December 5, 2001

Mr. Oliver D. Kingsley, President
Exelon Nuclear
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: DRESDEN NUCLEAR POWER STATION
NRC INSPECTION REPORT 50-237/01-19(DRP); 50-249/01-19(DRP)

Dear Mr. Kingsley:

On November 13, 2001, the NRC completed an inspection at your Dresden Nuclear Power Station, Units 2 and 3. The enclosed report presents the inspection findings which were discussed with Mr. P. Swafford and other members of your staff on November 8, 2001.

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. Specifically, this inspection focused on resident inspection activities, occupational and public radiation safety, and an inservice inspection.

Based on the results of this inspection, the inspectors identified one issue of very low safety significance (Green) and one No Color finding. These issues 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 the issues as a Non-Cited Violations in accordance with Section VI.A.1 of the NRC Enforcement Policy. If you deny any Non-Cited Violation, you should provide a response with the basis for your denial, within 30 days of the date of this inspection report, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region III; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and to the NRC Resident Inspector at the Dresden Nuclear Power Station.

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Sincerely,

/RA/

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

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

Enclosure: Inspection Report 50-237/01-19(DRP);
50-249/01-19(DRP)

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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:	50-237/01-19(DRP); 50-249/01-19(DRP)
Licensee:	Commonwealth Edison Company
Facility:	Dresden Nuclear Power Station, Units 2 and 3
Location:	6500 North Dresden Road Morris, IL 60450
Dates:	October 1 through November 13, 2001
Inspectors:	D. Smith, Senior Resident Inspector B. Dickson, Resident Inspector W. Slawinski, Senior Radiation Specialist S. Orth, Senior Radiation Specialist A. Kock, Region III Allegation Coordinator D. Jones, Reactor Engineer R. Zuffa, Illinois Department of Nuclear Safety B. Metrow, Illinois Department of Nuclear Safety
Approved by:	Mark A. Ring, Chief Branch 1 Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000237-01-19(DRP), IR 05000249-01-19(DRP), on 10/01/01-11/13/2001, Exelon Generation Company, Dresden Nuclear Power Station, Units 2 and 3. Fire Protection Occupational Radiation Safety.

This report covers a 6 week routine inspection, and baseline radiation protection and inservice inspections. The inspection was conducted by resident inspectors, senior radiation specialists, region III allegation coordinator, and a reactor engineer. The inspection identified one No Color finding which was also a Non-Cited Violation.

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 are indicated by "No Color" or by the severity level of the applicable violation. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described at its Reactor Oversight Process website at http://www.nrc.gov/NRR/OVERSIGHT/index.html.

A. Inspector Identified Findings

Cornerstone: Initiating Events

No Color. The inspectors identified a Non-Cited Violation of Technical Specification 5.4.1 concerning the licensee's failure to have a fire extinguisher readily available, as required by station procedures, while performing hot work activities in the unit 2 catwalk and unit 2 heater bay areas (NCV 50-237/01-19-01).

Based on group 1 questions, this issue was more than minor because it had a credible impact on safety, in that, equipment damage and personnel injury could have occurred. Although this deficiency affected one of the fire protection defense-in-depth elements, this issue screened out of the fire protection significance determination process. Based on a yes answer to question 6 in group 3, this was a No Color violation (1R05).

Cornerstone: Occupational Radiation Safety

Green. A Non-Cited Violation of Technical Specification 5.4.1 was identified for the failure to control high efficiency particulate air (HEPA) filter equipped portable vacuums to prevent their unauthorized use and tampering, as required by station procedure. This finding included a cross-cutting element as a causal factor related to the effectiveness of the licensee's corrective actions, because similar HEPA vacuum unit control problems were identified and documented by the licensee on several other occasions during 2001(Section 20S2.5).

This finding was determined to be of very low safety significance because unauthorized use of the improperly controlled vacuums did not occur; consequently, a substantial potential for an overexposure did not exist relative to vacuum use.

B. Licensee Identified Findings

Violations of very low significance which were identified by the licensee have been reviewed by the inspectors. Corrective actions taken or planned by the licensee appear reasonable. These violations are listed in Section 40A7 of this report.

Report Details

Summary of Plant Status

Unit 2 began the period in coastdown operations. On October 20, 2001, the operators took the unit offline to perform refueling outage seventeen. Major work planned for the outage included improvements to the Unit 2 electro-hydraulic control system, replacement of the high pressure turbine, upgrades of the feedwater heater system and several plant modifications in anticipation of an extended power uprate. On November 7, 2001, during startup activities from the refueling outage, Unit 2 experienced a scram from approximately nine percent power. The unit was restarted on November 8, 2001, and was at approximately 15 percent power at the end of this inspection period.

Unit 3 operated at full power for the entire period.

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 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 conducted a review of the Unit 2 125 Vdc Battery system and the Unit 2 turbine building 125 distribution motor control center on main bus 2.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

a. Inspection Scope

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

Unit 2 turbine building trackway (Fire Zone 8.2.5.A)
Unit 2 torus basement/catwalk (Fire Zone 1.1.2.1)

b. Findings

One No Color, Non-Cited Violation was identified for failure to follow a fire protection procedure.

