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June 26, 2000

U. S. Nuclear Regulatory Commission
Document Control Desk
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Washington, DC 20555-0001

Subject: Entergy Operations, Inc.
Inservice Inspection Program, Revision 9

Waterford Steam Electric Station – Unit 3
Docket No. 50-382
License No. NPF-38

CNRO-2000/00023

Ladies and Gentlemen:

Entergy Operations, Inc. (Entergy) has issued Revision 9 of the Waterford Steam Electric Station – Unit 3 (W3) Inservice Inspection (ISI) Program (CEP-ISI-001) for use. The changes, discussed in Section 2 of the program, result from adopting portions of the 1995 Addenda as permitted by 10CFR50.55a(g)(4). In accordance with ASME Section XI, IWA-1400(c), Entergy is providing this copy of the program revision to the NRC for information only.

Should you have any questions, please contact Kevin Hall at (601) 368-5417 or Guy Davant at (601) 368-5756.

Very truly yours,

A handwritten signature in cursive script that reads "Ron Boyd for MAK".

MAK/GHD/baa
attachment

cc:

Mr. C. M. Dugger (W3) (w/o)
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Mr. T. R. Farnholtz, NRC Senior Resident Inspector (W3) (w/o)
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Mr. E. W. Merschoff, NRC Region IV Regional Administrator (w/o)

A047

**W3 INSERVICE INSPECTION PROGRAM
CEP-ISI-001, Rev. 9**

INCORPORATION INSTRUCTIONS

REMOVE

SECTIONS 1 THROUGH 5

INSERT

**SECTIONS 1 THROUGH 12
RELOCATE LISTS AND DRAWINGS
BEHIND SECTION 12.**

**APPENDIX A COVER PAGE (PAGE 1 OF
20) IN FRONT OF THE LINE LIST**

**APPENDIX B COVER PAGE (PAGE 1 OF
190) IN FRONT OF THE EXAMINATION
CATEGORY TABLES**

**APPENDICES C-D COVER PAGE (PAGE 1
OF 1)**

APPENDIX E

**APPENDIX F COVER PAGE (PAGE 1 OF
39) IN FRONT OF DRAWING WTR-1-1100**

**APPENDIX G COVER PAGE (PAGE 1 OF
62) IN FRONT OF DRAWING WTR-2-1100**

**APPENDICES H-Z COVER PAGE (PAGE 1
OF 1)**

**WATERFORD 3 STEAM
ELECTRIC STATION
INSERVICE INSPECTION
PLAN**

APPLICABLE SITES

ANO Unit 1: GGNS: W-3:

ANO Unit 2: RBS: ECH:

Safety Related: Yes

No

REVIEW AND CONCURRENCE SHEET

Program Section Title: Waterford 3 Steam Electric Station Inservice Inspection Plan,
Revision 9

Prepared By:

[Signature]

Date:

18 May 00

Checked By:

[Signature]

Date:

5/18/00

ANII:

Sherald R. Bivins

AUTHORIZED BY ZAFI CORDERO

Reviewed By (or NA)

Date:

18 MAY 00

Concurred:

JR Hamilton
Responsible Supervisor

Date:

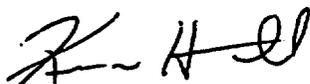
5-22-2000

50.59 REVIEW PRE-SCREENING

Facility: Waterford 3 Steam Electric Station

I. SIGNATURES

Preparer:



K. W. Hall

18 May 00

Signature

Name (print)

Date

Reviewer:



R. S. LEWIS

5/22/00

Signature

Name (print)

Date

II. OVERVIEW

Document Evaluated: CEP-ISI-001, Revision 9, "Waterford 3 Steam Electric Station Inservice Inspection Plan"

Brief Description of the Proposed Change: Reformat into a Program Section for issuance under Central Engineering Procedure EP-P-002-00. Also incorporate changes required by 10 CFR 50.55a including the adoption of later Editions and addenda and Code Cases.

III. PRE-SCREENING

Check the applicable boxes below. If any of the boxes are checked, neither a Screening nor a 50.59 Evaluation is necessary. Provide supporting documentation or references as appropriate.

