

Southern Nuclear  
Operating Company, Inc.  
4000 Peachtree Industrial Blvd.  
Atlanta, GA 30328  
Attention: Nuclear License Unit  
770.399.4050

December 17, 2009



*Energy to Serve Your World*  
NL-09-1838

Docket Nos: 50-321 50-348 50-424  
50-366 50-364 50-425

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

Edwin I. Hatch Nuclear Plant  
Joseph M. Farley Nuclear Plant  
Vogtle Electric Generating Plant  
10 CFR 50.46 ECCS Evaluation Model Annual Reports for 2008

Ladies and Gentlemen:

Southern Nuclear Operating Company (SNC) is the licensed operator for the Edwin I. Hatch Nuclear Plant (Hatch), the Joseph M. Farley Nuclear Plant (Farley), and the Vogtle Electric Generating Plant (Vogtle). 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 Hatch, Farley, and Vogtle are provided in Enclosures 1, 2, and 3, respectively. The resulting peak cladding temperature (PCT) for Hatch, Farley, and Vogtle continues to meet the criterion of 10 CFR 50.46(b)(1) (i.e.,  $\leq 2200^{\circ}\text{F}$ ).

This letter contains no NRC commitments. If you have any questions, please advise.

Sincerely,

A handwritten signature in black ink that reads "Mark J. Ajluni".

M. J. Ajluni  
Nuclear Licensing Manager

MJA/CLT/lac

Enclosures:

1. Edwin I. Hatch Nuclear Plant 10 CFR 50.46 ECCS  
Evaluation Model Annual Report for 2008
2. Joseph M. Farley Nuclear Plant 10 CFR 50.46 ECCS  
Evaluation Model Annual Report for 2008
3. Vogtle Electric Generating Plant 10 CFR 50.46 ECCS  
Evaluation Model Annual Report for 2008

cc: Southern Nuclear Operating Company  
Mr. J. T. Gasser, Executive Vice President  
Mr. J. R. Johnson, Vice President – Farley  
Mr. D. R. Madison, Vice President – Hatch  
Mr. T. E. Tynan, Vice President – Vogtle  
Ms. P. M. Marino, Vice President – Engineering  
RType: CFA04.054; CHA02.004; CVC7000.

U. S. Nuclear Regulatory Commission  
Mr. L. A. Reyes, Regional Administrator  
Mr. R. E. Martin, NRR Project Manager – Farley  
Ms. D. N. Wright, NRR Project Manager – Hatch  
Ms. D. N. Wright, NRR Project Manager – Vogtle  
Mr. E. L. Crowe, Senior Resident Inspector – Farley  
Mr. J. A. Hickey, Senior Resident Inspector – Hatch  
Mr. M. Cain, Senior Resident Inspector – Vogtle

**Edwin I. Hatch Nuclear Plant  
Joseph M. Farley Nuclear Plant  
Vogtle Electric Generating Plant  
10 CFR 50.46 ECCS Evaluation Model Annual Reports for 2008**

**Enclosure 1**

**Edwin I. Hatch Nuclear Plant  
10 CFR 50.46 ECCS Evaluation Model Annual Report for 2008**

**Enclosure 1  
Edwin I. Hatch Nuclear Plant  
10 CFR 50.46 ECCS Evaluation Model Annual Report for 2008**

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

<b>Table 1-1a – Summary of Changes/Errors (2008)</b>	
<b>Description</b>	<b>Estimated Effect (<math>\Delta</math> PCT)</b>
None affecting PCT	N/A

<b>Table 1-1b – Cumulative Impact of Changes/Errors</b>	
<b>Description</b>	<b>GE14</b>
	<b><math>\Delta</math> PCT  (°F)</b>
• Changes/Errors Previously Reported (Reference 1)	5
• Current Year – 2008 (Reference 2)	0
<b>Cumulative Total</b>	<b>5</b>

Enclosure 1  
 Edwin I. Hatch Nuclear Plant  
 10 CFR 50.46 ECCS Evaluation Model Annual Report for 2008

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

<b>Table 1-2a – Summary of Changes/Errors (2008)</b>	
Description	Estimated Effect ( $\Delta$ PCT)
None affecting PCT	N/A

<b>Table 1-2b – Cumulative Impact of Changes/Errors</b>	
Description	GE14
	$\Delta PCT $ ( $^{\circ}F$ )
• Changes/Errors Previously Reported (Reference 1)	5
• Current Year – 2008 (Reference 3)	0
<b>Cumulative Total</b>	5

