

Response to RAI-2

In a letter to the U.S. Nuclear Regulatory Commission (NRC) dated November 17, 2015 (Agencywide Documents and Management System (ADAMS) Accession No. ML15327A244), 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).

To complete their review, the NRC staff provided a request for additional information (RAI) by electronic mail dated April 12, 2016. This enclosure provides the response to RAI-2. The remainder of the RAIs are addressed in Enclosures 3 and 4. For clarity, NRC RAI-2 is provided below in *italics* font and the NSPM response is provided in plain font.

RAI-2: It appears from several statements in WCAP-17400-P, Revision 1, including Figure S3-1, "Allowable Storage Arrays," and Table S5-1, "Fuel Categories Ranked by Reactivity," that Fuel Category 7 and Array F storage requirements are part of a revised TS 4.3.1, "Criticality." Consequently, provide an updated TS Table 4.3.1-1, "Fuel Categories Ranked by Reactivity" and an updated TS Figure 4.3.1-1, "Allowable Storage Arrays" either removing Fuel Category 7 and Array F or providing clarification in the TS for how Integral Fuel Burnable Absorber (IFBA) bearing fuel is to be stored as Fuel Category 7.

Response: NSPM proposes to revise TS Figure 4.3.1-1 to constrain the definition of Category 7 to the fuel that was consolidated in the spent fuel consolidation demonstration project described in Updated Safety Analysis Report (USAR) Section 10.2. Thereby, the TS will preclude consolidation of IFBA-bearing fuel and obviate analysis of IFBA fuel in that configuration. The proposed TS revision is described in Enclosure 2 of this submittal.

Note that no revision to TS Table 4.3.1-1 is proposed because the additional limitations on Category 7 do nothing but constrain the definition to the historical inventory of consolidated fuel which has been fully analyzed. Thus, the category rankings described in TS Table 4.3.1-1 remain valid for IFBA-bearing fuel, and no changes to TS Table 4.3.1-1 are necessary.

L-PI-16-040
Enclosure 2

NSPM

Marked-Up Technical Specification Page

1 page follows

4.0-10

Notes:

1. In all arrays, an assembly of higher Fuel Category number can replace an assembly designated with a lower Fuel Category number.
2. Category 1 is fuel up to 5.0 weight percent U-235 enrichment and does not credit burnup.
3. Fuel Categories 2 through 6 are determined from Tables 4.3.1-2 or 4.3.1-3.
4. An "R" designates a location that requires insertion of an RCCA in the fuel assembly.
5. An "X" designates a location that requires an empty cell, except that the empty cells in Array F may store assembly structural materials including nozzles, guide tubes, and grids.
6. An empty (water-filled) cell may be substituted for any fuel-containing cell in all storage arrays.
7. Array F shall only interface with Array A, and no other.
8. Except for the center rodded assembly of the 3x3 Array G and the special interface defined between Array A and Array F, each assembly location is part of up to four 2x2 arrays (assembly in the lower right, lower left, upper right, upper left) and each assembly must simultaneously meet the requirements of all those arrays of which it is a part.

Figure 4.3.1-1 (page 3 of 3)
Allowable Storage Arrays

9. Category 7 is reserved for the fuel that was consolidated in the spent fuel consolidation demonstration project described in Updated Safety Analysis Report Section 10.2.