On October 3, 2001, the inspectors observed two welders, located inside a contaminated area and on top of a scaffold, conducting welding activities on the core spray line in the Unit 2 torus catwalk area. One of the welders was assigned fire watch responsibilities. The inspectors noted that the fire extinguisher allocated for use by the fire watch was not on the scaffolding, but was located on the Unit 2 catwalk, approximately 25 - 30 feet away from the welders and outside the contaminated area. The fire watch would have to unlatch himself from the scaffold, climb over and onto the torus then maneuver through an area with a low ceiling, pipes and cable trays before crossing the contaminated boundary, retrieving the fire extinguisher and returning. The inspectors questioned the appropriateness of the fire extinguisher location. In response, the operations field supervisor generated Condition Report (CR) # 00077641 and modified the hot work permit to have the fire extinguisher located on the scaffold.

The inspectors reviewed operations administrative procedure OP-AA-201-004, “Fire Prevention For Hot Work,” Revision 4, and concluded that the location of the fire extinguisher was not in compliance with the procedure. Specifically, Procedural Step 4.2.1.8 specified that an operable fire extinguisher shall be available and conveniently located in the work area, and Procedural Step 4.3.3 specified that the fire watch shall be aware of the location of fixed fire extinguishers in the area, or have an additional fire extinguisher readily available, and be trained in its use.

Licensee plant management, however, concluded that the placement of the fire extinguisher met all the requirements of OP-AA-201-004. The inspectors discussed the issue with the Region III fire protection specialists and NRC Office of Nuclear Reactor Regulation fire protection personnel with the consensus being that the licensee was not in compliance with OP-AA-201-004. Subsequent discussions with the licensees staff, including corporate fire protection personnel on October 31, 2001, failed to resolve the disagreement over the placement of fire extinguishers for conducting hot work. Condition Report # 00080820, dated October 31, 2001, concluded that the station was in compliance with OP-AA-201-004 and National Fire Protection Association (NFPA) 51B, although the procedure could be enhanced.

On October 31, 2001, the inspectors toured the Unit 2 heater bay, which was a contaminated area, and identified that fire extinguishers were not readily available for welding activities on the 2B1 and 2D2 feedwater heaters. When asked about the location of a fire extinguisher, the fire watch for the 2D2 heater left the area for approximately 3-4 minutes before returning with a fire extinguisher. The fire watch assigned to the 2B1 heater, after searching for approximately a minute, located a fire extinguisher approximately 20 feet away in a clean area. This would have required the fire watch to exit the contaminated area to retrieve the extinguisher. The licensee

captured the inspectors' observations in CR # 00081380, but did not address the practice of locating fire extinguishers outside of contaminated areas.

During the exit meeting, plant management agreed the station was not in compliance with the procedure, however, there had not been any documentation of this new station position. Therefore, the licensee generated CR #00082314 on November 9, 2001, documenting that the station was not in compliance with OP-AA-201-004 on October 3, 2001.

Section 5.4.1 of Dresden Improved Technical Specifications stated that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Administrative procedures addressing the fire protection program were listed in this regulatory guide. One fire protection program procedure was Operations Administrative Procedure OP-AA-201-004, "Fire Prevention For Hot Work," Revision 4. Procedural Step 4.2.1.8 specified that an operable fire extinguisher shall be available and conveniently located in the work area, and Procedural Step 4.3.3 specified that the fire watch shall be aware of the location of fixed fire extinguishers in the area, or have an additional fire extinguisher readily available, and be trained in its use. Contrary to the above, on October 3 and 31, 2001, fire extinguishers were not readily available during hot work activities in the Unit 2 catwalk and the Unit 2 heater bay areas. This was an apparent violation. This violation is being treated as a Non-Cited Violation, consistent with Section VI.A.1, of the NRC Enforcement Policy **(NCV 50-237/01-19-01(DRP)).** This issue was entered into the licensee's corrective action program as CRs 00077641, 00080820, 00081380, and 00082314.

In NRC Inspection Manual Chapter 0610*, Appendix B, group 1 questions 1 and 3 were answered yes. Failure to follow the requirements of OP-AA-201-004 had a credible impact on safety, in that, damage to equipment important to safety and personnel injury could have occurred. This finding, if left uncorrected, could become a more significant safety concern because a fire resulting from hot work activities could spread quickly and damage post-fire safe shutdown equipment in other risk significant areas. For the fire protection question in group 2, however, since this finding did not involve impairment or degradation of a fire protection feature, it could not be evaluated using the Manual Chapter 0609, "Significance Determination Process." Although this finding involved a degradation of a fire protection defense-in-depth element, it screened out of the fire protection SDP because it did not affect detection and manual suppression capability (fire brigades), automatic suppression capability, fire barriers, and 20-foot separation requirements. The answer to question 6 of the group 3 questions was yes since this issue was considered a violation greater than minor during the review of the group 1 questions. Therefore, this issue was a No Color violation.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

The inspectors reviewed the licensee's flooding mitigation and protection plans to ensure that areas highly susceptible to internal flooding were adequately addressed. The inspector assessed the licensee's audit of flood protection barriers and reviewed procedures for coping with flooding in risk significant areas in the plant.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance (71111.07)

a. Inspection Scope

The inspector reviewed the documents associated with maintenance and thermal performance testing of the Unit 2 low pressure coolant injection/containment cooling service water system heat exchangers. These exchangers were chosen for review based on their relatively high safety significance. The inspectors reviewed completed surveillance tests and associated calculations to confirm that each heat exchanger met its design heat removal requirements. The inspectors also reviewed CRs concerning heat exchanger performance issues to verify that the licensee had an appropriate threshold for identifying issues.

b. Findings

No findings of significance were identified.

