



Commonwealth Edison

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May 22, 1985

Mr. James G. Keppler
Regional Administrator
U.S. Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, IL 60137

Subject: Quad Cities Station Units 1 & 2
Response to Inspection Report Nos.
50-254/85-02 & 50-265/85-02
NRC Docket Nos. 50-254 & 50-265

Reference (a): J. G. Keppler letter to Cordell Reed
dated April 2, 1985.

Dear Mr. Keppler:

This letter is in response to the inspection conducted by Messrs. R. A. Hasse & R. N. Sutphin during the period January 21, through February 7, 1985 of activities at Quad Cities Station. Reference (a) indicated that certain activities appeared to be in noncompliance with NRC requirements. The Commonwealth Edison Company response to the Notice of Violation is provided in the enclosure.

If you have any further questions on this matter, please direct them to this office.

Very truly yours,

B. Rybak
for D. L. Farrar
Director of Nuclear Licensing

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Attachment

cc: NRC Resident Inspector - Quad Cities

MAY 23 1985

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ATTACHMENT

COMMONWEALTH EDISON COMPANY

RESPONSE TO NOTICE OF VIOLATION

- A. The Standby Gas Treatment System (SBGTS) was modified by the installation of jumpers intended to bypass the heater high temperature cutoff switches, without the benefit of either an on-site review (as required by Technical Specification, Section 6.1.G.2.a.4) or a post-installation test to verify the installation's adequacy. The jumpers were installed across the wrong terminals; when the SBGTS was called upon to operate, due to the loss of the Reactor Protective System 1 D MG set, the heaters in both trains tripped.

DISCUSSION

On July 19, 1983, the Environmental Qualification of Electrical Equipment (EQEE) project identified that the heater high temperature cut out switches on the Standby Gas Treatment System (SBGTS) were not required. On August 18, 1983 the Station Nuclear Engineering Department (SNED) presented a formal recommendation to the Station to remove the temperature switches. The Station requested SNED's assistance in engineering the modification and SNED issued the modification approval on March 13, 1984. On August 1, 1984, due to spurious SBGTS heater trips caused by the temperature switches, jumpers were installed to delete the switches from the circuit. The jumpers were installed in accordance with procedure QAP 300-12, "Electrical Jumpers and Relay Blocks", and the existing corporate directive for jumper placement. An error was made on the placement of the jumpers due to the use of an incorrect electrical wiring drawing. When the SBGTS was called upon to operate on August 2, 1984 both trains were declared inoperable due to the failure of the electrical heaters. Licensee Event Report 84-12 was initiated.

CORRECTIVE ACTION TAKEN AND RESULTS ACHIEVED

The immediate corrective action taken was to correct the placement of the jumpers and to replace the damaged control transformers in each train's heater logic circuit. Both SBGTS Trains were operable within 12 hours of the initial failure. Subsequently, the jumpers were removed when the modification to remove the temperature switches was completed on each train.

CORRECTIVE ACTION TO BE TAKEN TO AVOID FURTHER NONCOMPLIANCE

Technical Staff Engineers have been instructed to more rigorously inspect actual plant configurations when working on modifications. In addition, Corporate Directive NSDD-A09 "Conduct of Operations", section 5.3.10 "Bypass of Safety Functions and Jumper Control" is being revised to consider placement of a jumper as a potential modification. Jumpers which impact safety functions will require an on-site review and approval prior to the placement of the jumper except during backshift circumstances. Station procedures shall be modified to comply with the Directive.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance is expected to be achieved when station procedure revisions are completed by July 30, 1985.

- B. In 1980 a modification was made to the control circuit of the Unit 1 Low Pressure Coolant Injection (LPCI) valves to prevent valve hammer during a continuous close signal. An error was made in the preparation of the wiring diagrams at the station and the resulting installation was in error. The error was not detected by either the subsequent review and approval of these diagrams or the tests performed after installation.

DISCUSSION

In 1973 a modification was initiated by the Station to prevent valve hammer during a continuous close signal on the Unit 1 Low Pressure Coolant Injection (LPCI) valves. In 1976 the Station received the approval from SNED to proceed with the modification. Several months later, in 1976, the Station returned the modification to SNED for preparation of the necessary wiring diagrams. In July 1979, the Station provided SNED with wiring diagrams and requested SNED to approve and return them to the Station. In August 1979, SNED approved the wiring diagrams. On November 26, 1980, the Station completed the modification, and on November 27, 1980, the modification test was complete. The error in the wiring of the modification was not discovered during the modification test because the motors on the injection valves had motor brakes on them to prevent valve hammering at the time of modification.

