September 11, 2000

EA-00-195

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 INSPECTION REPORT 50-254/2000011(DRP); 50-265/2000011(DRP)

Dear Mr. Kingsley:

On August 15, 2000, the NRC completed an inspection at your Quad Cities Units 1 and 2 reactor facilities. The results were discussed with Mr. Dimmette 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 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, and interviews with personnel. Specifically, this inspection focused on resident inspection activities.

Based on the results of this inspection, NRC identified three issues which were categorized as being of very low risk significance (GREEN). Of the three issues, one was determined to involve two violations of NRC requirements, but because of the low safety significance, the violations are not cited. This issue involved inadequate safety evaluations for procedure changes requiring stripping of safety-related and nonsafety-related electrical loads from 125 Volt and 250 Volt busses under certain circumstances. The second issue involved the loss of an auxiliary power transformer after a grid disturbance. This condition almost resulted in a loss of offsite power to Unit 1. The third issue involved reclassification of the risk significance of a degraded safe shutdown makeup pump discharge valve based on further information provided in a regulatory conference. These issues are listed in the summary of findings and are discussed in the body of the attached inspection report.

If you contest the non-cited violations, 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 a copy to the Regional Administrator, Region III, Resident Inspector and the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001.

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 50-254/2000011(DRP);
50-265/2000011(DRP)

cc w/encl:
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REGION III

Docket Nos:	50-254; 50-265
License Nos:	DPR-29; DPR-30
Report No:	50-254/2000011(DRP); 50-265/2000011(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:	July 1 through August 15, 2000
Inspectors:	C. Miller, Senior Resident Inspector K. Walton, Resident Inspector T. Madeda, Security Inspector R. Ganser, Illinois Department of Nuclear Safety
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

- Initiating Events
- Mitigating Systems
- Barrier Integrity
- Emergency Preparedness

Radiation Safety

- Occupational
- Public

Safeguards

- Physical Protection

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

NRC Inspection Report 50-254/2000011(DRP), 50-265/2000011(DRP) on 07/01 - 08/15/2000, ComEd, Quad Cities Nuclear Power Station, Units 1 & 2, Maintenance Work Prioritization & Control, Operator Work Arounds, and Event Follow-up.

The inspection was conducted by resident inspectors and a regional security specialist. This inspection identified three GREEN issues, one of which involved two non-cited violations. The significance of issues is indicated by their color (GREEN, WHITE, YELLOW, RED) and was determined by the Significance Determination Process.

Cornerstone: Initiating Events

- GREEN. On July 18 a fault on one of the offsite power feeds to the Quad Cities electrical ring bus caused electrical circuit breakers 1-3 and 3-4 to open. This action isolated the fault and resulted in a Unit 2 turbine generator and reactor trip. The response by the switchyard resulted in a loss of power on the Unit 1 reserve auxiliary transformer. The response to the reactor scram on Unit 2 was as designed. Operator performance during this event was determined to have been acceptable.

  The inspectors reviewed the risk significance of this initiating event for both units using the Significance Determination Process. All mitigating equipment was available for Unit 2 following the uncomplicated trip, and this event was screened as having very low risk significance (GREEN.) One of two auxiliary transformers for Unit 1 was de-energized during the event, but the unit did not trip and all mitigating equipment was available. Therefore, this event was also screened as GREEN for Unit 1 (Section 4OA3.1).

Cornerstone: Mitigating Systems

- GREEN. On July 19 during a regulatory conference, the licensee discussed the contribution of fire risk to core damage frequency associated with the safe shutdown makeup pump discharge valve being in a degraded condition. Based on the information presented during the conference, the NRC concluded that this condition was of very low safety significance due to the short duration (2 days) the condition existed (Section 1R13.1).