**Enclosure 1**  
**Edwin I. Hatch Nuclear Plant**  
**10 CFR 50.46 ECCS Evaluation Model Annual Report for 2008**

**References:**

1. Letter from Mark J. Ajluni to USNRC (NL-08-1735), "Edwin I. Hatch Nuclear Plant, Joseph M. Farley Nuclear Plant, Vogtle Electric Generating Plant 10 CFR 50.46 ECCS Evaluation Model Annual Reports for 2007," dated December 19, 2008
2. Global Nuclear Fuel Supplemental Reload Licensing Report for Edwin I. Hatch Nuclear Power Plant Unit 1 (Report Number 0000-0067-2863-SRLR), Revision 0, dated December 2007
3. Global Nuclear Fuel Supplemental Reload Licensing Report for Edwin I. Hatch Nuclear Power Plant Unit 2 (Report Number 0000-0083-5389-SRLR), Revision 0, dated December 2008

**Edwin I. Hatch Nuclear Plant  
Joseph M. Farley Nuclear Plant  
Vogtle Electric Generating Plant  
10 CFR 50.46 ECCS Evaluation Model Annual Reports for 2008**

**Enclosure 2**

**Joseph M. Farley Nuclear Plant  
10 CFR 50.46 ECCS Evaluation Model Annual Report for 2008**

Enclosure 2  
 Joseph M. Farley Nuclear Plant  
 10 CFR 50.46 ECCS Evaluation Model Annual Report for 2008

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

<b>Table 2-1a – Summary of Changes/Errors (2008)</b>	
Description	Estimated Effect ( $\Delta$ PCT)
<p><b><u>Reactor Coolant Pumps Inputs Error</u></b></p> <p>Several errors were discovered in the pump two-phase degraded homologous curve. In addition, minor errors were also found in the pump inputs resulting in a slight loop to loop asymmetry. The corrected pump inputs have been evaluated. The result from the plant specific WCOBRA/TRAC runs yielded an estimated PCT increase of 18°F for Farley Unit 1.</p>	18°F

<b>Table 2-1b – Cumulative Impact of Changes/Errors</b>	
Description	$\Delta$  PCT  (°F)
• Changes/Errors Previously Reported (Reference 1)	0
• Current Year – 2008 (Reference 2)	18
<b>Cumulative Total</b>	18

**Enclosure 2**  
**Joseph M. Farley Nuclear Plant**  
**10 CFR 50.46 ECCS Evaluation Model Annual Report for 2008**

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

<b>Table 2-1c – Summary of Changes/Errors (2008)</b>	
<b>Description</b>	<b>Estimated Effect (<math>\Delta</math> PCT)</b>
None affecting PCT	N/A

<b>Table 2-1d – Cumulative Impact of Changes/Errors</b>	
<b>Description</b>	<b><math>\Delta PCT </math> (°F)</b>
• Changes/Errors Previously Reported (Reference 1)	42
• Current Year – 2008 (Reference 2)	0
<b>Cumulative Total</b>	<b>42</b>

Enclosure 2  
 Joseph M. Farley Nuclear Plant  
 10 CFR 50.46 ECCS Evaluation Model Annual Report for 2008

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

<b>Table 2-2a – Summary of Changes/Errors (2008)</b>	
<b>Description</b>	<b>Estimated Effect (<math>\Delta</math> PCT)</b>
<p><b><u>Reactor Coolant Pumps Inputs Error</u></b></p> <p>Several errors were discovered in the pump two-phase degraded homologous curve. In addition, minor errors were also found in the pump inputs resulting in a slight loop to loop asymmetry. The corrected pump inputs have been evaluated. The result from the plant specific WCOBRA/TRAC runs yielded an estimated PCT increase of 18°F for Farley Unit 2.</p>	18°F

<b>Table 2-2b – Cumulative Impact of Changes/Errors</b>	
<b>Description</b>	<b><math>\Delta</math> PCT  (°F)</b>
<ul style="list-style-type: none"> <li>• Changes/Errors Previously Reported (Reference 1)</li> </ul>	0
<ul style="list-style-type: none"> <li>• Current Year – 2008 (Reference 2)</li> </ul>	18
<b>Cumulative Total</b>	18

**Enclosure 2**  
**Joseph M. Farley Nuclear Plant**  
**10 CFR 50.46 ECCS Evaluation Model Annual Report for 2008**

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

<b>Table 2-2c – Summary of Changes/Errors (2008)</b>	
<b>Description</b>	<b>Estimated Effect (<math>\Delta</math> PCT)</b>
None affecting PCT	N/A

<b>Table 2-2d – Cumulative Impact of Changes/Errors</b>	
<b>Description</b>	<b><math>\Delta PCT </math> (<math>^{\circ}F</math>)</b>
• Changes/Errors Previously Reported (Reference 1)	0
• Current Year – 2008 (Reference 2)	0
<b>Cumulative Total</b>	<b>0</b>

