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July 5, 1984

Administrative Judges
Ivan W. Smith, Chairman
Sheldon J. Wolfe
Gustave A. Linenberger, Jr.
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

In the Matter of
Metropolitan Edison Company
(Three Mile Island Nuclear Station, Unit No. 1)
Docket No. 50-289 (Restart - Remand)

Dear Chairman Smith and Administrative Judges Wolfe and Linenberger:

During the June 28, 1984 prehearing conference, the Licensing Board requested that Licensee's counsel provide it with a current status report on the readiness of TMI-1 to restart. Tr. 27,308 (Chairman Smith). Based on a report today from Mr. Henry D. Hukill, Vice President of TMI-1, Licensee's counsel anticipates that TMI-1 could be physically ready to operate by the middle of this month. Licensee is continuing to conduct long-range maintenance and modification work at TMI-1. Once restart authorization is received, Licensee anticipates that it would take 7 to 10 days to place this work in a status to permit plant operation. The mid-July date is based on the need for 7 to 10 days of lead time.

For the information of the Board and the parties, Licensee encloses two letters sent by Licensee to the NRC Staff, dated June 27 and July 3, 1984, respectively, which report on the steam generator leakage recently detected at TMI-1.

Sincerely,

Deborah B Bauser

Deborah B. Bauser
Counsel for Licensee

DBB:jah
Enclosure
cc: Service List

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

Before the Commission

In the Matter of	)	
	)	
METROPOLITAN EDISON COMPANY	)	Docket No. 50-289 SP
	)	
(Three Mile Island Nuclear Station, Unit No. 1)	)	(Restart - Management Phase)

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Washington, D.C. 20555

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Administrative Judge
Gustave A. Linenberger, Jr.
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Washington, D.C. 20555

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U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Atomic Safety & Licensing Board
Panel
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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5211-84-2161
June 27, 1984

Office of Nuclear Reactor Regulations
Attn: John F. Stolz, Chief
Operating Reactors Branch No. 4
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Stolz:

Three Mile Island Nuclear Station, Unit I (TMI-1)
Operating License No. DPR-50
Docket No. 50-289
TMI-1 Steam Generator Leakage Testing

This letter is to provide you with additional information now available on the condition of the TMI-1 steam generators.

As you are aware, secondary chemistry data are routinely monitored and evaluated for trends at TMI-1 as part of our steam generator leakage monitoring program. Late last week, gradually increasing boron, cesium and tritium concentrations, as well as slight decreases in pH, were found to indicate a small increase in leakage in the "B" steam generator. The leak rate was determined to be approximately 1.5 gph under the current cold RCS conditions (about 300 psig). Although a rough projection to hot RCS conditions indicates a primary-to-secondary leak rate below the GPU administrative limit of 7 gph (and the Technical Specification limit of 60 gph), additional investigations of the change in leak rate are being conducted.

Bubble tests of tubing above approximately the eleventh tube support plate have been conducted in the "A" and "B" steam generators. One tube (80-45) in the "B" steam generator was identified as bubbling significantly. Tube 80-45 has bubbled slightly and intermittantly during past bubble tests. By using stoppers at various levels in the bubbling tube, it has been determined that primary coolant can pass through a crack very high in the upper tube sheet, then down through the tight tube-to-tubesheet crevice

comprising the same joint, and into the secondary system. Some leakage via such pathways has always been predicted for the mechanical tube-to-tubesheet joints. Because of the high bubble rate for this joint, the tube will be plugged before return to service.

Additional inspection of the leaking joint is planned using a fibroscope. Drip tests of the "B" lower tubesheet area are also scheduled to identify significant leakage contributors, if any, in the lower regions of the steam generator. Eddy current testing of the full length of the tube is also planned as confirmation that leakage is past the joint, not from lower in the tube. While the ECT equipment is in place, a sample population of other tubes will also be monitored. All these tests are scheduled for completion this week or early next week.

