UNITED STATES
NUCLEAR REGULATORY COMMISSION
Region III
2443 Warrenville Road, Suite 210
Lisle IL 60532-4352

August 28, 2013

EA-13-096

Ms. Karen Fili
Site Vice President
Monticello Nuclear Generating Plant
Northern States Power Company, Minnesota
2807 West County Road 75
Monticello, MN 55362-9637

SUBJECT: FINAL SIGNIFICANCE DETERMINATION OF A YELLOW FINDING WITH ASSESSMENT FOLLOWUP AND NOTICE OF VIOLATION; NRC INSPECTION REPORT NO. 05000263/2013009; MONTICELLO NUCLEAR GENERATING PLANT

Dear Ms. Fili:

This letter provides you the final significance determination of the preliminary Yellow finding discussed in our previous communication dated June 11, 2013, which included U.S. Nuclear Regulatory Commission (NRC) Inspection Report No. 05000263/2013008. The finding involved the licensee's failure to maintain a procedure addressing all of the effects of an external flooding scenario on the plant. Specifically, Monticello Nuclear Generating Plant (Monticello) failed to maintain flood Procedure A.6, "Acts of Nature," such that it could support the timely implementation of flood protection activities within the 12-day timeframe credited in the design basis as stated in the updated safety analysis report.

In a letter dated July 11, 2013, you provided a response to the NRC staff's preliminary determination regarding the finding. In your July 11, 2013, letter, you agreed there was a performance deficiency; and, you provided additional information for the NRC's consideration in its final determination of the significance of the apparent violation. You provided a probabilistic risk analyses to support a best-estimate assessment of the significance of the finding as well as a bounding analyses to support the final significance determination prior to corrective actions taken by the site. Based on your analysis, you concluded that the best-estimate risk assessment was of very low safety assessment, with a bounding assessment of low-to-moderate risk. Enclosure 1 provides our detailed assessment of the major points that you raised in your letter, along with our final assessment.

The NRC determined that the information provided in your letter did not change the NRC's bounding quantitative evaluation nor did it change the qualitative evaluation attributes used for the NRC's decision making, as communicated to you in our preliminary risk assessment. As a result, the conclusions reached in our preliminary significance determination process (SDP) evaluation remain unchanged. Therefore, after considering the information developed during the inspection and the additional information provided in your letter dated July 11, 2013, the NRC has concluded that the finding is appropriately characterized as Yellow; a finding having substantial safety significance.

You have 30 calendar days from the date of this letter to appeal the staff's determination of significance for the identified Yellow finding. Such appeals will be considered to have merit only if they meet the criteria given in Inspection Manual Chapter 0609, Attachment 2, "Process for Appealing NRC Characterization of Inspection Findings (SDP Appeal Process)." An appeal must be sent in writing to the Regional Administrator, Region III, 2443 Warrenville Road, Lisle, IL 60532-4352.

The NRC has also determined that the failure of Northern States Power Company, Minnesota to maintain a procedure addressing all of the effects of an external flooding scenario on the plant is a violation of Technical Specification 5.4.1 as cited in the Notice of Violation (Notice) provided in Enclosure 2. The circumstances surrounding the violation were described in detail in NRC Inspection Report No. 05000263/2013008. In accordance with the NRC Enforcement Policy, the Notice is considered escalated enforcement action because it is associated with a Yellow finding.

The NRC has concluded that information regarding the reasons for the violation, the corrective actions taken and planned to correct the violation and prevent recurrence, and the date when full compliance was achieved, is already adequately addressed on the docket in NRC Inspection Report No. 05000263/2013008. Therefore, you are not required to respond to this letter unless the description therein does not accurately reflect your corrective actions or your position. In that case, or if you choose to provide additional information, you should follow the instructions specified in the enclosed Notice.

As a result of our review of Monticello's performance, including this Yellow finding in the Mitigating Systems Cornerstone, we have assessed the plant to be in the Degraded Cornerstone column (Column III) of the NRC's Action Matrix, as of the second quarter of 2013. Therefore, we plan to conduct a supplemental inspection using Inspection Procedure 95002, "Supplemental Inspection for One Degraded Cornerstone or Any Three White Inputs in a Strategic Performance Area," when your staff has notified us of your readiness for this inspection. This inspection procedure is conducted to provide assurance that the root cause and contributing causes of risk significant performance issues are understood, the extent of condition and the extent of cause are identified, and the corrective actions are sufficient to prevent recurrence. In addition, this procedure is conducted to provide an independent determination of whether safety culture components caused or significantly contributed to the risk-significant performance issues.

