



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

May 24, 2013

Mr. James E. Lynch
Site 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 -
REQUEST FOR ADDITIONAL INFORMATION RELATED TO REACTOR
VESSEL INTERNALS PROGRAM SUBMITTAL FOR FULFILLMENT OF
LICENSE RENEWAL COMMITMENT 25 (TAC NOS. MF0052 AND MF0053)

Dear Mr. Lynch:

By letter dated October 1, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12276A041), as supplemented by letters dated March 7, 2013, and March 22, 2013 (ADAMS Accession Nos. ML13084A378 and ML13067A284, respectively), Northern States Power Company, a Minnesota corporation (NSPM, the licensee), doing business as Xcel Energy, submitted an aging management program (AMP) for the reactor vessel internals at Prairie Island Nuclear Generating Plant (PINGP), Units 1 and 2. Materials Reliability Program-227-A report, "Pressurized Water Reactor (PWR) Internals Inspection and Evaluation Guidelines," and its supporting reports were used as technical bases for developing the PINGP AMP.

The NRC staff is reviewing your submittal and has determined that additional information is required to complete the review. The specific information requested is addressed in the enclosure to this letter. During a discussion with Mr. Dale Vincent of your staff on May 7, 2013, it was agreed that you would provide a response to this request with 30 days of the date of this letter.

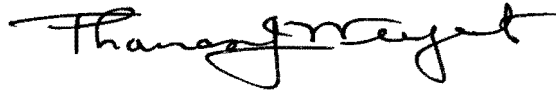
The NRC staff considers that timely responses to requests for additional information help ensure sufficient time is available for staff review and contribute toward the NRC's goal of efficient and effective use of staff resources.

J. E. Lynch

- 2 -

If circumstances result in the need to revise the requested response date, please contact me at (301) 415-4037.

Sincerely,

A handwritten signature in black ink, appearing to read "Thomas J. Wengert". The signature is fluid and cursive, with the first name "Thomas" being more prominent.

Thomas J. Wengert, Senior Project Manager
Plant Licensing Branch III-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-282 and 50-306

Enclosure:
Request for Additional Information

cc w/encl: Distribution via ListServ

REQUEST FOR ADDITIONAL INFORMATION (RAI)

PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNITS 1 AND 2

DOCKET NOS. 50-282 AND 50-306

By letter dated October 1, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12276A041), as supplemented by letters dated March 7, 2013 (ADAMS Accession No. ML13067A284) and March 21, 2013 (ADAMS Accession No. ML13084A378), Northern States Power Company, a Minnesota corporation (the licensee), doing business as Xcel Energy, submitted an aging management program (AMP) for the reactor vessel internals (RVI) at Prairie Island Nuclear Generating Plant (PINGP), Units 1 and 2. Materials Reliability Program (MRP)-227-A report, "Pressurized Water Reactor (PWR) Internals Inspection and Evaluation Guidelines," and its supporting reports were used as technical bases for developing the PINGP AMP. The Nuclear Regulatory Commission (NRC) staff reviewed this report and issued a final safety evaluation (SE) on December 16, 2011 (ADAMS Accession No. ML11308A770). Based on the review of PINGP's AMP conducted thus far, the staff has developed this first request for additional information (RAI). The staff may issue additional RAIs based on the resolution of Action Items 1 and 2 addressed in the staff's SE for the MRP-227-A report.

RAI-1: Historically, the following materials used in the PWR RVI components were known to be susceptible to some of the aging degradation mechanisms that are identified in the MRP-227-A report. In this context, the NRC staff requests that the licensee confirm that these materials are not currently used in the RVI components at PINGP, Units 1 and 2.