On July 29, 1984, the Unit One LPCI valve motors were replaced as part of the EQEE project. These new valve motors did not include motor brakes. The wiring error in the 1980 modification allowed the valves to hammer and become damaged.

CORRECTIVE ACTION TAKEN AND RESULTS ACHIEVED

The immediate corrective action taken was to repair the valves and to correct the wiring errors. All valve circuits modified under the 1980 modification were examined prior to the startup of the unit. Also, all valve motors which were replaced as part of the EQEE project were examined prior to the startup of the unit. The necessary corrections were made and the valves examined prior to unit startup.

CORRECTIVE ACTION TO BE TAKEN TO AVOID FURTHER NONCOMPLIANCE

The Station has formalized print design review for Safety-Related modifications engineered on-site. The review requires an independent design review by SNED. Additionally, the Station has implemented a new procedure providing guidelines for preparing Modification Tests and instructed appropriate personnel in its use.

SNED has also formalized its review of station generated design prints. SNED now requires all wiring diagrams furnished by the Station to be re-drafted and receive an independent design review by a SNED approved design organization. This change will be formally incorporated in SNED Procedure Q.6.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance has been achieved for by the Station. Compliance by SNED will be formally achieved by the implementation of Q.6 by June 15, 1985.

- C. The Unit 1 Steam Jet Air Ejector (SJAE) suction valves were replaced with butterfly valves. The design review and installation package did not identify that the valves could be installed in different orientations. Because of their subsequent incorrect installation, indication in the control room was opposite of actual valve position. The misorientations were detected while attempting to draw a vacuum on the condenser during startup.

DISCUSSION

In July, 1984, the Steam Jet Air Ejector (SJAE) Suction Valves were replaced with a more reliable valve. On August 8, 1984, the Station completed the modification test of the new SJAE suction valve. On August 16, 1984, when starting up the unit and trying to draw main condenser vacuum, it was discovered that the butterfly valve disc had been installed 90 degrees out of proper orientation. Actual valve position was exactly opposite of the indicated position in the Control Room and locally at the valve. In the modification package, neither the Station nor SNED specified a procedure or instructions regarding valve assembly. The modification package relied on the craft capability to correctly assemble the valves.

CORRECTIVE ACTION TAKEN AND RESULTS ACHIEVED

The immediate corrective action taken was to repair the SJAE suction valves by rotating the discs 90 degrees and properly reinstalling the operator. This allowed vacuum to be established on the main condenser and normal unit startup.

CORRECTIVE ACTION TO BE TAKEN TO AVOID FURTHER NONCOMPLIANCE

The Station has implemented a new procedure "Disassembly, Repair, and Reassembly of Safety-Related Butterfly, Ball, and check valves with Pneumatic or Hydraulic Actuators". This procedure includes guidance on proper assembly of valve discs to shafts to preclude orientation errors. In addition, discussions have been held with the Technical Staff Engineers emphasizing the need for thorough modification tests. The implementation of the new "Guidelines for Development of Tests for Modifications" procedure QTP500-6 will also aid in the proper preparation of future modification tests. Corporate Directive NSDD-A09 will be revised to address post maintenance and post modification test requirements.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

The Station is currently in full compliance. NSDD-A09 will be revised June 1, 1985.

- D. A 2" tee and flange were added to the Unit 1 bottom head drain line of the Reactor Water Clean Up (RWCU) system. This modification was approved, installed, and declared operational without the benefit of a stress analyses as required by FSAR Section 12.1.3.

DISCUSSION

On March 23, 1984 the Station received advanced approval on installation of a 2" tee and flange to the Unit One bottom head drain line (which is attached to the reactor water cleanup system). The tee was to facilitate chemical decontamination of the reactor vessel recirculation piping. On May 9, 1984 the installation of the modification was complete. And on July 11, 1984 the modification test was completed in conjunction with the vessel hydro. It was during the hydro that a significant vibration was identified on the tee and flange installation.

CORRECTIVE ACTION TAKEN AND RESULTS ACHIEVED

Subsequent analysis performed by SNED has indicated that the initial design review performed for this modification was adequate in that installation of the tee and flange did not affect the safe operability of the piping.

CORRECTIVE ACTION TO BE TAKEN TO AVOID FURTHER NONCOMPLIANCE

By letter dated March 14, 1985 all Project Engineers were instructed to require a full documented design evaluation to be performed prior to placing a system in service. This requirement will be met for all applicable modifications, including applicable advanced approval modifications. This will be formally implemented in SNED Procedure Q.6.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Both the Station and SNED are in full compliance.