

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

July 10, 1984

Director of Nuclear Reactor Regulation
Attention: Ms. E. Adensam, Chief
Licensing Branch No. 4
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Ms. Adensam:

In the Matter of the Application of) Docket Nos. 50-390
Tennessee Valley Authority) 50-391

During a telephone conference call on June 7, 1984, the NRC and TVA discussed Watts Bar Nuclear Plant ASME Section XI Preservice Inspection Program Technical Instruction TI-50A for unit 1. As a result, TVA has revised requests for relief ISI-4, -11, and -13 and ISI-7 and -12 are being withdrawn. Copies of these revised relief requests are enclosed. In addition, TVA will revise ISI-10 to incorporate the current state-of-the-art examination capabilities after the fabrication of the ultrasonic calibration block.

If you have any questions concerning this matter, please get in touch with D. P. Ormsby at FTS 858-2682.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L. M. Mills
L. M. Mills, Manager
Nuclear Licensing

Sworn to and subscribed before me
this 10th day of July, 1984

Paulette W. White
Notary Public
My Commission Expires 9-5-84

Enclosure

cc: U.S. Nuclear Regulatory Commission (Enclosure)
Region II
Attn: Mr. James P. O'Reilly Administrator
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

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REQUEST FOR RELIEF ISI-4

Components:

Pressure-retaining welds in piping (See List Below)

Class:

ASME Class 1 and 2 (TVA Safety Class A and B)

Inspection Requirement:

Volumetric examination of longitudinal, circumferential, and pipe branch connection welds, examination categories B-F, B-J, C-F, and C-G.

Basis for Relief:

In some cases it will be impractical to ultrasonically examine all welds in accordance with paragraph T-532 of Article 5, Section V of the ASME Code or Appendix III, Subarticle III-4400 of Section XI of ASME Code 1977 Edition, Summer 1978 Addenda and achieve meaningful results, i.e., removable hanger interference or valve and pump casings adjoining the welds.

Each weld had a construction radiographic examination performed in accordance with ASME Section III.

Alternate Inspection:

Ultrasonic examinations will be performed to the extent practical and supplemented with Section XI surface examinations on all accessible areas of the weld.

REQUEST FOR RELIEF ISI-4

| Weld Number ¹ | Code Category ² | Drawing Number | Physical Configuration ³ | Scan ⁴ /Limitation ⁵ | Remarks ⁶ |
|--------------------------|----------------------------|-----------------------|-------------------------------------|--|--|
| SIF-D091-4 | BJ | CHM-2758-C 9 of 13 | E/V | 3/5:00-8:00 4/No scan from valve | ELL introdos prevents coupling from 5:00-8:00 (Note 7) |
| SIF-D090-5 | BJ | CHM-2758-C 8 of 13 | V/T | 3/No scan 4/No scan | No examination due to component geometry (Note 7) |
| SIF-D089-6 | BJ | CHM-2758-C 7 of 13 | V/T | 3/No scan 4/No scan | No examination due to component geometry (Note 7) |
| SIF-D091-6 | BJ | CHM-2758-C 9 of 13 | V/T | 3/No scan 4/No scan | No examination due to component geometry (Note 7) |
| UHIF-D043-6 | BJ | ISI-0004-C 4 of 5 | V/F | 3/No scan 4/No scan | No examination due to component geometry (Note 7) |
| UHIF-D043-5 | BJ | ISI-0004-C 4 of 5 | V/F | 3/No scan 4/No scan | No examination due to component geometry (Note 7) |

414

REQUEST FOR RELIEF ISI-4 (Continued)

