February 28, 2001

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 NUCLEAR POWER STATION - NRC INSPECTION REPORT 50-254/01-02(DRP), 50-265/01-02(DRP)

Dear Mr. Kingsley:

On February 14, 2001, the NRC completed an inspection at your Quad Cities Units 1 and 2 reactor facilities. The enclosed report documents the inspection findings which were discussed on February 14, 2001, with Mr. Tulon and other members of your staff.

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

Based on the results of this inspection, the NRC did not identify any issues which were categorized as being risk significant.

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).

Sincerely,

/RA/

Mark A. Ring, Chief
Reactor Projects Branch 1

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

Enclosure: Inspection Report 50-254/01-02(DRP), 50-265/01-02(DRP)

See Attached Distribution

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T. J. Tulon, Site Vice President
G. Barnes, Quad Cities Station Manager
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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:	50-254/01-02(DRP), 50-265/01-02(DRP)
Licensee:	Commonwealth Edison Company (ComEd)
Facility:	Quad Cities Nuclear Power Station, Units 1 and 2
Location:	22710 206th Avenue North Cordova, IL 61242
Dates:	January 1 through February 14, 2001
Inspectors:	C. Miller, Senior Resident Inspector J. Adams, Resident Inspector
Approved by:	Mark Ring, Chief Reactor Projects Branch 1 Division of Reactor Projects

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 05000254-01-02, IR 05000265-01-02, on 01/01-02/14/2001; Commonwealth Edison Company; Quad Cities Nuclear Power Station; Units 1 & 2. Resident Inspector Report.

The inspection was conducted by the resident inspectors. The significance of issues is indicated by their color (GREEN, WHITE, YELLOW, RED) and was determined by the Significance Determination Process. Based on the results of this inspection, there were no significant findings.

Report Details

1. REACTOR SAFETY

Plant Status

Operators maintained Units 1 and 2 at or near full power operations during the period, except for minor power decreases for turbine testing and/or control rod positioning.

1R04 Equipment Alignments (71111.04)

a. Inspection Scope

The inspectors verified the system alignments of the accessible portions of the listed systems. During the walkdowns, the inspectors verified the system lineup and system operating parameters (i.e., temperature, pressure, flow, etc.). In addition, the inspectors reviewed design and licensing information and discussed system performance with licensee personnel. The inspectors verified the alignments of the following risk important systems related to the Mitigating Systems Cornerstone while the alternate systems were not available to perform their safety functions:

- Unit 2 high pressure coolant injection and the safe shutdown makeup systems during the Unit 1 reactor core isolation cooling system work window on January 9, and

- Unit 2 core spray system during the unavailability of the low pressure coolant injection mode of operation of the residual heat removal system on January 23.

b. Issues and Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

.1 Fire Protection Walkdowns

a. Inspection Scope

The inspectors conducted fire protection walkdowns of the Unit ½ diesel generator and day tank room (fire zone 9.3), Unit 1 high pressure coolant injection pump room and high pressure coolant injection access tunnel (fire zone 11.1.3), Unit 2 high pressure coolant injection room (fire zone 11.1.4), and Unit 2B core spray room (fire zone 11.3.1) related to the Mitigating Systems Cornerstone. The inspectors verified the proper control of transient combustibles and ignition sources, the material condition of fire detection and fire suppression systems, the operational lineup of fire detection and fire suppression systems, the maintenance of fire protection equipment, and the material condition and operational status of fire barriers. The inspectors discussed issues associated with the

fire zones with the fire marshal, fire protection engineer, and licensee management. The inspectors reviewed the following documents:

- Quad Cities Units 1 and 2 Updated Fire Hazards Analysis, Section 9.3, "Unit ½ Diesel Generator Room," Revision 12;
- Quad Cities Units 1 and 2 Updated Fire Hazards Analysis, Section 11.1.3, "Unit 1 High Pressure Coolant Injection Pump Room," Revision 12;
- Quad Cities Units 1 and 2 Updated Fire Hazards Analysis, Section 11.1.4, "Unit 2 High Pressure Coolant Injection Pump Room," Revision 12;
- Quad Cities Units 1 and 2 Updated Fire Hazards Analysis, Section 11.3.1, "Unit 2 Southwest Corner Room," Revision 12;
- Site Engineering Evaluation Form SESR 4-1872, CO_2 Discharge Tests for the ½, 1, 2 Diesel Generator Rooms, September 7, 1994;
- Condition Reports Q2000-03283 and Q2001-00041; and
- Action Request Number 990118811.

b. Issues and Findings

No findings of significance were identified.

