



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

August 6, 2015

Mr. Kevin Davison  
Site Vice President  
Prairie Island Nuclear Generating Plant  
Northern States Power Company - Minnesota  
1717 Wakonade Drive East  
Welch, MN 55089

SUBJECT: PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNITS 1 AND 2 –  
REQUESTS 1-RR-4-11 AND 2-RR-4-11 ASSOCIATED WITH THE FOURTH  
10-YEAR INTERVAL FOR THE INSERVICE INSPECTION PROGRAM  
(TAC NOS. MF5770 AND MF5771)

Dear Mr. Davison:

By letter dated February 17, 2015, Northern States Power Company – Minnesota (the licensee), doing business as Xcel Energy, submitted a request for relief from the requirements of the American Society of Mechanical Engineers Boiler (ASME) and Pressure Vessel Code (Code), Section XI, "Rules for Inservice Inspection of Nuclear Components," for the Prairie Island Nuclear Generating Plant (Prairie Island), Units 1 and 2.

Specifically, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.55a(g)(4)(iv), the licensee submitted requests 1-RR-4-11, Revision 0, and 2-RR-4-11, Revision 0, to use the 2007 Edition with 2008 Addenda of ASME Code, Section XI, Mandatory Appendix VIII, "Performance Demonstration for Ultrasonic Examination Systems," with all related requirements, for the remainder of the fourth 10-year inspection interval of the Inservice Inspection Program.

The NRC staff reviewed the proposed alternative and determined, as set forth in the enclosed safety evaluation, that the licensee adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(g)(4)(iv), and remains in compliance with the ASME Code requirements.

The NRC staff approves the use of the 2007 Edition through 2008 Addenda of the ASME Code, Section XI for Examination Categories B-A and B-D for Prairie Island, Units 1 and 2, until the end of the fourth 10-year inservice inspection interval which is scheduled to end after the twenty-ninth refueling outage for Unit 2, with the latest ASME code-allowed date being December 20, 2015.

K. Davison

- 2 -

If you have any questions, please contact Terry A. Beltz at 301-415-3049, or via e-mail at Terry.Beltz@nrc.gov.

Sincerely,

A handwritten signature in black ink, appearing to read 'D. Pelton', with a long horizontal flourish extending to the right.

David L. Pelton, Chief  
Plant Licensing Branch III-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-282 and 50-306

Enclosure: Safety Evaluation

cc w/enclosure: Distribution via ListServ



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

FOR RELIEF REQUESTS 1-RR-4-11 AND 2-RR-4-11

REGARDING USE OF A PORTION OF A SUBSEQUENT EDITION AND ADDENDA OF THE

AMERICAN SOCIETY OF MECHANICAL ENGINEERS

BOILER AND PRESSURE VESSEL CODE, SECTION XI

NORTHERN STATES POWER COMPANY – MINNESOTA

PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNITS 1 AND 2

DOCKET NOS. 50-282 AND 50-306

(TAC NOS. MF5770 AND MF5771)

1.0 INTRODUCTION

By letter dated February 17, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15048A035), Northern States Power Company – Minnesota (NSPM, the licensee), doing business as Xcel Energy, submitted requests 1-RR-4-11, Revision 0, and 2-RR-4-11, Revision 0. These requests propose to use a later edition of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (Code), Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," for the Prairie Island Nuclear Generating Plant (Prairie Island), Units 1 and 2. The licensee's request applies to the fourth 10-year inservice inspection (ISI) interval, in which the licensee adopted the 1998 Edition through the 2000 Addenda of ASME Code Section XI as the code of record.

Specifically, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.55a(g)(4)(iv), the licensee requested to use later code editions and addenda for ISI items subject to the limitations and modifications listed in 10 CFR 50.55a(b).

2.0 REGULATORY EVALUATION

The licensee proposes an alternative to the requirements of the ASME Code, in that it requests to use a later edition of the ASME Code in accordance with 10 CFR 50.55a(g)(4)(iv). The NRC staff notes that 10 CFR 50.55a(g)(4)(iv) states:

Enclosure

Inservice examination of components and system pressure tests may meet the requirements set forth in subsequent editions and addenda of the ASME Code provided that they are incorporated by reference in 10 CFR 50.55a(b), subject to the conditions listed in 10 CFR 50.55a(b), and subject to Commission approval. Portions of editions or addenda may be used provided that all related requirements of the respective editions or addenda are met.

