

December 20, 2007

Mr. Timothy G. Mitchell
Vice President, Operations
Arkansas Nuclear One
Entergy Operations, Inc.
1448 S. R. 333
Russellville, AR 72802

SUBJECT: ARKANSAS NUCLEAR ONE, UNIT 2 - ISI-2007-1, REQUEST TO USE A
LATER EDITION AND ADDENDA OF AMERICAN SOCIETY OF MECHANICAL
ENGINEERS BOILER AND PRESSURE VESSEL CODE (TAC NO. MD6603)

Dear Mr. Mitchell:

By letter dated August 22, 2007, Entergy Operations, Inc. (Entergy), submitted a request to use the 2001 Edition through the 2003 Addenda of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, for inservice inspection (ISI)-related activities associated with repair/replacement, pressure testing, and nondestructive examination (NDE) at Arkansas Nuclear One, Unit 2 (ANO-2). The current ISI Code of record for ANO-2 is the 1992 Edition of the ASME Code, Section XI. Additionally, in regard to performance demonstration of ultrasonic examinations, Entergy requests permission to use the 2001 Edition with no Addenda of Appendix VIII of the ASME Code, Section XI, as specified in Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a(b)(2)(xxiv). This request affects all Class 1, 2, 3, MC, and CC components, component supports, and welds in the ASME Code, Section XI, pressure boundary at ANO-2. The approval of a subsequent edition and addenda of the ASME Code will allow Entergy to maintain a standard program among its southern facilities for repair/replacement, pressure testing, and NDE activities. This request is for the remainder of the third 10-year ISI interval which is scheduled to end on or about March 25, 2010.

The U.S. Nuclear Regulatory Commission (NRC) staff concludes that the proposed request to use the 2001 Edition through the 2003 Addenda of Section XI to the ASME Code for repair/replacement, pressure testing and NDE activities has addressed all related requirements and associated modifications and limitations in 10 CFR 50.55a(b). Therefore, pursuant to 10 CFR 50.55a(g)(4)(iv), the NRC staff approves the use of the 2001 Edition through the 2003 Addenda of Section XI of the ASME Code for repair/replacement, pressure testing, and NDE activities for the remainder of the third 10-year ISI interval at ANO-2 consistent with the limitations stated in 10 CFR 50.55a(b)(2)(xxiv) regarding the implementation of Appendix VIII of Section XI to the ASME Code.

T. Mitchell

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The NRC staff's safety evaluation is enclosed.

Sincerely,

/RA/

Thomas G. Hiltz, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No.: 50-368

Enclosure: Staff Evaluation

cc w/encl: See next page

T. Mitchell

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Arkansas Nuclear One

(November 2007)

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELIEF REQUEST ISI-2007-1 TO USE A LATER EDITION AND ADDENDA OF
THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS
BOILER AND PRESSURE VESSEL CODE, SECTION XI
ENTERGY OPERATIONS, INC.
ARKANSAS NUCLEAR ONE, UNIT 2
DOCKET NO. 50-368

1.0 INTRODUCTION

By letter dated August 22, 2007, Entergy Operations, Inc. (Entergy, the licensee) submitted a request, pursuant to paragraph 50.55a(g)(4)(iv) of Title 10 of the *Code of Federal Regulations* (10 CFR), to use the 2001 Edition through the 2003 Addenda of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (Code), Section XI, for inservice inspection (ISI)-related activities associated with repair/replacement, pressure testing, and nondestructive examination (NDE) at Arkansas Nuclear One, Unit 2 (ANO-2). The current ISI Code of record for ANO-2 is the 1992 Edition of the ASME Code, Section XI. Additionally, in regard to performance demonstration of ultrasonic examinations, Entergy requests permission to use the 2001 Edition with no Addenda of Appendix VIII of the ASME Code, Section XI, as specified in 10 CFR 50.55a(b)(2)(xxiv). The approval of a subsequent edition and addenda of the ASME Code will allow Entergy to maintain a standard program among its southern facilities for repair/replacement, pressure testing, and NDE activities. This request is for the remainder of the third 10-year ISI interval which is scheduled to end on or about March 25, 2010.

