



June 12, 2000

L-2000-130  
10 CFR 50.46

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

Re: St. Lucie Unit 2  
Docket No. 50-389  
SBLOCA and LBLOCA Evaluation Models  
30-Day 10 CFR 50.46 Report

The attached report is submitted pursuant to 10 CFR 50.46(a)(3)(ii) to provide notification of a significant change to the calculated peak cladding temperature for the limiting loss of coolant accident evaluated for St. Lucie Unit 2. The emergency core cooling system performance has been re-analyzed as part of the implementation of reload process improvement for operating Cycle 12 using bounding inputs. These analyses were performed with acceptable evaluation models approved by St. Lucie Unit 2 License Amendment #105. The small break loss of coolant accident (SBLOCA) peak centerline temperature (PCT) is 2055 °F and the large break loss of coolant accident (LBLOCA) PCT is 2150 °F.

Please contact us if you have any questions about this matter.

Very truly yours,

A handwritten signature in black ink that reads 'Rajiv S. Kundalkar'. The signature is written in a cursive style with a large initial 'R'.

Rajiv S. Kundalkar  
Vice President  
St. Lucie Plant

RSK/GRM

Attachment

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

## St. Lucie Unit 2 10 CFR 50.46 30-Day Report

Combustion Engineering (CE) is the current fuel vendor for St. Lucie Unit 2, and performs the calculations to demonstrate that the Unit 2 emergency core cooling system (ECCS) performance conforms to 10 CFR 50.46. CE employs an acceptable evaluation model consistent with 10 CFR 50, Appendix K. Re-analyses of the small break and the large break loss of coolant accidents have resulted in a significant change to the calculated peak cladding temperature (PCT), and is hereby reported pursuant to 10 CFR 50.46(a)(3)(ii).

### Nature of the Model Change and Corrective Action

The St. Lucie Unit 2 ECCS performance analyses PCTs applicable to the last operating cycle (Cycle 11) were previously reported in Reference 1. The small break loss of coolant accident (SBLOCA) PCT was 1915<sup>0</sup>F and the large break loss of coolant accident (LBLOCA) PCT was 2171<sup>0</sup>F.

The ECCS performance has been re-analyzed as part of the implementation of reload process improvement for operating Cycle 12 using bounding inputs. These analyses, performed with acceptable evaluation models, are documented in Reference 2 and approved by License Amendment #105 (Reference 3).

### Impact of the Model Change

Reanalysis of the SBLOCA, reported in Reference 2, has resulted in a new PCT of 2055<sup>0</sup>F (0.045 ft<sup>2</sup> break). The new LBLOCA PCT, also reported in Reference 2, is 2150<sup>0</sup>F (0.6 DEG/PD), and is the limiting PCT of record for St. Lucie Unit 2. A summary of PCT changes is provided in the attached table.

### References

1. FPL Letter L-2000-58, R. S. Kundalkar (FPL) to NRC (DCD), 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 6, 2000
2. FPL Letter L-98-308, J. A. Stall (FPL) to NRC (DCD), Docket 50-389, Proposed License Amendment, Cycle 12 Reload Process Improvement, December 18, 1998.
3. NRC Letter, K. N. Jabbour (NRC) to Thomas F. Plunkett (FPL), St. Lucie Unit 2 – Issuance of Amendment No. 105 Regarding the Cycle 12 Reload Process Improvement (TAC No. MA4523), December 21, 1999

St. Lucie Unit 2 10 CFR 50.46 30-Day Report

Table: Summary of LOCA PCTs for St. Lucie Unit 2

<b>Unit 2 SBLOCA Summary</b>	<b>PCT</b>
Last Evaluation Model Calculated SBLOCA PCT	1905 °F
Penalty due to Holding Coil Delay, DRFA Fuel, Adverse Reactivity versus Fuel Temperature	+10 °F
Change due to Reload Process Improvement Re-analysis	+140 °F
Cumulative Change	150 °F
New Evaluation Model Calculated SBLOCA PCT	2055 °F

<b>Unit 2 LBLOCA Summary</b>	<b>PCT</b>
Last Evaluation Model Calculated LBLOCA PCT	2133 °F
Penalty for DRFA	+10 °F
Change Due to ERF Error	+28 °F
Change due to Reload Process Improvement Re-analysis	-21 °F
Cumulative Change	59 °F
New Evaluation Model Calculated LBLOCA PCT	2150 °F