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50-366

NL-11-1652

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555-0001

Edwin I. Hatch Nuclear Plant
10 CFR 50.46 ECCS Evaluation Model
Significant Change/Error Report

Ladies and Gentlemen:

In accordance with the requirements of 10 CFR 50.46(a)(3)(ii), Southern Nuclear Operating Company (SNC) is submitting the enclosed Edwin I. Hatch Nuclear Plant (HNP) emergency core cooling system (ECCS) evaluation model significant change/error report.

On July 21, 2011, SNC received notification of two change/error reports which included the respective estimated effects on the HNP limiting ECCS analysis fuel peak cladding temperature (PCT). The estimated effects of these two change/error reports have been added to the estimated effects of the changes/errors previously reported in the annual report. The resultant accumulation of the absolute magnitudes of the applicable change/error estimated effects is greater than 50 °F. This accumulation constitutes a significant change/error requiring a 30 day report. The resulting HNP PCT continues to meet the criterion of 10 CFR 50.46(b)(1) (i.e., ≤ 2200 °F) with sufficient margin such that no reanalysis is required.

This letter contains no NRC commitments. If you have any questions, please contact Jack Stringfellow at (205) 992-7037.

Respectfully submitted,

A handwritten signature in black ink that reads "Mark J. Ajluni". The signature is written in a cursive, flowing style.

M. J. Ajluni
Nuclear Licensing Director

MJA/CLT/lac

Enclosure: 1. Edwin I. Hatch Nuclear Plant 10 CFR 50.46 ECCS
Evaluation Model Significant Change/Error Report

cc: Southern Nuclear Operating Company
Mr. S. E. Kuczynski, Chairman, President & CEO
Mr. J. T. Gasser, Executive Vice President
Mr. D. R. Madison, Vice President – Hatch
Ms. P. M. Marino, Vice President – Engineering
RTYPE: CHA02.004

U. S. Nuclear Regulatory Commission
Mr. V. M. McCree, Regional Administrator
Mr. P. G. Boyle, NRR Project Manager
Mr. E. D. Morris, Senior Resident Inspector – Hatch

**Edwin I. Hatch Nuclear Plant
10 CFR 50.46 ECCS Evaluation Model Significant Change/Error Report**

Enclosure 1

10 CFR 50.46 ECCS Evaluation Model Significant Change/Error Report

**Edwin I. Hatch Nuclear Plant Unit 1
SAFER/GESTR-LOCA Analysis Model**

Table 1-1a – Current Changes/Errors

Description	Estimated Effect (Δ PCT)
In GE Hitachi 10 CFR 50.46 Notification Letter 2011-02 (Reference 1) an error was reported regarding the input coefficients used to direct the deposition of gamma radiation energy produced by fuel causing the heat deposited in the fuel channel (post scram) to be overpredicted and the corresponding heat to the fuel to be under predicted. The bounding effect of this error on peak cladding temperature (PCT) has been determined to be 45 °F.	45
In GE Hitachi 10 CFR 50.46 Notification Letter 2011-03 (Reference 1) an error was reported that the contribution of heat from gamma ray absorption by the channel had been minimized. The method had been simplified such that initially all the energy was assumed to be deposited in the fuel rods prior to the loss-of-coolant accident (LOCA) and then adjusted such that the correct heat deposition was applied after the scram. The energy distribution during the pre-scram phase was updated with the appropriate energy distribution. The bounding effect of this error on PCT has been determined to be 5 °F.	5

Table 1-1b – Cumulative Impact of Changes/Errors

Description	GE14
	$\Delta PCT $ (°F)
• Changes/Errors Previously Reported in Annual Report (Reference 2)	5
• Current Changes/Errors (References 1, 3)	50
Cumulative Total	55

**Edwin I. Hatch Nuclear Plant Unit 2
SAFER/GESTR-LOCA Analysis Model**

Table 1-2a – Current Changes/Errors	
Description	Estimated Effect (Δ PCT)
In GE Hitachi 10 CFR 50.46 Notification Letter 2011-02 (Reference 1) an error was reported regarding the input coefficients used to direct the deposition of gamma radiation energy produced by fuel causing the heat deposited in the fuel channel (post scram) to be overpredicted and the corresponding heat to the fuel to be under predicted. The bounding effect of this error on peak cladding temperature (PCT) has been determined to be 45 °F.	45
In GE Hitachi 10 CFR 50.46 Notification Letter 2011-03 (Reference 1) an error was reported that the contribution of heat from gamma ray absorption by the channel had been minimized. The method had been simplified such that initially all the energy was assumed to be deposited in the fuel rods prior to the loss-of-coolant accident (LOCA) and then adjusted such that the correct heat deposition was applied after the scram. The energy distribution during the pre-scram phase was updated with the appropriate energy distribution. The bounding effect of this error on PCT has been determined to be 5 °F.	5

Table 1-2b – Cumulative Impact of Changes/Errors	
Description	GE14
	Δ PCT (°F)
• Changes/Errors Previously Reported in Annual Report (Reference 2)	5
• Current Changes/Errors (References 1, 4)	50
Cumulative Total	55

References:

1. E-mail from James F. Harrison (GE Power & Water) to Christopher M. Comfort (SNC), "Hatch Units 1 and 2 50.46 Notification Letters 2011-02 and 2011-03," dated July 21, 2011.
2. Letter from Mark J. Ajluni to USNRC (NL-10-2340), "Edwin I. Hatch Nuclear Plant, Joseph M. Farley Nuclear Plant, Vogtle Electric Generating Plant 10 CFR 50.46 ECCS Evaluation Model Annual Reports for 2009," dated December 16, 2010
3. Global Nuclear Fuel Supplemental Reload Licensing Report for Edwin I. Hatch Nuclear Power Plant Unit 1 (Report Number 0000-0099-0707-SRLR), Revision 0, dated November 2009
4. Global Nuclear Fuel Supplemental Reload Licensing Report for Edwin I. Hatch Nuclear Power Plant Unit 2 (Report Number 0000-0116-1536-SRLR), Revision 0, dated December 2010