

Charles R. Pierce
Regulatory Affairs Director

Southern Nuclear
Operating Company, Inc.
40 Inverness Center Parkway
Post Office Box 1295
Birmingham, AL 35242

Tel 205.992.7872
Fax 205.992.7601



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

Joseph M. Farley Nuclear Plant Units 1 and 2
Vogtle Electric Generating Plant Units 1 and 2
10 CFR 50.46 ECCS Evaluation Model Annual Report for 2013

Ladies and Gentlemen:

Southern Nuclear Operating Company (SNC) is the licensed operator for the Joseph M. Farley Nuclear Plant (Farley) Units 1 and 2, and the Vogtle Electric Generating Plant (Vogtle), Units 1 and 2. The requirements of 10 CFR 50.46(a)(3)(ii) include an annual report by licensees of changes to or errors in acceptable emergency core cooling system (ECCS) models that affect the temperature calculation and the estimated effect of changes or errors on the limiting ECCS analysis. Accordingly, the reports required by 10 CFR 50.46(a)(3)(ii) for Farley and Vogtle are provided in Enclosures 1 and 2, respectively. The resulting peak cladding temperature (PCT) for Farley and Vogtle continue to meet the criterion of 10 CFR 50.46(b)(1) (i.e., $\leq 2200^{\circ}\text{F}$). Please note that the 2013 annual report for the Edwin I. Hatch Nuclear Plant, Units 1 and 2, was previously sent by letter dated June 20, 2014.

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

Respectfully submitted,

A handwritten signature in black ink that reads "C. R. Pierce". The signature is written in a cursive style with a prominent initial "C" and a long, sweeping underline.

C. R. Pierce
Regulatory Affairs Director

CRP/RMJ/lac

- Enclosures: 1. Joseph M. Farley Nuclear Plant Units 1 and 2
10 CFR 50.46 ECCS Evaluation Model Annual Report for 2013
2. Vogtle Electric Generating Plant Units 1 and 2
10 CFR 50.46 ECCS Evaluation Model Annual Report for 2013

cc: Southern Nuclear Operating Company

Mr. S. E. Kuczynski, Chairman, President & CEO

Mr. D. G. Bost, Executive Vice President & Chief Nuclear Officer

Ms. C. A. Gayheart, Vice President - Farley

Mr. D. R. Madison, Vice President – Fleet Operations

Mr. B. K. Taber, Vice President – Vogtle 1 & 2

Mr. M. D. Meier, Vice President – Regulatory Affairs

Mr. B. J. Adams, Vice President – Engineering

Mr. R. R. Martin, Regulatory Affairs Manager – Farley

Mr. G. W. Gunn, Regulatory Affairs Manager – Vogtle 1 & 2 (Acting)

RType: Farley=CFA04.054; Vogtle=CVC7000

U. S. Nuclear Regulatory Commission

Mr. V. M. McCree, Regional Administrator

Mr. S. A. Williams, NRR Project Manager – Farley

Mr. L. M. Cain, Senior Resident Inspector – Vogtle 1 & 2

Mr. P. K. Niebaum, Resident Inspector - Farley

Mr. R.E. Martin, NRR Project Manager – Vogtle 1 & 2

**Joseph M. Farley Nuclear Plant Units 1 and 2
Vogtle Electric Generating Plant Units 1 and 2
10 CFR 50.46 ECCS Evaluation Model Annual Report for 2013**

Enclosure 1

**Joseph M. Farley Nuclear Plant Units 1 and 2
10 CFR 50.46 ECCS Evaluation Model Annual Report for 2013**

**Joseph M. Farley Nuclear Plant – Unit 1
ASTRUM Best Estimate Large Break LOCA Evaluation**

| Table 1-1a – Summary of Changes/Errors (2013) | |
|--|--|
| Description | Estimated Effect (Δ PCT °F) |
| None affecting PCT* | 0 |

| Table 1-1b – Cumulative Impact of Changes/Errors | |
|---|--|
| Description | Δ PCT (°F) |
| • Changes/Errors Previously Reported (Reference 1) | 0* |
| • Summary of Changes/Errors (2013) (Reference 2) | 0* |
| Cumulative Total | 0 |

*On October 30, 2013, a Significant Change/Error Report for Farley was submitted (Reference 1). This “reset” the baseline PCT for reporting purposes. There were no additional changes/errors in 2013 from those reported in Reference 1.

**Joseph M. Farley Nuclear Plant – Unit 1
NOTRUMP Appendix K Small Break LOCA Evaluation**

| Table 1-1c – Summary of Changes/Errors (2013) | |
|--|--|
| Description | Estimated Effect (Δ PCT °F) |
| None affecting PCT | N/A |

| Table 1-1d – Cumulative Impact of Changes/Errors | |
|---|--|
| Description | Δ PCT (°F) |
| • Changes/Errors Previously Reported (Reference 1) | 0 |
| • Summary of Changes/Errors (2013) (Reference 2) | 0 |
| Cumulative Total | 0 |

**Joseph M. Farley Nuclear Plant – Unit 2
ASTRUM Best Estimate Large Break LOCA Evaluation**

| Table 1-2a – Summary of Changes/Errors (2013) | |
|--|--|
| Description | Estimated Effect (Δ PCT °F) |
| None affecting PCT* | 0 |

| Table 1-2b – Cumulative Impact of Changes/Errors | |
|---|--|
| Description | Δ PCT (°F) |
| • Changes/Errors Previously Reported (Reference 1) | 0* |
| • Summary of Changes/Errors (2013) (Reference 2) | 0* |
| Cumulative Total | 0 |

*On October 30, 2013, a Significant Change/Error Report for Farley was submitted (Reference 1). This “reset” the baseline PCT for reporting purposes. There were no additional changes/errors in 2013 from those reported in Reference 1.

