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September 23, 1986

U. S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Washington, D. C. 20555

Attention: H. N. Berkow, Project Director
Special & Standardization Project Directorate

Gentlemen:

SUBJECT: SAFER MODEL FOR APPLICATION TO BOTH JET PUMP
AND NON-JET PUMP BOILING WATER REACTORS

The purpose of this letter is to request that the NRC approval of NEDE-30996 "SAFER Model for Evaluation of Loss-of-Coolant Accidents for Jet Pump and Non-Jet Pump Plants", specifically state the applicability of this version of the SAFER code to both jet pump and non-jet pump Boiling Water Reactors (BWR).

The original SAFER model described in NEDE-23785 was developed and approved for application to the jet pump BWR only. More recently, it has been expanded to include non-jet pump BWR capability as well. This expanded version of SAFER is described in NEDE-30996 and is currently undergoing NRC review. As a result of this evolution, there will exist two controlled versions of the code - the NEDE-23785 and NEDE-30996 versions. Since the latter incorporates all the features of the jet pump version in addition to the added non-jet pump capability, the NEDE-30996 version is appropriate for all BWR applications.

From the perspective of jet pump BWR LOCA analysis, the major new capability in SAFER is for high temperature core heatup calculations. It has been demonstrated (NEDE-30996 Volume 1 Figures 6-2 through 6-22) that the qualification of SAFER versus experimental results from the TLTA and ROSA jet pump plant simulation experiments was, if anything, improved as compared to the earlier version. In any case, the results of calculations for BWR/4 and BWR/6 LOCA events were impacted by less than $\pm 50^{\circ}$ F (NEDE-30996, Figures 6-24 through 6-35). Because of this, it is concluded that the expanded version of SAFER is applicable to jet pump BWR LOCA analysis over the entire range of PCT allowed by 10CFR50.46.

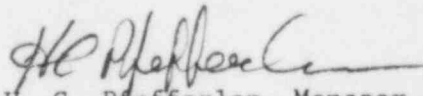
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The NRC review of NEDE-30996 has been focused on the non-jet pump application. In order to avoid any delay in this review, generic acceptance of jet pump application beyond the already approved temperature range (Upper Bound PCT less than 1600° F) is not being sought at this time. Accordingly, it is proposed that the approved application methodology in NEDE-23785 Volume III be used to guide the application of the expanded version of SAFER to jet pump plants. If in the future the calculated upper bound PCT equals or exceeds 1600° F for specific applications, additional supporting information will be submitted to demonstrate that the upper bound PCT prediction is sufficiently reliable (in accordance with the NEDE-23785 Volume III Safety Evaluation Report).

Since the necessary supporting material has already been provided for NRC review as part of the NEDE-30996 submittal, it is expected that this request can be satisfied without significant additional effort on the part of the NRC. If you have any questions, please contact the undersigned on (408) 925-3392.

Sincerely,


H. C. Pfefferlen, Manager
Safety & Fuel Licensing

HCP/dc

cc: T. E. Collins (NRC)
M. W. Hodges (NRC)
T. M. Su (NRC)
L. S. Gifford (GE - Bethesda)