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U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
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Edwin I. Hatch Nuclear Plant Units 1 and 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 2018

Ladies and Gentlemen:

Southern Nuclear Operating Company (SNC) is the licensed operator for the Edwin I. Hatch Nuclear Plant (Hatch) Units 1 & 2, 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 Hatch, Farley and Vogtle are provided in Enclosures 1, 2, and 3. The resulting peak cladding temperature (PCT) for Hatch, Farley and Vogtle continue 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 contact Jamie Coleman at 205.992.6611.

Respectfully submitted,

Cheryl A. Gayheart  
Regulatory Affairs Director

CAG/TLE/scm

- Enclosures:
1. Edwin I. Hatch Nuclear Plant Units 1 and 2  
10 CFR 50.46 ECCS Evaluation Model Annual Report for 2018
  2. Joseph M. Farley Nuclear Plant Units 1 and 2  
10 CFR 50.46 ECCS Evaluation Model Annual Report for 2018
  3. Vogtle Electric Generating Plant Units 1 and 2  
10 CFR 50.46 ECCS Evaluation Model Annual Report for 2018

cc: Regional Administrator, Region II  
NRR Project Manager – Farley, Hatch, Vogtle 1 & 2  
Senior Resident Inspector – Farley, Hatch, Vogtle 1 & 2  
NRR Project Manager – Farley, Hatch, Vogtle 1 & 2  
RType: Farley=CFA04.054, Hatch=CHA02.004, Vogtle=CVC7000

**Edwin I. Hatch Nuclear Plant Units 1 and 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 2018**

**Enclosure 1**

**Edwin I. Hatch Nuclear Plant Units 1 and 2  
10 CFR 50.46 ECCS Evaluation Model Annual Report for 2018**

**Edwin I. Hatch Nuclear Plant Unit 1**

<b>Table 1-1a – SAFER/GESTR-LOCA Summary of Changes / Errors (2018) (GE14)</b>	
<b>Description</b>	<b>Estimated Effect (<math>\Delta</math> PCT, °F)</b>
None affecting PCT.	0

<b>Table 1-1b – SAFER/PRIME-LOCA Summary of Changes / Errors (2018) (GNF2)</b>	
<b>Description</b>	<b>Estimated Effect (<math>\Delta</math> PCT, °F)</b>
None affecting PCT.	0

<b>Table 1-1c – Cumulative Impact of Changes / Errors</b>		
<b>Description</b>	<b>GE14 <math>\Delta</math> PCT  (°F)</b>	<b>GNF2 <math>\Delta</math> PCT  (°F)</b>
Changes/Errors Previously Reported (Reference 1)	0	0
Summary of Changes/Errors (2018) (Reference 2)	0	0
<b>Cumulative Total</b>	0	0

**Edwin I. Hatch Nuclear Plant Unit 2**

<b>Table 1-2a – SAFER/GESTR-LOCA Summary of Changes / Errors (2018) (GE14)</b>	
<b>Description</b>	<b>Estimated Effect (<math>\Delta</math> PCT, °F)</b>
None affecting PCT.	0

<b>Table 1-2b – SAFER/PRIME-LOCA Summary of Changes / Errors (2018) (GNF2)</b>	
<b>Description</b>	<b>Estimated Effect (<math>\Delta</math> PCT, °F)</b>
None affecting PCT.	0

<b>Table 1-2c – SAFER/PRIME-LOCA Summary of Changes / Errors (2018) (GNF3 LUAs)</b>	
<b>Description</b>	<b>Estimated Effect (<math>\Delta</math> PCT, °F)</b>
None affecting PCT.	0

<b>Table 1-2d – Cumulative Impact of Changes / Errors</b>			
<b>Description</b>	<b>GE14 Δ PCT  (°F)</b>	<b>GNF2 Δ PCT  (°F)</b>	<b>GNF3 (LUAs) Δ PCT  (°F)<sup>1</sup></b>
Changes/Errors Previously Reported (Reference 1)	0	0	0
Summary of Changes/Errors (2018) (Reference 3)	0	0	0
<b>Cumulative Total</b>	0	0	0

<sup>1</sup> GNF3 lead-use assemblies (LUAs) have a PCT 50 degrees greater than GNF2 assemblies.

**References:**

1. Letter from Cheryl A. Gayheart to USNRC (NL-18-0539), ML18134A282, "Edwin I. Hatch Nuclear Plant Units 1 and 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 2017," dated May 14, 2018
2. Global Nuclear Fuel 004N0711, "Supplemental Reload Licensing Report for Hatch 1 Reload 28 Cycle 29," Revision 0, dated November 2017
3. Global Nuclear Fuel 002N6847, "Supplemental Reload Licensing Report for Hatch 2 Reload 24 Cycle 25," Revision 1, dated November 2016

