METROPOLITAN EDISON COMPANY SUBSIDIARY OF GENERAL PUBLIC UTILITIES CORPORATION

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June 9, 1976
GQL 0841

Mr. J. P. O'Reilly, Director
Office of Inspection and Enforcement, Region 1
U.S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA 19406

Dear Sir:

Docket No. 50-289
Operating License DPR-50

In accordance with the Technical Specification of our Three Mile Island Nuclear Station Unit 1 (TMI-1), we are reporting the following reportable occurrence:

(1) Report Number: ER 76-19/3L

(2a) Report Date: June 9, 1976

(2b) Date of Occurrence: May 10, 1976

(3) Facility: Three Mile Island Nuclear Station Unit 1

(4) Identification of Occurrence:

Title: Violation of Technical Specifications, paragraph 4.4.1.2 in that combined local leak rate test results exceeded 0.6 La (111,899 SCCM)

Type: A reportable occurrence as defined by Technical Specification 6.9.2.B(2) in that the as found leakage constituted a condition requiring plant shutdown.

(5) Conditions Prior to Event:

Power: Core: 0
Elec.: 0

RC Flow: 0

RC Pressure: 0

1412 218

7910100 480

RC Temp: Ambient

PRZR Level: 0

PRZR Temp: Ambient

(6) Description of Event:

The as-found, measured total leakage for the valves and penetrations required to be leak tested was greater than 206,887 sccm compared to the acceptance criteria of 111,899 sccm.

(7) Designation of Apparent Cause of Event:

The cause of this event has been determined to be material in that the seat rings in valves CA-V2 and CA-V5A were not welded in as designed.

Also contributing as a cause of this event was design of valve MU-V116 in that it was not designed to back seat properly with 50 psig air backpressure.

The cause for leakage of other valves is determined to be operational wear.

(8) Analysis of Event:

The excessive leakage past these valves is not considered to have posed a threat to the health and safety of the public in that:

1. The valves were repaired to meet the acceptance criteria prior to returning the reactor to operation.

2. Some valves (IC-V2, 3, 4, 6 and RB-V7) with excessive leakage were on Closed Cooling Water Systems. Had an ES condition occurred during reactor operation prior to the refueling shutdown, the additional resistance to leakage caused by the water would have substantially reduced the leakage past the valves. (Local Leak Rate Tests are conducted with water drained from these valves and do not reflect actual system conditions.)

3. Several of the valves that failed (CA-V2,5A; CM-V7; CF-V12A and MU-V116) had a second reactor building isolation valve in series that passed its leakage test. In these cases the second containment isolation valve would have prevented leakage from the reactor building to the outside atmosphere.

(9) Corrective Action:

Numerous gate valves (IC-V2, 3, 4, 6 and RB-V7) in Cooling Water Systems had scarred seating surfaces. The most common repair was lapping and grinding of seats/wedges. One seat ring was replaced for one of these valves (RB-V7).

In two cases (IC-V6 and RB-V7) the valve wedges were not centered and this problem was corrected by replacing a bent stem for IC-V6 and modifying the wedge guide for RB-V7.

The seat rings for two small gate valves (CA-V2, 5A) were partially unscrewed preventing full closing of the valves. One of the affected rings on CA-V5A was broken. The seat rings were tack welded as a fix; the broken seat ring was replaced.

One ball valve (CM-V7) was not closing fully due to scarred seat rings. The seat rings were replaced and a considerable amount of dirt/grit was cleaned out of the valve.

Four large butterfly valves (AH-V1A; 1B, 1C, 1D) required cleaning and lubrication of the seating surfaces. AH-V1C was over traveling and required adjustment of the motor operator. AH-V1C and D also had flange leakage which required tightening of flange bolts.

One small check valve (CF-V12A) would not seat properly due to dirt accumulation and required cleaning.

A large tilting disc check valve (MU-V116) would not seat tight and extensive repair work was not successful. The valve was of a very poor design for the test requirements. A smaller lift check valve was substituted.

The as-left, measured total leakage for the valves and penetrations required to be leak tested was 76,303 sccm.

(10) Failure Data:

	Size	Mfgr.	Type	Actuator	Valve Material	Pressure Rating (psig)
AH-V1A/1D	48"	Pratt	Butterfly Valve	Pneumatic	C.S.	125
AH-V1B/1C	48"	Pratt	Butterfly Valve	Motor	C.S.	125
CA-V2,5A	1"	Velan	Gate Valve	Pneumatic	S.S.	1500/900
IC-V3,4	6"	Walworth	Gate Valve	Pneumatic	C.S.	150
IC-V2	6"	Walworth	Gate Valve	Motor	C.S.	150
IC-V6	3"	Walworth	Gate Valve	Pneumatic	C.S.	150
CM-V1	1"	Crane	Ball Valve	Pneumatic	S.S.	150
RB-V7	8"	Walworth	Gate Valve	Pneumatic	C.S.	150
MU-V116	4"	Crane	Check Valve	None	S.S.	3050
CF-12A	1"	Hancock	Check Valve	None	S.S.	600

(A complete report on valve testing and repair is available on site)

(10a) Similar Occurrences:

75-17
75-29

Sincerely,

Signed - R. C. Arnold

R. C. Arnold
Vice President

1412 220

RCA:JJM:cas