

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

ESK 96-190



October 6, 1996

U.S Nuclear Regulatory Commission  
Washington, D.C. 20555

Attention: Document Control Desk

Subject: Quad Cities Nuclear Power Station Units 1 and 2;  
NRC Docket Numbers 50-254 and 50-265;  
NRC Inspection Report Numbers 50-254/96010 and 50-265/96010.

Reference: G. E. Grant Letter to E. S. Kraft, Jr., Dated September 6, 1996,  
Transmitting Notices of Violation.

Enclosed is Commonwealth Edison's (ComEd's) responses to the Notice of Violations (NOV) transmitted with the referenced letter. The report cited two Severity Level IV violations: 1) concerning the failure of the Engineering Department to adequately review the suitability of a part essential to the function of an Emergency Core Cooling System, and 2) failure of the Engineering Department to follow procedures for the Temporary Alteration and Root Cause Investigation Process programs.

This letter contains the following commitments:

- 1) QCAP 2300-24 will be revised to add minimum qualification requirements for investigators and a maintained list will be issued detailing individuals who meet those requirements by November 15, 1996. This is per NTS 254-100-96-01002.01.

If there are any questions or comments concerning this letter, please refer them to Mr. Charles Peterson, Regulatory Affairs Manager, at (309) 654-2241, ext. 3602.

Respectfully,

E. S. Kraft, Jr.  
Site Vice President  
Quad Cities Station

9610180241 961006  
PDR ADDCK 05000254  
Q PDR

Attachment (A), Response to Notice of Violation

cc: A. Beach, NRC Regional Administrator, RIII  
R. Pulsifer, NRC Project Manager, NRR  
C. Miller, Senior Resident Inspector, Quad Cities  
R. Singer, MidAmerican Energy Company  
D. Tubbs, MidAmerican Energy Company

1001  
11

## ATTACHMENT A (Page 1 of 8)

### STATEMENT OF VIOLATION (254/265-96-010-01):

#### NOTICE OF VIOLATION

During an NRC inspection conducted on July 8 through July 26, 1996, violations of NRC requirements were identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions the violations are listed below:

- A. 10 CFR 50, Appendix B, Criterion III requires, in part, that measures be established for the selection and review for suitability of application of parts that are essential to the safety-related function of structures, systems, and components.

Contrary to the above, on July 10, 1996, the inspectors identified that the safety evaluation review for exempt change EO4-2-94-226 to replace a Unit 2 emergency core cooling system (ECCS) torus suction butterfly valve for the reactor core isolation cooling system was based on an incorrect valve weight. As a result, the licensee failed to adequately review for suitability a part essential to the function of an ECCS system.

This is a Severity Level IV problem (Supplement I) (50-265/96010-01).

#### REASON FOR VIOLATION:

Quad Cities Station acknowledges the violation for inadequate review of suitability of parts.

Quad Cities Station understands the concern on the exempt change EO4-2-94-226 in respect to the discrepancy between the target and actual valve weight for the 6" valve. The valves were ordered to a specified weight in order to eliminate the possibility of reanalysis of the associated Mark I piping. The target weights were pulled from the existing approved piping calculations and entered into the bids to the valve manufacturers. Therefore, these valves were not necessarily stock order valves and depending on the required weight were custom made for the specific application. The chronological documentation for the ordering and receipt of the 2-1301-56-6" Crane Butterfly valve is as follows:

**February 9, 1995** CHRON #0306410

This letter was addressed to Vectra, Technologies Letter transmitting the 2-1301-56-6" Crane Butterfly valve weight, as well as the three (3) other butterfly valves, for design information. The **estimated target weight** in this letter for the 6" valve was **95 lbs (+/- 10 %)**.

**February 22, 1995** CHRON #0306451

This letter was addressed to Vectra, Technologies transmitting revised information on the 2-1301-56, 6" valve. Crane had neglected to include the operator weight in the previous weight estimate. Therefore, the **new estimate** of the valve and operator combined weight was **140 lbs (+/- 10 %)**.

