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W3F1-2009-0026

June 1, 2009

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

SUBJECT: Requests for Relief from ASME Section XI Volumetric Examination Requirements – Second 10-Year Interval
Waterford Steam Electric Station, Unit 3
Docket No. 50-382
License No. NPF-38

- REFERENCE:
1. Entergy Letter to the NRC, "Inservice Inspection (ISI) Relief Request ISI-001, Revision 7, Limited Examination of Welds/Components" dated January 27, 1998 (W3F1-98-0003)
 2. Entergy Letter to the NRC, "Additional Information Regarding Inservice Inspection (ISI) Relief Request ISI-001, Revision 7" dated March 22, 1999 (W3F1-99-0042)

Dear Sir or Madam:

Pursuant to 10 CFR 50.55a(g)(6)(i), Entergy Operations, Inc. (Entergy) requests relief from the requirements of the American Society of Mechanical Engineers (ASME), Boiler and Pressure Vessel (B&PV) Code, Section XI pertaining to volumetric examinations at Waterford Steam Electric Station, Unit 3 (Waterford 3). In several locations, the required coverage cannot be obtained due to interference or geometry. The individual relief requests by examination category are provided in the attachments. These reliefs are for the second 10-year interval.

Entergy has previously submitted relief requests for limited volumetric examinations for Waterford 3 pressure-retaining welds (References 1 and 2).

This submittal contains no new commitments.

A047
NRR

Please contact Robert J. Murillo, Manager, Licensing at (504) 739-6715 should you have any questions concerning this submittal.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert J. Murillo", with a long horizontal flourish extending to the right.

RJM/RJP/ssf

Attachments:

1. Request for Relief WF3-ISI-007
2. Request for Relief WF3-ISI-008
3. Request for Relief WF3-ISI-009
4. Request for Relief WF3-ISI-010
5. Request for Relief WF3-ISI-011
6. Request for Relief WF3-ISI-012
7. Request for Relief WF3-ISI-013
8. Request for Relief WF3-ISI-014

cc: Mr. Elmo E. Collins, Jr.
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U. S. Nuclear Regulatory Commission
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NRC Senior Resident Inspector
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U. S. Nuclear Regulatory Commission
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Louisiana Department of Environmental Quality
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American Nuclear Insurers
Attn: Library
95 Glastonbury Blvd.
Suite 300
Glastonbury, CT 06033-4443

**Attachment 1 to
W3F1-2009-0026
Request for Relief
WF3-ISI-007**

REQUEST FOR RELIEF
WF3-ISI-007

Components/Numbers: See Table 1

Code Classes: ASME Code Class 1

References: ASME Section XI 1992 Edition, Table IWB-2500-1
ASME Section XI 1980 Edition with the Winter of 1981
Addenda for ultrasonic examinations
ASME Section XI 1992 Edition with 1993 Addenda
ASME Section XI 1995 Edition with 1995 & 1996 Addenda

Examination Category: B-A,

Description: Pressure Retaining Welds in Reactor Vessel

Item Number(s): B1.12, B1.22, B1.30, B1.40

Unit / Inspection Interval
Applicability: Waterford 3 Nuclear Station (WF3), Second (2nd) 10-year
interval

I. Code Requirement(s)

ASME Section XI, Table IWB-2500-1, Examination Category B-A, Pressure Retaining
Welds in Reactor Vessel – Inspection Program B:

- 1) Item B1.22 - Requires a volumetric examination of Meridional Welds in
Reactor Vessel Heads.
- 2) Item B1.40 - Requires a volumetric examination of Reactor Vessel Head to
Flange Welds

During the 2nd 10-year ISI interval at WF3, 10CFR50.55a(g)(6)(ii)(C) mandated an
implementation schedule for all licensees to begin use of Appendix VIII of the 1995
Edition, with 1996 Addenda of ASME Section XI. As a result, all examinations listed
in this relief request were performed prior to this implementation schedule, and were
performed in accordance with, Article 4 of the 1980 Edition, through the Winter 1981
Addenda of Section V. The methodology used to determine Code coverage for each
of the components listed in this relief request, therefore, depends on which set of
requirements were in effect during the examination. Where earlier Code rules were in
effect, Entergy credited Code coverage for examinations using the techniques and
examination angles required at that time. After the implementation of Appendix VIII,
examinations were performed using the techniques and examination angles qualified
through PDI for consideration of Code coverage, in accordance with qualified PDI

procedures.

II. Relief Requested

Due to the geometric configuration and location, certain code examination volumes, as depicted in ASME Section XI, cannot be examined to the extent of obtaining full code coverage. Pursuant to 10CFR50.55a(g)(6)(i), Entergy Operations, Inc. (Entergy) requests permission to perform ultrasonic examination within the limitations described in Table 1 of this relief request.

<u>Item Number</u>	<u>Comp. ID</u>	<u>Item Description</u>	<u>% Coverage</u>	<u>Reason for Limitation</u>
B1.40	02-001	RPV Head to Flange Weld	64%	Exam coverage limited by shroud, shroud support, and flange configuration. Scanned with 0°, 45°s, and 60°s, where accessible. Six inch wide lifting lugs every 30° around the circumference of the head. Shroud located 8" from the toe of the weld on the head side. Flange located 5 inches from the toe on the opposite side.
B1.22	02-002	RPV Head Peel Segment to Peel Segment at 90°	18%	Scanning obstructed for 18.1" of a 22.1" weld length, due to shroud. 45° and 60° shear, and 0° L used for scanning, where accessible.
B1.22	02-003	RPV Head Peel Segment to Peel Segment at 0°	18%	Scanning obstructed for 18.1" of a 22.1" weld length, due to shroud. 45° and 60° shear, and 0° L used for scanning, where accessible.

III. Basis for Relief

During ultrasonic examination of the Pressure Retaining Reactor Vessel Welds listed in Table 1 of this relief request, 100% coverage of the required examination volume could not be obtained.

Radiography is not practical on these types of weld configurations, which prevents

placement of the film and exposure source.

IV. Proposed Alternative Examinations

No alternative testing is proposed at this time. Entergy has examined these welds to the extent practical and will continue to perform pressure testing on the subject welds as required by the Code.

V. Conclusion

10CFR50.55a(g)(6)(i) states:

The Commission will evaluate determinations under paragraph (g)(5) of this section that code requirements are impractical. The Commission may grant such relief and may impose such alternative requirements as it determines is authorized by law and will not endanger life or property or the common defense and security and is otherwise in the public interest giving due consideration to the burden upon the licensee that could result if the requirements were imposed on the facility.

Entergy believes that it is impractical to obtain greater examination coverage on these welds. The examinations performed on the subject welds in addition to the examination of similar welds contained in the program would detect generic degradation, if it existed, demonstrating an acceptable level of integrity. Therefore, we request the proposed alternative be authorized pursuant to 10CFR50.55a(g)(6)(i).

