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February 21, 1995
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U. S. Nuclear Regulatory Commission
Att: Document Control Desk
Washington, DC 20555

Dear Sir:

Subject: Three Mile Island Nuclear Station, Unit 1 (TMI-1)
Operating License No. DPR 50
Docket No. 50-289
Nonconservative BWNT Large Break LOCA ECCS Analysis

Reference: BWNT letter (JHT-95-12), Taylor to NRC, "Report of Preliminary Safety Concern Related to Large Break LOCA ECCS Analysis" dated January 27, 1995.

On January 27, 1995 GPU Nuclear was informed by B&W Nuclear Technologies (BWNT) of nonconservative input conditions and data handling techniques in the large break loss-of-coolant accident (LBLOCA) analysis. These errors cause a change in peak clad temperature (PCT) of greater than 50°F and a resultant PCT greater than 2200°F. However, because of the conservatism imposed by the operating limits in GPU Nuclear's Core Operating Limits Report (COLR), the errors have not affected TMI-1 performance to the 50.46(b)(1) criteria of 2200°F PCT.

10 CFR 50.46 (a)(3)(ii) requires that licensees report to the NRC within 30 days the nature of any changes or errors in an acceptable Evaluation Model (EM) or in the application of such a model which affect the PCT calculation by greater than 50°F. The report must describe the estimated effect on the limiting ECCS analysis, and include a proposed schedule for providing a reanalysis or taking other action as may be needed to show compliance with 10 CFR 50.46 requirements.

As discussed in the reference above, the errors are related to the core flood tank (CFT) initial conditions assumed in the LBLOCA EM calculations and a condition of nonconservative data handling (involving the transfer of core path inlet enthalpy from the CRAFT2 to the THETA1-B computer codes) which was found in the EM while evaluating the CFT initial conditions. Specifically, when the initial conditions of maximum CFT liquid inventory and minimum pressure were applied in the currently approved EM (BAW-10104), the PCT change was found to be greater than 50°F.

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The 2-ft LOCA linear heat rate (LHR) analysis limits for all operating plants will require reductions estimated to range between approximately 0.3 kW/ft and 1.3 kW/ft, depending on the plant and fuel designs, to ensure that calculated PCT's are within the 10 CFR 50.46 acceptance criteria.

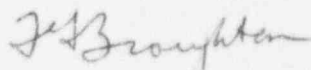
TMI-1 is currently in Cycle 10 operation with both Mark-B8 and Mark-B9 fuel assemblies. The BWNT preliminary analysis has focused on Mark-B9 and Mark-B10 fuel assemblies and a penalty of 1.3 kW/ft at the 2-ft elevation has been recommended for TMI-1. Mark-B8 assemblies are unaffected by the CFT input changes because LOCA limits at the 2-ft elevation were established for these assemblies using nominal CFT conditions. However, the analysis for all current fuel designs is subject to the nonconservative enthalpy data transfer. The adjustment related strictly to the Mark-B8 enthalpy contribution is expected to be smaller than that estimated for the Mark-B9. The final analyses to quantify the actual penalty for each fuel design at the 2-ft elevation are still in progress.

Based on the LHR penalties recommended by BWNT from the preliminary analyses, the TMI-1 operating limits for the remainder of the cycle (Cycle 10) will be unchanged. In addition to being bounded by the current operating limits, Table 2 of the TMI-1 COLR currently contains kW/ft monitoring limits for the remainder of Cycle 10 operation that bound the proposed reductions at the 2-ft elevation.

10 CFR 50.46 states that any change or error correction that results in a calculated ECCS performance that does not conform to the criteria set forth in paragraph (b) of this section is a reportable event as described in 50.72 and 50.73. TMI-1 is prevented from exceeding the acceptance criteria by the existing operating limits of the COLR. Therefore, the unit was prevented from being in an unanalyzed condition or a condition outside the design basis and this event is not reportable under 10 CFR 50.72 or 50.73.

BWNT has stated in the reference letter that its reanalysis is scheduled to be completed by August 1, 1995. Currently no action is required by GPU Nuclear pending the results of the reanalysis by BWNT.

Sincerely,



T. G. Broughton
Vice President and Director, TMI

MRK

cc: Region I Administrator
TMI-1 Senior Project Manager
TMI Senior Resident Inspector