



JAMES R MORRIS
Vice President, Nuclear Support
Nuclear Generation

Duke Power
526 South Church St.
Charlotte, NC 28202

Mailing Address:
EC07H / PO Box 1006
Charlotte, NC 28201-1006

704 382 6401

704 382 6056 fax

james.morris@duke-energy.com

June 21, 2005

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

Subject: Duke Energy Corporation
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

Reference: 1) Letter, L. W. Barnett (USNRC) to J. Mallay (Framatome ANP),
"Safety Evaluation of Framatome Technologies Topical Report BAW-
10164P Revision 4, "RELAP5/MOD2-B&W, An Advanced Computer
Program for Light Water LOCA and Non-LOCA Transient Analyses"
(TAC Nos. MA8465 and 8468), April 9, 2002.

10 CFR 50.46 (a)(3)(ii) requires the reporting of changes to or errors in ECCS
evaluation models (EM). This report covers the time period from January 1, 2004 to
December 31, 2004.

During this time period, the steam generators were replaced in Unit 1 and Unit 2 along
with modifications to the low pressure injection system (LPI). To address these plant
modifications, the LOCA analyses were revised and thus the analysis of record for
these two units was updated. The revised analyses were performed using a
modification of the Framatome evaluation model incorporating Revision 4 of BAW-
10164P-A which was approved by the NRC in 2002 (Reference 1). No other changes
or error corrections were made to the evaluation model during this time period.

Included in this report are two summary tables. Table 1 provides a summary of the
peak cladding temperatures for Units 1 and 2 while Table 2 provides the peak cladding
temperature summary for Unit 3.

There are no regulatory commitments associated with this letter.

A001

U.S. Nuclear Regulatory Commission
June 21, 2005
Page 2

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

Very truly yours,



James R. Morris

Attachments

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

xc: (with attachments)

W. D. Travers, Region II Administrator
U.S. Nuclear Regulatory Commission
Sam Nunn Atlanta Federal Center, 23 T85
61 Forsyth St., SW
Atlanta, GA 30303-8931

L. N. Olshan, Senior Project Manager (ONS)
U. S. Nuclear Regulatory Commission
11555 Rockville Pike
Mail Stop 0-8 G9A
Rockville, MD 20852-2738

M. C. Shannon, NRC Senior Resident Inspector
Oconee Nuclear Station

ATTACHMENTS

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

Table 2 – Peak Cladding Temperature Summary – Oconee Unit 3

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

LBLOCA	PCT(°F)	Comments
Evaluation model: RELAP5/MOD2-B&W		
Analysis of record PCT	2035 2028	Mark-B11 (M5), 17.7 kW/ft At 6.021 ft elevation Mark-B10T, 16.8 kW/ft At 4.264 ft elevation, Estimated based on the OTSG analysis
Prior errors (Δ PCT) 1. None	0	
Prior evaluation model changes (Δ PCT) 1. None	0	
Errors (Δ PCT) 1. None	0	
Evaluation model changes (Δ PCT) 1. None	0	
Absolute value of errors/changes for this report (Δ PCT)	0	
Net change in PCT for this report	0	
Final PCT	2035 2028	Mark-B11 Mark-B10T
SBLOCA	PCT(°F)	Comments
Evaluation model: RELAP5/MOD2-B&W		
Analysis of record PCT	1461	Full Power 0.15 ft ² break
Prior errors (Δ PCT) 1. None	0	
Prior evaluation model changes (Δ PCT) 1. None	0	
Errors (Δ PCT) 1. None	0	
Evaluation model changes (Δ PCT) 1. None	0	
Absolute value of errors/changes for this report (Δ PCT)	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 (Δ PCT) 1. None	0	
Prior evaluation model changes (Δ PCT) 1. None	0	
Errors (Δ PCT) 1. None	0	
Evaluation model changes (Δ PCT) 1. None	0	
Absolute value of errors/changes for this report (Δ PCT)	0	
Net change in PCT for this report	0	
Final PCT	1774	

Table 2
Peak Cladding Temperature Summary – Oconee Unit 3

LBLOCA	PCT(°F)	Comments
Evaluation model: RELAP5/MOD2-B&W		
Analysis of record PCT	2037 2050	Mark-B11 (M5), 16.8 kW/ft At 6.021 ft elevation Mark-B10T, 16.8 kW/ft At 4.264 ft elevation
Prior Errors (Δ PCT) 1. Containment press. correction 2. BEACH inlet area correction	-25 +3	Reference A Reference A (only Mark-B10T)
Prior evaluation model changes (Δ PCT) 1. None	0	
Errors (Δ PCT) 1. None	0	
Evaluation model changes (Δ PCT) 1. None	0	
Absolute value of errors/changes for this report (Δ PCT)	0	
Net change in PCT for this report	0	
Final PCT	2012 2028	Mark-B11 Mark-B10T
SBLOCA	PCT(°F)	Comments
Evaluation model: RELAP5/MOD2-B&W		
Analysis of record PCT	1369	Full Power 0.15 ft ² break
Prior errors (Δ PCT) 1. Change from min to max CFT level 2. SG primary tube region drag model input error 3. Limiting RCP type & two-phase degradation model(PSC 1-99) 4. RELAP5 water property and Unix operating system 5. Implementation of void-dependent cross flow model	43 -14 -5 -25 -12	Reference B Note (1) Reference B Reference B Reference B Reference C
Prior evaluation model changes (Δ PCT) 1. None	0	
Errors (Δ PCT) 1. None	0	
Evaluation model changes (Δ PCT) 1. None	0	
Absolute value of errors/changes for this report (Δ PCT)	0	
Net change in PCT for this report	0	
Final PCT	1356	

**Table 2 (continued)
Peak Cladding Temperature Summary – Oconee Unit 3**

SBLOCA	PCT(°F)	Comments
Analysis of record PCT	1261	Reduced Power - 50% FP (1 HPI case) 0.06 ft ² break
Prior errors (Δ PCT) 1. None	0	
Prior evaluation model changes (Δ PCT) 1. None	0	
Errors (Δ PCT) 1. None	0	
Evaluation model changes (Δ PCT) 1. None	0	
Absolute value of errors/changes for this report (Δ PCT)	0	
Net change in PCT for this report	0	
Final PCT	1261	

References:

- A) letter, W. R. McCollum, Jr. (Duke) to USNRC, "Report Pursuant to 10 CFR 50.46, Error Related to Application of the LBLOCA Evaluation Model", May 26, 2004.
- B) letter, M. S. Tuckman (Duke) to USNRC, "Report Pursuant to 10 CFR 50.46, Error Related to Application of the LBLOCA Evaluation Model", May 31, 2002.
- C) letter, W. R. McCollum, Jr. (Duke) to USNRC, "Report Pursuant to 10 CFR 50.46, Changes to or Errors in an ECCS Evaluation Model", May 19, 2003.

Note:

- (1) In Reference B this PCT change was listed as an estimate since it was based on calculations using a model that was under review (void-dependent cross-flow model). Given that this model is now approved, the Δ PCT value is no longer considered an estimate.