| Weld Number ¹ | Code Category ² | Drawing Number | Physical Configuration ³ | Scan ⁴ /Limitation ⁵ | Remarks ⁶ |
|--------------------------|----------------------------|-----------------------|-------------------------------------|--|--|
| SIF-D090-6 | BJ | CHM-2758-C 8 of 13 | P/V | 3/No Scan 4/2:00-5:00 | No examination due to component geometry (Note 7) |
| RCF-D234-3 | BJ | ISI-0017-C 4 of 11 | E/V | 3/No scan 4/5:00-7:00 | ELL introdoses prevents coupling from 5:00-7:00 (Note 8) |
| RCF-D236-4 | BJ | ISI-0017-C 5 of 11 | E/V | 3/5:00-7:00 4/No scan | ELL introdoses prevents coupling from 5:00-7:00 (Note 8) |
| RCF-D232-2 | BJ | ISI-0017-C 1 of 11 | V/R | 3/No scan 4/No scan 5/No base metal exam 6/No base metal exam | No examination due to component geometry (Note 8) |
| MSF-D001-1 | CG | CHM-2669-C 1 of 4 | E/N | 3/No scan 4/ 1/2 VEE path exam | No examination due to component geometry |
| MSF-D006-15 | CG | CHM-2669-C 4 of 4 | V/F | 3/No scan 4/No scan | No examination due to component geometry |
| FWF-D372-8 | CG | CHM-2671-C 6 of 8 | R/R | 3/No scan 4/No scan | No examination due to component geometry |
| UHS-66 | CF | ISI-0004-C 5 of 5 | P/F | 3/No scan 4/12:00-3:00 | No examination due to component geometry |
| RHRF-D047-4 | CF | CHM-2636-C 2 of 8 | E/T | 4/2:00-4:00, 8:00-10:00 | No examination due to component geometry |
| RHRS-132 | CF | CHM-2636-C 6 of 8 | E/E | 3/4:00-8:00 4/12:00-5:00 | ELL introdoses prevents coupling from 4:00-5:00 |

REQUEST FOR RELIEF ISI-4 (Continued)

| Weld Number ¹ | Code Category ² | Drawing Number | Physical Configuration ³ | Scan ⁴ /Limitation ⁵ | Remarks ⁶ |
|--------------------------|----------------------------|-----------------------|-------------------------------------|--|--|
| RHRS-102 | CF | CHM-2636-C 6 of 8 | E/T | 3/5:00-7:00 4/6:00-9:00 | ELL introdoses prevent coupling from 6:00-7:00 |
| RHRF-D051-12LS | CF | CHM-2636-C 6 of 8 | E | 9/No scan 10/No scan | ELL introdos prevents ultrasonic coupling |
| RHRS-132-LS | CF | CHM-2636-C 6 of 8 | E | 9/No scan 10/No scan | ELL introdoses prevents ultrasonic coupling |
| SIS-40-LS | CF | CHM-2758-C 3 of 13 | E | 9/No scan 10/No scan | ELL introdos prevents ultrasonic coupling |
| SIF-D080-1-LS | CF | CHM-2758-C 2 of 13 | E | 9/No scan 10/No scan | ELL introdos prevents ultrasonic coupling |
| FWF-D001-6 | CG | CHM-2671-C 1 of 8 | E/V | 3/11:00-1:00, 2:00-4:00, 5:00-7:00 4/No scan 5/See scan 3 limits 6/See scan 3 limits | No examination due to component geometry and permanent support |
| FWS-41 | CG | CHM-2671-C 4 of 8 | R/P | 4/3:00-5:00 5/3:00-5:00 6/3:00-5:00 | No examination due to permanent support |
| UHIF-D039-17 | CF | ISI-0004-C 5 of 5 | P/ Penetra- tion | No scans | ND examination due to weld covered by guard pipe |
| MSS-61A-LS | CG | CHM-2669-C 4 of 4 | P | All/Limited by 10% | Limited examinations due to pipe support |

916

REQUEST FOR RELIEF ISI-4 (Continued)

| Weld Number ¹ | Code Category ² | Drawing Number | Physical Configuration ³ | Scan ⁴ /Limitation ⁵ | Remarks ⁶ |
|--------------------------|----------------------------|-----------------------|-------------------------------------|--|---|
| MSS-61B-LS | CG | CHM-2669-C 4 of 4 | P | All/Limited by 10% | Limited examinations due to pipe support |
| MSF-D006-10 (R-501L) | CG | CHM-2669 4 of 4 | P/V | 15/Limited | Limited examination due to component geometry |
| RHRHX-4-1A | CB | CHM-2662-A | Nozzle-to-Shell | No scan 4/scan3 limited 60° to 120° and 240° to 300° | Limited examination due to nozzle geometry and vessel supports. |
| RHRHX-2-1A | CA | CHM-2662-A | Circ-weld | 2, 3, and 4 limited by ~90% | Limited examination due to nozzle and support interference. |
| RHRHX-3-1B | CB | CHM-2662-A | Nozzle-to-Shell | No scan 4/scan3 limited 60° to 120° and 240° to 300° | Limited examination due to nozzle geometry and vessel supports. |
| RCS-106 | B-J | ISI-0017-C 6 of 11 | F/P | 3/No scan 4/7:00 to 11:00 | No examination due to component geometry. Limited due to permanent pipe restraint. (Note 8) |
| RHRF-D055-10 | C-F | CHM-2636-C 8 of 8 | E/V | 3/9:00 4/No scan | No examination due to component geometry. Limited due to gamma plug. |
| SIF-D088-9 | CF | CHM-2758-C 6 of 14 | E/P | All/6:00 | Limited examination due to thermocouple. |