## ATTACHMENT A (Page 2 of 8)

**February 25, 1995** 10CFR50.59

The **10CFR50.59 Safety Evaluation** was prepared and the approval was given on March 1, 1996. At this time this was written and reviewed, the 2-1301-56-6" valve weight was estimated to be **140 lbs (+/- 10 %)**.

**February 27, 1995** CHRON #0306465

The Exempt Change Approval letter for E04-2-94-226. The letter states "... the calculations which were performed during the design process will be reviewed by the Site Engineering Cognizant Engineer and discussed in an addendum letter. ...."

**March 9, 1995** CHRON #0307259

Exempt Change Addendum letter 1. Due to the difference between 95 lbs. and 140 lbs. the piping analysis was revised. The calculation portion of this letter states: "...The calculations which were performed by Vectra during the design process are listed in Part 2 of ECN 04-1260M-01. They have been reviewed for assumptions, judgments and conclusions by Site Engineering and have been found acceptable." This review methodology is consistent with NEP-04-00 "Roadmap Design Changes". These calculations No. 28.0202.0332.21 and 28.0202.0333.22 contained the **140 lbs (+/- 10 %) 6" valve weight**.

**April 20, 1995** CHRON #0307939

The letter addressees the valve weights listed on the Crane assembly drawings versus the weights in the Crane purchase order. The 2-1301-56-6" valve was **160 lbs versus the initial estimate of 140 lbs (+/- 10 %)** discussed above. The letter also accepted the weight on the drawing. All of the other valve weights were within their acceptable weight windows. This letter was copied to Vectra, Technologies for final design information.

**April 27, 1995** CHRON #0308379

Addendum letter 2 to address the Crane Seismic calculations. The calculations were reviewed for assumptions, judgments and conclusions and found acceptable with the combined valve and operator weight of 160 lbs. The **10CFR50.59 was also reviewed and determined that it was not affected**. The Purchase order was referenced which is the referenced document accepted in CHRON #0307939 with the total valve weight of 160 lbs.

**July 16, 1996** PIF 96-2334

This PIF was generated to document the discrepancies between the final design information on the valve weight and the Vectra piping calculations No. 28.0202.0332.21 and 28.0202.0333.22. It was also to determine why the information was not formally documented within the calculations.

## **ATTACHMENT A (Page 3 of 8)**

### **SUMMARY OF THE CHRONOLOGY:**

During the course of the project, constant contact was maintained between Vectra and the Quad Cities Site Engineering Engineer. In April of 1995, the final weight of the valves were discussed between the site and the A/E and it was determined that the weight difference was insignificant in the piping model. This was due to the fact that the overall valve assembly weight, which includes the valve, operator and flanges, were still within the 10% weight window. This is because the total valve weight as input into the piping analysis contains the valve, operator and flange weights. The piping flanges were not weighed as part of the 160 lbs valve assembly. This information was not input into the piping calculation since the design margin window of the total valve assembly (+/-10%) was achieved. The Piping Configuration Verification Instruction CEC-99-017 states this tolerance is acceptable. This information and discussion was utilized to acknowledge the acceptance of the valves in CHRON letter #0307939. This determination was also utilized to review the existing 10CFR50.59 and documented that it was still applicable in CHRON letter #0308379.

### **CORRECTIVE ACTIONS TAKEN:**

As a result of the NRC inspection conducted on July 8 through July 26, 1996 a telecon documenting the conversation and results of the methodology discussed in April 1995 was searched for in Vectra's project files. This search did not uncover a telecon from 1995 documenting the methodology utilized to state in CHRON# 0307939, that the difference in valve weight was acceptable. As a result of the telecon not being retrievable, PIF 96-2334 was initiated. Also, the piping input calculation was revised to document the actual valve weight of 160 lbs. versus 140 lbs. (+/-10%) is acceptable and that no further analysis is required. Therefore, after formal review of the project timeline and Project Instructions, documentation of the weight difference with flanges fell within the stated allowable (+/- 10%).

### **ACTIONS TO PREVENT FURTHER OCCURRENCE:**

The NDIT, Nuclear Design Information Transmittal, located in NEP 12-03 will be enforced for utilization for all applicable design inputs. At a minimum this includes Safety Related components. This transmittal form is located in NEP 12-03 Exhibit B. A training session to refresh the engineering department on the NEP 12-03 for Design Information Transmittals, was held during the departmental meeting on October 1, 1996.

