



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

January 28, 2014

L-MT-14-005  
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

Revision 2 to LER 2013-003, "Inadequate External Flooding Procedure"

After submittal of Revision 1 to Licensee Event Report (LER) 2013-003, "Inadequate External Flooding Procedure," Northern States Power Minnesota (NSPM) d/b/a as Xcel Energy, identified that the LER contained incomplete information. Section 11 of the LER identified that this condition was reportable in accordance with 10CFR 50.73(a)(2)(vii), however, a companion discussion of this reporting requirement was not included in the Event Analysis discussion of the LER. This oversight was entered into the MNGP corrective action program. A revision to the LER was developed to correct this oversight and to make additional corrections. Revision 2 of LER 2013-003 is attached.

Summary of Commitments

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

A handwritten signature in black ink, appearing to read 'Karen D. Fili'.

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

|  |        |           |   |                    |  |                                      |  |               |  |               |
|--|--------|-----------|---|--------------------|--|--------------------------------------|--|---------------|--|---------------|
| <b>NRC FORM 366</b> <b>U.S. NUCLEAR REGULATORY COMMISSION</b><br>(10-2010)   |        |           |   |                    | <b>APPROVED BY OMB NO. 3150-0104</b> <b>EXPIRES 10/31/2013</b> |                                      |  |               |  |               |
| <b>LICENSEE EVENT REPORT (LER)</b><br>(See reverse for required number of digits/characters for each block)  |        |           |   |                    |  |                                      |  |               |  |               |
| 1. FACILITY NAME   |        |           |   |                    | 2. DOCKET NUMBER   |                                      |  | 3. PAGE       |  |               |
| Monticello Nuclear Generating Plant  |        |           |   |                    | 05000 - 263  |                                      |  | 1 OF 4        |  |               |
| 4. TITLE   |        |           |   |                    |  |                                      |  |               |  |               |
| Inadequate External Flooding Procedure   |        |           |   |                    |  |                                      |  |               |  |               |
| 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 |
| 5  | 31     | 13        | 2013  | 003                | 02   | 01                                   | 28   | 2014          | FACILITY NAME  | DOCKET NUMBER |
| 9. OPERATING MODE  |        |           | 11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply) |                    |  |                                      |  |               |  |               |
| 4  |        |           | <input type="checkbox"/> 20.2201(b)   |                    | <input type="checkbox"/> 20.2203(a)(3)(i)                      |                                      | <input type="checkbox"/> 50.73(a)(2)(i)(C)             |               | <input checked="" type="checkbox"/> 50.73(a)(2)(vii)   |               |
|  |        |           | <input type="checkbox"/> 20.2201(d)   |                    | <input type="checkbox"/> 20.2203(a)(3)(ii)                     |                                      | <input type="checkbox"/> 50.73(a)(2)(ii)(A)            |               | <input type="checkbox"/> 50.73(a)(2)(viii)(A)          |               |
|  |        |           | <input type="checkbox"/> 20.2203(a)(1)  |                    | <input type="checkbox"/> 20.2203(a)(4)                         |                                      | <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)(2)(i)   |                    | <input type="checkbox"/> 50.36(c)(1)(i)(A)                     |                                      | <input type="checkbox"/> 50.73(a)(2)(iii)              |               | <input checked="" type="checkbox"/> 50.73(a)(2)(ix)(A) |               |