- GREEN. The inspectors found that the 10 CFR 50.59 safety evaluations for procedure changes which required load stripping of the 125 and 250 Vdc busses under certain circumstances were not sufficient to justify that an unreviewed safety question did not exist. The inspectors identified the procedure inadequacies on March 16, 2000. The procedure changes involving stripping loads could have removed important loads from service during certain accident scenarios or could have affected system performance due to operator errors. By August 15, 2000, a new safety evaluation for these procedures had not been approved. These were considered as two non-cited violations of 10 CFR 50.59.

  Inspectors evaluated the risk associated with these procedure changes using the Significance Determination Process and found them to be of very low risk significance due to the low initiating event frequency (Section 1R16).

Report Details

Plant Status (71150)

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

Operators maintained Unit 2 at or near full power operations until July 18 when the reactor tripped automatically due to a grid disturbance. Operators returned Unit 2 to full power operations on July 20. Operators reduced Unit 2 power to less than 95 percent of rated power on July 30 to repair a valve in the feedwater heating system. The unit was returned to full power operations on July 31. The unit remained at full power operation for the remainder of the period.

1. REACTOR SAFETY

1R01 Adverse Weather (71111-01)

a. Inspection Scope

The inspectors reviewed the effects of elevated summer air and river water temperatures on equipment. The inspectors compared indicated equipment temperatures and room temperatures with temperature alarm setpoints for that equipment. The inspectors verified temperature alarm setpoints to design basis data (where applicable). The inspectors toured the facility and reviewed the following equipment temperatures and room temperatures (and trends where provided):

Mitigating System Cornerstone

- Unit 1 and Unit 2 Suppression Pools
- Unit 1 and Unit 2 Station Blackout Diesel Generator Battery Rooms
- Unit 1 and Unit 2 125 Volt and 250 Volt Station Battery Rooms
- Unit 1 and Unit 2 High Pressure Coolant Injection Rooms

Initiating Events Cornerstone

- Unit 1 and Unit 2 Recirculation Motor Generators and Recirculation Pumps
- Unit 1 and Unit 2 Feedwater Regulation Valve Hydraulic Control Stations

b. Issues and Findings

There were no issues or findings associated with this inspection activity.

1R04 Equipment Alignments (71111-04)

a. Inspection Scope

The inspectors performed partial system walk downs of the following systems for proper alignments:

- Unit 1 and Unit 2 Standby Liquid Control Systems
- Unit 1 and Unit 2 4kV Safety-related Switchgear
- Shared Emergency Diesel Generator

b. Issues and Findings

There were no issues or findings associated with this inspection activity.

1R05 Fire Protection (71111-05)

a. Inspection Scope

The inspectors toured the following fire areas to determine the availability of fire detection and suppression systems, and the status of emergency lighting:

Initiating Events Cornerstone

- Unit 1 and Unit 2 Turbine Lubricating Oil Reservoir Areas
- Unit 1 and Unit 2 Recirculation Motor Generator Lubricating Oil Cooler Areas

Mitigating Systems Cornerstone

- Unit 1 and Unit 2 480 Vdc and 250 Vdc Switchgear Areas
- Unit 1 and Unit 2 Station Blackout Diesel Generator Building

b. Issues and Findings

There were no issues or findings associated with this inspection activity.

1R11 Licensed Operator Requalifications (71111-11)

a. Inspection Scope

The inspectors observed simulator training of an operating crew on August 8, 2000. Inspectors assessed communications, procedure adherence, and implementation of emergency operating procedures. In addition, event classification and simulated offsite notifications were also evaluated.

b. Issues and Findings

There were no issues or findings associated with this inspection activity.

