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NJK-75-96

February 20, 1975

Mr. John F. O'Leary, Director
Directorate of Licensing Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20545



REFERENCE: Quad-Cities Nuclear Power Station
Docket No. 50-254, DPR-29
Appendix A, Section 6.6.B.2.b

Dear Mr. O'Leary:

The purpose of this letter is to provide you with details concerning an Unusual Event which occurred at Quad-Cities Nuclear Power Station, Unit 1, on February 12, 1975. This report is submitted in accordance with the requirements of Technical Specification 6.6.B.2.b.

At 1:00 P.M. on February 12, with Unit 1 in the Cold Shutdown condition, a special Core Spray operational hydrostatic test was run. This test was being performed in compliance with IE Bulletin 74-01, Item 1.a., which required the performance of a system functional or hydrostatic test on Core Spray piping beyond the second isolation valve.

Each Core Spray loop was tested separately, with the flow path from the pressure suppression chamber, through the minimum flow line, and then back to the suppression chamber. The 1A Core Spray pump was run in this manner for one hour. Approximately 30 minutes after starting the 1B Core Spray pump, water was observed to be overflowing the 1B Reactor Building Floor Drain Sump. The pump was stopped, and the overflow ceased. It was noticed at that time that the Reactor Building Equipment Drain Tank (RBEDT) level indication was greater than full scale, and the suppression chamber water level had decreased 3 inches from that at the time of the test start. The suppression chamber had been in the process of being pumped down concurrently with the special Core Spray test, thus the level decrease was not apparent during the running of the test. It is estimated that approximately 20,000 gallons of water were placed in the RBEDT, floor drain sump, and the reactor building basement under the suppression chamber. Immediate corrective action consisted of replenishing the suppression chamber water inventory, pumping down the RBEDT and sump, and cleaning up the basement floor. No overflow water migrated into any ECCS pump rooms.

The cause of this event has been attributed to the premature actuation of the Core Spray discharge header relief valves. The header pipe pressures experienced during the test were approximately 375 psig, which is the design setpoint of the relief valves. A sizable majority of the Core Spray pump flow, therefore, was being diverted to the RBEDT, and eventually to the floor drain sump.

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An operational test was performed on the 1B Core Spray loop on the following day. By observing a sudden increase in RBEDT level as discharge header pressure was increased, the 1B relief valve was found to lift between 325 and 330 psig. It was postulated at that time that the 1A relief valve was likewise defective. Work requests were written to reset these relief valves.

On February 15, the valves were reset to lift at 370 psig (loop A) and 375 psig (loop B). The Unit 2 Core Spray discharge header relief valves had been reset on January 3, 1975 during the present refueling outage. The setpoints as-left were 375 psig and 380 psig for the 2A and 2B loops, respectively. On February 18, an operational hydrostatic test was run on the Unit 2 Core Spray System with the discharge header pressures being maintained at 350 psig. No relief valve actuations took place.

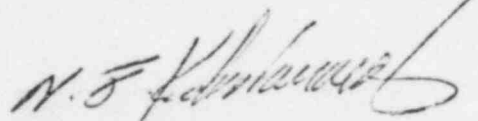
The Safety Implications of this event were not consequential due to the fact that the reactor was in the Cold Shutdown condition, and no ECCS was rendered inoperable. The ability for Core Spray to perform its design function was not jeopardized. The suppression chamber water level did not drop below the 0-inch mark on the control room level indicator during this occurrence. The water spillage did not result in any adverse contamination or airborne radiation conditions in the reactor building. There has been no cumulative experience at Quad-Cities Station with regards to this event.

The ECCS Simulated Auto-Actuation Test procedure has been amended so as to have the Core Spray pumps run on minimum flow only as long as necessary. A step has been also added to monitor RBEDT and suppression chamber levels during the simulated initiation. No other station procedure revisions have been deemed necessary as a result of this occurrence.

A modification has been initiated to re-route the relief valve discharge lines to the pressure suppression chamber. This modification will reduce the probability of losing suppression chamber water inventory during an accident condition while Core Spray is on the minimum flow path prior to injection into the reactor vessel. It has been suggested to have these lines tap into RHRS suppression chamber dump lines, rather than construct a new penetration to the chamber. This change will provide for additional system reliability and safety.

Very truly yours,

COMMONWEALTH EDISON COMPANY



N.J. Kalivianakis
Station Superintendent

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