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February 1, 1991

Mr. A. Bert Davis  
 Regional Administrator - Region III  
 U.S. Nuclear Regulatory Commission  
 799 Roosevelt Road  
 Glen Ellyn, Illinois 60137

Subject: Quad Cities Nuclear Power Station Units 1 and 2  
 Response to Two Level IV Violations  
 Inspection 50-254/90022; 50-265/90021  
 NRC Docket Nos. 50-254 and 50-265

Reference: W.D. Shafer letter to Cordell Reed dated  
 January 2, 1991 transmitting NRC Inspection  
 Report 50-254/90022; 50-265/90021

Mr. Davis:

Enclosed is Commonwealth Edison Company's (CECo) response to the subject Notice of Violation (NOV) which was transmitted with the referenced letter and Inspection Report. The NOV cited two level IV violations. The violations concerned five examples of failure to perform surveillances as required by Technical Specifications, and failure to take adequate corrective actions to preclude repetition of an event concerning work package content and instructions for electrical maintenance activities.

CECo understands the significance of the events, the need for effective corrective actions to prevent recurrence and has considered these in developing actions in response to the cited violations.

If your staff has any questions or comments concerning this letter, please refer them to Rita Radtke, Compliance Engineer at 708/515-7284.

Very truly yours,

T. J. Kovach  
 Nuclear Licensing Manager

cc: L.N. Olshan, Project Manager - NRR  
 T. Taylor, Senior Resident Inspector  
 NRR Document Control Desk

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Discussion

As required by 10 CFR 50.73, Licensee Event Reports (LERs) have been submitted to address the above five examples of missed or improperly performed Technical Specifications surveillances. The corrective actions that have been taken and the associated results achieved, as well as the corrective actions that will be taken to avoid further violations for each individual event are included in the LERs.

Corrective Actions

The Quad Cities LERs that specifically address each example cited in the Notice of Violation are as follows:

EXAMPLE a

LER 254/90-020

EXAMPLE b

LER 265/90-002

EXAMPLE c

LER 254/90-014

EXAMPLE d

LER 254/90-019

EXAMPLE e

LER 254/90-027

The Station recognized potential problems with ensuring Technical Specification surveillances are met and took the initiative to review their general surveillance (GSRV) program. During the fourth quarter of 1990, the Station requested the Onsite Nuclear Safety Department to conduct an assessment of the GSRV program. That assessment is complete and recommendations have been made.

Reviewing the examples in aggregate, we identified a potential common factor which is related to personnel errors.

Based on the knowledge gained from the Onsite Nuclear Safety assessment, the following corrective actions were developed which are broad-scoped and go beyond those corrective actions to address each event individually.

CORRECTIVE ACTIONS TO PREVENT FURTHER NONCOMPLIANCE

- 1) The GSRV Coordinator will provide a listing of Technical Specification surveillances for discussion at the Plan-of-the-Day meeting to keep station management informed of surveillance scheduling, including due dates, when grace periods are entered, and how much grace is left for each surveillance. This began on January 28, 1991.
- 2) A policy will be established and implemented to emphasize management expectations that unless extenuating circumstances exist, the routine use of the surveillance grace period will be eliminated and all GSRV scheduled Technical Specification surveillances will be completed on or before the due date. The Production Superintendent will develop the policy statement by February 15, 1991.
- 3) A Surveillance Coordinator position for the Operations Department will be established by May 1, 1991. During the interim the Station Surveillance Coordinator from Work Planning will oversee the Operations Department Surveillance Coordinator duties.
- 4) Personnel who perform Technical Specification surveillances will receive training on the importance of completing surveillances on time and paying attention to detail through the completion of the surveillance. The Station will use the INPO "self-check" program as a guide for developing a lesson plan. The lesson plan is expected to be completed by March 1, 1991 and training is expected to be completed by May 1, 1991.
- 5) The Technical Specification surveillance matrix currently maintained by Regulatory Assurance will be incorporated into the GSRV program by July 1, 1991.
- 6) A verification of the GSRV Tech Spec database will be performed for completeness and accuracy. A verification for the Operations Department will be completed by July 1, 1991, and by June 1, 1991 for all other departments.
- 7) The Personnel Error Evaluation Presentation (PEEP) Program was established in July 1990. The PEEP program brings the personnel involved in an event and upper station management together for a face to face discussion of the event. The event is reviewed, facts are presented, conclusions are drawn and proposed corrective actions are discussed. Examples a and e of this violation were presented as PEEP program events. In the future, all events which include personnel error as one of the primary causes will be reviewed by the Station Manager for the determination if a PEEP will be conducted.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED  
(for each individual example)

EXAMPLE a

Full compliance was achieved on September 20, 1990 when continuous fire watches were established for all required areas.

EXAMPLE b

Full compliance was achieved on January 2, 1990 when valve 2-4199-072 was cycled, proving operability and satisfying Technical Specification requirements.