|  |        |           | <input type="checkbox"/> 20.2203(a)(2)(ii)  |                    | <input type="checkbox"/> 50.36(c)(1)(ii)(A)                    |                                      | <input type="checkbox"/> 50.73(a)(2)(iv)(A)            |               | <input type="checkbox"/> 50.73(a)(2)(x)                |               |
|  |        |           | <input type="checkbox"/> 20.2203(a)(2)(iii)   |                    | <input type="checkbox"/> 50.36(c)(2)                           |                                      | <input checked="" type="checkbox"/> 50.73(a)(2)(v)(A)  |               | <input type="checkbox"/> 73.71(a)(4)                   |               |
| 10. POWER LEVEL  |        |           | <input type="checkbox"/> 20.2203(a)(2)(iv)  |                    | <input type="checkbox"/> 50.46(a)(3)(ii)                       |                                      | <input checked="" type="checkbox"/> 50.73(a)(2)(v)(B)  |               | <input type="checkbox"/> 73.71(a)(5)                   |               |
| 0%   |        |           | <input type="checkbox"/> 20.2203(a)(2)(v)   |                    | <input type="checkbox"/> 50.73(a)(2)(i)(A)                     |                                      | <input checked="" type="checkbox"/> 50.73(a)(2)(v)(C)  |               | <input type="checkbox"/> OTHER                         |               |
|  |        |           | <input type="checkbox"/> 20.2203(a)(2)(vi)  |                    | <input type="checkbox"/> 50.73(a)(2)(i)(B)                     |                                      | <input checked="" type="checkbox"/> 50.73(a)(2)(v)(D)  |               | Specify in Abstract below or in NRC Form 366A          |               |
| 12. LICENSEE CONTACT FOR THIS LER  |        |           |   |                    |  |                                      |  |               |  |               |
| NAME   |        |           |   |                    |  | TELEPHONE NUMBER (Include Area Code) |  |               |  |               |
| Lenny Sueper, Licensing Engineer   |        |           |   |                    |  | (612) 330-6917                       |  |               |  |               |
| 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          |
| <input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO  |        |           |   |                    |  |                                      |  |               |  |               |
| <b>ABSTRACT</b> (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)   |        |           |   |                    |  |                                      |  |               |  |               |
| <p>In preparation for the NRC's 10 CFR 50.54(f) flooding audit, an assessment of the external flooding walkdowns was performed at MNGP during the week of May 21, 2013. This effort resulted in the identification of external flooding deficiencies in the Procedure A.6, "Acts of Nature," for mitigation of a Probable Maximum Flood (PMF) event.</p> <p>On May 31, 2013, an aggregate review of deficiencies identified called into question the adequacy of Procedure A.6, "Acts of Nature," to protect the site from a PMF. As a result, Northern States Power Minnesota (NSPM) submitted Event Notification 49085 for an unanalyzed condition.</p> <p>The root cause for this event was determined to be: Station personnel incorrectly understood the 1980 NRC Safety Evaluation Report licensing basis to allow time for preparation of a detailed flood plan based on the presence of identifiable preconditions required for a PMF as stated in USAR, Appendix G. This misunderstanding was institutionalized through inclusion of this position in station documentation.</p> <p>The corrective action to prevent recurrence was determined to be: Clarify in appropriate station documents, including, but not limited to, the USAR, external flooding section of procedure A.6, and Design Basis Document for External Flooding, that the PMF antecedent conditions are required to be assumed present and that actions to mitigate a PMF must be preplanned. In addition, communicate requirements to management &amp; station personnel. Other corrective actions are also proposed from this event.</p> |        |           |   |                    |  |                                      |  |               |  |               |

