



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

August 8, 2015

Mr. Joseph W. Shea
Vice President, Nuclear Licensing
Tennessee Valley Authority
1101 Market Street, LP 3R-C
Chattanooga, TN 37402-2801

SUBJECT: WATTS BAR NUCLEAR PLANT, UNIT 2 – RELIEF FROM THE
REQUIREMENTS OF THE ASME CODE FOR THE FIRST 10-YEAR INTERVAL
OF THE CONTAINMENT INSERVICE INSPECTION (TAC NO. MF6154)

Dear Mr. Shea:

By letter dated March 17, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15077A180), as supplemented by letter dated June 15, 2015 (ADAMS Accession No. ML15168A041), Tennessee Valley Authority (TVA, the licensee) requested authorization to use an alternative edition and addenda of American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, for the Watts Bar Nuclear Plant (WBN), Unit 2, Containment Inservice Inspection Program.

Specifically, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a(z)(1), the licensee requested to use the proposed alternative on the basis that the alternative provides an acceptable level of quality and safety.

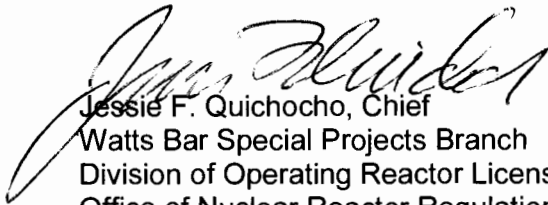
The U.S. Nuclear Regulatory Commission staff has reviewed the subject request and concludes, as set forth in the enclosed safety evaluation, that TVA has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(z)(1), and TVA is in compliance with ASME Code requirements.

J. Shea

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If you have any questions, please contact Mr. Justin Poole at (301) 415-2048 or Justin.Poole@nrc.gov.

Sincerely,



Jessie F. Quichocho, Chief
Watts Bar Special Projects Branch
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-391

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

RELIEF REQUEST REGARDING THE USE OF ALTERNATIVE AMERICAN

SOCIETY OF MECHANICAL ENGINEERS CODE EDITION AND ADDENDA

FOR CONTAINMENT INSERVICE INSPECTION

TENNESSEE VALLEY AUTHORITY

WATTS BAR NUCLEAR PLANT, UNIT 2

DOCKET NO. 50-391

1.0 INTRODUCTION

By letter dated March 17, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15077A180), as supplemented by letter dated June 15, 2015 (ADAMS Accession No. ML15168A041), Tennessee Valley Authority (TVA, the licensee) requested authorization to use an alternative edition and addenda of American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, for the Watts Bar Nuclear Plant, Unit 2 (WBN-2), Containment Inservice Inspection (CISI) Program.

Title 10 of the *Code of Federal Regulations* (10 CFR), paragraph 50.55a(b)(2)(vi), allows applicants or licensees to use either the 1992 Edition with the 1992 Addenda, or the 1995 Edition with the 1996 Addenda of ASME Code, Section XI, as conditioned by the requirements in 10 CFR 50.55a(b)(2)(viii) for concrete containments and 10 CFR 50.55a(b)(2)(ix) for metal containments when implementing the CISI requirements for the initial 120-month interval. However, instead of using either the 1992 Edition with the 1992 Addenda, or the 1995 Edition with the 1996 Addenda, the licensee proposed, pursuant to 10 CFR 50.55a(z)(1), to use the 2007 Edition with 2008 Addenda of ASME Code, Section XI, subject to the conditions listed in 10 CFR 50.55a(b)(2)(ix), for inservice inspection (ISI) of ASME Code Class metal containment (MC) components at WBN-2 for the initial 120-month inspection interval.

2.0 REGULATORY EVALUATION

General Design Criteria 1 in Appendix A to 10 CFR 50 requires that structures, systems, and components important to safety be designed, fabricated, erected, and tested to quality standards commensurate with the importance of the safety functions to be performed and that, where generally recognized codes and standards are used, they shall be identified and evaluated to determine their applicability, adequacy, and sufficiency and shall be supplemented or modified as necessary to assure a quality product in keeping with the required safety function.

As required by 10 CFR 50.55a(g)(4), throughout the service life of a boiling or pressurized water-cooled nuclear power facility, components that are classified as ASME Class MC (metal

containment) pressure retaining components and their integral attachments, and components that are classified as ASME Class CC (concrete containment) pressure retaining components and their integral attachments must meet the requirements, except design and access provisions and preservice examination requirements, set forth in Section XI of the ASME Code and addenda that are incorporated by reference in 10 CFR 50.55a(a)(1)(ii), subject to the condition listed in 10 CFR 50.55a(b)(2)(vi) and the conditions listed in 10 CFR 50.55a(b)(2)(viii) and 10 CFR 50.55a(b)(2)(ix), to the extent practical within the limitation of design, geometry, and materials of construction of the components.

In 10 CFR 50.55a(b)(2)(vi), a condition is set forth for ASME Code, Section XI, with respect to the effective edition and addenda of Subsections IWE and IWL, which allows applicants or licensees to use either the 1992 Edition with the 1992 Addenda, or the 1995 Edition with the 1996 Addenda, as conditioned by the requirements in paragraphs 10 CFR 50.55a(b)(2)(viii) and (ix), when implementing the CISI requirements for the initial 120-month inspection interval. The condition also requires that successive 120-month interval updates be implemented in accordance with 10 CFR 50.55a(g)(4)(ii). It is noted that 10 CFR 50.55a(b)(2)(vi) does not provide an option for applicants or licensees to choose any other editions or addenda than those mentioned in this paragraph for the initial 120-month containment ISI interval.

