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

June 12, 2014

L-MT-14-050
10 CFR 50.73

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

LER 2014-007 "Non-compliance with Technical Specification 3.4.9 – Reactor Coolant System Pressure and Temperature Limits"

Enclosed is the Monticello Licensee Event Report (LER) 2014-007-00 regarding the Monticello non-compliance with Technical Specification 3.4.9 "RCS Pressure and Temperature (P-T) Limits." This condition is reportable to the NRC in accordance with 10 CFR 50.73(a)(2)(i)(B).

Summary of Commitments

This letter contains no new commitments and no revisions to 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

NRC FORM 366 (02-2014) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 01/31/2017

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the FOIA, Privacy and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to Infocollects.Resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

LICENSEE EVENT REPORT (LER)

(See Page 2 for required number of digits/characters for each block)

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4. TITLE

Non-compliance with Technical Specification 3.4.9 – Reactor Coolant System Pressure and Temperature Limits

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
04	17	2014	2014	- 007	- 00	06	12	2014		05000
									FACILITY NAME	DOCKET NUMBER
										05000

9. OPERATING MODE	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: *(Check all that apply)*			
1	☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.73(a)(2)(i)(C)	☐ 50.73(a)(2)(vii)
	☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)
	☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)
	☐ 20.2203(a)(2)(i)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)
10. POWER LEVEL	☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
	☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(4)
88%	☐ 20.2203(a)(2)(iv)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(5)
	☐ 20.2203(a)(2)(v)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(C)	☐ OTHER
	☐ 20.2203(a)(2)(vi)	☒ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

LICENSEE CONTACT	TELEPHONE NUMBER *(Include Area Code)*
Carrie Fosaaen, Licensing Engineer	763-295-1357

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX

14. SUPPLEMENTAL REPORT EXPECTED	15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR
☐ YES *(If yes, complete 15. EXPECTED SUBMISSION DATE)* ☒ NO				

ABSTRACT *(Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)*

On April 17, 2014, plant personnel discovered a previously unrecognized failure to take appropriate actions of Technical Specification (TS) Limiting Condition for Operation 3.4.9. This failure occurred on seven prior occasions when the Reactor Pressure Vessel (RPV) pressure dropped below 0 psig.

The cause of the failure to take the appropriate TS actions was that station personnel did not recognize a vacuum was drawn on the RPV and the implications for compliance with Pressure-Temperature curves.

The Pressure Temperature Limits Report curves will be updated to recognize that the RPV may be operated at a vacuum.

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NARRATIVE

EVENT DESCRIPTION

On April 17, 2014, Monticello Nuclear Generating Plant (MNGP) personnel discovered a previously unrecognized failure to take appropriate actions of Technical Specification (TS) Limiting Condition for Operation (LCO) 3.4.9. On seven occasions during the last three years the Reactor Pressure Vessel (RPV) [PRV] pressure dropped below 0 psig. Computer points that measure the RPV pressure do not go below 0 psig. As a result, data for condenser vacuum was examined to determine when the RPV pressure may have been less than 0 psig. The following dates were identified where a vacuum was drawn on the reactor vessel during startup activities: May 22, 2011, June 25, 2011, October 27, 2011, December 8, 2011, July 16, 2013, and February 5, 2014. During these events the vacuum drawn on the vessel was approximated to be -3 psig based on the vacuum observed in the condenser. One instance on June, 3, 2013, was also identified as drawing a vacuum on the vessel during preparation for the class 1 pressure test; vacuum was approximately -17.15 psig.

At the time of discovery, the plant was operating in Mode 1 at approximately 88% rated thermal power. There were no other structures, systems, or components inoperable that contributed to the event.

EVENT ANALYSIS

This condition is being submitted in accordance with 10 CFR 50.73(a)(2)(i)(B) Operation or Condition Prohibited by Technical Specifications.

Operation of the RPV is required to be within the limits of the Pressure-Temperature (P-T) Curves in the Pressure Temperature Limits Report (PTLR) at all times as stated in TS 3.4.9. In Mode 1, 2, or 3, TS action 3.4.9.A requires restoration of parameter(s) to within limits within 30 minutes and determine if the Reactor Coolant System (RCS) is acceptable for continued operation within 72 hours. If the requirements of the LCO are not met in modes other than 1, 2, or 3, the required action is to initiate action to restore parameter(s) to within limits immediately and determine if RCS is acceptable for operation prior to entering Mode 2 or 3.

The P-T curves for Monticello used during plant startup bound reactor pressure conditions from 0 psig to 1300 psig. A vacuum drawn on the RPV during startup was not considered during development of the curves and is not reflected on the P-T curves. Monticello may draw a slight vacuum on the vessel during startup when the Main Steam Line Isolation Valves [ISV] are open to the Condenser [SG] and the Mechanical Vacuum Pump [SH] is in service. The vacuum is initiated on the RPV in Mode 4 and continues through the shift into Mode 2 and is terminated once the plant startup begins.

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NARRATIVE

SAFETY SIGNIFICANCE

The structural integrity of the reactor vessel and the RCS remains acceptable at all conditions including a slight vacuum generated during start-up operations. The acceptability of continued operation of the RPV under a vacuum has been validated by evaluation. Operation of the RPV under a vacuum does not impact the limits described in the PTLR and 10CFR50 Appendix G. The integrity of the RCS is also confirmed by the leak tight nature of the RPV and the demonstration of margin to collapse.

The 10CFR50 Appendix G requirements describe the minimum temperature operation of the vessel at core not critical and core critical conditions. These requirements have no lower limit for vessel pressure and make no distinction between operation at 0 psig and vacuum on the RPV. Monticello maintained the minimum temperature during all plant start-up evolutions where a vacuum was drawn on the RPV and was within operational limits to prevent failure of the RPV from brittle fracture.

CAUSE

The cause of the failure to enter the appropriate technical specification actions was that station personnel did not recognize a vacuum was drawn on the RPV and the implications for compliance with P-T curves.

CORRECTIVE ACTION

The PTLR curves will be updated to recognize that the RPV may be operated at a vacuum.

PREVIOUS SIMILAR EVENTS

There were no previous similar Licensee Events Reports identified for the MNGP in the past three years relative to RPV P-T curve limitations.