.2 Fire Drill Observation

a. Inspection Scope

The inspectors observed and evaluated the station's performance of an unannounced fire drill. The inspectors discussed performance criteria with the fire marshal.

b. Issues and Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation (71111.12)

a. Inspection Scope

The inspectors reviewed the licensee's implementation of the maintenance rule requirements, including a review of scoping, goal setting, performance monitoring, short-term and long-term corrective actions, and current equipment performance status.

The inspectors reviewed the following condition reports for proper maintenance rule classifications:

Initiating Events Cornerstone

- Units 1 and 2 Flood Protection Equipment Condition Reports Q2000-00043, Q2000-00046, and Q2000-00566;

Mitigating Systems Cornerstone

- Units 1 and 2 Battery Room Ventilation Condition Reports Q2000-00483, Q2000-02525, and Q2000-02863;
- Unit 2 Control Rod Drive Condition Reports Q2000-04339 and Q2000-04340;
- Unit 1 Feedwater Level Control Condition Reports Q2000-00973, Q2000-03840, and Q2000-04220;
- Unit 1 Core Spray Condition Reports Q2000-03020, Q2000-03578, and Q2000-03848;

Barrier Systems Cornerstone

- Unit 1 Primary Containment Condition Reports Q2000-03448, Q2000-03648, Q2000-03774, Q2000-03762,and Q2000-03848.

b. Issues and Findings

No findings of significance were identified.

1R13 Maintenance Risk and Emergent Work (71111.13)

a. Inspection Scope

The inspectors reviewed the licensee's evaluation of plant risk and equipment configuration associated with the performance of emergent and planned maintenance activities on the following mitigating systems:

- Unit 2 reactor core isolation cooling system work performed on January 8;
- Unit 1 low pressure coolant injection logic testing performed on January 10;
- Unit 1 station blackout diesel generator emergent work to repair accessory drive performed on January 12; and
- Unit 2 "B" train of residual heat removal and residual heat removal service water work performed on February 6.

The inspectors observed the licensee's maintenance planning, control of troubleshooting, and corrective maintenance activities. The inspectors discussed the associated maintenance activities with mechanical maintenance, work planners, system engineers, and station management.

b. Issues and Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed the following operability evaluations and condition reports associated with “B” train of control room ventilation and flood protection measures:

- Operability Determination for Condition Report Q2001-00234, the failure of control room emergency air filtration unit to meet Technical Specification flow criteria;
- Condition Report Q2001-00234, “Low Flow Control Room ‘B’ Train HVAC [Heating, Ventilation, and Air Conditioning] on Initial Readings;”
- Operability Determination for Condition Report Q2001-00190, an identified weakness in the external flood response procedure; and
- Condition Report Q2001-00190, “Weakness in External Flood Response Procedure.”

The inspectors also discussed the operability issues with engineering personnel.

b. Issues and Findings

No findings of significance were identified.

1R19 Post Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed the work requests (WR) and the post maintenance testing procedures associated with the Mitigating Systems Cornerstone activity listed below. The inspectors verified that the test procedure demonstrated proper operation of the component after completion of the maintenance activity.

- Unit 1 - WR 990204232, Core Spray Relay 1-1430-310 Replacement; and
- Unit 1 - WR 990244024, Noise Identification and Repair of the Unit 1 Station Blackout Diesel Generator.

b. Issues and Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed the surveillance test results from the Quad Cities Operating Surveillance (QCOS) tests listed below to ensure that Technical Specifications requirements were satisfied. The inspectors reviewed or observed the performance of the following surveillance test procedures in the Mitigating Systems Cornerstone:

- QCOS 1000-31, “Unit 1 ‘A’ Loop LPCI [Low Pressure Coolant Injection] and Containment Cooling Modes of RHR [Residual Heat Removal] Non-Outage Logic Test,” Revision 6;
- QCOS 1000-43, “Unit 2 ‘A’ Loop LPCI and Containment Cooling Modes of RHR Non-Outage Logic Test,” Revision 3;
- QCOS 2300-09, “HPCI Vent Verification,” Revision 11;
- QCOS 6600-20, “Unit 1 Diesel Generator Endurance/Margin and Full Load Reject/Hot Restart Test,” Revision 22;
- QCOS 6620-10, “SBO [Station Blackout] Diesel Generator 1 Sesquiannual Endurance/Margin and Full Load Reject Test,” Revision 7; and
- QCOS 6700-01, “MCC [Motor Control Center]18/19-5 Auto-Transfer Logic Operability Surveillance,” Revision 2.

b. Issues and Findings

No findings of significance were identified.

