



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

February 2, 2009

Mr. William R. Campbell, Jr.
Chief Nuclear Officer and
Executive Vice President
Tennessee Valley Authority
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

SUBJECT: BROWNS FERRY NUCLEAR PLANT, UNITS 1, 2, AND 3 - SAFETY
EVALUATION FOR A REQUEST TO USE A PARAGRAPH FROM A LATER
EDITION OF THE ASME CODE, SECTION XI, AND THE ASME OM CODE
(TAC NOS. MD8609, MD8610, AND MD8611)

Dear Mr. Campbell:

By letter dated April 22, 2008, the Tennessee Valley Authority, the licensee, submitted a request for relief from the inservice testing (IST) requirements specified in American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Plants (OM Code). In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.55a(f)(4)(iv), the request proposes to use a portion of a later edition of the ASME Code for Operation and Maintenance of Nuclear Power Plants (OM Code) at Units 1, 2 and 3. Specifically, the licensee is requesting to eliminate IST activities as a duty of the Authorized Inspection Agency and Inspectors (AIAI), by adopting those provisions of OM Code incorporated by reference in 10 CFR 50.55a(b)(3).

Based on the review contained in the enclosed safety evaluation, the NRC staff finds these requests acceptable. It should be noted that this approval does not affect inservice inspection system pressure testing activities, and that the NRC staff expects that TVA will continue to involve the AIAI in the Unit 2 system pressure testing activities applicable to the current inspection interval.

This request is authorized for the remainder of the third 10-year IST interval at the Browns Ferry Nuclear Plant units, which began August 30 2002, and ends August 31, 2012.

Sincerely,

A handwritten signature in black ink, appearing to read "T. H. Boyce", written over a horizontal line.

Thomas H. Boyce, Chief
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-259, 50-260, and 50-296

Enclosure: Safety Evaluation

cc w/encl: Distribution via Listserv



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

INSERVICE TESTING PROGRAM

RELIEF REQUEST

TENNESSEE VALLEY AUTHORITY

BROWNS FERRY NUCLEAR PLANT, UNITS 1, 2, AND 3

DOCKET NOS. 50-259, 50-260, AND 50-296

1.0 INTRODUCTION

By letter dated April 22, 2008, the Tennessee Valley Authority, the licensee, submitted a request regarding the use of a portion of a later edition of the American Society of Mechanical Engineers Code (ASME Code) for Operation and Maintenance of Nuclear Power Plants (OM Code) and Section XI, *Rules for Inservice Inspection of Nuclear Power Plant Components*, of the ASME Code (Section XI) with regards to the duties of the Authorized Inspection Agency and Inspectors (AIAI) during inservice testing (IST). In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) Sections 50.55a(f)(4)(iv) for Units 1 and 3 and 50.55a(g)(4)(iv), for Unit 2, the request proposes to eliminate IST activities as a duty of the AIAI, by adopting those provisions of the OM Code incorporated by reference in 10 CFR 50.55a(b)(3).

The Nuclear Regulatory Commission (NRC) staff notes that this request is not intended to relieve the AIAI of the review of Unit 2 inservice inspection (ISI) system pressure testing performed in accordance with Section XI, *Rules for Inservice Inspection of Nuclear Power Plant Components*, of the ASME Code. To that end, TVA will continue to involve the AIAI in the Unit 2 system pressure testing activities applicable to the current inspection interval.

The subject requests are for the third 10-year ISI interval at the Browns Ferry units, which began August 30 2002, and ends August 31, 2012, for the remainder of the third 10-year ISI interval.

2.0 REGULATORY REQUIREMENTS

Section 50.55a of 10 CFR, requires that IST of certain ASME Code Class 1, 2, and 3 pumps and valves be performed at 120-month (10-year) IST program intervals in accordance with the specified ASME Code and applicable addenda incorporated by reference in the regulations, except where alternatives have been authorized or relief has been requested by the licensee and granted by the NRC pursuant to paragraphs (a)(3)(i), (a)(3)(ii), or (f)(6)(i) of 10 CFR 50.55a.

In accordance with 10 CFR 50.55a(f)(4)(ii), licensees are required to comply with the requirements of the latest edition and addenda of the ASME Code incorporated by reference in the regulations 12 months prior to the start of each 120-month IST program interval. In accordance with 10 CFR 50.55a(f)(4)(iv), IST of pumps and valves may meet the requirements set forth in subsequent editions and addenda that are incorporated by reference in 10 CFR 50.55a(b), subject

to NRC approval. Portions of editions or addenda may be used provided that all related requirements of the respective editions and addenda are met.

