



Tennessee Valley Authority, Post Office Box 2000, Decatur, Alabama 35609-2000

March 11, 2005

10 CFR 50.55a(a)(3)(i)

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Mail Stop: OWFN P1-35  
Washington, D.C. 20555-0001

Gentlemen:

In the Matter of ) Docket Nos. 50-260  
Tennessee Valley Authority ) 50-296

**BROWNS FERRY NUCLEAR PLANT (BFN) - UNITS 2 AND 3 - AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME) SECTION XI, INSERVICE INSPECTION (ISI) PROGRAMS - REQUESTS FOR RELIEF 2-ISI-23 AND 3-ISI-20 - REQUEST TO USE ASME CODE CASE N-700, ALTERNATIVE RULES FOR SELECTION OF CLASSES 1, 2, AND 3 VESSEL WELDED ATTACHMENTS FOR EXAMINATION**

In accordance with 10 CFR 50.55a(a)(3)(i) TVA is requesting relief from certain inservice inspection requirements in Section XI of the ASME Boiler and Pressure Vessel Code. This letter submits BFN Units 2 and 3 requests for relief 2-ISI-23 and 3-ISI-20, respectively, for NRC review and approval.

Requests for relief 2-ISI-23 and 3-ISI-20 propose to adopt Code Case N-700, Alternative Rules for Selection of Classes 1, 2, and 3 Vessel Welded Attachments for Examination.

The BFN Units 2 and 3 current Code of record for the examination of Class 1, 2, and 3 welded attachments for vessels, piping, pumps, and valves is the 1995 Edition, 1996 Addenda. The 1996 Addenda currently states in Examination Categories B-K, C-C, and D-A 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. The 1996 Addenda does not specifically address selection criteria for single vessels.

*ACT*

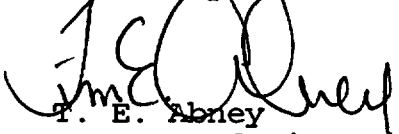
U.S. Nuclear Regulatory Commission  
Page 2  
March 11, 2005

Code Case N-700 requires 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. The case also requires that only one welded attachment on a single vessel be examined. However, the Code Case also requires that the attachment selected for examination on one of the multiple vessels or the single vessel, as applicable, to be an attachment under continuous load during operation if such an attachment exists.

TVA believes that the proposed alternatives will provide an adequate level of quality and safety for selection of the Class 1, 2, and 3 vessel welded attachments for examination. TVA requests approval of these requests for relief by November 18, 2005.

There are no new regulatory commitments in this letter. If you have any questions, please contact me at (256) 729-2636.

Sincerely,

  
T. E. Abney  
Manager of Licensing  
and Industry Affairs

cc: See Page 3

U.S. Nuclear Regulatory Commission  
Page 3  
March 11, 2005

Enclosure  
cc (Enclosure):

(Via NRC Electronic Distribution)  
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**ENCLOSURE**

**TENNESSEE VALLEY AUTHORITY  
BROWNS FERRY NUCLEAR PLANT (BFN)  
UNITS 2 AND 3  
AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME) SECTION XI,  
INSERVICE INSPECTION (ISI) PROGRAMS  
REQUESTS FOR RELIEF 2-ISI-23 AND 3-ISI-20**

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**(SEE ATTACHED)**

**TENNESSEE VALLEY AUTHORITY  
BROWNS FERRY NUCLEAR PLANT (BFN)  
UNITS 2 AND 3  
AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME) SECTION XI,  
INSERVICE INSPECTION (ISI) PROGRAM**

**REQUESTS FOR RELIEF 2-ISI-23 AND 3-ISI-20**

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**EXECUTIVE SUMMARY**

This request for relief proposes to adopt Code Case N-700, Alternative Rules for Selection of Classes 1, 2, and 3 Vessel Welded Attachments for Examination.

The BFN Unit 2 ISI program is based on the 1995 Edition, 1996 Addenda of ASME Section XI. The BFN Unit 3 ISI program is based on the 1989 Edition of ASME Section XI. The BFN Unit 3 ISI program for the examination of Class 1, 2, and 3 welded attachments for vessels, piping, pumps, and valves was updated to the 1995 Edition, 1996 Addenda of ASME Section XI as requested by TVA letter dated August 17, 2001. NRC approved TVA's update request by letter dated November 5, 2001 (TAC No. MB2586).

The 1996 Addenda currently states in Examination Categories B-K, C-C, and D-A 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. The 1996 Addenda does not specifically address selection criteria for single vessels.

Code Case N-700 provides criteria for selection of Class 1, 2, and 3 welded attachments for examination. Code Case N-700 requires 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. The case also requires that only one welded attachment on a single vessel be examined. However, the case also requires that the attachment selected for examination on one of the multiple vessels or the single vessel, as applicable, to be an attachment under continuous load during operation if such an attachment exists.

The requirements of Code Case N-700 provide an adequate level of quality and safety for selection of the Class 1, 2, and 3 vessel welded attachments for examination. Therefore, pursuant to 10 CFR 50.55a(a)(3)(i) it is requested that relief be granted.

**SYSTEM/COMPONENTS(S) FOR WHICH RELIEF IS REQUESTED**

Class 1, 2, and 3 Reactor Pressure Vessel welded attachments

**CODE REQUIREMENTS**

Table IWB-2500-1, Examination Category B-K, Footnote 4; Table IWC-2500-1, Examination Category C-C, Footnote 4; and Table IWD-2500-1, Examination Category D-A, Footnote 3 of the 1995 Edition, 1996 Addenda of ASME Section XI

**RELIEF REQUESTED**

Relief is requested to use the alternatives of Code Case N-700 for the selection of Class 1, 2, and 3 vessel welded attachments for examination.

