



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

June 19, 2015

Mr. John A. Dent, Jr.
Site Vice President
Entergy Nuclear Operations, Inc.
Pilgrim Nuclear Power Station
600 Rocky Hill Road
Plymouth, MA 02360-5508

SUBJECT: PILGRIM NUCLEAR POWER STATION RE: REQUEST FOR ALTERNATIVE
(PRR)-26, FIFTH 10-YEAR INSERVICE INSPECTION INTERVAL (TAC NO.
ME5432)

Dear Mr. Dent:

By letter dated November 26, 2014 (Agencywide Document Access and Management System Accession No. ML14342B001), Entergy Nuclear Operations, Inc. (Entergy, the licensee), requested use of an alternative to the requirements of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Section XI, 2007 Edition through the 2008 Addenda, for performance of repair/replacement (R&R) activities, pressure testing (PT) and non-destructive testing (NDE) for Pilgrim Nuclear Power Station (PNPS) during the fifth 10-year inservice inspection (ISI) interval. Specifically, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR), Paragraph 50.55a(a)(3)(i), the licensee requested an alternative on the basis that the alternative provides an acceptable level of quality and safety. Relief Request PRR-26 proposes an alternative for PNPS to continue the use of the 2001 Edition through the 2003 Addenda requirements of ASME Section XI for the performance of R&R, PT and NDE activities until standardized corporate procedures for these activities are updated in December 2017.

The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the licensee's submittal and determined that the proposed alternative will provide an acceptable level of quality and safety. Accordingly, the NRC staff concludes that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(z)(1). Therefore, the NRC staff authorizes the use of PRR-26 at PNPS during the fifth 10-year ISI interval which ends December 31, 2017.

All other requirements of the ASME Code for which relief has not been specifically requested and approved in this relief request remain applicable, including a third party review by the Authorized Nuclear Inservice Inspector.

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If you have any questions, please contact Richard Guzman, the NRC's Project Manager for Pilgrim at (301) 415-1030 or via e-mail at Richard.Guzman@nrc.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael Dudek". The signature is fluid and cursive, with the first name "Michael" being more prominent than the last name "Dudek".

Michael Dudek, Acting Chief
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-293

Enclosure:
Safety Evaluation

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

FIFTH 10-YEAR INSERVICE INSPECTION INTERVAL

REQUEST FOR ALTERNATIVE PRR-26

PILGRIM NUCLEAR POWER STATION

ENTERGY NUCLEAR OPERATIONS, INC.

DOCKET NUMBER 50-293

1.0 INTRODUCTION

By letter dated November 26, 2014 (Agencywide Document Access and Management System (ADAMS) Accession No. ML14342B001), Entergy Nuclear Operations, Inc. (Entergy, the licensee), requested use of an alternative to the requirements of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (B&PV Code) Section XI, 2007 Edition through the 2008 Addenda, for performance of repair/replacement (R&R) activities, pressure testing (PT) and non-destructive testing (NDE) for Pilgrim Nuclear Power Station (PNPS) during the fifth 10-year inservice inspection (ISI) interval.

Specifically, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR), the licensee requested an alternative on the basis that the alternative provides an acceptable level of quality and safety. Request PRR-26 proposes an alternative for PNPS to continue the use of the 2001 Edition through the 2003 Addenda requirements of ASME Code, Section XI for the performance of R&R, PT, and NDE activities until standardized corporate procedures for these activities are updated in December 2017.

This request is associated with the requirements of the ASME B&PV Code Section XI, for the fifth 10-year ISI interval at PNPS.

2.0 REGULATORY EVALUATION

Pursuant to 10 CFR 50.55a(g)(4)(ii), inservice examination of components conducted during 120-month intervals must comply with the latest Edition and Addenda of the ASME Code incorporated by reference in 10 CFR 50.55a(a) 12 months before the start of the 120-month inspection interval or the optional ASME Code cases listed in U.S. Nuclear Regulatory Commission (NRC) Regulatory Guide 1.147.

Pursuant to 10 CFR 50.55a(z), alternatives to the requirements of paragraphs (b) through (h) may be used, when authorized by the NRC, if the licensee demonstrates that (1) the proposed alternatives would provide an acceptable level of quality and safety, or (2) compliance with the

Enclosure

specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

Based on analysis of the regulatory requirements, the NRC staff concludes that regulatory authority exists to authorize the proposed alternative PRR-26 pursuant to 10 CFR 50.55a(z)(1).

3.0 TECHNICAL EVALUATION

3.1 ASME Code Components Affected

The affected components are ASME Code Class 1, 2, 3, and metallic containment (MC) components and component supports.

3.2 ASME Code Requirement

The licensee is required to update the PNPS 120-month ISI program to the latest Edition and Addenda of the ASME B&PV Code, Section XI, as approved by the NRC in 10 CFR 50.55a(a), for the fifth 10-year interval.