1R12 Maintenance Rule (71111-12)

a. Inspection Scope

The inspectors reviewed the following problem identification forms for proper maintenance rule classifications:

Q2000-01475	Drywell Compressor Trip
Q2000-01481	Silt, Zebra Mussels Partially Plugged Safety Service Water Screens
Q2000-01484	Intermediate Range Monitor 18 Declared Inoperable
Q2000-01510	Intermediate Range Monitor 18 Declared Inoperable
Q2000-01581	Loss of Condensor Vacuum on Unit 2
Q2000-01617	Failure to Vent Unit 2 High Pressure Coolant Injection System
Q2000-01630	Unit 2 Turbine Control Valves Failed to Close During Testing
Q2000-01715	Unit 2 “C” Reactor Feedwater Pump Breaker Auto Trip after Closure
Q2000-01821	Unit 2 Turbine Control Valves Failed to Fast Close
Q2000-01883	Reactor Building Closed Cooling Water Temperature Control Valve Broken Diaphragm Plate

The inspectors also reviewed the licensee’s a(1) action plans for the following systems:

- Main Turbine Electrohydraulic Control System (System Z5650)
- Instrument Air Compressors, Station Air Compressors, Standby Gas Treatment Systems, and Drywell Air Compressor Systems (System Z4400)

b. Issues and Findings

There were no issues or findings associated with this inspection activity.

1R13 Maintenance Risk Assessment and Emergent Work Evaluation

.1 Risk Assessment of Safe Shutdown Makeup Pump (71111-13)

a. Inspection Scope

The inspectors attended a regulatory conference with the licensee on July 19 to assess the risk of fire to core damage frequency with the safe shutdown makeup pump being unavailable due to a degraded discharge valve.

b. Issues and Findings

Inspection Report 50-254/2000005; 50-265/2000005, documented that the fire risk contribution to core damage frequency with the safe shutdown makeup pump being unavailable was about 1.55E-5 per year. The inspectors screened the failure of the Unit 2 safe shutdown makeup pump injection valve using the Significance Determination Process. The Significance Determination Process results indicated that the injection valve failure was potentially a WHITE finding, and a regulatory conference was held. During the conference, the licensee provided additional information including a discussion of the duration of the condition and the associated risk. Based on the information presented during the conference which indicated the condition only existed for a short duration (2 days), the NRC performed additional evaluation of the risk significance of the injection valve failure and concluded that the issue was of very low safety significance (GREEN). The results of this conference were previously documented in a Regulatory Conference Summary letter to Commonwealth Edison Company on August 1, 2000.

.2 Work Week Risk Profile Review (71111-13)

a. Inspection Scope

The inspectors reviewed the licensee's work risk profile for the week ending July 28 in order to determine if scheduled work was planned in a manner that minimized operational risks.

b. Issues and Findings

There were no issues or findings associated with this inspection activity.

.3 Emergent Work - Repair Switchyard Disconnect (71111-13)

a. Inspection Scope

The inspectors observed licensee planning meetings, attended the Plant Oversite Review Committee meeting and reviewed the risk assessment associated with emergent repairs to the Unit 1 main power transformer output disconnect.

b. Issues and Findings

There were no issues or findings associated with this inspection activity.

1R14 Personnel Performance During Nonroutine Plant Evolutions (71111-14, 71153)

a. Inspection Scope

The inspectors reviewed operator logs, problem identification forms, emergency notification sheets, the sequence of events recorder, and alarm printer outputs associated with a reactor trip that occurred on July 18. The inspectors interviewed control room personnel with respect to their actions in response to the event.

b. Issues and Findings

There were no issues or findings associated with this inspection activity.

1R15 Operability Evaluations (71111-15)

a. Inspection Scope

The inspectors reviewed operability evaluations associated with the following Mitigating System Cornerstone issues:

- High Pressure Coolant Injection Motor Speed Changer
- High Pressure Coolant Injection Restart at +44 Inches after High Level Trip

Information regarding these evaluations was not complete at the end of the period, and reviews will continue in subsequent inspections.

b. Issues and Findings

There were no issues or findings associated with this inspection activity.

