

June 29, 2006

Mr. Michael R. Kansler, President  
Entergy Nuclear Operations, Inc.  
440 Hamilton Avenue  
White Plains, NY 10601

SUBJECT: PILGRIM NUCLEAR POWER STATION - RELIEF REQUEST NO.  
PIL-05-R-001 (TAC NO. MC8299)

Dear Mr. Kansler:

By letter dated June 29, 2005, Entergy Nuclear Operations, Inc. (the licensee), requested relief from the requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, 1998 Edition with the 2000 Addendum, Subsection IWA-4540, Pressure Testing of Class 1, 2 and 3 items. The licensee proposed an alternative to use the ASME Code, Section XI, 2001 Edition through 2003 Addendum in lieu of the Code of Record for the fourth 10-year inservice inspection (ISI) program.

The Nuclear Regulatory Commission staff has concluded that the alternative proposed for the fourth 10-year ISI interval will provide an acceptable level of quality and safety. The bases of granting the relief are provided in the enclosed safety evaluation. Therefore, pursuant to Title 10 of the Code of Federal Regulations (10CFR) 50.55a(a)(3)(i), the proposed alternative is authorized for the Pilgrim's fourth 10-year ISI interval, which ends on June 30, 2015.

If you have any questions regarding this approval, please contact the Pilgrim Project Manager, James Shea, at 301-415-1388.

Sincerely,

*/RA/*

Richard J. Laufer, Chief  
Plant Licensing Branch I-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-293

Enclosure:  
As stated

cc w/encl: See next page

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Pilgrim Nuclear Power Station

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELIEF REQUEST NO. PIL-05-R-001

PILGRIM NUCLEAR POWER STATION

DOCKET NO. 50-293

1.0 INTRODUCTION

By letter dated June 29, 2005, Agencywide Documents Access and Management System (Accession No. ML051920157), Entergy Nuclear Operations, Inc (the licensee) submitted Relief Request No. PIL-05-R-001, related to the fourth 10-year interval inservice inspection (ISI) program for the Pilgrim Nuclear Power Station (Pilgrim). The licensee requested the Nuclear Regulatory Commission (NRC) authorization to use the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, 2001 Edition through the 2003 Addendum, in lieu of the 1998 Edition through the 2000 Addendum in regard to Subsection IWA-4540, "Pressure Testing of Class 1, 2, and 3 items." The licensee's proposed use of portions of subsequent edition and addenda to the ASME Code, Section XI, that is incorporated by reference in 10 CFR 50.55a(b)(2), is in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a(g)(4)(iv). The NRC staff's review focused on whether the related requirements of the 2001 Edition ASME Code, Section XI through the 2003 Addendum are being met. The licensee's request applies to the fourth 10-year ISI interval of Pilgrim. The licensee's request would be applicable during Pilgrim's fourth 10-year ISI interval, which ends on June 30, 2015.

2.0 REGULATORY EVALUATION

Section 50.55a(g) of 10 CFR requires that ISI of ASME Code Class 1, 2, and 3 components be performed in accordance with Section XI of the ASME Code and applicable addenda, except where specific written relief has been granted by the Commission pursuant to 10 CFR 50.55a(g)(6)(i). According to 10 CFR 50.55a(a)(3), alternatives to the requirements of paragraph 50.55a(g) may be used, when authorized by the NRC, if an applicant demonstrates that the proposed alternatives would provide an acceptable level of quality and safety or if the specified requirement would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

Pursuant to 10 CFR 50.55a(g)(4), ASME Code Class 1, 2, and 3 components (including supports) shall meet the requirements, except the design and access provisions and the preservice examination requirements, set forth in the ASME Code, Section XI, "Rules for Inservice Inspection (ISI) of Nuclear Power Plant Components," to the extent practical within the limitations of design, geometry, and materials of construction of the components. The regulations require that ISI of components and system pressure tests conducted during the first

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10-year interval and subsequent intervals comply with the requirements in the latest edition and addenda of Section XI of the ASME Code incorporated by reference in 10 CFR 50.55a(b) 12 months prior to the start of the 120-month interval, subject to the limitations and modifications listed therein. The ISI Code of Record for the fourth 10-year inspection interval for Pilgrim is the 1998 Edition through the 2000 Addendum of the ASME Code, Section XI. Pursuant to 10 CFR 50.55a(g)(4)(iv), inservice examination of components and system pressure tests may meet the requirements set forth in subsequent editions and addenda that are incorporated by reference in paragraph (b) of this section, subject to the limitations and modifications listed in paragraph (b) of this section, and subject to Commission approval. Portions of editions and addenda may be used provided that all related requirements of the respective editions or addenda are met.

Regulatory Issue Summary 2004-16, "Use of Later Editions and Addenda to ASME Code Section XI for Repair/Replacement Activities," provides additional information regarding the use of editions and addenda of the ASME Code subsequent to the Code of Record.