- The change is editorial as defined in Section 5.3.4.J of this procedure. Provide document change request to the appropriate department, if required.
- The change is a substitute part per Section 5.4.1.2.
- The change will be controlled in its entirety under 10CFR50.54 instead of 10CFR50.59 per Section 5.4.1.3 of this procedure.
- An approved, valid Screening or 50.59 Evaluation covering all aspects of the change already exists per Section 5.4.1.4. Reference 50.59 Evaluation # _____ or attach documentation. Verify the previous Screening or 50.59 Evaluation remains valid.
- The proposed change, in its entirety, has been approved by the NRC per Section 5.4.1.5. Reference: 10 CFR 50.55a
- The change is being made to conform to the SAR per Sections 5.4.1.6.

BASIS: (Discuss how the activity meets the Pre-Screening criteria.) Revision 9 of the ISI program is mostly an editorial change to re-format the information and reissue the document to meet EP-P-002-00 as a Program Section under the controls of Central Engineering Programs. Additionally, except for Section 11, the total contents, including changes that are not editorial, are written for

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BASIS: (Discuss how the activity meets the Pre-Screening criteria.) (Continued)

compliance with 10 CFR 50.55a as required by the NRC. Any deviation to the requirements of 10 CFR 50.55a requires NRC prior approval in accordance with 50.55a and is not subject to evaluation under the provisions of 10 CFR 50.59.

Section 11 contains commitments that are considered "Augmented Requirements" that may exceed the requirements of 50.55a and may be a result of license conditions or requirements. Changes to portions of Section 11, as discussed in Section 11, are subject to evaluation in accordance with 10 CFR 50.59 while other augmented requirements contained in Section 11 are made mandatory by the NRC. Further changes in revision 9 are only editorial changes or changes that are pre-approved by the NRC in 50.55a.

REVISION STATUS SHEET

REVISION SUMMARY

<u>REVISION</u>	<u>ISSUE DATE</u>	<u>DESCRIPTION</u>
0	6/29/84	Issued for Use
1	11/22/85	Added figures which illustrate and define the inspection boundaries. Added Relief Requests ISI-001 through ISI-010.
2	6/05/86	Added sections to include a line list, flow diagrams, and schedule of examinations. Revised Relief Requests ISI-001 through ISI-010. .
3	10/01/87	Added a list of calibration blocks, a system line list cross reference, comments to the schedule of examinations, and Request for relief ISI-011.
4	8/13/90	Adopted portions of the W83 and W84 Addenda of Section XI. Adopted Code Cases N-307-1 and N-435-1. Updated remarks on schedule of examinations, revised Relief Requests ISI-003, ISI-006, ISI-007, and ISI-011. Deleted Relief Requests ISI-004, ISI-005, ISI-008, and ISI-009. Added Relief Request ISI-012.

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- | | | |
|---|----------|---|
| 5 | 9/16/92 | Adopted Code Case 498. Revised Relief Requests ISI-001, ISI-006, and ISI-012. Added Relief Request ISI-013. Updated remarks on schedule of examinations. |
| 6 | 12/23/91 | Adopted Code Cases N-416-1, N-481, N-498-1. |
| 7 | 7/1/97 | This was originally released as Revision 0 to the 2 nd ten-year interval ISI Plan. It updated to ASME Section XI, 1992 Edition with portions of 1993 Addenda. Incorporated Relief Requests ISI2-001 through ISI2-007. Deleted all 1 st interval requests. Adopted Code Cases N-460, N-461, N-481, and N-496 for the 2 nd interval. Informed the NRC that Code Cases N-416-1, N498-1, N509, N-521, N-522, and N-524 would be considered adopted with the approval of Rev. 12 to REG Guide 1.147. Reformatted the Entire ISI Plan. |
| 8 | 5/25/98 | This was originally released as Revision 1 to the 2 nd ten-year interval ISI Plan. Incorporated Relief Requests ISI2-008 through ISI2-010. Removed references to Draft Rev 12 to REG Guide 1.147 and the Cod Cases it adopted. Added exemption criteria. |
| 9 | 5/21/00 | Revision 9 is an administrative rewrite that reformats the document into a Program Section that is managed by Central Engineering procedure EP-P-02. Additionally, the revision incorporates the latest requirements of 10 CFR 50.55a that was effective 9/22/99. |

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SECTION/APPENDIX REVISION STATUS

See the Table of Contents for Revision Status of each Section/Appendix.