1R16 Operator Work Arounds (71111-16)

a. Inspection Scope

Inspectors reviewed safety evaluations associated with procedure changes affecting the 125 and 250 Vdc batteries as tracked by Unresolved Items 50-254/2000003-01 and 50-265/2000003-01.

b. Issues and Findings

The inspectors found that the 10 CFR 50.59 safety evaluations used to justify procedures which required load stripping for dc busses were not sufficient to justify that an unreviewed safety question did not exist. The inspectors initially identified the procedure inadequacies on March 16, 2000. By August 15, 2000, a new safety evaluation for these procedures had not been approved. The licensee was in the process of performing revised safety evaluations and taking steps to eliminate the need for stripping loads in order to maintain adequate battery capacity. A revised safety evaluation for the procedure changes affecting the 125 Vdc batteries was completed on August 25, 2000. A revised safety evaluation for the procedure changes affecting the 250 Vdc batteries was completed on August 28, 2000.

(1) 125 Vdc Safety Evaluation

Title 10 CFR 50.59, “Changes, Tests and Experiments,” permits the licensee, in part, to make changes to the facility as described in the safety analysis report without prior Commission approval provided the changes do not involve an unreviewed safety question. Further, it is required that “the licensee shall maintain records of changes in the facility and these records must include a written safety evaluation which provides the bases for the determination that the change does not involve an unreviewed safety question.”

On October 31, 1985, the licensee implemented new Quad Cities Abnormal Operating Procedure 6900-7, “Loss of AC Power to the 125 Vdc Battery Chargers With Simultaneous Loss of Electrical Power.” This procedure provided steps for some plant conditions which required stripping safety-related and non safety-related loads, including those required for emergency core cooling system logic, main steam isolation valve closure, and reactor core isolation cooling. The safety evaluation for these procedure changes failed to provide the basis that the changes to plant configuration called for in the procedure did not involve an unreviewed safety question. On August 1, 1984, in a letter discussing corrective actions for inadequate 125 Vdc battery capacity, the licensee indicated that loads to be stripped were all nonsafety loads. Inspectors found that the loads being stripped by the procedure included safety-related loads. The effects of the loss of the previously mentioned loads and the potential issues resulting from additional operator actions and errors were not included in the evaluation. The procedure changes and safety evaluation remained in effect from 1985 through the end of this report period in August 2000. The failure to provide the basis that an unreviewed safety question did not exist was considered to be a violation of 10 CFR 50.59. This violation is being treated as a **Non-Cited Violation (50-254/200011-01)**, consistent with Section VI.A.1 of the May 1, 2000, Enforcement Policy. This violation was captured in the licensee’s corrective action program on Problem Identification Forms Q2000-01768, Q2000-2335, and Q2000-2864.

(2) **<u>250 Vdc Safety Evaluation</u>**

Title 10 CFR 50.59, “Changes, Tests and Experiments,” permits the licensee, in part, to make changes to the facility as described in the safety analysis report without prior Commission approval provided the changes do not involve an unreviewed safety question. Further, it is required that “the licensee shall maintain records of changes in the facility and these records must include a written safety evaluation which provides the bases for the determination that the changes do not involve an unreviewed safety question.”

On September 14, 1991, the licensee implemented new (temporary) Quad Cities Abnormal Operating Procedure 6900-05, “Loss of 250 VDC Battery Chargers Concurrent With A Design Basis Accident.” This procedure provided steps which, in some conditions, required operator actions to perform battery bus load shedding. The safety evaluation for these procedure changes failed to provide the basis that the changes did not involve the potential for an unreviewed safety question. The use of operator actions to ensure survivability of the battery system, and the potential problems caused by operator errors were not addressed. The procedure changes and safety evaluation remained in effect from 1991 through the end of this report period. The failure to provide the basis that an unreviewed safety question did not exist was considered to be a violation of 10 CFR 50.59. This violation is being treated as a **Non-Cited Violation (50-254/2000011-02)**, consistent with Section VI.A.1 of the May 1, 2000, Enforcement Policy. This violation was captured in the licensee’s corrective action program on Problem Identification Form Q2000-02950. Unresolved Items 50-254/2000003-01 and 50-265/2000003-01 are closed.

