

July 25, 2005

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

SUBJECT: SAFETY EVALUATION OF REQUEST TO USE LATER EDITION AND
ADDENDA OF AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)
BOILER AND PRESSURE VESSEL CODE (CODE) - VERMONT YANKEE
NUCLEAR POWER STATION (TAC NO. MC5850)

Dear Mr. Kansler:

By letter dated February 7, 2005, as supplemented on April 28, 2005, Entergy Nuclear Operations, Inc. and Entergy Nuclear Vermont Yankee, LLC (Entergy), requested approval to use the 2001 Edition, including the 2003 Addenda of the ASME Code, Section XI, Subparagraph IWA-4540(a) for the pressure-testing requirements of Class 1, 2, and 3 components following repair/replacement activities, performed by welding or brazing on a pressure-retaining boundary, at Vermont Yankee Nuclear Power Station (VYNPS). Your letter dated April 28, 2005, clarified the intent to implement all of the provisions of Article IWA-4540 of the 2003 Addenda of the ASME Code, Section XI, for VYNPS.

The Entergy request was submitted pursuant to the requirements in Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.55a(g)(4)(iv), consistent with the guidance in Nuclear Regulatory Commission (NRC) Regulatory Issue Summary 2004-12, "Clarification on Use of Later Editions and Addenda to the ASME OM Code and Section XI," dated July 28, 2004.

The NRC staff has completed its review of your request and has determined that the proposed alternative is approved in accordance with 10 CFR Section 50.55a(g)(4)(iv) for the remainder of the fourth 10-year inservice inspection interval at VYNPS, as documented in the enclosed Safety Evaluation. All other requirements of the ASME Code, Section XI, remain applicable, including third-party review by the Authorized Nuclear Inservice Inspector.

M. Kansler

- 2 -

If you have any questions regarding this matter, please contact the VYNPS Project Manager, Mr. Richard B. Ennis, at (301) 415-1420.

Sincerely,

/RA/

Darrell J. Roberts, Chief, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-271

Enclosure: As stated

cc w/encl: See next page

M. Kansler

- 2 -

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Vermont Yankee Nuclear Power Station

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

ENTERGY NUCLEAR VERMONT YANKEE, LLC

AND ENTERGY NUCLEAR OPERATIONS, INC.

VERMONT YANKEE NUCLEAR POWER STATION

DOCKET NO. 50-271

1.0 INTRODUCTION

By letter dated February 7, 2005, as supplemented on April 28, 2005, Entergy Nuclear Operations, Inc. and Entergy Nuclear Vermont Yankee, LLC (Entergy or the licensee) requested approval to use the 2001 Edition, including the 2003 Addenda of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (Code), Section XI, Subparagraph IWA-4540(a) for the pressure-testing requirements of Class 1, 2, and 3 components following repair/replacement activities, performed by welding or brazing on a pressure-retaining boundary, at Vermont Yankee Nuclear Power Station (VYNPS).

The Entergy request was submitted pursuant to the requirements in Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.55a(g)(4)(iv), consistent with the guidance in Nuclear Regulatory Commission (NRC or Commission) Regulatory Issue Summary (RIS) 2004-12, "Clarification on Use of Later Editions and Addenda to the ASME OM Code and Section XI," dated July 28, 2004.

2.0 REGULATORY EVALUATION

As discussed in the "Background Information" section of RIS 2004-12:

The regulations in 10 CFR 50.55a(f)(4) and (g)(4) establish the effective ASME Code edition and addenda to be used by licensees for performing inservice inspections of components (including supports) and inservice testing of pumps and valves. Paragraph 50.55a(f)(4)(iv) states that inservice test of pumps and valves may meet the requirements set forth in subsequent editions and addenda that are incorporated by reference in paragraph (b) of Section 50.55a, subject to the limitations and modifications listed in paragraph (b) of this section, and subject to Commission approval. In addition, it allows the use of portions of editions or addenda provided that all related requirements of the respective editions or addenda are met. Similarly, for inservice examination and system pressure tests, Paragraph 50.55a(g)(4)(iv) allows the use of subsequent editions and addenda, and portions thereof, incorporated by reference in paragraph (b) of Section 50.55a, subject to the limitations and modifications listed in paragraph (b), and subject to Commission approval.

Paragraphs 50.55a(f)(4)(ii) and (g)(4)(ii) require the use of the latest edition and addenda that has been incorporated by reference 1 year prior to the beginning of each 120-month interval. This is considered the Code of Record. As stated in paragraphs (f)(4)(iv) and (g)(4)(iv), the use of later editions and addenda of the Code is subject to Commission approval. Licensees that plan to use for their IST [inservice testing] and ISI [inservice inspection] programs later editions and addenda of the ASME OM Code or Section XI that have been incorporated by reference into 10 CFR 50.55a must obtain prior approval pursuant to 10 CFR 50.55a(f)(4)(iv) or (g)(4)(iv). The licensees may request this approval by submitting a letter to the NRC Document Control Desk.

The applicable Code of Record for the VYNPS ISI and pressure testing program is the 1998 Edition through the 2000 Addenda of the ASME Code, Section XI. VYNPS is currently in the fourth 10-year ISI interval, which began on September 1, 2003.

