

## NRR-PMDAPEm Resource

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**From:** Beltz, Terry  
**Sent:** Tuesday, April 30, 2013 7:02 AM  
**To:** 'Adams, Glenn D.'  
**Cc:** Carlson, Robert; Jackson, Christopher; Elliott, Robert; Wood, Kent; Cunanan, Davida; Wong, Emma; Hunt, Christopher; Bucholtz, Kristy  
**Subject:** Monticello Nuclear Generating Plant - Requests for Additional Information (SRXB) re: License Amendment Request to Support Fuel Storage Changes (TAC No. ME9893)  
**Attachments:** Monticello - Fuel Storage Change LAR - SRXB Requests for Additional Information (TAC No ME9893).docx

Dear Mr. Adams:

By letter to the U.S. Nuclear Regulatory Commission (NRC) dated October 30, 2012 (Agencywide Documents Access and Management System Accession No. ML12307A433), Northern States Power Company – Minnesota (NSPM), doing business as Xcel Energy, Inc., submitted a license amendment request to revise the Monticello Nuclear Generating Plant Technical Specifications (TS) to support fuel storage system changes and a revised criticality safety analysis that addresses legacy fuel types and new fuel designs. The proposed amendment would revise TS 4.3.1, “Fuel Storage Criticality,” and TS 4.3.3, “Fuel Storage Capacity.”

The NRC staff in the Reactor Systems Branch (SRXB) of the Office of Nuclear Reactor Regulation is currently reviewing your submittal. The SRXB staff has determined that additional information is required to complete its review and to determine that NSPM has acceptably demonstrated that the spent fuel pool will remain subcritical under all conditions. Draft requests for additional information (RAIs) are attached.

You may accept this draft RAI as a formal Request for Additional Information and respond to the questions by June 14, 2013. Alternatively, you may request to discuss the contents of this RAI with the NRC staff in a conference call, including any change to the proposed response date.

Please let me know if you have any questions or concerns.

Sincerely,

*Terry A. Beltz, Senior Project Manager  
Plant Licensing Branch III-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation  
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(SRXB) re: License Amendment Request to Support Fuel Storage Changes (TAC No. ME9893)  
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**From:** Beltz, Terry

**Created By:** Terry.Beltz@nrc.gov

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REQUEST FOR ADDITIONAL INFORMATION  
REACTOR SYSTEMS BRANCH OF THE OFFICE OF NUCLEAR REACTOR REGULATION  
REGARDING MONTICELLO NUCLEAR GENERATING PLANT  
LICENSE AMENDMENT REQUEST SUPPORTING SPENT FUEL STORAGE CHANGES  
NORTHERN STATES POWER COMPANY – MINNESOTA  
MONTICELLO NUCLEAR GENERATING PLANT  
DOCKET NO. 50-263  
(TAC NO. ME9893)

In the spent fuel pool (SFP), the spent fuel stored in the racks must comply with the regulations to remain subcritical. In the case of Monticello, they are licensed under 10 CFR 50.68, "Criticality Accident Requirements." This regulation states that:

*If no credit for soluble boron is taken, the k-effective of the spent fuel storage racks loaded with fuel of the maximum fuel assembly reactivity must not exceed 0.95, at a 95 percent probability, 95 percent confidence level, if flooded with unborated water.*

To demonstrate compliance with the regulation, the licensee has performed a nuclear criticality safety (NCS) analysis of record (AOR). In this NCS AOR, Monticello has credited Boral in the analysis to help maintain subcriticality. With respect to Boral, the NCS AOR assumes that the minimum B-10 areal density is 0.013 g/cm<sup>2</sup> and that a uniform 0.055 inch void region is used as a model for potential blistering.

In order to ensure that the Boral will remain within the assumptions used in the NCS AOR, a Surveillance Program to identify and monitor any degradation is in place. This program will confirm that the material will perform as designed for in the NCS AOR.

The NRC staff questions the amount of information described in Monticello's proposed Technical Specifications (TSs) in regard to the neutron absorbing material, Boral, and its Surveillance Program.

In particular:

1. Please justify why a minimum areal density limit of the Boral, a material of construction with a significant effect on safety, in the Spent Fuel Pool, is not specified in the Limited Condition for Operation section of the TS. Note: in 10 CFR 50.36(c)(2)(ii)(B), it states:

*Criterion 2. A process variable, design feature, or operating restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.*

Furthermore 10 CFR 50.36(c)(2)(ii)(C) states:

*Criterion 3. A structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.*

2. Justify why the Surveillance Program, which is related to a test or inspection to assure that the necessary quality of the component (Boral) is maintained so that the facility (Monticello SFP) is within its safety limits, is not included in the Surveillance Requirements Section of the Monticello TSs.

Note: in 10 CFR 50.36 (c)(3) it states:

*Surveillance requirements are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met.*