417

REQUEST FOR RELIEF ISI-4 (Continued)

| Weld Number ¹ | Code Category ² | Drawing Number | Physical Configuration ³ | Scan ⁴ /Limitation ⁵ | Remarks ⁶ |
|--------------------------|----------------------------|------------------------|-------------------------------------|--|---|
| MSF-D001-1 | CG | CHM-2669 1 of 4 | N/E | 3/No scan 4/3:00 | No examination due to component geometry. Limited examination due to 1½" branch connection. |
| RHRF-D049-4 | CF | CHM-2636-C 5 of 8 | P/E | 4/No scan 3/12:00 | No examination due to component geometry. Limited examination due to 2" branch connection. |
| 4174 SIF-B-T059-2B | BJ | CHM-2758-C 11 of 13 | P/F | 4, 5, 6/No scan | No examination due to flange bolting and configuration (Note 8) |
| MSS-8 | CG | CHM-2669-C 1 of 4 | E/P | 3, 4, 5, 6/6:00 | Limited examination due to pipe support. |
| SIF-B-T059-2A | BJ | CHM-2758-C 11 of 13 | F/P | 4, 5, 6/No scan | No examination due to flange bolting and configuration (Note 8) |
| RCS-1-4 | B-J | CHM-2547-B 1 of 2 | E/P | 4/Limited base metal/limited | Limited examination due to elbow geometry (Note 9) |
| RCS-2-4 | B-J | CHM-2547-B 1 of 2 | E/P | 4/Limited base metal/limited | Limited examination due to elbow geometry (Note 9) |
| RCS-3-4 | B-J | CHM-2547-B 1 of 2 | E/P | 4/Limited base metal/limited | Limited examination due to elbow geometry (Note 9) |
| RCS-4-4 | B-J | CHM-2547-B 1 of 2 | E/P | 4/Limited base metal/limited | Limited examination due to elbow geometry (Note 9) |
| RCF-D1-2 | B-F | CHM-2547-B 1 of 2 | E/N | 4/No scan | No examination due to nozzle geometry (Note 9) |

REQUEST FOR RELIEF ISI-4 (Continued)

| Weld Number ¹ | Code Category ² | Drawing Number | Physical Configuration ³ | Scan ⁴ /Limitation ⁵ | Remarks ⁶ |
|--------------------------|----------------------------|------------------------|-------------------------------------|--|---|
| RCF-D5-2 | B-F | CHM-2547-B 1 of 2 | E/N | 4/No scan | No examination due to nozzle geometry (Note 9) |
| RCF-D2-2 | B-F | CHM-2547-B 1 of 2 | E/N | 4/No scan | No examination due to nozzle geometry (Note 9) |
| RCF-D4-2 | B-F | CHM-2547-B 1 of 2 | E/N | 4/No scan | No examination due to nozzle geometry (Note 9) |
| RCF-F3-1 | B-F | CHM-2547-BR2 1 of 2 | N/E | 3/No scan | No examination due to nozzle geometry (Note 9) |
| RCF-F2-1 | B-F | CHM-2547-BR2 1 of 2 | N/E | 3/No scan | No examination due to nozzle geometry (Note 9) |
| RCS-1-5 | B-J | CHM-2547-BR2 1 of 2 | Branch Connections | 3/Limited | Limited examination due to branch connection configuration (Note 9) |
| RCS-2-5 | B-J | CHM-2547-BR2 1 of 2 | Branch Connections | 3/Limited | Limited examination due to branch connection configuration (Note 9) |
| RCS-3-5 | B-J | CHM-2547-BR2 1 of 2 | Branch Connections | 3/Limited | Limited examination due to branch connection configuration (Note 9) |
| RCS-4-5 | B-J | CHM-2547-BR2 1 of 2 | Branch Connections | 3/Limited | Limited examination due to branch connection configuration (Note 9) |

