

REPORT NUMBER: AO-50-254/74-8g

REPORT DATE: July 18, 1974

OCCURRENCE DATE: May 21, 1974

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

IDENTIFICATION OF OCCURRENCE:

Excessive leakage from the volume enclosed by valves AO-1-1601-21, AO-1-1601-22, AO-1-1601-55, and AO-1-1601-56.

CONDITIONS PRIOR TO OCCURRENCE:

Reactor in cold shutdown condition for refueling outage, drywell and torus purge valves closed.

DESCRIPTION OF OCCURRENCE:

On May 21, 1974, while performing local leak testing during the Unit One refueling outage, excessive leakage was measured when pressurizing the drywell nitrogen purge volume. All valves are normally closed when the system is not in service. The volume was pressurized to 48 psig through the pressure test valve 1-1601-74. By pressure decay it was determined the valves were leaking 26.1 SCFH which is in excess of Technical Specification 4.7.A.2.1(2)(b).

Required repairs were initiated and the subsequent leak test performed in the same manner as before showed the volume to leak 12.86 SCFH which is less than the 18.36 SCFH allowed by the Technical Specifications.

DESIGNATION OF APPARENT CAUSE OF OCCURRENCE:

It was determined that instruments PSH-1-8741-35 and FT-1-8741-34 had leakage past several fittings.

It was determined that the rubber seat on AO-1-1601-21 that the butterfly valve closes to was dirty.

Neither leak was excessive but the two together were enough to cause a leakage in excess of 18.36 SCFH.

ANALYSIS OF OCCURRENCE:

It was proved through several companion investigative leak tests that the AO-1-1601-22, AO-1-1601-55, and AO-1-1601-56 did not leak excessively. If an accident had occurred during operation, there may have been some leakage past the AO-1-1601-21 valve into the volume of piping enclosed by the four valves. This could have leaked through the instrumentation but it was determined during the companion leak tests that these fittings could be manually isolated. Therefore, there would have been no net out leakage from the drywell through this volume in excess of Technical Specifications.

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Thus, the consequences to public health and safety and personnel exposure are minimal.

CORRECTIVE ACTION:

Leaking fittings on PSH-1-8741-35 and FT-1-8741-34 were replaced. The rubber seat on A0-1-1601-21 was cleaned.

FAILURE DATA:

This is the first time these valves have been leak tested since the pre-operational test performed on October 28, 1970.

Unit Two has a similar volume with similar valves that was found to leak excessively on April 16, 1973. This was reported by telegram and 30-day letter. It was determined the A0-2-1601-22 valve leaked excessively and the valve butterfly was found to be slightly misaligned.

During the Unit Two refueling outage, the Unit Two drywell purge valves will be tested again.