In the course of performing the highly sensitive bubble testing, 14 other tubes, 6 plugged and 8 unplugged were seen to have faintly visible, very slight bubble formation. Seven tubes were in the "B" OTSG and seven in the "A" OTSG (which had no evidence of a leakage increase based on chemistry monitoring). Stopper tests of the unplugged bubbling tubes indicated leakage past the tube-to-tubesheet joint in all cases. This type of bubbling has been seen in past tests, and is considered to be acceptable and not unexpected for mechanical joints such as the kinetic expansion and the mechanical rolled plug. No repairs are planned or considered necessary for these tubes, but their locations have been noted for special observation during any future bubble tests.

Subject to review as further testing and examinations are completed, GPU has concluded that earlier evaluations of acceptability of the steam generators for service are unaffected by the additional information.

Sincerely,

H. D. Hukill
Director TMI-1

HDH/MJG/CWS/mle

cc: R. Conte
C. McCracken
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5211-84-2169
July 3, 1984

Office of Nuclear Reactor Regulations
Attn: John F. Stolz, Chief
Operating Reactors Branch No. 4
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Stolz:

Three Mile Island Nuclear Station, Unit I (TMI-1)
Operating LIcense No. DPR-50
Docket No. 50-289
TMI-1 Steam Generator Inspection

In my letter of June 27, 1984, I described additional testing being conducted to investigate a small leakage increase in the "B" steam generator. This testing is now complete.

As reported previously, bubble testing identified only one tube as bubbling significantly, tube 80-45 in OTSG "B". A fibrescope was placed in tube 80-45 with the secondary pressurized. Water could be seen coming through a crack at a point above the kinetic expansion joint qualified length, confirming that the leakage path was between the tube and tubesheet. This tube has been plugged.

Drip tests of the "B" steam generator identified nine plugs in the lower tubesheet, and three tubes that were dripping very slightly. The three tubes (which included 80-45) had all been previously identified by the bubble test. Eight of the slightly dripping plugs were rolled plugs. Slight dripping or wetness is acceptable and not unexpected for this type of joint. A third plug was an explosively welded plug, which was repaired by placing a new plug below it.

Eddy current testing using a differential probe has now been conducted for all tubes identified as bubbling, all tubes with less than 40 percent through wall indications left in service in the "B" generator, and approximately seventy other tubes in the "B" generator which are part of the supplemental ECT sample population. No new eddy current indications were found. No known indications were found to have grown. No tubes that were bubbling have any ECT indications below the kinetic expansion joint, confirming that bubbling is past the joint in all cases. No additional ECT is planned.

One very low voltage ECT signal was noted by data analysts in tube 70-8 in the "B" generator, six inches above the lower face of the upper tube sheet. A review of previous inspections showed a signal of the same shape and voltage at that location for both pre- and post- expansion inspections, indicating that this signal does not represent a new or growing defect. This size and type of signal, which is very close to the threshold of detectability of the probe in use, cannot reliably be distinguished from background using this probe. This threshold of detectability has been considered and found acceptable in GPU's evaluation of the steam generators. When such small signals are identified, additional inspections using the more sensitive 8x1 probe are normally conducted to determine whether the anomalous signal represents an ECT indication or simply part of background. The additional time necessary to prepare equipment and to carry out this inspection is not considered warrented for one tube. Rather than leave the steam generators open to oxygen for the additional time period this tube will be plugged as a precautionary measure.

In addition to the two tubes described above, GPU plans to plug one additional tube in the "B" generator, tube 79-41. This is one of the slightly bubbling tubes identified in my June 27, 1984 letter. Although it bubbled so slightly that the water surface above remained undisturbed, bubble formation at the tube surface appeared somewhat more frequent than for other slight bubblers. In the interest of maintaining secondary activity levels as low as possible, this tube is being plugged.

GPU's investigations of the small leakage increase are now complete, and plugging is complete. The steam generators will be closed and returned to service this week. All evidence continues to support the conclusions drawn in GPU's submittals on the acceptability of the steam generators for return to service. Baseline leakage will be re-established, as required after plugging, prior to criticality.

Sincerely,

A. D. Hukill
Vice President - TMI-1

HDH/MJG/RAS/mle

cc: R. Conte
J. Van Vliet