1R08 Inservice Inspection Activities (71111.08)

a. Inspection Scope

The inspectors conducted a review of the licensee's inservice inspection program for monitoring degradation of the reactor coolant system boundary and risk significant piping system boundaries. Specifically, the inspectors conducted in-process observations of; ultrasonic examinations on the reactor pressure vessel flange-to-shell weld and upper shell vertical seam welds, main steam and high pressure coolant injection nozzle-to-vessel welds, nozzle inner radii sections, nozzle-to-safe end welds, and main steam elbow-to-pipe and valve-to-pipe welds. These examinations were evaluated for compliance with the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code requirements. The inspectors also reviewed inservice inspection procedures, personnel certifications, and NIS-2 forms for Code repairs performed during the last outage to confirm that ASME Code requirements were met.

The inspectors also reviewed a sample of inservice inspection related problems documented in the licensee's corrective action program, to assess conformance with 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," requirements.

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation (71111.12)

a. Inspection Scope

The inspectors assessed the licensee's implementation of the maintenance rule by determining if systems were properly scoped within the maintenance rule. The inspectors also assessed the licensee's characterization of failed structures, systems, and components, and determined whether goal setting and performance monitoring were adequate for the Unit 3 instrument air system.

b. Findings

No findings of significance were identified.

1R13 Maintenance Work Prioritization & 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 reviewed maintenance activities on the Unit 2 125 Vdc battery system.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed operability evaluations to ensure that operability was properly justified and the component or system remained available, such that no unrecognized increase in risk occurred. The review included issues involving the fail-safe accumulator on the Unit 3 primary containment systems and a historical operability evaluation for the seismic qualification of the Unit 2 control rod drive header supply piping.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modification (71111.17)

a. Inspection Scope

The inspectors reviewed three permanent plant modifications during the Unit 2 outage to verify the design adequacy of the modifications, verify post-modification testing appropriateness, ensure licensing bases and design bases documents were maintained,

and ensure functionality of interfacing structures, systems, and components. The modifications reviewed included the installation of new 125 Vdc feeder cables, the change to the isolation condenser system initiation logic and reactor recirculation pump runback logic.

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed the following post-maintenance test results to confirm that the tests were adequate for the scope of the maintenance being performed, that the test data met the acceptance criteria. The inspectors also determined that the test restored the systems to the operational readiness status which was consistent with the design and licensing basis documents. The inspectors reviewed work activities associated with the rod block monitor and the average power range monitors.

b. Findings

No findings of significance were identified.

1R20 Refueling and Outage Activities (71111.20)

a. Inspection Scope

The inspectors reviewed and evaluated several outage activities during a refueling outage. 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 Specifications 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. 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 review included surveillance testing activities for the Unit 2 reactor protection system.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

20S1 Access Control to Radiologically Significant Areas (71121.01)

Plant Walkdowns and Radiological Boundary Verifications

a. Inspection Scope

The inspectors conducted walkdowns of selected radiologically controlled areas to verify the adequacy of radiological boundaries and postings. The inspectors also reviewed both administrative (procedure and radiation work permit (RWP)) and physical controls for access to these areas and assessed worker adherence to these controls through direct observation. Specifically, the inspectors walked-down several radiologically significant work area boundaries (high and locked high radiation areas) in the Unit-2 drywell, in the Unit-2 and Unit-3 Reactor and Turbine Buildings, and in the Radwaste Building. The inspectors performed confirmatory radiation measurements to verify that these areas and selected radiation areas were properly posted and controlled in accordance with 10 CFR Part 20, licensee procedures, and Technical Specifications. Additionally, the inspectors reviewed a locked high radiation area (LHRA) access control incident that occurred in the Unit-2 High Pressure Heater Bay/X-Area on September 25, 2001, and assessed the adequacy of the licensee's problem identification, extent of condition, and corrective actions (Section 40A7).

b. Findings

No findings of significance were identified.

20S2 As-Low-As-Is-Reasonably-Achievable (ALARA) Planning and Controls (71121.02)

.1 Radiation Dose Goals and Trending

a. Inspection Scope

The inspectors reviewed the station's historical outage exposure data and the dose goals and dose performance for the current refueling outage (D2R17), which took place between October 20 and November 7, 2001. In particular, historical outage doses were compared with D2R17 outage work scope and dose expenditures, if applicable, to assess the licensee's outage dose performance. The inspectors also reviewed the licensee's processes for estimating job doses for those higher dose jobs that took place

during the outage to verify that adequate technical bases for outage dose estimates and dose goals existed. These reviews were also completed to determine if the licensee's outage experiences, craft work group job scope and resource estimates, and industry operating experiences and data were used, as appropriate, to establish reasonably accurate dose estimates. In addition, the inspectors reviewed personnel exposures within selected work groups and the mechanisms used by the licensee to ensure that significant exposure variations did not occur amongst individuals performing similar work without adequate justification.

b. Findings

No findings of significance were identified.

.2 Radiological Work Planning

a. Inspection Scope

The inspectors reviewed the licensee's procedures for ALARA planning and evaluated the dose projection methodologies used for the D2R17 refueling outage for adequacy relative to industry practices. Specifically, the inspectors selected the following outage jobs that produced exposures in excess of 5 rem each and assessed the adequacy of the radiological controls and work planning for each:

Drywell Control Rod Drive System Pull/Put Maintenance Activities;
Turbine Building Power Up-Rate 'C' & 'D' Heater Shell Replacements;
Drywell Main Steam Safety, Electromatic, and Target Rock Valve Maintenance;
Scaffold Installation/Removal Activities (Excluding Drywell);
Turbine Building Valve Maintenance Activities;
Drywell Nuclear Instrumentation Maintenance Activities;
Drywell Scaffolding Activities Including Transport and Installation;
Reactor Disassembly/Reassembly and Related Activities;
Drywell Steel Modification; and
Drywell In-Service-Inspection Activities.

