Appendix A, “Significance Determination of Reactor Inspection Findings for At Power Situation,” the inspectors answered “no” to all five screening questions in the Phase 1 Screening Worksheet under the Mitigating System column and ‘no’ to all three questions in the Initiating Event column. As a result, the inspectors concluded that the issue was of very low safety significance.

Appendix B, Criterion V, “Instructions, Procedures and Drawings,” of 10 Code of Federal Regulation (CFR), Part 50, requires that activities affecting quality shall be performed in accordance with procedures. Installation of scaffolding was considered an activity affecting quality and was governed by procedure MA-AA-796-024. Contrary to the above, on September 14, 2002, the inspectors identified that the licensee failed to follow procedure MA-AA-796-024. The failure to follow procedure MA-AA-796-024 was a violation of 10 CFR 50 Appendix B, Criterion V. The inspectors determined that the violation is of very low safety significance, because the overall impact on the equipment was minor. The violation is being treated as a Non-Cited Violation, consistent with Section VI.A.1 of the USNRC Enforcement Policy (NCV 50-238/249-02-012-01). The violation is in the licensee’s corrective action program as Condition Reports 123416 and 126103.

This finding was also documented in Section 4OA2.2 for discussions on the problem identification and resolution aspects of this issue.

1R05 Fire Protection (71111.05)

a. Inspection Scope

Throughout the inspection period, 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 inspectors utilized the Dresden Fire Hazard Analysis to perform walk downs of the following areas:

- Unit 2/3 crib house;
- Unit 2 torus catwalk;
- Unit 3 torus catwalk; and
- Unit 2/3 refueling floor.

b. Findings

The inspectors identified that the licensee failed to follow the fire watch procedure during hot work activities. This issue was considered to be of very low safety significance and was dispositioned as an NCV.

On September 12, 2002, a welder was performing hot work activities in a contaminated area near the Unit 3 torus catwalk. The inspectors observed that the welder was on a scaffold approximately 15 feet away from the torus catwalk. The assigned fire watch was located on the torus catwalk which was a non-contaminated area and was facing away from the hot work activity. The fire extinguisher was on the scaffold. To respond to a fire, the fire watch would don a full set of protective clothing, walk across the step off pad, cross over a scaffold walkway, step onto the scaffold, retrieve the fire extinguisher and then extinguish the fire. The maintenance supervisor stopped work activities after the inspectors questioned the fire watch location. Initial discussions with the fire watch and subsequent discussions with the maintenance supervisor indicated that neither understood that both the fire watch and fire extinguisher were critical elements to a timely fire watch response. This issue was documented in CR 00122656.

Dresden administrative procedure, OP-AA-201-004, “Fire Prevention For Hot Work,” Revision 5, procedural step 3.4.1 stated that the fire watch is responsible for watching for fires in all exposed areas and trying to extinguish them...or otherwise reporting the fire immediately. The fire watch with his back to the welding activities could not watch for fires in all exposed areas. Also, procedural step 4.2.1.8 (Fire Prevention Precautions), stated that an operable fire extinguisher shall be available and conveniently located in the work area where there are no locked doors, step-off pads or physical obstructions that would have to be maneuvered in order for the fire watch to access the extinguisher. The failure of the fire watch to watch for fires and the need of the fire watch to cross a step off pad were violations of procedure OP-AA-201-004.

Similar issues identified by the inspectors during the fall 2001 Unit 2 refueling outage were documented as an NCV in IR 50-237/249-01-19. In addition, Nuclear Oversight (NO) identified a negative trend in fire protection prior to and during that outage, with three examples where the fire watch did not know the location of the nearest fire extinguisher and one where the welder was not in flame retardant apparel. In preparation for the upcoming October 2002 Unit 3 refueling outage, NO performed an assessment of fire watch training. The NO assessor identified that the fire extinguisher lesson plan, which was used to qualify fire watches, did not provide the student with the knowledge or skills to perform fire watch duties. Additionally, the lessons learned from the 2001 Unit 2 refueling outage had not been incorporated into the lesson plan. Interviews with the instructor revealed that the instructor deemed the fire watch material weak. As a result of NO's assessment, the licensee drafted a revision of the fire watch lesson plan. The licensee documented these issues in CRs 0080820, 0082314, 0081777, 0124144, 0122274 and 0122656.

In each instance where the licensee had not provided an adequate fire watch, no actual fire had occurred; therefore, each individual instance may be considered minor. However, using IMC 0612, Appendix B, "Issue Dispositioning Screening" and Appendix E "Example of Minor Issues," Example 4.a., the inspectors determined that this finding was more than minor because the continued identification of fire watch issues demonstrated that failure to follow procedure OP-AA-201-004 was a repetitive problem.

Using IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At Power Situation," the inspectors answered "no" to all five screening questions in the Phase 1 Screening Worksheet under the Mitigating system column. As a result, the inspectors concluded that the issue was of very low safety significance.

Appendix B, Criterion V, "Instructions, Procedures and Drawings," of 10 CFR Part 50, requires that activities affecting quality shall be performed in accordance with procedures. Fire watch duties were considered activities affecting quality and were governed by procedure OP-AA-201-004. Contrary to the above, on September 12, 2002, the inspectors identified that a fire watch failed to follow procedure OP-AA-201-004. The failure to follow procedure OP-AA-201-004 is a violation of 10 CFR 50, Appendix B, Criterion V. The violation is being treated as a NCV, consistent with Section VI.A.1 of the USNRC Enforcement Policy (NCV 50-249/02-012-02). This issue was entered into the corrective action program as Condition Report 00122656.

This finding was also documented in Section 4OA2.3 for discussion of the problem identification and resolution aspects of this issue.

1R11 Licensed Operator Requalification (71111.11Q)

a. Inspection Scope

The inspectors reviewed the training records for active reactor operators and senior reactor operators against evaluator's critiques to determine the licensee's effectiveness in evaluating and revising the requalification program.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

During this inspection period, 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 used the station's on-line work control process procedure to ensure that the licensee appropriately considered risk factors during the development and execution of planned activities.

The inspectors completed evaluations of maintenance activities on the following mitigating systems during this period:

- Unit 2 emergency diesel generator;
- Unit 2 average power range system;
- Unit 2 high pressure coolant injection system; and
- two events related to the Unit 2/3 emergency diesel generator.

