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Quad-Cities Generating Station
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BBS-74-43

February 27, 1974

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

Reference: Quad-Cities Nuclear Power Station, Unit 2
Docket No. 50-265, DPR-30, Appendix A
Table 3.2.2

Dear Mr. O'Leary:

The purpose of this letter is to inform you of the details concerning the instrument failure reported to you by telegram at 1030 on February 19, 1974. It was also reported by telephone at 0900 on the same day to Region III, Directorate of Regulatory Operations.

PROBLEM AND INVESTIGATION

At 1100 on February 18, 1974, while operating at a steady state condition of 2321 MWt and 777 MWe, the annunciator "Auto Blowdown Interlock Core Spray/RHR" alarmed. No surveillance was being performed at the time. An investigation revealed the cause to be a shorted pressure switch in the RHR logic circuit. This switch, No. 2-1053D, closes when the discharge pressure of the 2D RHR pump gets to 85 psig. There are eight of these switches which sense discharge pressure from the RHR and Core Spray pumps. They serve a permissive function to delay initiation of Auto Blowdown until operation of one of the low pressure core cooling systems is verified.

PS-2-1053D shorted because of moisture collection in the case. It is a Static "O" ring model 6N-L3 which operates by a piston pushing against a spring to actuate a microswitch. The working fluid is separated from the instrument case by a diaphragm "O" ring assembly.

1719

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Table 3.2.2 of the Technical Specifications requires that all instrument channels be operable or tripped; in this case the tripped condition would be open, not shorted. At 1700 on February 18, 1974 the faulty pressure switch was replaced with a new one and calibrated in accordance with station surveillance procedures.

EVALUATION AND CORRECTIVE ACTION

SAFETY IMPLICATIONS

The safety implications of this failure are minor since the system is designed to tolerate a single instrument failure. Had the criteria for auto blowdown been satisfied, low low level and drywell pressure, the logic circuit would still have required a second pressure switch to be picked up by pump pressure before allowing actuation of Auto Blowdown.

DETERMINATION OF CAUSE AND CORRECTIVE ACTION

The termination box adjacent to the instrument was opened to check for water and found dry. The defective pressure switch was replaced, disassembled and inspected. A frayed diaphragm was discovered in the switch which allowed water to enter. Since the failure was an isolated case and similar failures in the future will result in an alarm, no further corrective action is contemplated. In addition, the remaining seven Static "O" ring pressure switches in this subsystem were checked and found to be dry.

EVALUATION OF CUMULATIVE EXPERIENCE FOR SAFETY IMPLICATIONS

This is the first failure of this type experienced at Quad-Cities. There are no safety implications due to cumulative experience.

Very truly yours,

COMMONWEALTH EDISON COMPANY
QUAD CITIES NUCLEAR POWER STATION

B. B. Stephenson
Station Superintendent

BBS/lk

cc: Regional Director
Directorate of Regulatory Operations-Region III