Commonwealth Edison Company
Quad Cities Generating Station
22710 206th Avenue North
Cordova, IL 61242-9740
Tel 309-654-2241

ComEd

June 16, 2000

SVP-00-007

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Quad Cities Nuclear Power Station, Units 1 and 2
Facility Operating License Nos. DPR-29 and DPR-30
NRC Docket Nos. 50-254 and 50-265

Subject: Quad Cities Nuclear Power Station 10 CFR 50, Appendix R Optimization Project

Reference: Letter from D. A. Sager (ComEd) to U.S. NRC, "Identification of Appendix R Discrepancies," SVP 98-149, dated April 20, 1998.

On April 25, 2000 Commonwealth Edison (ComEd) Company met with the NRC to discuss the status of our Appendix R improvement initiatives. As discussed during the meeting, we have completed installation of four Appendix R design changes during the recent Unit 2 Refueling Outage (Q2R15), including:

- Reroute of the Safe Shutdown Makeup Pump (SSMP) injection point
- Installation of disconnect switches on the Reactor Recirculation System
- Installation of an inhibit switch on the Automatic Depressurization System
- Improve Bus 23-1 protection

In addition, the modifications scheduled for the upcoming Unit 1 refueling outage (Q1R16 scheduled for October 2000) have been designed and issued for installation. However, as discussed with the NRC during the April 25 meeting, certain plant modifications proposed in the referenced letter to address Appendix R discrepancies have been determined to not provide the intended benefit. Therefore, we are pursuing an alternative strategy as outlined in the attachment to this letter. As noted in the attachment, the evaluations supporting each alternative approach will be completed as part of the Safe Shutdown Analysis (SSA) revision process.

A006

Should you have any questions concerning this letter, please contact Mr. C.C. Peterson at (309) 654-2241, extension 3609.

Respectfully,

George P. Barnes for

Joel P. Dimmette, Jr.
Site Vice President
Quad Cities Nuclear Power Station

Attachment:
Design Changes - Appendix R Optimization Project

cc: Regional Administrator – NRC Region III
NRC Senior Resident Inspector – Quad Cities Nuclear Power Station

ISSUE: HPCI ROOM PENETRATION SEALS

Description of Discrepancy

To achieve and maintain hot shutdown, the current Quad Cities Safe Shutdown Analysis (SSA) requires manual actions to prevent spurious operation of the High Pressure Coolant Injection (HPCI) pump to eliminate the associated loss of reactor coolant inventory. This requires the HPCI room to be separated from adjacent areas. However, some of the HPCI room penetration seals do not meet the fire seal requirements.

Original Plan for Achieving Compliance

The appropriate seals were to be repaired, replaced or upgraded as required.

Alternate Plan For Achieving Compliance

Consistent with our commitment to reduce the number of post-fire remote manual actions, we are evaluating the existing separation between the HPCI room and surrounding fire areas. For a postulated fire in the HPCI room, we are completing the required circuit analyses to confirm that motive power is available to isolate the HPCI steam supply isolation valves from the control room. Similarly, for a fire outside the HPCI room that could potentially cause a spurious HPCI start, we are confirming that HPCI can be isolated from the control room, or if access to the HCPI room is available to manually trip the HPCI turbine. These evaluations will be completed as part of the SSA revision process.

ISSUE: TRIP OF REACTOR FEED PUMP

Description of Discrepancy

The Quad Cities design currently does not ensure that the logic circuits necessary to trip the reactor feedwater pumps remain free of fire damage. Manual actions to trip the reactor feedwater pumps are currently a compensatory action to achieve and maintain hot shutdown following a fire for certain fire areas.

Original Plan for Achieving Compliance

A modification was to be implemented to protect the tripping circuits of the reactor feedwater pumps.

Alternate Plan For Achieving Compliance

During the design phase for the proposed modification, it was determined the original modification does not provide complete protection to the reactor feedwater pump trip logic circuits. A review of alternative modifications has not identified a feasible solution. Therefore, these actions will be incorporated into the Safe Shutdown methodology and evaluated as part of the SSA revision process.

ISSUE: 250 VDC ALTERNATE SUPPLY

Description of Discrepancy

The current Quad Cities design may not ensure the normal power supply to the Reactor Core Isolation Cooling (RCIC) barometric condenser vacuum pump and condensate pump remain free from fire damage. Operation of these pumps is necessary to support RCIC pump operation. RCIC pump operation is necessary to achieve and maintain hot shutdown following a fire in certain fire areas.

Original Plan For Achieving Compliance

Modifications were planned to replace the existing manual disconnects with switches to facilitate re-alignment of the 250 Vdc reactor building switchgear during post-fire safe shutdown activities.

Alternate Plan for Achieving Compliance

During the design review of the proposed modification, it was determined that the modification to install switches to facilitate 250 Vdc realignment was only required on Unit 2. Due to design differences, realignment of the 250 Vdc system is not a required post-fire action to support the Unit 1 RCIC system. Installing this modification only on Unit 2 would result in a significant design difference between the Unit 1 and Unit 2 250 Vdc systems. We have elected not to pursue this modification to maintain consistency between the units and avoid the potential pitfalls associated with differences in Unit operating procedures. We are validating an alternative switching strategy using existing power transfer switches located in the RCIC room (these switches were originally installed to support safe shutdown activities). This evaluation will be completed as part of the SSA revision process.

ISSUE: RESIDUAL HEAT REMOVAL (RHR) HOT SHORTS MODS

Description of Concern

Certain RHR motor operated valves may be susceptible to mechanical damage due to a hot-short condition.

Original Plan For Achieving Compliance

We had proposed modifying RHR valve logic as necessary to eliminate the potential for a hot short condition. During the design phase for these modifications, we have determined that the proposed circuit modification would not adequately protect the RHR valves from a hot short condition.

Alternate Plan for Achieving Compliance

As an alternative plan for ensuring protection, we are confirming the capability to remove RHR valve motive power from the control room. This action will be added to the control room safe shutdown post-fire actions. This evaluation will be completed as part of the SSA revision process.

EMERGENCY LIGHTING

The planned upgrades to the Safe Shutdown Analysis (SSA) will have an impact on the emergency lighting requirements. We expect that the total number of required emergency light packs will decrease. During implementation of the upgraded SSA, the emergency lighting requirements of 10 CFR 50, Appendix R will be met and controlled under the Station's design change process. However, radiation exposure considerations may delay final installation details (i.e., the permanent mounting configuration) for certain light packs until the next available unit outage. All lighting will be permanently mounted no later than Q2R16 and Q1R17. These outages are currently scheduled for February and October 2002 respectively.