August 8, 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: QUAD CITIES - NRC INSPECTION REPORT 50-254/2000010(DRS); 50-265/2000010(DRS)

Dear Mr. Kingsley:

On July 14, 2000, the NRC completed a baseline inspection at your Quad Cities Nuclear Power Station, Units 1 and 2. The results of this inspection were discussed on July 14, 2000, with Mr. J. Dimmette, Jr., and other members of your staff. The enclosed report presents the results of that inspection.

The inspection was an examination of activities conducted under your license as they relate to radiation protection 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, and interviews with personnel. Specifically, this inspection focused on occupational radiation safety, the radiological controls implemented for access to radiologically significant areas, and the calibration, operability, and testing of radiation monitoring instrumentation. Also, your performance indicator data collection and reporting process for the occupational radiation safety cornerstone was reviewed, along with a verification of selected performance indicators for the occupational radiation safety and reactor safety cornerstones.

Based on the results of this inspection, no findings were identified.

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. 50-254; 50-265
License Nos. DPR-29; DPR-30

Enclosure: Inspection Report 50-254/2000010(DRS);
50-265/2000010(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
J. Dimmette, Jr., Site Vice President
G. Barnes, Quad Cities Station Manager
C. Peterson, Regulatory Affairs Manager
M. Aguilar, Assistant Attorney General
State Liaison Officer, State of Illinois
State Liaison Officer, State of Iowa
Chairman, Illinois Commerce Commission
W. Leech, Manager of Nuclear
MidAmerican Energy Company
W. Curtis, FEMA, Region V
E. Jenkins, FEMA, Region VII

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M. Aguilar, Assistant Attorney General
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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos:	50-254; 50-265
License Nos:	DPR-29; DPR-30
Report No:	50-254/2000010(DRS); 50-265/2000010(DRS)
Licensee:	Commonwealth Edison Company
Facility:	Quad Cities Nuclear Power Station, Units 1 and 2
Location:	22710 206th Avenue North Cordova, IL 61242
Dates:	July 10-14, 2000
Inspector:	J. E. House Senior 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 50-254/2000010(DRS); IR 50-265/2000010(DRS), on 07/10–07/14/2000; Commonwealth Edison Company, Quad Cities Nuclear Power Station, Units 1 and 2. The inspection covered the following baseline activities: the occupational radiation safety program and performance indicators for the occupational radiation safety cornerstone and reactor coolant activity for the reactor safety cornerstone.

The inspection was conducted by a regional senior radiation specialist. This inspection identified no findings.

Report Details

Summary of Plant Status: The plant was at 100 percent power throughout the inspection period.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS1 Access Controls for Radiologically Significant Areas

.1 Plant Walkdowns, Radiological Boundary Verifications and Radiation Work Permit Reviews

a. Inspection Scope

The inspector conducted walkdowns of the radiologically protected area (RPA) to verify the adequacy of radiological area boundaries and postings including high and locked high radiation areas in the Unit 1 and 2 Reactor Buildings, Turbine and Radwaste Buildings. Confirmatory radiation measurements were taken to verify that these areas and selected radiation areas were properly posted and controlled in accordance with 10 CFR 20, licensee procedures and Technical Specifications. Selected radiation work permits (RWPs) were reviewed for protective clothing requirements and alarm setpoints.

b. Findings

There were no findings identified.

.2 Review of Work in a Locked High Radiation Area

a. Inspection Scope

The inspector reviewed as low as is reasonably achievable (ALARA) plans, attended a pre-job briefing, verified electronic dosimeter alarm setpoints and observed work activities in a locked high radiation area to verify the adequacy of surveys and radiological controls. Radiation work permit (RWP) No. 3058, “Entry Into Locked High Radiation Areas,” was reviewed.

b. Findings

There were no findings identified.

.3 Problem Identification and Resolution

a. Inspection Scope

The inspector reviewed the licensee’s self-assessments, field observation reports (Scorecard and Tour Data), the problem identification form (PIF) database and selected PIFs related to radiation worker performance, work practices and high radiation area

access controls covering the previous six months. The inspector evaluated the effectiveness of the radiation protection self-assessment process to identify problems and trends, and to implement corrective actions.

b. Findings

There were no findings identified.

