



Commonwealth Edison
Quad-Cities Generating Station
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NJK-74-390

November 18, 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
Docket No. 50-254, DPR-29
Appendix A, Sections 1.0.A.2, 3.7.D.1, 3.7.D.3,
& 6.6.B.1.a.

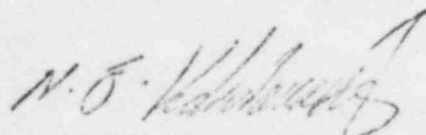
Dear Mr. O'Leary:

Enclosed please find Abnormal Occurrence Report No. AO 50-254/74-37 for Quad-Cities Nuclear Power Station. This occurrence was previously reported to Region III, Directorate of Regulatory Operations by telephone on November 8, 1974 and to you and Region III, Directorate of Regulatory Operations by telecopy on November 8, 1974.

This report is submitted to you in accordance with the requirements of Technical Specification 6.6.B.1.a.

Very truly yours,

COMMONWEALTH EDISON COMPANY
QUAD-CITIES NUCLEAR POWER STATION



N. J. Kalivianakis
Station Superintendent

NJK/PAR/saa

cc: Region III, Directorate of Regulatory Operations
J. S. Abel

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REPORT NUMBER: AO-50-254/74-37

REPORT DATE: November 18, 1974

OCCURRENCE DATE: November 8, 1974

FACILITY: Quad-Cities Nuclear Power Station
Cordova, IL 61242

IDENTIFICATION OF OCCURRENCE:

The ball valve for TIP Machine #5 of Unit One failed in the open position.

CONDITIONS PRIOR TO OCCURRENCE:

The unit was in the RUN Mode at a steady state power level of 2261 MWt and 735 MWe.

DESCRIPTION OF OCCURRENCE:

On November 8, 1974 at 0715 hours, while making a normal survey of his control panels, the Unit One operator discovered that the ball valve for TIP Machine #5 was in the open position. Operating the manual control switch on the TIP Drive Control Unit failed to close the ball valve. The Instrument Maintenance Department was notified and preparations were made to make an entry into the Unit One TIP cubicle. After a preliminary attempt to repair the ball valve in place failed, the ball valve was declared inoperable and at 1150 hours on November 8, an orderly shutdown at the rate of 20 MWe per hour was initiated. The control key for the shear valve was positioned in the control room for immediate use if necessary. These actions were in compliance with sections 3.7.D.1 and 3.7.D.3 of the Technical Specifications.

DESIGNATION OF APPARENT CAUSE OF OCCURRENCE:

Component failure - The cause of the occurrence was a combination of two component failures. The valve is solenoid-operated to the open position and spring loaded to the closed position. There are limit switches which provide open and closed indications to the control room. The spring was failing to return the ball valve completely to the closed position. Also, after this problem was initially corrected, the closed indication limit switch was not actuating properly.

ANALYSIS OF OCCURRENCE:

Although the open ball valve was discovered at 0715 hours on November 8, 1974, it is not known precisely when the failure occurred. The latest written record of TIP Machine #5 being operated was at 1500 hours on November 5, 1974. The actions of the operator after the discovery were adequate. Under accident conditions, with the drywell pressurized to 62 psig, the flow through the open penetration would have been 72.1 SCFM. Since the Standby Gas Treatment System would automatically start in the event of a loss of coolant accident, this leakage would be processed through it. This 72.1 SCFM represents only a small percentage of the rated flow of the SBT system, thus there would

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have been no significant amounts of radioactive materials released, nor would the public health and safety have been endangered.

CORRECTIVE ACTION:

On November 8, 1974 at the time that the shutdown was initiated, the instrument mechanics removed the failed ball valve and capped the primary containment penetration for TIP Machine #5. The ball valve was partially dismantled and inspected for an accumulation of the dry type lubricant used in the TIP tubes. This had been a cause of past ball valve failures. No accumulation was found. The valve was actuated on the bench and it was noticed that the valve was not returning completely to the closed position. The spring tension was adjusted. The valve was re-installed in the unit and functionally tested. It was then discovered that the open light remained on. After additional repair attempts failed, the valve was left out of the unit and the tube capped until November 12, 1974. The unit load reduction was terminated at 385 MWe.

On November 12, 1974, the ball valve was completely dismantled and it was discovered that the limit switch for the closed position was not actuating. All moveable parts of the valve were cleaned and lubricated, the spring tension was re-adjusted, and the limit switch was adjusted. The ball valve was re-installed and functionally tested satisfactorily.

FAILURE DATA:EQUIPMENT IDENTIFICATION:

Equipment Piece Number 700-733. Solenoid operated ball valve conforming to General Electric Drawing 112C2391P001.

RECORD OF FAILURES:

No previous failures of this equipment due to the causes discussed have occurred. However, there have been failures arising from the related problem of the dry lubricant in the TIP tube binding the ball valves and preventing their closure. The following is a list of these failures:

<u>Date</u>	<u>Unit</u>	<u>Ball Valve Number</u>
3-22-74	1	5
4-7-74	2	3
7-25-74	1	3

There are no safety implications for this abnormal occurrence due to the cumulative experience since this is the first failure of this type experienced.