

August 10, 2000

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

SUBJECT: BROWNS FERRY NUCLEAR PLANT, UNIT 2 - SECOND 10-YEAR INTERVAL
INSERVICE INSPECTION - RELIEF FROM ASME BOILER AND PRESSURE
VESSEL CODE, SECTION XI REQUIREMENTS: RELIEF REQUEST 2-ISI-11
(TAC NO. MA9055)

Dear Mr. Scalice:

By letter dated June 19, 2000, the Tennessee Valley Authority requested relief from the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section XI (the Code) requirements. The request for relief, No. 2-ISI-11, pertains to the Second 10-Year Interval Inservice Inspection for the Browns Ferry Nuclear Plant, Unit 2.

The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the request for relief. Based on its review, the NRC staff has determined that compliance with the Code requirements would result in a hardship or unusual difficulty without a compensating increase in the level of quality and safety. Relief is authorized pursuant to Title 10 of the *Code of Federal Regulation*, Section 50.55a(a)(3)(ii) for the second 10-year inservice inspection interval. The enclosed Safety Evaluation documents our review.

Sincerely,

/RA/

Richard P. Correia, Chief, Section 2
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-260

Enclosure: Safety Evaluation

cc w/encl: See next page

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELIEF FROM ASME BOILER AND PRESSURE VESSEL CODE SECTION XI
REQUIREMENTS: RELIEF REQUEST NO. 2-ISI-11
FOR
TENNESSEE VALLEY AUTHORITY
BROWNS FERRY NUCLEAR PLANT, UNIT 2
DOCKET NUMBER: 50-260

1.0 INTRODUCTION

Operating License DPR-52, for the Browns Ferry Nuclear Plant Unit 2 (BFN-2) requires that the Tennessee Valley Authority (TVA, the licensee) comply with the Commission's rules and regulations. Title 10 of the Code of Federal Regulations (10 CFR) Section 50.55a states that each power facility is subject to the inservice inspection requirements of 10 CFR 50.55a(g). 10 CFR 50.55a(g) requires that inservice inspection of American Society of Mechanical Engineers (ASME) Code Class 1, 2, and 3 components shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel (B&PV) Code and applicable addenda except where specific written relief has been granted by the U.S. Nuclear Regulatory Commission (NRC or Commission) pursuant to 10 CFR 50.55a(g)(6)(i). 10 CFR 50.55a(a)(3) states that alternatives to the requirements of paragraph (g) may be used, when authorized by the NRC, if (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.

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.

Pursuant to 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 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 applicable edition of Section XI of the ASME Code for the BFN-2 second 10-year inservice inspection (ISI) interval, which began May 24, 1992, is the 1986 Edition.

By letter dated June 19, 2000, the TVA, submitted Request for Relief No. 2-ISI-11 for BFN-2. The request relates to the requirement for visual examination of the interior surfaces of the pressure-retaining components of valves.

The information provided by TVA in support of Relief Request 2-ISI-11 has been evaluated. The staff's findings are presented below.

2.0 DISCUSSION

2.1 Code Requirement

The 1986 Edition, no Addenda, ASME Section XI, Table IWB-2500-1, Examination Category B-M-2, Item B12.50, requires a visual (VT-3) examination of the internal surface of valve bodies for valves having a nominal pipe size of 4-inches or greater. These examinations may be performed on the same valves selected for volumetric examination of welds; and examinations are limited to at least one valve within each group of valves that are of the same size, type/design (such as globe, gate, or check valves), and manufacturing method, and that perform similar functions in the system (such as containment isolation and system overpressure protection). This requires that the internal surfaces of one valve of each group receive a visual (VT-3) examination during each 10-year inspection interval. The examination requires disassembly of the valve for the sole purpose of performing the visual examination if not disassembled for other concurrent reasons.

2.2 Relief Request

Relief is requested from the requirement to disassemble valves for the sole purpose of performing a visual (VT-3) examination of the internal surface of the valve body.

TVA has classified the BFN-2 ASME Class 1 valves of nominal pipe size 4 inches and larger into 21 groups. The Code requires that one valve per group be examined each interval. Listed below are the groups and valves contained in each group that have not been disassembled for maintenance and/or repair and have not received a visual (VT-3) examination.

