



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

May 13, 2011

Mr. R. M. Krich  
Vice President, Nuclear Licensing  
Tennessee Valley Authority  
3R Lookout Place  
1101 Market Street  
Chattanooga, TN 37402-2801

SUBJECT: BROWNS FERRY NUCLEAR PLANT, UNITS 1 AND 3 – REQUEST TO  
USE SUBSEQUENT EDITION OF ASME CODE REPAIR AND  
REPLACEMENT ACTIVITIES (TAC NOS. ME4672 AND ME4673)

Dear Mr. Krich:

By letter dated July 1, 2010, the Tennessee Valley Authority (TVA, the licensee) submitted a request to the Nuclear Regulatory Commission (NRC) for approval to adopt certain American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, requirements at Browns Ferry Nuclear Plant (BFN), Units 1 and 3.

Specifically, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR), Section 55a(g)(4)(iv), the licensee requested NRC approval to use a later code edition and addenda for inservice inspection items, subject to the limitations and modifications listed in 10 CFR 50.55a(b). The licensee proposed to adopt the requirements for repair and replacement activities specified in the 2004 Edition of the ASME Code, Section XI, Article IWA-4000, "Repair/Replacement Activities," in its entirety, and all related requirements for repair and replacement activities for the subject units. The 2001 Edition, 2003 Addenda of the ASME Code is the current code of record for BFN Units 1 and 3.

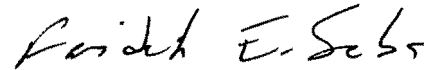
The NRC staff has reviewed the subject request and concludes, as set forth in the enclosed safety evaluation, that TVA has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(g)(4)(iv).

R. Krich

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If you have any questions, please contact the Browns Ferry Nuclear Plant Project Manager, Mr. Christopher Gratton, at 301-415-1055.

Sincerely,

A handwritten signature in black ink, appearing to read "Douglas A. Broaddus".

*for*

Douglas A. Broaddus, Branch Chief  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-259 and 50-296

Enclosure: Safety Evaluation

cc w/encl: Distribution via ListServ



UNITED STATES  
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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

REQUEST TO USE SUBSEQUENT EDITION OF ASME CODE, SECTION XI,

FOR REPAIR AND REPLACEMENT ACTIVITIES

TENNESSEE VALLEY AUTHORITY

BROWNS FERRY NUCLEAR PLANT, UNITS 1 AND 3

DOCKET NOS. 50-259 AND 50-296

1.0 INTRODUCTION

By letter dated July 1, 2010 (Agencywide Documents Access and Management System Accession Number ML101870599), the Tennessee Valley Authority (the licensee) requested authorization to adopt a later version of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (ASME Code) for Browns Ferry Nuclear Plant (BFN), Units 1 and 3. Specifically, the licensee proposed to adopt the requirements for repair and replacement activities specified in the 2004 Edition of the ASME Code, Section XI, Article IWA-4000, "Repair/Replacement Activities."

2.0 REGULATORY REQUIREMENTS

Pursuant to Title 10 of the *Code of Federal Regulations (10 CFR)*, Part 50, Section 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 [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 inservice examination of components and system pressure tests conducted during the first 10-year inspection interval and subsequent 10-year inspection 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 inspection interval, subject to the limitations and modifications listed therein.

Pursuant to 10 CFR 50.55a(g)(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 10 CFR 50.55a(b), subject to the limitations and modifications listed therein, 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.

The ASME Code of record for BFN Unit 1 for the second 10-year ISI interval, that is scheduled to end on June 1, 2017, is the 2001 Edition through the 2003 Addenda of the ASME Code, Section XI.

The AMSE Code of record for BFN Unit 3 for the third 10-year ISI interval, that is scheduled to end on November 18, 2015, is the 2001 Edition through the 2003 Addenda of the ASME Code, Section XI.