3.3 Proposed Alternative PRR-26

The licensee proposes to continue use of the 2001 Edition through the 2003 Addenda of ASME B&PV Code Section XI, for performance of R&R, PT and NDE activities until standardized corporate procedures for these activities are updated. Specifically, the licensee asked relief from updating the PNPS ISI program to certain sections of the 2007 Edition through the 2008 Addenda while maintaining and performing ISI related activities such as R&R, PT, and NDE to the current ASME Code Section XI, 2001 Edition through the 2003 Addenda requirements. For the 2007 Edition through the 2008 Addenda, the licensee will be using articles IWA-2400, -2500, and -2600; Articles 1000 and 2000 of IWB, IWC, IWD, IWE, and IWF; and Mandatory Appendix IX. The relief request identifies specific articles to be used from each set of Edition and Addenda.

3.4 Licensee's Basis for Alternative PRR-26

As stated in its letter dated November 26, 2014, the licensee will update the PNPS ISI Program to the fifth 10-year interval in accordance with 10 CFR 50.55a(g)(4)(ii) on July 1, 2015. While the ISI related activities such as R&R, PT, and NDE would normally be included as part of the update to the 2007 Edition and 2008 Addenda of ASME Code, Section XI, the proposed alternative is to maintain these ISI related activities in compliance with ASME Code, Section XI, 2001 Edition through the 2003 Addenda, while conforming to all conditions of 10 CFR 50.55a.

The licensee has standardized the performance of ISI related activities such as R&R, PT, and NDE across its entire nuclear fleet to the ASME Code, Section XI, 2001 Edition through the 2003 Addenda. The licensee stated that while ISI Program plans are controlled on a site-by-site basis, the R&R, PT, and NDE programs are administered under a corporate set of procedures. The licensee noted that updating the PNPS ISI, R&R, PT, and NDE program activities to the 2007 Edition through the 2008 Addenda would require establishing and maintaining two different programs; one for PNPS and one for the other 10 Entergy nuclear stations.

The licensee explained that maintaining the PNPS ISI related activities to the 2001 Edition through the 2003 Addenda standard with the other plants in its fleet will improve the level of quality and safety at PNPS. The licensee further explained that this allows leveraging the knowledge from the 10 other nuclear stations of ISI related activities to provide PNPS with a wealth of experience to draw on and minimizing the time spent on developing and maintaining procedures that are different from the rest of the fleet.

3.5 Duration of Proposed Alternative

The fifth 10-year ISI interval begins on July 1, 2015 and ends on June 30, 2025. However, with eight of its nuclear plants starting new 10-year ISI intervals between June 2015 and December 2017, the licensee proposed to standardize its corporate administered R&R, PT, and NDE programs across its entire nuclear fleet using the 2001 Edition through 2003 Addenda through December 2017. Prior to the expiration of the proposed relief request on December 31, 2017, the licensee will request NRC approval to update these ASME Code, Section XI activities to the latest ASME Code Edition incorporated by reference in 10 CFR 50.55a for the entire fleet. Therefore, the duration of Relief Request PRR-26 is from July 1, 2015, through December 31, 2017.

3.6 NRC Staff Evaluation

The NRC staff's review considered three areas of interest: 1) the proposed alternative, 2) differences between the two ASME Section XI Codes, and 3) the application of two separate codes of record.

Table 1, "Proposed ASME Section XI Code of Record for PNPS," of Relief Request PRR-26 as documented in the licensee's letter dated November 26, 2014, identifies the applicable subsections and articles that will be applied at PNPS in the dual ASME Codes.

The table includes seven footnotes that provide clarifications to support licensee's relief request. Footnote number 1 states that PNPS will follow all conditions mandated in 10 CFR 50.55a. Footnote number 3 states that PNPS will follow the conditions imposed on the use of IWA-4540 when performing system leakage tests pursuant to 10 CFR 50.55a. Footnote number 6 clarifies that PNPS will not use the acceptance standards of IWB-3514 of the 2001 Edition through the 2003 Addenda to disposition flaws detected in Alloy 600/82/182 metal.

The NRC staff noted that under the proposed alternative, if a flaw is detected in an ASME Class 1 austenitic stainless steel or nickel-based alloy weld in PNPS, the flaw may remain in service using the acceptance standards in IWB-3514 of the 2001 Edition. However, under the 2007 Edition, the flaw needs to be dispositioned by an evaluation which may result in a shorter inspection interval because the acceptance standards of IWB-3514 cannot be used to disposition the flaw. In this scenario, the 2001 Edition would be less conservative than the 2007 Edition. For example, the 2007 Edition of the ASME Code, Section XI, prohibits the use of IWB-3514 to disposition planar surface flaws in nickel-based Alloy 600, 82, or 182 material in boiling-water reactor (BWR) (or pressurized water reactor (PWR)) environment, or austenitic stainless steels and associated welds in BWR environments because of the stress corrosion cracking concerns. The 2001 Edition through the 2003 Addenda of the ASME Code, Section XI, does

not have this limitation for IWB-3514. This issue is further discussed below. The licensee stated that if a flaw is found in an ASME Class 1 austenitic stainless steel or nickel-based alloy weld, it would either evaluate the acceptability of the flaw in accordance with IWB-3600 or correct the flawed condition by performing an approved ASME Code, Section XI repair/replacement activity.