Attachment 2 to

W3F1-2009-0026

Request for Relief

WF3-ISI-008

REQUEST FOR RELIEF
WF3-ISI-008

Components/Numbers: See Table 1

Code Classes: ASME Code Class 1

References: ASME Section XI 1992 Edition, Table IWB-2500-1
ASME Section XI 1980 Edition with the Winter of 1981 Addenda for ultrasonic examinations
ASME Section XI 1992 Edition with 1993 Addenda
ASME Section XI 1995 Edition with 1995 & 1996 Addenda

Examination Category: B-D

Description: Full Penetration Welded Nozzles in Vessels

Item Number(s): B3.10, B3.20, and B3.30

Unit / Inspection Interval Applicability: Waterford 3 Nuclear Station (WF3), Second (2nd) 10-year interval

I. Code Requirement(s)

ASME Section XI, Table IWB-2500-1, Examination Category B-D, Full Penetration Welded Nozzles in Vessels – Inspection Program B:

- 1) Item B3.10 - Requires a volumetric examination of Reactor Vessel Nozzle-to-Vessel Welds.
- 2) Item B3.20 - Requires a volumetric examination of Reactor Vessel Nozzle Inside Radius Section.
- 3) Item B3.30 - Requires a volumetric examination of Pressurizer Vessel Nozzle-to-Vessel Welds.

During the 2nd 10-year ISI interval at WF3, 10CFR50.55a(g)(6)(ii)(C) mandated an implementation schedule for all licensees to begin use of Appendix VIII of the 1995 Edition, with 1996 Addenda of ASME Section XI. As a result, some examinations listed in this relief request were performed prior to this implementation schedule, and were performed in accordance with Article 4 of the 1980 Edition, through the Winter 1981 Addenda of Section V. The methodology used to determine Code coverage for each of the components listed in this relief request depends on which set of requirements were in effect at the time of the examination. Where earlier Code rules were in effect, Entergy credited Code coverage for examinations using the techniques and examination angles required at that time. After the implementation of Appendix VIII, examinations were performed using the techniques and examination angles qualified through PDI for consideration of Code coverage, in accordance with qualified PDI procedures.

II. Relief Requested

Due to the geometric configuration of the nozzle-to-vessel welds listed below, certain code examination volumes, as depicted in ASME Section XI, cannot be examined to the extent of obtaining full code coverage. Pursuant to 10CFR50.55a(g)(6)(i), Entergy Operations, Inc. (Entergy) requests permission to perform ultrasonic examination within the limitations described in Table 1 of this relief request.

Item Number	Comp. ID	Item Description	% Coverage	Reason for Limitation
B3.130	03-010	42" Hot Leg Nozzle to SG#1	86.5%	Single side examination (for majority of weld volume), due to weld location adjacent to the nozzle transition. Scanning performed with 0°, 45°s and 60°s where accessible (including two directions for accessible portion of weld volume.
B3.130	03-011	30" Cold leg to SG#1 @45°	66%	Exam coverage limited by nozzle and weld geometry configuration, due to transition of the nozzle adjacent to the weld toe. Scanned with 0°, 45°s and 60°s, where accessible.
B3.130	03-012	30" Cold leg to SG#1 @315°	66%	Exam coverage limited by nozzle and weld geometry configuration, due to transition of the nozzle adjacent to the weld toe. Scanned with 0°, 45°s and 60°s, where accessible.
B3.110	05-009	Pressurizer Surge Nozzle to Head Weld	64%	Exam coverage limited by nozzle to head configuration, due to transition of the nozzle adjacent to the weld toe. Scanned with 0°, 45°s and 60°s, where accessible.
B3.110	05-010	Pressurizer Spray Nozzle to Head Weld	74.8%	Exam coverage limited by nozzle to head configuration, due to transition of the nozzle adjacent to the weld toe. Scanned with 0°, 45°s and 60°s, where accessible.
B3.110	05-011	Pressurizer Safety Nozzle to Head Weld	65.9%	Exam coverage limited due to nozzle to head configuration, due to transition of the nozzle adjacent to the weld toe. Exam also limited due to head to shell transition area. This obstructed the 45° axial scan for 13" and the 60° axial scan for 20".
B3.110	05-012	Pressurizer Safety Nozzle to Head Weld	65.9%	Exam coverage limited due to nozzle to head configuration, due to transition of the nozzle adjacent to the weld toe. Exam also limited due to head to shell transition area. This obstructed the 45° axial scan for 13" and the 60° axial scan for 20".
B3.110	05-013	Pressurizer Safety Nozzle to Head Weld	65.9%	Exam coverage limited due to nozzle to head configuration, due to transition of the nozzle adjacent to the weld toe. Exam also limited due to head to shell transition area. This obstructed the 45° axial scan for 13" and the 60° axial scan for 20".

Table 1, Limited B-D Examinations				
Item Number	Comp. ID	Item Description	% Coverage	Reason for Limitation
B3.120	05-014	Pressurizer Surge Nozzle Inner Radius	29.4%	Scanning limited by nozzle to head transition configuration. Scanning performed with 60°s and 70°s, where accessible.
B3.120	05-015	Pressurizer Spray Nozzle Inner Radius	60.4%	Scanning limited by nozzle to head transition configuration. Scanning performed with 60°s and 70°s, where accessible.
B3.120	05-016	Pressurizer Safety Nozzle Inner Radius	72%	Scanning limited by nozzle to head transition configuration. Scanning performed with 60°s and 70°s, where accessible.
B3.120	05-017	Pressurizer Safety Nozzle Inner Radius	72%	Scanning limited by nozzle to head transition configuration. Scanning performed with 60°s and 70°s, where accessible.
B3.120	05-018	Pressurizer Safety Nozzle Inner Radius	72%	Scanning limited by nozzle to head transition configuration. Scanning performed with 60°s and 70°s, where accessible.

III. Basis for Relief

During ultrasonic examination of the Reactor and Pressurizer Vessel nozzle-to-vessel welds listed in Table 1 of this relief request, 100% coverage of the required examination volume could not be obtained.

Radiography is not practical on these types of nozzle-to-vessel weld configurations, which prevent placement of the film and exposure source. To perform any additional Code allowable UT examination, modification and/or replacement of the component would be required. The examinations performed on the subject items in addition to the examination of other vessel welds contained in the ISI program would detect generic degradation, if it existed, therefore demonstrating an acceptable level of integrity.

IV. Proposed Alternative Examinations

No alternative testing is proposed at this time. Entergy has examined these welds to the extent practical and will continue to perform pressure testing on the subject welds as required by the Code.

V. Conclusion

10CFR50.55a(g)(6)(i) states:

The Commission will evaluate determinations under paragraph (g)(5) of this section that code requirements are impractical. The Commission may grant such relief and may impose such alternative requirements as it determines is authorized by law and will not endanger life or property

or the common defense and security and is otherwise in the public interest giving due consideration to the burden upon the licensee that could result if the requirements were imposed on the facility.