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 operator logs, condition reports, and alarm printer outputs associated with a scram of Unit 3 on July 21, 2002, which was due to a trip of the main turbine system.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

Throughout the inspection period, the inspectors reviewed operability evaluations (OE) to ensure that operability was properly justified and that the affected component or system remained available, such that no unrecognized increase in risk occurred. The inspectors used the Dresden Updated Final Safety Analysis Report (UFSAR) in assessing the following issues involving system operability:

- unexplained water level increases in the Unit 3 torus (OE 01-038);
- additional unanalyzed loads on a rod hanger on the Unit 3 torus (OE 02-011);
- an error identified in Framatone transient analysis computer code that resulted in non-conservative minimum critical power ratio operating limit (OE 01-015);
- the failure of the core spray minimum flow transmitter alarm relay (01-028);
- a valve actuator in the reactor water cleanup system which had not been evaluated for use (OE 01-008);
- missing support anchors of the 3A core spray pump suction piping (OD 01-009);
- a 125 VDC ground on the Unit 2/3 diesel generator field circuit (OD02-014);
- a degraded cell on the Unit 2 250 VDC battery (OE 01-022);
- a weeping weld on the HPCI system (OE 01-023);
- a leak on Section XI Class 3 piping in the control room heating, ventilation and air conditioning system (OE 01-005); and
- the identification of pitting in a fire main in the turbine building (01-029).

b. Findings

No findings of significance were identified

1R16 Operator Work-Arounds (71111.16)

a. Inspection Scope

During the weeks of July 28 and August 4, 2002, the inspectors reviewed all operator work-arounds to assess any potential effect on the functionality of mitigating systems. During this review, the inspectors evaluated work-arounds for impact on abnormal or emergency operating procedures.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modification (71111.17)

a. Inspection Scope

The inspectors reviewed three permanent plant modifications associated with the Unit 3 October 2002 refueling outage to verify the design adequacy to ensure licensing bases and design bases were maintained, and to ensure functionality of interfacing structures, systems, and components. The modifications reviewed included the following:

- low pressure coolant injection swing bus timer setpoint change;
- stator cooling water alarm and runback setpoint changes for extended power uprate; and
- feedwater level control system logic functional changes and addition of reactor recirculation runback for extended power uprate.

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 and observed the following post-maintenance testing activities involving risk significant equipment in the Mitigating Systems and Barrier Integrity Cornerstones:

- replacement of Unit 2 low pressure coolant injection valve 2-1501-32A;
- replacement of pressure switch 3-1501-62B;
- troubleshooting and repair of recirculation pump temperature indicator;
- replacement of a main steam line low pressure isolation switch;
- repair of Unit 2 local power range monitor 48-33D;
- repair associated with intermittent high and hi-hi alarms on the Unit 3 intermediate range monitoring system;
- testing and monitoring of the main turbine;
- valve timing for core spray valve 3-1402-4A;
- replacement of a reactor cooling system sample valve; and
- replacement of the Unit 3 main turbine permanent magnet generator.

During post-maintenance testing observations, the inspectors verified that the test was adequate for the scope of the maintenance work which had been performed, and that the testing acceptance criteria were clear and demonstrated operational readiness consistent with the design and licensing basis documents. The inspectors also verified that the test was performed as written, that all testing prerequisites were satisfied, and that the test data were complete, appropriately verified and met the requirements of the testing procedure. Following the completion of the test, the inspectors verified that the test equipment was removed, and that the equipment was returned to a condition in which it could perform its safety function.

b. Findings

No findings of significance were identified.

1R20 Refueling and Outage Activities (71111.20)

a. Inspection Scope

The inspectors reviewed and evaluated several forced outage activities during the forced outage on Unit 3 which occurred due to the failure of the main turbine shaft oil pump on July 21, 2002. The inspectors used the station's shutdown safety management program procedure 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 observed surveillance testing activities and/or reviewed completed packages for the tests, listed below, related to systems in the Initiating Event, Mitigating Systems and Barrier Integrity Cornerstones:

- DOS 5600-02, "Turbine Weeklies";
- DTS 30-01, "Containment Cooling Service Water Pump Vault Penetrations Surveillance";
- DIS 1300.01, "Sustained High Pressure Relay Calibration"; and
- DIS 1500-01,"Low Pressure Coolant Injection Reactor Recirculation Pump A and B Differential Pressure."

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS1 Access Control to Radiologically Significant Areas (71121.01)

.1 Plant Walkdowns and Radiological Boundary Verification

a. Inspection Scope

The inspectors conducted walkdowns of selected radiologically controlled areas (RCAs) to verify the adequacy of radiological area boundaries and postings. Specifically, the inspectors walked down selected locked high radiation area boundaries in the Unit 1 and Unit 2 Reactor and Turbine Buildings to determine if these areas and selected high radiation areas were properly posted and controlled in accordance with 10 CFR Part 20 and licensee Technical Specifications. The inspectors also observed the radiological conditions of work areas within those high radiation areas to assess the radiological housekeeping and contamination controls.

b. Findings

No findings of significance were identified.

2OS3 Radiation Monitoring Instrumentation and Protective Equipment (71121.03)

.1 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 check sources used for selected instruments and discussed their use with RP staff, to assess their material condition and to determine if they were used and maintained adequately.

b. Findings

No findings of significance were identified.

.2 Tests and Calibrations of Radiation Monitoring Instrumentation

a. Inspection Scope

The inspectors selectively reviewed radiological instrumentation associated with monitoring transient high and/or very high radiation areas and instruments used for remote emergency assessment to verify that the instruments had been calibrated consistent with industry standards and in accordance with station procedures. The inspectors 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 3 Filter Building Level 3 ARM
- Unit 2 Torus Area ARM
- Unit 2 Drywell High Radiation Monitors (two units)
- Electronic Dosimetry (10 randomly selected units)
- J. L. Shepherd Model 89-400 Instrument Calibrator

The inspectors reviewed the licensee's program for post accident sampling relative to maintenance and surveillance testing of the high radiation sampling system (HRSS) equipment and training of personnel in HRSS use. Specifically, the inspectors reviewed HRSS operability and surveillance procedures and discussed and reviewed the results of HRSS surveillance tests completed since September 2001, to determine if system function was demonstrated consistent with those procedures and Technical Specifications. The inspectors also reviewed chemistry technician training records and training matrices to verify that personnel were qualified for HRSS use as required by Technical Specifications.

The inspectors discussed surveillance (source check) practices and reviewed the most recent calibration records and procedures for selected radiation monitors used for assessment of internal exposure and those instruments utilized for surveys of personnel and equipment prior to egress from the RCA. The review was performed to determine if these instruments were calibrated as required by procedure, consistent with industry standards. These instruments were as follows:

- Canberra Fastscan Whole Body Counting System
- Nuclear Enterprise IPM-9D Contamination Monitor (Monitor # 143)
- Eberline PM-7 Portal Monitor (Monitor #3)
- Eberline PCM 2 Contamination Monitor (Monitor # 149)

b. Findings

One Green finding involving a Non-Cited Violation (NCV) was identified for the failure to adequately implement a program for post accident sampling that ensured the capability to obtain containment (drywell) atmosphere samples under accident conditions.

Emergency facilities and assessment equipment to support the implementation of the licensee's Emergency Plan included a High Radiation Sampling System (or Post Accident Sampling System). That system was designed to provide the capability to sample and transport reactor coolant and/or containment atmosphere samples from either operating unit under degraded core conditions, without radiation exposures to any individual exceeding General Design Criteria 19 of Appendix A to 10 CFR Part 50. The HRSS consisted of a liquid acquisition system for reactor coolant sampling and a containment air sample panel (CASP) for sampling the drywell atmosphere.