**BASIS FOR RELIEF**

The BFN Unit 2 ISI program is based on the 1995 Edition, 1996 Addenda of ASME Section XI. The BFN Unit 3 ISI program is based on the 1989 Edition of ASME Section XI. The Unit 3 ISI program for the examination of Class 1, 2, and 3 welded attachments for vessels, piping, pumps, and valves was updated to the 1995 Edition, 1996 Addenda of ASME Section XI. NRC approved this update request on November 5, 2001 (TAC No. MB2586).

Code Case N-509, Alternative Rules for the Selection and Examination of Class 1, 2, and 3 Integrally Welded Attachments, was incorporated in the 1995 Edition, 1995 Addenda. The technical basis for development of Code Case N-509 concluded that operational transients/water hammers to be the major potential for welded attachment failures (possibility exists for corrosion related failures). The technical basis of Code Case N-509 also concluded that welded attachment failures have been identified as a result of connected support member deformation and had not been identified by the Section XI examinations. That is the basis for Code Case N-509 and the 1995 Addenda, and later addenda, which requires welded attachments to be examined whenever component support deformation is identified. In addition, a sampling plan for welded attachments was maintained.

Code Case N-509 and the 1996 Addenda state in Examination Categories B-K, C-C, and D-A that "For multiple vessels of similar design, function and service, only one welded attachment of only of the multiple vessels shall be selected for examination". There is no criterion for selection of the one welded attachment that must be examined. Code Case N-509 and the 1996 Addenda do not specifically address selection criteria for single vessels.

Code Case N-700 utilizes the basis for development of Code Case N-509 to provide criteria for selection of Class 1, 2, and 3 vessel welded attachments for examination. Code Case N-700 requires 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. The Code case requires that only one welded attachment on a single vessel be examined. However, the case also requires that the attachment selected for examination on one of the multiple vessels or the single vessel, as applicable, to be an attachment under continuous load during operation if such an attachment exists.

#### **ALTERNATIVE EXAMINATION**

In lieu of the requirements specified in the earlier Code Requirements Section, Code case N-700 will be used for selection of Class 1, 2, and 3 vessel welded attachments for examination. Code case N-700 was approved by the ASME Code Committee on November 18, 2003.

#### **JUSTIFICATION FOR GRANTING RELIEF**

Code Case N-509 was incorporated in the 1995 Edition, 1995 Addenda. The technical basis for development of Code Case N-509 concluded that operational transients/water hammers to be the major potential for welded attachment failures (possibility exists for corrosion related failures). The technical basis of Code Case N-509 also concluded that welded attachment failures have been identified as a result of connected support member deformation and have not been identified by the present Code examinations. That is the basis for Code Case N-509 and the 1995 Addenda, and later addenda, which requires welded attachments to be examined whenever component support deformation is identified. In addition, a sampling plan for welded attachments was maintained. For multiple vessels this sampling plan requires 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. Code Case N-509 and the 1996 Addenda do not specifically address selection criteria for single vessels.

Code Case N-700 utilizes the basis for development of Code Case N-509 to provide criteria for selection of Class 1, 2, and 3 welded attachments for examination. Code Case N-700 requires 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. The case requires that only one welded attachment on a single vessel be examined. However, the case also requires that the attachment selected for examination on one of the multiple

vessels or the single vessel, as applicable, to be an attachment under continuous load during operation if such an attachment exists.

Pursuant to 10 CFR 50.55a(a)(3)(i), approval is requested to use the proposed alternatives described above in lieu of the requirements specified in the earlier Code Requirements Section. Compliance with the proposed alternatives will provide an adequate level of quality and safety for selection of the Class 1, 2, and 3 vessel welded attachments for examination.

#### **IMPLEMENTATION SCHEDULE**

The alternative will be used for BFN Units 2 and 3 until the end of each unit's respective current ten-year ISI program inspection interval as follows:

BFN Unit 2 is currently in the second inspection period of the third ten-year inspection interval. The third inspection interval is currently scheduled to end on May 24, 2011.

BFN Unit 3 is currently in the third inspection period of the second ten-year inspection interval. The second inspection interval is currently scheduled to end on November 18, 2005.

#### **ATTACHMENT**

American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Code Case N-700, "Alternative Rules for Selection of Classes 1, 2, and 3 Vessel Welded Attachments for Examination"



Approval Date: November 18, 2003

See Numeric Index for expiration  
and any reaffirmation dates.

**Case N-700**  
**Alternative Rules for Selection of Classes 1, 2,**  
**and 3 Vessel Welded Attachments for**  
**Examination**  
**Section XI, Division 1**

*Inquiry:* What alternative rules may be used in lieu of those required by Table IWB-2501-1, Table IWC-2500-1, and Table IWD-2500-1, Examination Categories B-K and C-C, footnote 4, and Examination Category D-A, footnote 3, for selection of vessel welded attachments for examination?

*Reply:* It is the opinion of the Committee 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. 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.

The Committee's function is to establish rules of safety, relating only to pressure integrity, governing the construction of boilers, pressure vessels, transport tanks and nuclear components, and inservice inspection for pressure integrity of nuclear components and transport tanks, and to interpret these rules when questions arise regarding their intent. This Code does not address other safety issues relating to the construction of boilers, pressure vessels, transport tanks and nuclear components, and the inservice inspection of nuclear components and transport tanks. The user of the Code should refer to other pertinent codes, standards, laws, regulations or other relevant documents.