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

Edwin I. Hatch Nuclear Plant Units 1 and 2
10 CFR 50.46 ECCS Evaluation Model
Annual Report for 2014 and 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) Units 1 & 2 emergency core cooling system (ECCS) evaluation model annual report for 2014. In addition, as a result of the use of GNF2 fuel for the HNP Unit 2 Cycle 24 core load, SNC is submitting a HNP Unit 2 significant change/error report.

HNP Unit 2 Cycle 24 is the first HNP cycle with a reload of GNF2 fuel. Cycle 24 went critical on March 10, 2015. The new fuel introduction required re-analysis of ECCS-LOCA performance evaluation of the limiting large break LOCA and small break LOCA. The re-analysis resulted in an increase in the calculated peak cladding temperature (PCT) increase of 180°F for the GNF2 fuel as compared to the previous fuel design (GE14). The analysis also incorporated a methodology change to SAFER/PRIME-LOCA from the previous SAFER/GESTR-LOCA. The analysis meets the NRC Safety Evaluation Report (SER) requirements on the SAFER/PRIME-LOCA application, and demonstrates that the 10 CFR 50.46 PCT and maximum cladding oxidation acceptance criteria are satisfied.

There were no changes or errors to the GE14 ECCS-LOCA evaluation model for 2014 other than those reported in SNC letter dated June 20, 2014 (ML14171A627).

The GNF2 ECCS-LOCA evaluation incorporates all previous code error notices and provides a new baseline for HNP Unit 2 with GNF2 fuel. This re-analysis was performed for both units and will serve as a baseline for Unit 1 next spring after its first reload of GNF2 fuel is installed. However, until then, Unit 1 continues to be licensed using the existing GE14 ECCS-LOCA evaluation.

This letter contains no NRC commitments. If you have any questions, please contact Ken McElroy at (205) 992-7369.

Respectfully submitted,



C. R. Pierce
Regulatory Affairs Director

CRP/RMJ

Enclosure: Hatch Nuclear Plant 10 CFR 50.46 ECCS Evaluation Model
Annual Report for 2014 & Significant Change/Error Report

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**Edwin I. Hatch Nuclear Plant
10 CFR 50.46 ECCS Evaluation Model
Annual Report for 2014 and Significant Change/Error Report**

Enclosure

**Hatch Nuclear Plant 10 CFR 50.46 ECCS Evaluation Model
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**Edwin I. Hatch Nuclear Plant Unit 1
 SAFER/GESTR-LOCA Analysis Model**

Table 1-1a – SAFER/GESTR-LOCA Summary of Changes / Errors (2014)	
Description	Estimated Effect (Δ PCT)
None affecting PCT ¹	N/A

Table 1-1b – Cumulative Impact of Changes / Errors	
Description	GE14 ΔPCT (°F)
• Changes/Errors Previously Reported (Reference 1)	0 ¹
• Summary of Changes/Errors (2014)	0 ¹
Cumulative Total	0

¹ On June 20, 2014, a Significant Change / Error report was submitted (Reference 1). This “reset” the baseline PCT for reporting purposes. There were no additional changes / errors in 2014 other than those reported in Reference 1.

Edwin I. Hatch Nuclear Plant Unit 2

Table 1-2a – SAFER/GESTR-LOCA Summary of Changes / Errors (2014) (GE14)	
Description	Estimated Effect (Δ PCT)
None affecting PCT ¹	N/A

Table 1-2b – SAFER/PRIME-LOCA Summary of Changes / Errors (2014) (GNF2)	
Description	Estimated Effect (Δ PCT)
N/A (Not used in 2014)	N/A

Table 1-2c – Current Changes / Errors		
Description	GE14 Estimated Effect (Δ PCT)	GNF2 Estimated Effect (Δ PCT)
None affecting PCT ²	0	0 ³

Table 1-2d – Cumulative Impact of Changes /Errors		
Description	GE14 Δ PCT (°F)	GNF2 Δ PCT (°F)
• Changes/Errors Previously Reported (Reference 1)	0 ¹	N/A
• Current Changes / Errors	0	0 ³
• Summary of Changes/Errors (2014)	0 ¹	N/A
Cumulative Total	0	0

Enclosure to NL-15-0680
Hatch Nuclear Plant 10 CFR 50.46 ECCS Evaluation Model
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- ¹ On June 20, 2014, a Significant Change / Error report was submitted (Reference 1). This “reset” the baseline PCT for reporting purposes. There were no additional changes / errors in 2014 other than those reported in Reference 1.
- ² The GNF2 fuel has a licensing basis PCT that is 250°F greater than the GE14 licensing basis PCT, or 180°F greater than the GE14 error-corrected PCT. All previous code error notices have been included in the new GNF2 licensing basis PCT, while code error notices from 2011 – 2014 are not included in the GE14 licensing basis PCT. This explains why the difference in licensing basis PCT between GE14 and GNF2 is 70°F greater than the error-corrected PCT difference.
- ³ There have been no changes to the GNF2 “baseline” PCT.

Reference:

1. Letter from C. R. Pierce to USNRC (NL-14-0900), “Edwin I. Hatch Nuclear Plant Units 1 and 2 10 CFR 50.46 ECCS Evaluation Model Annual Report for 2013 and Significant Change/Error Report,” dated June 20, 2014