Florida Power & Light Company, 6501 S. Ocean Drive, Jensen Beach, FL 34957

March 30, 2011

L-2011-123
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 the report is from January 1, 2010 through December 31, 2010.

Please contact us should you have any questions regarding this submittal.

Sincerely,

Eric S. Katzman
Licensing Manager
St. Lucie Plant

ESK/KWF

Attachment

A002
NRR

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 Table 1. The data interval for this report is from January 1, 2010 through December 31, 2010. A discussion of the changes follows.

1.0 ST LUCIE UNIT 1

1.1 Changes to SBLOCA

1.1.1 No errors were found in the SBLOCA ECCS performance analysis since the previous report of Reference 3.1. The limiting SBLOCA PCT remains at 1702 °F and is documented in Table 1.

1.2 Changes to LBLOCA

1.2.1 No errors were found in the LBLOCA ECCS performance analysis since the previous report of Reference 3.1. The limiting LBLOCA PCT remains at 2079 °F and is documented in Table 1.

2.0 ST. LUCIE UNIT 2

2.1 Changes to SBLOCA

2.1.1 No errors were found in the SBLOCA ECCS performance analysis since the previous report of Reference 3.1. The limiting SBLOCA PCT remains at 1943° F and is documented in Table 1.

2.2 Changes to LBLOCA

4.1 There was one change to the St. Lucie Unit 2 LBLOCA ECCS performance analysis during the Year 2010, as described below:

Increase in the Maximum Containment Spray Flow

The maximum containment spray flow used in the LBLOCA analysis was increased from 3450 gpm/pump to 3650 gpm/pump to cover a higher calculated flow in the analysis. The impact of this flow increase was estimated to be 10°F.

3.0 REFERENCES

3.1 FPL Letter L-2010-067, Eric Katzman to U.S. Nuclear Regulatory Commission 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 30, 2010

3.2 FPL Letter L-2009-277, Eric Katzman to U.S. Nuclear Regulatory Commission Document Control Desk, "St. Lucie Unit 1 Docket No. 50-335 Acceptance Criteria for Emergency Core Cooling Systems for Light Water Nuclear Power Reactors 10 CFR 50.46 Change Report," November 30, 2009.

Table 1: 2010 St. Lucie Units 1 and 2 SBLOCA and LBLOCA PCT Summary

Unit 1 SBLOCA Summary
Evaluation Model: XN-NF-82-49(P)(A), Revision 1, Supplement 1
Evaluation Model PCT: 1765°F

			Net PCT Effect	Absolute PCT Effect
A	Prior 10 CFR 50.46 Changes or Error Corrections – Previous Years	ΔPCT	-63 °F	83 °F*
B	Prior 10 CFR 50.46 Changes or Errors Corrections – Year 2010	ΔPCT	0 °F	0 °F
C	10 CFR 50.46 Changes in Year 2010 Since Item B	ΔPCT	0 °F	0 °F
D	Absolute Sum of 10 CFR 50.46 Changes	ΔPCT		83 °F

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*	**1702°F < 2200°F**

Unit 1 LBLOCA Summary
Evaluation Model: EMF-2087(P)(A), Revision 0
Evaluation Model PCT: 2005°F

			Net PCT Effect	Absolute PCT Effect
A	Prior 10 CFR 50.46 Changes or Error Corrections – Previous Years	ΔPCT	+74 °F	76 °F*
B	Prior 10 CFR 50.46 Changes or Errors Corrections – Year 2010	ΔPCT	0 °F	0 °F
C	10 CFR 50.46 Changes in Year 2010 Since Item B	ΔPCT	0 °F	0 °F
D	Absolute Sum of 10 CFR 50.46 Changes	ΔPCT		76°F

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*	**2079°F < 2200°F**

* **Reference 3.2 contains a 30 day report related to this cumulative PCT.**

Unit 2 SBLOCA Summary
Evaluation Model: CENPD-137, Supplement 2-P-A
Evaluation Model PCT: 1943°F

			Net PCT Effect	Absolute PCT Effect
A	Prior 10 CFR 50.46 Changes or Error Corrections – Previous Years	ΔPCT	0 °F	0 °F
B	Prior 10 CFR 50.46 Changes or Errors Corrections – Year 2010	ΔPCT	0 °F	0 °F
C	10 CFR 50.46 Changes in Year 2010 Since Item B	ΔPCT	0 °F	0 °F
D	Absolute Sum of 10 CFR 50.46 Changes	ΔPCT		0 °F

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*	**1943°F < 2200°F**

Unit 2 LBLOCA Summary
Evaluation Model: CENPD-132, Supplement 4-P-A (1999 EM)
Evaluation Model PCT: 2104°F

			Net PCT Effect	Absolute PCT Effect
A	Prior 10 CFR 50.46 Changes or Error Corrections – Previous Years	ΔPCT	-4 °F	4 °F
B	Prior 10 CFR 50.46 Changes or Errors Corrections – Year 2010	ΔPCT	0 °F	0 °F
C	10 CFR 50.46 Changes in Year 2010 Since Item B	ΔPCT	(see below)	(see below)
	Increase in max containment spray flow	ΔPCT	+10 °F	10 °F
D	Absolute Sum of 10 CFR 50.46 Changes	ΔPCT		14 °F

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*	**2110°F < 2200°F**