

June 30, 2006

Mr. Karl W. Singer  
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, UNIT 3 - REGARDING REQUEST FOR  
RELIEF FROM THE REQUIREMENTS OF THE ASME CODE (TAC NO. MC8794)

Dear Mr. Singer:

By a letter dated October 19, 2005, The Tennessee Valley Authority (TVA, the licensee) submitted Relief Request (RR) 3-ISI-20 for the use of an alternative to certain American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) requirements at the Browns Ferry Nuclear Plant (BFN), Unit 3. Specifically, the licensee requested to use Code Case N-700 "Alternative Rules for Selection of Classes 1, 2 and 3 Vessel Welded Attachments for Examinations," for the remainder of the third 10-year inservice inspection (ISI) interval in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.55a(a)(3)(i).

Based on our review of your submittal, we have concluded that the alternative proposed in RR 3-ISI-20 provides an acceptable level of quality and safety. Therefore, it is authorized pursuant to 10 CFR 50.55a(a)(3)(i) for BFN Unit 3 for the remainder of the third 10-year ISI interval or until ASME Code Case N-700 is approved for general use by reference in Regulatory Guide 1.147, Inservice Inspection Code Case Acceptability, ASME Section XI, Revision 1. After that time, the licensee must follow the conditions, if any are specified in Regulatory Guide 1.147. All other requirements of the ASME Code, Sections III and XI for which relief has not been specifically requested remain applicable, including third party review by the Authorized Nuclear Inservice Inspector.

These reliefs are authorized for the remainder of the third 10-year ISI interval at BFN Unit 3, which began November 19, 2005 and ends November 18, 2015.

Sincerely,

*/RA/*

Michael L. Marshall, Jr., Chief,  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-296

Enclosure: Safety Evaluation

cc w/encl: See next page

Mr. Karl W. Singer  
 Chief Nuclear Officer and  
 Executive Vice President  
 Tennessee Valley Authority  
 6A Lookout Place  
 1101 Market Street  
 Chattanooga, TN 37402-2801

June 30, 2006

SUBJECT: BROWNS FERRY NUCLEAR PLANT, UNIT 3 - REGARDING REQUEST FOR RELIEF FROM THE REQUIREMENTS OF THE ASME CODE (TAC NO. MC8794)

Dear Mr. Singer:

By a letter dated October 19, 2005, The Tennessee Valley Authority (TVA, the licensee) submitted Relief Request (RR) 3-ISI-20 for the use of an alternative to certain American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) requirements at the Browns Ferry Nuclear Plant (BFN), Unit 3. Specifically, the licensee requested to use Code Case N-700 "Alternative Rules for Selection of Classes 1, 2 and 3 Vessel Welded Attachments for Examinations," for the remainder of the third 10-year inservice inspection (ISI) interval in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.55a(a)(3)(i).

Based on our review of your submittal, we have concluded that the alternative proposed in RR 3-ISI-20 provides an acceptable level of quality and safety. Therefore, it is authorized pursuant to 10 CFR 50.55a(a)(3)(i) for BFN Unit 3 for the remainder of the third 10-year ISI interval or until ASME Code Case N-700 is approved for general use by reference in Regulatory Guide 1.147, Inservice Inspection Code Case Acceptability, ASME Section XI, Revision 1. After that time, the licensee must follow the conditions, if any are specified in Regulatory Guide 1.147. All other requirements of the ASME Code, Sections III and XI for which relief has not been specifically requested remain applicable, including third party review by the Authorized Nuclear Inservice Inspector.

These reliefs are authorized for the remainder of the third 10-year ISI interval at BFN Unit 3, which began November 19, 2005 and ends November 18, 2015.

Sincerely,

*/RA/*

Michael L. Marshall, Jr., Chief, Section 2  
 Plant Licensing Branch II-2  
 Division of Operating Reactor Licensing  
 Office of Nuclear Reactor Regulation

Docket No. 50-296

Enclosure: Safety Evaluation

cc w/encl: See next page

<u>Distribution:</u>	PUBLIC	LPL2-2 R/F	RidsNrrPMMChernoff
RidsNrrPMEBrown	RidsNrrDorlLpl2-2	RidsOgcRp	RidsAcrsAcnwMailCenter
RidsNrrDciCpnb	DNaujock	D. Naujock	RidsNrrLABClayton (Hard copy)
SLee, EDO	LRegner		RidsRgn2MailCenter (Mwidmann)

