Commonwealth Edison
Quad-Cities Nuclear Power Station
Post Office Box 216
Cordova, Illinois 61242
Telephone 309/654-2241

BBS-73-94

May 16, 1973

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

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SUBJECT: Quad-Cities Nuclear Power Station Unit #2,
Docket No. 50-265, DPR-30, Appendix A,
Sections 4.7.A.2.i.(2)(b) and 6.6.C.2.

Dear Mr. Giambusso:

The purpose of this letter is to inform you of the details concerning an excessive leakage measurement which was made during a primary containment local leak rate test on the Unit 2 drywell purge valves. This unusual event took place on April 16, 1973 while the reactor was in the cold shutdown condition.

DESCRIPTION

On April 16, local leak rate tests were being performed on Unit 2 primary containment isolation valves and testable penetrations. This test was not required at this time, however, it was scheduled when Dresden Station experienced leakage on these valves. Air-operated valves 2-1601-21, 2-1601-22, 2-1601-55, and 2-1601-56 were placed in the closed position and the enclosed volume was pressurized to the 48 psig test pressure. Prior to beginning the test, each of these valves was cycled open and closed twice to demonstrate valve operability.

Should not have been per Appendix J

Following pressurization of the volume, a pressure decay test was run for one hour in order to measure the leakage. This leakage was 99.0 SCFH, which exceeded the acceptance criteria of 18.36 SCFH (5 percent Lto) for any one penetration or isolation valve. However, the Limiting

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Condition for Operation relating to primary containment was never exceeded since total allowable containment leakage was within specifications.

While observing the pressure decay, a steady flow of air was noticed leaking past the lower left portion of the valve disc on AO-2-1601-22. Following the leak test, the leaking valve was opened and maintenance personnel thoroughly cleaned the rubber seat. The valve packing was also tightened. On April 17, the volume was again tested and the leak rate was measured at 92.8 SCFH. Again, air was observed to be leaking past the disc.

With the 1601-22 valve in the closed position, a clearance of approximately 1/32" was measured between the valve disc and the rubber seat at the spot where the air leakage had been observed. The valve was removed from service and the disc was adjusted and re-positioned with shims to center it on the rubber seat. After returning the valve to service, it was operated twice to check operability.

On April 19, a leakage test was performed on the volume and the leak rate was 6.5 SCFH. No leakage was noticed past the disc on valve 1601-22.

INVESTIGATION AND CORRECTIVE ACTION

The volume enclosed by air operated drywell purge valves 2-1601-21, 2-1601-22, 2-1601-55, and 2-1601-56 had been tested for leakage on three occasions prior to April 1973. The preoperational leak rate test was performed on August 15, 1971 and the measured leakage was 6.70 SCFH. The total isolation valve leakage during the entire preoperational test was 82.99 SCFH, which was less than the allowable leak rate of 110.16 SCFH (30 percent Lto) for testable penetrations plus isolation valves. The drywell purge valves were again leak checked on May 14, 1972 and August 23, 1972 following minor valve repairs. The measured leakages on these two occasions were 12.3 SCFH and 15.5 SCFH, respectively.

Following the successful leak test on April 19, 1973, leakage measurements were made on the other Unit 2 air-operated primary containment vent and purge valves having valve discs similar to that of AO-2-1601-22. The following results were obtained:

Volume	Valves	Leakage
Drywell and torus exhaust lines	AO-2-1601-23, 24 60, 61, 62, 63	11.25 SCFH
Torus vent lines	AO-2-1601-20A, CV-2-1601-31A	0.64 SCFH
Torus vent lines	AO-2-1601-20B, CV-2-1601-31B	1.91 SCFH

These results were all within the acceptance criteria of 18.36 SCFH.

Similar leak tests were run on the Unit 1 drywell and torus vent and purge valves on May 5, 1973 with satisfactory results. The volume enclosed by AO-1-1601-21, 22, 55, and 56 had an acceptable leakage of 15.0 SCFH.

In all of the testing and inspections no deterioration of the rubber valve seats was detected. This is the first occurrence of this type at Quad-Cities and increased surveillance is planned for these valves at approximately 6 month intervals.

Sincerely,

COMMONWEALTH EDISON COMPANY
QUAD-CITIES NUCLEAR POWER STATION

B. B. Stephenson
Superintendent

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cc: Director of Compliance, Region III
Directorate of Regulatory Operations