(3) 125 Vdc Risk Assessment

The Phase 2 Significance Determination Process considered the reactor core isolation cooling system to be unavailable during station blackout sequences. This assumption was made because the entry requirements for the 125 Vdc load stripping procedure would be met under station blackout conditions, and the load stripping would make reactor core isolation cooling system operation unavailable automatically and manually from the control room. Since the load stripping procedure had been in effect since 1984, the time period that the condition existed was considered to be 1 year. Using these assumptions, the finding was considered to have very low risk significance (GREEN) largely due to the low initiating event frequency for station blackout events. The potential failure for operators to properly strip busses and subsequent effects on the battery system were not evaluated due to the uncertainty of the errors of commission (operators mistakenly performing actions not specified in the procedure) that could be involved.

(4) 250 Vdc Risk Assessment

The Phase 1 Significance Determination Process determined the finding to have very low risk significance (GREEN) since no mitigating system function was determined to be unavailable due to the load stripping, and because the informal battery sizing calculations showed that the battery could continue to perform its function even if the non-safety related loads were not shed.

1R19 Post Maintenance Testing (71111-19)

a. Inspection Scope

The inspectors reviewed and/or observed portions of the following post maintenance testing procedures:

- Quad Cities Operating Surveillance 1100-07, Standby Liquid Control Pump Flow Rate Test
- Design Change Package 9900329, Rewire Unit 2 Station Blackout Diesel Generator Feed from Bus 71 to Bus 24-1 for Appendix R
- Design Change Package 9800132, Install Thermocouple on Unit 2 Standby Liquid Control Piping
- Quad Cities Mechanical Maintenance Surveillance 6620-01, Station Blackout Diesel Generator Preventive Maintenance Quarterly Inspection

The inspectors ensured that the surveillance test adequately tested the system/component after completion of the maintenance activity.

b. Issues and Findings

There were no issues or findings identified during this inspection activity.

1R22 Surveillance Testing (71111-22)

a. Inspection Scope

The inspectors reviewed the following Quad Cities Operating Surveillance (QCOS) tests to ensure test results were in compliance with the Technical Specifications or the safety analysis report:

Mitigating Systems

- QCOS 1000-04, Residual Heat Removal Service Water Pump Operability Test
- QCOS 6600-42, Diesel Generator Monthly Load Test

Barrier Systems

- QCOS 7500-05, "A" Standby Gas Treatment Operability Test

b. Issues and Findings

There were no findings identified during this inspection.

1R23 Temporary Modifications (71111-23)

a. Inspection Scope

The inspectors reviewed the following temporary modifications (TMOD) to ensure that the system availabilities were not adversely affected by the temporary modification:

- TMOD 9900500 Remove "C" Phase Paddle from Unit 2 Main Generator Differential Relay 87G2
- TMOD 9900469 Install Temporary Pressure Gage on Unit 1 High Pressure Coolant Injection System

b. Issues and Findings

There were no issues or findings associated with this inspection activity.

3. SAFEGUARDS

3PP4 Security Plan Changes (71130-04)

a. Inspection Scope

The inspector reviewed Revision 46 of the Quad Cities Nuclear Power Station Security Plan and Security Personnel Training and Qualification Plan, which were submitted by licensee letter dated May 25, 2000, to verify that the changes did not decrease the effectiveness of the submitted plans.

b. Issues and Findings

The documents were submitted in a timely manner, and the changes did not appear to reduce the effectiveness of the previous plans. However, one unresolved item was identified in Revision 46. In Section 9.6 the licensee added a new requirement allowing the transfer of searched material/equipment between protected areas at different sites. However, the language of the plan change did not adequately describe the protected measure(s) methodology relating to the transportation of secure (searched) materials being transported from a licensee site to another licensee site. This is an **Unresolved Item (50-254/2000011-03; 50-265/2000011-03)**. This same issue was also identified during security plan reviews relating to the LaSalle and Braidwood Station Security Plans. The Quad Cities Station Security Administrator agreed to resubmit additional change(s) that will provide more details on the search process. The inspector will conduct further evaluation of this issue upon receipt of this revision.