|                                     |   |                      |   |                |
|-------------------------------------|---|----------------------|---|----------------|
| <b>NRC FORM 366A</b><br>(10-2010)   | <b>LICENSEE EVENT REPORT (LER)</b><br><b>CONTINUATION SHEET</b> |                      | <b>U.S. NUCLEAR REGULATORY COMMISSION</b> |                |
| <b>1. FACILITY NAME</b>             | <b>2. DOCKET</b>  | <b>6. LER NUMBER</b> |   | <b>3. PAGE</b> |
| Monticello Nuclear Generating Plant | 05000-263   | YEAR                 | SEQUENTIAL<br>NUMBER                      | REV<br>NO.     |
|                                     |   | 2013                 | - 003                                     | - 02           |
| 2 OF 4                              |   |                      |   |                |

**NARRATIVE**

**EVENT DESCRIPTION**

Prior to discovery of the condition the Monticello Nuclear Generating Plant (MNGP) was in Mode 4 at 0% power.

In preparation for the NRC's 10 CFR 50.54(f) flooding audit, an assessment of the external flooding walkdowns was performed at MNGP during the week of May 21, 2013. This effort resulted in the identification of external flooding weaknesses in the Procedure A.6, "Acts of Nature," for mitigation of a Probable Maximum Flood (PMF) event. Examples of issues identified by the assessment team include:

- Procedure A.6 does not consider the Emergency Diesel Generator Emergency Service Water drains. A walkdown revealed that the drain is not visible in the expected location, and that it may be covered. As a result, it is not clear if this drain would allow flood waters to bypass the levee.
- Yard drains around the security access facility were not accounted for by the procedure. These would allow water to flow under the levee, if left unsealed during a PMF event.
- Construction drawings contained errors that would have created a gap between the intake structure and bin wall. Additionally, there were questions on bin wall construction once access is lost from the river side of the bin wall as there are interferences on the plant side of the bin wall that would complicate construction.

On May 31, 2013, an aggregate review of issues identified, such as the examples above, called into question the adequacy of Procedure A.6, "Acts of Nature," to protect the site from a PMF. As a result, Northern States Power Minnesota (NSPM) submitted Event Notification 49085 for an unanalyzed condition. As a result of this report, NSPM performed a root cause investigation. The root cause investigation assessed the preceding issues and discovered other issues during the investigation. After analysis the following deficiencies in the preparations for responding to an external flooding event were determined to be relevant to the determination of an unanalyzed condition:

- Potential flood barrier bypasses in drain lines from inside the turbine building were not specifically identified.
- Station procedures for flooding mitigation did not require verification on 4 hour intervals of pneumatic plug pressure installed in yard drain discharge lines as recommended by the manufacturer.
- Unclear guidance regarding actions for determining flood levels and installing mitigation materials in a timely manner in culverts that bypass the levee.
- The turbine building addition catch basin was relocated inside the levee with no direction to plug this flood barrier bypass
- Change from ring levee to horseshoe levee design did not identify the time to remove obstacles required to construct the levee and the impact of the weather on working conditions and construction time.
- Horseshoe levee design relied on connection of levee to the screenhouse. The screenhouse structure was not designed as a flood barrier. The levee design should have been identified as connecting to the intake structure.
- New security access facility installation and yard drain additions were not specifically identified in the horseshoe levee design and resulted in potential levee bypass paths.
- Schedule for completion of flood plan assumed two extra weeks for implementation without an understanding of the design basis requirements.

|  |  |   |               |                                    |            |         |
|--|--|---|---------------|------------------------------------|------------|---------|
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| Monticello Nuclear Generating Plant  |  | 05000-263   | YEAR          | SEQUENTIAL<br>NUMBER               | REV<br>NO. | 3 OF 4  |
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| <b>NARRATIVE</b>   |  |   |               |                                    |            |         |
| <p>These conditions in aggregate were determined to challenge the ability of the site to mitigate the effects of a PMF which led to the unanalyzed condition. These conditions have been corrected via procedure changes or changes to the MNGP facility.</p>  |  |   |               |                                    |            |         |
| <b>EVENT ANALYSIS</b>  |  |   |               |                                    |            |         |
| <p>This event is reportable in accordance with 10 CFR 50.73(a)(2)(ii)(B) as an unanalyzed condition that significantly degraded plant safety.</p>  |  |   |               |                                    |            |         |
| <p>This event is also reportable in accordance with 10 CFR 50.73(a)(2)(v)(A), (B), (C) and (D) and 10 CFR 50.73(a)(2)(ix)(A) as a condition and, as an event as a result of a single cause, that could have prevented the fulfillment of the safety function of structures or systems that are needed to:</p> <ul style="list-style-type: none"> <li>• Shut down the reactor and maintain it in a safe shutdown condition;</li> <li>• Remove residual heat;</li> <li>• Control the release of radioactive material; or</li> <li>• Mitigate the consequences of an accident.</li> </ul> |  |   |               |                                    |            |         |
| <p>This event is also reportable in accordance with 10 CFR 50.73(a)(2)(vii) since as a result of a single cause, at least one independent train or channel became inoperable in multiple systems and two independent trains or channels became inoperable in a single system that is designed to:</p> <ul style="list-style-type: none"> <li>• Shut down the reactor and maintain it in a safe shutdown condition;</li> <li>• Remove residual heat;</li> <li>• Control the release of radioactive material; or</li> <li>• Mitigate the consequences of an accident.</li> </ul>         |  |   |               |                                    |            |         |
| <p>This condition is considered a safety system functional failure as significant portions of the safety functions indicated above would have been negatively impacted during a PMF.</p>   |  |   |               |                                    |            |         |
| <b>SAFETY SIGNIFICANCE</b>   |  |   |               |                                    |            |         |
| <p>MNGP is required to be protected from flooding as described in the licensing basis. The procedural inadequacies affected the ability to protect the site during a PMF event. Since there has been no external flood approaching the PMF elevation, there were no adverse consequences to the health and safety of the public or the plant and its personnel as a result of the identified deficiencies. The root cause investigation did not identify any aggregate additional risks to the health and safety of the public resulting from this event.</p>                          |  |   |               |                                    |            |         |
| <b>CAUSE</b>   |  |   |               |                                    |            |         |
| <p>NSPM has completed a root cause investigation of this event. The root cause determined by the investigation was identified as:</p>  |  |   |               |                                    |            |         |
| <p style="margin-left: 40px;">Station personnel incorrectly understood the 1980 NRC Safety Evaluation Report licensing basis to allow time for preparation of a detailed flood plan based on the presence of identifiable preconditions required for a PMF as stated in the Updated Safety Analysis Report (USAR), Appendix G. This misunderstanding was institutionalized through inclusion of this position in station documentation.</p>  |  |   |               |                                    |            |         |
| <p><b>No contributing causes were identified as a result of this investigation.</b></p>  |  |   |               |                                    |            |         |

