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Document Control Desk
U. S. NUCLEAR REGULATORY COMMISSION
Mail Station P1-137
Washington, DC 20555

Attention: Mr. Robert B. Samworth, Project Manager
PWR Project Directorate III-3

Gentlemen:

DOCKETS 50-266 AND 50-301
ECCS LARGE BREAK LOCA ANALYSIS
POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

In a letter dated July 24, 1990, we notified the NRC of an error in the decay heat model used to perform the Large Break Loss of Coolant Accident (LOCA) analysis for the Point Beach Nuclear Plant (PBNP) Units 1 and 2. This error was also the subject of our Licensee Event Report 90-007-00 dated August 13, 1990. Our letter dated October 31, 1990, provided additional information concerning this error and discussed our plans to reanalyze the large break LOCA using the model changes described in Addendum 4 to Westinghouse Topical Report WCAP-10924, Volume 1, "Westinghouse Large Break LOCA Best Estimate Methodology: Model Description and Validation." We noted that it was our expectation that this reanalysis would fully recover the peaking factor value of 2.50 as currently defined in the PBNP Technical Specifications.

On March 1, 1991, we received from Westinghouse Electric Corporation the results of a reanalysis and recalculation of the Peak Cladding Temperature (PCT) for the Large Break LOCA transient. This calculation employed a power distribution corresponding to an F_Q of 2.50, an F delta H of 1.70, and a power factor in the low power channel of 0.6. The version of Westinghouse COBRA/TRAC used in this analysis incorporated those changes documented in WCAP 10924, Volume 1, Addendum 4, as well as other 1990 minor code corrections. These changes include:

- The decay heat model error correction.

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- Changes to the fuel rod conduction and strain model to improve the fuel rod energy balance and to more accurately calculate cladding oxidation by employing the strained fuel rod area in the Zr-H_2O reaction calculation.

- New gamma redistribution factors to better account for redistribution of fuel rod energy due to gamma transport.

The results of this analysis yielded a revised PCT value of 2028°F. The attached figure provides the PCT as a function of time for the limiting elevation. This Appendix K recalculation has been verified. Consequently, we can state that the Acceptance Limit will be met with the above peaking factor assumptions.

We have also been advised that the NRC staff has completed its review of WCAP-10924, Volume 1, Addendum 4, and has found the report and the model changes discussed therein to be acceptable. This approval was documented in a letter and safety evaluation report from Mr. A. C. Thadani of the NRC staff to Mr. W. J. Johnson of Westinghouse dated February 8, 1991. In light of the satisfactory reanalysis results and the NRC's formal approval of the model revisions, we are relaxing the special administrative limit we had placed on F_Q of 2.43. We had committed to this administrative limit in our letter of October 31, 1990, pending the results of the reanalysis and NRC approval of the model changes. The F_Q limit for PBNP Units 1 and 2 will be as defined in the Technical Specifications, i.e., 2.50.

Please contact us if you have any questions concerning our actions in this matter.

Very truly yours,

C. W. Fay
Vice President
Nuclear Power

Copy to NRC Regional Administrator, Region III
NRC Resident Inspector

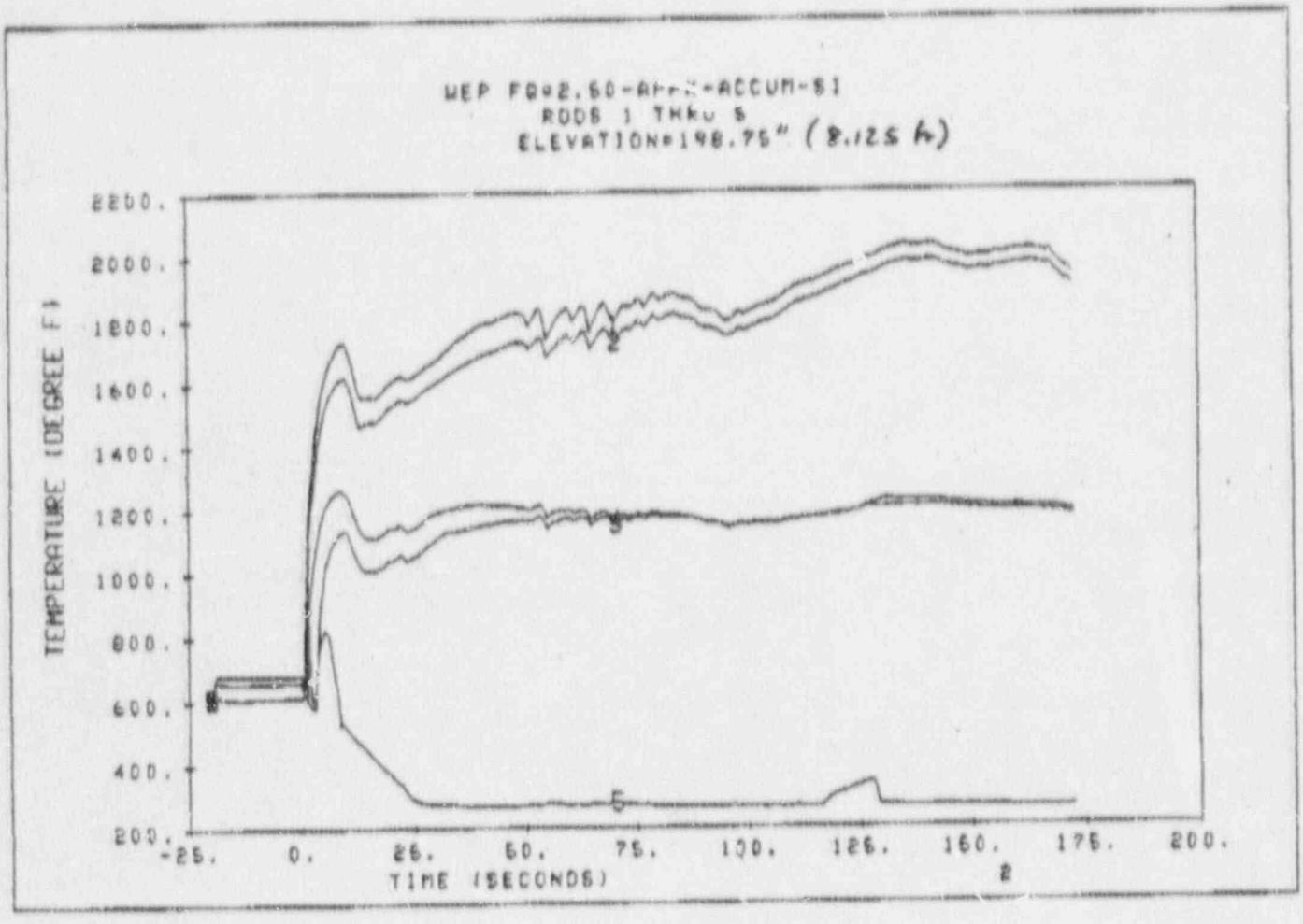

Figure 1. PBNP Cladding Temperatures for 0.4 DECLG Break at 8.125 ft.