Chemistry procedures governed the HRSS operability program and included a quarterly surveillance to test CASP function. The surveillance procedure required that drywell atmosphere samples be obtained using the CASP and be analyzed for radioactive content. However, the inspectors identified that drywell atmosphere sampling using the CASP was discontinued in the early or mid-1990s, because the licensee's chemistry staff believed that the sampling activity may have caused a spike in drywell pressure and its continued performance was thought to adversely impact plant operations. The inspectors identified that from that time forward, the chemistry staff (as directed by chemistry supervision) omitted those portions of the surveillance that involved drywell sampling to avoid potential impact on plant operations, even though the surveillance procedure continued to require that drywell atmosphere samples be obtained quarterly using the CASP. Records reviewed by the inspectors documented successful completion of the quarterly surveillance, but did not indicate that only a portion of the procedure was completed and that HRSS drywell sampling capabilities were not tested as required by procedure.

During an operating experiences review in July 2001, the chemistry staff identified that the required drywell atmosphere samples were not being obtained using the HRSS. To address this problem, the licensee scheduled an annual surveillance using its predefine system; however, samples were not collected from both operating units until late March and early April 2002. Other problems related to the licensee's problem identification and resolution of this issue were also identified by the inspectors. Specifically, the samples collected in the spring of 2002 were not analyzed as required by the surveillance procedure, the samples were collected beyond the due dates established by the predefine system, and the predefine established annual frequency was inconsistent with the quarterly frequency required by the surveillance procedure. Additionally, even though predefines were designated to perform the CASP surveillance, no data sheet or other surveillance record was created to document completion of the tests in 2002. Although actions were taken in an attempt to rectify the deficient condition when identified in July 2001, a condition report or other corrective action record was not generated to document and evaluate the non-conforming condition, which allowed a less rigorous process to be used to resolve the overall problem. The lack of a specific evaluation of the actual procedure compliance issue resulted in corrective actions that were narrowly focused in that they did not address the conflict between the newly created predefines and the program procedure. Consequently, the corrective actions developed by the licensee in July 2001 to address the HRSS surveillance problem were neither timely or effective.

This issue represents a performance deficiency associated with the emergency preparedness cornerstone attribute for surveillance and testing of equipment used to assess core damage, and affects the cornerstone objective to protect the health and safety of the public in the event of a radiological emergency. Specifically, if not regularly tested and maintained, the CASP may not function as intended when called upon during accident conditions. Also, chemistry staff responsible for collecting CASP samples may not be sufficiently familiar or knowledgeable of sample panel operations should they not have the opportunity to regularly test their skills. Consequently, this issue represents a finding that is more than minor and which was evaluated using the Emergency Preparedness Significance Determination Process of Appendix B to Manual Chapter 0609. Since the finding involved a failure to meet a regulatory (surveillance procedure) requirement but did not represent a failure to meet the planning standards of 10 CFR 50.47(b) or those of Appendix E to 10 CFR 50, the finding was determined to be of very low safety significance (Green). Specifically, the drywell continuous air monitoring/manifold system is routinely used to sample the containment atmosphere during accident conditions if not precluded by the radiological conditions in the reactor building. Also, in-line hydrogen monitors, containment high range radiation monitors, and reactor coolant sampling using the liquid acquisition portion of the HRSS would normally be utilized for core damage assessment in favor of drywell atmosphere sampling.

Technical Specification 5.5.3 requires, in part, that the licensee implement a post accident sampling program that ensures the capability to obtain and analyze reactor coolant and containment atmosphere samples under accident conditions that includes provisions for maintenance of sampling and analysis equipment. Chemistry procedure DSBP 1000-37, “HRSS Operability Program,” and procedure DSBP 2000-27, “Gas Partitioner, Containment Air Sampling During Accident Conditions Using the CASP in Manual Mode,” implement the post accident sampling program and require that drywell atmosphere samples be obtained quarterly using the CASP. The failure to fully implement the post accident sampling program and demonstrate CASP operability through quarterly surveillances is a violation of Technical Specification 5.5.3. However, since the licensee documented this issue in its corrective action program (condition report (CR) # 00120956) and because the violation is of very low safety significance, it is being treated as an NCV (NCV No. 50-237/02-12-03 and No. 50-249/02-12-03).

.3 Radiation Protection Staff Instrument Use

a. Inspection Scope

The inspectors observed RP staff source check portable radiation survey instruments to determine if those checks were completed adequately using appropriate techniques, sources, and in accordance with station procedures. The inspectors evaluated radiation protection technician (RPT) performance while instruments used for surveys of personnel and equipment prior to unconditional release from the RCA were source checked to determine if those activities were completed adequately and in conformance with station procedures. Alarm setpoints of instruments used for unconditional release were also reviewed to determine if they were established at values consistent with industry standards and regulatory guidance provided in Health Physics Positions No. 72 and No. 250 of NUREG/CR-5569.

b. Findings

No findings of significance were identified.

.4 Respiratory Protection Program

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 ensure that self-contained breathing apparatus (SCBA) were properly maintained and ready for emergency use. Specifically, the inspectors reviewed SCBA equipment inspection, functional test and maintenance procedures and records for selected periods in 2001 and 2002 through July, for all SCBA units staged for emergency use in various areas of the plant. The review was performed to determine if the equipment was properly maintained consistent with industry standards and station procedures.

The inspectors walked down the SCBA air bottle filling station and selected SCBA equipment storage locations in the Unit 1 and Unit 2 control rooms, the Operations Support Center and one of the fire brigade response carts located in the Turbine Building. The inspectors examined several SCBA units that were stored in these areas to assess their material condition, and to verify that air bottle hydrostatic tests were current and that bottles were pressurized to meet procedural requirements. The inspectors discussed SCBA equipment inspection and functional testing with an RPT that performed these activities to verify they were completed adequately and that the equipment was properly maintained. The inspectors also 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 SCBA equipment function were qualified consistent with industry standards.

The inspectors performed a review to determine if a sufficient cadre of the licensee's emergency response organization that could be called upon to perform key emergency response activities that required use of respiratory protection equipment were trained and qualified in SCBA use. Specifically, the inspectors reviewed respiratory protection training and SCBA qualification records for current operations on-shift staff, the station's fire brigade and members of the licensee's radiation protection and maintenance staffs to ensure personnel qualifications were maintained consistent with the licensee's emergency plan and procedures.

b. Findings

No findings of significance were identified.

.5 Identification and Resolution of Problems

a. Inspection Scope

The inspectors reviewed the results of a focus area self-assessment of the radiation monitoring instrumentation program completed by the RP staff in March 2002, field observations completed by the licensee's Nuclear Oversight staff during the twelve months preceding the inspection, and the licensee's CR database and several individual CRs related to radiation monitoring instrumentation and SCBA equipment generated in calendar year 2001 through August 2002. The inspectors evaluated the effectiveness of the licensee's self-assessment and corrective action program to identify, characterize and prioritize problems, and to develop corrective actions.

b. Findings

No findings of significance were identified.

