GE Nuclear Energy

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Document Control Desk
US Nuclear Regulatory Commission
Washington, DC 20555-0001

Attention: J. L. Vermiel, Chief
Reactor Systems Branch

Subject: **Summary of Changes and Errors in ECCS Evaluation Models**

Reference: Letter, G. A. Watford to the Document Control Desk (T. E. Collins), *Reporting of Changes and Errors in ECCS Evaluation Models*, dated June 30, 1998 (MFN-032 8).

The purpose of this letter is to summarize the impact of changes and errors in the methodology used by GE to demonstrate compliance with the Emergency Core Cooling System (ECCS) requirements of 10 CFR 50.46. This report covers the period from the last report (Reference) to the present. It is noted that Peak Cladding Temperature (PCT) variations resulting from plant specific system or fuel changes are not addressed in this letter. These should be treated, as appropriate, on a plant specific basis in accordance with other sections of 10CFR50.

A summary of the changes and errors is provided in the attached table. The table describes the approved methodology affected, the range of applicability of the change/error, a brief description of the change/error and the estimated impact.

All utilities using these evaluation models have been notified of these changes/errors to assist them in reporting, in accordance with 10CFR50.46 (a) (3) (ii).

If you have any questions, please call me.

Sincerely,

G. A. Watford, Manager
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Summary of Changes and Errors in ECCS Evaluation Models
July 1998 through June 1999

Error/ Change	Approved Methodology	Applicability	Description	Impact
Error	NEDE-30996P-A, *SAFER Model for Evaluation of Loss-of-Coolant Accidents for Jet Pump and Non-Jet Pump Plants*, October 1987.	Non-jet pump plants, GE9 and later fuel designs with large central water rods	In CORCL (used for fuel rod heatup calculations during spray cooling conditions) the diameter of the large central water rod is not passed as needed into one of the initialization routines. This problem does not affect the view factor or heat transfer calculations, however, it does affect the cross-section distribution of droplets within subchannels. This is a conservative error. The error has been corrected in the CORCL module.	-30 to -40°F
Error	NEDC-23785-1-PA, Rev. 1, *The GESTR-LOCA and SAFER Models for the Evaluation of the Loss-of-Coolant Accident*, Octobe 1984.	Jet pump plants with GE8, GE9, GE10 and Siemens 8x8 and 9x9 fuel designs	The SAFER code models counter current flow limiting (CCFL) in the upper part of the bundle at the upper tie plate (UTP). The CCFL correlation uses the UTP flow area and a coefficient based on test data to determine the liquid downflow into the bundle. For fuel designs in which CCFL is expected to occur at the top spacer due to enlarged UTP flow areas, the CCFL constant must be adjusted to account for the difference in flow areas at the spacer and UTP. This was recognized for GE11 and later fuel types but was not applied to GE8, GE9, GE10 and Siemens 8x8 and 9x9 fuel types. The Technical Design Procedures have been modified to ensure that consistent inputs are used.	+5 to +25°F