### **DATE WHEN FULL COMPLIANCE WILL BE MET:**

Full compliance was met with the completion of the departmental meeting on October 1, 1996.

## ATTACHMENT A (Page 4 of 8)

### STATEMENT OF VIOLATION (254/265-96-010-02):

#### NOTICE OF VIOLATION

- B. 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality shall be prescribed by documented instructions, procedures, and drawings of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, and drawings.

Quad Cities Technical Procedure (QCTP) 1020-2, "System Temporary Alteration Review," requires that for each temporary alteration, the cognizant system engineer shall review each temporary alteration in effect for greater than three months. This review must address the continued applicability of the safety evaluation.

Quad Cities Technical Procedure (QCTP) 1020-2, "System Temporary Alteration Review," requires, in part, that all temporary alteration evaluations be submitted to the technical staff supervisor for approval.

Quad Cities Technical Procedure (QCTP) 1020-2, "System Temporary Alteration Review," requires, in part, that the temporary alteration coordinator prepare a monthly report on all temporary alterations greater than 6 months old to include an outline of the current status of actions required to resolve each alteration, the cognizant individual's name, and identification of alterations that have had limited progress toward resolution.

Quad Cities Administrative Procedure (QCAP) 2300-24, "Levels 1, 2, and 3 Root Cause Investigations," requires, in part, that team leaders be trained in root cause analysis.

Quad Cities Administrative Procedure (QCAP) 2300-24, "Levels 1, 2, and 3 Root Cause Investigations," requires, in part, that causal codes be used in the root cause analysis report.

Contrary to the above:

- a. On July 23, 1996, the inspectors identified that temporary alteration evaluations for temporary alterations 94-2-34, 94-1-84, and 94-1-121 had not been submitted to the technical staff supervisor for approval as required by QCTP 1020-2.
- b. On July 23, 1996, the inspectors identified that temporary alteration evaluations 94-1-6, 93-1-52, and 94-2-5 failed to address the continued applicability of the safety evaluation as required by QCTP 1020-2.



## ATTACHMENT A (Page 5 of 8)

- c. On July 23, 1996, the inspectors identified that although the monthly report identified temporary alterations in place and projected removal dates, the report failed to identify responsible personnel and temporary alterations which have had limited progress toward resolution as required by QCTP 1020-2. In addition, prior to 1996, monthly temporary alteration reports were not generated as required by QCTP 1020-2.
- d. On July 24, 1996, the inspectors identified that the team leader for root cause investigations associated with issues described in problem identification forms (PIFs) 96-0460, 96-0067, 96-0828, and 96-1097 failed to attend training in root cause analysis as required by QCAP 2300-24.
- e. On July 24, 1996, the inspectors identified that root cause investigation reports associated with issues described in problem identification forms (PIFs) 96-0460, 96-0067, 96-0828, and 96-1097 did not contain causal codes as required by QCAP 2300-24.

This is a Severity Level IV problem (Supplement I) (50-254/96010-02; 50-265/96010-02).

### REASON FOR VIOLATION:

Quad Cities Station acknowledges the violation for procedure adherence.

The violations of QCTP 1020-2 are attributed to the following reasons:

#### B.a.- Failure to Obtain Approval Signatures

The reason the forms were prepared, but not approved, can be attributed to the preparer of the form not sending the form to the Supervisor for signature and failure of the Temp Alt Coordinator to notice both signatures were not on the form prior to filing it.

#### B.b.- Failure to Review Safety Evaluations for Continued Applicability

The QCTP 1020-2 procedure requires a monthly review of temporary alteration safety evaluations (for temp alts installed beyond the 90 days) to ensure that the evaluations have no system or operational limitations which would invalidate them.

The reason for the violation can be attributed to a failure on the system engineers part to follow the procedure and the supervisors failure to note the deficiency prior to signing the review form.

