THOMAS C. GEER
Vice President
Nuclear Engineering

Duke Energy Corporation
526 South Church St.
Charlotte, NC 28202

Mailing Address:
EC08H / PO Box 1006
Charlotte, NC 28201-1006

704 382 4712
704 382 7852 fax
tcgeer@duke-energy.com

December 18, 2007

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

Subject: Duke Power Company LLC d/b/a Duke Energy Carolinas, LLC (Duke)
McGuire Nuclear Station, Units 1 and 2
Docket Number 50-369 and 50-370
Catawba Nuclear Station, Units 1 and 2
Docket Number 50-413 and 50-414

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

Reference: Letter from Thomas C. Geer (Duke) to USNRC, "Report Pursuant to 10 CFR 50.46, Changes to or Errors in an ECCS Evaluation Model," May 22, 2007.

10 CFR 50.46 (a)(3)(ii) requires the reporting of errors or changes in the Emergency Core Cooling System (ECCS) evaluation models. This report covers the time period from January 1, 2006 to December 31, 2006.

In the reference above, Duke previously reported the results of small break loss of coolant accident (SBLOCA) re-analyses performed by Westinghouse to support decreased intermediate head safety injection and centrifugal charging pump (IHSI/CCP) flows at all McGuire/Catawba units. Other than the change described above, there were no errors or evaluation model changes identified by Westinghouse in 2006.

For completeness, Westinghouse informed Duke of a number of coding changes that were made as part of normal code maintenance and general code cleanup that are not considered to be errors or evaluation model changes. As such, these changes were not considered to have an impact on calculated peak clad temperatures (PCTs) and are not included in the PCT summary tables.

A summary of the PCT for McGuire Units 1 & 2 and Catawba Unit 1 is provided in Table 1. Table 2 provides a summary of the PCT for Catawba Unit 2.

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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

Attachments
Table 1 – Peak Cladding Temperature Summary – McGuire Units 1 & 2 and Catawba Unit 1
Table 2 – Peak Cladding Temperature Summary – Catawba Unit 2

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

J. F. Stang, Senior Project Manager (CNS & MNS)
U. S. Nuclear Regulatory Commission
11555 Rockville Pike
Mail Stop 0-8 G9A
Rockville, MD 20852-2738

J. B. Brady, NRC Senior Resident Inspector
McGuire Nuclear Station

A. T. Sabisch, NRC Senior Resident Inspector
Catawba Nuclear Station

ATTACHMENTS

Table 1 – Peak Cladding Temperature Summary – McGuire Units 1 & 2 and Catawba Unit 1

Table 2 – Peak Cladding Temperature Summary – Catawba Unit 2

Table 1
Peak Cladding Temperature Summary – McGuire Units 1 & 2 and Catawba Unit 1

LBLOCA	Cladding Temp (°F)	Comments
Evaluation model : WCOBRA/TRAC		
Analysis of record PCT	2028	MNS/CNS Composite Model
Prior errors (ΔPCT)		
1. Decay heat in Monte Carlo calculations	8	Reference A
2. MONTECF power uncertainty correction	20	Reference B
3. Safety Injection temperature range	59	Reference C
4. Input error resulting in an incomplete solution matrix	25	Reference D
5. Revised Blowdown Heatup Uncertainty Distribution	5	Reference E
6. Vessel Unheated Conductor Noding	0	Reference F
Prior evaluation model changes (ΔPCT)		
1. Revised Algorithm for Average Fuel Temperature	0	Reference F
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	2145	
SBLOCA		
Evaluation model : NOTRUMP		
Analysis of record PCT	1323	Reference G
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	1323	

Reference:

A) letter, M. S. Tuckman (Duke) to USNRC, "Report Pursuant to 10 CFR 50.46, Changes to or Errors in an ECCS Evaluation Model", May 3, 2001
B) letter, M. S. Tuckman (Duke) to USNRC, "Report Pursuant to 10 CFR 50.46, Changes to or Errors in an ECCS Evaluation Model", April 3, 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", July 29, 2003
D) 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 26, 2004
E) letter, J. R. Morris (Duke) to USNRC, "Report Pursuant to 10 CFR 50.46, Changes to or Errors in an ECCS Evaluation Model", June 21, 2005
F) letter, T. C. Geer (Duke) to USNRC, "Report Pursuant to 10 CFR 50.46, Changes to or Errors in an ECCS Evaluation Model", March 13, 2007
G) letter, T. C. Geer (Duke) to USNRC, "Report Pursuant to 10 CFR 50.46, Changes to or Errors in an ECCS Evaluation Model", May 22, 2007

Table 2
Peak Cladding Temperature Summary – Catawba Unit 2

LBLOCA	Cladding Temp (°F)	Comments
Evaluation model : WCOBRA/TRAC		
Analysis of record PCT	2028	MNS/CNS Composite Model
Prior errors (ΔPCT) 1. Decay heat in Monte Carlo calculations 2. MONTECF power uncertainty correction 3. Safety Injection temperature range 4. Input error resulting in an incomplete solution matrix 5. Revised Blowdown Heatup Uncertainty Distribution 6. Vessel Unheated Conductor Noding	 8 20 59 25 5 0	 Reference A Reference B Reference C Reference D Reference E Reference F
Prior evaluation model changes (ΔPCT) 1. Revised Algorithm for Average Fuel Temperature	0	Reference F
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	2145	
SBLOCA		
Evaluation model : NOTRUMP		
Analysis of record PCT	1243	Reference G
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	1243	

Reference:

A) letter, M. S. Tuckman (Duke) to USNRC, "Report Pursuant to 10 CFR 50.46, Changes to or Errors in an ECCS Evaluation Model", May 3, 2001
B) letter, M. S. Tuckman (Duke) to USNRC, "Report Pursuant to 10 CFR 50.46, Changes to or Errors in an ECCS Evaluation Model", April 3, 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", July 29, 2003
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