October 24, 2000

Mr. Oliver D. Kingsley
President, Nuclear Generation Group
Commonwealth Edison Company
ATTN: Regulatory Services
Executive Towers West III
1400 Opus Place, Suite 500
Downers Grove, IL 60515

SUBJECT: DRESDEN - NRC INSPECTION REPORT 50-237/2000018(DRS); 50-249/2000018(DRS)

Dear Mr. Kingsley:

On September 29, 2000, the NRC completed an inspection at the Dresden Nuclear Generating Station, Units 2 and 3. The enclosed report presents the results of that inspection. The results were discussed on September 29, 2000, with Mr. Swafford and other members of your Dresden staff.

The inspection was an examination of activities conducted under your license as they relate to radiation safety and to compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection consisted of a selective examination of procedures and representative records, observations of activities, facility walkdowns, and interviews with personnel. Specifically, the inspection focused on as-low-as-is-reasonably-achievable (ALARA) planning and radiological work controls for the Unit 3 refueling outage (D3R16). The performance indicator data reported for the public radiation safety cornerstone was also reviewed and verified for accuracy.

Based on the results of this inspection, one issue was identified for failure to ensure that access to a locked high radiation area was properly secured, resulting in a violation of NRC requirements. This issue was evaluated under the risk significance determination process and was determined to be of very low safety significance (Green). The violation was not cited due to its very low safety significance and because the problem was entered into your corrective action program. If you contest the non-cited violation, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the 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 facility.

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

We will gladly discuss any questions you have concerning this inspection.

Sincerely,

/RA/

Gary L. Shear, Chief
Plant Support Branch
Division of Reactor Safety

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

Enclosure: Inspection Report 50-237/2000018(DRS);
50-249/2000018(DRS)

cc w/encl: D. Helwig, Senior Vice President, Nuclear Services
C. Crane, Senior Vice President, Nuclear Operations
H. Stanley, Vice President, Nuclear Operations
R. Krich, Vice President, Regulatory Services
DCD - Licensing
P. Swafford, Site Vice President
R. Fisher, Station Manager
D. Ambler, Regulatory Assurance Manager
M. Aguilar, Assistant Attorney General
State Liaison Officer
Chairman, Illinois Commerce Commission

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos:	50-237; 50-249
License Nos:	DPR-19; DPR-25
Report No:	50-237/2000018(DRS); 50-249/2000018(DRS)
Licensee:	Commonwealth Edison Company
Facility:	Dresden Nuclear Generating Station, Units 2 and 3
Location:	6500 N. Dresden Road Morris, IL 60450
Dates:	September 25 - 29, 2000
Inspectors:	Wayne J. Slawinski, Senior Radiation Specialist David W. Nelson, Radiation Specialist
Approved by:	Gary L. Shear, Chief Plant Support Branch Division of Reactor Safety

NRC's REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) recently revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting and assessing safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

Reactor Safety	Radiation Safety	Safeguards
● Initiating Events	● Occupational	● Physical Protection
● Mitigating Systems	● Public	
● Barrier Integrity		
● Emergency Preparedness		

To monitor these seven cornerstones of safety, the NRC uses two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection findings will be evaluated according to their potential significance for safety, using the Significance Determination Process, and assigned colors of GREEN, WHITE, YELLOW or RED. GREEN findings are indicative of issues that, while they may not be desirable, represent very low safety significance. WHITE findings indicate issues that are of low to moderate safety significance. YELLOW findings are issues that are of substantial safety significance. RED findings represent issues that are of high safety significance with a significant reduction in safety margin.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing varying levels of performance and incremental degradation in safety: GREEN, WHITE, YELLOW, and RED. GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections. WHITE corresponds to performance that may result in increased NRC oversight. YELLOW represents performance that minimally reduces safety margin and requires even more NRC oversight. And RED indicates performance that represents a significant reduction in safety margin but still provides adequate protection to public health and safety.

The assessment process integrates performance indicators and inspection so the agency can reach objective conclusions regarding overall plant performance. The agency will use an Action Matrix to determine in a systematic, predictable manner which regulatory actions should be taken based on a licensee's performance. The NRC's actions in response to the significance (as represented by the color) of issues will be the same for performance indicators as for inspection findings. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, which can include shutting down a plant, as described in the Action Matrix.

