



Monticello Nuclear Generating Plant
2807 W County Road 75
Monticello, MN 55362

June 17, 2014

L-MT-14-054
10 CFR 50.46(a)(3)(ii)

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

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

June 2014, Thirty-Day Report of Changes in Emergency Core Cooling System
Evaluation Models Pursuant to 10 CFR 50.46

- References:
- 1) NRC to NSPM, "Monticello Nuclear Generating Plant – Issuance of Amendment No. 176 to Renewed Facility Operating License Regarding Extended Power Uprate (TAC No. MD9990)," dated December 9, 2013.
 - 2) NRC to NSPM, "Monticello Nuclear Generating Plant – Issuance of Amendment No. 180 to Renewed Facility Operating License Regarding Maximum Extended Load Line Limit Analysis Plus (TAC No. ME3145)," dated March 28, 2014.
 - 3) NSPM to NRC, "Report of Changes in Emergency Core Cooling System Evaluation Models," (L-MT-14-004) dated January 10, 2014.

Pursuant to 10 CFR 50.46(a)(3)(ii), the Northern States Power Company, a Minnesota corporation (NSPM), doing business as Xcel Energy, is providing this 30-day report concerning changes/errors identified in the Emergency Core Cooling System (ECCS) evaluation models for the Monticello Nuclear Generating Plant (MNGP). The MNGP Loss of Coolant Accident (LOCA) analyses of record (AORs) are contained in the General Electric Hitachi (GEH) reports submitted for the MNGP Extended Power Uprate and the Maximum Extended Load Line Limit Analysis Plus (MELLLA+) license amendments (References 1 and 2).

This 30-day report is being made due to the recent issuance of several GEH Nuclear Energy 10 CFR 50.46 Notification Letters. The changes/errors discussed within those notification letters result in a cumulative increase in Peak Cladding Temperature (PCT) that exceeds the 50°F reporting threshold of 10 CFR 50.46(a)(3)(i), and hence, are being reported in accordance with the regulation. The nature of these changes/errors and their effect on PCT is summarized in Table 1 of Enclosure 1. These changes result

in an Adjusted PCT increase from the previously reported 2150°F (Reference 3) to 2170°F.

As prescribed by the regulation a proposed reanalysis schedule or an evaluation is needed to demonstrate the facility remains in compliance with 10 CFR 50.46 requirements. In accordance with 10 CFR 50.46(a)(3)(ii) the following evaluation is provided. The Adjusted PCT is 30°F below the 2200°F acceptance criterion of 10 CFR 50.46(b)(1). This provides sufficient margin to justify taking no further action. No further reanalysis or other actions are planned.

Enclosure 1 provides additional information on the nature of the changes, and also on the previous changes and errors, and their effect on the MNGP LOCA analysis. This information is being submitted in accordance with the requirements of 10 CFR 50.46(a)(3)(ii) for the MNGP.

If you have any questions or require additional information, please contact Mr. Richard Loeffler at (763) 295-1247.

Summary of Commitments

This letter proposes no new commitments and does not revise any existing commitments.



Karen D. Fili,
Site Vice-President, Monticello Nuclear Generating Plant
Northern States Power Company – Minnesota

Enclosure

cc: Regional Administrator, Region III, USNRC
Project Manager, Monticello Nuclear Generating Plant, USNRC
Resident Inspector, Monticello Nuclear Generating Plant, USNRC

ENCLOSURE 1

MONTICELLO NUCLEAR GENERATING PLANT

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

(3 Pages Follow)