The inspectors reviewed the RWP and the ALARA plan developed for each job and assessed radiological engineering controls and other dose mitigation techniques specified in these documents to verify that plans were developed consistent with procedures and included appropriate controls to reduce dose. These documents were also reviewed to determine if job history files, licensee lessons learned, and industry experiences were adequately integrated into each work package. Additionally, the inspectors discussed the ALARA planning for selected jobs with ALARA staff to verify that adequate interfaces between contractors, station work groups, and ALARA staff occurred during job planning.

b. Findings

No findings of significance were identified.

.3 Implementation of ALARA Controls

a. Inspection Scope

The inspectors selected the following high exposure or high radiation area jobs conducted during the outage and reviewed the execution of the ALARA program:

Drywell Structural Steel Modification to Support Power Uprate;
Control Rod Drive Pull/Put Activities;
Electromatic and Safety Relief Valve Maintenance; and
Reactor Cavity Decontamination.

The inspectors discussed job performance with radiation protection (RP) staff, and total effective dose equivalent (TEDE) ALARA evaluations completed for certain jobs were assessed for technical adequacy. Work in progress reports and radiological survey data were also reviewed to assess their adequacy. Pre-job briefs were either attended or briefing information was selectively reviewed by the inspectors to verify that work area radiological information was exchanged effectively. The inspectors evaluated the licensee's engineering controls at selected locations to verify that the controls were consistent with those specified in the ALARA plans. The inspectors also observed and questioned workers involved in the drywell steel modification and cavity decontamination to verify that they had adequate knowledge of radiological work conditions and ALARA controls.

b. Findings

No findings of significance were identified

.4 Verification of Exposure Estimates and Exposure Tracking Systems

a. Inspection Scope

The inspectors reviewed the methodology and assumptions used to develop outage dose estimates and compared collective outage and individual job dose performance and dose trending with estimates for accuracy. The inspectors reviewed man-hour estimates for higher dose jobs to determine if they were reasonably accurate when compared to actual results. In particular, the inspectors discussed with the ALARA staff the drywell steel modification and control rod drive exchange, both of which expended additional dose due either to scope growth, uncertainties in work duration estimates, or problems with equipment operation. The licensee established an estimate of 217 person-rem for the Unit-2 outage. As of November 1, 2001 (day 13 of an 18 day outage), the licensee had recorded an outage exposure of 221 person-rem compared to its estimate of about 200 person-rem for that stage of the outage. Selected work in progress review reports were examined to evaluate the licensee's ability to assess the effectiveness of an overall job, to execute its ALARA plan, and to institute changes in work plans, if warranted. The licensee's exposure tracking system was also reviewed to determine if the level of exposure tracking detail, exposure report timeliness, and report distribution were sufficient to support the control of outage exposures.

b. Findings

No findings of significance were identified.

.5 Identification and Resolution of Problems

a. Inspection Scope

The inspectors reviewed the results of an outage ALARA readiness assessment, completed by the RP staff prior to the outage, and a Nuclear Oversight (NO) Department third quarter 2001 assessment report. The inspectors also reviewed outage related NO field observations, CRs generated in 2001 focusing on outage and access control related CRs, and related prompt investigation and apparent cause evaluations. These reviews were conducted to determine if the licensee adequately identified individual problems and trends, evaluated contributing causes and extent of condition, and had developed corrective actions to achieve lasting results. During this inspection, the inspectors reviewed the licensee's actions to resolve repetitive problems concerning the control of vacuum cleaners used in radiologically posted areas and verified the implementation of corrective actions. Work in progress reports for the outage were also reviewed to further assess the licensee's problem identification and resolution capability for the RP program.

b. Findings

The inspectors identified a Green finding and associated Non-Cited Violation concerning the inadequate control of vacuum cleaners equipped with high efficiency particulate air (HEPA) filters used in the radiologically posted area. The inspectors also observed that the licensee's prior actions to correct repetitive issues associated with the control of this equipment was ineffective.

On October 30, 2001, the inspectors identified deficiencies concerning the control of HEPA vacuum units in the radiologically posted area. The vacuum units were controlled by procedure DRP 6210-17, "Issuance and Control of Vacuum Cleaners in Radiologically Posted Areas." In particular, the inspectors observed the following problems:

a. one vacuum used on the turbine deck was missing its security seal (between vacuum cleaner head and body);

b. one vacuum used on the turbine deck had a partially unattached security seal; and

c. one vacuum in the Unit 1 feedwater pump area was not stored in a manner to prevent unauthorized use.

In addition, the inspectors identified inconsistencies in the vacuum issuance log. For example, a vacuum unit issued in January 2001 (and not documented as returned) had also been issued on October 9, 2001, to a different person and location. Despite these control and documentation issues, the inspectors did not observe any abnormal

radiation levels near the equipment nor did the inspectors observe any indication that unauthorized personnel had manipulated the equipment or had opened the units.

The inspectors identified a number of previously identified issues associated with the licensee's control of HEPA equipped vacuum cleaners (CR Nos. D2001-01562, D2001-03573, and 00072898). In addition, the NO staff had identified an additional problem on the day previous to the inspectors' observations. As a result of these issues, the licensee had performed an apparent cause evaluation and implemented corrective actions focused at improving the ownership of the program. During this inspection, the inspectors identified that the corrective actions were not effective at resolving the issue and preventing future occurrences. In addition, the inspectors noted that not all of the corrective actions were fully implemented. Specifically, the apparent cause resulted in the vacuum issuance log being re-located from the Unit 1 storage cage to the RP desk to gain better control of the units. However, the inspectors found the log to be maintained at the Unit 1 storage cage on October 30, 2001.