Entergy believes that it is impractical to obtain greater examination coverage on these welds. To obtain additional coverage would necessitate modification and/or replacement of the component. The examinations performed on the subject welds in addition to the examination of similar welds contained in the program would detect generic degradation, if it existed, therefore demonstrating an acceptable level of integrity. Therefore, we request the proposed alternative be authorized pursuant to 10CFR50.55a(g)(6)(i).

**Attachment 3 to
W3F1-2009-0026
Request for Relief
WF3-ISI-009**

REQUEST FOR RELIEF
WF3-ISI-009

Components/Numbers: See Table 1

Code Classes: ASME Code Class 1

References: ASME Section XI 1992 Edition, Table IWB-2500-1
ASME Section XI 1995 Edition with 1996 Addenda (for Ultrasonic examinations performed after November 22, 2002)

Examination Category: B-F,

Description: Pressure Retaining Dissimilar Metal Welds in Vessel Nozzles

Item Number(s): B5.40

Unit / Inspection Interval Applicability: Waterford 3 (WF3), Second (2nd) 10-year interval

I. Code Requirement(s)

ASME Section XI, Table IWB-2500-1, Examination Category B-F, Pressure Retaining Dissimilar Metal Welds in Vessel Nozzles.

1. Items B5.40 - Requires 100% volumetric examination of the Class 1 NPS 4 or Larger Nozzle-to-Safe End Butt Welds.

During the 2nd 10-year ISI interval at WF3, 10CFR50.55a(g)(6)(ii)(C) mandated an implementation schedule for all licensees to begin use of Appendix VIII of the 1995 Edition, with 1996 Addenda of ASME Section XI. After the implementation of Appendix VIII, only ½ Vee path examinations have been allowed to be used in austenitic materials, in accordance with qualified PDI procedures. Additional discussion, as to the examination coverage determination process when using Appendix VIII techniques on single-sided austenitic welds, is provided in Section III of this relief request.

II. Relief Requested

Pursuant to 10CFR50.55a(g)(6)(i), Entergy Operations, Inc. (Entergy) requests relief from achieving greater than 90% coverage as allowed by Code Case N-460, when performing volumetric examinations on the following welds.

<u>Table 1, Limited B-F Examinations</u>				
<u>Item Number</u>	<u>Item ID</u>	<u>Item Description</u>	<u>% Coverage</u>	<u>Reason for Limitation</u>
B5.40	26-006	PZR Nozzle to 8" x 6" Reducing Safe end Weld	63%	Scanning limited on reducer side due to OD taper near the weld toe. 45°s, 45°RL and 60°RL used for scanning, where accessible.

Table 1, Limited B-F Examinations				
<u>Item Number</u>	<u>Item ID</u>	<u>Item Description</u>	<u>% Coverage</u>	<u>Reason for Limitation</u>
B5.40	26-001	Pressurizer Safety Nozzle to 8" x 6" Reducing Safe end Weld	70%	Scan coverage limited on the reducing safe end side, due to OD configuration. 45°s, 45°RL, and 60°RL used for scanning, where accessible.

III. Basis for Relief

During ultrasonic examination of the piping welds listed in Table 1 of this relief request, 100% coverage of the required examination volume could not be obtained.

Class 1 piping and components are often designed with welded joints such as nozzle-to-pipe, pipe-to-valve and pipe-to-pump which can physically obstruct a large portion of the required examination volume. For the welds listed in Table 1 (above), the examinations were performed after November 22, 2002, the 10CFR50.55a mandatory implementation date for Appendix VIII of Section XI, and code coverage percentages, provided, reflect what is currently allowed by qualified Appendix VIII techniques. Appendix VIII qualified (PDI) procedures have demonstrated that sound beams may potentially be attenuated and distorted when required to pass through austenitic weld metal. Still, the PDI qualified methods employ the best available technology for maximizing examination coverage of these types of welds. For the components listed in this relief request, examination was extended to the far side of the weld to the extent permitted by geometry as qualified through PDI.

Entergy has used the best available techniques to examine the subject piping welds. To improve upon these examination coverage percentages, modification and/or replacement of the component would be required. Consistent with the ASME Section XI sampling approach, examination of the subject welds, when combined with examinations that have been performed on other welds within the same Examination Category, is adequate to detect generic degradation, if it existed, therefore demonstrating an acceptable level of integrity.

IV. Proposed Alternative Examinations

No alternative testing is proposed at this time. Entergy has examined the subject welds to the extent practical and will continue to perform pressure testing on the subject welds as required by the Code.

Entergy will use pressure test and VT-2 visual examination to compliment the limited examination coverage after each refueling outage.

V. Conclusion

10CFR50.55a(g)(6)(i) states:

The Commission will evaluate determinations under paragraph (g)(5) of this section that code requirements are impractical. The Commission may grant such relief and may impose such alternative requirements as it determines is authorized by law, and will not endanger life or property or the common defense and security and is otherwise in the public interest giving due

consideration to the burden upon the licensee that could result if the requirements were imposed on the facility.

Entergy believes that it is impractical to obtain greater examination coverage on these areas. To obtain additional coverage would necessitate modification and/or replacement of the component. The examinations performed on the subject areas, in addition to the examination of similar welds contained in the program would detect generic degradation, if it existed, therefore demonstrating an acceptable level of integrity. Therefore, we request the proposed alternative be authorized pursuant to 10CFR50.55a(g)(6)(i).

**Attachment 4 to
W3F1-2009-0026
Request for Relief
WF3-ISI-010**

REQUEST FOR RELIEF
WF3-ISI-010

Components/Numbers: See Table 1

Code Classes: ASME Code Class 1

References: ASME Section XI 1992 Edition, Table IWB-2500-1
ASME Section XI 1995 Edition with 1996 Addenda (for ultrasonic examinations performed after May 22, 2000)

Examination Category: B-J

Description: Pressure Retaining Welds in Piping

Item Number(s): B9.11, B9.21, B9.31

Unit / Inspection Interval Applicability: Waterford 3 (WF3), Second (2nd) 10-year interval

I. Code Requirement(s)

ASME Section XI, Table IWB-2500-1, Examination Category B-J, Pressure Retaining Welds in Piping – Inspection Program B:

1. Item B9.11 – Requires a volumetric examination of Circumferential Welds NPS 4 or Larger.
2. Item B9.21- Requires a volumetric examination of Circumferential Welds less than NPS 4.
3. Item B9.31 - Requires a volumetric examination of Branch Pipe Connection Welds NPS 4 or Larger

During the 2nd 10-year ISI interval at WF3, 10CFR50.55a(g)(6)(ii)(C) mandated an implementation schedule for all licensees to begin use of Appendix VIII of the 1995 Edition, with 1996 Addenda of ASME Section XI. As a result, the examinations listed in this relief request were performed utilizing procedures written in accordance with the PDI Generic UT Procedures and Appendix VIII. With the implementation of Appendix VIII, only ½ Vee path examinations have been allowed to be used in austenitic materials, and angle beams are no longer credited to extend beyond the centerline of austenitic welds for consideration of Code coverage, in accordance with qualified PDI procedures. Additional discussion, as to the examination coverage determination process when using Appendix VIII techniques on single-sided austenitic welds, is provided in Section III of this relief request.

