Xcel Energy®

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

August 21, 2015

L-MT-15-067
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 2015-004-00 "Past Inoperability of Turbine Stop Valve Scram Function Exceeded Technical Specification Requirements"

Enclosed is the Monticello Nuclear Generating Plant (MNGP) Licensee Event Report (LER) 2015-004-00 concerning malfunction of the turbine stop valve scram limit switch. This condition is reportable to the NRC in accordance with 10 CFR 50.73(a)(2)(i)(B), as operations prohibited by Technical Specifications.

Summary of Commitments

This letter contains no new commitments and no revisions to existing commitments.

Peter A. Gardner
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

Past Inoperability of Turbine Stop Valve Scram Function Exceeded Technical Specification Requirements

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
06	24	2015	2015	004	00	08	21	2015		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)
95%	☐ 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
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

14. SUPPLEMENTAL REPORT EXPECTED	15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR
☒ YES *(If yes, complete 15. EXPECTED SUBMISSION DATE)* ☐ NO		8	31	17

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

On June 24, 2015 during performance of turbine stop valve scram testing, the relay associated with the scram logic failed to de-energize as expected. Based on this failure to de-energize, stop valve 4 (SV-4) limit switch would not have contributed an input to the scram logic as designed.

The cause of the failure is unknown at this time but has been isolated to the limit switches through troubleshooting efforts. The limit switches are located in a high radiation area that precludes investigation during reactor operation. The fuse for the logic associated with SV-4 limit switch has been removed to meet Technical Specification requirements, thus there is a half subchannel trip in place on channels A2 and B2. With the subchannels in trip, the likelihood of a scram is increased. The cause will be supplemented upon completion of investigation. A troubleshooting plan is in place to perform investigation of the limit switches at the next available opportunity.

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NARRATIVE

EVENT DESCRIPTION

On May 20 through May 25, 2015, during the refueling outage, the turbine stop valve (SV) [V] limit switches [33] were replaced.

On May 23, turbine stop valve closure calibration checks were performed as post maintenance testing. This check identified that the closed indication light for SV-4 position indication did not illuminate at any time.

On May 25, investigations were performed. Binding was found in the movement of the actuating arm for the limit switch for SV-4. Adjustments were made to the switch and connecting arms. The stop valves were cycled several times to provide evidence that the switches were performing as designed. Following completion of the maintenance, the turbine stop valve closure calibration check was successfully performed.

Reactor startup commenced on May 28. As part of normal startup activities, the stop valves were opened in preparation for turbine operation. It was noted that when SV-4 opened, the stop valve closure scram relay did not energize as expected. At this time investigation was performed and found that an adjustment of the stop valve stem follower was required. The adjustment was performed and the valve cycled to verify the limit switch would actuate in the required test band. The turbine stop valve closure calibration check was successfully performed for SV-4.

Reactor power reached 40% during startup on June 1 at approximately 2155 hours.

On June 24, 2015 at 1130 hours, during performance of the turbine stop valve closure scram test, closure of SV-4 did not actuate the required relays [RLY]. At 1245 hours the fuses [FU] were removed to meet the Technical Specification required action to place the channel in trip. At the time of discovery the plant was in Mode 1 at 95% power.

EVENT ANALYSIS

The event is reportable in accordance with 10 CFR 50.73(a)(2)(i)(B) Operation or Condition Prohibited by Technical Specifications. A past operability evaluation determined that there was not sufficient evidence to conclude that SV-4 stop valve closure scram function was operable since the limit switch replacement during the refueling outage. Therefore, the TS 3.3.1.1 Limiting Condition for Operation had not been met since the plant exceeded 40% rated thermal power on June 1. This exceeded the TS required action time to place the channel in trip.

This event is not considered a Safety System Functional Failure per NEI 99-02 Revision 7.

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NARRATIVE

SAFETY SIGNIFICANCE

Although the limit switch for SV-4 would not have provided input to its associated scram logic, the stop valve closure scram would have occurred as designed since the limit switches associated with the other three stop valves were verified to be functioning as designed. Since any three stop valves can cause a stop valve closure scram, the scram would still have occurred. By design, all four stop valves close at the same time on a turbine generator trip signal. Other than manual test stroking (one valve at a time) there is no operating scenario where only some of the stop valves close.

The turbine stop valve closure scram initiates a scram earlier than either the nuclear instrumentation system or primary system high pressure. The nuclear system high pressure scram in conjunction with the automatic pressure relief system is adequate to preclude over pressurizing the primary system. The turbine stop valve closure scram that provides addition margin to the primary system pressure limit.

CAUSE

The cause of the failure is unknown at this time but has been isolated to the limit switches through troubleshooting efforts. The limit switches are located in a high radiation area that precludes investigation. The cause will be supplemented upon completion of investigation.

CORRECTIVE ACTION

The fuses for the logic associated with SV-4 have been removed to meet Technical Specification requirements. This causes half subchannel trip in place on channels A2 and B2. With the subchannels in trip, the likelihood of a scram is increased. A troubleshooting plan is in place to perform investigation of the limit switches at the next available opportunity.

PREVIOUS SIMILAR EVENTS

There were no similar Licensee Event Reports during the past three years.

ADDITIONAL INORMATION

The Institute of Electrical and Electronics Engineer codes for equipment are denoted by [XX].