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GPU Nuclear, Inc.
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February 1, 2000
OG-1781

Project No. 693

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Attn: Mr. Stuart Bailey

Subject: Final Report of Preliminary Safety Concern (PSC 1-99) Related to the Use of an Inappropriate Reactor Coolant Pump Two-Phase Degradation Model

- References:
1. PSC 1-99, John A. Klingenfus, January 6, 1999, filed 205 T4.4
 2. Letter from J.J. Kelly to USNRC Document Control Desk, "Report of Preliminary Safety Concern Related to the Use of an Inappropriate RCP Two-Phase Degradation Model," OG-1748, March 5, 1999
 3. Letter from J. J. Kelly to USNRC Document Control Desk, "10CFR50.46 Thirty Day Report on Significant PCT Changing ECCS Analysis," February 4, 1999, OG-1740
 4. FTI Document "PSC 1-99 Resolution," 51-5006132-00, January 2000

Gentlemen:

The purpose of this letter is to advise you of the final results of the evaluation of the Preliminary Safety Concern (Reference 1) reported to the NRC in reference 2 and 3. The concern relates to the use of an inappropriate RCP two-phase degradation model in the analyses of large break loss of coolant events.

All of the cases affected by the RCP type and degradation model, and cases that challenge 10 CFR 50.46 limits, have been identified and either reanalyzed or reevaluated. The analyzed cases were used to develop PCT delta's (or linear heat rate adjustments) that were applied to the non-limiting core elevations or times in life. Documentation of the RCP degradation sensitivity studies, RCP reanalysis and associated PCT deltas or linear heat rate adjustments is contained in FTI Document "PSC 1-99 Resolution," reference 4.

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All PCT's inclusive of all penalties were less than 2150F when corrected and reanalyzed or reevaluated. The limiting two-phase pump degradation for the 177 FA raised and lowered loop plant designs were determined to be the RELAP5 two-phase head difference curves combined with the M3 two-phase void-dependent multiplier. Reference 4 also summarizes the plant specific RCP types and limiting two-phase degradation for all B&W-designed plants.

As a result of the evaluations, the concerns of PSC 1-99 do not constitute a defect or substantial safety hazard as defined in 10CFR Part 21. An adequate margin of safety is maintained. This concern is not reportable under Part 21.

If there are any questions on the evaluation results, please contact Robert Schomaker at 804/832-2917 or the undersigned at 804/832-2964.

Sincerely,



JJ Kelly
Manager
B&W Owners Group Services

JJK/RJS/mcl

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