3. SAFEGUARDS

Cornerstone: Physical Protection (PP)

3PP3 Response to Contingency Events (71130.03)

The Office of Homeland Security (OHS) developed a Homeland Security Advisory System (HSAS) to disseminate information regarding the risk of terrorist attacks. The HSAS implements five color-coded threat conditions with a description of corresponding actions at each level. USNRC Regulatory Information Summary (RIS) 2002-12a, dated August 19, 2002, "USNRC Threat Advisory and Protective Measures System," discusses the HSAS and provides additional information on protective measures to licensees.

a. Inspection Scope

On September 10, 2002, the USNRC issued a Safeguards Advisory to reactor licensees to implement the protective measures described in RIS 2002-12a in response to the Federal government declaration of threat level "Orange." Subsequently, on September 24, 2002, the OHS downgraded the national security threat condition to "Yellow" and a corresponding reduction in the risk of a terrorist threat.

The inspectors interviewed licensee personnel and security staff, observed the conduct of security operations, and assessed licensee implementation of the threat level "Orange" protective measures. Inspection results were communicated to the region and headquarters security staff for further evaluation.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES (OA)

4OA1 Performance Indicator (PI) Verification (71151)

a. Inspection Scope

On August 21, 2002, the inspectors reviewed a sample of plant records and data against the reported performance indicators in order to determine the accuracy of the indicators.

Mitigating System Cornerstone

Unit 2 and Unit 3 Safety System Functional Failures (June 2001 through June 2002).

b. Findings

No findings of significance were identified.

.2 Reactor Coolant System Specific Activity PI

a. Inspection Scope

The inspectors evaluated the chemistry department's PI data analysis methods and records to verify that the licensee had accurately assessed and reported the PI for the reactor coolant system specific activity indicator under the barrier integrity cornerstone in accordance with the criteria specified in Nuclear Energy Institute 99-02, Revisions 1 and 2, "Regulatory Assessment Performance Indicator Guideline." Specifically, the inspectors reviewed the dose equivalent iodine calculation procedure, the reactor coolant system (RCS) specific activity performance indicator procedure and interviewed members of the licensee's chemistry staff involved in the determination and verification of RCS specific activity. The inspectors also selectively reviewed the licensee's Unit 2 and Unit 3 chemistry sample analysis results for maximum dose equivalent iodine for the period between April 2001 through July 2002. These reviews were performed to verify that the licensee adequately determined dose equivalent iodine values, and to verify adherence to station procedures and to the guidance contained in Nuclear Energy Institute 99-02 relative to assessing and reporting the RCS specific activity performance indicator. Additionally, the inspectors observed a chemistry technician collect an RCS sample to verify that the sample was collected properly, and discussed with chemistry staff the method used to calculate dose equivalent iodine to verify its adequacy.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

a. Inspection Scope

As documented in various sections of this inspection report, the inspectors conducted an inspection of the licensee's corrective action program. The inspectors selected corrective actions for several inspector identified issues for periodic review of the problem identification and resolution program per USNRC inspection procedure (IP) 71152. Additionally, the inspectors verified that: 1) the licensee identified issues at an appropriate threshold; 2) that these issues were correctly entered in the corrective action program; and 3) that these issues were properly addressed for resolution.

b. Findings

.1 Performance Management Review Committee Members (Effective Review of Events)

a. During the evaluation of the licensee's Management Review Committee the inspectors noted that in several instances the committee members have allowed CRs to be approved with the incorrect significance level determination.

b. On May 31, 2002, instrument maintenance (IM) personnel rendered the control room heating, ventilation and air conditioning (CRHVAC) system inoperable without the knowledge of control room operators. The IMs opened a supply air duct door, an opening of approximately 144 square inches, to replace a failed temperature transmitter. This CRHVAC opening size exceeded the 12.57 square inch opening that ensured operability of the system. Upon discovery of this deficient condition, the access door was sealed and tested. This condition existed for approximately 20 minutes and no fuel moves were in progress; therefore, this issue had minimal safety significance.

The temperature transmitter failed during a preventive maintenance (PM) activity. The CRHVAC system would have been rendered inoperable during this PM activity regardless of the failure of the transmitter because the same 144 square inch opening needed to be accessed. The licensee completed an investigation and issued a root cause report (RCR) which determined that the root cause was ineffective change management during the implementation of the plant barrier control program. Specifically, the IM planner failed to use administrative procedure CC-AA-201, "Plant Barrier Control Program," Revision 3, when developing the work instructions for this task, which would have prevented the problem. However, IM planners had been successful in the past when performing similar work, which had been properly evaluated by operations and engineering personnel without using this procedure. In addition, the RCR stated that causal factors for the event included an inaccurate risk perception by operators when evaluating this work and an incorrect assumption by the system engineer that the work activity would be bounded by the 12.57 square inch opening limit.

Although the RCR identified engineering and operations personnel as ineffective barriers, which contributed to the occurrence of this event, the licensee did not specify any associated corrective actions. This approach is contrary to the station's administrative guideline procedure LS-AA-125-1001, "Root Cause Analysis Manual," Revision 3, which directs the evaluator to identify at least one corrective action for each contributing cause. Also, the RCR specified that the work instructions misled the operators and the system engineer by the information within the work instructions. The inspectors disagreed with this conclusion because the work instructions indicated that an opening would be placed in the CRHVAC system. Specifically, step D.4, stated, "the temperature bulb that feeds transmitter... is ty-rapped to a rod within the ductwork," and step E.2, stated, "remove transmitter capillary tubing from ductwork....restore capillary tubing to ductwork using shop supplied ty-raps." The inspectors determined that the size of the opening was not discussed in the work instructions and that the work packages lacked specificity to make a system operability assessment. Therefore, the inspectors concluded that an adequate evaluation of plant activities required the operators and system engineer to seek additional information to definitively determine the impact of the opening on the system.

The licensee generated a licensee event report (LER) for this issue. The inspectors determined that there were discrepancies documented in the LER as indicated below:

1. The LER made no mention of the ineffective barriers of operations and engineering personnel review and thus no specified associated corrective actions. The inspector identified that the RCR documented these ineffective barriers as causal factors.

2. The LER documented that the work instructions did not explicitly state that the control room boundary would be impaired during the work activity. The inspectors determined that instructions stated an opening would be placed in the system.

3. The LER documented that temporary signs would be placed on CRHVAC doors; however, during the inspectors' verification of this action, the inspectors observed that the signs had been removed.

Following the inspectors' identification of the above issues, the licensee generated CR#124766 discussing the ineffective barriers, briefed the issue with both operations and engineering personnel and placed the signs back on the CRHVAC doors.

.2 <u>Repetitive Scaffolding Issues (Effectiveness of Corrective Actions)</u>

As discussed in Section 1R04 of this inspection report, the inspectors identified several deficient scaffolds installed throughout the facility. Despite the inspectors' and licensee's routine identification of these deficiencies during the Unit 2 refueling outage in November 2001, the licensee continue to experience problems in this area. Additionally, following the identification of an August 2002 deficiency with scaffolding discussed in Section 1R04, the licensee failed to generate a CR until prompted by the inspectors. Moreover, following the documentation of another scaffolding deficiency on September 14, 2002, which was also discussed in section 1R04, the licensee failed to address the potential operability condition created by the scaffolding until prompted by the inspectors.