For administrative purposes, this letter is issued as NRC Inspection Report 05000263/2013009. Additionally, apparent violation (AV) 05000263/2013008-01 is now closed, and violation (VIO) 05000263/2013008-01 is opened in its place.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response, if you choose to provide one, will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html. To the extent possible, your response

should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction. The NRC also includes significant enforcement actions on its Web site at http://www.nrc.gov/reading-rm/doc-collections/enforcement/actions.

Sincerely,

/RA/

Cynthia D. Pederson
Regional Administrator

Docket No. 50-263
License No. DPR-22

Enclosures:
1. Analysis of Licensee Information
2. Notice of Violation

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ANALYSIS OF LICENSEE INFORMATION

In your July 11, 2013, letter, you provided information that the probable maximum flood was not an instantaneous event, but rather a slowly developing evolution that you believe allows for plant staff to monitor, predict, prepare, and implement appropriate actions to provide the required flood protection. You provided data to show that the probability of a probable maximum flood at the site was extremely low. You provided additional insight into estimation of Mississippi River exceedance probabilities based on annual peak flood estimates. You estimated flood frequencies using a split record approach for spring and summer.

You provided information regarding human error probabilities (HEPs) for flood mitigation actions. Specifically, you changed certain HEPs to match the NRC-derived values discussed in the preliminary risk assessment, except for the HEPs associated with inventory control and decay heat removal (i.e., manual operation of reactor core isolation cooling (RCIC) and hard pipe vent). You stated that following identification of the performance deficiency, actions were taken to procure the bin wall and levee materials, and with these materials in place, performance of a reasonable simulation demonstrated that the levee and bin wall system could now be installed within the available time as defined in the licensing basis.

You provided information about an open house session to share information with members of the Monticello community on its operations and preparedness to handle potential emergencies and how it would respond to flooding, earthquakes and other unforeseen challenges. Finally, you provided information on an expert panel that you assembled to examine the behavioral and cultural aspects impacting decision making within the nuclear business unit.

NRC Evaluation

Regarding preparation for extreme flood events, for the construction of the bin wall and levee at the time of the violation, we maintain our position that you did not have procedures in place and would not have been able to construct the bin wall and levee system within the required time stated in the licensing basis. The NRC agreed that, as of February 15, 2013, you had taken action to pre-stage the necessary material and that, based on simulation results, the levee and bin wall system could be installed within the time frame stated in the licensing basis.

Regarding flood frequencies, the NRC noted that you used a split record method as opposed to the traditional single annual exceedance approach used by the NRC and recommended by the Army Corps of Engineers. One concern identified with the split-record approach is that a dependency is expected between the two seasons given that a record flow may be affected by an early or late snowmelt. We understand you chose this method because there is a difference in probability distributions considering the individual seasons and you wanted to determine whether you could gain some risk insight as to how predictable a flood would be during the different seasons. You determined that overall above 930' elevation summer floods were just as likely as the spring floods. Also, you used the 84th percentile flood hazard curve as a best estimate to develop the initiating event frequencies. We noted that applying your 90th and 95th percentile hazard curve frequencies to the NRC human error probability modeling assumptions did not change the NRC's preliminary estimation of significance for this issue. Overall, the uncertainty of the frequency estimates was large enough that the NRC's preliminary estimation of frequency remained valid and unchanged when weighted against defense-in-depth and other risk-informed information.