II. Relief Requested

Pursuant to 10CFR50.55a(g)(6)(i), Entergy Operations, Inc. (Entergy) requests relief from

achieving greater than 90% coverage as allowed by Code Case N-460, when performing volumetric examinations on the following welds.

<u>Table 1, Limited B-J Examinations</u>				
<u>Item Number</u>	<u>Comp. ID</u>	<u>Item Description</u>	<u>% Coverage</u>	<u>Reason for Limitation</u>
B9.11	06-006	14" Shutdown Cooling Nozzle to Safe end Weld	86.5%	Scanning limited on nozzle side of weld due to nozzle transition. 45° and 60° shear, 40°, 45° and 60° RL used for scanning, where accessible.
B9.11	07-013	RCS 30" Elbow to 45° Elbow Weld	82.2%	Scanning obstructed for 17.8% of weld circumference due to adjacent permanent support structure. 45°s and 60°s used for scanning, where accessible.
B9.11	08-014	30" Pipe to Safe end Weld	71%	Scan coverage limited on safe end side of weld due to short safe end length and the adjacent pump configuration. 45°s and 45°RL used for scanning, where applicable.
B9.11	09-002	SG Nozzle Ext. Piece to 30" Elbow Ext. Piece Weld	87%	Scanning limited on elbow side of weld due to elbow OD configuration, limiting the amount of elbow side coverage. 45°s and 60°s used for scanning, where accessible.
B9.11	09-005	45° Elbow to 30" Elbow Weld	85%	Scanning limited on elbow side of weld for 17" of circumference due to adjacent permanent support. Scanning performed across weld from pipe side, but no second direction in obstructed area due to ID cladding, which precludes bouncing sound. 45°s used for scanning, where accessible.
B9.11	09-016	30" Elbow to Safe end Weld (RCP 1B Inlet)	52.5%	Scanning limited on safe end side of weld due to the width and shape of safe end. 45°s and 60°s, and 45°, 60° and 70° RL used for scanning, where accessible.
B9.11	09-017	30" Safe end to RCP 1B Weld	17.5%	Scanning limited on safe end side of weld due to the width and shape of safe end. Scanning on Pump side is considered "best effort" due to cast stainless steel material. 1.9% of safe end side was also obstructed by a 1" diameter nozzle. 45° RL used for scanning, where accessible.
B9.11	10-001	RCP 1B to 30" Safe end Weld	18%	Scanning limited on safe end side of weld due to the width and shape of safe end. Scanning on Nozzle side limited by nozzle transition. 45° RL used for scanning, where accessible.

Table 1, Limited B-J Examinations

Item Number	Comp. ID	Item Description	% Coverage	Reason for Limitation
B9.11	10-002	Safe end to 30" Pipe Weld (RCP 1B Outlet)	44.2%	Scanning limited on safe end side due to width and shape of safe end. Pipe side scanning limited by adjacent nozzle for 6.75" of 116" of circumference. 45° and 60° RL used for scanning, where accessible.
B9.11	13-001	SG#2 30" Nozzle to Nozzle Extension Weld	62.5%	Scanning limited to Nozzle Extension side only, due to Nozzle OD configuration. Additionally, Nozzle Extension side scanning was limited due to adjacent weld no. 13-002, resulting in approximately only 50% coverage of the required volume from the Nozzle Extension side, in the axial scan direction. Circumferential coverage was unobstructed. 45° and 60° shear used for scanning, where accessible.
B9.11	17-033	12" Pipe to Reducer Weld	57%	Examination limited on reducer side due to taper configuration 0.8" from weld toe. Scanning performed with 45°s and 70°RL, where accessible.
B9.11	19-006	12" Pipe to Valve Weld	50%	Scanning limited to pipe side only, due to valve OD configuration. 45°s and 60°RL used for scanning where accessible.
B9.11	19-008	Valve end to 12" Pipe Weld	50%	Scanning limited to pipe side only, due to valve OD configuration. 45°s and 60°RL used for scanning, where accessible.
B9.11	21-066	14" Pipe to Valve Weld	50%	Single sided examination due to valve configuration. 45-70°s, and 70°RL used for scanning, where accessible.
B9.11	22-023	Elbow to 14" Pipe Weld	88%	10" of downstream side of the weld, near the intrados of the elbow, was not-accessible due to penetration hole. 45° and 60° shear used for scanning, where accessible.
B9.11	25-009	4" Pipe to 4" x 4" x 3" Tee Weld	75%	Scanning limited to 50% circumference on tee side due to branch connection radius. 45-70°s used for scanning, where accessible.
B9.11	25-015	4" x 4" x 3" Tee to 4" Pipe Weld	75%	Scanning limited to 50% circumference on tee side due to branch connection radius. 45-70°s used for scanning, where accessible.
B9.11	25-016	4" Pipe to Valve end Weld	50%	Single sided examination due to valve configuration. 45-70°s used for scanning, where accessible.
B9.11	25-018	Valve end to 4" Pipe Weld	50%	Single sided examination due to valve configuration. 45-70°s used for scanning, where accessible.
B9.11	25-019	4" Pipe to Elbow weld	75%	Scanning limited to 50% circumference on the elbow side due to the intrados radius. 45-70°s used for scanning, where accessible.

Table 1, Limited B-J Examinations

<u>Item Number</u>	<u>Comp. ID</u>	<u>Item Description</u>	<u>% Coverage</u>	<u>Reason for Limitation</u>
B9.11	25-020	Elbow to 4" Pipe Weld	75%	Scanning limited to 50% circumference on the elbow side due to the intrados radius. 45-70°s used for scanning, where accessible.
B9.11	25-022	Tee to 4" Branch Connection Weld	62%	Scanning limited to 12% on tee side due to the radius of the tee. 45-70°s used for scanning, where accessible.
B9.11	26-002	8" x 6" Reducing Safe-end to 6" Elbow Weld	50%	Scanning limited on both side of weld due to elbow to reducer OD configuration. 45-70°s used for scanning, where accessible.
B9.11	26-007	8" x 6" Reducing Safe-end to 6" Elbow Weld	52%	Scanning limited on both side of weld due to elbow to reducer OD configuration. 45-70°s used for scanning, where accessible.
B9.21	15-006	2" Drain Nozzle to Safe end Weld	85.5%	Examination limited on safe end side of weld due to adjacent safe end to pipe weld. 45°s, 60°RL and 70°RL used for scanning, where accessible.
B9.21	27-002	2" Pipe to Elbow Weld	75%	Scanning limited to 50% circumference on the elbow side due to the intrados radius. 45-70°s and 70°RL used for scanning, where accessible.
B9.21	27-004	2" Pipe to Elbow Weld	75%	Scanning limited to 50% circumference on the elbow side due to the intrados radius. 45-70°s and 70°RL used for scanning, where accessible.
B9.21	27-005	Elbow to 2" Pipe Weld	75%	Scanning limited to 50% circumference on the elbow side due to the intrados radius. 45-70°s and 70°RL used for scanning, where accessible.
B9.21	27-006	2" Pipe to Elbow Weld	75%	Scanning limited to 50% circumference on the elbow side due to the intrados radius. 45-70°s and 70°RL used for scanning, where accessible.
B9.21	27-007	Elbow to 2" Pipe Weld	75%	Scanning limited to 50% circumference on the elbow side due to the intrados radius. 45-70°s and 70°RL used for scanning, where accessible.
B9.21	27-008	2" Pipe to Elbow Weld	75%	Scanning limited to 50% circumference on the elbow side due to the intrados radius. 45-70°s and 70°RL used for scanning, where accessible.
B9.21	27-009	Elbow to 2" Pipe Weld	75%	Scanning limited to 50% circumference on the elbow side due to the intrados radius. 45-70°s and 70°RL used for scanning, where accessible.