### 3.0 TECHNICAL EVALUATION

#### 3.1 Licensee's Approval Request

In accordance with the provisions of 10 CFR 50.55a(g)(4)(iv), the licensee requested approval to adopt the requirements for repair and replacement activities specified in the 2004 Edition of the ASME Code, Section XI, Article IWA-4000, with all related requirements, for BFN Unit 1 and BFN Unit 3. BFN Unit 2 has adopted the 2004 ASME Code, Section XI, for the fourth 10-year interval that is scheduled to start on May 25, 2011, and is scheduled to end on May 24, 2021. This requested change for Unit 1 and Unit 3 would allow all three operating units to use the same ASME Code requirements for repair and replacement activities.

#### 3.2 Nuclear Regulatory Commission (NRC) Staff Evaluation

The licensee is requesting to use the 2004 Edition of the ASME Code, Section XI, Article IWA-4000, for repair and replacement activities in lieu of the same article in the 2001 Edition through 2003 Addenda of the ASME Code. Pursuant to 10 CFR 50.55a(g)(4)(iv), portions of later editions and addenda of the ASME Code that are incorporated by reference in 10 CFR 50.55a(b), subject to the limitations and modifications listed therein, and subject to Commission approval, may be used provided that all related requirements of the respective editions or addenda are met. The 2004 Edition of the ASME Section XI Code has been incorporated by reference in 10 CFR 50.55a(b)(2). The restrictions pertaining to the use of the 2004 Edition ASME Code, Section XI, Article IWA-4000 include:

In accordance with 10 CFR 50.55a(b)(2)(xii), the provisions in IWA-4660, "Underwater Welding," are not approved for use on irradiated material.

In accordance with 10 CFR 50.55a(b)(2)(xix), the provisions in IWA-4520(c) allowing the substitution of alternative examination methods, a combination of methods, or newly developed techniques for the methods specified in the Construction Code are not approved for use.

In accordance with 10 CFR 50.55a(b)(2)(xx), the non-destructive examination provision in IWA-4540(a)(2) of the 2002 Addenda of Section XI must be applied when performing system leakage tests after repair and replacement activities performed by welding or brazing on a pressure retaining boundary.

In accordance with 10 CFR 50.55a(b)(2)(xxiii), the use of the provisions for eliminating mechanical processing of thermally cut surfaces in IWA-4461.4.2 is prohibited.

In accordance with 10 CFR 50.55a(b)(2)(xxv), the use of the provisions in IWA-4340, "Mitigation of Defects by Modification," is prohibited.

In accordance with 10 CFR 50.55a(b)(2)(xxvi), the repair and replacement activity provisions in IWA-4540(c) of the 1998 Edition of Section XI for pressure testing Class 1, 2, and 3 mechanical joints must be applied.

The NRC staff finds that having repair and replacement activities based on separate editions of the ASME Code implemented for the three BFN units can possibly create procedural and programmatic differences that could potentially result in implementation errors. Having the repair and replacement activities for all three BFN units based on the same ASME Code edition can eliminate such differences and should provide for more cohesive programs for repairs, replacements, and pressure testing. Therefore, the NRC staff finds that adopting the 2004 Edition of the ASME Code, Section XI, Article IWA-4000, with the restrictions specified in 10 CFR 50.55a(b) for BFN Units 1 and 3, will provide an acceptable level of quality and safety.

#### 4.0 CONCLUSION

Pursuant to 10 CFR 50.55a(g)(4)(iv), the licensee's request for NRC approval to use the 2004 Edition of the ASME Code, Section XI, Article IWA-4000, subject to the restrictions of 10 CFR 50.55a(b), in lieu of the 2001 Edition through the 2003 Addenda of the Code, Section XI, Article IWA-4000, is approved. This approval is effective May 25, 2011, for the remainder of the second 10-year ISI interval at BFN Unit 1, ending on June 1, 2017, and for the remainder of the third 10-year ISI interval at BFN Unit 3, ending on November 18, 2015.

Principal Contributor: Jay Wallace

Date: May 13, 2011

R. Krich

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If you have any questions, please contact the Browns Ferry Nuclear Plant Project Manager, Mr. Christopher Gratton, at 301-415-1055.

Sincerely,

***/RA by FSaba for/***

Douglas A. Broaddus, Branch Chief  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-259 and 50-296

Enclosure: Safety Evaluation

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