.3 Repeat Fire Protection Issues (Effectiveness of Corrective Actions)

As discussed in Section 1R05 of this inspection report, the inspectors identified several instances where adequate fire watches were not provided during hot work activities. Although these fire watch deficiencies were noted by both the inspectors and the licensee during the 2001 Unit 2 refueling outage and captured in the station's corrective action program, problems continued to occur in this area. In addition, NO oversight performed an assessment of ongoing fire watch training for workers scheduled to perform fire watch responsibilities during the October 2002 Unit 3 refueling outage and determined that the training was deficient.

.4 Emergency Diesel Generator Failure (Timely Identification of Issues)

As discussed in Section 4OA7 of this inspection report, the Unit 2 emergency diesel generator cooling water pump failed shortly after it was started. During the initial investigation and troubleshooting, the licensee discovered that the insulation for the power supply cables was stripped on all three phases. Despite this being a potential failure mode for the pump, the licensee did not immediately document this issue in the corrective action program. The failure to immediately document this issue led to a delay in the licensee's assessment of determining whether a common mode failure existed with the Unit 2/3 and Unit 3 emergency diesel generator cooling water pumps.

.5 Untimely Condition Report Generation following Emergency Preparedness Drill (Timeliness of Corrective Actions)

On April 17, 2002, the licensee conducted an emergency preparedness drill. The licensee identified deficiencies. The inspectors questioned the licensee on whether the CRs had been generated for the drill issues. The licensee determined that the CRs had been generated but had not been supervisory reviewed until approximately 2 months later. The licensee also determined that corporate personnel had not performed the supervisory reviews on other unrelated CRs. The station's corrective action procedure, CC-AA-125, specified that this review should be performed on the same day that the CR was originated and supervisory reviewed by the end of the next business day. The licensee generated CR #114194 to document this issue which was also supervisory reviewed late.

.6 Repetitive Unit 2 High Pressure Coolant Injection (HPCI) System Abnormal Alarms (Effectiveness of Corrective Actions)

The Unit 2 HPCI system has received abnormal "Inlet Drain Pot Hi Level" alarms in the standby condition, since January 2002. Each occurrence was documented in a CR and subsequent repairs were made to the system. The licensee declared the system inoperable and unavailable to facilitate these repairs. These repairs have not resolved this issue which has led to increased system unavailability and additional dose to the individuals performing the repairs.

.7 Test and Calibration of Radiation Monitoring Equipment

A contributing cause for the NCV and Green finding associated with the post accident sampling program (documented in Section 2OS3.2) was the licensee's untimely and inappropriately utilized problem identification and resolution process.

4OA3 Event Follow-up (71153)

a. Inspection Scope

Throughout this inspection period, the inspectors reviewed 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 LERs.

b. Findings

.1 (Closed) LER 50-237/2000-004-00 and 50-237/2000-004-01: "Reactor Scram Due to a Failure to Close Current Transformer Knife Switches Following Maintenance"

On November 30, 2000, Dresden Unit 2 scrammed during maintenance in the 345 KV switchyard. The work was performed by Nuclear Operational Analysis Department and Sub Station Construction personnel. The licensee determined that the root cause of this event was insufficient adherence to management standards, policies and administrative controls by the Nuclear Operational Analysis Department. The inspectors discussed this event in inspection report 50-237;249/00-21 as one Green finding. In response to this event, the licensee developed a number of corrective actions. The inspectors verified that these corrective actions had been initiated. This LER is closed.

.2 (Closed) LER 50-249/2001-001-00 and 50-249/2001-001-01: "High Flow Differential Pressure Switches Outside of Technical Specification Limits"

On January 9, 2001, while performing DIS 1300-07, "Unit 3 Isolation Condenser Steam/Condensate Line High Flow Calibration," both condensate return line high flow channels were found outside of Technical Specifications. The safety significance of the issue was minimal because the isolation capability was not lost. The root cause was determined to be unacceptable setpoint drift. As an interim corrective action, the licensee changed the frequency for performing DIS 1300-07 from quarterly to monthly. Also, the licensee planned to replace differential pressure indicating switches (DPIS-2(3)-1349-A, -B (condensate line) and DPIS-2(3)-1350-A,-B (steam line)) with Barton Model 580A switches and return to a quarterly surveillance interval.

Although this Technical Specifications violation was entered into the licensee's corrective action program as CRs D2001-00130, D2001-00131, and 00042013, this issue constituted a violation of minor significance that is not subject to enforcement action in accordance with Section IV of the USNRC's Enforcement Policy. This LER is closed.

.3 (Closed) LER 50-237/2001-004-00: "Unit 2 Torus High Water Level Switches Failed Technical Specification Calibration Surveillance Due to Historical Poor Post Modification Testing and Overly Conservative Technical Specification Allowable Value"

During the performance of a newly required channel calibration of the Unit 2 torus high water level switches, the licensee discovered that the level switches were outside of the Improved Technical Specifications allowable values. The licensee's investigation determined that a post-maintenance test was not performed following the installation of these switches; therefore, the actual level at which the switches actuated, was never verified. According to the licensee, post maintenance testing was not required when these switches were installed in 1985. The licensee had however verified through Technical Specifications surveillance testing that the magnetrol switches were functional. The calibration of these switches were not required until implementation of Improved Technical Specifications in April 2001.

The licensee also discovered that the allowable value in the Improved Technical Specifications for torus high level allowable value was overly conservative. The licensee concluded that the assumption made in a calculation developed to support the Improved Technical Specifications was based on original construction design specifications and not the design basis function of these torus level high switches. The inspectors reviewed and verified that the licensee's corrective actions regarding this LER were completed. This LER is closed.

.4 (Closed) LER 237/2002-003-00: "Manual Valve Failures Prevent the Cooling Water Flow to Control Room Refrigeration Condensing Unit."

On May 9, 2002, during monthly surveillance testing, for the control room heating, ventilation and air conditioning system, the refrigeration condensing unit (RCU) compressor tripped due to high discharge pressure. Investigation into this issue determined that manual inlet valve, 2/3-3999-334, separated from the stem and became stuck in the closed position which prevented cooling flow to the control room train B HVAC RCU heat exchanger. Also, the manual outlet valve, 2/2-3999-332 had also separated from its stem. The licensee determined that the cause of the inoperability of the B train HVAC system was due to using carbon steel material and frequently exercising the valves which caused the protective corrosion layer on the ears to be removed and accelerated the rate of corrosion.

The licensee restored the B HVAC train back to service, by removing the valve's internal through a temporary modification which restored flow to the RCU. The A HVAC train was started upon the failure of the B train. The licensee will replace these two valves with stainless steel valves. The licensee also identified other valves to be replaced in other systems, that were susceptible to the same conditions. This LER is closed.

.5 (Closed) LER 50-237/2002-004-00: "Control Room Ventilation Ductwork Breached During Replacement of Temperature Transmitter." See Section 4OA2.1 for discussion of this issue. This LER is closed.

4OA4 Others– Power Uprate (71004)

a. Inspection Scope

The inspectors reviewed a number of extended power uprate modifications to verify that the modifications were prepared in accordance with the licensing basis and the UFSAR. In addition, the inspectors reviewed the modifications to verify that the mitigating system capability would be maintained. The inspectors also reviewed prepared modifications to ensure that the licensee properly performed design change evaluations consistent with 10 CFR Part 50.59, "Changes, Tests and Experiments."