Table 1. Limited B-J Examinations

Item Number	Comp. ID	Item Description	% Coverage	Reason for Limitation
B9.21	27-010	2" Pipe to Elbow Weld	75%	Scanning limited to 50% circumference on the elbow side due to the intrados radius. 45-70°s and 70°RL used for scanning, where accessible.
B9.21	27-011	Elbow to 2" Pipe Weld	75%	Scanning limited to 50% circumference on the elbow side due to the intrados radius. 45-70°s and 70°RL used for scanning, where accessible.
B9.21	27-037	Tee to 2" Pipe Weld	62%	Scanning limited to 12% on tee side due to the radius of the tee. 45-70°s and 70°RL used for scanning, where accessible.
B9.21	27-038	Elbow to 2" Pipe Weld	75%	Scanning limited to 50% circumference on the elbow side due to the intrados radius. 45-70°s and 70°RL used for scanning, where accessible.
B9.21	27-054	2" Pipe to Elbow Weld	75%	Scanning limited to 50% circumference on the elbow side due to the intrados radius. 45-70°s used for scanning, where accessible.
B9.21	27-055	Elbow to 2" Pipe Weld	75%	Scanning limited to 50% circumference on the elbow side due to the intrados radius. 45-70°s used for scanning, where accessible.
B9.21	28-001	2" Pipe to Elbow Weld	75%	Scanning limited to 50% circumference on the elbow side due to the intrados radius. 45-70°s used for scanning, where accessible.
B9.21	28-002	Elbow to 2" Pipe Weld	75%	Scanning limited to 50% circumference on the elbow side due to the intrados radius. 45-70°s used for scanning, where accessible.
B9.21	28-008	2" Pipe to Elbow Weld	75%	Scanning limited to 50% circumference on the elbow side due to the intrados radius. 45-70°s used for scanning, where accessible.
B9.21	28-009	Elbow to 2" Pipe Weld	75%	Scanning limited to 50% circumference on the elbow side due to the intrados radius. 45-70°s used for scanning, where accessible.
B9.21	28-012	2" pipe to 2" x 2" x 2" Tee Weld	70%	Scanning limited to 50% circumference on tee side due to branch connection radius. Scanning limited to 90% on pipe side due to an adjacent clamp. 45-70°s used for scanning, where accessible.
B9.21	28-013	2" x 2" x 2" Tee to 2" Pipe Weld	75%	Scanning limited to 50% circumference on tee side due to branch connection radius. 45-70°s used for scanning, where accessible.
B9.21	28-016	2" x 2" x 2" Tee to 2" Branch Connection Weld	51%	Scanning limited to 12% on tee side due to the radius of the tee. Scanning limited to 90% on branch connection side due to an adjacent clamp. 45-70°s used for scanning, where accessible.

Table 1, Limited B-J Examinations

Item Number	Comp. ID	Item Description	% Coverage	Reason for Limitation
B9.21	28-074	2" pipe to 2" x 2" Tee Weld	75%	Scanning limited to 50% circumference on tee side due to branch connection radius. 45-70°s used for scanning, where accessible.
B9.21	28-075	2" x 2" x 2" Tee to 2" Pipe Weld	75%	Scanning limited to 50% circumference on tee side due to branch connection radius. 45-70°s used for scanning, where accessible.
B9.21	28-076	Tee to 2" Pipe Weld	62%	Scanning limited to 12% on tee side due to the radius of the tee. 45-70°s used for scanning, where accessible.
B9.21	28-077	2" Pipe to Elbow Weld	75%	Scanning limited to 50% circumference on the elbow side due to the intrados radius. 45-70°s used for scanning, where accessible.
B9.21	28-078	Elbow to 2" Pipe Weld	75%	Scanning limited to 50% circumference on the elbow side due to the intrados radius. 45-70°s used for scanning, where accessible.
B9.31	08-008	12" Safety Injection Nozzle to 30" Pipe Weld	50%	Scanning limited to 30" pipe side, due to nozzle OD configuration. ID clad prevents two directional coverage, via the bounce. 45° shear used for scanning, where accessible.

III. Basis for Relief

During ultrasonic examination of the piping welds listed in Table 1 of this relief request, 100% coverage of the required examination volume could not be obtained.

Class 1 piping and components are often designed with welded joints such as nozzle-to-pipe, pipe-to-valve and pipe-to-pump which can physically obstruct a large portion of the required examination volume. For many of the welds listed in Table 1 (above), the examinations were performed after the 10CFR50.55a mandatory implementation date for Appendix VIII of Section XI, and code coverage percentages, provided, reflect what is currently allowed by qualified Appendix VIII techniques. Appendix VIII qualified (PDI) procedures have demonstrated that sound beams may potentially be attenuated and distorted when required to pass through austenitic weld metal. Still, the PDI qualified methods employ the best available technology for maximizing examination coverage of these types of welds. For all the components listed in this relief request, examination was extended to the far side of the weld to the extent permitted by geometry, but this portion of the examination is not included in the reported coverage for welds examined under PDI and Appendix VIII rules.

Entergy has used the best available techniques to examine the subject piping welds. To improve upon these examination coverage percentages, modification and/or replacement of the component would be required. Consistent with the ASME Section XI sampling approach, examination of the subject welds, when combined with examinations that have been performed on other welds within the same Examination Category, is adequate to detect generic degradation, if it existed, therefore demonstrating an acceptable level of integrity.

IV. Proposed Alternative Examinations

No alternative testing is proposed at this time. Entergy has examined the subject welds to the

extent practical and will continue to perform pressure testing on the subject welds as required by the Code.

