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TMI-19-053

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

THREE MILE ISLAND NUCLEAR STATION, UNIT 2 (TMI-2)
POSSESSION ONLY LICENSE NO. DPR-73
DOCKET NO. 50-320

Subject: TMI-2 Unfiltered Leak Rate from Containment with RB Breather Closed

This special report is being submitted pursuant to the requirements of Three Mile Island Nuclear Generating Station, Unit 2, Technical Specifications 3.1.1.2.d, specifically:

T.S. 3.1.1.2 The unfiltered leak rate from Containment with the RB Breather closed shall be less than 1/100 of the rate through the RB Breather.

Action: If the unfiltered leak rate from Containment with the RB Breather closed is greater than 1/100 of the rate through the RB Breather or if the trend indicates that the 1/100 value will be exceeded within one year, then:

- a. Identify the excessive leakage path;
- b. Make necessary repairs and/or adjustments;
- c. Perform an additional unfiltered leak rate test; and
- d. Prepare and submit a special report to the Commission pursuant to Specification 6.8.2 within the next 30 days.

On 05/09/19 the TMI-2 T.S. 3.1.1.2 Unfiltered Leak Rate Test was performed using Surveillance Procedure 2303-6.1 with the results indicating leakage (1.3%) above the acceptance criteria of <1%. This condition was documented in the TMI site corrective action program under Issue Report (IR) # 04247808.

A troubleshooting team was assembled, and a troubleshooting plan developed. Details of the troubleshooting are documented in IR 04247808. The purpose of troubleshooting was to address the action of T.S. 3.1.1.2.a to "identify the excessive leakage path." There were 6 potential causes identified and 4 of them were refuted by the troubleshooting. The 2 potential causes that were not refuted were: Airlock leakage – door seals were visually inspected; equalizing valves were found to be fully closing; and equalizing valve seats (as visible) were found acceptable. The airlock

doors were cycled to permit entry into the Containment for inspection. All components of the airlock functioned correctly.

Purge Valve(s) leakage – (outside) purge valves were found to be fully seated when closed. The Inner Purge valves are permanently blocked open (a condition of Post-Defueling Monitored Storage – PDMS); the outside purge valves were cycled per procedure, open and then closed.

The instrumentation used to complete the surveillance was checked for leakage and calibrated. A calibrated alternate instrument was installed at an alternate containment penetration as part of the troubleshooting plan. The conclusion of the troubleshooting effort satisfied T.S. 3.1.1.2.b, although, there were no necessary repairs and/or adjustments required. Per T.S. 3.1.1.2.c, the test was conducted again with satisfactory results (0.9%). A review of results from previous test performances [2013=0.1%, 2007=0.5%, 2002=0.2%] did not indicate an adverse trend or any outstanding issues that may affect the conduct of the test. It is noted that the most recent test result is higher than previously measured. This will be factored into the testing preparations and evaluation at the next testing interval per TS 4.1.1.2. Based on an initial failed test, the next test interval shall be 1 year per TS 4.1.1.2.

The most probable cause for the initial test failure was leakage through the purge valve(s) and/or the Reactor Building Airlock(s) since they are infrequently cycled components which may have achieved improved seating after being cycled. A contributing cause was the steady lowering local atmospheric (barometric) pressure during the entire initial (failed) test duration.

There are no regulatory commitments contained in this letter.

If you have any questions, please contact Gil Wright at (717) 948-8225.

Respectfully,



Gregory H. Halnon
President and Chief Nuclear Officer, GPUN

cc: USNRC TMI-2 Region I Inspector
USNRC TMI-2 Project Manager
USNRC Senior Resident Inspector – Three Mile Island
NRC Regional Administrator, Region I
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