More information can be found at: http://www.nrc.gov/NRR/OVERSIGHT/index.html.

SUMMARY OF FINDINGS

IR 50-237/2000018(DRS), 50-249/2000018 (DRS), on 09/25-29/00; Commonwealth Edison Company; Dresden Generating Station, Units 2 and 3. Radiation Safety, Other Activities.

The inspection was conducted by two regional radiation specialists. The inspection identified one green issue and one associated violation which was non-cited. The significance of issues is indicated by their color (green, white, yellow, red) and was determined by the Significance Determination Process.

Cornerstone: Occupational Radiation Safety

- Green. A Non-Cited Violation of Technical Specification 6.8 was identified for failure to ensure that an access gate to a locked high radiation area was properly secured and latched upon egress from the area, as required by station procedure. This finding was determined to be of very low safety significance because no unauthorized entry into the inadequately secured high radiation area occurred and a substantial potential for an overexposure did not exist (Section 20S1.2).

Report Details

Summary of Plant Status: Unit 2 was at full power and Unit 3 was shutdown for a refueling outage (D3R16) during the inspection period.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS1 Work Controls for Radiologically Significant Areas

.1 Plant Walkdowns, Radiological Boundary Verifications and Observations of Radiation Worker Performance

a. Inspection Scope

The inspectors conducted walkdowns of the radiologically controlled area (RCA) to verify the adequacy of radiological boundaries and postings. Specifically, the inspectors walked down several radiologically significant work area boundaries (high and locked high radiation areas) in the Unit 2 and 3 Reactor Buildings including the Unit 3 drywell, and in the Turbine and Radwaste Buildings. In addition, confirmatory radiation measurements were performed to verify that access to these areas and to selected radiation areas were properly posted and controlled in accordance with 10 CFR 20, licensee procedures and Technical Specifications. The inspectors also observed radiation workers performing the activities described in Section 2OS2.2, and evaluated their awareness of radiological work conditions and verified the implementation of radiological controls specified in applicable radiation work permits and as-low-as-is-reasonably-achievable (ALARA) plans.

b. Findings

There were no findings identified.

.2 Review of a High Radiation Area Access Control Incident

a. Inspection Scope

The inspectors reviewed an access control incident that occurred during the refueling outage on September 27, 2000, associated with work in the Unit 3 reactor water cleanup (RWCU) heat exchanger room, an area controlled as a locked high radiation area. Specifically, the inspectors observed the access controls for the heat exchanger room, reviewed the licensee's preliminary assessment of the incident as documented in a condition report (CR), and discussed the incident with the radiation protection (RP) staff. The inspectors verified that the incident was isolated, that the immediate problems were expeditiously corrected, and that the radiological safety significance of the incident was adequately assessed by the licensee.

b. Findings

A contract radiation worker that exited an area with radiation levels greater than 1000 mrem/hour (a locked high radiation area) failed to physically challenge the access gate to the area and ensure that it was locked and properly secured/latched.

A contract worker and a radiation protection technician (RPT) entered the Unit 3 RWCU heat exchanger room to prepare for eddy current testing of the 3A heat exchanger. Radiation levels in the room ranged up to approximately 2000 mrem/hour, and the area was controlled as a contaminated, locked high radiation area. A self-locking, spring loaded gate physically controlled access to the heat exchanger room, to meet Technical Specification requirements and the licensee's high radiation area control procedure for securing the area.

Access to the area was successfully completed in accordance with procedure on September 27, 2000, work was initiated and the RPT left the area momentarily, leaving the contract worker in the room to continue. Shortly thereafter, the contract worker vacated the room and sought RPT assistance because he had dropped his security badge on the floor and wanted it surveyed before work progressed. Upon egress from the room, the self-locking mechanism on the gate did not latch because an extension cord prevented the gate from closing completely. However, this problem was not recognized since the worker failed to physically challenge the access gate to ensure it was latched and secured. The worker remained within the contaminated area boundary, established by rope barrier, just outside the gate, to await RPT assistance which was summoned by another worker designated as the outside person for the job. The worker stood in the immediate area and maintained constant visual surveillance of the entry gate until the RPT arrived several minutes later. The RPT subsequently noticed that the gate was unlatched, unbeknownst to the contract worker. Appropriate actions were taken to correct the problem, the job was stopped, radiation protection (RP) management was notified and a CR was written.