.4 Control of Non-Fuel Materials Stored in the Spent Fuel Pools

a. Inspection Scope

The inspector reviewed the licensee's programmatic controls and current practices for the control of highly activated or contaminated materials (non-fuel) stored within the spent fuel or other storage pools. The following documents were reviewed:

- Focus Area Self Assessment AD-AA-103, Revision 1, November 16, 1999, "Storage of Material in the Unit 1 & 2 Fuel Pools"

- QCFHP 0500-01 Unit 1(2), Revision 3, "Spent Fuel Storage Pool Inventory Control and Audit"

The controlling procedure and a self-assessment were evaluated; radiation protection and reactor services staff were interviewed; and a walk-down of the refuel floor was conducted in order to verify that controls for underwater storage of non-fuel materials were adequate.

b. Findings

There were no findings identified.

2OS3 Radiation Monitoring Instrumentation

.1 Source Tests and Calibration of Radiological Instrumentation

a. Inspection Scope

The inspector verified the accuracy and operability of radiation monitoring instruments used for the protection of occupational workers. Instrumentation included area radiation monitors (ARMs), continuous air monitors (CAMs), portable survey meters, whole body counter, portal monitors, electronic dosimeters and tool monitors.

The Updated Final Safety Analysis Report (UFSAR) was reviewed to identify those area radiation monitors (ARMs) that were associated with transient high and very high radiation areas. These monitors included, but were not limited to, the following:

- Primary Containment Monitors
- Drywell Radiation Monitors
- Reactor Building Crane Monitors

- Radwaste Building Monitors
- Transverse Incore Probe (TIP) Drive Machinery and TIP Room Monitors
- Control Rod Drive Hydraulic Control Units Monitors
- Cleanup Pump and Instrument Rack Area Monitors
- Standby Gas Treatment Area Monitors
- Fuel Pool Pump and Heat Exchanger Area Monitor
- Torus Area Monitors
- Reactor Core Isolation Cooling Room Monitors

Continuous air monitors (CAMs) were identified in the following locations:

- Reactor Building Vents
- Turbine Building Vents
- Off-gas Fuel Building Vent
- Drywell

The inspector verified that ARM locations were as described in the UFSAR and reviewed the most recent calibrations for selected ARMs and CAMs. Current calibration records (1999/2000) were reviewed for the whole body counters, selected personnel contamination monitors (PCMs), selected portable radiation survey instruments, selected electronic dosimeters and tool monitors. The inspector observed source checks and the calibration process for portable survey instruments to verify compliance with procedures. The following calibration procedures were reviewed:

- QIP 1800-01, Revision 7, “ARM Calibration”
- QCIPM 1800-04, Unit 1(2), Revision 2 “NUMAC ARM Calibration”
- QCIPM 1800-05, Unit 1(2), Revision 2, “Eberline ARM Calibration”
- QCCP 1200-04, Unit 1(2), Revision 3, “NMC Continuous Air Monitor Calibration”
- QCIS 2400-01, Unit 1(2), Revision 8, “Drywell Radiation Monitor Calibration and Function Test”
- QCIS 2400-02, Unit 1(2), Revision 3, “Drywell Radiation Monitor Function Test”
- QCRP 5824-08, Unit 1(2), Revision 5, “Operation and Calibration of the Merlin Gerin CDM-21 Calibrator”
- QCRP 5822-10, Unit 1(2), Revision 8, “The Eberline PM-7 Portal Monitor”
- QCRP-5823-05, Unit 1(2), Revision 8, “RO-7 Survey Meter”
- QCRP 5823-16, Unit 1(2), Revision 7, “Bicron RSO-50E Survey Meter”
- RPQC 0700-01, Revision 0, “Operation and Calibration of the Ram Gam 1"

b. Findings

There were no findings identified.

.2 Problem Identification and Resolution

a. Inspection Scope

The inspector reviewed the licensee’s self-assessments, audits, and problem identification forms (PIFs) for the previous 12 months covering radiological incidents involving personnel contamination events and radiological instrumentation. There were

no radiation protection department licensee event reports, or internal exposures in excess 100 milli-rem committed effective dose equivalent.

b. Findings

There were no findings identified.

4. OTHER ACTIVITIES (OA)

4OA1 Performance Indicator Verification

.1 Occupational Exposure Control Effectiveness

a. Inspection Scope

The inspector verified the licensee's performance indicator (PI) for the occupational radiation safety cornerstone. The data review focused on selected PIFs and RPA exit exposure data for the previous 12 months. During plant walkdowns, the inspector also verified that those areas that met the definition of locked high radiation areas were adequately secured.

b. Findings

There were no findings identified.

.2 RCS Specific Activity

a. Inspection Scope

The inspector observed a chemistry technician obtain, prepare for analysis and analyze a reactor coolant sample. Following the analysis, the gamma analysis data was also evaluated. The inspector also reviewed the dose equivalent iodine (DEI) concentrations in reactor coolant for the previous 12 months to verify the reactor coolant system activity performance indicator.

b. Findings

There were no findings identified.