This finding, if left uncorrected, would become a more significant concern and could cause an unplanned radiation exposure to personnel. Therefore, the inspectors evaluated this finding using the NRC significance determination process (SDP) for the occupational radiation safety cornerstone. The finding was not associated with an ALARA issue and did not impact the licensee's ability to assess dose; however, the finding had the potential to result in an unplanned radiation exposure. Since the inspectors did not observe any unauthorized use of the improperly controlled equipment or any abnormal radiation levels, the inspectors concluded that a substantial potential for an overexposure did not exist and that the finding was of very low safety significance (Green).

Technical Specification 5.4.1 requires, in part, that procedures be established, implemented, and maintained that cover the activities recommended in Regulatory Guide 1.33, Revision 2, Appendix A, which included RP procedures for contamination control. Procedure DRP 6210-17 provides contamination controls for the use of HEPA vacuums and contains the requirements that the units be stored to prevent unauthorized use and be sealed with tamper proof tape, tie-wrap or a locking device to prevent tampering. The failure to adequately implement DRP 6210-17 is a violation of Technical Specification 5.4.1. However, because of the very low safety significance of the violation and because the licensee has included this item in its corrective action program (CR No. 00081193), this violation is being treated as a **Non-Cited Violation (NCV 50-237/01-19-02 and 50-249/01-19-02).**

4. OTHER ACTIVITIES (OA)

4OA3 Event Follow-up (71153)

.1 (CLOSED) Licensee Event Report (LER) 2000-006-00: Unanalyzed Condition Resulting From Inadequate Design Control for Bus 34 Undervoltage Relay. The licensee discovered that the overvoltage coil tap setting for the undervoltage relays on Bus 34 had been changed without using the station's design control process. The licensee had performed a walkdown of all safety related 4KV relay tap settings and found one

additional relay setting which was found incorrect but was in the conservative direction. However, this information was accidentally omitted from the LER. A non-cited violation was issued for this problem in inspection report 50-237/00-13(DRP);50-249/00-13(DRP). This LER is closed.

.2 (CLOSED) Licensee Event Report (LER) 2000-006-01: Unanalyzed Condition Resulting From Inadequate Design Control for Bus 34 Undervoltage Relay. This LER included the information which had been omitted from revision 00. This LER is closed.

4OA5 Other

Institute of Nuclear Plant Operations Interim Report Review

An inspection team from the Institute of Nuclear Plant Operations performed a plant evaluation from June 11, 2001, through June 18, 2001. The inspectors reviewed the interim report dated August 20, 2001. No further inspection was deemed necessary by NRC inspectors, and no assessment was made of the results of the inspection.

4OA6 Meetings, including Exit

.1 Routine Resident Exit

The resident inspectors presented their inspection results to Mr. Swafford and other members of licensee management at the conclusion of the inspection on November 8, 2001. The licensee acknowledged the findings presented. No proprietary information was identified.

.2 Interim Exit Meetings

Inservice Inspection

Senior Official at Exit:	Robert Fisher, Plant Manager
Date:	October 31, 2001
Proprietary (explain "yes"):	No
Subject:	Biennial Inservice Inspection

Radiation Safety

Senior Official at Exit:	Preston Swafford
Date:	November 2, 2001
Proprietary Information:	None
Subject:	Occupational - Access Controls for Radiologically Significant Areas and ALARA Planning/Controls
Change to Inspection Findings:	None

40A7 Licensee Identified Violations: The following findings 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 Policy, NUREG-1600 for being dispositioned as Non-Cited Violations (NCVs).

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 Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region III; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Dresden Station.

NCV Tracking Number	Requirement Licensee Failed to Meet
50-237;249/01-19-03	Technical Specification 5.7.2 requires that high radiation areas accessible to personnel with radiation levels greater than 1000 mrem/hour be provided with locked doors, or direct or electronic surveillance that is capable of preventing unauthorized entry. Additionally, procedure RP-AA-460, "Controls for High and Very High Radiation Areas," required by Technical Specification 5.4.1, required that an individual exiting an LHRA ensure that the access door is secured/locked by physically challenging it and that a second individual perform an independent verification of its closure. The procedure also required that all individuals that enter a LHRA receive a pre-job briefing from RP that covers certain specified information. On September 25, 2001, and as described in CR # 76379, the licensee failed to: (1) lock or maintain surveillance of a door leading to the Unit-2 Heater Bay/X-Area (a high radiation area greater than 1000 mrem/hour); (2) ensure that the LHRA access door was secured/latched upon worker egress from the area and independently verify door closure; and (3) conduct a pre-job briefing that covered required information with all individuals that entered the LHRA. Since the inspector concluded that area radiation levels, coupled with the limited duration of the problem before it was licensee identified, precluded a substantial potential for an overexposure, the incident was determined to be of very low safety significance. The licensee also correctly reported the incident to the NRC as an occurrence for the occupational exposure control effectiveness performance indicator.