The licensee interviewed the involved workers and verified that no entry was made into the room while the worker awaited assistance. The interviews also revealed that the worker was cognizant of the security and access control requirements for locked high radiation areas, and was capable of preventing unauthorized entry as required by Technical Specifications. The contract worker, however, was not designated the Access Control Guard for the area as required by the licensee's high radiation area control procedure, even though the worker could have fulfilled those responsibilities had he known the gate was not secured. The inspectors concluded that it was fortuitous that the worker remained in the area, maintained constant surveillance of the gate, and consequently was capable of preventing unauthorized entry.

Technical Specification (TS) 6.8.A requires, in part, that written procedures be established and implemented covering the activities referenced in Appendix A of Regulatory Guide (RG) 1.33, Revision 2, February 1978. Appendix A of RG 1.33 specifies that radiation protection procedures for access control to radiation areas be implemented. Procedure RP-AA-460 (Revision 1), "Controls for High and Very High Radiation Areas," was developed to meet this requirement.

Items 4.2.3 and 5.4.1(6) of RP-AA-460 require that an individual exiting a locked high radiation area ensure that the access is secured/locked by physically challenging the access to ensure closure and proper latching. Also, items 4.2.5, 5.4.2(4) and 5.4.2(5) require that an individual be designated as an Access Control Guard when a high radiation lock is defeated, and that the designated individual acknowledge those responsibilities by completing Attachment 3, "Responsibilities for the Access Control Guard."

The failure to physically challenge the gate to ensure closure and proper latching, and the failure to designate an access control guard and complete appropriate procedure required documentation are examples of a violation of TS 6.8.A. This violation is considered a Non-Cited Violation (50-237/2000018-01; 50-249/2000018-01), consistent with Section VI.A of the NRC Enforcement Policy. This problem was entered into the licensee's corrective action program as CR No. D2000-05372.

The inspectors evaluated the risk significance of this issue using the Occupational Radiation Safety Significance Determination Process (Appendix C to NRC Manual Chapter 0609, "Significance Determination Process"), and concluded that there was not a substantial potential for an overexposure, nor was the licensee's ability to assess worker dose compromised. Therefore, the issue was determined to be of very low safety significance (Green). Although the unlatched gate reduced the barriers to prevent an unintended exposure, the area was properly posted and direct surveillance over access was maintained. No unauthorized entry was made into the area.

2OS2 As-Low-As-Is-Reasonably-Achievable (ALARA) Planning and Controls

.1 ALARA Planning

a. Inspection Scope

The inspectors reviewed the station's collective exposure histories for 1997 to present, current exposure trends for the ongoing Unit 3 refueling outage (U3R16), and planned and completed radiological work activities for the outage to assess current performance and exposure challenges. The inspectors used the exposure data and the station's three-year rolling average exposure information and compared it with national boiling water reactor industry data. The inspectors also assessed the licensee's processes for estimating job dose and the effectiveness of exposure tracking for the outage.

b. Findings

There were no findings identified.

.2 Job Site Inspections and ALARA Controls

a. Inspection Scope

The inspectors selected the following high exposure or high radiation area active or recently completed job activities, and evaluated the licensee's use of ALARA controls:

- Refueling Floor Activities;
- Reactor Water Cleanup Valve Repacking (Drywell);
- Main Steam Line Safety Relief Valve Reassembly (Drywell);
- Moisture Separator Modification; and
- Turbine Building Valve Maintenance.

The inspectors surveyed work areas to verify that radiation levels were consistent with the licensee's survey data, and verified that low dose areas were designated and appropriately used by workers. The inspectors evaluated the licensee's engineering controls at selected locations and verified that the controls were consistent with those specified in the ALARA plans. The inspectors observed and questioned workers at each job location to determine that they had adequate knowledge of radiological work conditions and exposure controls.

b. Findings

There were no findings identified.

