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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

RELATED CORRESPONDENCE

July 13, 1984

Docket No. 50-289 DL

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DOCKETED  
USNRC

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MEMORANDUM FOR: Atomic Safety and Licensing Board for TMI-1  
Steam Generator Repair

FROM: Gus C. Lainas, Assistant Director  
for Operating Reactors, DL

SUBJECT: BOARD NOTIFICATION (BN-84-131) TRANSMITTING STAFF REVIEW  
OF RECENT TMI-1 STEAM GENERATOR LEAKAGE AND LONG-TERM  
CORROSION TEST PROGRAM

OFFICE OF SECRETARY  
DOCKETING & SERVICE  
BRANCH

In accordance with the NRC procedure for Board Notification, the following information is being provided for your information.

By letters dated June 27 and July 3, 1984, GPUNC (the licensee), provided information on the TMI-1 steam generator leakage detected in late June. By letter dated July 6, 1984, the licensee provided updated information on the long-term corrosion test program. These letters have been forwarded by the licensee to the Board and parties. The enclosed letter from the staff to the licensee dated July 13, 1984, documents the results of the staff's review of these matters.

Gus C. Lainas, Assistant Director  
for Operating Reactors, DL

Enclosure:  
As Stated

cc: See next page

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cc w/enclosure:  
Chairman Palladino  
Commissioner Roberts  
Commissioner Asselstine  
Commissioner Bernthal  
Commissioner Zech  
Parties to Hearing  
OPE  
OGC  
EDO  
SECY-2  
ACRS-10



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555  
July 13, 1984

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 reviewed 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 bubble, 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.

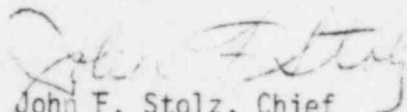
Mr. Henry D. Hukill

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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,



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

cc: See next page