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1.0 GENERAL PLANT DESCRIPTION AND PROGRAM REQUIREMENTS

This Program Section contains the details for the second 120-month Inservice Inspection (ISI) Program interval for the inspection of Class 1, 2, and 3 pressure retaining components and their supports at the Waterford 3 Steam Electric Station, which is a Combustion Engineering two loop PWR design.

The initial 120-month ISI Program commenced with commercial operation on September 24, 1985. However, by authorization from the Director of the Office of Nuclear Regulation (Reference GNRI 96-00244) the first 120-month interval was extended until June 30, 1997. The second 120-month interval began on July 1, 1997 and will continue through June 30, 2007. The coordination of refuel outages and periods within the second interval is shown in Figure 1.1.

Changes to the contents of this Program Section shall be requested in accordance with Section 12, Program Change Notice.

2.0 CODE OF RECORD FOR THE SECOND INTERVAL

The current Code of record is the 1992 Edition with portions of later Addenda as described in Section 2 of this Program Section. Due to the unknown implementation schedule for Section XI Appendix VIII, the NRC authorized W3 (Reference GNRI 96-00244) to perform ultrasonic examinations in accordance with the 1980 Edition with the Winter of 1981 Addenda as specified in the ISI plan for the first interval. The use of the 1980 Edition with the Winter of 1981 Addenda is limited until such time when changes to 10 CFR 50.55a require the use of ASME Section XI, Appendix VIII. Section 2 provides a detail listing of the applicable editions and addenda of Section XI as it applies to ultrasonic examinations based on current 10 CFR 50.55a requirements.

Section 3 of this Program Section, Code Cases, lists the adopted Code Cases for Waterford 3

Pursuant to the provisions of 10 CFR 50.55a(3) and (g)(5)(iii), requests for alternatives and specific requests for relief are submitted for NRC approval. Approved requests are contained as part of this Program Section in Section 4.

3.0 SCOPE

This Program Section identifies the items, such as welds, equipment, and supports that are subject to examination during the second ten-year interval in accordance with ASME Section XI. This Program Section also includes items requiring "augmented" examinations. These augmented examinations are the result of regulatory input (Generic Letters, IE Bulletins, etc.) and/or service history (NSSS vendor correspondence, condition reports, etc.) and are performed in conjunction with or in addition to Code examinations.

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The ISI Program includes the following:

- Piping weld examination
- Pipe and equipment support examination
- Reactor pressure vessel and other equipment examination
- Pump and valve body internal examination
- Bolting examination
- Pressure tests

For each component, this Program Section also provides information regarding examination method and the inspection period during which the component is scheduled to be examined. ISI piping isometric drawings and equipment sketches depicting the location of the components are included.

The Pump and Valve Inservice Test (IST) Program is a separate independent Program Section. The requirements for IST are not included in the scope of this Program Section.

Snubbers are selected and functionally tested in accordance with W-3 Technical Specification 3/4.7.8, "Snubbers", as opposed to ASME Section XI Code requirements. All component supports associated with snubbers are visually examined (VT-3) in accordance with the ASME Code Section XI, 1992 Edition, in conjunction with the Snubber test program. The Snubber Test Program is not included in the scope of this Program Section.

The Inservice Inspection (ISI) Program for Containment is a separate independent Program Section. The requirements for ISI of the containment are not included in the scope of this Program Section.

4.0 REGULATORY GUIDANCE

The ISI program incorporates the augmented examination requirements of the following Regulatory Guides, IE Bulletins, NUREGS, Standard Review Plans and Generic Letters:

- | | |
|------------------|---|
| Reg. Guide 1.14 | Reactor Coolant Pump Flywheel Integrity. |
| Reg. Guide 1.150 | Ultrasonic Testing of Reactor Vessel Welds during Preservice and Inservice Examination |
| SRP 3.6.1 | Plant Design For Protection Against Postulated Piping Failures In Fluid Systems Outside Containment" (NUREG-0800) |
| SRP 3.9.3 | ASME Code Class 1, 2 and 3 Components, Component Supports, and Core Support Structures" (NUREG-0800) |

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- SRP 5.2.4 Reactor Coolant Pressure Boundary Inservice Inspection and Testing (NUREG-0800)
- SRP 5.4.1.1 Pump Flywheel Integrity (NUREG-0800)
- SRP 6.6 Inservice Inspection of Class 2 and 3 components (NUREG-0800)
- IE Bulletin 88-08 Thermal Stresses in Piping Connected to Reactor Coolant Systems.