.3 Source Term Reduction and Control

a. Inspection Scope

The inspectors reviewed the status of the licensee's source term reduction program, focusing on those initiatives taken for the outage which included hydrolazing and other decontamination work, and installation of permanent and temporary shielding. The inspectors also evaluated other ongoing source term reduction strategies such as water chemistry control and hot spot reduction initiatives, and verified that a viable source term control program was in place. Noble metal injection was initiated for Unit 3 during the outage and currently both operating units utilized hydrogen injection, depleted zinc oxide addition and the noble metals process. The inspectors also performed surveys within the radiologically controlled area to verify the accuracy of the licensee's records of identified hot spots and to identify any other significant unidentified sources of radiation exposure.

b. Findings

There were no findings identified.

.4 Radiological Work Planning

a. Inspection Scope

The inspectors selected the following outage job activities that were estimated to exceed 5 person-rem or were conducted in high radiation areas, and assessed the adequacy of the radiological controls and work planning:

- Drywell Equipment/Floor Drain Sump System Maintenance Activities;
- Drywell Control Rod Drive (CRD) System Pull/Put Maintenance Activities;
- Drywell In Service (ISI) Inspections;

- Moisture Separator Modification; and
- Reactor Disassembly/Reassembly and Related Activities.

For each job activity, the inspectors reviewed ALARA evaluations and associated dose mitigation techniques, and exposure estimates and performance. The inspectors also assessed the integration of ALARA requirements into work packages, and attended pre-job briefings to evaluate the licensee's communication of work plans. The inspectors verified that the licensee's dose estimates for the outage were reasonably accurate, and confirmed that no outage jobs greater than 5 person rem exceeded respective dose estimates by more than 50%.

b. Findings

There were no findings identified.

.5 Verification of Exposure Estimate Goals and Exposure Tracking System

a. Inspection Scope

The inspectors reviewed the methodology and assumptions used for the U3R16 exposure estimates and exposure goals, and compared job activity dose rate and man-hour estimates for accuracy. The inspectors verified that job dose history files and dose reductions anticipated through lessons learned were appropriately used to forecast outage doses. The inspectors also reviewed the licensee's exposure tracking system to determine if the level of exposure tracking detail, exposure report timeliness and exposure report distribution was sufficient to support control of collective exposures.

b. Findings

There were no findings identified.

.6 Identification and Resolution of Problems

a. Inspection Scope

The inspectors evaluated the effectiveness of the self-assessment process to identify, characterize and prioritize problems, and verified that previous outage related ALARA issues were adequately addressed and resulted in improved dose performance. The inspectors reviewed Nuclear Oversight (NO) U3R16 field observations and weekly reports, and outage generated condition reports to assess the adequacy of the licensee's ability to identify problems.

b. Findings

There were no findings identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification

a. Inspection Scope

The inspectors verified that the licensee accurately assessed and reported the PI for the public radiation safety cornerstone, consistent with the criteria specified in Nuclear Energy Institute (NEI) 99-02, Revision 0, "Regulatory Assessment Performance Indicator Guideline." Specifically, the inspectors selected reviewed gaseous effluent release data and associated offsite dose information for January through August 2000, and discussed gaseous effluent release data collection and calculation methods with the health physicist responsible for that work. Also, the inspectors reviewed the licensee's assessments and CR database to determine if problems with the collection, assessment or reporting of PI data occurred.

b. Findings

There were no findings identified.

40A6 Management Meetings

Exit Meeting Summary

The inspectors presented the inspection results to Mr. Swafford and other members of licensee management and staff at the conclusion of the site inspection on September 29, 2000. The inspectors further discussed the inspection findings associated with the high radiation access control problem with the station Radiation Protection Manager on October 16, 2000. The licensee acknowledged the information and findings presented. No proprietary information was identified by the licensee.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

D. Ambler, Regulatory Assurance Manager
P. Boyle, Chemistry Manager
S. Butterfield, NRC Coordinator
J. Estes, Radiation Protection Engineering Supervisor (LaSalle)
R. Fisher, Station Manager
J. Harlach, Station Safety Advisor
N. Hightower, Superintendent, Corporate Radiation Protection
M. Karchnsky, Operations
W. Lipscomb, Training Manager
J. Moser, Radiation Protection Manager
J. Nalewajha, Nuclear Oversight
D. Nestle, Health Physicist
R. Norris, Radiation Protection Operations Supervisor
L. Oshier, Radiation Protection Technical Support Supervisor
M. Pavey, Nuclear Oversight
B. Ryback, Regulatory Assurance
P. Swafford, Site Vice President

NRC

B. Dixon, Resident Inspector
D. Smith, Senior Resident Inspector

ITEMS OPENED, CLOSED AND DISCUSSED

Opened and Closed

50-237;249/2000018-01	NCV	Failure to verify that a locked high radiation area access gate was locked and physically secured/latched, and that an access control guard was properly designated.