4/17b

REQUEST FOR RELIEF ISI-4 (Continued)

| Weld Number ¹ | Code Category ² | Drawing Number | Physical Configuration ³ | Scan ⁴ /Limitation ⁵ | Remarks ⁶ |
|--------------------------|----------------------------|------------------------|-------------------------------------|--|---|
| RCS-4-6 | B-J | CHM-2547-BR2 1 of 2 | Branch Connec- tions | 4/No scan | No examination due to branch connection configuration (Note 9) |
| RCS-P-1 | B-J | CHM-2547-BR2 1 of 2 | Branch Connec- tions | 4/No scan | No examination due to branch connection configuration (Note 9) |

REQUEST FOR RELIEF ISI-4 (Continued)

- NOTES:
1. LS following seam number indicates longitudinal seam.
 2. Categories determined in accordance with ASME XI 74S75.
 3. P = Pipe, V = Valve, E = ELL, T = TEE, R = Reducer; F = Flange and N = Nozzle.
 4. Scans 3 and 4 are perpendicular to circumferential welds.
Scans 5 and 6 are parallel to circumferential welds.
Scans 7 and 8 are perpendicular to longitudinal welds.
Scans 9 and 10 are parallel to longitudinal welds.
 5. Limitations are expressed in o'clock references. In general, the exact limitation is noted rather than a percentage of the required examinations.
 6. Examinations conducted from one side of the weld provide full coverage within the variable limits of weld penetrability and opposite surface condition.
 7. This weld can be exempt from examination to the later code since the stress level and usage factor were below the limits under loads associated with specific seismic events and operational conditions. [1977 Edition, Summer 1978 Addenda, Table IWB-2500-1, Category B-J, Noted (1)(b)]
 8. This weld can be exempt from volumetric examination by the later code since the nominal pipe size is less than four inches. (1977 Edition, Summer 1978 Addenda, Table 2500-1, Category B-J)
 9. Because of the attenuation resulting from inherent coarse grain structure in cast stainless steel the examination is limited to the $\frac{1}{2}$ V technique. Also physical restrictions prevent the exam from both sides of the weld.

REQUEST FOR RELIEF ISI-11

Components: Letdown Heat Exchanger and Excess Letdown Heat Exchanger

Class: ASME Class 2 (TVA Safety Class B)

Inspection Requirement: Volumetric examination of at least twenty percent of each circumferential butt weld (head-to-shell, tube sheet-to-shell) in examination category C-A. This examination shall be uniformly distributed among three areas around the vessel circumference.

Basis for Relief: Twenty percent of the circumferential welds can be examined, however, because of geometrical interference we cannot distribute the examination area uniformly.

Alternate Inspection: The circumferential welds shall be volumetrically examined in all accesible areas. This will exceed the twenty percent examination requirements.

REQUEST FOR RELIEF ISI-13

Components: Ultrasonic Examination Techniques of Piping Welds

Class: ASME Class 1 and 2 (TVA Safety Class A and B)

Inspection Requirement: Ultrasonic Examination

Basis for Relief: In accordance with Title 10 of Code of Federal Regulation, Part 50, Section 50.55a, paragraph g(4)(IV), in-service examinations of components, tests of pumps and valves, and system pressure tests, may meet the requirements set forth in subsequent editions and addenda that are incorporated by reference in paragraph (b) of this section, subject to the limitations and modifications listed in paragraph (b) of this section, 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 Watts Bar Preservice Program is based on 1974 Edition, Summer 1975 Addenda.

The ultrasonic examination technique [IWA-2232(b), IWA-2232(c), and Appendix III] and evaluation (IWA-3000) of piping welds is being updated to the 1977 Edition, Summer 1978 Addenda of ASME Section XI except for Appendix III, Paragraph III-3410 material, III-3430 calibration notches, and III-4450 inaccessible welds. TVA is requesting to update to only portions of the related areas of the respective editions and addenda.

Alternate Inspection: As specified in Request for Relief ISI-1 and ISI-4.