3.0 TECHNICAL EVALUATION

The licensee requested in its letter dated February 7, 2005, to use the pressure-testing requirements for repair/replacement activities performed by welding or brazing on a pressure-retaining boundary specified in the 2001 Edition through the 2003 Addenda of the ASME Code, Section XI, Subarticle IWA-4540(a) for VYNPS. The licensee subsequently provided additional information to support its request in its letter dated April 28, 2005. In this letter, which responded to the NRC staff's request for additional information, the licensee clarified their intent, which is to implement all of the provisions of Article IWA-4540 of the 2003 Addenda of the ASME Code, Section XI, for VYNPS. Therefore, the staff's technical evaluation focused on the differences between the provisions given in the 2003 Addenda version and the 1998 Edition through 2000 Addenda version of Article IWA-4540.

The required actions of the 2003 Addenda of the ASME Code, Section XI, Subarticle IWA-4540(a) include system pressurization and the performance of a VT-2 visual examination during the pressure test. In the 2003 Addenda, Subarticle IWA-4540(a) limits these requirements to brazed joints or welds made in the course of a repair/replacement activity. The 2003 Addenda of this subarticle includes language which specifies that, as a minimum, repair/replacement activities performed by welding or brazing on a pressure-retaining boundary shall include a hydrostatic test or system leakage test in accordance with Article IWA-5000. However, the 1998 Edition through 2000 Addenda of ASME Code, Section XI, Subarticle IWA-4540(a) was not explicit in requiring pressurization and VT-2 visual examination during the pressure test only for brazed joints or welds made during the conduct of a repair/replacement activity. Therefore, the revisions to Subarticle IWA-4540(a) in the 2003 Addenda of the ASME Code, Section XI provide a more limited scope of application for the requirement.

Subarticle IWA-4540(c) was introduced in the 2003 Addenda of the ASME Code, Section XI to separately address pressure-testing requirements for replacement components and appurtenances that make up part of a pressure-retaining boundary. Subarticle IWA-4540(d) was introduced in the 2003 Addenda of the ASME Code, Section XI to separately address pressure-testing requirements for replacement components and piping subassemblies containing welded or brazed joints that make up part of a pressure-retaining boundary, where such welded or brazed joints have been fabricated by the Repair/Replacement Organization, or fabricated in accordance with the ASME Construction Code. Subarticle IWA-4540(b) remains

unchanged between the 1998 Edition through 2000 Addenda and the 2003 Addenda of the ASME Code, Section XI.

The implementation of Subarticles IWA-4540(c) and IWA-4540(d) is necessary for the correct implementation of Article IWA-4540 in the 2003 Addenda because they separately address pressure-testing requirements for replacement components and piping subassemblies, where the fabrication of brazed joints and welds in the replacement component did not necessarily occur in the course of the replacement activity. These requirements are not addressed by Subarticle IWA-4540(a) in the 2003 Addenda of the ASME Code, Section XI.

The additional information submitted by the licensee on April 28, 2005, provided clarification of its intent, which is to implement all of the provisions of Article IWA-4540 in the 2003 Addenda of the ASME Code, Section XI, as opposed to implementing only Subarticle IWA-4540(a) and excluding Subarticles IWA-4540(c) and IWA-4540(d) in the 2003 Addenda. This is consistent with the requirements of 10 CFR 50.55a(g)(4)(iv), which states that portions of editions or addenda may be used provided that all related requirements of the respective editions or addenda are met.

For the requirements of Article IWA-5000, which are referenced by Subarticle IWA-4540(a), the licensee stated in its letter dated April 28, 2005 that it intends to use the 1998 Edition through the 2000 Addenda of the ASME Code, Section XI, which is the licensee's Code of Record for the fourth 10-year ISI interval at VYNPS. Furthermore, the licensee will implement the requirements of 10 CFR 50.55a(b)(2)(xx), which modifies the provisions of Subarticle IWA-5213(a) in the 1997 Edition through 2002 Addenda of the ASME Code, Section XI, regarding test condition holding times.

Based on the above technical evaluation, the NRC staff concludes that the licensee's request to use the requirements specified in the 2001 Edition through the 2003 Addenda of the ASME Code, Section XI, Subarticle IWA-4540(a), and subsequent clarification of the intent to use all related requirements specified in Article IWA-4540, for VYNPS provides an acceptable level of quality and safety.

4.0 CONCLUSION

As described above, the licensee's request provides an acceptable level of quality and safety. In addition, the 2001 Edition through the 2003 Addenda of the ASME Code, Section XI requirements has been incorporated by reference into 10 CFR 50.55a(b)(2). Based on these considerations, the NRC staff concludes that the proposed alternative to use the 2001 Edition, including the 2003 Addenda of the ASME Code, Section XI, Subparagraph IWA-4540(a), and all related requirements specified in Article IWA-4540, for the pressure-testing requirements of Class 1, 2, and 3 components following repair/replacement activities, performed by welding or brazing on a pressure-retaining boundary, is approved in accordance with 10 CFR 50.55a(g)(4)(iv) for the remainder of the fourth 10-year inservice inspection interval at VYNPS. All other requirements of the ASME Code, Section XI, remain applicable, including third party review by the Authorized Nuclear Inservice Inspector.

Principal Contributor: C. Sydnor

Date: July 25, 2005