4. OTHER ACTIVITIES (OA)

4OA2 Performance Indicator Verification

.1 Reactor Scrams Performance Indicator Verification (71151)

a. Inspection Scope

The inspectors reviewed licensee event reports, operator logs, and licensee power histories from November 1999 through June 2000 in order to verify the licensee's performance indicators for scrams.

b. Issues and Findings

The inspectors did not identify any issues or findings associated with this inspection.

.2 Reactor Scrams With Loss of Normal Heat Removal Performance Indicator Verification (71151)

a. Inspection Scope

The inspectors reviewed licensee event reports, operator logs, and licensee power histories from November 1999 through June 2000 in order to verify the licensee's performance indicators for scrams with loss of normal heat removal.

b. Issues and Findings

The inspectors did not identify any issues or findings associated with this inspection.

.3 Unplanned Power Changes Performance Indicator Verification (71151)

a. Inspection Scope

The inspectors reviewed licensee power histories from November 1999 through June 2000 in order to verify the licensee's performance indicators for unplanned power changes.

b. Issues and Findings

The inspectors did not identify any issues or findings associated with this inspection.

4OA3 Event Follow-up

.1 Faulted Offsite Power Source Resulting In a Turbine and Reactor Trip (71153)

a. Inspection Scope

The inspectors reviewed operator logs, problem identification forms, emergency notification sheets, the sequence of events recorder, and alarm printer outputs associated with a reactor trip that occurred on July 18. The inspectors interviewed operations, maintenance, and engineering personnel concerning the cause of the failure and the resulting sequence of events.

b. Issues and Findings

On July 18, a fault on one of the offsite power feeds to the Quad Cities electrical ring bus caused electrical circuit breakers 1-3 and 3-4 to open, which isolated the fault. However, the Unit 2 main generator protective relays also detected the fault which resulted in the Unit 2 main generator and reactor tripping. Electrical circuit breaker 3-4 automatically reclosed about 10 seconds after the fault was detected. Since the fault was not cleared, a high current condition existed and electrical breaker 4-6 opened to isolate the fault. When breaker 4-6 opened, transformer 12 (Unit 1 reserve auxiliary transformer) de-energized. Although the Unit 1 main generator experienced large swings in power output during the transient, the generator did not trip.

Due to the momentary loss of voltage on the 4160 volt safety busses, both the Unit 2 and shared emergency diesel generators automatically started. Both safety busses automatically transferred to their alternate power supplies. Safety-related equipment remained available during the transient. Unit 2 responded to the reactor trip according to design. The licensee acknowledged that this event almost resulted in a loss of offsite power to Unit 1 and continued to evaluate protective relay performance and other corrective actions. This event was documented on Problem Identification Form Q2000-02574.

The inspectors reviewed the risk significance of this initiating event for both units using the Significance Determination Process. All mitigating equipment was available for Unit 2 following the uncomplicated trip, and this event was screened as having very low risk significance (GREEN.) Even though one of two auxiliary transformers was de-energized during the event, Unit 1 did not trip and all mitigating equipment was available. Therefore, this event was also screened as GREEN for Unit 1.

.2 Review of Licensee Event Reports (71153)

a. Inspection Scope

The inspectors reviewed Licensee Event Reports and other items using Inspection Procedure 71153. The inspectors reviewed the licensee’s root cause reports and corrective actions for these events.

b. Observations and Findings

(Closed) Licensee Event Report 50-254/99004-00 and 50-254/99004-01: Control Room Emergency Ventilation System Inoperable. The licensee improperly measured the ventilation system flow rate after a maintenance activity, and erroneously determined the system was operable. Ten days later, the licensee identified that the ventilation system flow rate was incorrectly measured and declared the system inoperable due to high flow rate. The reportability aspects of this issue were discussed in Inspection Report 50-254/99020; 50-265/99020. The risk significance of this issue was minor since the licensee later tested the air filtration unit at the as-found air flow rate and determined that the unit would have been able to meets its design function.

