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10 CFR 50.46

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

Oconee Nuclear Station, Units 1, 2, and 3
Docket Numbers 50-269, 50-270, and 50-287
Renewed Operating License Nos. DPR-38, DPR-47, and DPR-55

Subject: Duke Energy Carolinas, LLC (Duke Energy): 10 CFR 50.46 - Annual Report for 2013 for Oconee Nuclear Station, Units 1, 2, and 3

Reference:

- 1) Letter, G. D. Miller (Duke Energy) to USNRC, *30-Day Report Pursuant to 10 CFR 50.46, Changes to or Errors in an Evaluation Model*, December 16, 2013 (ADAMS Accession No. ML13353A137)

10 CFR 50.46 (a)(3)(ii) requires the reporting of changes to or errors in Emergency Core Cooling System (ECCS) evaluation models (EMs). This report covers the time period from January 1, 2013 to December 31, 2013 for the Oconee Nuclear Station (ONS). The most recent 10 CFR 50.46 report for ONS (Reference 1) provided the Peak Cladding Temperature (PCT) results of a Large Break Loss of Coolant Accident (LOCA) reanalysis to correct ECCS model errors previously reported to the NRC. Attached are the LOCA PCT margin summary tables for Oconee Units 1, 2, and 3. There are no new regulatory commitments contained in this letter.

Please address any comments or questions regarding this matter to **Michael K. Lelaure** at (990) 373-3819 (Mike.Lelaure@duke-energy.com).

Sincerely,

Benjamin C. Waldrep
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Attachment: 2013 Annual Report of Peak Cladding Temperature

ADD2
NRC

xc (with attachment):

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Eddy Crowe
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Oconee Nuclear Station

Attachment

**Duke Energy Carolinas, LLC
Oconee Nuclear Station, Units 1, 2, and 3**

**10 CFR 50.46
Acceptance Criteria for Emergency Core
Cooling Systems for Light-Water Nuclear Power Reactors**

2013 Annual Report of Peak Cladding Temperature

**Table 1: LOCA Peak Cladding Temperature Margin Summary –
Oconee Units 1, 2, and 3**

**Table 1: LOCA Peak Cladding Temperature Margin Summary –
 Oconee Units 1, 2, and 3**

LBLOCA		PCT(°F)	Comments
Evaluation model: RELAP5/MOD2-B&W			
Analysis of record PCT		1852	Reference F
Prior 10 CFR 50.46 Changes or Error Corrections (ΔPCT) 1. None			
Current 10 CFR 50.46 Changes or Error Corrections (ΔPCT) 1. Transient fuel pellet thermal conductivity degradation (considered a change in the application of the evaluation model)		+2	Reference G
Final licensing basis PCT		1854	
SBLOCA Full Power -180% FP		PCT(°F)	Comments
Evaluation model: RELAP5/MOD2-B&W			
Analysis of record PCT		1598	References A, B, C (2 HPI Case) 0.15 ft ² break
Prior 10 CFR 50.46 Changes or Error Corrections (ΔPCT) 1. ECCS Bypass and Upper Plenum Column Weldment Modeling		0	References D, E
Current 10 CFR 50.46 Changes or Error Corrections (ΔPCT) 1. None		0	
Final licensing basis PCT		1598	
SBLOCA Reduced Power [1]		PCT(°F)	Comments
Analysis of record PCT		N/A	Will be reported under a separate LAR (References A, B, C)
Prior 10 CFR 50.46 Changes or Error Corrections (ΔPCT)		N/A	
Current 10 CFR 50.46 Changes or Error Corrections (ΔPCT)		N/A	
Errors (ΔPCT)		N/A	
Final licensing basis PCT		N/A	Operation Not Justified [2]

Notes

1. Partial power SBLOCA analysis with one HPI pump out of service, supports 30 day LCO for TS 3.5.2 Condition B. Also supports TS 3.5.2 Condition C1 and C2.
2. Pending review and approval of separate LAR. Refer to Reference A for additional details.

References for Table 1:

- A) Letter, R. M. Glover (Duke Energy) to USNRC, *30-Day Report Pursuant to 10 CFR 50.46, Changes to or Errors in an Evaluation Model*, December 8, 2011 (ADAMS ML11347A193)
- B) Letter, B. C. Waldrep (Duke Energy) to USNRC, *30-Day and Annual Report Pursuant to 10 CFR 50.46, Changes to or Errors in an Evaluation Model*, July 5, 2012 (ADAMS ML121910319)
- C) Letter, B. C. Waldrep (Duke Energy) to USNRC, *30-Day Report Pursuant to 10 CFR 50.46, Changes to or Errors in an Evaluation Model*, December 20, 2012
- D) Letter, G. J. St.Clair (AREVA) to S. Thomas (Duke Energy), *10 CFR 50.46 LOCA Report of Two EM Error Corrections (AREVA CR 2012-165: ECCS Bypass Mathematical Error and AREVA CR 2012-757: Upper Plenum Column Weldment EM Change)*, February 23, 2012, AREVA Letter FAB12-120
- E) Letter, D. C. Culp (Duke Energy) to USNRC, *30-Day Report Pursuant to 10 CFR 50.46, Changes to or Errors in an Evaluation Model*, March 9, 2012 (ADAMS ML12073A354)
- F) Letter, G. J. St.Clair (AREVA) to S. Thomas (Duke Energy), *10 CFR 50.46 LOCA Report of an EM Error Correction (AREVA CR 2013-5610) Related to an Error in the Filtered Flow Calculation of the Filter Break Frequency*, November 14, 2013, AREVA Letter FAB13-00549
- G) AREVA NP Document No. 86-9208764-000, *TCD Transient Assessment for B&W Plants Summary Report*, October 21, 2013 (AREVA Proprietary)