**Enclosure 2**  
**Joseph M. Farley Nuclear Plant**  
**10 CFR 50.46 ECCS Evaluation Model Annual Report for 2008**

**References**

1. Letter from Mark J. Ajluni to USNRC (NL-08-1735), "Edwin I. Hatch Nuclear Plant, Joseph M. Farley Nuclear Plant, Vogtle Electric Generating Plant 10 CFR 50.46 ECCS Evaluation Model Annual Reports for 2007," dated December 19, 2008
2. Westinghouse Letter LTR-LIS-09-75, "J. M. Farley Units 1 and 2 10 CFR 50.46 Annual Notification and Reporting for 2008," dated January 29, 2009

**Edwin I. Hatch Nuclear Plant  
Joseph M. Farley Nuclear Plant  
Vogtle Electric Generating Plant  
10 CFR 50.46 ECCS Evaluation Model Annual Reports for 2008**

**Enclosure 3**

**Vogtle Electric Generating Plant  
10 CFR 50.46 ECCS Evaluation Model Annual Report for 2008**

**Enclosure 3  
Vogtle Electric Generating Plant  
10 CFR 50.46 ECCS Evaluation Model Annual Report for 2008**

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

<b>Table 3-1a – Summary of Changes/Errors (2008)</b>	
<b>Description</b>	<b>Estimated Effect (<math>\Delta</math> PCT)</b>
None affecting PCT	N/A

<b>Table 3-1b - Cumulative Impact of Changes/Errors</b>	
<b>Description</b>	<b><math>\Delta PCT </math> (<math>^{\circ}</math>F)</b>
• Changes/Errors Previously Reported (Reference 1)	40
• Current Year – 2008 (Reference 2)	0
<b>Cumulative Total</b>	<b>40</b>

Enclosure 3  
Vogtle Electric Generating Plant  
10 CFR 50.46 ECCS Evaluation Model Annual Report for 2008

Vogtle Electric Generating Plant – Unit 1  
Appendix K Small Break LOCA Evaluation

<b>Table 3-1c – Summary of Changes/Errors (2008)</b>	
Description	Estimated Effect ( $\Delta$ PCT)
None affecting PCT	N/A

<b>Table 3-1d – Cumulative Impact of Changes/Errors</b>	
Description	$\Delta$  PCT  (°F)
• Changes/Errors Previously Reported (Reference 1)	0
• Current Year – 2008 (Reference 2)	0
<b>Cumulative Total</b>	0

**Enclosure 3  
Vogtle Electric Generating Plant  
10 CFR 50.46 ECCS Evaluation Model Annual Report for 2008**

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

<b>Table 3-2a – Summary of Changes/Errors (2008)</b>	
<b>Description</b>	<b>Estimated Effect (<math>\Delta</math> PCT)</b>
None affecting PCT	N/A

<b>Table 3-2b – Cumulative Impact of Changes/Errors</b>	
<b>Description</b>	<b><math>\Delta</math> PCT  (°F)</b>
• Changes/Errors Previously Reported (Reference 1)	40
• Current Year – 2008 (Reference 2)	0
<b>Cumulative Total</b>	<b>40</b>

**Enclosure 3  
Vogtle Electric Generating Plant  
10 CFR 50.46 ECCS Evaluation Model Annual Report for 2008**

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

<b>Table 3-2c – Summary of Changes/Errors (2008)</b>	
<b>Description</b>	<b>Estimated Effect (<math>\Delta</math> PCT)</b>
None affecting PCT	N/A

<b>Table 3-2d – Cumulative Impact of Changes/Errors</b>	
<b>Description</b>	<b><math>\Delta</math> PCT  (°F)</b>
• Changes/Errors Previously Reported (Reference 1)	0
• Current Year – 2008 (Reference 2)	0
<b>Cumulative Total</b>	<b>0</b>

**Enclosure 3**  
**Vogtle Electric Generating Plant**  
**10 CFR 50.46 ECCS Evaluation Model Annual Report for 2008**

**References**

1. Letter from Mark J. Ajluni to USNRC (NL-08-1735), "Edwin I. Hatch Nuclear Plant, Joseph M. Farley Nuclear Plant, Vogtle Electric Generating Plant 10 CFR 50.46 ECCS Evaluation Model Annual Reports for 2007," dated December 19, 2008
2. Westinghouse Letter LTR-LIS-09-91, "Vogtle Units 1 and 2 10 CFR 50.46 Annual Notification and Reporting for 2008," dated January 29, 2009