Commonwealth Edison
Quad-Cities Nuclear Power Station
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BBS-72-7

November 24, 1972

Mr. A. Giambusso
Deputy Director for Reactor Projects
Directorate of Licensing
U.S. Atomic Energy Commission
Washington, D. C. 20545

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Reference: Quad-Cities Nuclear Power Station Unit 1
License DPR-30, Appendix A
Sections 1.0.A.2, 3.7.D.2, and 6.6.B.3

Dear Mr. Giambusso:

The purpose of this letter is to inform you of the details regarding an incident involving an outboard main steam isolation valve, AO-1-203-2D, at Quad-Cities Unit 1. This abnormal occurrence was reported to you by telegram on November 16, 1972.

DESCRIPTION OF INCIDENT

At 0030 on November 15, 1972 with the Unit 1 reactor at 90 percent power, partial closure surveillance was being performed on the main steam line isolation valves as required by Technical Specification 4.7.D.1.d. When the test switch for MSIV-2D was actuated, approximately 25 seconds elapsed before any valve movement was detected by the indicating lights on control room panel 901-3. All other valves including the other MSIV in the D steam line tested satisfactorily, thus if an isolation signal had been received, the steam lines would have isolated.

INVESTIGATION AND REPAIR

Due to the probability of receiving a High Steam Line Flow isolation and scram if an MSIV were fully closed while at 90% power, load had to be reduced before the 2D valve could be exercised and timed. As power was

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being reduced at 1418, a pressure spike occurred while valving out the pressure regulator and the reactor scrammed on high neutron flux. An attempt was then made to exercise MSIV-2D with its control switch and the valve would not move. The inboard valve, AO-1-203-1D was put in the closed position for the subsequent reactor startup. Initial trouble shooting indicated that the operating pilot valve was not moving. The pilot valve was replaced and the MSIV was satisfactorily tested by cycling it four times.

The defective operating pilot was carefully disassembled and inspected in an attempt to determine the exact cause of failure. Considerable effort was required to free the piston and remove it from the pilot cylinder. When the piston was examined, it appeared to be clean except for a small amount of a light colored residue which could not be identified. Efforts were made to scrape off an analytical quantity, but this could not be done. The pilot piston was thoroughly cleaned and polished and the valve was reassembled. Cleaning the piston corrected the problem and the valve now operates freely.

CONCLUSIONS AND CORRECTIVE ACTION

The failure of the MSIV operating pilot was apparently caused by some contaminant from the Instrument Air System. The valve had been successfully cycled and timed four days prior to the failure. The fact that the steam lines would have isolated if required was proven by the demonstrated operability of the other seven valves at the time of the failure. Thus the plant was not operated at any time in an unsafe condition. This is the first occurrence at this station where an MSIV has been rendered inoperable by contamination from the air system. If trends develop which indicate this to be a problem, consideration will be given to a chemical flushing of the instrument air headers during the next major outage. Also as corrective action, an Operating Memo has been issued to all shift engineers to insure that they are aware of this potential problem with the MSIV's. This should assist them in detecting the problem immediately based on the valve behavior during partial closure surveillance testing.

Very truly yours,

W. F. Kohlwey

FOR: B. B. Stephenson
Superintendent

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