5.0 EXAMINATIONS

5.1 Examination Criteria

The selection of items for inservice inspection is based on application of ASME Section XI examination criteria in paragraphs IWB-1200, IWC-1200, IWD-1200 and IWF-1200 and on augmented inspection requirements identified in Section 11, Augmented Examinations, of this Program Section. The piping exempted per IWB-1220, IWC-1220 and IWD-1220 is listed in Appendix A, Line List, of this Program Section. Class 2 components were exempted from volumetric and surface examination using the criteria contained in IWC-1220, except as follows, stainless steel piping with nominal wall thickness less than 3/8-inch and nominal pipe size > 4-inch, has been included as Examination Category C-F-1, Item Number C5.10. This piping had received volumetric examinations during the First Interval under a "supplemental" program. Per IWF-1230, the supports on exempt piping and associated equipment and components are also exempt.

The performance of Inservice Inspection and NDE activities including the qualification of inspection and NDE personnel shall be in accordance with ASME Section XI as defined in Section 2.0.

Items that cannot be examined per ASME Section XI requirements are identified in Relief Requests contained in Section 4 of this Program Section.

5.2 Pump/Valve Examination

Internal surfaces of Class 1 valve bodies exceeding 4 inch nominal size are subject to visual examination per Exam Category B-M-2. The grouping of Class 1 valve bodies is discussed in Section 7 of this Program Section.

The internal surfaces of the Class 1 pump casings are subject to visual examination per the Exam Category B-L-2. The grouping of Class 1 pump casings is discussed in Section 7 of this Program Section.

5.3 Pressure Testing

Class 1, 2, and 3 pressure retaining boundaries are defined on the Flow Diagrams. These boundaries shall be subject to pressure test as specified in Section 5 of this Program Section.

5.1 Integral Attachments

Integral attachments are examined in accordance with Code Case N-509. As required by the NRC's approval, a minimum of 10% of all nonexempt integral attachments are required to be examined. Additionally, when evidence of component support deformation (e.g., broken, bent, or pulled out parts) is identified during operation, refueling, maintenance, examination, inservice-inspection, or testing, the associated integral attachments shall be examined in accordance with the requirements of the Code Case. If conditions are detected that do not meet the acceptance criteria of the Code Case, additional and successive examinations shall be performed in accordance with IWB, IWC or IWD 2420 and 2430. Integral attachments examined because of support deformation cannot be credited towards the examination requirements for the period or interval.

6.0 REPORTS

6.1 ISI Summary Report

- 6.1.1 Waterford 3 has adopted Code Case N-532 "Alternative Requirements to Repair and Replacement Documentation Requirements and Inservice Summary Report Preparation and Submission as Required by IWA-4000 and IWA-6000."
- 6.1.2 Code Case N-532 requires completion of Form OAR-1 "Owners Activity Report" is required after each refueling outage
 - 6.1.2.1 It is to include ASME Activities performed during the outage and the previous operating cycle.
 - 6.1.2.2 It shall be completed prior to the start of the next outage or within twelve months of the completion of the inspection period, whichever comes first.

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6.1.3 Each OAR-1 is to contain the following information formatted in accordance with Code Case N-532.

6.1.3.1 Table 1 "Abstract of Examinations and Tests" shall contain the following information for each examination category:

6.1.3.1.1 The examination category,

6.1.3.1.2 Total examinations required for the interval,

6.1.3.1.3 Total examinations credited for the period,

6.1.3.1.4 Total examinations credited (%) for the period,

6.1.3.1.5 Percentage of total examinations credited for the interval,

6.1.3.1.6 Applicable remarks.

6.1.3.2 Table 2 "Items with flaws or relevant conditions that required evaluation for continued service" shall contain the following information for all items with flaws or other relevant conditions requiring evaluation for continued service:

6.1.3.2.1 The examination category,

6.1.3.2.2 Item number,

6.1.3.2.3 Item description,

6.1.3.2.4 Flaw characterization,

6.1.3.2.5 Whether the flaw or condition was found in a scheduled Section XI examination or test.

6.1.3.2.6 Table 3 "Abstract of repairs, replacements, or corrective measures required for continued service" shall be in accordance with EP-S-007, Standard for ASME Section XI, Division 1 - 1992 Edition Repairs and Replacements.

