



December 30, 2006

L-MT-06-084
10 CFR 50.46(a)(3)

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

Monticello Nuclear Generating Plant
Docket 50-263
License No. DPR-22

2006 Report of Changes and Errors in ECCS Evaluation Models

- References: 1) GE Report: NEDC-32514P, Revision 1, "Monticello SAFER/GESTR LOCA Loss of Coolant Accident Analysis," dated October 1997. (Exhibit G to LAR, Revision 1, Dated July 26, 1996, Supporting Monticello Nuclear Generating Plant Power Rerate Request Program.)
- 2) GE Report: GE-NE-J1103878-09-02P, "Monticello ECCS-LOCA Evaluation for GE14," GE Proprietary Information, dated August 2001.
- 3) NMC to NRC letter, "2005 Report of Changes and Errors in ECCS Evaluation Models," (L-MT-05-106), dated December 29, 2005.
- 4) GE 10 CFR 50.46 notification letter 2006-01, "Impact of Top Peaked Power Shape for Small Break LOCA Analysis," July 28, 2006.

Pursuant to 10 CFR 50.46(a)(3), Nuclear Management Company, LLC (NMC) is providing the annual report of changes or errors identified in the Emergency Core Cooling System (ECCS) evaluation models or application for the Monticello Nuclear Generating Plant (MNGP). This report is for the period between July 2005 and July 2006.

The MNGP Loss of Coolant Accident (LOCA) analyses of record (AOR) are contained in General Electric (GE) reports submitted for the MNGP rerate (Reference 1) and the LOCA analysis for the GE14 fuel type (Reference 2). Two GE fuel types are currently in use, the GE11 and GE14 fuel types.

During the period covered, one notification of a change or error resulting in a change to the calculated Peak Cladding Temperature (PCT) was received from GE. The change

was to model small-break LOCA with a top-peaked power shape, rather than a mid-peaked power shape. When the change was made, the PCT for GE14 fuel increased by 30 °F, while the PCT for GE11 fuel was unaffected.

The current adjusted licensing basis PCTs for the fuel types in use at MNGP are:

<u>Fuel Type</u>	<u>Licensing Basis</u> <u>PCT (°F)</u>
GE11	2137
GE14	1975

Enclosure 1 provides a summary table of the applicable changes and errors in the LOCA analyses from when the last analyses of record were performed.

This letter makes no new commitments or changes any existing commitments.

 For J. Conway

John T. Conway
Site Vice President, Monticello Nuclear Generating Plant
Nuclear Management Company, LLC

Enclosure

cc: Administrator, Region III, USNRC
Project Manager, Monticello
Resident Inspector, Monticello
Minnesota Department of Commerce

TABLE 1 – SUMMARY OF MONTICELLO LOCA CHANGES AND ERRORS INVOLVING CHANGES IN PEAK CLADDING TEMPERATURE (PCT)

Applicable Analysis or Error Description	Ref.	Licensing Basis PCT (°F)	
		GE11	GE14
Monticello Loss of Coolant Accident (LOCA) Analyses of Record (AOR):			
NEDC-32514P, Rev 1, Monticello SAFER/GESTR-LOCA Loss of Coolant Accident Analysis	1	2087	----
GE-NE-J1103878-09-02P, Monticello ECCS-LOCA Evaluation for GE14	2	----	<1960
Impact of SAFER Time Step Size on the PCT for Jet Pump Plant Analyses (Notification Letter 2000-04) The time step size used in the SAFER-LOCA code was determined inappropriate to achieve good numerical convergence for an accurate PCT.	3	-5	N/A
Impact of SAFER Pressure Rate Inconsistency Error on PCT (Notification Letter 2001-02) An inconsistent core exit steam flow was used in the SAFER pressure equation, resulting in premature termination of ECCS condensation, and an increase in the second PCT.	4	+10	N/A
SAFER Core Spray Injection Elevation Error (Notification Letter 2002-01) An error in the automation code that prepared input for SAFER resulted in the core spray sparger elevation being specified lower than actual.	5	+60	N/A
Impact of SAFER Level/Volume Table Error on PCT (Notification Letter 2003-01) Level and volume tables used by SAFER were not updated when a revised initial water level was implemented.	6	-15	-15
Impact of Top Peaked Power Shape for Small Break LOCA Analysis (Notification Letter 2006-01) Small Break LOCA analyses had assumed a mid-peaked axial power shape consistent with the DBA break analysis. It was determined that a top-peaked axial power shape can result in higher calculated PCT.	7	0	+30
Sum of absolute value of changes during the current reporting period.		0	30
Sum of absolute value of changes since last AOR.		90	45
Algebraic sum of changes during the current reporting period.		0	30
Algebraic sum of changes since last AOR.		50	+15
Current Adjusted Peak Cladding Temperature		2137	<1975

References

1. GE Report: NEDC-32514P, Revision 1, "Monticello SAFER/GESTR-LOCA Loss-of-Coolant Accident Analysis," Dated October 1997. (This report is Exhibit G of Revision 1 to License Amendment Request Dated July 26, 1996, Supporting Monticello Nuclear Generating Plant Power Rerate Request Program.)
2. GE Report: GE-NE-J1103878-09-02P, "Monticello ECCS-LOCA Evaluation for GE14," GE Proprietary Information, dated August 2001.
3. 10 CFR 50.46 Notification Letter 2000-04, "Impact of SAFER Time Step Size on the Peak Clad Temperature (PCT) for Jet Pump Plant Analyses," dated November 8, 2000.
4. 10 CFR 50.46 Notification Letter 2001-02, "Impact of SAFER Pressure Rate Inconsistency Error on the Peak Clad Temperature (PCT)."
5. 10 CFR 50.46 Notification Letter 2002-01, "SAFER Core Spray Injection Elevation Error," GE Proprietary Information, dated June 13, 2002.
6. 10 CFR 50.46 Notification Letter 2003-01, "Impact of SAFER Level/Volume Table Error on the Peak Clad Temperature (PCT), GE Proprietary Information, dated May 6, 2003.
7. 10 CFR 50.46 Notification Letter 2006-01, "Impact of Top Peaked Power Shape for Small Break LOCA Analysis," GE Proprietary Information, dated July 28, 2006.