Group	Valve No.	Size	System	Material	Vendor and Type
2	HCV-3-66	24	Feedwater	A-216 WCB	Powell Gate
2	HCV-3-67	24	Feedwater	A-216 WCB	Powell Gate
3	FCV-68-01	28	Recirculation	A-351 CF8	Darling Gate
3	FCV-68-77	28	Recirculation	A-351 CF8	Darling Gate
4	FCV-68-03	28	Recirculation	A-351 CF8	Darling Gate
4	FCV-68-79	28	Recirculation	A-351 CF8	Darling Gate
5	FCV-68-33	22	Recirculation	A-351 CF8	Darling Gate
5	FCV-68-35	22	Recirculation	A-351 CF8	Darling Gate
8	HCV-74-69	24	Residual Heat Removal	A-351 CF8M	Powell Gate
8	HCV-74-55	24	Residual Heat Removal	A-351 CF8M	Powell Gate
11	HCV-74-49	20	Residual Heat Removal	A-351 CF8M	Powell Gate
13	HCV-75-27	12	Core Spray	A-351 CF8M	Powell Gate
13	HCV-75-55	12	Core Spray	A-351 CF8M	Powell Gate
16	69-500	6	Reactor Water Clean Up	A182 F316	Velan Gate
18	FCV-71-40	6	Reactor Core Isolation Cooling	A-216 WCB	Rockwell Check
21	FCV-74-48	20	Residual Heat Removal	A-351 CF8M	Walworth Gate

2.3 Basis for Relief

The licensee's basis for relief states:

Disassembly of valves for the sole purpose of performing a VT-3 examination of the internal pressure retaining boundary imposes undue hardship without a compensating increase in the level of quality and safety and subjects plant personnel to unnecessary radiation exposure. Also, the NRC Staff has endorsed the alternative of examining valve internals only when the valves are disassembled for maintenance, repair, or for volumetric examination by approving the ASME Section XI Code, 1995 Edition with the 1996 Addenda, which was incorporated by reference in 10 CFR 50.55a effective November 22, 1999.

2.4 Alternative Examination Proposal

TVA will perform a visual (VT-3) examination of at least one valve within each group of valves when the valves are disassembled for maintenance and/or repair in accordance with the ASME Section XI Code, the 1995 Edition with the 1996 Addenda. (Note: BFN-2 has no valve bodies that contain welds requiring disassembly for volumetric examination).

In addition, the valves receive a visual (VT-2) examination for leakage when the system pressure tests of ASME Section XI, IWA-5000 are conducted in accordance with the requirements of Table IWB-2500-1, Category B-P components.

2.5 Justification for the Granting of Relief

The licensee's justification for granting of relief states:

Disassembling valves for the sole purpose of performing a VT-3 examination of the internal pressure retaining boundary imposes undue hardship without a compensating increase in the level of quality and safety and subjects plant personnel to unnecessary radiation exposure. The possibility of additional wear or damage to the internal surfaces of the valves occurring during disassembly along with excessive levels of radiation exposure to plant personnel to meet the Code requirements would result in hardship and unusual difficulty without a compensating increase in the level of quality and safety. Also, the NRC Staff has endorsed the alternative of examining valve internals only when the valves are disassembled for maintenance, repair or for volumetric examination by accepting the requirements of the ASME Section XI Code, 1995 Edition with the 1996 Addenda, which was incorporated by reference in 10 CFR 50.55a effective November 22, 1999.

The proposed alternative to perform the VT-3 examination when valves are disassembled for maintenance and/or repair (BFN Unit 2 has no valve bodies that contain welds requiring disassembled for volumetric examination) will provide reasonable assurance of structural integrity of the subject components.

At least one valve within each group of valves shall be VT-3 examined when the valves are disassembled for maintenance and/or repair (BFN Unit 2 has no valve

bodies that contain welds requiring disassembled for volumetric examination). Also, the valves receive a visual, VT-2 examination for leakage when the system pressure tests of ASME Section XI, IWA-5000 are conducted in accordance with the requirements of Table IWB-2500-1, Category B-P components

3.0 STAFF'S EVALUATION

VT-3 visual examinations are conducted to determine the general mechanical and structural condition of components. They are conducted by certified personnel under controlled conditions and serve to detect discontinuities and imperfections such as corrosion, wear or erosion resulting from service conditions. When such examinations are performed on valve body internal surfaces, disassembly and reassembly of the valves is required. This subjects maintenance and inspection personnel to radiation, and the equipment to damage. ASME has determined that components should not be disassembled solely to perform these examinations, but, if a valve subject to the examination requirement is otherwise disassembled for maintenance, repair or volumetric examination, the VT-3 examination should be performed (Ref: ASME Section XI, 1995 Edition with 1996 Addenda). This staff has determined, on a generic basis, that the hardships and difficulties involved in the disassembly, examination, and reassembly of valves solely for performing the VT-3 examinations do not provide a compensating increase in quality and safety. In view thereof, ASME Section XI, 1995 Edition with 1996 Addenda was incorporated into 10 CFR 50.55a effective November 22, 1999. These subsequent requirements may be used by the licensee.

4.0 CONCLUSION

The staff has evaluated the licensee's June 19, 2000 request for relief and has concluded that the Code-required examination requirements would result in a hardship or unusual difficulty without a compensating increase in the level of quality and safety. Therefore, the licensee's Request for Relief No. 2-ISI-11 is authorized pursuant to 10 CFR 50.55a(3)(ii) for the second 10-year inservice inspection interval.

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Date: August 10, 2000

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BROWNS FERRY NUCLEAR PLANT

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