Nuclear

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U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

Gentlemen:

Three Mile Island Nuclear Station Unit 1 (TMI-1)
Operating License No. DPR-50, Docket No. 50-289
NRC Bulletin 88-11
Pressurizer Surge Line Thermal Stratification and Striping
Justification for Continued Operation

This letter provides the GPU Nuclear (GPUN) Corporation response to NRC bulletin 88-11. The subject bulletin requires an inspection to determine any gross discernible distress or structural damage in the entire pressurizer surge line. Additionally, the subject bulletin requires that a justification for continued operation (JCO) be provided for those plants where a bounding analysis showed that Code requirements would not be met for the full licensed life of the pressurizer surge line, after considering the effects of thermal stratification and striping.

Since the issuance of the subject bulletin, the upcoming refueling outage (8R) is the first opportunity for TMI-1 to perform the requested inspection. The 8R outage is scheduled to begin in January, 1990 and the requested inspection will be completed during the outage.

Analysis to demonstrate compliance with the Code for the full licensed life of the plant has not been completed at this time. Such analysis is expected to be completed by the end of 1990 as part of the B&WOG activity. The major thermal stratification fatigue usage is caused by heatup/cooldown cycles. The following information and justification is provided as the JCO of TMI-1. The basic logic for the JCO of TMI-1 is its low number of heatup/cooldown cycles compared to the number of such cycles at comparable B&W lowered loop plants.

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In order to establish equivalency of TMI-1 to the other B&W lowered loop plants in terms of the pressurizer surge line configuration, plant operation and surge line material properties, GPUN reviewed the B&WOG report BAW-2085, dated May 1989, on this subject and its supporting calculations. The results of this review are: all of the B&W lowered loop plants have virtually identical pressurizer surge line configurations; and, all of the B&W plants are basically operated in a similar fashion. Four B&W plants have more heatup/cooldown cycles than TMI-1. Additionally, two of these plants, which have in excess of eighty (80) heatup/cooldown cycles, have equivalent material properties to TMI-1. One of these plants was instrumented to monitor the pressurizer surge line and other plant parameters. GPUN has reviewed the data collected at this plant and finds the major thermal stratification cycles that had occurred during the instrumented plant pre-heatup to have been caused by their HPI check valve IST surveillance testing.

GPUN's review of its own procedures, operations, and surveillance testing indicates that thermal stratification cycles during the pre-heatup phase are not expected. Fatigue usage for the same number of TMI-1 heatup/cooldown cycles as at the instrumented plant is expected to be lower. TMI-1 has thus far experienced fewer than 40 heatup/cooldown cycles compared to the 80 cycles at the two comparable plants. Even if we assume the usage factor per heatup/cooldown cycle to be the same at TMI-1 as at the other plants, an additional 40 heatup/cooldown cycles at TMI-1 is justified based on their successful operating experience.

Thus, justification for continued operation of TMI-1 has been demonstrated.

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HDH/GMC/djk

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