



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

May 7, 2001

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

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Gentlemen:

In the Matter of) Docket No. 50-296
Tennessee Valley Authority)

**BROWNS FERRY NUCLEAR PLANT (BFN) - UNIT 3 - AMERICAN SOCIETY
OF MECHANICAL ENGINEERS (ASME) SECTION XI, INSERVICE
INSPECTION PROGRAM, SECOND TEN-YEAR INTERVAL, REQUEST FOR
RELIEF 3-ISI-10 (TAC NO. MB1773)**

In accordance with 10 CFR 50.55a(a)(3)(i), TVA is requesting relief from specified inservice inspection requirements in Section XI of the ASME Boiler and Pressure Vessel Code. The enclosure to this letter contains BFN Unit 3 request for relief 3-ISI-10 for NRC review and approval.

TVA is requesting relief from the ASME Section XI Code, 1989 Edition (no Addenda), requirement to perform surface examinations (i.e., wet fluorescent magnetic particle) on 92 BFN Unit 3 reactor pressure vessel (RPV) closure head nuts. Extensive cleaning of these nuts is required for a surface examination to be performed. This extensive cleaning results in an additional expenditure of resources, and an increased radiological dose for examination personnel.

As an alternative, TVA is proposing to perform a visual examination (VT-1) of the RPV closure head nuts. The 1995 Edition with the 1996 Addenda to the ASME Section XI Code changed the examination method for RPV closure head nuts from a surface examination to a visual (VT-1) examination which is consistent with that for nuts of other Class 1 components. TVA considers that its proposed alternative provides an acceptable level of quality and safety.

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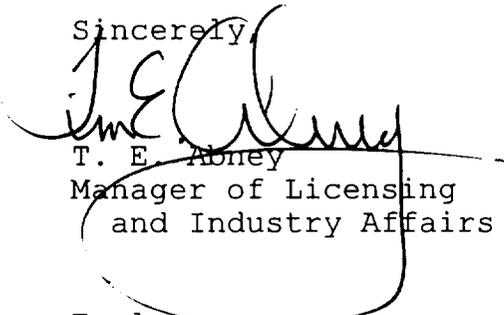
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The enclosed request for relief is consistent with alternate examination requirements accepted for use for BFN Unit 2 by NRC letter to TVA, dated July 26, 2000.

TVA requests review of this request for relief by January 31, 2002, to support the Unit 3 Cycle 10 (Spring 2002) refueling outage.

There are no commitments contained in this letter. In accordance with NRC RIS 2001-05, only one paper copy of this document is being sent to the NRC Document Control Desk. If you have any questions, please contact me at (256) 729-2636.

Sincerely,



T. E. Abney
Manager of Licensing
and Industry Affairs

Enclosure

cc: (Enclosure):

(Via NRC Electronic Distribution):

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ENCLOSURE

TENNESSEE VALLEY AUTHORITY
BROWNS FERRY NUCLEAR PLANT (BFN)
UNIT 3
AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME) SECTION XI,
INSERVICE INSPECTION (ISI) PROGRAM
(SECOND TEN-YEAR INSPECTION INTERVAL)

REQUEST FOR RELIEF 3-ISI-10

(See Attached)

TENNESSEE VALLEY AUTHORITY
BROWNS FERRY NUCLEAR PLANT (BFN)
UNIT 3
ASME SECTION XI, INSERVICE INSPECTION PROGRAM
(SECOND TEN-YEAR INSPECTION INTERVAL)

REQUEST FOR RELIEF 3-ISI-10

Executive Summary: In accordance with 10 CFR 50.55a(a)(3)(i), TVA is requesting relief from inservice inspection requirements in the 1989 Edition, no addenda, Section XI of the ASME Boiler and Pressure Vessel Code for Pressure Retaining Bolting Greater than 2-inches in diameter.

Compliance with the 1989 Edition, no Addenda, ASME Section XI, requires that the BFN Unit 3 RPV closure head nuts (92 total) receive a surface examination. The surface examination, normally a wet fluorescent magnetic particle examination, requires extensive cleaning of the nuts. This extensive cleaning results in inefficient use of available resources, and an increased radiological dose for examination personnel.

The 1995 Edition of the ASME Section XI Code, with the 1996 Addenda, lists the examination requirement for RPV closure head nuts as a visual (VT-1) examination rather than a surface examination. This edition of the Code has been endorsed by the NRC Staff by reference in 10 CFR 50.55a effective November 22, 1999.

TVA requests that relief be granted from the prescribed requirements of the ASME Section XI, 1989 Edition, no Addenda, to perform a surface examination of the BFN Unit 3 RPV closure head nuts.