Given that the licensee has proposed the use of a later edition of the ASME Code pursuant to 10 CFR 50.55a(g)(4)(iv) and that 10 CFR 50.55a(g)(4)(iv) specifically permits the use of later editions of the ASME Code subject to technical criteria which will be considered below, the NRC staff finds that regulatory authority exists to authorize the use of a subsequent edition of the ASME Code, as requested by the licensee.

### 3.0 TECHNICAL EVALUATION

The information provided by the licensee in support of the requests for relief from ASME Code requirements has been evaluated and the bases for disposition are documented below.

#### 3.1 ASME Code Component(s) Affected

Code Class:	1
Reference:	IWB-2500
Examination Category:	B-A and B-D, Pressure Retaining Welds in Reactor Vessel and Full Penetration Welded Nozzles in Vessels
Item Number:	Description:
B1.11	Reactor Vessel Shell Welds Circumferential
B1.21	Reactor Vessel Head Welds Circumferential
B1.30	Reactor Vessel Shell-to-Flange Weld
B3.90	Reactor Vessel Nozzle-to-Vessel Welds
B3.100	Reactor Vessel Nozzle Inside Radius Section
Component Number:	157-051 and 257-051

#### 3.2 Applicable ASME Edition and Addenda

The proposed alternative applies to the fourth 10-year ISI interval, in which the licensee adopted the 1998 Edition through the 2000 Addenda of ASME Code, Section XI, as the code of record. The fourth 10-Year inspection interval is effective for Prairie Island, Units 1 and 2, from December 21, 2004, through December 20, 2014, with extension through the end of the Unit 2 refueling outage (2R29) as allowed by ASME Code, Section XI, paragraph IWA-2430(d).

### 3.3 Licensee Proposed Alternative

Pursuant to 10 CFR 50.55a(g)(4)(iv), the licensee requested to use the 2007 Edition with 2008 Addenda of the ASME Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," Mandatory Appendix VIII, "Performance Demonstration for Ultrasonic Examination Systems," with all related requirements.

The 2007 Edition with 2008 Addenda is incorporated by reference in 10 CFR 50.55a(1)(ii). The edition and addenda were first incorporated into the code in 10 CFR 50.55a(b)(2), as documented in the *Federal Register* (76 FR 36232).

The regulation in 10 CFR 50.55a(b)(2) includes the following modifications or limitations that are applicable to the 2007 Edition with 2008 Addenda of ASME Code, Section XI, Appendix VIII:

(xiv) Appendix VIII personnel qualification. All personnel qualified for performing ultrasonic examinations in accordance with Appendix VIII shall receive 8 hours of annual hands-on training on specimens that contain cracks. Licensees applying the 1999 Addenda through the latest edition and addenda incorporated by reference in paragraph (b)(2) of this section may use the annual practice requirements in VII-4240 of Appendix VII of Section XI in place of the 8 hours of annual hands-on training provided that the supplemental practice is performed on material or welds that contain cracks, or by analyzing prerecorded data from material or welds that contain cracks. In either case, training must be completed no earlier than 6 months prior to performing ultrasonic examinations at a licensee's facility.

(xvii) Reconciliation of quality requirements. When purchasing replacement items, in addition to the reconciliation provisions of IWA-4200, 1995 Addenda through 1998 Edition, the replacement items must be purchased, to the extent necessary, in accordance with the licensee's quality assurance program description required by 10 CFR 50.34(b)(6)(ii).

### 3.4 NRC Staff Evaluation

The regulation in 10 CFR 50.55a(g)(4)(iv) contains criteria which must be met prior to use of a subsequent edition of the ASME Code these criteria are:

1. The proposed edition/addendum of the ASME Code is incorporated by reference in 10 CFR 50.55a(b).
2. The proposed edition/addendum of the ASME Code is subject to the conditions listed in 10 CFR 50.55a(b).
3. If only portions of editions or addenda are to be used all related requirements of the respective editions or addenda must be met.