3. SAFEGUARDS

3PP4 Security Plan Changes (71130.04)

a. Inspection Scope

The inspector reviewed Revisions 50 and 51 to the Quad Cities Nuclear Power Station Security Plan to verify that the changes did not decrease the effectiveness of the submitted documents. The referenced revisions were submitted in accordance with regulatory requirements by licensee letters dated January 2, 2001 (Revision 50) and January 3, 2001 (Revision 51).

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES (OA)

4OA1 Performance Indicator Verification

a. Inspection Scope

The inspectors reviewed licensee event reports (LERs) and other event reports provided by the licensee since the last safety system functional failure performance indicator verification inspection. Event dates from April 1999 through December 2000 were reviewed.

b. Findings

Inspectors reviewed several reports for systems which were declared inoperable because Technical Specifications requirements were not met. In four of these reports,

inspectors could not verify the licensee's determination that the failure was not a safety system functional failure. The licensee did not classify the following events as safety system functional failures because of a determination that the safety function was met:

LER Number	Event Date	Description
50-265/2000002	2/23/2000	Unit 2 Emergency Diesel Generator Vent Fan Switch Mispositioned,
50-265/2000003	3/3/2000	Inoperable Intermediate Range Monitors,
50-254/2000007(retracted)	11/27/2000	Safe Shutdown Makeup Pump Inoperable, and
Event 37636 (retracted)	12/27/2000	Unit 2 High Pressure Coolant Injection Inoperable Due to an Inadequate Fill and Vent

The inspectors continued the inspection into the next inspection period in order to review additional data to be supplied by the licensee and to be reviewed with assistance from the Office of Nuclear Reactor Regulation (NRR) and regional inspectors. The resolution of this item is pending a response from the NRR Inspection Program Branch, Region III Division of Reactor Safety, and the licensee. It is identified as **Unresolved Item (URI) 50-254/01-02-01;50-265/01-02-01.**

4OA3 Event Follow-up (71153)

.1 Review of Licensee Event Reports

a. Inspection Scope

The inspectors reviewed licensee event reports using Inspection Procedure 71153. The licensee's root cause reports and corrective actions for these events were included in the review.

b. Observations and Findings

(Closed) Licensee Event Report 50-254/00003-00, and 50-254/00003-01: High Pressure Coolant Injection Subsystem Auxiliary Oil Pump Failure to Continue Running. The risk from internal events for this condition was determined to be very low (GREEN) in Inspection Report 50-254/00-03; 50-265/00-03. The effect on risk due to external events, specifically fires, was determined to be potentially significant during a preliminary Significance Determination Process review. However, this issue was also the substantial contributor to a YELLOW high pressure coolant injection unavailability performance indicator. A supplemental inspection was performed to evaluate the issue and the corrective actions, as reported in Inspection Report 50-254/00-13; 50-265/00-13. This issue is closed.

(Closed) Licensee Event Report 50-265/00006-01: Primary Coolant Isolation and Reactor Trip due to Human Error. On May 5, 2000, an instrument technician performing a calibration of the main steam line flow instruments caused a reactor trip on Unit 2. All

safety-related equipment operated as designed but some minor equipment problems occurred (see Inspection Report 50-254/200005; 50-265/200005). During performance of Quad Cities Instrument Surveillance (QCIS) 0200-17, "Main Steam Line High Flow Calibration & Functional Test," the technician tested a "B" channel instrument and determined that the instrument needed to be calibrated. In error, the instrument technician calibrated an "A" channel instrument instead. With an instrument in one channel pressurized above the trip setpoint for testing, and an instrument on the other channel with a trip setpoint mistakenly lowered to below the system operating pressure, a Unit 2 reactor trip resulted. Failure to properly implement Quad Cities Instrument Surveillance 0200-17 was considered a non-cited violation of Technical Specification 6.8.A.1 and Regulatory Guide 1.33. The non-cited violation was documented in Inspection Report 50-265/200007-07.

Using the initiating event Significance Determination Process, this issue screened out in Phase 1 since all mitigating equipment was available. Using the barrier systems Significance Determination Process, this issue was also screened out in Phase 1 since the primary containment isolation system was not degraded and operated as designed. Therefore the risk significance of this event was very low (GREEN). The inspectors reviewed the causes of the event and compared them to the corrective actions to prevent recurrence. The inspectors determined the licensee's corrective actions to be reasonable and focused towards the causes of the event. This issue is closed.