**Edwin I. Hatch Nuclear Plant Units 1 and 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 2018**

**Enclosure 2**

**Joseph M. Farley Nuclear Plant Units 1 and 2  
10 CFR 50.46 ECCS Evaluation Model Annual Report for 2018**

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

<b>Table 1-1a – Summary of Changes/Errors (2018)</b>	
<b>Description</b>	<b>Estimated Effect (<math>\Delta</math> PCT °F)</b>
None affecting PCT.	0

<b>Table 1-1b – Cumulative Impact of Changes/Errors</b>	
<b>Description</b>	<b><math>\Delta</math> PCT  (°F)</b>
Changes/Errors Previously Reported (Reference 1)	0
Summary of Changes/Errors (2018) (Reference 2)	0
<b>Cumulative Total</b>	0



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

<b>Table 1-1c – Summary of Changes/Errors (2018)</b>	
<b>Description</b>	<b>Estimated Effect (<math>\Delta</math> PCT °F)</b>
None affecting PCT.	0

<b>Table 1-1d – Cumulative Impact of Changes/Errors</b>	
<b>Description</b>	<b><math>\Delta PCT </math> (°F)</b>
Changes/Errors Previously Reported (Reference 1)	0
Summary of Changes/Errors (2018) (Reference 2)	0
<b>Cumulative Total</b>	0

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

<b>Table 1-2a – Summary of Changes/Errors (2018)</b>	
<b>Description</b>	<b>Estimated Effect (<math>\Delta</math> PCT °F)</b>
None affecting PCT.	0

<b>Table 1-2b – Cumulative Impact of Changes/Errors</b>	
<b>Description</b>	<b><math>\Delta</math> PCT  (°F)</b>
Changes/Errors Previously Reported (Reference 1)	0
Summary of Changes/Errors (2018) (Reference 2)	0
<b>Cumulative Total</b>	<b>0</b>

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

<b>Table 1-2c – Summary of Changes/Errors (2018)</b>	
<b>Description</b>	<b>Estimated Effect (<math>\Delta</math> PCT °F)</b>
None affecting PCT.	0

<b>Table 1-2d – Cumulative Impact of Changes/Errors</b>	
<b>Description</b>	<b><math>\Delta PCT </math> (°F)</b>
Changes/Errors Previously Reported (Reference 1)	0
Summary of Changes/Errors (2018) (Reference 2)	0
<b>Cumulative Total</b>	0

**References:**

1. Letter from Cheryl A. Gayheart to USNRC (NL-18-0539), ML18134A282, "Edwin I. Hatch Nuclear Plant Units 1 and 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 2017," dated May 14, 2018
2. Westinghouse Letter LTR-LIS-19-13, "J. M. Farley Units 1 and 2, 10 CFR 50.46 Annual Notification and Reporting for 2018," dated February 14, 2019

**Edwin I. Hatch Nuclear Plant Units 1 and 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 2018**

**Enclosure 3**

**Vogtle Electric Generating Plant Units 1 and 2  
10 CFR 50.46 ECCS Evaluation Model Annual Report for 2018**

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

<b>Table 1-1a – Summary of Changes/Errors (2018)</b>	
<b>Description</b>	<b>Estimated Effect (<math>\Delta</math> PCT) (<math>^{\circ}</math>F)</b>
None affecting PCT	0

<b>Table 1-1b - Cumulative Impact of Changes/Errors</b>	
<b>Description</b>	<b><math>\Delta</math> PCT  (<math>^{\circ}</math>F)</b>
Changes/Errors Previously Reported (Reference 1)	29
Summary of Changes/Errors (2018) (Reference 2)	0
<b>Cumulative Total</b>	<b>29</b>

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

<b>Table 1-1c – Summary of Changes/Errors (2018)</b>	
<b>Description</b>	<b>Estimated Effect (<math>\Delta</math> PCT)</b>
None affecting PCT.	0

<b>Table 1-1d – 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
Changes/Errors 2018 Calendar Year (Reference 2)	0
<b>Cumulative Total</b>	<b>0</b>

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

<b>Table 1-2a – Summary of Changes/Errors (2018)</b>	
<b>Description</b>	<b>Estimated Effect (<math>\Delta</math> PCT)</b>
None affecting PCT.	0

<b>Table 1-2b - 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)	29
Summary of Changes/Errors (2018) (Reference 2)	0
<b>Cumulative Total</b>	<b>29</b>

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

<b>Table 1-2c – Summary of Changes/Errors (2018)</b>	
<b>Description</b>	<b>Estimated Effect (<math>\Delta</math> PCT)</b>
None affecting PCT.	0

<b>Table 1-2d – 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
Changes/Errors 2018 Calendar Year (Reference 2)	0
<b>Cumulative Total</b>	<b>0</b>

**References:**

1. Letter from Cheryl A. Gayheart to USNRC (NL-18-0539), ML18134A282, "Edwin I. Hatch Nuclear Plant Units 1 and 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 2017," dated May 14, 2018
2. Westinghouse Letter LTR-LIS-19-31, "A. W. Vogtle Units 1 and 2, 10 CFR 50.46 Annual Notification and Reporting for 2018," dated February 13, 2019