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August 3, 2009

U. S. Nuclear Regulatory Commission
Washington, D. C. 20555-001
Attention: Document Control Desk

Subject: Duke Energy Carolinas, LLC (Duke)
Oconee Nuclear Station, Units 1, 2, and 3
Docket Numbers 50-269, 50-270, and 50-287

Report Pursuant to 10 CFR 50.46, Changes to or Errors in an Evaluation Model

10 CFR 50.46 (a)(3)(ii) requires the reporting of changes to or errors in Emergency Core Cooling (ECCS) evaluation models (EMs). This report covers the time period from January 1, 2008 to December 31, 2008.

During this time reporting period, there were no errors identified in the application of the large break loss of coolant accident (LBLOCA) evaluation model (EM) or the small break loss of coolant accident (SBLOCA) EM.

However, there was a fuel design change identified during this reporting period as Oconee Unit 2 began operation with Mark (Mk)-B-HTP fuel during the fall of 2008. Mk-B-HTP LBLOCA analyses were performed to define the allowable LOCA linear heat rate (LHR) limits and determine the corresponding peak clad temperatures (PCTs) in a mixed core configuration with Mk-B11 fuel. Mk-B-HTP SBLOCA analyses were also performed to define the maximum PCT for Mk-B-HTP fuel in a mixed core configuration with Mk-B11 fuel. The continued applicability of the Mk-B11 LBLOCA and SBLOCA analyses for a mixed core configuration were also verified.

Included in this report are Mk-B11 fuel PCT summary tables for Units 1, 2, and 3, and Mk-B-HTP mixed core PCT summary tables for Oconee Unit 2.

There are no regulatory commitments associated with this letter.

Please address any comments or questions regarding this matter to L. B. Jones at (704) 382-4753.

Sincerely,

Thomas C. Geer
Vice President, Nuclear Engineering

A002
NRR

Attachments

Table 1 – Mk-B11 Peak Cladding Temperature Summary – Oconee Units 1, 2, and 3

Table 2 – Mk-B-HTP Mixed Core Peak Cladding Temperature Summary – Oconee 2

xc: (with attachments)

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ATTACHMENT

Table 1 – Peak Cladding Temperature Summary – Oconee Units 1, 2, and 3

Table 2: Mk-B-HTP Mixed Core Peak Cladding Temperature Summary – Oconee 2

Table 1: Mk-B11 Peak Cladding Temperature Summary – Oconee Units 1, 2, and 3

LBLOCA	PCT(°F)	Comments
Evaluation model: RELAP5/MOD2-B&W		
Analysis of record PCT	2035	Mark-B11 (M5), 17.7 kW/ft at 6.021 ft elevation
Prior errors (ΔPCT) 1. Energy Deposition Factor 2. Input error to RBCU heat removal rate curve fit 3. CONTEMPT mass and energy input time step 4. Typo on containment pressure response value	 0 0 0 0	Reference A (see below)
Prior evaluation model changes (ΔPCT) 1. None	 0	
Errors (ΔPCT) 1. None	 0	
Evaluation model changes (ΔPCT) 1. None	 0	
Absolute value of errors/changes for this report (ΔPCT)	0	
Net change in PCT for this report	0	
Final PCT	2035	
SBLOCA	**PCT(°F)**	**Comments**
Evaluation model: RELAP5/MOD2-B&W		
Analysis of record PCT	1461	Full Power -100% FP (2 HPI Case) 0.15 ft^2 break
Prior errors (ΔPCT) 1. None	 0	
Prior evaluation model changes (ΔPCT) 1. None	 0	
Errors (ΔPCT) 1. None	 0	
Evaluation model changes (ΔPCT) 1. None	 0	
Absolute value of errors/changes for this report (ΔPCT)	0	
Net change in PCT for this report	0	
Final PCT	1461	
SBLOCA	**PCT(°F)**	**Comments**
Analysis of record PCT	1774	Reduced Power – 75% FP (1 HPI case) 0.075 ft^2 break
Prior errors (ΔPCT) 1. None	 0	
Prior evaluation model changes (ΔPCT) 1. None	 0	
Errors (ΔPCT) 1. None	 0	
Evaluation model changes (ΔPCT) 1. None	 0	
Absolute value of errors/changes for this report (ΔPCT)	0	
Net change in PCT for this report	0	
Final PCT	1774	

Reference A: letter, T. C. Geer (Duke) to USNRC, "Report Pursuant to 10 CFR 50.46, Changes to or Errors in an ECCS Evaluation Model", July 29, 2008.

Table 2: Mk-B-HTP Mixed Core Peak Cladding Temperature Summary – Oconee Unit 2

LBLOCA	PCT(°F)	Comments
Evaluation model: RELAP5/MOD2-B&W		
Analysis of record PCT	2020	
Prior errors (ΔPCT) 1. Not Applicable (Mk-B-HTP fuel loaded in 2008)	N/A	
Prior evaluation model changes (ΔPCT) 1. Not Applicable (Mk-B-HTP fuel loaded in 2008)	N/A	
Errors (ΔPCT) 1. None	0	
Evaluation model changes (ΔPCT) 1. None	0	
Absolute value of errors/changes for this report (ΔPCT)	0	
Net change in PCT for this report	0	
Final PCT	2020	
SBLOCA	**PCT(°F)**	**Comments**
Evaluation model: RELAP5/MOD2-B&W		
Analysis of record PCT	1397	Full Power -100% FP (2 HPI Case) 0.15 ft^2 break
Prior errors (ΔPCT) 1. Not Applicable (Mk-B-HTP fuel loaded in 2008)	N/A	
Prior evaluation model changes (ΔPCT) 1. Not Applicable (Mk-B-HTP fuel loaded in 2008)	N/A	
Errors (ΔPCT) 1. None	0	
Evaluation model changes (ΔPCT) 1. None	0	
Absolute value of errors/changes for this report (ΔPCT)	0	
Net change in PCT for this report	0	
Final PCT	1397	
SBLOCA	**PCT(°F)**	**Comments**
Analysis of record PCT	1788	Reduced Power – 75% FP (1 HPI case) 0.075 ft^2 break
Prior errors (ΔPCT) 1. Not Applicable (New Analysis performed in 2008)	N/A	
Prior evaluation model changes (ΔPCT) 1. Not Applicable (New Analysis performed in 2008)	N/A	
Errors (ΔPCT) 1. None	0	
Evaluation model changes (ΔPCT) 1. None	0	
Absolute value of errors/changes for this report (ΔPCT)	0	
Net change in PCT for this report	0	
Final PCT	1788	