|  |  |   |                      |   |            |                |
|--|--|---|----------------------|---|------------|----------------|
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| Monticello Nuclear Generating Plant  |  | 05000-263   | YEAR                 | SEQUENTIAL<br>NUMBER                      | REV<br>NO. | 4 OF 4         |
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| <b>NARRATIVE</b><br><br><b>CORRECTIVE ACTION</b><br><br><p>Actions have been taken to address identified deficiencies. For example, Procedure A.6, "Acts of Nature," was revised to address the leakage pathways that were identified in the list above. Construction drawings for the bin wall were also updated to correct the gap identified.</p> <p>The root cause investigation determined the following corrective action was necessary to prevent recurrence of this condition:</p> <ul style="list-style-type: none"> <li>Clarify in appropriate station documents, including, but not limited to, the USAR, external flooding section of the A.6 Procedure, and Design Basis Document for External Flooding, that the PMF antecedent conditions are required to be assumed present, and actions to mitigate a PMF must be preplanned. In addition, communicate the requirements to management and station personnel.</li> </ul> <p>The root cause investigation also identified the following additional corrective actions:</p> <ul style="list-style-type: none"> <li>Develop a flood plan consistent with the licensing basis that will protect the plant from an external flood based on the assumption that the antecedent conditions are present. Incorporate the flood plan into the A.6 Procedure.</li> <li>Develop a standard for the A.6 Procedure that establishes requirements for content, level of detail, validation, and format for the A.6 Procedure consistent with its purpose of responding to extreme natural conditions including certain licensing basis events. The standard is to be based on industry standards (e.g., benchmarking of other plants, INPO guidance, MNGP abnormal procedures, etc.). Incorporate the newly developed standard into a new or existing MNGP administrative procedure.</li> <li>Revise the A.6 Procedure to implement the new standard.</li> </ul> <p><b>PREVIOUS SIMILAR EVENTS</b></p> <p>On November 26, 1990 the site identified, in a Licensee Event Report (LER), that there were procedural inadequacies with the external flooding procedure related to protective measures for the Emergency Diesel Generator Fuel Oil Transfer House. The LER was supplemented April 24, 1991 with additional detail, including the cause of the event, which was procedural inadequacy. As a result, the external flooding procedure was revised to build a small levee around the Fuel Oil Transfer House. This action was recently deemed not reasonable because it would interfere with surrounding buildings and limit access to the Diesel Fuel Oil Storage Tank. The current protection method relies on an earthen levee that surrounds the site. The smaller levee around the Fuel Oil Transfer House is an optional back-up method of protection in the current revision of A.6, "Acts of Nature," and does not impact the ability to protect the Emergency Diesel Generator Fuel Oil Transfer House from a PMF.</p> |  |   |                      |   |            |                |