



MAR 27 2017

L-2017-056
10 CFR 50.46

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

Re: St. Lucie Units 1 and 2
Docket Nos. 50-335 and 50-389
Acceptance Criteria for Emergency Core Cooling
Systems for Light Water Nuclear Power Reactors
10 CFR 50.46 Annual Report

Pursuant to 10 CFR 50.46(a)(3)(ii), the nature of any change to or error discovered in the evaluation models for emergency core cooling systems (ECCS), or in the application of such models, that affect the fuel cladding temperature calculations for St. Lucie Units 1 and 2 is reported in the attachment to this letter. The estimated effect from any such change or error on the limiting ECCS analysis for each unit is also addressed. The data interval for this report is from January 1, 2016 through December 31, 2016.

Please contact Ken Frehafer at 772-467-7748 should you have any questions regarding this submittal.

Sincerely,

A handwritten signature in black ink that reads "Michael J. Snyder".

Michael J. Snyder
Licensing Manager
St. Lucie Plant

MJS/KWF

Attachment

cc: USNRC Regional Administrator, Region II
USNRC Senior Resident Inspector, St. Lucie Nuclear Plant

St. Lucie Units 1 and 2
10 CFR 50.46 Annual Report

Emergency core cooling system (ECCS) analyses for St. Lucie Unit 1 and St. Lucie Unit 2 are performed by AREVA and Westinghouse Electric Company (W), respectively. The following information pertaining to the evaluation models for small break loss of coolant accidents (SBLOCA) and large break loss of coolant accidents (LBLOCA), and the application of such models to each St. Lucie Unit, is provided pursuant to 10 CFR 50.46(a)(3)(ii). A summary of calculated peak cladding temperature (PCT) changes is provided in Tables 1 and 2 (for St. Lucie Units 1 and 2, respectively). The data interval for this report is from January 1, 2016 through December 31, 2016. A discussion of the changes follows.

1.0 ST LUCIE UNIT 1

1.1 Changes to SBLOCA

No errors were found in the SBLOCA ECCS performance analysis since the previous annual report of Reference 3.1. Table 1 provides a summary of PCT changes for St. Lucie Unit 1.

1.2 Changes to LBLOCA

No errors were found in the LBLOCA ECCS performance analysis since the previous annual report of Reference 3.1. Table 1 provides a summary of PCT changes for St. Lucie Unit 1.

2.0 ST. LUCIE UNIT 2

2.1 Changes to SBLOCA

No errors were found in the SBLOCA ECCS performance analysis since the previous annual report of Reference 3.1. Table 2 provides a summary of PCT changes for St. Lucie Unit 2.

2.2 Changes to LBLOCA

No errors were found in the LBLOCA ECCS performance analysis since the previous annual report of Reference 3.1. Table 2 provides a summary of PCT changes for St. Lucie Unit 2.

3.0 REFERENCES

- 3.1 Letter L-2016-049, Eric Katzman to U.S. Nuclear Regulatory Commission Attn: Document Control Desk, "St. Lucie Units 1 and 2 Docket Nos. 50-335 and 50-389 Acceptance Criteria for Emergency Core Cooling Systems for Light Water Nuclear Power Reactors 10 CFR 50.46 Annual Report," March 2, 2016 (ML 16077A230).

Table 1: 2016 St. Lucie Unit 1 SBLOCA and LBLOCA PCT Summary

Unit 1 SBLOCA Summary

Evaluation Model: EMF-2328(P)(A) Rev. 0 as supplemented by ANP-3000(P), Revision 0.

Evaluation Model PCT: 1828°F

		Net PCT Effect	Absolute PCT Effect
A	Prior 10 CFR 50.46 Changes or Error Corrections – up to Year 2015	+22 °F	82 °F
B	Prior 10 CFR 50.46 Changes or Error Corrections – Year 2016	None	None
C	10 CFR 50.46 Changes in Year 2016 Since Item B	None	None
D	Sum of 10 CFR 50.46 Changes	+22 °F	82 °F

<i>The sum of the PCT from the most recent analysis using an acceptable evaluation model and the estimates of PCT impact for changes and errors identified since this analysis</i>	1850 °F < 2200 °F
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Unit 1 LBLOCA Summary

Evaluation Model: EMF-2103(P)(A) Rev. 0 as supplemented by ANP-2903(P), Revision 1.

Evaluation Model PCT: 1788°F

		Net PCT Effect	Absolute PCT Effect
A	Prior 10 CFR 50.46 Changes or Error Corrections – up to Year 2015	+6 °F	6°F
B	Prior 10 CFR 50.46 Changes or Error Corrections – Year 2016	None	None
C	10 CFR 50.46 Changes in Year 2016 Since Item B		
	Incorrect cutback ratio applied to gadolina bearing rods	+0 °F	0 °F
D	Sum of 10 CFR 50.46 Changes	+6 °F	6°F

<i>The sum of the PCT from the most recent analysis using an acceptable evaluation model and the estimates of PCT impact for changes and errors identified since this analysis</i>	1794 °F < 2200 °F
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Table 2: 2016 St. Lucie Unit 2 SBLOCA and LBLOCA PCT Summary

Unit 2 SBLOCA Summary

Evaluation Model: CENPD-137, Supplement 2-P-A (S2M)

Evaluation Model PCT: 1903°F

		Net PCT Effect	Absolute PCT Effect
A	Prior 10 CFR 50.46 Changes or Error Corrections – up to Year 2015	0 °F	0 °F
B	Prior 10 CFR 50.46 Changes or Errors Corrections – Year 2016	None	None
C	10 CFR 50.46 Changes in Current Year Since Item B	None	None
D	Sum of 10 CFR 50.46 Changes	0 °F	0 °F

<i>The sum of the PCT from the most recent analysis using an acceptable evaluation model and the estimates of PCT impact for changes and errors identified since this analysis</i>	1903 °F < 2200 °F
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Unit 2 LBLOCA Summary

Evaluation Model: CENPD-132, Supplement 4-P-A (1999 EM)

Evaluation Model PCT: 2087°F

		Net PCT Effect	Absolute PCT Effect
A	Prior 10 CFR 50.46 Changes or Error Corrections – up to Year 2015 (Reference 3.1)	0 °F	0 °F
B	Prior 10 CFR 50.46 Changes or Errors Corrections – Year 2016	None	None
C	10 CFR 50.46 Changes in Current Year Since Item B	None	None
D	Sum of 10 CFR 50.46 Changes	0 °F	0 °F

<i>The sum of the PCT from the most recent analysis using an acceptable evaluation model and the estimates of PCT impact for changes and errors identified since this analysis</i>	2087 °F < 2200 °F
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