



Prairie Island Nuclear Generating Plant  
1717 Wakonade Drive East  
Welch, MN 55089

February 16, 2017

L-PI-16-100  
10 CFR 50.90

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

Prairie Island Nuclear Generating Plant, Units 1 and 2  
Dockets 50-282 and 50-306  
Renewed License Nos. DPR-42 and DPR-60

Response to NRC Request for Information - License Amendment Request for Spent Fuel Pool Criticality Technical Specification Changes (CAC Nos. MF7121 and MF7122)

- References:
- 1) Letter from Kevin Davison (NSPM) to NRC (Document Control Desk), "License Amendment Request for Spent Fuel Pool Criticality Technical Specification Changes," dated November 17, 2015 (ADAMS Accession No. ML15327A244)
  - 2) Email from Robert Kuntz (NRC) to Glenn Adams (NSPM), "Official Use Only - Proprietary Information Enclosed – Request for Information Related to the Prairie Island SFP Criticality Analysis License Amendment Request (CAC Nos. MF7121 and MF7122)", dated October 31, 2016

In a letter to the U.S. Nuclear Regulatory Commission (NRC) dated November 17, 2015 (Reference 1), the Northern States Power Company, a Minnesota corporation doing business as Xcel Energy (hereafter "NSPM"), requested an amendment to the Technical Specifications (TS) for Prairie Island Nuclear Generating Plant (PINGP). Specifically, NSPM proposed to revise Technical Specification (TS) 3.7.16, "Spent Fuel Storage Pool Boron Concentration," and TS 4.3.1, "Fuel Storage Criticality," to allow spent fuel pool (SFP) storage of nuclear fuel containing a boron-based neutron absorber in the form of zirconium diboride ( $ZrB_2$ ) Integral Fuel Burnable Absorber (IFBA).

The IFBA-Gd spent fuel pool criticality analysis submitted by Reference 1 followed published NRC guidance (DSS-ISG-2010-01), utilized NRC approved methods, and was consistent with the Prairie Island Licensing Basis. To complete their review, the NRC staff provided a second request for additional information (RAI) - Reference 2. The NRC requested that two reactivity effects be treated as biases in the criticality analysis as opposed to uncertainties. This treatment deviates from the established guidance (DSS-ISG-2010-01) and the established Prairie Island licensing basis.

Further, there is no established NRC guidance to describe an acceptable analytical methodology for calculating these reactivity effects and combining them as biases. Because the response to the RAI requires the application of first-of-a-kind factors, the fuel vendor (Westinghouse) relied upon very conservative assumptions and criticality models in developing the draft RAI responses. NSPM's current understanding of the model results is that they will unnecessarily constrain spent fuel loading in the pool and will result in unnecessary fuel movements without a commensurate increase in safety.

NSPM is working with the NRC's Licensing PM to schedule a public meeting for further discussion of the RAIs and clarity regarding the NRC's new treatment of these two reactivity effects. Concurrently, NSPM is working with its fuel vendor to refine and utilize more realistic assumptions in the criticality model. NSPM's RAI responses are dependent upon the above two actions and NSPM will refine its schedule for responding to the RAIs after the public meeting is conducted.

If there are any questions or if additional information is needed, please contact Glenn Adams at 612-330-6777.

#### Summary of Commitments

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

I declare under penalty of perjury that the foregoing is true and correct.

Executed on February 16, 2017



Scott Northard  
Vice President – Prairie Island Nuclear Generating Plant  
Northern States Power Company – Minnesota

cc: Regional Administrator, Region III, USNRC  
Project Manager, Prairie Island Nuclear Generating Plant, USNRC  
Resident Inspector, Prairie Island Nuclear Generating Plant, USNRC  
State of Minnesota