V. Conclusion

10CFR50.55a(g)(6)(i) states:

The Commission will evaluate determinations under paragraph (g)(5) of this section that code requirements are impractical. The Commission may grant such relief and may impose such alternative requirements as it determines is authorized by law and will not endanger life or property or the common defense and security and is otherwise in the public interest giving due consideration to the burden upon the licensee that could result if the requirements were imposed on the facility.

Entergy believes that it is impractical to obtain greater examination coverage on these areas. To obtain additional coverage would necessitate modification and/or replacement of the component. The examinations performed on the subject areas, in addition to the examination of similar welds contained in the program would detect generic degradation, if it existed, therefore demonstrating an acceptable level of integrity. Therefore, we request the proposed alternative be authorized pursuant to 10CFR50.55a(g)(6)(i).

**Attachment 5 to
W3F1-2009-0026
Request for Relief
WF3-ISI-011**

REQUEST FOR RELIEF
WF3-ISI-011

Components/Numbers: See Table 1

Code Classes: ASME Code Class 2

References: ASME Section XI 1992 Edition, Table IWC-2500-1
ASME Section XI 1980 Edition with the Winter of 1981 Addenda for ultrasonic examinations
ASME Section XI 1992 Edition with 1993 Addenda
ASME Section XI 1995 Edition with 1995 & 1996 Addenda

Examination Category: C-A

Description: Pressure Retaining Welds in Pressure Vessels

Item Number(s): C1.10, C1.20

Unit / Inspection Interval Applicability: Waterford 3 Nuclear Station (WF3), Second (2nd) 10-year interval

I. Code Requirement(s)

ASME Section XI, Table IWC-2500-1, Examination Category C-A, Pressure Retaining Welds in Pressure Vessels.

1. Items C1.10 - Requires 100% volumetric examination of the Class 2 Shell Circumferential Welds.
2. Items C1.20 - Requires 100% volumetric examination of the Class 2 Head Circumferential Welds.

II. Relief Requested

Pursuant to 10CFR50.55a(g)(6)(i), Entergy Operations, Inc. (Entergy) requests relief from achieving greater than 90% coverage as allowed by Code Case N-460, when performing volumetric examinations on the following welds.

Table 1, Limited C-A Examinations

<u>Item Number</u>	<u>Item ID</u>	<u>Item Description</u>	<u>% Coverage</u>	<u>Reason for Limitation</u>
C1.10	04-026	SG Intermediate Shell to Conical Shell Weld	56%	Scan obstruction caused by 4" wide insulation support ring located 2.3" from toe of weld, 360° around circumference. 45° and 60°s used for scanning, where accessible.
C1.20	04-029	SG#2 Top Head Torus to Top Head Dome Weld	89%	Scanning limited for 11.3% of weld circumference, due to 14 insulation lugs located 3.5" from weld centerline every 36" around the circumference. 45°s and 60°s used for scanning, where accessible.
C1.20	54-074	Shut Down Heat Exchanger Shell to Flange Weld	88%	Configuration of top and bottom nozzle saddle weld and the horizontal shell weld limit this exam.
C1.20	54-075	Shut Down Heat Exchanger Shell to Flange Weld	85%	Configuration of top and bottom nozzle saddle weld and the horizontal shell weld limit this exam.

III. Basis for Relief

During ultrasonic examination of the piping welds listed in Table 1 of this relief request, 100% coverage of the required examination volume could not be obtained.

Class 1 piping and components are often designed with welded joints such as nozzle-to-pipe, pipe-to-valve and pipe-to-pump which can physically obstruct a large portion of the required examination volume. For the welds listed in Table 1 (above), the examinations were performed after November 22, 2002, the 10CFR50.55a mandatory implementation date for Appendix VIII of Section XI, and code coverage percentages, provided, reflect what is currently allowed by qualified Appendix VIII techniques. Appendix VIII qualified (PDI) procedures have demonstrated that sound beams may potentially be attenuated and distorted when required to pass through austenitic weld metal. Still, the PDI qualified methods employ the best available technology for maximizing examination coverage of these types of welds. For the components listed in this relief request, examination was extended to the far side of the weld to the extent permitted by geometry as qualified through PDI.

Entergy has used the best available techniques to examine the subject piping welds. To improve upon these examination coverage percentages, modification and/or replacement of the component would be required. Consistent with the ASME Section XI sampling approach, examination of the subject welds, when combined with examinations that have been performed on other welds within the same Examination Category, is adequate to detect generic degradation, if it existed, therefore demonstrating an acceptable level of integrity.

IV. Proposed Alternative Examinations

No alternative testing is proposed at this time. Entergy has examined the subject welds to the extent practical and will continue to perform pressure testing on the subject welds as required by the Code.

Entergy will use pressure test and VT-2 visual examination to compliment the limited examination coverage after each refueling outage.

V. Conclusion

10CFR50.55a(g)(6)(i) states:

The Commission will evaluate determinations under paragraph (g)(5) of this section that code requirements are impractical. The Commission may grant such relief and may impose such alternative requirements as it determines is authorized by law and will not endanger life or property or the common defense and security and is otherwise in the public interest giving due consideration to the burden upon the licensee that could result if the requirements were imposed on the facility.

Entergy believes that it is impractical to obtain greater examination coverage on these areas. To obtain additional coverage would necessitate modification and/or replacement of the component. The examinations performed on the subject areas, in addition to the examination of similar welds contained in the program would detect generic degradation, if it existed, therefore demonstrating an acceptable level of integrity. Therefore, we request the proposed alternative be authorized pursuant to 10CFR50.55a(g)(6)(i).

**Attachment 6 to
W3F1-2009-0026
Request for Relief
WF3-ISI-012**

REQUEST FOR RELIEF
WF3-ISI-012

Components/Numbers: See Table 1

Code Classes: ASME Code Class 2

References: ASME Section XI 1992 Edition, Table IWC-2500-1
 ASME Section XI 1980 Edition with the Winter of 1981 Addenda for ultrasonic examinations
 ASME Section XI 1992 Edition with 1993 Addenda
 ASME Section XI 1995 Edition with 1995 & 1996 Addenda

Examination Category: C-B

Description: Pressure Retaining Nozzle Welds in Vessels

Item Number(s): C2.21

Unit / Inspection Interval Applicability: Waterford 3 Nuclear Station (WF3), Second (2nd) 10-year interval

I. Code Requirement(s)

ASME Section XI, Table IWC-2500-1, Examination Category C-A, Pressure Retaining Welds in Pressure Vessels.

1. Items C2.21 - Requires 100% volumetric examination of the Class 2 Pressure Retaining Nozzle Welds in Vessels

II. Relief Requested

Pursuant to 10CFR50.55a(g)(6)(i), Entergy Operations, Inc. (Entergy) requests relief from achieving greater than 90% coverage as allowed by Code Case N-460, when performing volumetric examinations on the following welds.