Footnote numbers 2 and 4 clarify the articles (e.g., IWA-2000) and subarticles (e.g., IWA-2100) of the Editions and Addenda that will be used. Footnote number 5 clarifies that PNPS does not have Class CC (concrete containment) components; therefore, the requirements of subsection IWL do not apply.

The NRC staff notes that IWF-5000 of the 2001 Edition requires that the ISI of snubbers be performed in accordance with the ASME Operation and Maintenance (OM) Code, Part 4. The NRC staff notes that IWF-5000 was initially removed from the 2006 Addenda and subsequently the 2007 Edition does not contain IWF-5000. Footnote 7 of Table 1 as shown in Attachment 1 to the November 26, 2014, letter states that as required by 10 CFR 50.55a(b)(3)(v), snubber pre-service and ISI and testing requirements are implemented in subsection ISTD of the ASME OM Code, 2004 Edition through 2006 Addenda, in its entirety. The NRC staff finds that the deletion of IWF-5000 in the 2006 Addenda through the 2007 Edition does not affect the licensee's ISI of the snubbers which will be performed in accordance with the OM Code. The NRC staff finds that the licensee's snubber inspection and testing program satisfies 10 CFR 50.55a(b)(3)(v) and is, therefore, acceptable.

For mandatory appendices, the NRC staff finds that the licensee appropriately identified that when applying Appendix VIII to perform performance-demonstrated based ultrasonic examinations, the 2001 Edition, no Addenda, in lieu of the 2001 Edition through the 2003 Addenda, should be used. This is because 10 CFR 50.55a(b)(2)(xv) requires the use of the 2001 Edition, no Addenda for the performance demonstration of ultrasonic examinations, when the Code of record is later than the 2001 Edition.

The NRC staff has determined that the table and associated footnotes provide clear descriptions and commitments as to which subsections, articles and subarticles of the Editions and Addenda of the ASME Code, Section XI, that will be applicable for the duration period. The NRC staff finds that the table and associated footnotes satisfy 10 CFR 50.55a.

The NRC staff noted that the licensee is already accustomed to the use of dual ASME Code Editions and Addenda for the ISI program. The licensee stated that PNPS presently selects, plans, and schedules the performance of ISI examinations and tests in accordance with the 1998 Edition through 2000 Addenda of ASME Code, Section XI while the R&R, PT, and NDE activities are performed in accordance with the 2001 Edition through 2003 Addenda. This dual use of Code Editions and Addenda was approved by the NRC in a safety evaluation for Relief Request ISI-2008-1, dated April 30, 2009 (ADAMS Accession No. ML091130456). The dual Code Editions and/or Addenda proposed in PRR-26 are identical to those previously approved by the NRC in April 2009 and presently implemented at PNPS with one exception: the selection, planning, and scheduling of ISI examinations/tests will be performed in accordance with the 2007 Edition through the 2008 Addenda instead of the 1998 Edition through the 2000 Addenda of ASME Code, Section XI. Therefore, a process for tracking and monitoring the

implementation of dual Code Editions and Addenda of ASME Code, Section XI already exists at PNPS.

Based on the above, the NRC staff finds that the licensee has acceptable process controls to manage, track, and control two sets of the ASME Code appropriately at PNPS.

In summary, the NRC staff finds that relief request PRR-26 as documented in the licensee's letter dated November 26, 2014, provides the necessary information as to which Article, Edition and Addenda of the ASME Code will be applicable to the ASME Code Class 1, 2, 3, and MC components and component supports. The NRC staff determines that approval of later Editions and Addenda of the ASME Section XI Code in 10 CFR 50.55a does not make earlier Editions and Addenda of the ASME Code unsafe because the NRC staff has also approved the earlier Edition and Addenda with conditions in 10 CFR 50.55a. Furthermore, the NRC staff did not find it necessary to mandate that plants following earlier Editions and Addenda of ASME Code, Section XI, implement any of the changes incorporated into the 2007 Edition through the 2008 Addenda of Section XI. The NRC staff finds that the proposed alternative is acceptable because the licensee will follow the requirements in the 2001 Edition through the 2003 Addenda for R&R, PT and NDE activities as well as the 2007 Edition through the 2008 Addenda of the ASME Code for ISI Program selection, planning, and scheduling of ISI examinations and tests.

4.0 CONCLUSION

As set forth above, the NRC staff determines that the proposed alternative PRR-26 provides an acceptable level of quality and safety. Accordingly, the NRC staff concludes that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(z)(1). Therefore, the NRC staff authorizes the use of PRR-26 at PNPS during the fifth 10-year ISI interval which ends December 31, 2017.

All other requirements of the ASME Code for which relief has not been specifically requested and approved in this relief request remain applicable, including a third party review by the Authorized Nuclear Inservice Inspector.

Principal Contributor: K. M. Hoffman

Date: June 19, 2015

- 2 -

If you have any questions, please contact Richard Guzman, the NRC's Project Manager for Pilgrim at (301) 415-1030 or via e-mail at Richard.Guzman@nrc.gov.

Sincerely,

/RA/

Michael Dudek, Acting Chief
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-293

Enclosure:
Safety Evaluation

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