KEY POINTS OF CONTACT

Licensee

R. Bauman, ISI coordinator
K. Bowman, Operations Manager
H. Bush, Radiation Protection Supervisor
V. Castle, Training Operations Manager
R. Fisher, Plant Manager
T. Fisk, Chemistry Manager
M. Friedman, Emergency Preparedness Coordinator
V. Gengler, Security Manager
R. Geier, RV/ISI NDE Coordinator
K. Hall, NDE Level III
T. Luke, Engineering Manager
R. May, NDE Level III
J. Moser, Radiation Protection Manager
J. Nalewajka, Acting Nuclear Oversight Manager
B. Norris, Radiation Protection Engineering Supervisor
L. Oshier, Radiation Protection Technical Support Supervisor
R. Peak, Design Engineering Manager
R. Ruffin, Regulatory Assurance - NRC Coordinator
R. Rybak, Regulatory Assurance
W. Stoffels, Maintenance Manager
P. Swafford, Site Vice President
R. Whalen, System Engineering Manager

General Electric

J. Easton, Project Manager
H. Schlortt, NDE Level II
S. Snyder, ISI Coordinator

IHI Southwest Technology

C. Littlefield, NDE Level III
S. Todd, Project Manager

NRC

G. Grant, Director, Division of Reactor Projects, Region III
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

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-237/01-19-01	NCV	Failure to A Follow Fire Protection Procedure
50-237;50-249/01-19-02	NCV	Failure to control HEPA equipped portable vacuum units as required by station procedure (Section 20S2.5)
50-237;50-249/01-19-03	NCV	Failure to adequately control access to a LHRA, verify LHRA door closure/latching upon worker egress, and ensure all workers that entered a LHRA received an adequate pre-job brief relative to egress requirements (Section 40A7)

Closed

50-237/01-19-01	NCV	Failure to A Follow Fire Protection Procedure
50-237;50-249/01-19-02	NCV	Failure to control HEPA equipped portable vacuum units as required by station procedure (Section 20S2.5)
50-237;50-249/01-19-03	NCV	Failure to adequately control access to a LHRA, verify LHRA door closure/latching upon worker egress, and ensure all workers that entered a LHRA received an adequate pre-job brief relative to egress requirements (Section 40A7)
50-249/2000-006-00	LER	Unanalyzed Condition Resulting From Inadequate Design Control for Bus 34 Undervoltage Relay
50-249/2000-006-01	LER	Unanalyzed Condition Resulting From Inadequate Design Control for Bus 34 Undervoltage Relay

LIST OF ACRONYMS USED

ALARA	As Low As Is Reasonably Achievable
CR	Condition Report
D2R17	Dresden Unit 2's 17th Refueling Outage
DRP	Division of Reactor Projects
HEPA	High Efficiency Particulate Air
HRA	High Radiation Area
IDNS	Illinois Department of Nuclear Safety
ISI	Inservice Inspection
LER	Licensee Event Report
LHRA	Locked High Radiation Area
NCV	Non-Cited Violation
NDE	Nondestructive Examination
NO	Nuclear Oversight
OS	Occupational Radiation Safety
PERR	Public Electronic Reading Room
RA	Radiation Area
RETS	Radiological Effluent Technical Specifications
RP	Radiation Protection
RV	Reactor Vessel
RWP	Radiation Work Permit
SDP	Significance Determination Process
TEDE	Total Effective Dose Equivalent
UFSAR	Updated Final Safety Analysis Report
WO	Work Order

LIST OF DOCUMENTS REVIEWED

1R05 Fire Protection

OP-AA-201-004	Fire Prevention For Hot Work	Revision 4
CR 0081777	Nuclear Oversight Identifies Potential Adverse Trend in Fire Protection	October 29, 2001
CR 00081578	Nuclear Oversight Fire Seal Degraded without Technical Specification Limiting Condition for Operation Entry and Fire Watch	October 30, 2001
CR 00080605	Continuous Fire Watch as Required by Technical Requirement Manual 3.7n	October 27, 2001
CR 00080816	Nuclear Regulatory Commission Contact Reports Safe Shutdown Light Out	October 29, 2001
CR 00080820	Extinguisher Location During Hot Work Activity	October 3, 2001
CR 00080047	Emergency Self-Contained Breathing Apparatus Packs	October 22, 2001

1R06 Flood Protection Measures

UFSAR Section 3.4.1.1	External Flood Protection Measures	
UFSAR Section 3.4.1.2	Internal Flood Protection Measures	
Work Request 980111847-01	Dresden Unit 2 18 Month Administrative Technical Requirement Condenser Pit Level Switch Functional Test	March 20, 2000
Work Request 980106299-01	Dresden Unit 2 Refueling 24 Month Administrative Technical Requirement Containment Cooling Service Water Pump Vault Penetration Surveillance Test	April 12, 2001
Work Request 990069848-01	Dresden Unit 2 Refueling 18 Month Administrative Technical Requirement Condenser Pit Hi/Hi-Hi Water Level 2A Circulation Water Pump Trip Level Switch Functional Test	November 21, 2000

1R07 Heat Sink Performance

Calculation No. DR-029-M-001	Containment Cooling Service Water System Design Input for the Balance Heat Exchanger Performance Utility, Revision 1	March 25, 1994

Calculation No. DRE96-0162	The Low Pressure Coolant Injection Heat Exchanger Versus River Water Temperature, Revision 0	August 20, 1996
CR 0081746	Blind Flange Was Not Installed Per Design Change Package for Drain Modification	November 2, 2001
CR 00081582	2A Low Pressure Coolant Injection Heat Exchanger Head Leakage	November 3, 2001
CR 00080900	Missed Quality Control Hold Points on 2B Low Pressure Coolant Injection Heat Exchanger Divider Plate Repairs	October 30, 2001
CR 00081019	Final Visual Quality Control Hold Points Bypassed for 2B Low Pressure Coolant Injection Heat Exchanger	October 30, 2001