The licensee submitted its request in accordance with the guidance provided in the U.S. Nuclear Regulatory Commission (NRC) Regulatory Issue Summary (RIS) 2004-16, dated October 19, 2004. In RIS 2004-16, the NRC staff stated that licensees who wish to use provisions of subsequent editions and addenda of the ASME Code, Section XI, for ISI-related activities, including repair/replacement activities, must receive prior NRC approval as required by 10 CFR 50.55a(g)(4)(iv).

2.0 REGULATORY REQUIREMENTS

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 pre-service examination requirements, set forth in the ASME Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," to the extent practical within the limitations of design, geometry, and materials of construction of the components.

Paragraph 50.55a(g)(4)(ii) of 10 CFR requires that ISI examination of components and system pressure tests conducted during successive 120-month inspection intervals must 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 repair, replacement, and modification of plant components are not explicitly mentioned in 10 CFR 50.55a(g)(4) and associated subparagraphs; however, these activities are specifically mentioned in ASME Code, Section XI. The NRC staff maintains that these activities are not separate and distinct but are included under inservice examinations. Therefore, the requirements of 10 CFR 50.55a(g)(4)(iv) are applicable to repair/replacement activities.

Paragraph 50.55a(g)(4)(iv) states that 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 limitations and modifications 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. Currently, 10 CFR 50.55a(b)(2) incorporates by reference the ASME Code, Section XI, 1970 Edition through the 1976 Winter Addenda, and the 1977 Edition (Division 1) through the 2003 Addenda (Division 1).

3.0 REQUEST TO USE A SUBSEQUENT EDITION AND ADDENDA TO ASME CODE SECTION XI, FOR REPAIR/REPLACEMENT ACTIVITIES

3.1 ASME Code Component(s) Affected (As Stated by Licensee)

All Class 1, 2, 3, MC, and CC components, component supports, and welds in the ASME Code, Section XI, pressure boundary at ANO-2.

3.2 Applicable Code Requirements (As Stated by Licensee)

Inservice inspection (ISI) related activities such as repair/replacements, pressure testing, and non-destructive examination (NDE) are currently performed at ANO-2 in accordance with the 1992 Edition of ASME Section XI with the exceptions listed below:

- Pressure testing is performed in accordance with the 1992 Edition with portions of the 1993 Addenda. (Ref: NRC SER [Safety Evaluation Report] dated December 12, 1996 – TAC No. M94471)
- Ultrasonic examinations are performed in accordance with the 1995 Edition, 1996 Addenda. (Ref: NRC SER dated January 5, 2006 – TAC No. MC 8046)
- ISI of Class MC (including metallic liners) and Class CC containments are performed in accordance with the 1992 Edition/1992 Addenda with portions of the 1998 Edition/2000 Addenda. (Ref: NRC SER dated December 21, 2004 – TAC No. MC5026)

3.3 Proposed Subsequent Code Edition and Requirements

The licensee proposes to use the 2001 Edition through the 2003 Addenda of ASME Code, Section XI, at ANO-2 for the performance of repair/replacement, pressure testing, and NDE activities. This ASME Code edition is approved for use pursuant to 10 CFR 50.55a(b)(2). To comply with the NRC restriction in 10 CFR 50.55a(b)(2)(xxiv), the 2001 Edition with no Addenda of Appendix VIII will be used for performance demonstration of ultrasonic examinations.

ASME Code, Section XI, activities at Arkansas Nuclear One, Unit 1 (ANO-1), and ANO-2, Grand Gulf Nuclear Station (GGNS), River Bend Station (RBS), and Waterford Steam Electric Station, Unit 3 (WF3), are currently performed in accordance with the Editions/Addenda of the ASME Code, Section XI, identified in Section 3.2 above. As of May 31, 2008, the ISI code of record of ANO-1, GGNS, RBS, and WF3 will be updated to the 2001 Edition/2003 Addenda of Section XI in accordance with the 10-year update requirements of 10 CFR 50.55a(g)(4)(ii). Also, to comply with the NRC restriction in 10 CFR 50.55a(b)(2)(xxiv), performance demonstration of ultrasonic examinations will be in accordance with the 2001 Edition/No Addenda of Appendix VIII. Because ANO-2 is only in the eighth year of its third 10-year ISI interval, its ISI-related activities Code of record is not scheduled for update until March 26, 2010.