(Closed) Licensee Event Report 50-254/00010-00: Automatic Reactor Scram from Low Reactor Vessel Level. On December 6, 2000, Unit 1 experienced a reactor trip on low reactor vessel water level as a result of a failure of the master feedwater level controller. The licensee identified the root cause as a faulty solder joint from original construction on the master feedwater level controller. The inspectors reviewed the licensee's root cause and were unable to identify any deficient licensee performance that could have been attributed to recent maintenance activities associated with the master feedwater controller. This licensee event report was screened out in phase one of the Significance Determination Process as having very low risk significance.

The inspectors reviewed operator logs, Condition Report Q2000-04323, an event notification worksheet, sequence of events recorder output, and alarm printer output associated with the reactor trip and verified that all automatic actions occurred consistent with a reactor vessel low level trip and all safety systems responded as designed. The inspectors interviewed control room personnel with respect to their actions in response to the event. The inspectors reviewed operator actions and ensured they were consistent with established procedures. The inspectors documented their review of operator performance in Inspection Report 50-254/00-20, 50-265/00-20, Section 1R14.

The inspectors reviewed the root causes of the event and compared them to the licensee's corrective actions to prevent recurrence. The inspectors determined the licensee's corrective actions to be reasonable and focused towards the root causes of the event. No violations of NRC requirements were identified. This issue is closed.

.2 Review of Unresolved Items

a. Inspection Scope

The inspectors reviewed unresolved items using Inspection Procedure 71153 and other applicable procedures.

b. Observations and Findings

(Closed) Unresolved Item (50-265/00-05-01): This unresolved item involved several Unit 2 turbine valve testing failures, including fast acting solenoid valve failures. These issues, along with other Unit 2 turbine testing failures were reviewed in Inspection Report 50-254/00-11; 50-265/00-11. No adverse affect on initiating event frequency was found due to electrical and mechanical trip features which worked along with the fast acting solenoid valves, and because of turbine design which could be considered as one piece. This item is closed.

(Closed) Unresolved Item (50-254/00-14-03; 50-265/00-14-03): The unresolved item involved language of a security plan change (Revision 47) that added unnecessary information regarding the definition of bullet resistant structures. This item is closed based on NRC review of Revision 50 of the licensee security plan (refer to Section 3PP4).

4OA6 Management Meetings

The inspectors presented the inspection results to Mr. Tulon and other members of licensee management at the conclusion of the inspection on February 14, 2001. The licensee acknowledged the findings presented. No proprietary information was identified.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

T. Tulon	Site Vice President
G. Barnes	Station Manager
M. Perito	Maintenance Manager
W. Beck	Regulatory Assurance Manager
C. Peterson	Training Manager
E. Anderson	Radiation Protection Manager
K. Leech	Nuclear Security Manager

NRC

M. Ring	Chief, Projects Branch 1

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-254/01-02-01	URI	Safety System Functional Failure Performance Indicator Issues
50-265/01-02-01	URI	Safety System Functional Failure Performance Indicator Issues

Closed

50-254/00003-00	LER	High Pressure Coolant Injection Subsystem Auxiliary Oil Pump Failure to Continue Running
50-254/00003-01	LER	High Pressure Coolant Injection Subsystem Auxiliary Oil Pump Failure to Continue Running
50-265/00006-01	LER	Primary Coolant Isolation and Reactor Trip Due to Human Error
50-254/00010-00	LER	Automatic Rector Scram from Low Reactor Vessel Level
50-265/00-05-01	URI	Unit 2 Turbine Control Valve Testing Failures
50-254/00-14-03; 50-265/00-14-03	URI	Clarification of a Security Plan Change

LIST OF BASELINE INSPECTIONS PERFORMED

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

Inspection Procedure		Report
Number	Title	Section
71111-04	Equipment Alignment	1R04
71111-05	Fire Protection	1R05
71111-12	Maintenance Rule Implementation	1R12
71111-13	Maintenance Work Prioritization & Control	1R13
71111-15	Operability Evaluations	1R15
71111-19	Post Maintenance Testing	1R19
71111-22	Surveillance Testing	1R22
71130.04	Security Plan Changes	3PP4
71151	Performance Indicator Verification	4OA1
71153	Event Follow-up	4OA3
(none)	Management Meetings	4OA6

LIST OF ACRONYMS AND INITIALISMS USED

CFR	Code of Federal Regulations
IDNS	Illinois Department of Nuclear Safety
LER	Licensee Event Report
NRR	Office of Nuclear Reactor Regulation
QCOS	Quad Cities Operating Surveillance
URI	Unresolved Item
WR	Work Request