Discussed

None

LIST OF ACRONYMS USED

ALARA	As-Low-As-Is-Reasonably-Achievable
CFR	Code of Federal Regulations
CR	Condition Report
NCV	Non-Cited Violation
N.O.	Nuclear Oversight
NRC	Nuclear Regulatory Commission
PDR	Public Document Room
RCA	Radiologically Controlled Area
RP	Radiation Protection
RPT	Radiation Protection Technician
RWCU	Reactor Water Cleanup
RWP	Radiation Work Permit
U3R16	Unit-3 16th Refueling Outage

LIST OF BASELINE INSPECTION PROCEDURES PERFORMED

The following inspectable-area procedures were used to perform this inspection. Documented findings are contained in the body of the report.

Inspection Procedures		Report Section
No. 71121.01	Access Control to Radiologically Significant Areas	2OS1
No. 71121.02	ALARA Planning and Controls	2OS2
No. 71151	Performance Indicator Verification	4OA1

PARTIAL LIST OF DOCUMENTS REVIEWED

The following documents were selected and reviewed by the inspectors to accomplish the objectives and scope of the inspection and to support any findings.

Station Procedures

DAP 12-09 (Revision 17)	Dresden Station ALARA Program
RP-AA-250 (Revision 1)	External Dose Assessments from Contamination
RP-AA-351 (Revision 1)	Decontamination of Personnel
RP-AA-350 (Revision 0)	Assessment of Radiologically Contaminated Personnel
DRP 6020-02 (Revision 5)	Radiological Air Sampling Program
RP-AA-460 (Revision 1)	Controls for High and Very High Radiation Areas

RWPs with associated ALARA Reviews

RWP # 007108 (Rev 0)	D3R16 Drywell Nuclear Instrumentation Maintenance Activities
RWP # 007110 (Rev 0)	D3R16 Drywell Equipment/Floor Drain Sump System Maintenance
RWP # 007302 (Rev 0)	D3R16 Turbine Building Valve Maintenance Activities
RWP # 007119 (Rev 0)	D3R16 Drywell Control Rod (CRD) System Pull/Put Maintenance Activities
RWP # 007123 (Rev0)	D3R16 Drywell In Service Inspection (ISI) Activities
RWP # 007209 (Rev 0)	Reactor Disassembly/Reassembly and Related Activities
RWP # 007313 (Rev 0)	D3R16 Moisture Separator Modification

Nuclear Oversight (NO) Assessments, Weekly Reports and Field Observations

Nuclear Oversight Report NOA-12-99-OP10, “D2R16 Work Practices,” November 12, 1999
Nuclear Oversight Weekly Reports, September 15, 2000, and September 22, 2000
Nuclear Oversight Field Observation Reports: ATIs 30709-21, 34889-11, 34889-42, 34889-41, 34889-60, 34889-62

Radiation Protection Focus Area Self-Assessments and Readiness Assessments

“Communications/Turnovers,” January 24 - February 2, 2000
“Station ALARA Committee Effectiveness,” February 14 - February 17, 2000
“Cross-Functional ALARA Program,” May 22 - May 31, 2000
“Readiness Assessment for NRC Inspection Prior to D3R16," September 19, 2000

Condition Reports

D2000-04943, D2000-05000, D2000-05012, D2000-05016, D2000-05018, D2000-05084, D2000-05138, D2000-05247, D2000-05249, D2000-05297, D2000-05354, D2000-05364, D2000-05421, D2000-05430, D2000-05441, D2000-05372

Other Documents

Daily Outage Exposure Reports for September 25, 26, 27, 28 and 29, 2000
Personnel Contamination Log (Attachment 2) entries for September 17 - September 29, 2000
Personnel Contamination Data Sheets (Attachment 3), PCE Numbers 00-23 and 00-22
Action Item Lists for Cross-Functional ALARA Self-Assessment and INPO RP Outage Preparation/ALARA Improvement Plan