



Commonwealth Edison
1400 Opus Place
Downers Grove, Illinois 60515

May 19, 1993

Dr. Thomas E. Murley, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attn: Document Control Desk

Subject: Quad Cities Nuclear Power Station Units 1 and 2
Revision to Implementation Schedule for HPCI
Turbine Steam Exhaust Line Modifications.
NRC Docket Nos. 50-254 and 50-265

References: (a) R. Stols and T.E. Murley letter dated
June 28, 1991
(b) J. Schrage to T.E. Murley letter dated
July 6, 1992
(c) J. Schrage to T.E. Murley letter dated
November 15, 1991
(d) J. Schrage to T.E. Murley letter dated
March 17, 1992

Dear Dr. Murley:

In August 1990, Commonwealth Edison (CECo) provided a response to an NRC Notice of Violation for Quad Cities Station (Inspection Report 50-254(265)/89024) citing the local leak rate testing performance of the 1(2)-2301-45 High Pressure Coolant Injection (HPCI) steam exhaust valve. During local leak rate testing, these valves had repetitively exceeded 10 CFR 50 Appendix J acceptance criteria.

As part of the corrective actions for the violation, CECo implemented a series of short and long term actions. The short term actions included replacement of the seating material on the check valve with a more suitable material; and modifying the spring design and the spring force. The long term corrective actions focused upon diagnostic testing of the check valve to determine the exact cause of failure. Diagnostic test results indicated that check valve cycling occurred during low speed surveillance of the HPCI turbine (2900 to 3100 rpm). In addition to the cycling effect, the diagnostic

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testing identified a "chugging" phenomenon in the exhaust line at low turbine speeds. This chugging could cause severe check valve oscillations. In order to minimize the valve cycling, CECo revised the normal operating surveillance procedures to reduce low speed testing of the HPCI turbine. CECo also performed an analysis to quantify the chugging phenomenon. This analysis suggested installation of a sparger on the end of the HPCI turbine steam exhaust line.

During a meeting at Region III in September 1990, CECo and the NRC discussed a potential modification to the HPCI turbine steam exhaust line. This modification established a new primary containment boundary such that the steam exhaust check valve (2301-45) was no longer part of the containment boundary, and thus could be removed from the 10 CFR 50 Appendix J leak rate testing program. The modification also included a sparger on the end of the HPCI turbine steam exhaust line, which would minimize the cyclical chugging load on the steam exhaust check valve. CECo provided a description of the modification as part of a proposed Technical Specification amendment for Quad Cities (References (a) and (b)) for the new primary containment configuration.

CECo provided supplemental information for the proposed Technical Specification amendments in References (c) and (d). As part of the additional information, CECo provided a schedule revision for installation of the exhaust line sparger, including the results of analyses which concluded that the existing exhaust line configuration will remain submerged in the torus below the minimum torus water level following a design basis accident. The NRC issued Technical Specification amendments and Safety Evaluations (SER) for the new primary containment configuration on November 4, 1992 and February 21, 1992 for Units 1 and 2 respectively. The NRC Safety Evaluations also included the revised schedule for installation of the HPCI turbine steam exhaust line sparger. The purpose of this letter is to provide information pertaining to a revision of the implementation plan for the HPCI turbine steam exhaust line sparger.

CECo has installed the new HPCI turbine steam exhaust line vacuum breaker configuration on Quad Cities Units 1 and 2 during refuel outages on both units in 1992. CECo also revised appropriate surveillance procedures in January 1991, eliminating turbine operation at low speeds. Finally, CECo installed modified check valves (improved seating material, springs, and spring forces) on Quad Cities Unit 1 in July 1991, and Unit 2 in January 1991. Installation of the HPCI turbine steam exhaust line spargers was scheduled for the twelfth refueling outage on Unit 2 (current refuel outage), and the thirteenth refueling outage on Unit 1 (scheduled to start on March 12, 1994).

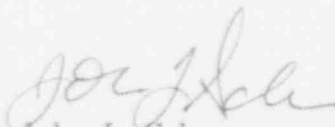
May 19, 1993

Subsequent to the revision of the surveillance procedures, and installation of modified check valves, CECo performed either 10 CFR 50 Appendix J testing (prior to installation of the new primary containment configuration); or full flow and backleakage testing in accordance with Section XI of the ASME Code (after installation of the new primary containment configuration). Since January 1991 for Quad Cities Unit 2, the HPCI turbine steam exhaust line check valve has successfully passed both 10 CFR 50 Appendix J leak rate and ASME Section XI backleakage testing acceptance criteria. Similarly for Quad Cities Unit 1, since July 1991, the HPCI turbine steam exhaust line check valve has successfully passed 10 CFR 50 Appendix J leak rate testing acceptance criteria. This information is provided in tabular form in the Enclosure.

Although the installation of the spargers will enhance the performance of the check valves over the entire HPCI turbine operating range, the modified check valves and enhanced surveillance procedures have significantly reduced excessive check valve cycling and wear to the valve seat. This has resulted in enhanced performance of the check valves during required testing. Based upon the enhanced performance of the valves, and the requirement to drain the torus in order to install the spargers, CECo will delay the installation of the spargers, pending further testing results of the HPCI turbine steam exhaust line check valves.

If there are any questions concerning this matter, please contact John L. Schrage at 708-663-7283.

Sincerely,



John L. Schrage
Nuclear Licensing Administrator

Enclosure

cc: A.B. Davis, Regional Administrator - RIII
C.P. Patel, Project Manager - NRR
T.E. Taylor, Senior Resident Inspector - Quad Cities
Office of Nuclear Facility Safety - IDNS