Table 1, Limited C-B Examinations				
<u>Item Number</u>	<u>Item ID</u>	<u>Item Description</u>	<u>% Coverage</u>	<u>Reason for Limitation</u>
C2.21	04-030	SG#2 MS Nozzle to Top Head Dome Weld	86%	14% of circumference of weld partially limited due to 8 insulation lugs located 5.25" from the weld centerline every 24" around the circumference. 45°s and 60°s used for scanning, where accessible.

III. Basis for Relief

During ultrasonic examination of the piping welds listed in Table 1 of this relief request, 100% coverage of the required examination volume could not be obtained.

Class 1 piping and components are often designed with welded joints such as nozzle-to-pipe, pipe-to-valve and pipe-to-pump which can physically obstruct a large portion of the required examination volume. For the welds listed in Table 1 (above), the examinations were performed after November 22, 2002, the 10CFR50.55a mandatory implementation date for Appendix VIII of Section XI, and code coverage percentages, provided, reflect what is currently allowed by qualified Appendix VIII techniques. Appendix VIII qualified (PDI) procedures have demonstrated that sound beams may potentially be attenuated and distorted when required to pass through austenitic weld metal. Still, the PDI qualified methods employ the best available technology for maximizing examination coverage of these types of welds. For the components listed in this relief request, examination was extended to the far side of the weld to the extent permitted by geometry as qualified through PDI.

Entergy has used the best available techniques to examine the subject piping welds. To improve upon these examination coverage percentages, modification and/or replacement of the component would be required. Consistent with the ASME Section XI sampling approach, examination of the subject welds, when combined with examinations that have been performed on other welds within the same Examination Category, is adequate to detect generic degradation, if it existed, therefore demonstrating an acceptable level of integrity.

IV. Proposed Alternative Examinations

No alternative testing is proposed at this time. Entergy has examined the subject welds to the extent practical and will continue to perform pressure testing on the subject welds as required by the Code.

Entergy will use pressure test and VT-2 visual examination to compliment the limited examination coverage after each refueling outage.

V. Conclusion

10CFR50.55a(g)(6)(i) states:

The Commission will evaluate determinations under paragraph (g)(5) of this section that code requirements are impractical. The Commission may grant such relief and may impose such alternative requirements as it determines is authorized by law and will not endanger life or property or the common defense and security and is otherwise in the public interest giving due consideration to the burden upon the licensee that could result if the requirements were imposed on the facility.

Entergy believes that it is impractical to obtain greater examination coverage on these areas. To obtain additional coverage would necessitate modification and/or replacement of the component. The examinations performed on the subject areas, in addition to the examination of similar welds contained in the program would detect generic degradation, if it existed, therefore demonstrating an acceptable level of integrity. Therefore, we request the proposed alternative be authorized pursuant to 10CFR50.55a(g)(6)(i).

**Attachment 7 to
W3F1-2009-0026
Request for Relief
WF3-ISI-013**

REQUEST FOR RELIEF
WF3-ISI-013

Components/Numbers: See Table 1

Code Classes: ASME Code Class 2

References: ASME Section XI 1992 Edition, Table IWC-2500-1

Examination Category: C-F-1

Description: Pressure Retaining Welds in Austenitic Stainless Steel or High Alloy Piping

Item Number(s): C5.11, C5.21

Unit / Inspection Interval Applicability: Waterford 3 Nuclear Station (WF3) / Second (2nd) 10-year Interval

I. Code Requirement(s)

ASME Section XI, Table IWC-2500-1, Examination Category C-F-1, Pressure Retaining Welds in, in Austenitic Stainless Steel or High Alloy Piping

1. Item C5.11 - Requires 100% volumetric examination of Piping Welds \geq 3/8 in. Nominal Wall Thickness for Piping > NPS 4, Circumferential Welds
2. Item C5.21- Requires 100% volumetric examination of Piping Welds \geq 1/5 in. Nominal Wall Thickness for Piping > NPS 4, Circumferential Welds

II. Relief Requested

Pursuant to 10CFR50.55a(g)(6)(i), Entergy Operations, Inc. (Entergy) requests relief from achieving greater than 90% coverage as allowed by Code Case N-460, when performing volumetric examinations on the following welds.

Table 1, Limited C-F-1 Examinations				
Item Number	Item ID	Item Description	% Coverage	Reason for Limitation
C5.11	55-051	8" Pipe to Valve Weld	45.5%	Single sided exam due to valve configuration. Additional limitation on pipe side due to weld crown. 45°s, 60° and 70°RL used for scanning, where accessible.

Table 1, Limited C-F-1 Examinations

Item Number	Item ID	Item Description	% Coverage	Reason for Limitation
C5.11	64-001	Valve to 10" Pipe Weld	50%	Single sided exam due to valve configuration. Additional limitation on pipe side due to weld crown. 45°s, 60°s and 70°s used for scanning, where accessible (component is less than 0.50" in thickness).
C5.11	56-001	LPSI Valve to 10" Pipe Weld	50%	Scanning limited to pipe side only, due to valve OD configuration. 45°s, 60°s, and 70°s used for scanning, where accessible (pipe nominal thickness = 0.365").
C5.11	56-002	LPSI 10" Pipe to Tee Weld	50%	Scanning limited to pipe side only, due to tee OD configuration. 45°s, 60°s, and 70°s used for scanning, where accessible (pipe nominal thickness = 0.365").
C5.11	56-003	LPSI Tee to 10" Pipe Weld	50%	Scanning limited to pipe side only, due to tee OD configuration. 45°s, 60°s, and 70°s used for scanning, where accessible (pipe nominal thickness = 0.365").
C5.11	61-071	14" x 8" Reducing Elbow to Flange Weld	50%	Scanning limited to elbow side only, due to flange OD configuration. 45°s, 60°s and 70° shear used for scanning, where accessible. (Thickness is less than 0.50")
C5.11	55-001	10" valve to stainless pipe weld	50%	Scanning limited to pipe side only, due to valve OD configuration. 45°s and 70°s used for scanning where accessible.
C5.11	56-005	Tee to 10" Pipe Weld	50%	Scanning limited to pipe side only, due to tee OD configuration. 45°s, 60°s, and 70°s used for scanning, where accessible (pipe nominal thickness = 0.365").
C5.11	56-043	10" Pipe to 10" x 6" Reducer Weld	50%	Scanning limited to pipe side due to reducer OD configuration. 45°s and 70°s used for scanning, where accessible (less than 0.5" thickness).

Table 1, Limited C-F-1 Examinations				
Item Number	Item ID	Item Description	% Coverage	Reason for Limitation
C5.11	56-077	8" Pipe to Cont. Penetration Weld	50%	Scanning limited to pipe side only, due to OD configuration of penetration side. 45°s and 60°RL used for scanning, where accessible.
C5.11	52-004	14" Elbow to Tee Weld	50%	Scanning limited to elbow side only, due to tee OD configuration. 45°s, 60°s, 70°s, and 60°RL used for scanning, where accessible.
C5.21	60-131	4" Pipe to Tee	79%	Scanning limited due to Tee to pipe configuration, 6" total inches was not scanned due to interference.
C5.21	60-468	3" Elbow to Pipe Weld	50%	Scanning limited to 50% circumference on the elbow side due to the intrados radius. 45-70°s used for scanning, where accessible.
C5.21	60-469	Pipe to Penetration Weld	50%	Single sided exam due to penetration configuration. 45-70°s used for scanning, where accessible.