6.1.4 Each OAR-1 prepared during an inspection period shall be submitted within twelve months following the end of the inspection period.

7.0 PROGRAM ARRANGEMENT

7.1. This ISI Program Section is divided into the following items:

7.1.1. Table of Contents

7.1.2. Section 1 - Introduction

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- 7.1.3. Section 2 – Addenda Paragraphs
- 7.1.4. Section 3 – Code Cases
- 7.1.5. Section 4 – Relief Requests
- 7.1.6. Section 5 – Pressure Testing
- 7.1.7. Section 6 – Calibration Standards
- 7.1.8. Section 7 – Class 1 Pumps and Valves
- 7.1.9. Section 8 – Examination Selection Summary
- 7.1.10. Section 9 – Successive Examinations
- 7.1.11. Section 10 – Risk-Informed Selections
- 7.1.12. Section 11 – Augmented Examinations
- 7.1.13. Section 12 – Program Change Notice
- 7.1.14. Inservice Inspection Examination Appendix B - The inservice inspection examination appendix (tables) are grouped by scheduled Examination Category. Each inservice inspection requirement page contains the following information pertaining to the required exams:
 - 7.1.14.1. ISI Item Number
 - 7.1.14.2. Item Description
 - 7.1.14.3. System
 - 7.1.14.4. Code Item Number
 - 7.1.14.5. Drawing
 - 7.1.14.6. Period Scheduled for Examination
 - 7.1.14.7. Exam Method
 - 7.1.14.8. Relief Requests
 - 7.1.14.8. Remarks

7.2. Appendices E through H contain the isometric drawings for the ISI Program. The isometric drawings identify locations of Class 1 and 2 piping and components that are subject to inspection. Exempted piping may be shown when clarity or continuity is appropriate.

7.3 Schedule of Inspection

7.3.1. In the tables for inservice inspection requirements, the Period heading contains a one digit number (1, 2, or 3) which refers to the scheduled inspection period. Inspection period 1 consists of the first thirty-six (36)

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calendar months of the interval. Inspection period 2 consists of forty-eight (48) calendar months following the first period and inspection period 3 consists of the last thirty-six (36) months, making a total of 120 months, or 10 years. Examinations are scheduled to meet the requirements of Table IWB, C, D-2412-1 and IWF-2410-2 as applicable. The ten year interval as it is divided into period is depicted, included its coordination with refuel outages, is shown in Figure 1.1.

- 7.3.2. Where items are scheduled for examination in more than one period, they are included in the Tables for each scheduled period.
- 7.3.3. Where items are to be examined in conjunction with maintenance disassembly (such as Category B-M-2 valve bodies), they are scheduled for each period with an examination note referring to the specific scheduling requirement or to the Section discussing the scheduling requirement.
- 7.3.4. Where items are scheduled for examination each refueling outage or at a frequency different from the per period frequency, they are scheduled for each period with an examination note identifying the specific frequency.

7.4. Symbols and Abbreviations

- 7.4.1. The following abbreviations are used in the Period Examination Tables for examination item. In some instances, these abbreviations may be combined with the use of a hyphen "-" to describe two different items joined by a weld:

<u>Abbreviation</u>	<u>Description</u>
AC	Chilled Water
BD	Steam Generator Blowdown
BM	Boron Management
CA	Containment Air
CC	Component Cooling Water
CD	Condensate
CH	Chemical And Volume Control
CS	Containment Spray
DW	Demineralized Water
EA	Emergency Diesel Generator Air Supply
EF	Emergency Feedwater
EG	Emergency Diesel
FP	Plant Fire Protection
FS	Fuel Pool
FW	Main (and Emergency) Feedwater

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<u>Abbreviation</u>	<u>Description</u>
HPSI	High Pressure Safety Injection
HV	Heating, Ventilation, Air Conditioning
HX	Heat Exchanger
IA	Instrument Air
LPSI	Low Pressure Safety Injection
LO	Lube Oil
MS	Main Steam
NG	Nitrogen Gas
PZR	Pressurizer
RC	Reactor Coolant
SA	Station Air
SI	Safety Injection
SL	Sampling System
WM	Waste Management