- (1) Nickel base alloys - Inconel 600; Weld Metals - Alloy 82 and 182 and Alloy X-750 (excluding control rod guide tube split pins)
- (2) Alloy A-286 ASTM A 453 Grade 660, Condition A or B
- (3) Stainless steel type 347 material (excluding baffle-former bolts)
- (4) Precipitation hardened (PH) stainless steel materials - 17-4 and 15-5
- (5) Type 431 stainless steel material

RAI-2: Condition 7 of Revision 1 of the NRC staff's December 16, 2011, SE, stipulates that the licensee shall include a summary of the operating experience related to the aging degradation in the RVI components. The NRC staff requests that the licensee provide information regarding the extent of aging degradation (if any) that has occurred thus far in all of the RVI components. Specifically, include the operating history of the following components at PINGP, Units 1 and 2:

- baffle-former bolts
- baffle-edge bolts
- baffle-former assembly
- clevis insert bolts
- core barrel bolting, and
- thermal shields.

Provide a summary that includes a list of RVI components that have been inspected thus far under the American Society of Mechanical Engineers (ASME) Code, Section XI, inservice inspection program, and the inspection results. This list shall include any RVI component categorized under the "Existing" inspection category in the MRP-227-A report.

RAI-3: According to Section A.1.4 in MRP-175, "Materials Reliability Program: PWR Internal Aging Degradation Mechanism Screening Threshold Values," the susceptibility to stress corrosion cracking (SCC) in nickel-based Alloy X-750 PWR RVI components depends on the type of heat treatment that is performed on the alloy. High temperature heat treatment (HTH) processes that are used on Alloy X-750 components offer better resistance to SCC than the other age hardened heat treatment processes. Additionally, Appendix A of the MRP-227-A report identified, as a part of the industry's operational experience, that the clevis insert assembly in Alloy X-750 bolting in one operating unit failed due to primary water stress corrosion cracking (PWSCC). Therefore, the staff requests that the licensee provide information related to the type of heat treatment process that was used for the Alloy X-750 materials used in the RVI components at PINGP. If Alloy X-750 material is used for clevis insert bolting or for any other RVI components at PINGP, Units 1 and 2, confirm that HTH treatment was performed on this material. If the clevis insert bolting did not undergo HTH treatment, discuss your plans to inspect these bolts (in addition to the inspections to monitor aging due to wear) for identifying PWSCC.

RAI-4: In Enclosure 1, Page 2, of the licensee's October 1, 2012, submittal, the licensee indicated that the control rod guide tube (CRGT) cards will be inspected no later than two refueling outages from the beginning of the license renewal period (i.e., the period of extended operation). The licensee also stated that it would perform inspections on the CRGT cards to assess the wear of these cards. The staff requests that the licensee provide the following information:

- (1) The number of cards that are planned to be inspected
- (2) The inspection results
- (3) How the criteria for maximum allowed wear was established
- (4) The licensee's corrective actions, if any, and
- (5) The licensee's plan for subsequent inspections of this component during the period of extended operation.

J. E. Lynch

- 2 -

If circumstances result in the need to revise the requested response date, please contact me at (301) 415-4037.

Sincerely,

/ra/

Thomas J. Wengert, Senior Project Manager
Plant Licensing Branch III-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-282 and 50-306

Enclosure:
Request for Additional Information

cc w/encl: Distribution via ListServ

DISTRIBUTION:

PUBLIC LPL3-1 R/F
RidsNrrPMPrairieIsland Resource
RidsAcrsAchw_MailCTR Resource
RidsRgn3MailCenter Resource

RidsNrrDorILpl3-1 Resource
RidsNrrLABTully Resource
GCheruvenki, NRR
RidsNrrDeEvib Resource

RidsNrrDorIDpr Resource

ADAMS Accession Number: ML13130A144

* via memo

OFFICE	NRR/LPL3-1/PM	NRR/LPL3-2/LA	NRR/EVIB/BC	NRR/LPL3-1/BC	NRR/LPL3-1/PM
NAME	TWengert	SRohrer	SRosenberg*	RCarlson	TWengert
DATE	05/17/13	05/13/13	04/15/13	05/24/13	05/24/13

OFFICIAL RECORD COPY