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December 29, 1976
GQL 1777

Mr. James P. O'Reilly, Director
Office of Inspection & Enforcement, Region 1
U. S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, Pennsylvania 19406

Dear Sir:

Three Mile Island Nuclear Station, Unit 1 (TMI-1)
Docket No. 50-289
Operating License No. DPR-50
IE Circular 76-06

Enclosed please find an outline of the program we will follow at TMI-1 in response to IE Circular 76-06. A summary report of examination and evaluation of results will follow within sixty days of completion of the next TMI-1 refueling outage.

Sincerely

W. M. Creitz
President

WMC:JJM:eg

Enclosure: Outline of TMI-1 Program in
Response to IE Circular 76-06

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REPORT OF PROGRAM TO DETECT PRESENCE OF STRESS CORROSION CRACKS IN
STAGNANT AND LOW FLOW STAINLESS PIPING CONTAINING BORIC ACID SOLUTION

TMI UNIT #1

Summary

This report describes chemical analysis, hydrostatic testing and ultrasonic examinations which will be performed to assure structural integrity of stainless steel piping containing stagnant or low flow boric acid solution.

Scope

Stainless steel piping containing stagnant or low flow boric acid solution has been considered.

Program

I. Chemical Analysis

A program of chemical analysis, detailed below, already exists for detection of chlorides in the systems indicated. The history of these analyses indicates that these systems have not contained chlorides in concentrations above one ppm. It is well established that stress corrosion cracking does not occur when chloride concentrations are below ten ppm.¹ Therefore, it is inappropriate to conduct special tests on these systems.

Monitoring for chlorides will be continued. In the event that a threshold of ten ppm chloride concentration is exceeded at some time in the future, special testing of the piping involved will be considered at that time.

Sampling Conducted for Detection of Chlorides

<u>Sample Source</u>	<u>Frequency</u>
Decay Heat System	Daily when running
Borated Water Storage Tanks	Monthly
Reactor Coolant Bleed Tanks	Weekly
Core Flood Tanks	Monthly
Spent Fuel Pool	Monthly

¹Latanision and Staehle "Stress Corrosion of Iron-Nickel-Chromium Alloys" - Proceedings of the Conformance on Fundamental Aspects of Stress Corrosion Cracking - September 11-15, 1967 - Ohio State University. Copyrighted 1969 - National Association of Corrosion Engineers

II. Hydrostatic Testing

In special testing conducted during April, 1976, in response to news of stress corrosion cracks in other PWR plants, chloride levels in excess of ten ppm were measured in the Reactor Building spray piping. The levels measured were similar to those observed at Arkansas Nuclear One (ANO) where failures have occurred.

Conditions and materials used at ANO are not identical to TMI #1. However, special testing of the Reactor Building spray piping to detect the presence of stress corrosion cracks is appropriate in this case.

Therefore, a hydrostatic test of the Reactor Building spray piping in accordance with ASME Section XI will be performed during the 1977 refueling outage currently scheduled for 3/19/77 through 4/30/77.

III. Ultrasonic Testing

As a part of the special testing, an ultrasonic examination will be performed on the Reactor Building spray piping. At least four selected welds will be volumetrically examined in accordance with ASME Section XI, Appendix I, except that the examined area will cover a distance of approximately six (6) times the pipe thickness (but not less than two (2) inches, nor more than eight (8) inches). The welds to be examined will be selected on the basis of stress, probable exposure to chlorides and accessibility. Examination will be performed during the 1977 refueling outage currently scheduled for 3/19/77 through 4/30/77.

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