



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

November 08, 2016

Mr. Scott D. Northard  
Vice President  
Northern States Power Company - Minnesota  
Prairie Island Nuclear Generating Plant  
1717 Wakonade Drive East  
Welch, MN 55089-9642

SUBJECT: PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNITS 1 AND 2 – STAFF REVIEW OF MITIGATION STRATEGIES ASSESSMENT REPORT OF THE IMPACT OF THE REEVALUATED SEISMIC HAZARD DEVELOPED IN RESPONSE TO THE MARCH 12, 2012, 50.54(f) LETTER (Cac Nos. MF7865 AND MF7866)

Dear Mr. Northard:

The purpose of this letter is to provide the U.S. Nuclear Regulatory Commission's (NRC's) assessment of the seismic hazard mitigation strategies assessment (MSA), as described in an October 26, 2016, letter (Agencywide Documents Access and Management System (ADAMS) Accession No. ML16302A465), submitted by Northern States Power Company, a Minnesota corporation (the licensee), doing business as Xcel Energy, for Prairie Island Nuclear Generating Plant, Units 1 and 2 (PINGP). The MSA confirms that the licensee has adequately addressed the reevaluated seismic hazard within its mitigating strategies for beyond-design-basis external events.

BACKGROUND

By letter dated March 12, 2012 (ADAMS Accession No. ML12053A340), the NRC issued a request for information pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.54(f) (hereafter referred to as the 50.54(f) letter). The 50.54(f) letter was issued as part of implementing lessons learned from the accident at the Fukushima Dai-ichi nuclear power plant. Enclosure 1 to the 50.54(f) letter requested licensees reevaluate the seismic hazard using present-day methodologies and guidance. Concurrent with the reevaluation of seismic hazards, the NRC issued Order EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events" (ADAMS Accession No. ML12054A736). The order requires holders of operating power reactor licenses and construction permits issued under 10 CFR Part 50 to develop, implement, and maintain guidance and strategies to maintain or restore core cooling, containment, and spent fuel pool cooling following a beyond-design-basis external event.

By letter dated March 27, 2014 (ADAMS Accession No. ML14086A628), the licensee provided its reevaluated seismic hazard for PINGP in response to the 50.54(f) letter.

On December 10, 2015 (ADAMS Accession No. ML16005A621), the Nuclear Energy Institute (NEI) submitted Revision 2 to NEI 12-06, including guidance for MSAs regarding reevaluated hazard information. The NRC subsequently endorsed NEI 12-06, Revision 2, with exceptions, clarifications, and additions, in Japan Lessons-Learned Division (JLD) interim staff guidance (ISG) JLD-ISG-2012-01, Revision 1, "Compliance with Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events" (ADAMS Accession No. ML15357A163).

#### MITIGATION STRATEGIES ASSESSMENT

By letter dated December 15, 2016 (ADAMS Accession No. ML15341A162), the NRC staff documented its review of the licensee's reevaluated seismic hazard, also referred to as the mitigating strategies seismic hazard information. The staff confirmed the licensee's conclusion that its reevaluated seismic hazard is bounded by the current design basis at all frequencies above 1 Hertz. In addition, the staff concluded that the ground motion response spectrum determined by the licensee adequately characterizes the reevaluated seismic hazard for the PINGP site.

Appendix H of NEI 12-06, Revision 2, describes acceptable methods for demonstrating that the reevaluated seismic hazard is addressed within the PINGP mitigating strategies for beyond-design-basis external events. The licensee stated that the PINGP MSA was performed consistent with NEI 12-06, Revision 2. The NRC staff confirmed that the licensee's seismic hazard MSA is consistent with the guidance in Appendix H.4.1 of NEI 12-06, Revision 2, as endorsed by JLD-ISG-2012-01, Revision 1. Therefore, the methodology used by the licensee is appropriate to perform an assessment of the mitigation strategies that addresses the reevaluated seismic hazard.

The NRC staff has reviewed the seismic hazard MSA for PINGP. The NRC staff concludes that sufficient information has been provided to demonstrate that the licensee's plans for the development and implementation of guidance and strategies under Order EA-12-049 appropriately address the reevaluated seismic hazard information stemming from the 50.54(f) letter.

S. Northard

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If you have any questions, please contact me at (301) 415-1617 or via e-mail at Frankie.Vega@nrc.gov.

Sincerely,

A handwritten signature in black ink, appearing to read 'Frankie Vega', with a stylized flourish at the end.

Frankie Vega, Project Manager  
Hazards Management Branch  
Japan Lessons-Learned Division  
Office of Nuclear Reactor Regulation

Docket Nos. 50-282 and 50-306

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S. Northard

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If you have any questions, please contact me at (301) 415-1617 or via e-mail at Frankie.Vega@nrc.gov.

Sincerely,

***/RA/***

Frankie Vega, Project Manager  
Hazards Management Branch  
Japan Lessons-Learned Division  
Office of Nuclear Reactor Regulation

Docket Nos. 50-282 and 50-306

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**\* via e-mail**

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