The requirements of 10 CFR 50.55a(z) allow alternatives to the codes and standards requirements of 10 CFR 50.55a(b) through 10 CFR 50.55a(h), or portions thereof, to be used when authorized by the Director of the Office of Nuclear Reactor Regulation, NRC, or the Director of the Office of New Reactors, NRC, as appropriate. A proposed alternative must be submitted and authorized prior to implementation, and the applicant or licensee must demonstrate that (1) the proposed alternative would provide an acceptable level of quality and safety; or (2) compliance with the specified requirements of 10 CFR 50.55a would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

3.0 TECHNICAL EVALUATION

3.1 The Licensee's Relief Request

The licensee requests authorization, pursuant to 10 CFR 50.55a(z)(1), to use an alternative edition and addenda of ASME Code, Section XI, for the CISI Program for ASME Code Class MC components at WBN-2 for the initial 120-month inspection interval beginning at commercial operation. The proposed alternative is to use the 2007 Edition with the 2008 Addenda of ASME Code, Section XI, incorporated by reference in 10 CFR 50.55a(a)(1)(ii) and conditioned by 10 CFR 50.55a(b)(2)(ix).

The licensee notes that the condition set forth in 10 CFR 50.55a(b)(2)(vi) regarding the initial 120-month interval of ISI requirements for ASME Code Class MC components allows the WBN-2 code of record to be in accordance with only either the 1992 Edition with 1992 Addenda, or the 1995 Edition with the 1996 Addenda of ASME Code, Section XI, and that no alternative editions and addenda are provided as options.

The licensee points out that using the older codes required by 10 CFR 50.55a(b)(2)(vi) would result in WBN-2 committing to use a code that is older than the code being used for the

preservice inspection, which is being conducted, to the 2001 Edition with 2003 Addenda of ASME Code, Section XI. The licensee also states that the latest approved edition and addenda of ASME Code, Section XI, for CISIs incorporate years of experience and lessons learned and that going back to the older 1992 Edition with 1992 Addenda, or the 1995 Edition with the 1996 Addenda, would negate the advancements made in recent years in application of ASME Code, Section XI, and would require multiple relief requests from ASME Code, Section XI. The licensee provided information about previous relief requests made by TVA and approved by the NRC for WBN, Unit 1, associated with ASME Code Section XI and indicated that these relief requests are also applicable to WBN-2 and are reflected in later Editions and Addenda (including the 2007 Edition with the 2008 Addenda) of ASME Code Section XI.

3.2 NRC Staff Evaluation

The ISI program for ASME Class MC components at WBN-2 must meet the requirements set forth in Section XI of the ASME Code and addenda that are incorporated by reference in 10 CFR 50.55a(a)(1)(ii) and subject to the conditions set forth in 10 CFR 50.55a(b)(2)(vi) and 10 CFR 50.55a(b)(2)(ix). The condition set forth in 10 CFR 50.55a(b)(2)(vi) regarding the initial 120-month interval of ISI requirements for ASME Code Class MC components allows only either the 1992 Edition with 1992 Addenda or the 1995 Edition with the 1996 Addenda of ASME Code, Section XI, to be used by the licensee and no alternative editions and addenda are provided as options.

The NRC staff notes that as discussed in the statements of consideration (61 *Federal Register* (FR) 41303; August 8, 1996 and 64 FR 51370; September 22, 1999), the provision in 10 CFR 50.55a(b)(2)(vi) requiring the use of either the 1992 Edition with the 1992 Addenda or the 1995 Edition with the 1996 Addenda of ASME Code Section XI when implementing the initial 120-month containment ISI interval was adopted to address expedited examination of containment during the 5-year period from September 1996 to September 2001, and the expedited examination involved the completion of the first set of examinations of the initial 120-month containment inspection interval. Further, as noted in the statements of consideration, the 1992 Edition with the 1992 Addenda was included in the rule because it was the earliest version of the ASME Code the staff found Subsections IWE and IWL acceptable. Also, the staff notes that the 2007 Edition through the 2008 Addenda proposed by the licensee as an alternative to the 10 CFR 50.55a(b)(2)(vi) requirements is the most recent version of the code endorsed in 10 CFR 50.55a.

Therefore, the licensee's request, pursuant to 10 CFR 50.55a(z)(1), to use the 2007 Edition with the 2008 Addenda, as an alternative to either the 1992 Edition with the 1992 Addenda or the 1995 Edition with the 1996 Addenda, of ASME Code Section XI incorporated by reference in 10 CFR 50.55a(a)(1)(ii) and conditioned by 10 CFR 50.55a(b)(2)(ix), for ISI of ASME Code Class MC components at WBN-2, for the initial 120-month inspection interval is acceptable. The NRC staff finds the proposed alternative would provide an acceptable level of quality and safety.

4.0 CONCLUSION

As set forth above, the NRC staff determines that use of the 2007 Edition with the 2008 Addenda of ASME Code, Section XI, 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) and is in compliance with ASME Code requirements. Therefore, the NRC staff authorizes the use of the 2007 Edition with 2008 Addenda of ASME Code, Section XI, subject to the conditions listed in 10 CFR 50.55a(b)(2)(ix) for ISI of ASME Code Class MC components at WBN-2 for the initial 120-month inspection interval. All other ASME Code requirements for which relief was not specifically requested and approved remain applicable, including third-party review by the authorized nuclear inservice inspector.

Principal Contributor: S. Park

Date: August 8, 2015.

J. Shea

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If you have any questions, please contact Mr. Justin Poole at (301) 415-2048 or Justin.Poole@nrc.gov.

Sincerely,

/RA/

Jessie F. Quichocho, Chief
Watts Bar Special Projects Branch
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-391

Enclosure:
Safety Evaluation

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NAME	RKuntz	BClayton LRonewicz for	TLupold*	JQuichocho
DATE	8/5/15	8/5/15	8/6/15	8/8/15

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