NRC guidance contained in Generic Letter (GL) 89-04, *Guidance on Developing Acceptable Inservice Testing Programs*, provides alternatives to ASME Code requirements which are acceptable. Further guidance is given in GL 89-04, Supplement 1, and NUREG-1482 Revision 1, *Guidance for Inservice Testing at Nuclear Power Plants*.

The ISI of the ASME Code Class 1, 2, and 3 components is to be performed in accordance with Section XI of the ASME Code and applicable edition and addenda as required by 10 CFR 50.55a(g), except where specific relief has been granted by the NRC pursuant to paragraphs (a)(3)(i), (a)(3)(ii), or (g)(6)(i) of 10 CFR 50.55a. Section 50.55a(a)(3) of 10 CFR states, in part, that alternatives to the requirements of paragraph (g) may be used when authorized by the NRC, if the applicant demonstrates that: (i) the proposed alternatives would provide an acceptable level of quality and safety, or (ii) compliance with the specified requirements 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) will 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 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 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. It states in 10 CFR 50.55a(g)(4)(iv) that 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 modification listed in 10 CFR 50.55a(b) and subject to NRC approval. Portions of editions or addenda may be used provided that all related requirements of the respective editions or addenda are met.

3.0 REQUEST

3.1 Affected Components

All pumps and valves in the Units 1, 2, and 3 IST program.

3.2 Applicable Code

Units 1 and 3 - ASME OM Code, 1995 Edition through 1996 Addenda

Unit 2 - ASME Code, Section XI, 1995 Edition through 1996 Addenda, and ASME OM Code, 1995 Edition through 1996 Addenda

3.3 Proposed Portion of Subsequent Code Edition and Addenda

Units 1 and 3 - 2001 Edition through 2003 Addenda of the ASME OM Code, Paragraph ISTA-1500.

Unit 2 - 2001 Edition through 2003 Addenda of the ASME Code, Section XI, Paragraph IWA-2110, and 2001 Edition through 2003 Addenda of the ASME OM Code, Paragraph ISTA-1500.

3.4 Technical Bases

The 2001 Edition through 2003 Addenda of the ASME OM Code has been incorporated by reference in 10 CFR 50.55a(b)(3), subject to the modifications and limitations imposed by 10 CFR 50.55a(b)(3).

The 2001 Edition through 2003 Addenda of the ASME Code, Section XI, has been incorporated by reference in 10 CFR 50.55a(b)(2), subject to the modifications and limitations imposed by 10 CFR 50.55a(b)(2).

3.5 Duration of Proposed Request

The duration of the proposed request is through the third IST interval, which ends August 31, 2012, for Units 1, 2, and 3.

3.6 Technical Evaluation

Units 1 and 3

The requirements of 10 CFR 50.55a(f)(4)(iv) allow licensees to use subsequent editions and addenda of the ASME OM Code, provided that editions and addenda 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. The requirements of 10 CFR 50.55a(b)(3) allow use of the 2001 Edition through 2003 Addenda of the OM Code, subject to the modifications and limitations imposed by 10 CFR 50.55a(b)(3).

The differences between Paragraph ISTA 1.4 in the 1995 Edition through 1996 Addenda of the OM Code and Paragraph ISTA-1500 in the 2001 Edition through 2003 Addenda of the OM Code are that in the 2001 Edition through 2003 Addenda:

(1) An Authorized Inspection Agency (AIA) is not required to provide inspection services for the pump and valve IST and;

(2) The Owner shall qualify personnel who perform and evaluate examinations and tests in accordance with the Owner's quality assurance program, instead of only verifying the qualifications of these personnel.

Pump and valve IST mainly involves operating the equipment and recording data. Because of this, there is no practical need to have an AIA involved in the pump and valve IST. This is the reason

that the requirement for an AIA was removed from the ASME OM Code in the 2001 Edition through 2003 Addenda.

Based on the above, the NRC staff finds the licensee's request to use the 2001 Edition through 2003 Addenda of the ASME OM Code, Paragraph ISTA-1500, for pump and valve IST for the remainder of the third 10-year IST interval at Units 1 and 3 acceptable, provided that all related requirements are met, and subject to the limitations and modifications listed in 10 CFR 50.55a(b).