- 7.5. Weld Examination Coverage - Examination coverage includes essentially 100% of the weld length except as permitted below:
- 7.5.1. Examination coverage may be reduced when allowed by Code or when specific relief from the Code required coverage has been granted by the NRC. Where relief is granted, it is documented in Section 4 of this Program Section.
- 7.5.2. When essentially 100% of the examination volume or area cannot be examined due to component interference or part geometry, a reduction in examination coverage on any Class 1 or 2 weld is acceptable provided the reduction in coverage for that weld is less than 10%. Applicable examination records identify both the cause and % of reduced examination coverage. (As permitted by Code Case N-460)

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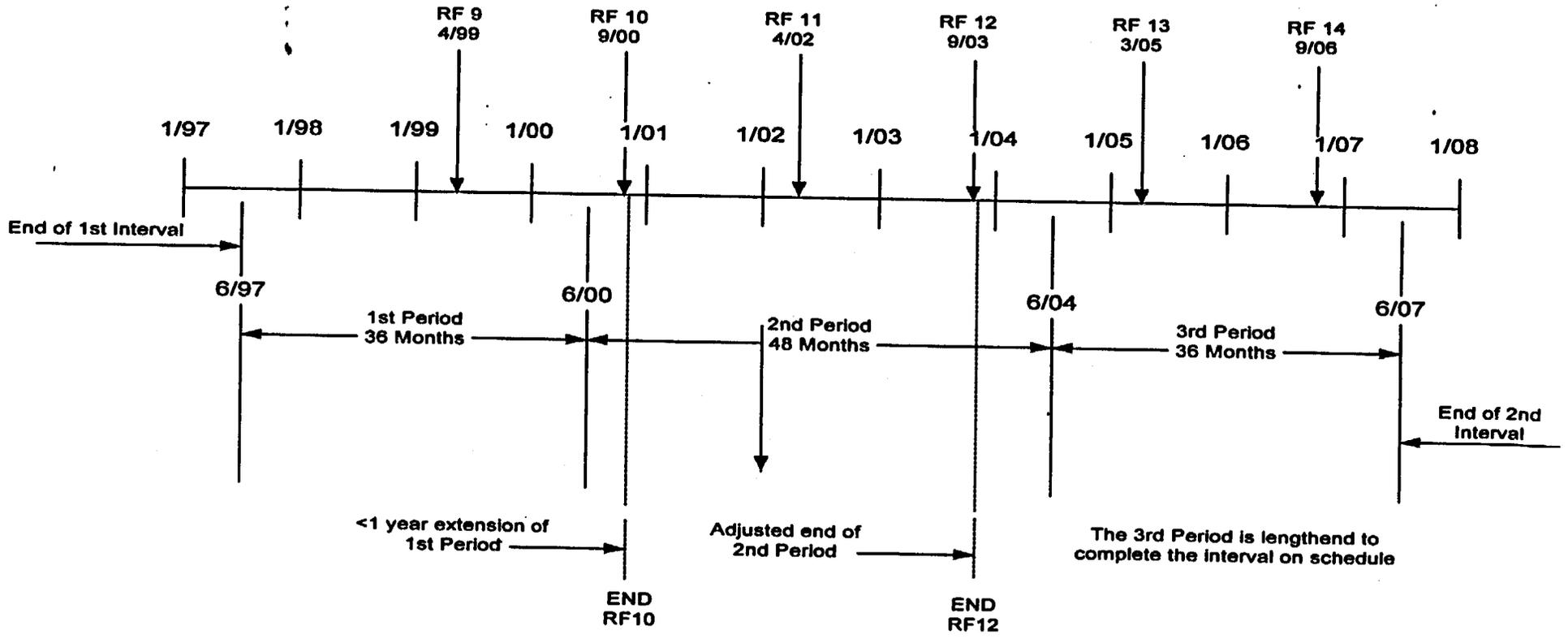


FIGURE 1.1

SECTION 2
LATER EDITIONS
AND ADDENDA

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SECTION 2
LATER EDITIONS AND ADDENDA

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1.0 Later Edition and Addenda