As an alternative, TVA will perform a visual (VT-1) examination in accordance with the requirements of the 1995 Edition with the 1996 Addenda of the ASME Section XI Code. TVA considers that its proposed alternative provides an acceptable level of quality and safety.

This request for relief is consistent with alternate examination requirements accepted for use for BFN Unit 2 by NRC letter to TVA, dated July 26, 2000.

Unit: Three (3)

System(s): Reactor Pressure Vessel (RPV)

Components: RPV Closure Head Nuts (92 Total)

ASME Code Class: ASME Code Class 1

Section XI Edition: 1989 Edition, no Addenda

Code Table: IWB-2500-1

Examination Category: B-G-1, Pressure Retaining Bolting, Greater than 2 Inches in Diameter

Examination Item Number: B6.10, Reactor Vessel, Closure Head Nuts

Code Requirement: The 1989 Edition, no Addenda, ASME Section XI, Table IWB-2500-1, Examination Category B-G-1, Item B6.10, RPV Closure Head Nuts require a surface examination.

Code Requirements From Which Relief Is Requested: Relief is requested from the requirement to perform a surface examination of the RPV closure head nuts, as stipulated in ASME Section XI, 1989 Edition (no Addenda), Table IWB-2500-1, Examination Category B-G-1, Item B6.10.

List Of Items Associated With The Relief Request: RPV Closure Head Nuts (92 Total) 3-01 through 3-92

Basis For Relief Request:

Extensive cleaning of the RPV Nuts is required prior to performing the wet fluorescent magnetic particle examination. This extensive cleaning results in an additional expenditure of resources, and an increased radiological dose for examination personnel.

Also, the 1989 Edition of Section XI does not provide acceptance criteria for the mandated surface examination shown in Table IWB-2500-1. Table IWB-2500-1 was subsequently changed in the 1989 Addenda, and later editions of the code, requiring a visual (VT-1) examination of the closure head nuts, and also providing acceptance criteria for VT-1 examination of bolting greater than 2 inches.

Alternate Examination:

TVA will perform a visual (VT-1) examination of the RPV closure head nuts in accordance with the requirements of the 1995 Edition with the 1996 Addenda of ASME Section XI, Table IWB-2500-1, Examination Category B-G-1, Item B.6.10. TVA considers that its proposed alternative provides an acceptable level of quality and safety.

Justification For The Granting Of Relief:

The 1995 Edition with the 1996 Addenda of ASME Section XI has been approved in 10 CFR 50.55a, Industry Codes and Standards, effective November 22, 1999. For these versions of the Code, Table IWB-2500-1, Category B-G-1, Item B6.10, the examination requirement changed from a surface to a visual (VT-1) examination.

Due to design factors, the stripping areas of the female threads (i.e., inside the nut) are approximately 1.3 times the area of the mating male threads (see ASME B1.1, Unified Inch Screw Threads). Consequently, if a defect were to develop during component service, the defects should occur in the threads of the bolt or stud before developing in the threads of the nut because of higher stresses in the male

threads. Also, when RPV closure head nuts are tightened for closure or loosened for opening, the studs are tensioned and the nuts are run on/off the threads with no load since the load is taken by the stud or bolt through the tensioning device.

This request for relief is consistent with one granted for BFN Unit 2, by NRC letter to TVA dated July 26, 2000.

Implementation

Schedule:

This request for relief is applicable to the Second Ten-Year ASME Section XI Inservice Inspection Interval for BFN Unit 3.

Attachments:

Browns Ferry Unit 3, Stud Details RPV Closure Head, drawing SK-B3037

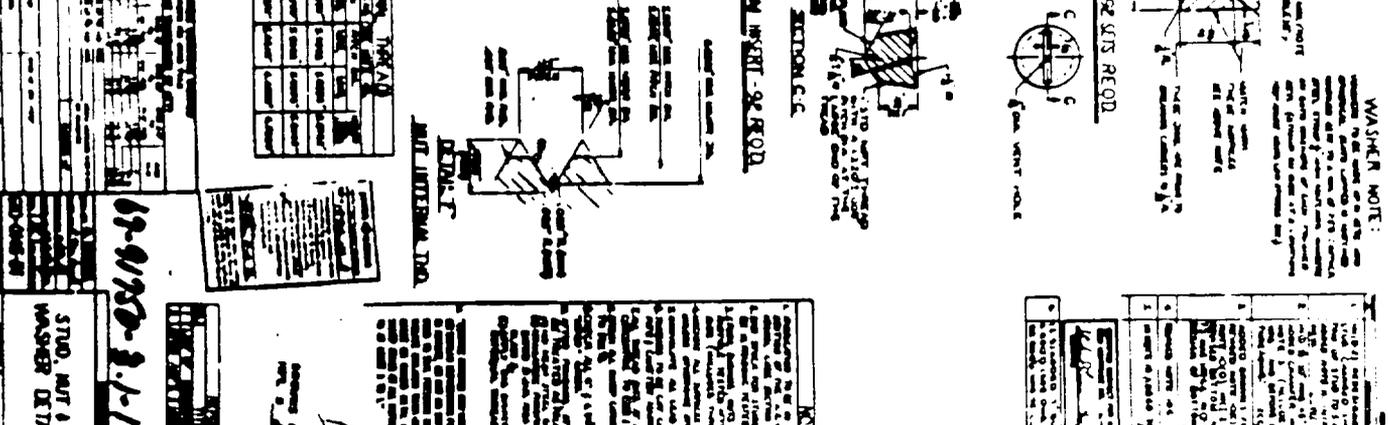
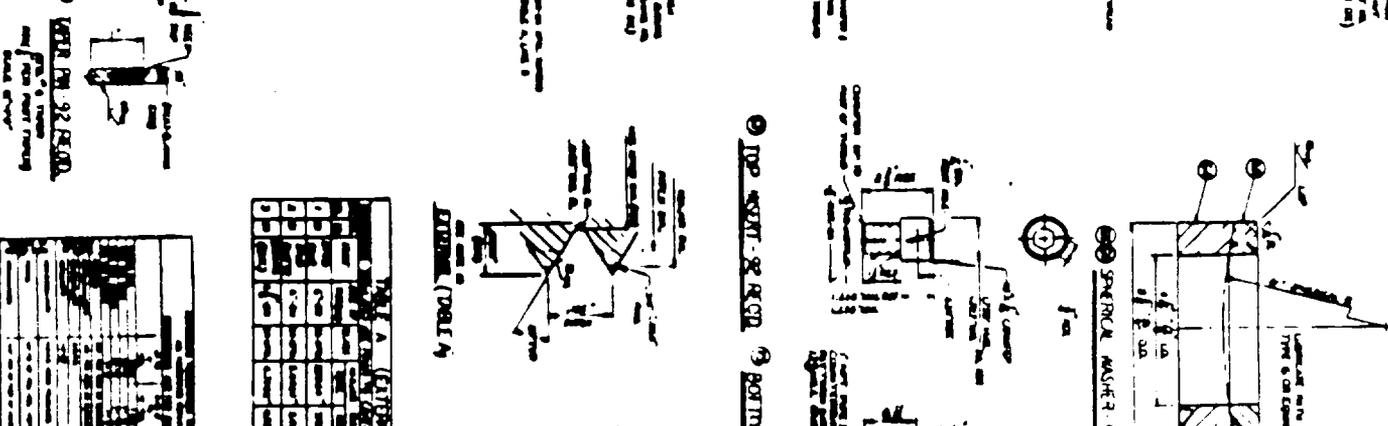
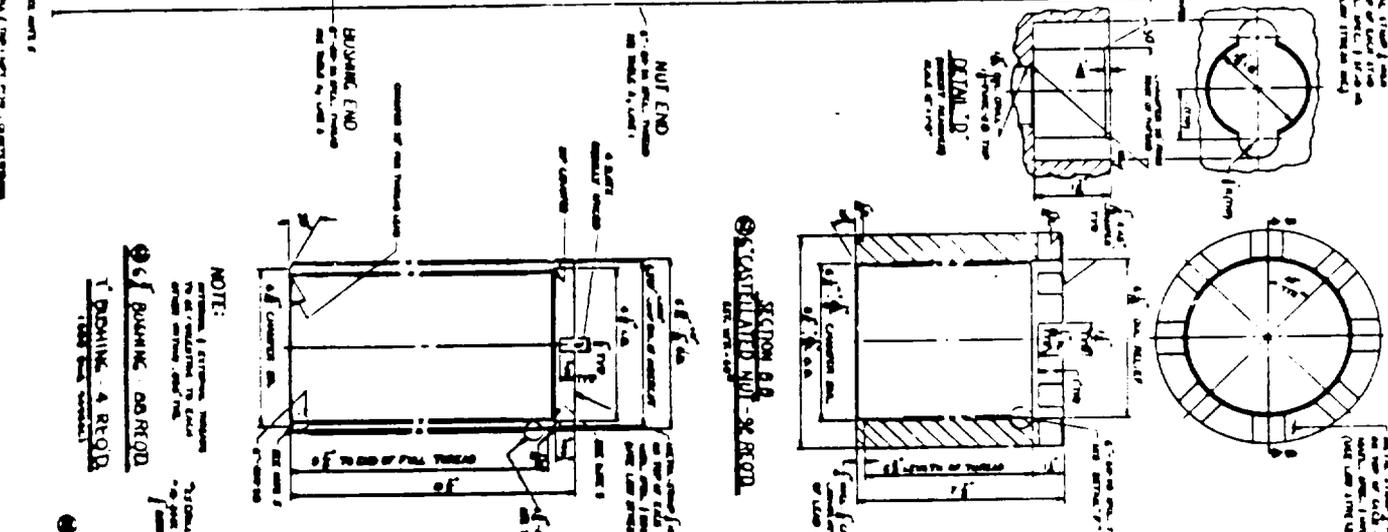
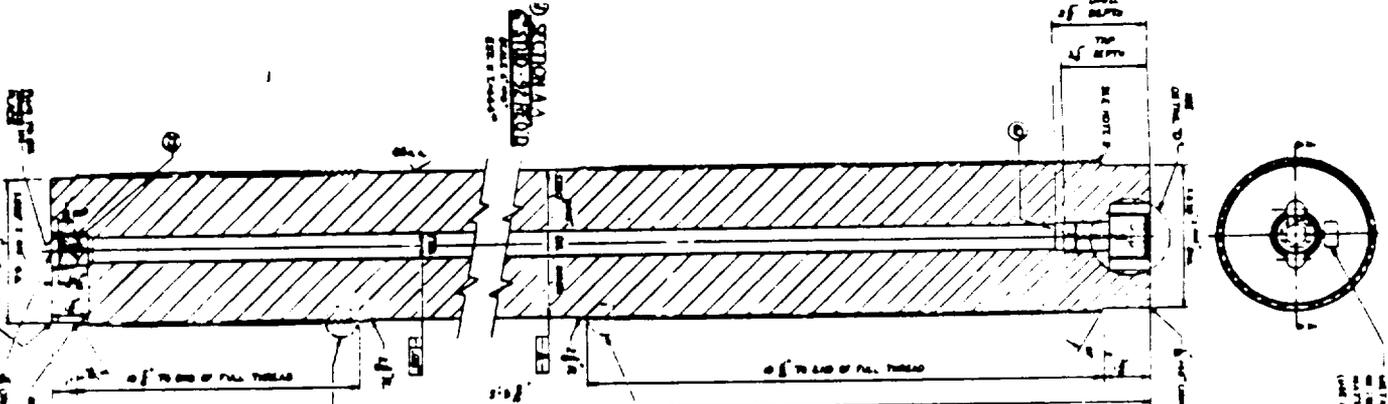
Browns Ferry Unit 3, Stud, Nut & Washer Details, drawing 131859E, Revision 6