Unit 2

As indicated in Section 3.3, the Unit 2 ISI program from which portions of the requirements are located is different than the Units 1 and 3 requirements. The requirements of 10 CFR 50.55a(g)(4)(iv) allow licensees to use subsequent editions and addenda of Section XI of the ASME Code, provided that editions and addenda 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. The requirements of 10 CFR 50.55a(b)(2) allow use of the 2001 Edition through 2003 Addenda of the ASME Code, Section XI, subject to the modifications and limitations imposed by 10 CFR 50.55a(b)(2).

It is stated in Paragraph IWA-2110(c) of the 1995 Edition through 1996 Addenda of the ASME Code, Section XI, that "it is the duty of the Inspector to verify that the inservice tests required on pumps, valves, and component supports (IWF, IWP, and IWV) have been completed and the results recorded." This requirement is not contained in the 2001 Edition through 2003 Addenda of the ASME Code, Section XI. Also, in the 1995 Edition through 1996 Addenda of the ASME Code, Section XI, it is stated in Paragraph IWP-1100 that "pump testing shall be performed in accordance with the requirements stated in ASME/American National Standards Institute (ANSI) OM, Part 6," and it is stated in Paragraph IWV-1100 that "valve testing shall be performed in accordance with the requirements stated in ASME/ANSI OM, Part 10." Pump and valve IST was removed from the scope of ASME Code Section XI with the 2001 Edition through 2003 Addenda, along with the requirement for an AIA for pump and valve IST, as stated above. The use of Paragraph IWA-2110 of the 2001 Edition of the ASME Code, Section XI eliminates the AIA requirement, which aligns it with the 2001 Edition through 2003 Addenda of the ASME OM Code, as stated above.

Given that the licensee has requested to remove the AIAI duties related only to IST, it is recognized by the NRC staff that no alternative under 10 CFR 50.55a(g)(4)(iv) is being requested. Additionally, approval of this request is not intended to relieve the AIAI of the review of Unit 2 ISI system pressure testing performed in accordance with Section XI of the ASME Code. Therefore, it should be noted that this approval does not affect ISI activities and the NRC staff expects that TVA will continue to involve the AIAI in the Unit 2 system pressure testing activities applicable to the current inspection interval.

The NRC staff also finds the licensee's request to use the 2001 Edition through 2003 Addenda of Section XI of the ASME Code, Paragraph IWA-2110 for pump and valve IST for the remainder of the third 10-year IST interval at Unit 2 acceptable, provided that all related requirements are met, and subject to the limitations and modifications listed in 10 CFR 50.55a(b).

4.0 CONCLUSION

Based on the information provided in the licensee's submittals, the NRC staff has determined that, pursuant to 10 CFR 50.55a(f)(4)(iv), the NRC staff approves the request to use the 2001 Edition through 2003 Addenda of the ASME OM Code, Paragraph ISTA-1500, in lieu of the 1995 Edition through 1996 Addenda of the ASME OM Code, Paragraph ISTA 1.4 for Units 1 and 3. For Unit 2, pursuant to 10 CFR 50.55a(g)(4)(iv), the NRC staff approves the request to use the 2001 Edition through 2003 Addenda of the ASME Code, Section XI, Paragraph IWA-2110 in lieu of the 1995 Edition through 1996 Addenda of the ASME Code, Section XI, Paragraph IWA-2110.

These authorizations are for the remainder of the third 10-year ISI interval at the Browns Ferry units, which began August 30 2002, and ends August 31, 2012, and is limited to those components described in Section 3.1 above.

Principal Contributors: Robert Wolfgang, NRR

Date: February 2, 2009

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Mr. William R. Campbell, Jr.
Chief Nuclear Officer and
Executive Vice President
Tennessee Valley Authority
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1101 Market Street
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Based on the review contained in the enclosed safety evaluation, the NRC staff finds these requests acceptable. It should be noted that this approval does not affect inservice inspection system pressure testing activities, and that the NRC staff expects that TVA will continue to involve the AIAI in the Unit 2 system pressure testing activities applicable to the current inspection interval.

This request is authorized for the remainder of the third 10-year IST interval at the Browns Ferry Nuclear Plant units, which began August 30 2002, and ends August 31, 2012.

Sincerely,

/RA/

Thomas H. Boyce, Chief
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-259, 50-260, and 50-296

Enclosure: Safety Evaluation

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Letter to W. R. Campbell, Jr. from T. H. Boyce dated February 2, 2009

Subject: BROWNS FERRY NUCLEAR PLANT, UNITS 1, 2, AND 3 - SAFETY EVALUATION
FOR A RELIEF REQUEST TO USE A LATER PARAGRAPH FROM THE ASME CODE,
SECTION XI, AND THE ASME OM CODE (TAC NOS. MD8609, MD8610, AND
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