1R08 Inservice Inspection

54-ISI-107-4	Remote Ultrasonic Examination of Boiling Water Reactor (BWR) Core Shroud Assembly Weld Seams	March 23, 2001
54-ISI-21-28	Administrative Procedure for the Written Practice of Personnel Qualification in Ultrasonic Examination	March 8, 2001
1211.18	Non-Destructive Examination Procedure for Containment Inspection-Visual Exams VT-1 & VT-3	January 27, 2000
NIS-2 #16-99-26	Applied Weld Overlay	November 23, 1999
AR# 17687	Indication on Recirc Riser Nozzle NZF	November 10, 1999
AR# 25415	Linear Indication on Welds JX105A & C	April 25, 2001
AR# 17614	Disposition Nonconformance: Two Linear Indications Found in Recirculation Inlet Nozzle N2B, Weld #RRB-F002 (Nozzle to Safe-End)	November 6, 1999
AR# 25937	Indication on HCC-B002 (Vessel Head Dollar Weld)	April 24, 2001
MT-EXLN-100V3	Magnetic particle testing of carbon-steel welds	October 2001
PT-EXLN-100V3	Liquid penetrant testing of dissimilar metal welds	October 2001

UT-EXLN-300V4	Procedure for Manual Ultrasonic Examination of Reactor Vessel Assembly Welds	October 21, 2001
GE-UT-311	Procedure for Manual Ultrasonic Examination of Nozzle Inner Radii and Bore	October 21, 2001
GE-UT-304	Procedure for Manual Ultrasonic Planar Flaw Sizing in Vessel Materials	October 17, 2001
D2-R17-02	Examination Summary Sheet, 2/1/RPV Shell/N3A-1 NIR	October 29, 2001
D2-R17-13	Examination Summary Sheet, 2/1/RPV UPP HD/N18A-2 Noz-RPV	October 29, 2001
NRC Exemption Safety Evaluation	Dresden Nuclear Power Station, Units 2 and 3-Exemption From The Requirements of 10 CFR 50.55a(g)(6)(ii)(A)(2), Inservice Examination of the Reactor Pressure Vessel	September 28, 2001
	Inservice Inspection (ISI) Summary Report Fall 2000 Inservice Inspection Period	December 29, 2000

1R12 Maintenance Rule Implementation

CR 00082344	2/3 Main Turbine Floor Continuous Air Monitor Trip	October 14, 2001
CR 00080609	Main Steam Safety Valve Setpoint Outside of 1%	October 27, 2001

1R13 Maintenance Work Prioritization and Control

CR 00080526	Near Miss, Potentially Both Emergency Diesel Generator Inoperable for Shutdown Unit	October 26, 2001
CR 00080025	Commencement of Fuel Moves Without Notifying Radiation Protection	October 23, 2001

1R15 Operability Evaluations

Operability Evaluation - 01-039	Fail Safe Accumulators on Containment Ventilation and Purge System	October 12, 2001
Action Tracking Item 74496-04	Historical Operability/Engineering Evaluation for Control Rod Drive Header Supply System Missing Supports	September 27, 2001

1R17 Permanent Plant Modification

Design Change Package 9900064	Addition of 125 Vdc Feeder Cables

Design Change Package 9900727	Extended Power Uprate Project Reactor Recirculation Pump Runback on Reactor Feedwater or Condensate Pump Trip +8 inches	
Design Change Package 9900730	Isolation Condenser Time Delay Modification Unit 2	
CR 0081369	2B1 Reactor Recirculation Motor Generator Set Oil Pump is Cycled 3 Times Due to Wiring Problem	November 2, 2001
CR 00081191	Improperly Wired Recirculation Runback Relays and Belts not in Line	November 2, 2001

1R19 Post Maintenance Testing

WO 99237383-01	Unit 2 - Rod Block Monitor #8 Replacement -	October 25, 2001
WO 99237378-01 & 317828	Unit 2 Average Power Range Monitor #3 Flow Comparator & Power Supply Replacement	October 25, 2001

1R20 Refueling and Outage Activities

General Electric Analyses GE-NE-T2300740-2	Dresden Nuclear Power Station Unit 2 and 3 Containment Analyses of the Design Basis Accident-Loss of Coolant Accident Based on Long Term Low Pressure Coolant Injection/Containment Cooling System Configuration of One Low Pressure Coolant Injection/Containment Cooling Service Water System Pump and Two Containment Cooling Service Water Pumps.	December 1996
CR 0081632	Reactor Protection System Half-SCRAM and Standby Gas Treatment Automatic Start due to Design Engineer Human Performance	November 4, 2001
CR 00080838	Dive Equipment Damaged in Unit 2 Torus during Emergency Core Cooling System Pump Run	October 28, 2001
WO 32250803	Install Reactor Recirculation Pump Motor Generator Set Voltage Regulator	March 20, 2001
CR 00081621	Jet Pump Wall Brace Analysis Pump Speed Exclusion Zones	November 5, 2001
Engineering Request 352485	Change in Drywell Exhaust Fan Mounting Clips	October 23, 2001