The modifications reviewed included the following modifications:

- low pressure coolant injection swing bus timer setpoint change;
- stator cooling water alarm and runback setpoint changes for extended power uprate; and
- feedwater level control system logic functional changes and addition of reactor recirculation runback for extended power uprate.

b. Findings

No findings of significance were identified.

4OA6 Exit Meetings

Preliminary Exit Meeting Occupational Radiation Safety

Senior Officials at Exit:	Robert Hovey
Dates	August 30, 2002, and follow-up telephone discussion with Danny Bost and others on September 20, 2002.
Proprietary Information:	None
Subject:	Occupational Radiation Safety - Radiation Monitoring Instrumentation and Protective Equipment

Exit Meeting

The resident inspectors presented their inspection results to Mr. R. Hovey and other members of licensee management at the conclusion of the inspection on September 24, 2002. The licensee acknowledged the findings presented. No proprietary information was identified.

4OA7 Licensee Identified Violation

The following finding of very low safety significance was identified by the licensee and is a violation of USNRC requirements which meets the criteria of Section VI of the USNRC Enforcement Policy, NUREG-1600 for being dispositioned as a Non-Cited Violation (NCV).

Cornerstone: Mitigating System

Part 50.59, of 10 CFR, “Changes, Tests and Experiments,” requires that the licensee perform an evaluation when the potential to create a possibility of a malfunction of a structure system or component important to safety with a different result than any other previously evaluated in the FSAR. In 1996, the licensee failed to perform a 50.59 evaluation following the replacement of the emergency diesel generator cooling water pump junction boxes. As a result, the cooling water pump did not meet submersibility qualification as described in the licensing basis.

KEY POINTS OF CONTACT

Licensee

R. Hovey, Site Vice President
D. Bost, Station Director
S. Bell, Health Physicist
J. Henry, Operations Director
J. Hansen, Regulatory Assurance Manager
J. Sipek, Nuclear Oversight Director
W. Stoffels, Maintenance Director
S. Taylor, Radiation Protection Director
H. Bush, Lead Radiation Protection Supervisor
J. DeYoung, Corporate EP Specialist
J. Ellis, Performance Monitoring Group Lead
T. Fisk, Chemistry Manager
M. Pavey, Emergency Preparedness Coordinator
J. Ferguson, ALARA Analyst
V. Gengler, Dresden Site Security Director
K. Hall, NDE Level III
S. Hunsader, Corporate Maintenance Rule Owner
A. Shahkarami, Director, Engineering
R. May, NDE Level III
C. Melgoza, ALARA Analyst
D. Nestle, Radiation Protection
N. Starcevich, Instrumentation Coordinator
M. Overstreet, Radiation Protection Shift Supervisor
M. Phelan, Assistant Radiation Protection Manager
R. Ruffin, Regulatory Assurance - USNRC Coordinator
D. VanAken, Corporate EP Specialist

Nuclear Regulatory Commission

S. Reynolds, Deputy Director, Division of Reactor Projects
M. Ring, Chief, Division of Reactor Projects, Branch 1
D. Smith, Dresden Senior Resident Inspector
B. Dickson, Dresden Resident Inspector

IDNS

R. Zuffa, Illinois Department of Nuclear Safety

Contractor

A. Lewis, REMP Technician, Environmental Incorporated - Midwest Laboratory

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-237; 249/02-12-01	NCV	Violation of 10 CFR Part 50, Appendix B, Criterion V Scaffolding erections.
50-249/02-12-02	NCV	Violation of 10 CFR Part 50, Appendix B, Criterion V, Fire Watch Activity.
50-237/02-12-03 50-249/02-12-03	NCV	Failure to fully implement the program that ensured the capability to obtain drywell atmosphere samples under accident conditions, as required by Technical Specification 5.5.3 (Section 2OS3)

Closed

50-237; 249/02-12-01	NCV	Violation of 10 CFR Part 50, Appendix B, Criterion V, Scaffolding erections.
50-249/02-12-02	NCV	Violation of 10 CFR Part 50, Appendix B, Criterion V, Fire Watch Activity.
50-237/02-12-03 50-249/02-12-03	NCV	Failure to fully implement the program that ensured the capability to obtain drywell atmosphere samples under accident conditions, as required by Technical Specification 5.5.3 (Section 2OS3)
50-237/2000-004-00 and 01	LER	Reactor Scram Due to a Failure to Close Current Transformer Knife Switches Following Maintenance.
50-249/2001-001-00 and 01	LER	High Flow Differential Pressure Switches Outside of Technical Specification Limits.
50-237/2001-004-00	LER	Unit 2 Torus High Water Level Switches Failed Technical Specification Calibration Surveillance Due to Historical Poor Post Modification Testing and Overly Conservative Technical Specification Allowable Value.
50-237/2002-003-00	LER	Manual Valve Failures Prevent the Cooling Water Flow to Control Room Refrigeration Condensing Unit.
50-237/2002-004-00	LER	Control Room Ventilation Ductwork Breached During Replacement of Temperature Transmitter.

Discussed

None

LIST OF ACRONYMS USED

ALARA	As Low As Is Reasonably Achievable
ARM	Area Radiation Monitor
CASP	Containment air sample panel
CFR	Code of Federal Regulations
CR	Condition Report
CRHVAC	Control Room Heating Ventilation and Air Conditioning
DIS	Dresden Instrument Surveillance
DOS	Dresden Operating Surveillance
DRP	Division of Reactor Projects
DRS	Division of Reactor Safety
HPCI	High Pressure Coolant Injection
HRSS	High Radiation Sampling System
HSAS	Homeland Security Advisory System
IDNS	Illinois Department of Nuclear Safety
IM	Instrument Maintenance
IMC	Inspection Manual Chapter
LER	Licensee Event Report
LPCI	Low Pressure Coolant Injection
MWe	Megawatts electrical
NCV	Non-Cited Violation
NO	Nuclear Oversight
USNRC	Nuclear Regulatory Commission
OA	Other Activities
OE	Operability Evaluation
OHS	Office of Homeland Security
PI	Performance Indicator
PM	Preventive Maintenance
RCA	Radiologically Controlled Area
RCR	Root Cause Report
RCS	Reactor Coolant System
RCU	Refrigeration Condensing Unit
RIS	Regulatory Information Summary
RP	Radiation Protection
RPT	Radiation Protection Technician
SCBA	Self-Contained Breathing Apparatus
SDP	Significance Determination Process
UFSAR	Updated Final Safety Analysis Report
WO	Work Order

LIST OF DOCUMENTS REVIEWED

1R04 Equipment Alignment

CR 123416	Operation Failure to Document USNRC Identified Issue on Scaffolding	

1R05 Fire Protection

CR 00114652	Fire hose reel F-147 pressurized while in standby	July 7, 2002
CR 00118408	Leaks and thin wall in fire protection piping	August 2, 2002

