

JUL 13 1984

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Docket No. 50-289

Mr. Henry D. Hukill, Vice President
and Director - TMI-1
GPU Nuclear Corporation
P. O. Box 480
Middletown, Pennsylvania 17057

Dear Mr. Hukill:

SUBJECT: STAFF REVIEW OF TMI-1 STEAM GENERATOR LEAKAGE AND LONG-TERM
CORROSION TESTS

Your letters of June 27 and July 3, 1984, provided additional information on TMI-1 steam generator primary-to-secondary leakage, and your letter of July 6, 1984 provided updated information on the long-term corrosion test program. We have review this information as discussed below.

During the September 1983 steam generator hot functional test, the background primary-to-secondary leakage rate had been established at 1.0 gph as discussed in Supplement No. 1 to NUREG-1019 at pg. 22. While the plant was in a cold shutdown condition following completion of the last hot functional test of the plant in May 1984, GPUNC recently detected an increase in the background primary-to-secondary leakage rate of the B OTSG. Although the increase in leakage was less than that which would require inspection, you opened the primary side of both OTSG's and conducted hubble, drip and eddy-current test (ECT) examinations. ECT examinations of approximately 150 tubes demonstrated that corrosion was not progressing or initiating. A total of approximately 15 tubes and/or plugs showed indications of minor leakage. Minor leakage of this magnitude is typical from plugs and anticipated from the repaired tubes. The unplugged tubes which were leaking were confirmed to be leakage between the tube and tubesheet, above the kinetic expansion repair joint. It was determined that one tube was leaking past the 6-inch repair joint sufficiently so that background leakage would have increased to an estimated 4 gph at operating conditions. To maintain background leakage low, in addition to the leaking tube, two additional tubes were plugged as an added precaution. Leakage of this type is anticipated as discussed in various sections of NUREG-1019 and Supplement No. 1 to NUREG-1019. The total amount of primary-to-secondary leakage is limited by the plant Technical Specifications and the proposed License Condition No. 4 on page 27 of NUREG-1019, Supplement No. 1.

With regard to the long-term corrosion tests, your reported results indicate that tests which simulate actual plant conditions with water chemistry maintained at maximum anticipated impurity concentrations continue to show no evidence of crack propagation or initiation. The absence of crack propagation or initiation in these tests continues to support the conclusion of NUREG-1019 and Supplement No. 1 to NUREG-1019.

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Mr. Henry D. Hukill

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Test Loop No. 1 simulated conditions which assumed that peroxide cleaning would not be conducted and that a continued source of thiosulfate contamination would exist. Under these conditions, one pre-existing crack in a tube specimen taken from the TMI-1 OTSG showed crack propagation. No evidence of corrosion initiation of uncracked tube specimens was detected. These test results verify the applicability of the long-term corrosion test program by demonstrating that corrosion continues to propagate in water chemistry conditions where it would be predicted to propagate.

Based on the above, we find that the information provided by letters dated June 27, July 3 and July 6, 1984 does not affect the evaluation, conclusions, or proposed license conditions in NUREG-1019 or Supplement No. 1 to NUREG-1019.

Sincerely,

"ORIGINAL SIGNED BY:"

John F. Stolz, Chief
Operating Reactors Branch #4
Division of Licensing

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