**Table 1 - Summary of Monticello LOCA Changes and Errors
 Involving Changes in Peak Cladding Temperature**

Applicable Analysis or Error Description	Ref.	Licensing Basis PCT(°F) GE14
NEDC-33322P, Revision 3, Safety Analysis Report for Monticello Constant Pressure Power Uprate	1 & 2	< 2140
<p>PRIME Fuel Properties Implementation for Fuel Rod T/M Performance, replacing GESTR Fuel Properties (10 CFR 50.46 Notification Letter 2012-01, Revision 1)</p> <p>This change is due to the application of an NRC-approved procedure to estimate the change in Peak Clad Temperature (PCT) due to the change in fuel properties from GESTR to PRIME primarily to address inaccuracies in fuel pellet thermal conductivity as a function of exposure.</p>	3	+ 10
<p>SAFER04A E4-Maintenance Update Changes (10 CFR 50.46 Notification Letter 2014-01)</p> <p>This change is for a new version (E4) of SAFER04A that resolves several accumulated observations that are code maintenance items. Sensitivity calculations show these items have an insignificant effect on calculated PCT.</p>	4	+ 0
<p>SAFER04A E4-Mass Non-Conservatism (10 CFR 50.46 Notification Letter 2014-02)</p> <p>This change is due to a logic error that occurs when upper plenum liquid mass and core spray flow rate are low. System mass is gradually lost due to core spray being discarded, resulting in marginally less ECCS flow credited as reaching the core.</p>	5	+ 15

Applicable Analysis or Error Description	Ref.	Licensing Basis PCT(°F) GE14
SAFER04A E4-Minimum Core DP Model (10 CFR 50.46 Notification Letter 2014-03)		
This change is due to the use of a minimum differential pressure that could be non-conservative offering inappropriate steam cooling benefit above the core two-phase level.	6	+ 20
SAFER04A E4-Bundle/Lower Plenum CCFL Head (10 CFR 50.46 Notification Letter 2014-04) This change is due to the counter current flow limitation (CCFL) calculation representing the pressure head slightly different from that of the calculated water level in the bundle.	7	- 15
Sum of absolute value of changes during the current reporting period.		50
Sum of absolute value of changes since last Analysis of Record (AOR).		60
Algebraic sum of changes during the current reporting period.		+ 20
Algebraic sum of changes since last AOR.		+ 30
Current Adjusted Peak Cladding Temperature		< 2170

The GE Hitachi Notification Letters that result in the submittal of this 10 CFR 50.46 30-day report are those listed above that have been issued for the year 2014 (i.e., those that are listed below the heavy black line in the above table).

References

1. GE Report: NEDC-33322P, Revision 3, "Safety Analysis Report for Monticello Constant Pressure Power Uprate," dated October 2008. [Submitted as Enclosure 5 of letter L-MT-08-52, dated November 5, 2008.]
2. NSPM to NRC letter, "Monticello Extended Power Uprate and Maximum Extended Load Line Limit Analysis Plus License Amendment Requests: Supplement for Analytical Methods Used to Address Thermal Conductivity Degradation and Analytical Methods Limitations (TAC Nos. MD9990 and ME3145)," (L-MT-13-053) dated July 8, 2013.
3. GE Hitachi (GEH) 10 CFR 50.46 Notification Letter 2012-01, Revision 1, "PRIME Fuel Properties Implementation for Fuel Rod T / M Performance, replacing GESTR Fuel Properties," dated July 30, 2013.
4. GEH 10 CFR 50.46 Notification Letter 2014-01, "SAFER04A E4-Maintenance Update Changes," dated May 21, 2014.
5. GEH 10 CFR 50.46 Notification Letter 2014-02, "SAFER04A E4-Mass Non-Conservatism," dated May 21, 2014.
6. GEH 10 CFR 50.46 Notification Letter 2014-03, "SAFER04A E4-Minimum Core DP Model," dated May 21, 2014.
7. GEH 10 CFR 50.46 Notification Letter 2014-04, "SAFER04A E4-Bundle/ Lower Plenum CCFL Head," dated May 21, 2014.
8. NSPM to NRC letter, "Report of Changes in Emergency Core Cooling System Evaluation Models," (L-MT-14-004) dated January 10, 2014.