1R06 Flood Protection Measures

CR 00120361	Initiation of condition report for diesel generator cold water pump extent of condition note timely	August 22, 2002
CR 00120311	Unit 2 and 3 emergency diesel generator cooling water pump submersibility qualification	August 22, 2002

1R11 Operator Requalification

CR 00113996	Licensed operator biennial exam not in agreement with NUREG-1021 requirements	July 1, 2002

1R13 Maintenance Risk Assessments and Emergent Work Control

WR 459766	Unit 2/2 emergency diesel generator ground alarm	
WR 457506	Unit 2/3 emergency diesel generator lube oil pump noise abnormalities	
WR 470386	Unit 2/3 emergency diesel generator technical specification diesel generator operability	
CR 00117766	HPCI turbine inlet drain point level high alarm, Annunciator 902-3-B-11	
CR 00115691	Failure of Unit 3 permanent magnet generator	July 15, 2002
CR 00114054	Unit 2 emergency diesel generator inoperable due to failure to meet Technical Specification SR 3.8.1.8	July 2, 2002

CR 00116733	Rod control timer/movement C/S malfunction delays unit start up	July 26, 2002

1R14 Nonroutine Evolutions

CR 00116478	Unit 3 reactor scram	July 21, 2002

1R15 Operability Evaluations

CR 00116462	Drywell JIB crane (517') found in contact with drywell spray valve	July 26, 2002
CR 00121352	Unit 3 torus/DW vent valve operator is missing bolts	September 3, 2002
CR 00121807	Unit 2 high pressure coolant injection and Unit 3 standby liquid control strut supports found out of tolerance	September 5, 2002
Operability Determination #02-014	Ground on Unit 2/3 Diesel Generator Field Circuit	
Operability Determination #01-022	Degraded Cell on the Unit 2 250 Vdc Battery	
CR D2001-02231	Battery Acid Puddle Found Under D2 250 Station Battery, Cell 84	
Operability Determination 01-023	Leaking Weld Upstream of high pressure coolant injection valve 2-1599-131B	
Dwg M-1186A	Core spray piping system	Revision G
Dwg M-3403-05	Low pressure coolant injection 3a/b and core spray suction	Revision D
OD 01-009	3a core spray suction piping support anchor	February 5, 2001
29.0202.0311-04	Low pressure coolant injection 3a/b & core spray 3a suction	Revision 2
DRE01-0025	Operability evaluation for pipe support M-3403-05	Revision 0
OD 01-008	Motor-operated valve 3-0220-2 actuator	February 1, 2001
CR D2000-5523	Incorrect spring pack causes damage to motor operated valve 3-0220-2	September 28, 2000

CR D2000-5544	Motor-operated valve rework causes outage delays in d3r16	October 2, 2000
AR 00036161	D2000-5544: motor-operated valve rework causes outage delays in d3r16	November 17, 2000
CR D2000-0492	Motor operated valve actuator has not been evaluated for end use on 3-0220-2	January 26, 2001
WR 990018932	Overhaul actuator due to noise and trending of valve operation test and evaluation system data	October 1, 2000
WR 980064101	Repair pending as found local leak rate test results	October 2, 2000
WR 990106590	Rebuild cat id 31171 actuator to use on 3-0220-2	September 30, 2000
Memo 6359712	Parts evaluation for Motor operated valve 3-0220-2 from Michael Girard to Frank Winter	February 1, 2001
Operability Documentation 99-024	Leakage into Unit 2 torus	
LS-AA-105-1001	Supporting Operability Documentation	Revision 1
LS-AA-105-1000	Operability Determination Guidance Manual	Revision 0
LS-AA-105	Operability Determination	Revision 0
UFSAR 3.4.1.2.2	Protection of the Emergency Core Cooling System, Drywell and Torus	
UFSAR 6.3.1.3, 6.3.2.3 - 6.3.4.3	High Pressure Coolant Injection Subsystems	
T.S. 3.3.5.1	The Emergency Core Cooling System Instrumentation	
T.S. 3.6.4.1	Secondary Containment	
T.S. 3.5.1	Emergency Core Cooling Systems	
T.S. 3.6.1.1	Primary Containment	
T.S. 3.6.1.3	Primary Containment Isolation Valves	
UFSAR 6.3.3.1	Emergency Core Cooling Subsystem Performance Evaluation	

UFSAR 3.8.2.3	Suppression Chamber	
10 CFR 100.11	Determination of Exclusion Area, Low Population Zone, and Population Center Distance	
10 CFR 50.34 (a) (1)	Contents of Applications; Technical Information	
UFSAR 3.1.1.2.5	Criteria 10 - Containment	
T.S. 3.5.1	Emergency Core Cooling Operating	
Response to ERC 000351865		
ECR 000351865	Request System Engineer Evaluate Increase in Torus Water Level	
CR 00114208	Unit 2 emergency diesel generator run to support operability and trouble shoot	July 2, 2002
CR 00113928	2/3 emergency diesel generator field around alarm during surveillance	July 1, 2002
CR 00114000	Guide pins found on Unit 3 drywell pipe penetrations	July 1, 2002
CR 00115512	Unit 2 main turbine master trip solenoid valve test failure	July 13, 2002
CR 00113590	Missed inspections of control rod drive housing welds	June 27, 2002

1R17 Permanent Plant Modifications

EC 8163	Low pressure coolant injection swing bus timer setpoint change	April 26, 2001
EC 8252	Stator cooling water alarm & runback setpoint changes for extended power uprate	November 8, 2001
EC 8272	FWLCS (Bailey) logic functional changes and addition of reactor recirculation runback for extended power uprate	September 13, 2002

1R19 Post Maintenance Testing

DIS 0250-02	Main steam line low pressure isolation switch calibration	Revision 16

DIS 0261-01	Main steam line low pressure switch replacement and time delay relay replacement	Revision 4
WO 00424792-02	DOS 1500-01, “Low Pressure Coolant Injection System Valve Operability and Timing”	Revision 24
DOS 0040-07	Checklist A, “Valve Position Indication for Unit 2 Valves”	Revision 24
WO 99197620-04	DOS 1500-04, Data Sheet 7, “PS 3-1501-62B Calibration and Functional Test”	Revision 13
WO 990254624-01	DIP 0700-15, Data Sheet 3, “LPRM Detector Plateaus - APRM 3"	Revision 11
DOS 5600-01	Testing of the turbine overspeed trip system	July 25, 2002
EC 338106	Turbine monitoring plan during d3f40 startup	July 25, 2002
EC 338107	Turbine overspeed testing recommendation during d3f40 startup	July 25, 2002
WR 467431	Inspect front standard for cause of noise	July 25, 2002
DOS 1400-02	Core spray system valve operability timing	Revision 23
WO 99212849 02	Disengage/re-engage limit switch post maintenance cycle valve stem 3-1402-4A	December 18, 2001
WO 99212849 03	Unit 3 after greasing valve stem and thread of valve 3-1402-4A, post maintenance cycle valve stem for valve 3-1402-4A	January 8, 2002
WO 00330271	Intermediate range monitor channel 15 intermittent high and high-high alarms	June 18, 2001
WO 00325072	Cannot adjust needle on inverter output frequency meter	July 10, 2001
DOS 500 500-03	APRM Rod	
WO 465535-02	Replacement of Division II flow converter card	
CR 00115742	APRM flow converter power supply failure caused half scram	July 16, 2002
CR 00114930	Unit 3 RMCS timer failed preventative maintenance test	July 9, 2002