CR 00081358	High Pressure Coolant Injection Valve Rotated in Wrong Direction	November 2, 2001
CR 00081007	B Low Pressure Coolant Injection Heat Exchanger Scaffold Contacting Piping	October 29, 2001
CR 00080013	Marginal Stator Cooling Water System Capacity After Extended Power Uprate	October 23, 2001
CR 00080238	Relay Target Found Set at the .2 Amp Tap	October 22, 2001
WO 357004-01	Electric Maintenance Troubleshoot Cause of Main Steam Isolation Valve 1C Relay 590-102D Failed to Operate	October 30, 2001
WO 377174-01	Mechanical Maintenance Repair Leaks on 2-0203-1C Manifold Block	November 4, 2001
WO 073264-01	Unit 2 Instrument Air Valve to Main Steam Isolation Valve AO 2-203-2A	October 27, 2001
WO 023272-01	Unit 2 Packing Leak Scram Discharge Volume Test Volume During Pressure Test	October 27, 2001
WO 023277-01	U2 Packing Leak Scram Discharge Volume Test Volume During Pressure Test	October 27, 2001
CR 00080588	Surface Damage on Temperature Relief Valve and Electromagnetic Relief Valve	October 27, 2001
CR 00080839	Nuclear Regulatory Commission Concerns with D2R17 Undervoltage Tests	October 27, 2001
CR 00081216	Nuclear Oversight Identifies Missed Quality Control Hold Points on 125 Vdc Modification	November 2, 2001
CR 00079004	2-1904-12A Fuel Pool Cooling Filter Inlet Flow Control Valve	October 20, 2001
CR 00079634	Unit 2 1A Main Steam Isolation Valve Actuator Missing J-Box Support Plate	October 21, 2001

1R22 Surveillances

DOS 6600-05	Bus Undervoltage and Emergency Core Cooling System Integrated Functional Test for Unit 2 Diesel Generator	Revision 29

LIST OF DOCUMENTS REVIEWED

20S1 Access Controls For Radiologically Significant Areas

CR # 00076379 and Prompt Investigation	High Rad Door Found in Open Position	September 25, 2001
RP-AA-460	Controls for High and Very High Radiation Areas	Revision 1

20S2 As-Low-As-Is-Reasonably-Achievable (ALARA) Planing and Controls

	D2R17 RWP Report, Dose Trending and Associated ALARA Estimates	October 28, 2001 - November 1, 2001
	Listing of CRs Coded to Radiation Protection Issues	September 15 - October 30, 2001
CR # 00072898	Vacuum Found Uncontrolled Outside of U-3 ALARA Decon Room	August 28, 2001
CR # 00073359	D-1 MTF Vacuum Cleaners	August 27, 2001
CR # 00075121	Pre-NRC Self-Assessment Issues	September 13, 2001
CR # 00080008	Contaminated Anti-C Glove Found Outside the RPA	October 23, 2001
CR # 00080032	RAM Discovered in Trash Container - Vendor Break Area	October 24, 2001
CR # 00080517	Worker Contaminates Face While Welding	October 26, 2001
CR # 0081143	Additional Dose Received on RWP 075, Scope Add for CRDs	October 31, 2001
CR # 00081152	Additional Dose Received on RWP 069, Drywell MSIVs, ERV and TRV	October 31, 2001
CR # 00081165	Additional Dose Received on RWP 697, Drywell Steel Mod	October 31, 2001
CR # 00081193	Identified Deficiencies with HEPA Use in the RPA	October 31, 2001
CR # D2001-01562	Observation Report/Areas for Improvement	March 20, 2001
CR # D2001-03573	Issuance and Control of Vacuum Cleaners in RPAs	July 6, 2001

DRP 6210-17	Issuance and Control of Vacuum Cleaners in Radiologically Posted Areas	Revisions 2 and 3
NOA-DR-01-3Q	Nuclear Oversight Assessment Report	July - September 2001
RP -AA-401, ALARA Work in Progress Review	D2R17 Control Rod Drive Exchange	October 28, 2001
RP -AA-401, ALARA Work in Progress Review	D2R17 Drywell Main Steam Safety, Electromatic, and Target Rock Valve Maintenance	October 29, 2001
RP -AA-401, ALARA Work in Progress Reviews	D2R17 Drywell Steel Modification	October 28 and October 30, 2001
RP-AA-400	ALARA Program	Revision 1
RP-AA-401	Operational ALARA Planning and Controls	Revision 1
RWP # 10000038 and Associated ALARA Plan	D2R17 Scaffolding Activities Transport/Installation (Excluding Drywell)	Revision 2
RWP # 10000062 and Associated ALARA Plan	D2R17 Drywell Scaffolding Activities Including Transport, Installation, and Removal	Revision 1
RWP # 10000064 and Associated ALARA Plan	D2R17 Drywell Nuclear Instrumentation Maintenance Activities	Revision 2
RWP # 10000069 and Associated ALARA Plan	D2R17 Drywell Main Steam Safety, Electromatic, and Target Rock Valve Maintenance	Revision 0
RWP # 10000075 and Associated ALARA Plan	D2R17 Drywell Control Rod Drive System Pull/Put Maintenance Activities	Revision 4
RWP # 10000086 and Associated ALARA Plan	D2R17 Drywell In Service Inspection Activities	Revision 2
RWP # 10000100 and Associated ALARA Plan	D2R17 Reactor Disassembly/Reassembly and Related Activities	Revision 1
RWP # 10000106 and Associated ALARA Plan	D2R17 Turbine Building Valve Maintenance Activities	Revision 1

RWP # 10000541 and Associated ALARA Plan	D2R17 Turbine Building EPU ‘C’ & ‘D’ Heater Shell Replacements	Revision 1
RWP # 10000697 and Associated ALARA Plan	D2R17 Drywell Steel/EPU Modification Activities	Revision 3