## ATTACHMENT A (Page 6 of 8)

### B.c.- Failure to Issue Report per QCTP 1020-2 Requirements

When the administrative responsibility for Temporary Alteration was transitioned to Design Engineering in September of 1995, the new Temp Alt Coordinator was told by his predecessor that the QCTP 1020-2 report was not being issued and that nobody had expressed an interest in an additional temporary alteration report with the information required by QCTP 1020-2. At that time monthly Temp Alts statistics were being tracked in IQE and reported to the BWR Vice President on a monthly basis.

The new Temp Alt Coordinator continued the IQE and vice president reports and began issuing a third report at the monthly TRB meetings to address temp alt removal plans and schedule. At that time it was thought the "intent" of the QCTP 1020-2 procedure was being met.

The reason for the violation is attributed to a failure of the Temp Alt Coordinator to recognize the need for verbatim procedural compliance for all activities, including reports.

### B.d.- Root Cause Analysis Training:

Although QCAP 2300-24, "Level 1,2, and 3 Root Cause Investigation" does not specifically detail root cause analysis training or qualification requirements, an examination into the training records of the investigators for these four PIFs does show that reasonable root cause analysis training was completed.

PIF 96-0460 - Investigator completed Organization and Programmatic Root Cause Determination Training 09/01/94 and Human Performance Evaluation System Training 05/23/90 (at Dresden Station).

PIF 96-0067 - Investigator completed Management-Oversite Risk Tree (MORT) Training 08/24/90 (at LaSalle Station).

PIF 96-0828 - Investigator completed Human Performance Evaluation System Training 11/10/92.

PIF 96-1097 - Investigator completed Problem Solving/Decision Making Training 09/13/94 and Management-Oversite Risk Tree (MORT) Training 07/15/87.

However, the training required for interviewing techniques and for diagnostics for plant events, as listed in QCAP 2300-24, was not conducted for these four PIFs.

### B.e.- Causal Codes:

The revision of QCAP 2300-24 which was current during the mentioned PIF investigations did have a separate Causal Code Attachment which was not completed by the investigators for these PIFs.

## ATTACHMENT A (Page 7 of 8)

### CORRECTIVE ACTIONS TAKEN:

#### B.a-c.:

Procedure QCTP 1020-2 has been revised since the NRC inspection. The revision made the following changes:

- Changed the responsibility for performing QCTP 1020-2 reviews from System to Design Engineering.
- Reduced the frequency of the required report from monthly to quarterly.
- Requires the Temp Alt Coordinator to review QCTP 1020-2 review forms on file for Temp Alts greater than three months old for continued applicability on a monthly basis.
- Requires the Temp Alt Coordinator to ensure removal plans in the Electronic Work Control System (EWCS) are current.
- Requires the Plant Operations Review Committee to review Temp Alts greater than three months old on a quarterly basis.

#### B.d-e.:

It was verified that the investigators for the PIFs listed had completed reasonable Root Cause Analysis training.

QCAP 2300-24 was revised on May 22, 1996 to remove the Causal Code Attachment sheet. QCAP 2300-20, "Problem Identification" was revised on May 22, 1996 to add a Causal Factor section to the Problem Identification Form. This section has high visibility during PIF approval as it is placed between the Cause/Corrective Action section and the final approval signature block. This should ensure its completion.

### ACTIONS TO PREVENT FURTHER OCCURRENCE:

#### B.a.:

The Temp Alt Coordinator will review all QCTP 1020-2 forms prior to filing to ensure both signatures are present.

#### B.b.:

During the monthly review of QCTP 1020-2 forms on file, the Temp Alt Coordinator will (per section F.3 of the revised procedure) note any discrepancies with respect to the safety evaluation review and bring them to the Design Engineering Supervisors attention for further action.



## **ATTACHMENT A (Page 8 of 8)**

### B.c.:

The Temp Alt Coordinator will issue the QCTP 1020-2 report as required by the procedure.

### B.d-e.:

QCAP 2300-24 will be revised to add minimum qualifications to investigate PIFs. A list will then be generated and maintained detailing individuals who meet these minimum requirements to be used as Team Leaders or Evaluators. These actions will be tracked under NTS 254-100-96-01002.01.

### **DATE WHEN FULL COMPLIANCE WILL BE MET:**

QCTP 1020-2 was revised and issued with an effective date of 9/9/96.

QCAP 2300-24 will be revised and the qualification list generated by 11/15/96.