III. Basis for Relief

During the 2nd 10-year ISI interval at WF3, 10CFR50.55a(g)(6)(ii)(C) mandated an implementation schedule for all licensees to begin use of Appendix VIII of the 1995 Edition, with 1996 Addenda of ASME Section XI. As a result, the examinations listed in this relief request were performed utilizing procedures written in accordance with the PDI Generic UT Procedures and Appendix VIII. With the implementation of Appendix VIII, only ½ Vee path examinations have been allowed to be used in austenitic materials, and angle beams are no longer credited to extend beyond the centerline of austenitic welds for consideration of Code coverage, in accordance with qualified PDI procedures. Additional discussion, as to the examination coverage determination process when using Appendix VIII techniques on single-sided austenitic welds, is provided in Section III of this relief request.

IV. Proposed Alternative Examinations

No alternative testing is proposed at this time. Entergy has examined the subject welds to the extent practical and will continue to perform pressure testing on the subject lines of the welds as required by the Code.

V. Conclusion

10CFR50.55a(g)(6)(i) states:

The Commission will evaluate determinations under paragraph (g)(5) of this section that code requirements are impractical. The Commission may grant such relief and may impose such

alternative requirements as it determines is authorized by law and will not endanger life or property or the common defense and security and is otherwise in the public interest giving due consideration to the burden upon the licensee that could result if the requirements were imposed on the facility.

Entergy believes that it is impractical to obtain greater examination coverage on this item. To obtain additional coverage would necessitate modification and/or replacement of the component. The examinations performed on the subject item, in addition to the examination of similar items contained in the program would detect generic degradation, if it existed, therefore demonstrating an acceptable level of integrity. Therefore, we request the proposed alternative be authorized pursuant to 10CFR50.55a(g)(6)(i).

**Attachment 8 to
W3F1-2009-0026
Request for Relief
WF3-ISI-014**

REQUEST FOR RELIEF
WF3-ISI-014

Components/Numbers: See Table 1

Code Classes: ASME Code Class 1

References: ASME Section XI 1992 Edition, Table IWB-2500-1
ASME Section XI 1980 Edition with the Winter of 1981 Addenda for ultrasonic examinations
ASME Section XI 1992 Edition with 1993 Addenda
ASME Section XI 1995 Edition with 1995 & 1996 Addenda
ASME Section XI Code Case N-716

Examination Category: R-A,

Description: Alternative Piping Classification and Examination Requirements

Item Number(s): R1.20

Unit / Inspection Interval Applicability: Waterford 3 Nuclear Station (WF3), Second (2nd) 10-year interval

I. Code Requirement(s)

ASME Section XI, Code Case N-716 Examination Category R-A, Pressure Retaining Welds in Class 1 and 2 Piping – Inspection Program B:

1) Item R1.20 - Elements not Subject to a Degradation Mechanism

During the 2nd 10-year ISI interval at WF3, 10CFR50.55a(g)(6)(ii)(C) mandated an implementation schedule for all licensees to begin use of Appendix VIII of the 1995 Edition, with 1996 Addenda of ASME Section XI. As a result, the examinations listed in this relief request were performed utilizing procedures written in accordance with the PDI Generic UT Procedures and Appendix VIII. With the implementation of Appendix VIII, only ½ Vee path examinations have been allowed to be used in austenitic materials, and angle beams are no longer credited to extend beyond the centerline of austenitic welds for consideration of Code coverage, in accordance with qualified PDI procedures. Additional discussion, as to the examination coverage determination process when using Appendix VIII techniques on single-sided austenitic welds, is provided in Section III of this relief request.

II. Relief Requested

Pursuant to 10CFR50.55a(g)(6)(i), Entergy Operations, Inc. (Entergy) requests relief from achieving greater than 90% coverage as allowed by Code Case N-460, when performing volumetric examinations on the following welds.

Table 1, Limited R-A Examinations				
Item Number	Comp. ID	Item Description	% Coverage	Reason for Limitation
R1.20	06-007	Reactor Coolant 42" Elbow to Pipe weld	89%	Limited scan due to permanent Concrete saddle type support
R1.20	15-011	Reactor Coolant 42" Pipe to Elbow weld	84%	Limited up stream scan due to permanent Concrete saddle type support and down stream limitation due to Shutdown cooling nozzle and surge nozzle configuration

III. Basis for Relief

During ultrasonic examination of the piping welds listed in Table 1 of this relief request, 100% coverage of the required examination volume could not be obtained.

Class 1 and 2 piping and components are often designed with welded joints such as nozzle-to-pipe, pipe-to-valve, and pipe-to-pump or supports which can physically obstruct a large portion of the required examination volume. For many of the welds listed in Table 1 (above), the examinations were performed after the 10CFR50.55a mandatory implementation date for Appendix VIII of Section XI, and code coverage percentages, provided, reflect what is currently allowed by qualified Appendix VIII techniques. Appendix VIII qualified (PDI) procedures have demonstrated that sound beams may potentially be attenuated and distorted when required to pass through austenitic weld metal. Still, the PDI qualified methods employ the best available technology for maximizing examination coverage of these types of welds. For all the components listed in this relief request, examination was extended to the far side of the weld to the extent permitted by geometry, but this portion of the examination is not included in the reported coverage for welds examined under PDI and Appendix VIII rules. Entergy has used the best available techniques to examine the subject piping welds. To improve upon these examination coverage percentages, modification and/or replacement of the component would be required. Consistent with the ASME Section XI sampling approach, examination of the subject welds, when combined with examinations that have been performed on other welds within the same Examination Category, is adequate to detect generic degradation, if it existed, therefore demonstrating an acceptable level of integrity.

IV. Proposed Alternative Examinations

No alternative testing is proposed at this time. Entergy has examined these welds to the extent practical and will continue to perform pressure testing on the subject welds as required by the Code.

V. Conclusion

10CFR50.55a(g)(6)(i) states:

The Commission will evaluate determinations under paragraph (g)(5) of this section that code requirements are impractical. The Commission may grant such relief and may impose such alternative requirements as it determines is authorized by law and will not endanger life or property or the common defense and security and is otherwise in the public interest giving due

consideration to the burden upon the licensee that could result if the requirements were imposed on the facility.

Entergy believes that it is impractical to obtain greater examination coverage on these welds. The examinations performed on the subject welds in addition to the examination of similar welds contained in the program would detect generic degradation, if it existed, demonstrating an acceptable level of integrity. Therefore, we request the proposed alternative be authorized pursuant to 10CFR50.55a(g)(6)(i).