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September 30, 2016

L-MT-16-046
10 CFR 50.73

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

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

LER 2016-002-00, "Inadequate Appendix R Fire Barrier Impacts Safe Shutdown Capability"

Enclosed, is the Monticello Nuclear Generating Plant (MNGP) Licensee Event Report (LER) 2016-002-00 regarding discovery of an inadequate Appendix R fire barrier that impacts the operator egress path during a Control Room evacuation. This condition is reportable to the NRC in accordance with 10 CFR 50.73(a)(2)(ii)(B), as an event or condition that resulted in the plant being in an unanalyzed condition that significantly degrades plant safety. This unanalyzed condition resulted from the determination that because of the inadequate fire barrier, a fire in the Plant Administration Building (PAB) would now require use of an alternate shutdown strategy to safely shutdown the reactor. However, the alternate shutdown strategy requires that the operators traverse from the Control Room through the PAB Fire Area to access the alternate shutdown equipment. This path could be impacted by the PAB fire.

Summary of Commitments

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

A handwritten signature in black ink, appearing to read 'Peter A. Gardner'.

Peter A. Gardner
Site Vice President, Monticello Nuclear Generating Plant
Northern States Power Company – Minnesota

Enclosure

cc: Regional Administrator, Region III, USNRC
Project Manager, MNGP, USNRC
Resident Inspector, MNGP, USNRC
Department of Commerce, State of Minnesota



LICENSEE EVENT REPORT (LER)
(See Page 2 for required number of digits/characters for each block)

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.

1. FACILITY NAME Monticello Nuclear Generating Plant	2. DOCKET NUMBER 05000-263	3. PAGE 1 OF 4
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4. TITLE
Inadequate Appendix R Fire Barrier Impacts Safe Shutdown Capability

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
08	04	2016	2016	- 002	- 00	09	30	2016	FACILITY NAME	DOCKET NUMBER
										05000
										05000

9. OPERATING MODE **11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §:** *(Check all that apply)*

1	<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)
	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input checked="" type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)
	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)
	<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)
100%	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)
	<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)
	<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> 73.77(a)(1)
	<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(D)	<input type="checkbox"/> 73.77(a)(2)(i)
	<input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input type="checkbox"/> 73.77(a)(2)(ii)
		<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> OTHER Specify in Abstract below or in NRC Form 366A	

12. LICENSEE CONTACT FOR THIS LER

LICENSEE CONTACT Stephen Sollom, Licensing Engineer	TELEPHONE NUMER <i>(Include Area Code)</i> 763-295-1611
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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 <input checked="" type="checkbox"/> YES <i>(If yes, complete 15. EXPECTED SUBMISSION DATE)</i> <input type="checkbox"/> NO	15. EXPECTED SUBMISSION DATE	MONTH 12	DAY 15	YEAR 2016
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ABSTRACT *(Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)*

On August 4, 2016, while performing a Fire Protection/Appendix R self-assessment, it was discovered that the floor between the Cable Spreading Room (CSR) and the Plant Administration Building (PAB) basement is not an adequate Appendix R fire barrier. Because the CSR and the PAB are located in the same Fire Area (FA), a fire in the PAB could spread to the CSR requiring evacuation of the Control Room (CR). When the CR is evacuated, alternate shutdown activities are performed at the Alternate Shutdown System (ASDS) Panel. The travel path used to access the ASDS Panel following CR evacuation traverses the same fire area in the PAB.

This unanalyzed condition resulted from the determination that because of the inadequate fire barrier, a fire in the PAB would now require use of an alternate shutdown strategy to safely shutdown the reactor. However, the alternate shutdown strategy requires that the operators traverse from the CR through the PAB Fire Area to access the alternate shutdown equipment. This path could be impacted by the PAB fire.

In response to this discovery an hourly fire watch was established.



**LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET**

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		YEAR	SEQUENTIAL NUMBER	REV NO.
Monticello Nuclear Generating Plant	05000-263	2016	- 002	- 00

NARRATIVE

UNIT CONDITION PRIOR TO THE EVENT

On August 4, 2016, Monticello Nuclear Generating Plant (MNGP) was at 100% power, Mode 1.

EVENT DESCRIPTION

On August 4, 2016, while performing a Fire Protection/Appendix R self-assessment, it was discovered that the floor between the Cable Spreading Room (CSR) and the Plant Administration Building (PAB) basement is not a credited Appendix R fire barrier. Fire Area (FA) VI encompasses the MNGP CSR (above) and portions of the PAB basement that house the Division I batteries (below the CSR). Specifically it was discovered that the CSR floor was not an adequate fire barrier, because the structural steel supporting the CSR floor did not have a 3-hour fire rating as required by 10 CFR 50, Appendix R, Section III.G.2. Since the CSR and the PAB are located in the same fire area without a compliant fire barrier, a fire in the PAB could spread to the CSR. By procedure, a fire in the CSR requires evacuation of the Control Room (CR). The MNGP CR is a separate fire area within the PAB.