In evaluating the first criterion, i.e., that the proposed edition/addendum of the ASME Code has been incorporated by reference in 10 CFR 50.55a(b), the NRC staff notes that

10 CFR 50.55a(b)(2) incorporates, by reference, Section XI of the ASME Code from the 1970 Edition through the 1976 Winter Addenda, and the 1977 Edition through the 2007 Edition with the 2008 Addenda, which was proposed by the licensee. Therefore, the NRC finds that the first criterion has been satisfied.

In evaluating the second criterion, i.e., that the conditions listed in 10 CFR 50.55a(b) are satisfied for the specific proposed subsequent edition and addenda of the ASME Code, Section XI, the NRC staff notes that 10 CFR 50.55a(b) sets no conditions on Examination Categories B-A and B-D of the 2007 Edition, 2008 Addenda, of the ASME Code, Section XI. Therefore, the NRC staff finds that the second criterion has been satisfied.

In evaluating the third criterion, i.e., that if portions of subsequent editions or addenda of the ASME Code, Section XI, are used, all related requirements of the respective editions or addenda must be met, the NRC staff is satisfied that the licensee has listed all related requirements in Examination Categories B-A and B-D of the 2007 Edition, 2008 Addenda, of the ASME Code, Section XI. Therefore, the NRC staff finds that the third criterion has been satisfied.

#### Summary

Based on the above, the NRC staff finds that the criteria contained in 10 CFR 50.55a(g)(4)(iv) are satisfied, and that the licensee's request to use the 2007 Edition with 2008 Addenda of the ASME Code, Section XI, for Examination Categories B-A and B-D is acceptable.

#### 4.0 CONCLUSION

As set forth above, the NRC staff finds that the licensee adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(g)(4)(iv), and that the requested use of a subsequent Edition of ASME Code, Section XI, requirements is acceptable.

Therefore, the NRC staff approves the use of the 2007 Edition through the 2008 Addenda of the ASME Code, Section XI, for Examination Categories B-A and B-D for the Prairie Island Nuclear Generating Plant, Units 1 and 2, until the "Rules for Inservice Inspection of Nuclear Power Plant Components," until the end of the fourth 10-year ISI interval, which is scheduled to end after the twenty-ninth refueling outage for Unit 2 (2R29), with the latest ASME code-allowed date being December 20, 2015.

All other requirements of the ASME Code, Section XI, for which relief has not been specifically requested and authorized by NRC staff remain applicable, including a third party review by the Authorized Nuclear In-service Inspector.

Principal Contributors: Tom McLellan, NRR/DE/EVIB  
Stephen Cumblidge, NRR/DE/EPNB

Date: August 6, 2015

K. Davison

- 2 -

If you have any questions, please contact Terry A. Beltz at 301-415-3049, or via e-mail at Terry.Beltz@nrc.gov.

Sincerely,

/RA/

David L. Pelton, Chief  
Plant Licensing Branch III-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-282 and 50-306

Enclosure: Safety Evaluation

cc w/enclosure: Distribution via ListServ

DISTRIBUTION:

PUBLIC

LPL3-1 R/F

RidsNrrDorlLpl3-1 Resource

RidsRgn3MailCenter Resource

RidsNrrPMPrairieIsland Resource

RidsAcraAcnw\_MailCTR Resource

RidsNrrLAMHenderson Resource

RidsOgcRp Resource

RidsNrrDeEpn Resource

SCumblidge, NRR

RidsDorIDpr Resource

KMorganButler, OEDO

TMcLellan, NRR

**ADAMS Accession No.: ML15196A432**

**\*SE transmitted via email dated 08/05/2015**

OFFICE	DORL/LPL3-1/PM	DORL/LPL3-1/LA	DE/EVIB/BC *	DE/EPNB/BC *	DORL/LPL3-1/PM
NAME	TBeltz	(KGoldstein for) MHenderson	JMcHale	DAlley	DPelton
DATE	8/06/2015	8/06/2015	8/05/2015	8/05/2015	8/06/2015

**OFFICIAL RECORD COPY**