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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.

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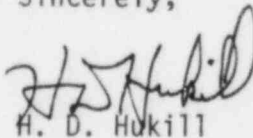
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One very low voltage ECT signal was noted by data analysts in tube 70-8 in the "B" generator, six inches above the lower face of the upper tube sheet. A review of previous inspections showed a signal of the same shape and voltage at that location for 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 warranted 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,



H. D. Hukill

Vice President - TMI-1

HDH/MJG/RAS/mle

cc: R. Conte  
J. Van Vliet