## 2.1 Code Requirements for Which Relief is Requested

Pursuant to 10 CFR 50.55a(g)(4)(iv), the licensee has proposed an alternative to the 2000 Addendum for pressure testing of Class 1, 2, and 3 items by implementing the requirements of subsection IWA-4540 of the ASME Code, Section XI, 2001 Edition through the 2003 Addendum which states the following:

- (a) The repair/replacement activities performed by welding or brazing on a pressure-retaining boundary shall include a hydrostatic or system leakage test in accordance with IWA-5000, prior to, or as part of, return to service.

The changes to the ASME Code, Section XI, subparagraph IWA-4540(a) for pressure testing of class 1, 2, and 3 items following repair/replacement activities performed by welding or brazing on a pressure-retaining boundary do not affect other parts of the ASME Code. The 2001 Edition through the 2003 Addendum of the ASME Code, Section XI requires that brazed joints and welds made in the course of a repair/replacement activity require pressurization and a VT-2 visual examination during the test. This added requirement would also be followed under the Pilgrim Repair/Replacement Program.

## 2.2 ASME Code Requirements

For repair/replacement activities performed by welding or brazing on pressure-retaining boundary, the ASME Code, Section XI, 1998 Edition through the 2000 Addendum, Subsection IWA-4540, "Pressure Testing of Classes 1, 2, and 3 Items" requires performance of either a system hydrostatic test in accordance with Subsection IWA-5000 or performance of the following prior to, or as part of, return to service:

- a. Non-destructive examination (NDE) of the repair in accordance with the 1992 Edition or later ASME Code, Section III.
- b. Owner's requirement prior to return to service.
- c. A system leakage test in accordance with IWA-5000.

## 2.3 Licensee's Basis for Requesting Relief

The licensee's proposed alternative to use a portion of the later edition ASME Code, Section XI is in accordance with 10 CFR 50.55a(g)(4)(iv), and the NRC staff noted that the proposed ASME Code has been incorporated by reference in 10 CFR 50.55a(b)(2). However, since the ISI Code of Record is the 1998 Edition through the 2000 Addendum of the ASME Code, the licensee has requested relief from a portion of its ISI Code of Record and is required to meet the related requirements of the proposed later Code.

### 3.0 NRC STAFF EVALUATION

The NRC staff's review focused on whether all related requirements pertaining to the portion of the ASME Code in regard to repair/replacement activities performed by welding or brazing on a pressure retaining boundary in the proposed edition and addenda to the Code are being met. The staff, therefore, reviewed Subsection IWA-4540 pertaining to pressure testing of Class 1, 2, and 3 items repaired by welding or brazing in the 2001 Edition through the 2003 Addendum of the ASME Code, Section XI. The staff noted that the later Code offers more flexibility than the 1998 ASME Code, Section XI through 2000 Addendum while providing the same level of assurance of quality and safety in regard to the pressure testing of components repaired by welding or brazing as identified below.

Test Requirement for Repair as stated in IWA-4540	1998 ASME Code Section XI through 2000 Addendum	2001 ASME Code Section XI through 2003 Addendum
Required Pressure test	System hydrostatic test per Subsection IWA-5000 or	System hydrostatic or system leakage test per Subsection IWA-5000 and
Alternative Pressure test	System leakage test with NDE to 1992 Edition or later of ASME Code, Section III	Pressurization and VT-2 visual examination of the welded/brazed joint only

There is no other related requirement in regard to pressure testing of repaired components addressed in Subsection IWA-4540 which would be applicable for the licensee in adopting to the later edition of the ASME Code and its Addenda. The licensee has stated that it would comply with the related requirements of the 2001 ASME Code, Section XI through the 2003 Addendum for pressure testing of Class 1, 2, and 3 items repaired by welding or brazing. Since the 2001 Edition through 2003 Addendum of ASME Code, Section XI, was incorporated by reference in 10 CFR 50.55a(b)(2) and the licensee complies with the related requirements of this Code, the proposed alternative in Relief Request No. PIL-05-R-001 is authorized pursuant to 10 CFR 50.55a(a)(3)(i). The use of the later ASME Code and Addenda will provide an acceptable level of quality and safety.

### 4.0 CONCLUSION

The licensee's proposed alternative in Relief Request No. PIL-05-R-001 pertains to the use of Subsection IWA-4540 of the 2001 ASME Code, Section XI including the 2003 Addendum in lieu of the applicable 1998 ASME Code Section XI including the 2000 Addendum. The later ASME Code and its Addenda has been incorporated by reference in 10 CFR 50.55a(b)(2), and the

licensee stated that it would meet the related requirements of the ASME Code in regard to pressure testing components repaired by welding or brazing. The NRC staff has determined that the proposed alternative in Relief Request No. PIL-05-R-001 will provide an acceptable level of quality and safety. Therefore, pursuant to 10 CFR 50.55a(a)(3)(i), the staff authorizes the alternative for the fourth 10-year ISI interval for Pilgrim. All other ASME Code, Section XI requirements for which relief was not specifically requested and approved in this relief request remain applicable, including a third party review by the Authorized Nuclear Inservice Inspector.

Principal Contributor: P. Patnaik

Date: June 29, 2006