The use of the 2001 Edition through the 2003 Addenda of the ASME Code, Section XI, for repair/replacement, pressure testing, and NDE activities, and the 2001 Edition with no Addenda of Appendix VIII for performance demonstration of ultrasonic examinations, will allow the licensee to standardize and corporately implement and administer Section XI activities.

3.4 Related Requirements

Entergy will comply with all related requirements in the ASME Code, Section XI, as described below:

- Entergy has proposed to utilize all “Articles” (e.g. IWA-1000, IWA-2000, etc.) from every “Subsection” (e.g., IWA, IWB, etc.) of the 2001 Edition through the 2003 Addenda that could be used or referenced for the performance of repair/replacement, pressure testing, and NDE activities. Entergy has also stated that it will comply with all “Mandatory Appendices” of the 2001 Edition through the 2003 Addenda.
- Entergy will only use Appendix VIII from the 2001 Edition of ASME Code, Section XI, in accordance with the NRC restriction in 10 CFR 50.55a(b)(2)(xxiv). However, this appendix includes all pertinent requirements for performance demonstration of ultrasonic examination systems.
- With regard to the performance of ISI examinations and tests, Entergy will continue to select, plan, and schedule these ISI activities—as specified in IWA-, IWB-, IWC-, IWD-, IWE-, IWF-, and IWL-2500—in accordance with its current Code of record. To ensure that all related requirements are met, ANO-2 will also continue to comply with applicable portions of IWA-2000 and all provisions of IWB-, IWC-, IWD-, IWE-, IWF-, and IWL-1000 and 2000 from its original Code of record.

4.0 STAFF EVALUATION

The NRC staff evaluated the licensee's request to use 10 CFR 50.55a(g)(4)(iv), which states that 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 provisions of 10 CFR 50.55a(g)(4)(iv) are satisfied. The licensee has addressed the provisions of 10 CFR 50.55a(g)(4)(iv) as follows:

The proposed edition and addenda should be incorporated by reference in 10 CFR 50.55a(b). Currently, 10 CFR 50.55a(b)(2) incorporates by reference the ASME Code, Section XI, 1970 Edition through the 1976 Winter Addenda, and the 1977 Edition (Division 1) through the 2003 Addenda (Division 1), which includes the 2001 Edition through the 2003 Addenda of the ASME Code, Section XI, proposed by the licensee.

The limitations and modifications listed in 10 CFR 50.55a(b) should be satisfied for the specific use of the proposed subsequent ASME Code edition and addenda. The licensee has satisfactorily identified the restrictions on the use of ASME Code, Section XI, 2001 Edition through the 2003 Addenda specified in 10 CFR 50.55a(b) in its submittal of August 22, 2007.

If portions of subsequent Code editions or addenda 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 the 2001 Edition through the 2003 Addenda of the ASME Code, Section XI, that are relevant to repair/replacement, pressure testing, and NDE activities.

Based on the above, the NRC staff finds that the provisions of 10 CFR 50.55a(g)(4)(iv) are satisfied and that the licensee's request to use the 2001 Edition through the 2003 Addenda of Section XI of the ASME Code for repair/replacement, pressure testing, and NDE activities is acceptable.

5.0 CONCLUSION

The NRC staff concludes that the proposed request to use the 2001 Edition through the 2003 Addenda of Section XI to the ASME Code for repair/replacement, pressure testing, and NDE activities has addressed all related requirements and associated modifications and limitations in 10 CFR 50.55a(b). Therefore, pursuant to 10 CFR 50.55a(g)(4)(iv), the NRC staff approves the use of the 2001 Edition through the 2003 Addenda of Section XI of the ASME Code for repair/replacement, pressure testing, and NDE activities for the remainder of the third 10-year ISI interval at ANO-2 consistent with the limitations stated in 10 CFR 50.55a(b)(2)(xxiv) regarding the implementation of Appendix VIII of Section XI to the ASME Code.

Principal Contributor: C. Nove

Date: December 20, 2007