ADAMS ACCESSION NO.: ML061390303

\* No Legal Objection

NRR-028

OFFICE	LPL2-2	LPL2-2/PM	LPL2-2/PM	LPL2-2/LA	CPNB/DCI	OGC	LPL2-2/SC
NAME	LRegner:bt	B Mozafari	EBrown	BClayton	TChan by memo dated	MYoung *	MMarshall
DATE	05 / 31 /06	05 / 31 /06	06 / 1 /06	05 / 31 /06	01 / 4 /06	06 / 07 /06	06 / 30 /06

**OFFICIAL RECORD COPY**

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

INSERVICE INSPECTION PROGRAM

BROWNS FERRY NUCLEAR PLANT, UNIT 3

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-296

1.0 INTRODUCTION

By letter dated October 19, 2005, the Tennessee Valley Authority (the licensee) submitted Relief Request 3-ISI-20 for the use of an alternative to certain the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) requirements at the Browns Ferry Nuclear Plant, Unit 3. Specifically, the licensee requested to use Code Case N-700, "Alternative Rules for Selection of Classes 1, 2, and 3 Vessel Welded Attachments for Examinations," for the remainder of the third 10-year inservice inspection interval which began November 19, 2005.

2.0 REGULATORY EVALUATION

The Inservice Inspection (ISI) of the ASME Code Class 1, 2, and 3 components shall be performed in accordance with Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," of the ASME Code and applicable edition and addenda, except where specific written relief has been granted by the Commission pursuant to Title 10, *Code of Federal Regulations* (10 CFR), Section 50.55a (g)(6)(i). It is stated in part, in 10 CFR 50.55a(a)(3), 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 Section XI of the ASME Code, 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.

As stated in 10 CFR 50.55a(g)(4)(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 paragraph 10 CFR 50.55a(b), subject to the limitations and

Enclosure

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 code of record for the third 10-year ISI interval for Unit 3 is the 2001 Edition through 2003 Addenda of Section XI of the ASME Code.

### 3.0 TECHNICAL EVALUATION

#### 3.1 Affected Systems and Components

ASME Code, Section XI, Class 1, 2, and 3 components.

#### 3.2 Applicable ASME Code Requirements

From the 2001 Edition with 2003 Addenda of Section XI of the ASME Code:

Table IWB-2500-1, Examination Category B-K, Footnote 4; “For multiple vessels of similar design, function, and service, only one welded attachment of only one of the multiple vessels shall be selected for examination,”

Table IWC-2500-1, Examination Category C-C, Footnote 4; “For multiple vessels of similar design, function, and service, only one welded attachment of only one of the multiple vessels shall be selected for examination,” and

Table IWD-2500-1, Examination Category D-A, Footnote 3: “For multiple vessels of similar design, function, and service, only one welded attachment of only one of the multiple vessels shall be selected for examination . . . .”

#### 3.3 Proposed Alternative to ASME Code Requirements

The licensee RR 3-ISI-20 proposed alternative criteria for examinations of Class 1, 2, and 3 vessel welded attachments. In lieu of ASME Code requirements, the licensee proposed using Code Case N-700 which states,

“for multiple vessels of similar design, function, and service, only one welded attachment of only one of the multiple vessels shall be selected for examination. For single vessels, only one welded attachment shall be selected for examination. The attachment selected for examination on one of the multiple vessels or the single vessel as applicable, shall be an attachment under continuous load during normal system operation, or an attachment subject to a potential intermittent load (seismic, water hammer, etc.) during normal system operation if an attachment under continuous load does not exist.”

#### 3.4 Basis for Request

The 2001 Edition with 2003 Addenda states in Section XI, Examination Categories B-K and C-C within Footnote 4 of Table IWB-2500-1 and IWC-2500-1 that “For multiple vessels of similar design, function and service, only one welded attachment of only one of the multiple vessels shall be selected for examination.” There is no criterion for selection of the one welded attachment that must be examined. Section XI does not specifically address the selection

criteria for single vessels. Code Case N-700 has the same requirements as Footnote 4 for multiple vessels and provides the same criteria for single vessels. Code Case N-700 also requires that the attachment selected for examination on one of the multiple vessels or single vessel, as applicable, to be an attachment under continuous load during operation, if such an attachment exists.

#### 4.0 TECHNICAL EVALUATION

Section 50.55a(b) of 10 CFR references the 2001 Edition with 2003 Addenda of Section XI of the ASME Code and does not take exception to Footnote 4 to Examination Categories B-K and C-C or Footnote 3 to Examination Category D-A. The proposed alternative, Code Case N-700, contains the same wording from the 2001 Edition with 2003 Addenda that states; "for multiple vessels of similar design, function, and service, only one welded attachment of only one of the multiple vessels shall be selected for examination." The Code Case then expands the application to include selection criteria for single vessels. For a single vessel, the selection of one attachment for examination represents a larger percentage of the attachments being examined than the percentage of attachments being examined for multiple vessels. Therefore, extending the ASME Code sampling philosophy to single vessel attachments is as conservative as the current ASME Code requirements.