Regarding manual operation of RCIC and the hard pipe vent, the NRC determined that your revised HEPs were much more credible than the overly optimistic values used in your earlier analysis. Yet the NRC determined that the HEPs were still too low because they did not address potential challenges in running RCIC for an extended period of time during or after the flood event. For example, during the manual operation of RCIC validation process, the NRC noted that you found that reactor water level monitoring, as specified in the RCIC procedure, would not work as written, without additional actions by instrumentation and controls (I&C) or operations personnel, outside of the procedure, to obtain valid level readings. Your position was that there would be time for plant staff to informally troubleshoot in order to obtain the correct level indications, and that the level discrepancies could easily be corrected by an individual with an I&C background and an individual with an operations background. Further, Procedure A.6 did not direct manual operation of RCIC and the hard pipe vent; instead, those actions were directed by the Emergency Director or Technical Support Center judgment. The plant would be originally aligned for cold shutdown for this event which was not factored into job performance measures developed subsequent to this issue; and as a result, it did not appear to have been addressed as an item contributing as a potential source of human error. In the preliminary analysis, the NRC stated that little credit was granted for other sites for similar findings. Monticello has not shown that its strategy was significantly different than strategies at other sites, thus the NRC HEP value for operating RCIC during extended flood-induced Station Blackout remained unchanged.

The NRC appreciated the information that you provided about the open house session and the expert panel. However, we did not consider this information to affect our significance determination assessment.

NOTICE OF VIOLATION

Northern States Power Company, Minnesota
Monticello Nuclear Generating Plant

Docket Nos. 50-263
License Nos. DPR-22
EA-13-096

During an NRC inspection conducted from September 24, 2012, to May 15, 2013, a violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy, the violation is listed below:

> Technical Specification Section 5.4.1 requires, in part, that written procedures be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978.
>
> Regulatory Guide 1.33, Revision 2, Appendix A, Paragraph 6 addresses "Procedures for Combating Emergencies and Other Significant Events" and lists Item w "Acts of Nature (e.g., tornado, flood, dam failure, earthquakes)" as an activity under Paragraph 6 to be covered by written procedures.
>
> Contrary to the above, from February 29, 2012, to February 15, 2013, the licensee failed to maintain a flood plan to protect the site against external flooding events. Specifically, the site failed to maintain flood Procedure A.6, "Acts of Nature," such that it could support the timely implementation of flood protection features within the 12-day timeframe credited in the design basis, as stated in the updated safety analysis report.

This violation is associated with a Yellow SDP finding.

The NRC has concluded that information regarding the reason for the violation, the corrective actions taken and planned to correct the violation and prevent recurrence, and the date when full compliance was achieved is already adequately addressed on the docket in NRC Inspection Report No. 05000263/2013008 and in your letter dated July 11, 2013. However, you are required to submit a written statement or explanation pursuant to Title 10 of the Code of Federal Regulations Section 2.201 if the description therein does not accurately reflect your corrective actions or your position. In that case, or if you choose to respond, clearly mark your response as a "Reply to a Notice of Violation, EA-13-096" and send it to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001 with a copy to the Regional Administrator, Region III, and a copy to the NRC Resident Inspector at the Monticello Station, within 30 days of the date of the letter transmitting this Notice of Violation (Notice).

If you contest this enforcement action, you should also provide a copy of your response, with the basis for your denial, to the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001.

If you choose to respond, your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html. Therefore, to the extent possible, the response should not include any personal privacy or proprietary information so that it can be made available to the Public without redaction.

In accordance with 10 CFR 19.11, you may be required to post this Notice within two working days of receipt.

Dated this 28th day of August, 2013

should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction. The NRC also includes significant enforcement actions on its Web site at http://www.nrc.gov/reading-rm/doc-collections/enforcement/actions.

Sincerely,

/RA/

Cynthia D. Pederson
Regional Administrator

Docket No. 50-263
License No. DPR-22

Enclosures:
1. Analysis of Licensee Information
2. Notice of Violation

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SEE PREVIOUS CONCURRENCE

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DATE	08/20/13	08/21/13	08/20/13	08/21/13	08/26/13	08/28/13	08/28/13

OFFICIAL RECORD COPY

1 OE concurrence received via email from L. Casey on August 26, 2013.

Letter to Mark Schimmel from Cynthia D. Pederson dated August 28, 2013

SUBJECT: FINAL SIGNIFICANCE DETERMINATION OF A YELLOW FINDING WITH ASSESSMENT FOLLOWUP AND NOTICE OF VIOLATION; NRC INSPECTION REPORT NO. 05000263/2013009; MONTICELLO NUCLEAR GENERATING PLANT

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