Upon evacuation of the CR, plant procedures direct the operator to perform shutdown of the reactor using Division II equipment on the Alternate Shutdown System (ASDS) Panel, located in the Emergency Filtration Train (EFT) Building. The credited travel path used to access the ASDS Panel following CR evacuation traverses FA VI in the PAB.

This is an unanalyzed condition, because of the inadequate fire barrier and its effect on safe shutdown capability. With the inadequate fire barrier, a fire in the PAB would now require use of an alternate shutdown strategy to safely shutdown the reactor. However, the alternate shutdown strategy requires that the operators traverse from the CR through the PAB FA to access the alternate shutdown equipment. This path could be impacted by the PAB fire.

In 1982, Northern States Power (NSP) (the previous licensee for MNGP) provided a safe shutdown analysis that assumed a modification would be performed to remove Division II equipment from the CSR so that the CSR could be classified as a Division I area along with the rest of FA VI. In addition NSP requested an exemption from the requirements of 10 CFR 50, Appendix R, Section III.G.2 for structural steel fireproofing, including the structural steel in FA VI. In 1983, the NRC denied the requested exemption for the structural steel in FA VI. After the NRC denial of the exemption, NSP agreed to provide alternate shutdown capability in the CSR in lieu of protecting the structural steel. It has now been determined that neither alternate shutdown capability nor structural steel fireproofing has been implemented in FA VI.

EVENT ANALYSIS

The condition is reportable to the NRC in accordance with 10 CFR 50.73(a)(2)(ii)(B) for placing the plant in an unanalyzed condition that significantly degrades plant safety. The condition was reported to the NRC on August 4, 2016, in event notification 52154 in accordance with 10 CFR 50.72(b)(3)(ii)(B).



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SAFETY SIGNIFICANCE

Due to the noncompliance in the Appendix R fire barrier/boundary, both safe shutdown divisions have the potential to be challenged in the event of a fire in the PAB as well as access to the ASDS Panel for performing safe shutdown operations. Fire protection features in the FA VI consists of five (5) separate fire zones. Fire detection capability in FA VI consists of ionization smoke detection and smoke and thermal detection alarms. Four zones alarm in the CR. Upon alarm receipt, the fire brigade is promptly dispatched and will address adverse conditions using manual suppression capabilities that consist of hose stations and portable extinguishers. FA VI also covers office areas in the PAB, including a heating, ventilation and air conditioning (HVAC) room. The office areas and HVAC room do not have fire detection. The office areas are manned by personnel from organizations that are staffed on a continuous basis to support plant activities. So it is expected that a fire would be detected throughout FA VI and suppression equipment would be available to respond to the event.

The PAB basement fire zones of interest do not contain fire hazards that are considered high hazard sources, such as oil reservoirs, oil migrating paths or large storage tanks of flammable/combustible liquids. Instead electrical cabinets, and batteries are found in the PAB basement. These sources are not considered high fire hazard sources and would not cause a structural collapse, assuming fire fighters can reach the fire.

The risk evaluation for this event determined that there are few ignition sources in FA VI that would produce a hot gas layer that would be necessary for propagation of a fire to other areas of the PAB. Therefore, based on the above, the risk of the failure of the structural steel in the PAB causing a fire to propagate to the CSR is low.

CAUSE

The cause of the deficient safe shutdown strategy is due to a legacy error in the 10 CFR 50, Appendix R safe shutdown analysis implementation. From documentation it was determined that the original safe shutdown analysis (circa 1982) assumed a modification would be performed to remove Division II equipment from the CSR so that the CSR could be classified as a Division I area along with the rest of FA VI. In addition, NSP requested an exemption from the requirements of 10 CFR 50, Appendix R, Section III.G.2 for structural steel fireproofing, including the structural steel in FA VI. However, when the modification was not performed and the exemption was not approved, FA VI was not reevaluated, and it could not be determined why the reevaluation did not occur.

CORRECTIVE ACTION COMPLETED

The immediate corrective action provided a compensatory action for the degraded fire barrier, consisting of an hourly fire watch in accordance with the MNGP fire protection program.



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Monticello Nuclear Generating Plant	05000-263	YEAR	SEQUENTIAL NUMBER	REV NO.
		2016	- 002	- 00

CORRECTIVE ACTIONS PLANNED

The final corrective action has yet to be determined. Alternatives being considered at this time include upgrading the fire boundary between the CSR and the PAB to be compliant with 10 CFR 50, Appendix R requirements, or providing an alternate path for the operators to the ASDS panel.

This LER will be supplemented when final corrective actions are determined.

PREVIOUS SIMILAR OCCURRENCES

There are no previous similar licensee event reports in the past three years.