

EXPIRES 4-30-82

(PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

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July 7, 1983

Mr. James P. O'Reilly, Regional Administrator
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street NW, Suite 2900
Atlanta, Georgia 30303

Re: McGuire Nuclear Station Unit 2
Docket No. 50-370

Dear Mr. O'Reilly:

Please find attached Reportable Occurrence Report RO-370/83-26. This report concerns T.S. 3.4.6.2, "Reactor Coolant System leakage shall be limited to: ...b. 1 gpm unidentified leakage,..."; and T.S. 3.6.3, "The containment isolation valves specified in Table 3.6-2 shall be operable with isolation times as shown in Table 3.6-2:.. This incident was considered to be of no significance with respect to the health and safety of the public.

Very truly yours,

H.B. Tucker / BT

Hal B. Tucker

PBN:jfw
Attachment (2)

cc: Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Records Center
Institute of Nuclear Power Operations
1100 Circle 75 Parkway, Suite 1500
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Mr. W. T. Orders
NRC Resident Inspector
McGuire Nuclear Station

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DUKE POWER COMPANY
McGUIRE NUCLEAR STATION
REPORTABLE OCCURRENCE REPORT NO. 370/83-26

REPORT DATE: July 7, 1983

FACILITY: McGuire Unit 2, Cornelius, NC

IDENTIFICATION: Unidentified Reactor Coolant System Leakage in Excess of 1 GPM, and Valve 2NM25 Inoperable

DESCRIPTION: On 6/8/83 the Reactor Coolant (NC) System leakage was declared out of specification pursuant to Technical Specification (T.S.) 3.4.6.2b, "Reactor Coolant System leakage shall be limited to ... 1 gpm Unidentified Leakage." The unidentified leakage was quantified as approximately 4 gpm through the performance of both manual and computer calculations per periodic test "Reactor Coolant Leakage Calculation". Unit 2 was in Mode 1 at 30% power at the time of the incident.

Immediate action taken was the identification of the leak, which was found to be valve 2NM68, NC Hotleg Sample Header Containment Penetration Relief. Stopping the leak by closing the penetration isolation valves was attempted through the electrical actuation of 2NM25 and 2NM22 from the Control Room. This did not successfully stop leakage through 2NM68.

Reactor power reduction began at 0040, 6/9/83 in accordance with Action Statement b of T.S. 3.4.6.2. The NRC was notified of the Action Statement associated power reduction by the Emergency Notification System. When reactor power reached approximately 5.5%, Operators were able to enter containment past the biological shield (crane wall) in order to manually isolate 2NM68 and check the electric containment isolation valves. Valve 2NM25 was determined to be not fully closed, and was manually closed. Isolation valves 2NC37 and 112 were also manually closed. These actions secured leakage through 2NM68 and another reactor coolant system leakage calculation was performed. Leakage was within specification; the Action Item was cleared at 0600 and power escalation began.

2NM25 was declared inoperable on 6/9/83 pursuant to T.S. 3.6.3 due to its failure to fully close. The requirements of the Action Statement had been met by the manual closure of 2NC112 and the manual closure and deenergizing of 2NM25.

These incidents are attributed to Component Malfunction: 2NM68 lifted at less than its intended setpoint and failed to reseal; 2NM25 failed to close fully when actuated.

EVALUATION: Penetration relief valve 2NM68 apparently lifted during the performance of the "Pressurizer Pressure and Level Control System Test". A recorded peak pressure of approximately 2290 psig occurred on 6/8/83. This is below the 2485 psig relief setpoint for 2NM68, but premature lifts on the order of 10% of the setpoint have been experienced in the past with other 3/4" Dresser Type SR relief valves.

Temperature transients made a valid test of NC system leakage difficult to perform, but an increasing frequency of makeup from the Volume Control Tank to the NC system indicated a possible leak. A high radiation alarm from 2EMF39L, Containment Atmosphere Radiation Monitor (Low Range), and increasing level in Containment Sump A also indicated an NC System leak. The leak was confirmed once system temperature and pressure were stabilized to allow accurate measurement. Due to past experience with Nuclear Sampling (NM) system penetration relief valves, and the fact that it relieved to sump A, 2NM68 was suspected of having lifted. Closing containment isolation valves 2NM22 and 25 reduced the rate of level increase for sump A, but did not entirely halt it.

Once containment was accessible following power reduction, manual isolation valves were closed and 2NM25 was found to be 3/4 of a turn from being fully closed.

CORRECTIVE ACTION: After identifying the source of NC system unidentified leakage, valves 2NM22 and 25 were electrically closed. After the 4 hours allowed under the Action Statement, power reduction began in order to reach Cold Shutdown within 6 hours. At approximately 5% reactor power, Operators were able to enter containment and close NC system isolation valves 2NC37 and 112. Penetration valves 2NM22 and 25 were checked, and the handwheel for manual operation of 2NM25 was closed an additional 3/4 turn. NC system unidentified leakage was then calculated to be within specifications (0.78 gpm).

The relief valve will be repaired (including properly adjusting the relief setpoint) and the operator travel and torque switch of 2NM25 checked to ensure full valve closure. A modification to delete the 3/4" Dresser Type SR relief valve, 2NM68, and replace it by a check valve to relieve penetration pressure to the NC system is planned. Pending leak-tight testing of the hard-seat check valves, this modification will be implemented during the current outage.

SAFETY ANALYSIS: The leakage through 2NM68 was well within the make-up capability of the charging pump. The ability to isolate penetration M309 was restored through the securing of 2NM25 and 2NC112 in the closed position, as dictated by the Action Statement. Prior to the identification of 2NM25 leakage, the second penetration valve, 2NM268, was available for containment isolation.

This incident had no impact on the health and safety of the public.