4OA5 Performance Indicator Data Collecting and Reporting Process Review (TI 2515/144)

a. Inspection Scope

The inspector evaluated the licensee's performance indicator (PI) data collection and reporting process to verify that the licensee had appropriately implemented the NRC/Industry guidance, as documented in Nuclear Energy Institute (NEI) 99-02, Revision 0, "Regulatory Assessment Performance Indicator Guide." The evaluation consisted of interviews with licensee staff members responsible for data acquisition, verification and reporting. In addition, the following procedures were reviewed:

- RS-AA-122, Revision 2: “Regulatory Assurance Performance Indicator Monthly Review Process”

- RS-AA-122-115, Revision 1: “Performance Indicator-Occupational Exposure Control Effectiveness”

- RS-AA-123, Revision 1: “Performance Indicator Data Discrepancy and Issue Resolution Process”

b. Findings

There were no findings identified.

4OA6 Management Meetings

.1 Exit Meeting Summary

The inspector presented the inspection results to Mr. J. Dimmette, Jr., and other members of licensee management and staff at the conclusion of the inspection on July 14, 2000. The licensee acknowledged the information presented and did not identify any information discussed as proprietary.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

E. Anderson, Radiation Protection Manager
D. Barker, Radiation Protection
W. Beck, Executive Assistant
P. Behrens, Chemistry Manager
R. Bull, Fuel Handling Supervisor
R. Chrzanowski, Nuclear Oversight Manager
J. Dimmette, Jr., Site Vice President
T. Fuhs, Regulatory Assurance
D. Harmon, Systems Engineering
R. Hebeler, Chemistry Supervisor
D. Kallenbach, Radiation Protection
M. McDowell, Operations Manager
C. Peterson, Regulatory Assurance Manager
G. Powell, Radiation Protection Supervisor
J. Siper, Director of Licensing and Compliance
J. Sirovy, Nuclear Oversight Staff
R. Svaleson, Shift Operations Supervisor
J. Woolridge, Radiation Protection

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Closed

None

Discussed

None

LIST OF ACRONYMS USED

ALARA	As Low As Is Reasonably Achievable
ARM	Area Radiation Monitor
CAM	Continuous Air Monitor
CFR	Code of Federal Regulations
DRS	Division of Reactor Safety
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
OA	Other Activities
PI	Performance Indicator
PIF	Problem Identification Form
RP	Radiation Protection
RPA	Radiologically Protected Area
RWP	Radiation Work Permit
TI	Temporary Instruction

PARTIAL LIST OF DOCUMENTS REVIEWED

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

Self-Assessments

Focus Area Self-Assessment AD-AA-103, Revision 1, November 16, 1999, Storage of Material in the Unit 1& 2 Fuel Pools
Radiation Protection Department Focus Area Self-Assessment of Area Radiation Monitors and Continuous Air Monitors
Radiation Protection Department Focus Area Self-Assessment of Radiation Monitoring Instrumentation
Radiation Protection Department Focus Area Self-Assessment of Performance Indicators
Radiation Protection Department Focus Area Self-Assessment of Access Control to Radiologically Significant Areas

Problem Identification Forms
Q2000-02522, Q2000-02176, Q2000-02413, Q2000-2448, Q2000-00499, Q2000-00626, Q2000-00639, Q2000-00653, Q2000-00906, Q2000-01096, Q2000-01201,Q2000-01349, Q2000-01763, Q2000-01963

Procedures

QCFHP 0500-01 Unit 1(2) Revision 3, “Spent Fuel Storage Pool Inventory Control and Audit”
QIP 1800-01, Revision 7, “ARM Calibration”
QCIPM 1800-04 Unit 1(2), Revision 2, “NUMAC ARM Calibration”
QCIPM 1800-05 Unit 1(2), Revision 2, “Eberline ARM Calibration”
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QCRP 5823-16 Unit 1(2), Revision 7, “Bicron RSO-50E Survey Meter”
RPQC 0700-01, Revision 0, “Operation and Calibration of the Ram Gam 1"
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RS-AA-122-115, Revision 1, “Performance Indicator-Occupational Exposure Control Effectiveness”
RS-AA-123, Revision 1, “Performance Indicator Data Discrepancy and Issue Resolution Process”

Radiation Work Permits

RWP No. 3058, Entry Into Locked High Radiation Areas
RWP No. 0002, General Tours

Miscellaneous

Selected radiation detection instrument calibration records