

## NRR-PMDAPEm Resource

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**From:** Beltz, Terry  
**Sent:** Thursday, March 27, 2014 2:45 PM  
**To:** 'Fields, John S.'  
**Cc:** Eckholt, Gene F. (Eugene.Eckholt@xenuclear.com); 'Adams, Glenn D.'; 'Loeffler, Richard A.'; Parks, Benjamin; Carlson, Robert  
**Subject:** Monticello Nuclear Generating Plant - NRC Staff Request for Additional Information (Follow-up Question) re: AREVA Fuel Transition License Amendment Request (TAC No. MF2479)

Dear Mr. Fields:

By letter dated July 15, 2013 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13200A185), Northern States Power Company - a Minnesota corporation (NSPM), doing business as Xcel Energy, requested an amendment to the operating license and facility Technical Specifications for the Monticello Nuclear Generating Plant. The amendment, if approved, would allow for a transition to the AREVA ATRIUM 10XM fuel design. The amendment would also allow the implementation of AREVA safety analysis methods.

In an e-mail dated December 18, 2013 (ADAMS Accession No. ML13353A366), the U.S. Nuclear Regulatory Commission (NRC) staff in the Reactor Systems Branch (SRXB) of the Office of Nuclear Reactor Regulation issued requests for additional information (RAIs) based on areas where additional information was needed to complete its review. NSPM responded to these SRXB RAIs in a letter dated January 31, 2014 (ADAMS Accession No. ML14035A298).

The NRC staff has reviewed the January 31, 2014, RAI responses and determined the need for a follow-up question associated with SRXB RAI-6. The follow-up question is provided below.

Please provide a response to the SRXB RAI-6 follow-up question by April 18, 2014. You may request to discuss the contents of this question with the NRC staff in a conference call to provide any additional clarification, if needed.

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

Sincerely,

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**OFFICE OF NUCLEAR REACTOR REGULATION**

**REACTOR SYSTEMS BRANCH (SRXB)**

**REQUEST FOR ADDITIONAL INFORMATION (FOLLOW-UP)**  
**REGARDING LICENSE AMENDMENT REQUEST**  
**TO TRANSITION TO AREVA ATRIUM 10XM FUEL AND SAFETY ANALYSIS METHODS**  
**MONTICELLO NUCLEAR GENERATING PLANT (MONTICELLO)**  
**DOCKET NO. 50-263**  
**(TAC NO. MF2479)**

**Follow-Up to SRXB RAI-6 re: ASME Overpressure Analysis**

The NRC staff requested the licensee to justify the assumption for the maximum allowable initial dome pressure. At a lower pressure condition at the same power level, the initial steady state void fraction could be higher, leading to a greater void collapse and resultant neutron flux spike.

In its letter dated January 31, 2014, the licensee provided a response to SRXB RAI-6, acknowledging the potentially limiting characteristics of a lower initial dome pressure, and confirmed that the higher pressure initial condition was more limiting. The licensee stated:

...a lower initial dome pressure may experience a larger pressure increase (peak pressure – initial pressure) during the event. However, a lower initial dome pressure also has more margin to the pressure limit. AREVA calculations have shown the increase in the pressure rise during the event does not offset the increase in initial pressure margin.

The licensee also provided results of an analysis, applicable to Monticello, that evaluated both initial pressure conditions, and indicated that the lower initial pressure result was bounded by the higher initial pressure result by a margin of 5 pound per square inch (psi). The NRC staff verified the licensee's response, which is based on AREVA's prior modeling experience, by reviewing the topical report suite describing these modeling approaches. The NRC staff was unable to locate, in its record system, a clear disposition for this initial condition that verified the licensee's assertion that this analysis would be applicable to Monticello. In light of the facts that the difference in peak pressures in the sensitivity analyses was 5 psi, and the licensee's indicated margin to the dome pressure safety limit was 6 psi, the NRC staff determined that supplemental information is required to verify the applicability of the experiential analyses to Monticello specifically.

Please provide relevant excerpts from an NRC-approved topical report with a disposition for the selection of initial conditions, or demonstrate that the chosen initial condition is the most conservative with respect to the limiting vessel pressure.

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