3-ISI-10

ATTACHMENTS

Drawing SK-B3037

Drawing 131859E, Revision 6



NOTE:

1. THE ROD SHALL BE OF THE TYPE AND GRADE SPECIFIED IN THE DRAWING.

2. THE NUT SHALL BE OF THE TYPE AND GRADE SPECIFIED IN THE DRAWING.

3. THE WASHER SHALL BE OF THE TYPE AND GRADE SPECIFIED IN THE DRAWING.

4. THE CASTLE NUT SHALL BE OF THE TYPE AND GRADE SPECIFIED IN THE DRAWING.

5. THE TOP NUT SHALL BE OF THE TYPE AND GRADE SPECIFIED IN THE DRAWING.

6. THE SPECIAL WASHER SHALL BE OF THE TYPE AND GRADE SPECIFIED IN THE DRAWING.

7. THE ROD SHALL BE OF THE TYPE AND GRADE SPECIFIED IN THE DRAWING.

8. THE NUT SHALL BE OF THE TYPE AND GRADE SPECIFIED IN THE DRAWING.

9. THE WASHER SHALL BE OF THE TYPE AND GRADE SPECIFIED IN THE DRAWING.

10. THE CASTLE NUT SHALL BE OF THE TYPE AND GRADE SPECIFIED IN THE DRAWING.

11. THE TOP NUT SHALL BE OF THE TYPE AND GRADE SPECIFIED IN THE DRAWING.

12. THE SPECIAL WASHER SHALL BE OF THE TYPE AND GRADE SPECIFIED IN THE DRAWING.

STUD, NUT & WASHER DETAILS

69-91750-2-1-1A2-200

TVA

MF