



Crystal River Nuclear Plant
Docket No. 50-302
Operating License No. DPR-72

Ref: 10CFR50.46

August 10, 2010
3F0810-03

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

Subject: Crystal River Unit 3 – 10 CFR 50.46 Notification of Change in Peak Cladding Temperature for Small Break Loss Of Coolant Accident Analysis

Dear Sir:

Pursuant to 10 CFR 50.46(a)(3)(ii), Florida Power Corporation (FPC), doing business as Progress Energy Florida, Inc., hereby provides notification of a change in peak clad temperature (PCT) of greater than 50 degrees Fahrenheit (°F) in the Crystal River Unit 3 (CR-3) Small Break Loss of Coolant Accident (SBLOCA) analysis.

This notification is due to an estimated adjustment that results in a significant change to the PCT for past SBLOCA analysis. The SBLOCA adjustment is due to an error occurred when the Emergency Feedwater Initiation and Control (EFIC) level rate controller was modified for the fill rate sequence of operation. As a consequence, the SBLOCA response would have been less conservative than predicted by the analysis.

This condition increases the SBLOCA PCT by 100°F, with a new PCT of 1348°F for previous Cycle 16. The EFIC level rate controller change has no impact on the Large Break Loss of Coolant Accident (LBLOCA) PCT. The attachment to this letter provides additional details. The resulting maximum PCT remains within the 2200°F limit of 10 CFR 50.46.

This correspondence contains no new regulatory commitments.

If you have any questions regarding this submittal, please contact Mr. Dan Westcott, Superintendent, Licensing and Regulatory Programs at (352) 563-4796.

Sincerely,

Stephen J. Cahill
Director Engineering Nuclear
Crystal River Nuclear Plant

SJC/pdk

Attachment: Summary of Changes to Evaluation Models and Peak Cladding Temperature for Large Break Loss of Coolant Analysis and Small Break Loss of Coolant Analysis

xc: NRR Project Manager
Regional Administrator, Region II
Senior Resident Inspector

A001
MRK

PROGRESS ENERGY FLORIDA, INC.

CRYSTAL RIVER UNIT 3

DOCKET NUMBER 50-302 /LICENSE NUMBER DPR-72

Attachment

**Summary of Changes to Evaluation Models and Peak Cladding
Temperature for Large Break Loss of Coolant Analysis and Small
Break Loss of Coolant Analysis**

Summary of Changes to Evaluation Models and Peak Cladding Temperature for Large Break Loss of Coolant Analysis and Small Break Loss of Coolant Analysis

Pursuant to 10 CFR 50.46(a)(3)(ii), Florida Power Corporation (FPC), doing business as Progress Energy Florida, Inc., hereby provides notification of a change in peak clad temperature (PCT) of greater than 50 degrees Fahrenheit (°F) in the Crystal River Unit 3 (CR-3) Small Break Loss of Coolant Accident (SBLOCA) analysis.

Reference 1 describes an error, identified by CR-3, that resulted in a significant change to the PCT for the past Cycle 16 SBLOCA analysis. The SBLOCA error occurred when the Emergency Feedwater Initiation and Control (EFIC) level rate controller was modified for the fill rate sequence of operation. Modifications made to the EFIC control signal resulted in a change to the Emergency Feedwater (EFW) flow response. As a consequence, the EFW flow can decrease to zero for a limited duration shortly after EFW initiation.

Nuclear Condition Report 378974 was generated in the CR-3 Corrective Action Program to document this. There is reason to believe that every cycle was similarly impacted since the modification was implemented during Cycle 11. Only Cycle 16 impacts were evaluated.

This error resulted in an estimated PCT change for the Cycle 16 SBLOCA of 100°F. This results in a PCT of 1348°F for Cycle 16 and is appropriate for past reportability only. Past Cycle 16 reports were submitted to the NRC in References 2, 3, and 4 noted below. The EFIC System is expected to have the controls modified prior to startup from Refueling Outage 16. Therefore, this error notification does not apply to Cycle 17 and the current PCT provided in Reference 5 remains valid.

REFERENCES

1. Letter from AREVA to CR-3, AREVA-10-02095, dated July 12, 2010, "EFW Level Rate Controller Past Operability Evaluation for 10 CFR 50.46 SBLOCA PCT Reporting"
2. Crystal River Unit 3 to NRC letter, 3F1209-11, dated December 16, 2009, "Crystal River Unit 3 – 10 CFR 50.46 Loss-of-Coolant Accident Evaluation Model Change and Peak Cladding Temperature Change Report"
3. Crystal River Unit 3 to NRC letter, 3F1208-07, dated December 11, 2008, "Crystal River Unit 3 – 10 CFR 50.46 Loss-of-Coolant Accident Evaluation Model Change and Peak Cladding Temperature Change Report"
4. Crystal River Unit 3 to NRC letter, 3F1107-06, dated November 21, 2007, "Crystal River Unit 3 – 10 CFR 50.46 Loss-of-Coolant Accident Evaluation Model Change and Peak Cladding Temperature Change Report"
5. Crystal River Unit 3 to NRC letter, 3F1209-13, dated December 30, 2009, "Crystal River Unit 3 – 10 CFR 50.46 Notification of Change in Peak Cladding Temperature for Small Break Loss of Coolant Accident Analyses"

The following tables provide the corrected peak clad temperature (PCT) results for Small Break (SB) and Large Break (LB) Loss of Coolant Accidents (LOCAs) for Cycle 16.

CR-3 LB LOCA PCT Change Summary Cycle 16 Full Core of Mark-B-HTP Assemblies		
	Delta PCT	PCT
Previously Reported PCT (2009 Annual Report dated December 16, 2009)	N/A	1994°F
No unreported errors for Cycle 16	0	1994°F
Cumulative Change	0	
Sum of absolute magnitude of changes	0	

CR-3 SB LOCA PCT Change Summary Cycle 16 Full Core of Mark-B-HTP Assemblies		
	Delta PCT	PCT
Previously Reported PCT (2009 Annual Report dated December 16, 2009)	N/A	1248°F
Analysis changes due to the EFIC level rate controller variation	100°F	1348°F
Cumulative Change	100°F	
Sum of absolute magnitude of changes	100°F	