The current requirements are silent on the process used by the licensee for selecting the attachment for examination. The proposed alternative requires the licensee to select the attachment that is under continuous load during normal system operation, or subject to a potential intermittent load during normal system operation if no attachment under continuous load exists. These additional requirements provide guidance for selecting the attachment most likely to develop flaws during plant operations. The additional selection requirements increase the likelihood of detecting service-induced degradation, if any is present.

The additional examination criteria for single vessels and the selection criteria for single and multiple vessels are considered more conservative than current ASME Code requirements for multiple vessels. These standards provide assurance of structural integrity. Therefore, the NRC staff concludes that the use of Code Case N-700 will provide an acceptable level of quality and safety.

#### 5.0 CONCLUSION

Based on the above evaluation, the NRC staff finds the licensee's RR 3-ISI-20 for the use of Code Case N-700 for the selection of vessel attachments for examination will provide an acceptable level of quality and safety. Therefore, pursuant to 10 CFR 50.55a(a)(3)(i), the proposed alternative, Code Case N-700, is authorized for the Browns Ferry Nuclear Plant, Unit 3 for the third 10-year inservice inspection interval or until Code Case N-700 is approved for general use by reference in Regulatory Guide 1.147, "Inservice Inspection Code Case Acceptability." After that time, if the licensee wishes to continue to use Code Case N-700, the licensee must follow all conditions and limitations place on the use of the Code Case, if any, that are specified in Regulatory Guide 1.147.

All other ASME Code, Section XI requirements for which relief was not specifically requested and approved in this RR remain applicable, including third party review by the Authorized Nuclear Inservice Inspector.

Principal Contributor: D. Naujock

**BROWNS FERRY NUCLEAR PLANT**

Mr. Karl W. Singer  
Tennessee Valley Authority  
cc:

Mr. Ashok S. Bhatnagar, Senior Vice President  
Nuclear Operations  
Tennessee Valley Authority  
6A Lookout Place  
1101 Market Street  
Chattanooga, TN 37402-2801

Mr. Larry S. Bryant, Vice President  
Nuclear Engineering & Technical Services  
Tennessee Valley Authority  
6A Lookout Place  
1101 Market Street  
Chattanooga, TN 37402-2801

Brian O'Grady, Site Vice President  
Browns Ferry Nuclear Plant  
Tennessee Valley Authority  
P.O. Box 2000  
Decatur, AL 35609

Mr. Robert J. Beecken, Vice President  
Nuclear Support  
Tennessee Valley Authority  
6A Lookout Place  
1101 Market Street  
Chattanooga, TN 37402-2801

General Counsel  
Tennessee Valley Authority  
ET 11A  
400 West Summit Hill Drive  
Knoxville, TN 37902

Mr. John C. Fornicola, Manager  
Nuclear Assurance and Licensing  
Tennessee Valley Authority  
6A Lookout Place  
1101 Market Street  
Chattanooga, TN 37402-2801

Mr. Bruce Aukland, Plant Manager  
Browns Ferry Nuclear Plant  
Tennessee Valley Authority  
P.O. Box 2000  
Decatur, AL 35609

Mr. Robert G. Jones, General Manager  
Browns Ferry Site Operations  
Browns Ferry Nuclear Plant  
Tennessee Valley Authority  
P.O. Box 2000  
Decatur, AL 35609

Mr. Glenn W. Morris, Manager  
Corporate Nuclear Licensing  
and Industry Affairs  
Tennessee Valley Authority  
4X Blue Ridge  
1101 Market Street  
Chattanooga, TN 37402-2801

Mr. William D. Crouch, Manager  
Licensing and Industry Affairs  
Browns Ferry Nuclear Plant  
Tennessee Valley Authority  
P.O. Box 2000  
Decatur, AL 35609

Senior Resident Inspector  
U.S. Nuclear Regulatory Commission  
Browns Ferry Nuclear Plant  
10833 Shaw Road  
Athens, AL 35611-6970

State Health Officer  
Alabama Dept. of Public Health  
RSA Tower - Administration  
Suite 1552  
P.O. Box 303017  
Montgomery, AL 36130-3017

Chairman  
Limestone County Commission  
310 West Washington Street  
Athens, AL 35611