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February 2, 1984
5211-84-2026

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
United States Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr. Denton:

SUBJECT: Three Mile Island Nuclear Station, Unit 1 (TMI-1)
Operating License No. DPR-50
Docket No. 50-289
TMI-1 Steam Generators

During the GPU Nuclear Corporation (GPUN) management review of the acceptability of the steam generators to return to service, one aspect of GPUN Topical Report 008 was identified as potentially ambiguous. In telephone conversations with C. McCracken and H. Silver of the NRC staff on January 3, 1984, it was established that no misunderstanding exists. This letter provides clarification of TR-008 to document this mutual understanding.

The conclusion in the Topical Report that tubing left in service is acceptable for continued use is based on already conducted eddy current inspections and those to be carried out during future shutdowns, the results of transient loadings during the OTSG hot test program, the confirmation in the lead corrosion test program that no crack growth is anticipated due to chemical conditions, and the ability of leakage monitoring to detect leakage changes due to any loads imposed during cooldown which are sufficient to contribute significantly to mechanical fatigue.

TR-008, pp. 84-89 discusses tube stability during the most severe normal transient loading permitted by procedure, a cooldown resulting in a 70°F differential temperature between the shell and tubes. All plant cooldowns are, of course, not at this maximum rate and thus do not develop the maximum tube-to-shell delta T. As stated on page 88, "the OTSG leak rate will be monitored during each plant cooldown. High leak rates would be investigated prior to restart". This evaluation of each cooldown will be based on the actual plant conditions. For tubes experiencing lower loading during cooldown, the cooldown leakage, if any, is of significance since low loads may not be sufficient to assure that residual crack openings will remain after cooldown.

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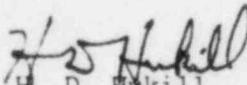
Mr. Harold R. Denton

Page 2

February 2, 1984

For low tube-to-shell delta Ts, the maximum load on some tubes may be less than or equal to that assumed for steady state in the TR-008 evaluation (200-500 lbs). Leakage through a hypothetical critical-sized crack in such a tube would not be significant under these conditions. However, each earlier cooldown at a higher delta T, such as those deliberately conducted during steam generator testing, will have shown that such cracks were not present and such low loads have been demonstrated not to significantly contribute to mechanical crack propagation (see TR-008, p.87). If a tube is loaded to an extent to contribute significantly to crack growth, leakage monitoring will show the presence of a critical-sized crack. If not, these particular tubes will be no different from a monitoring standpoint than all tubes during hot steady-state operations. The leakage monitoring performed during the previous transient which did generate significant loads is expected to remain representative of the condition of the tubes. Thus, the fact that some cooldowns result in a tube to shell delta T of less than or equal to 70°F is consistent with the previously discussed conclusions in TR-008.

Very truly yours,



H. D. Makill

Vice President/Director, TMI-1

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cc: H. Silver