**Joseph M. Farley Nuclear Plant – Unit 2
NOTRUMP Appendix K Small Break LOCA Evaluation**

| Table 1-2c – Summary of Changes/Errors (2013) | |
|--|--|
| Description | Estimated Effect (Δ PCT °F) |
| None affecting PCT | N/A |

| Table 1-2d – Cumulative Impact of Changes/Errors | |
|---|--|
| Description | Δ PCT (°F) |
| • Changes/Errors Previously Reported (Reference 1) | 0 |
| • Summary of Changes/Errors (2013) (Reference 2) | 0 |
| Cumulative Total | 0 |

References:

1. Letter from C. R. Pierce to USNRC (NL-13-2277), "Joseph M. Farley Nuclear Plant 10 CFR 50.46 ECCS Evaluation Model Annual Report for 2012 and Significant Change/Error Report," dated October 30, 2013
2. Westinghouse Letter LTR-LIS-14-91, "J. M. Farley Units 1 and 2, 10 CFR 50.46 Annual Notification and Reporting for 2013," dated March 18, 2014

**Joseph M. Farley Nuclear Plant Units 1 and 2
Vogtle Electric Generating Plant Units 1 and 2
10 CFR 50.46 ECCS Evaluation Model Annual Report for 2013**

Enclosure 2

**Vogtle Electric Generating Plant Units 1 and 2
10 CFR 50.46 ECCS Evaluation Model Annual Report for 2013**

**Vogle Electric Generating Plant – Unit 1
BASH Large Break LOCA Evaluation**

| Table 1-1a – Summary of Changes/Errors (2013) | |
|---|--|
| Description | Estimated Effect (Δ PCT) ($^{\circ}$F) |
| A change in the methodology used to calculate grid blockage ratio and porosity for 17x17 OFA fuel resulted in a change to the grid inputs used in the 1981 Appendix K Large Break LOCA Evaluation Model with BASH (BASH-EM), which affects the grid heat transfer in the LOCBART fuel rod heatup calculation. | 29 |

| Table 1-1b - Cumulative Impact of Changes/Errors | |
|---|--|
| Description | Δ PCT ($^{\circ}$F) |
| • Changes/Errors Previously Reported (Reference 1) | 0 |
| • Summary of Changes/Errors (2013) (Reference 2) | 29 |
| Cumulative Total | 29 |

**Vogtle Electric Generating Plant – Unit 1
BASH Large Break LOCA Evaluation**

| Table 1-1c – Summary of Changes/Errors (2013) | |
|--|---|
| Description | Estimated Effect (Δ PCT) |
| None affecting PCT | N/A |

| Table 1-1d – Cumulative Impact of Changes/Errors | |
|---|--|
| Description | Δ PCT (°F) |
| • Changes/Errors Previously Reported (Reference 1) | 0 |
| • Changes/Errors 2013 Calendar Year (Reference 2) | 0 |
| Cumulative Total | 0 |

**Vogtle Electric Generating Plant – Unit 2
BASH Large Break LOCA Evaluation**

| Table 1-2a – Summary of Changes/Errors (2013) | |
|---|---|
| Description | Estimated Effect (Δ PCT) |
| A change in the methodology used to calculate grid blockage ratio and porosity for 17x17 OFA fuel resulted in a change to the grid inputs used in the 1981 Appendix K Large Break LOCA Evaluation Model with BASH (BASH-EM), which affects the grid heat transfer in the LOCBART fuel rod heatup calculation. | 29 |

| Table 1-2b - Cumulative Impact of Changes/Errors | |
|---|--|
| Description | Δ PCT (°F) |
| • Changes/Errors Previously Reported (Reference 1) | 0 |
| • Summary of Changes/Errors (2013) (Reference 2) | 29 |
| Cumulative Total | 29 |

**Vogtle Electric Generating Plant – Unit 2
Appendix K Small Break LOCA Evaluation**

| Table 1-2c – Summary of Changes/Errors (2013) | |
|--|---|
| Description | Estimated Effect (Δ PCT) |
| None affecting PCT | N/A |

| Table 1-2d – Cumulative Impact of Changes/Errors | |
|---|--|
| Description | Δ PCT (°F) |
| • Changes/Errors Previously Reported (Reference 1) | 0 |
| • Changes/Errors 2013 Calendar Year (Reference 2) | 0 |
| Cumulative Total | 0 |

References:

1. Letter from C. R. Pierce to USNRC (NL-13-2576), "Edwin I. Hatch Nuclear Plant Units 1 and 2 Vogtle Electric Generating Plant Units 1 and 2 10 CFR 50.46 ECCS Evaluation Model Annual Report for 2012," dated December 23, 2013.
2. Westinghouse letter LTR-LIS-14-101, "A. W. Vogtle Units 1 and 2 10 CFR 50.46 Annual Notification and Reporting for 2013," dated March 17, 2014.