The inspectors reviewed the licensee’s corrective actions for the licensee event report. The Technical Specification limiting condition for operation for this system was 7 days. Since the system was inoperable for greater than allowed by Technical Specifications, this was considered a violation of Technical Specification 3.8.D.1. This failure constitutes a violation of minor significance and is not subject to formal enforcement action. This item is closed.

(Closed) Licensee Event Report 50-265/00003-00: Movement of Fuel with Fewer Intermediate Range Monitors Operable than Allowed by Technical Specifications. This issue, including enforcement and risk significance, was discussed in Inspection Report 50-254/2000001; 50-265/2000001. The inspectors reviewed the licensee event report and the licensee’s corrective actions. This licensee event report is closed.

(Closed) Licensee Event Report 50-265/00007-00: Reactor Scram and RWCU Isolation. On May 22, during a return to service of a Unit 2 turbine control valve, the unit tripped from full power operation. A delay in startup of a reactor feedwater pump resulted in a second primary containment isolation signal. These issues and their safety significance were discussed in Inspection Report 50-254/2000007; 50-265/2000007. The inspectors reviewed the licensee event report and corrective actions. This licensee event report is closed.

4OA4 Management Meetings

The inspectors presented the inspection results to Mr. Dimmette and other members of licensee management near the conclusion of the inspection on August 14, 2000. The licensee acknowledged the findings presented. No proprietary information was identified.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

J Dimmette	Site Vice President
G. Barnes	Station Manager
P. Behrens	Chemistry Manager
G. Boerschig	Engineering Manager
R. Chrzanowski	Nuclear Oversight Manager
R. Svaleson	Shift Operations Superintendent
D. Tubbs	MidAmerican Energy

NRC

M. Ring	Branch Chief, Branch 1

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-254/2000011-01	NCV	Violation of 50.59 for stripping of 125 Vdc loads
50-254/2000011-02	NCV	Violation of 50.59 for stripping of 250 Vdc loads
50-254/2000011-03; 50-265/2000011-03	URI	Changes to Security Plan

Closed

50-254/2000011-01	NCV	Violation of 50.59 for stripping of 125 Vdc loads
50-254/2000011-02	NCV	Violation of 50.59 for stripping of 250 Vdc loads
50-254/99004-00; 50-254/99004-01	LER	Control Room Emergency Ventilation System Inoperable
50-265/00003-00	LER	Movement of Fuel with Fewer Intermediate Range Monitors Operable than Allowed by Technical Specifications
50-265/00007-00	LER	Reactor Scram and RWCU Isolation
50-254/2000003-01; 50-265/2000003-01	URI	Inadequate Safety Evaluations for Stripping 125 Vdc and 250 Vdc Busses

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
71111-01	Adverse Weather Preparations	1R01
71111-04	Equipment Alignment	1R04
71111-05	Fire Protection	1R05
71111-11	Licensed Operator Requalification	1R11
71111-12	Maintenance Rule Implementation	1R12
71111-13	Maintenance Risk Assessment and Emergent Work Evaluation	1R13
71111-14	Personnel Performance During Nonroutine Evolutions	1R14
71111-15	Operability Evaluations	1R15
71111-16	Operator Work Arounds	1R16
71111-19	Post Maintenance Testing	1R19
71111-22	Surveillance Testing	1R22
71111-23	Temporary Plant Modifications	1R23
71130	Security Plan Changes	3PP4
71151	Performance Indicator Verification	4OA2
71153	Event Follow-up	4OA3
(none)	Management Meetings	4OA5

LIST OF ACRONYMS AND INITIALISMS USED

ac	Alternating Current
CFR	Code of Federal Regulations
dc	Direct Current
kV	Kilovolt
LER	Licensee Event Report
NCV	Non Cited Violation
QCOS	Quad Cities Operating Surveillance
RCIC	Reactor Core Isolation Cooling
RWCU	Reactor Water Cleanup
TMOD	Temporary Modification
URI	Unresolved Item
Vac	Volts - Alternating Current
Vdc	Volts - Direct Current