EXAMPLE c

Full compliance was achieved on July 4, 1990 when a reactor water sample verified no increase in activity levels.

EXAMPLE d

Full compliance was achieved on August 14, 1990 when the required instrument checks per properly completed.

EXAMPLE e

Full compliance was achieved on November 4, 1990 when a new Core Performance Calculation was completed, the automonitoring function of the Core Monitoring Code was restored, and the Qualified Nuclear Engineer completed thermal limits calculations.

## VIOLATION 2

10 CFR 50, Appendix B, Criteria XVI states, in part, that measures shall be established to assure that conditions adverse to quality such as deficiencies and non-conformances are promptly identified and corrected. These measures shall assure that the cause of the condition is determined and corrective action taken to preclude repetition.

Contrary to the above, on October 4, 1990, it was identified that corrective actions for a previous Notice of Violation concerning the adequacy of work instructions (NRC Violation No. 89022-02a) did not preclude repetition of a similar event. On October 4, 1990 a violation for inadequate work instructions concerning lifted leads left unlanded for #3 and #4 turbine control valve fast acting solenoid valves was identified. This is a repeat violation concerning electrical maintenance work package content and instructions.

This is a Severity Level IV violation (Supplement I).  
(No. 50-265/90021-02(DRP))

## DISCUSSION

On October 3, 1990 Quad Cities Unit Two was operating in the RUN mode at approximately 32 percent of rated core thermal power. At 1650 hours, while performing the Turbine Control Valve Fast Closure Scram Instrumentation Functional Test, Turbine Control Valves (TCV) #3 and #4 failed to fast close and provide a half-scrum on Reactor Protection System (RPS) Channel 'B'. The #3 and #4 TCV test permissive lights de-energized and valve position indicators showed full closed. TCVs #1 and #2 tested satisfactorily. The fast-action solenoids provide fast closure (less than one second) of the turbine control valves to protect the turbine from overspeed when the load is removed. The purpose of the scram is to anticipate the rapid increase in the pressure and neutron flux which may result from the fast closure of the turbine control valves.

The failure of TCVs #3 and #4 to fast close and provide a half-scrum was due to the fact that the wires to the coils of the fast-acting solenoids were not landed inside the local junction box located on the respective control valves.

The cause for the lifted leads was due to a management deficiency in the Electrical Maintenance (EM) Department. The Work Packages initiated to perform the work did not provide for adequate documentation of lifted leads.

A contributing cause was the fact that the "As Left Condition-Work Performed" section of QAP 1500-S28 was not properly completed by the EM individual who lifted the leads. Had this been completed properly, it would have provided an indication to the subsequent EM crews that the leads were lifted and to reland them upon installation of the rebuilt solenoids.

The junction box covers were reinstalled after the leads were lifted to remove the old solenoid valves. This is standard maintenance practice. Therefore, there was no visual evidence that the leads in the junction boxes were lifted. With the junction box covers replaced and no documentation of lifted leads in the work package, a different crew completing the work did not recognize an incomplete circuit. Therefore, leads lifted at the local junction boxes were not relanded after installation of the rebuilt solenoids.

CORRECTIVE ACTIONS TAKEN AND RESULTS ACHIEVED

The lifted leads for the FASVs on TCVs #3 and #4 were relanded in their respective junction boxes on October 3, 1990.

CORRECTIVE ACTIONS TAKEN TO PREVENT FURTHER NON-COMPLIANCE

- 1) An Electrical Maintenance (EM) procedure, QCEM 700-14, "Lifting and Landing Leads", was written to outline the steps required for lifting and landing leads when necessary to perform maintenance work. This was completed on November 16, 1990.
- 2) EM work analysts have been instructed to include a Lead Lift and Land Log Sheet in EM work packages to properly document lead lifts and lands at locations other than those at the device being replaced.
- 3) EM personnel have been trained on the "Lifting and Landing Leads" procedure.
- 4) EM personnel have also been trained on the importance of properly filling out QAP 1500-S28, Work Request History Form.
- 5) All Maintenance personnel will review this event at their weekly tailgate meetings by February 6, 1991.
- 6) A Personnel Error Evaluation Presentation (PEEP) was held on October 22, 1990. The event was reviewed and as a corrective action the use of a Lead Lift and Land Log sheet was proposed.
- 7) Development of a Maintenance Department "Work Analyst Guideline" was begun in July 1990. This guide will aid the analyst in preparing maintenance work packages. The guideline will be issued by February 28, 1991 and training completed by March 31, 1991.

Previous corrective actions placed emphasis on verification of field conditions. The leads were properly lifted, however, documentation of the lifted leads was inadequate. With the addition of the Lead Lift and Land Log Sheet and training of Electrical Maintenance personnel on its use, Commonwealth Edison is confident that the recurrence of this event will be prevented.

DATE WHEN FULL COMPLIANCE WAS ACHIEVED

Full compliance was achieved on October 4, 1990 after the leads had been relanded, the test successfully completed, and outage report terminated.