1R22 Surveillance Test

WOs# 46163301, 46163302 and 46163303	DTS 30-01 CCSW Pump Vault Penetration Surveillance Test.	
DOS 6600-01	Unit 2 “Diesel Generator Monthly Surveillance”	
WO 469817-01	DIS 1300-01 “Sustained High Pressure Surveillance”	
CR 00122136	Check valves were not tested during quarterly surveillance	September 10, 2002
CR 00121809	Isolation condenser hi flow switch dPIS 2-1349-A found in technical specification violation	September 5, 2002
CR 00121813	Isolation condenser steam and condensate line hi flow switch calibration	September 5, 2002
CR 00117260	Unit 2 turbine master trip solenoid test failure. Repeat event.	July 26, 2002
CR 00115325	Surveillance not updated by temporary modification process	July 12, 2002
CR 00113397	DIS 250-3 data sheet expanded tolerance exceed technical specification value	June 26, 2002
CR 00113775	RBM CH.8 failed acceptance criteria during DOS 0700-07	June 29, 2002
CR 00112493	PS 32-305-130-38-35 out of tolerance during DIS 300-02	June 19, 2002
CR 00113412	Calibration of electromagnetic relief valve pressure switches being performed monthly	June 26, 2002

2OS1 Access Control to Radiologically Significant Areas

RP-AA-460	Controls for High and Very High Radiation Areas	Revision 2
Nuclear Oversight Field Observation (NOA-DR-01-3Q)	Unit 2 Drywell Entry	September 3, 2001

CR No.00109974	Adverse Trend of Newly Found High Radiation Areas in Max Recycle Area	May 30, 2002

2OS3 Radiation Monitoring Instrumentation and Protective Equipment

Updated Final Safety Analysis Report, Chapters 9.3 and 12.3	High Radiation Sampling System and Radiation Protection Design Features	Revision 4
	Listing of Inservice Portable Survey Instruments and Contamination Monitors	August 2002
DSBP 1000-37	HRSS Operability Program	Revision 5
DSBP 2000-27	Gas Partitioner, Containment Air Sampling During Accident Conditions Using the CASP in Manual Mode	Revision 5
Attachments B and C of DSBP 1000-37	HRSS Yearly and Quarterly Surveillance Results	September 2001 - July 2002
	Dresden Chemistry Technician Task to Training Matrix	August 2002
	Nuclear Chemistry Technician Continuing Training Records (All Chemistry Technicians)	August 26, 2002
	Chemistry Technician Long Range Training Plan Matrix	Undated
DCP 1008-01	HRSS Consumables Inventory	Revision 2
Checklists 1 - 3 of DCP 1008-01	HRSS Hand Tools Inventory, HRSS Consumables Inventory and HRSS Gas Bottle/PARAPS Inventory	September 2001 - June 2002
CR No. D2001 - 03594	Review of Kewaunee HRSS Issue Identifies Further Evaluation	July 9, 2001
CR No. 00120956	Failure to Follow Program Procedure DSBP 1000-37	August 28, 2002
DRP 5800-09	Calibration Frequencies for Radiation Protection Survey Instruments	Revision 3
DRP 5822-07	Calibration, Maintenance and Operation of the IPM-9D Whole Body Frisking Monitor	Revision 2

DRP 5822-08	Sensitivity Checks of Personnel Contamination Monitors	Revision 1
RP-DR-902	Operation and Calibration of the Merlin Gerin CDM-21 Calibrator	Revision 0
	J.L. Shepherd Calibrator (SN 8136) Source Characterization	January 9, 2002
DIS 1800-06	Calibration Record of Unit 3 Filter Building, Third Level, ARM	December 13, 2001
DIS 1800-05	Calibration Record of Unit 2 Torus ARM	February 28, 2002
DOS 1600-21	Record of Unit 2 Drywell High Radiation Monitor Channel Functional Test (Monitors 2419A and 2419B)	June 18, 2002
DIS 1600-16	Calibration Record of Unit 2 Drywell High Radiation Monitor (2419A and 2419B)	November 3, 2001
DRP 5822-07	IPM-9D Calibration Data Sheet (Monitor #143)	February 19, 2002
	Calibration Report for PM-7 Portal Monitor (SN 3)	May 28, 2002
DRP 5822-41	Instrument Calibration Data Sheet for the PCM-2 (SN 149)	February 15, 2002
	Calibration Report for the Canberra Fastscan Whole Body Counter System	September 18, 2001
Radiation Protection Department Focused Area Self-Assessment Report	Radiation Monitoring Instrumentation	March 25 - 29, 2002
CR No. 00115109	Mask Medical Qualifications Expire for Operators Over 45	July 16, 2002
CR No. 00085107	Two SCBAs Failed During Fire Drill	March 6, 2002
NOS Field Observation No. NOA-DR-01-3Q	Radiation Protection Technical Specification Sampling	September 5, 2001
NOS Field Observation No. NOA-DR-01-3Q	Self-Assessment Review for Radiation Monitoring Instrumentation	September 27, 2001
NOS Field Observation	Instrument Daily Checks	May 23, 2002

CR No. 00097365	RP Instruments Not Calibrated in a Timely Manner	April 22, 2002
CR No. 000898376	Deficiencies Noted in the RP Instrument Program	January 7, 2002
CR Nos. 00080047 and 00073330	Emergency MSA SCBA Packs	August 23 and October 22, 2001
CR No. 00086613	EP Self-Assessment Identifies Respirator Quals Below Standard	December 18, 2001
RP-DR-827	Use of the Eagle Breathing Air Compressor System	Revision 2
RP-RD-826 and Associated Inspection Records	MSA Self-Contained Breathing Apparatus Inspection	Revision 2 and Inspection Records for January 2001 - July 2002

71152 Problem Identification and Resolution

CR 00118254	Apparent cause evaluation not performed on functional failure noted in CR D2001-03	August 1, 2002

4OA1 Performance Indicator Verification

DCP 1019-01	Plant Sampling System	Revision 29
DCP 3207-01	Gamma Isotopic Analysis	Revision 15
CR No. 00051140	Dose Equivalent Iodine Conversion Factor Error	June 28, 2001

4OA3 Event Follow-up

CR 00116678	Turbine EBOP taken out of service and turbine tripped	July 26, 2002

4OA4 Others– Power Uprate

EC 8163	Low pressure coolant injection swing bus timer setpoint change	April 26, 2001
EC 8252	Stator cooling water alarm & runback setpoint changes for extended power uprate	November 8, 2001

EC 8272	FWLCS (Bailey) logic functional changes and addition of reactor recirculation runback for extended power uprate	September 13, 2002

1EP4 Emergency Action Level and Emergency Plan Changes

CR 114194	Sixteen corporate CRs have not yet been reviewed by a supervisor in a timely manner