

NORTHEAST UTILITIES



THE CONNECTICUT LIGHT AND POWER COMPANY
THE HARTFORD ELECTRIC LIGHT COMPANY
WESTERN MASSACHUSETTS ELECTRIC COMPANY
WOLYCKE WATER POWER COMPANY
NORTHEAST UTILITIES SERVICE COMPANY
NORTHEAST NUCLEAR ENERGY COMPANY

P.O. BOX 270
HARTFORD, CONNECTICUT 06101
(203) 666-6911

March 31, 1983
MP-4851

Mr. Ronald C. Haynes
Regional Administrator, Region I
U.S. Nuclear Regulatory Commission Regional Office
631 Park Avenue
King of Prussia, Pa. 19406

Reference: Facility Operating License No. DPR-65

Dear Mr. Haynes:

This letter is sent as an informational notice regarding the shutdown of Millstone - Unit 2 on March 1, 1983. This letter is not required by our Technical Specifications, but was considered to be appropriate as informative and timely notification of events at Millstone Unit 2.

Yours truly,

NORTHEAST NUCLEAR ENERGY COMPANY

A handwritten signature in cursive script, appearing to read 'E. J. Mroczka'.

E. J. Mroczka
Station Superintendent
Millstone Nuclear Power Station

EJM/SP:ejl

Attachment:

cc: Director Office of Inspection and Enforcement, Washington, D. C. (30)
Director Office of Management Information and Program Control,
Washington, D. C. (3)
U. S. Nuclear Regulatory Commission, c/o Document Management Branch,
Washington D. C. 20555

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ATTACHMENT

On March 1, 1983, at 1730 hours, Millstone Unit 2 commenced a Cold Shutdown from its current 100% steady state power operation. This decision was based on the failure to meet Technical Specification 3.4.6.2.b, Reactor Coolant System (RCS) in that the unidentified leak rate was greater than 1 GPM.

The following is a brief history leading to the shutdown:

- Prior to the February 18, 1983 reactor trip, total RCS leakage was calculated by our computer program in steady state conditions to be approximately 1.30 GPM. Taking credit for identified leakage a 0.90 to 0.95 GPM unidentified leak rate from the RCS was determined.
- In the 7 months preceding this event, the unidentified RCS leak rate had been slowly trending upward to reach the approximate .90 to .95 GPM value. Extensive searches for the leaks during this time failed to fully identify potential sources.
- On February 26, upon achieving steady state conditions after the earlier reactor trip, RCS total leakage as calculated by the computer program mass balance, was 1.40 to 1.45 GPM. Taking credit for identified leakage resulted in a 1.0 to 1.05 GPM unidentified RCS leakage. Since this was slightly in excess of allowable unidentified leakage, a special test (T83-5) was performed to try to identify any leakage in the Chemical and Volume Control System (CVCS). Any leakage from this system would also be seen by our computer program as RCS leakage and hence we desired to quantify and take credit for this leakage. The test indicated a total RCS leak rate of 1.12 GPM. Taking credit for identified leakage resulted in an unidentified RCS leakage of approximately 0.73 GPM. The results of this test were consistent with a similar test performed 4 weeks prior (1/25/83), which showed a total RCS leak rate of 1.15 GPM. The 1/25/83 test was performed at a time when the computer program calculated total RCS leak rate was 1.30 GPM. Based on these results, station personnel concluded that the increased leakage was in the CVCS system. This was further supported by no increase in Containment radiation monitors, in Containment sump pumping and in calculated primary to secondary leak rate of the steam generators.
- On March 1, 1983 the computer program mass balance and CVCS leakage test (T83-5) were again performed as required by the surveillance program. The testing indicated a 1.7 GPM leak rate. When corrected the unidentified leak rate exceeded 1 GPM and the unit proceeded to Cold Shutdown as required by the technical specification 3.4.6.2.b.

Concerning the calculation completed on February 26, Technical Specifications require a mass balance to be performed on the RCS every 72 hours to identify the RCS leak rate. The RCS is coupled to the CVCS by charging flow, letdown flow and reactor coolant pump seal controlled bleed flow. Hence our mass balance computer program is actually calculating the total RCS/CVCS leak rate. The purpose of the test (T83-5) described above is to separate the RCS from the CVCS. Due to practical considerations, such a test can be run for only a very short time (1½ hours). Based on later review of the February 26 performance of the T83-5 test, some doubt exists as to the accuracy of the calculation due to changes in pressurizer pressure during the test. Revisions were made to the procedure to preclude recurrence of this problem.

Therefore, it is possible that the unidentified leak rate exceeded 1 GPM as early as February 26, 1983 due to the uncertainty of the performance of test T83-5. This possible error was discovered during the next test on March 1, 1983.