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

March 11, 2009

L-2009-061
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, 2008 through December 31, 2008.

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, 2008 through December 31, 2008.

1.0 ST LUCIE UNIT 1

1.1 One error was found in the SBLOCA ECCS performance analysis since the previous report of Reference 3.1 and is described below. Table 1 summarizes the estimated impact of this error on the St. Lucie Unit 1 SBLOCA PCT. The limiting SBLOCA PCT is now 1758° F.

Programming code error in RELAP5
A legacy code error in RELAP5 for the SBLOCA analysis was discovered which resulted in the PCT being lowered by 8 °F. The error was related to incorrect indexing in summations that compute the terms for delayed neutron fractions.

1.2 No errors were found in the LBLOCA ECCS performance analysis since the previous report of Reference 3.2. The limiting LBLOCA PCT remains at 2059° F.

A 30 day 10 CFR 50.46 report was issued in 2008 and is listed in Reference 3.2.

2.0 ST. LUCIE UNIT 2

2.1 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.

2.2 No errors were found in the LBLOCA ECCS performance analysis since the previous report of Reference 3.1. The limiting LBLOCA PCT remains at 2130° F.

3.0 REFERENCES

3.1 FPL Letter L-2007-040, Gordon L. Johnston. to USNRC 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 22, 2007.

3.2 FPL Letter L-2008-254, 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," December 4, 2008.

Table 1: 2008 St. Lucie Units 1 and 2 SBLOCA and LBLOCA PCT Summary

Unit 1 SBLOCA Summary
Evaluation Model: EMF-2328(P)(A), Revision 0
Evaluation Model PCT: 1765 °F

			Net PCT Effect	**Absolute PCT Effect**
A	Prior 10 CFR 50.46 Changes or Error Corrections – Previous Years	ΔPCT	+1 °F	+3 °F
B	Prior 10 CFR 50.46 Changes or Errors Corrections – Year 2008	ΔPCT	0 °F	+0 °F
C	10 CFR 50.46 Changes in Year 2008 Since Item B	ΔPCT	(see below)	(see below)
	RELAP5 Programming Code Error	ΔPCT	-8 °F	+8 °F
D	Absolute Sum of 10 CFR 50.46 Changes	ΔPCT		+11 °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*	**1758 °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	+42 °F	+44 °F
B	Prior 10 CFR 50.46 Changes or Errors Corrections – Year 2008	ΔPCT	+12 °F	+56 °F*
C	10 CFR 50.46 Changes in Year 2008 Since Item B	ΔPCT	0 °F	+56 °F
D	Absolute Sum of 10 CFR 50.46 Changes	ΔPCT		+56 °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*	**2059 °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 2008	ΔPCT	0 °F	+0 °F
C	10 CFR 50.46 Changes in Year 2008 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 (from 2001)
Evaluation Model PCT: 2130 °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 2008	ΔPCT	0 °F	+0 °F
C	10 CFR 50.46 Changes in Year 2008 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*	**2130 °F < 2200 °F**