- 1.1 Within the provisions of ASME Section XI and 10 CFR 50.55a(g)(4)(iv), the use of later Editions and/or Addenda of ASME Section XI is permitted with specific NRC approval. This provision has been further clarified by the NRC (Reference Ltr # 0CAN109510 from the NRC Region IV Office), to mean that their prior approval for use of later Edition/Addenda listed in 10 CFR 50.55a(b)(2) is not required and that only notification within a reasonable time frame is necessary. Additionally 10 CFR 50.55a(g)(4)(iv) requires that all related requirements of the edition or addenda are met.
- 1.2 Additionally, as the NRC determines appropriate through changes to 10 CFR 50.55a, they sometimes mandate the use of later portions of ASME Section XI. Section 2 of this program section identifies those later Editions and/or Addenda that have been included into the W3 ISI program based on NRC approval or requirements.

2.0 1993 Addenda

- 2.1 Prior to the NRC approval of the 1992 Edition of ASME Section XI, by incorporation into 10 CFR 50.55a(b), the NRC authorized the use of the 92 Edition with select portions of the 1993 Addenda at W3 (Reference GNRI 96-00244). Table 2.1 identifies the portions of the 1993 Addenda that have been adopted by Entergy and approved by the NRC for use with the W3 ISI program.

TABLE 2.1
1993 ADDENDA

<u>Code Paragraph</u>	<u>Code Change Description</u>
1. Table IWA-5210-1	Table IWA-5210-1 is revised to reflect a change in referenced paragraphs for Test Temperature requirements from IWB/IWC-5230 to IWB/IWC-5240 to be consistent with changes in paragraph numbers in IWB and IWC. This change has no impact on examination and test requirements.
2. Paragraphs IWA-5250(a)(2)	Paragraph IWA-5250(a)(2) is revised to delete the requirement for removal and examination of bolting in leaking bolted connections in gaseous systems.
3. IWA-5265(b):	Paragraph IWA-5265(b) is revised to clarify that even if the test pressure at the highest elevations is

TABLE 2.1
1993 ADDENDA

<u>Code Paragraph</u>	<u>Code Change Description</u>
	not achieved, the maximum test pressure that any component is allowed to see is 106% of the specified test pressure.
4. Table IWB-2500-1, Examination Categories B-P	Table IWB-2500-1, Examination Category B-P is revised to delete the requirement for the Class 1 hydrostatic test once per interval.
5. Table IWB-2500-1, Examination Categories B-E	Table IWB-2500-1, Examination Category B-E is deleted. The requirements of this category involved duplicate examinations that were already addressed in Category B-P. This change has no affect on examinations and is considered to be a clarification.
6. Article IWB-5000 in its entirety	Article IWB-5000 is rewritten for clarity. Also the boundary requirements have been revised to change the end of the interval test boundary requirements for the hydrostatic test to the end of the interval requirements for the system leakage test. This is consistent with deletion of the periodic hydrostatic test requirement from Category B-P.
7 Table IWC-2500-1, Examination Category C-H	Table IWC-2500-1, Examination Category C-H is revised to delete the requirement for the Class 2 hydrostatic test once per interval.
8 Article IWC-5000 in its entirety	Article IWC-5000 is rewritten for clarity. Also, the boundary requirements have been revised to exempt open-ended discharge piping from the system leakage test.
9. Article IWD-5000 in its entirety	Article IWD-5210(b) has been rewritten for clarity. Paragraph IWD-5222(g) which required pressure tests of open-ended piping discharging to the suppression pool is deleted and IWD-5222(f) is rewritten to exempt all open-ended piping (including open-ended suppression pool piping). The boundary requirements have been revised to exempt open-ended discharge piping from the system leakage test.

3.0 1995 Edition through and Including the 1995 Addenda

- 3.1 As discussed in Paragraph 1.1, the NRC has approved the use of the 1995 Edition through the 1995 Addenda in 10 CFR 50.55a(b). Table 2.2 identifies the portions of the 1995 Addenda that have been adopted by Entergy for use with the W3 ISI program

TABLE 2.2
1995 ADDENDA

Code Paragraph	Code Change Description	Related Requirements
1. IWA-5213	IWA-5213 is revised to reflect a change in the required hold time after pressurization to test conditions prior to performing the visual examinations during the conduct of a system leakage test. This change eliminates the hold time after attaining the test pressure and temperature for periodic pressure testing. Repair/Replacement pressure testing hold times remain unchanged..	None

4.0 1995 Edition Through and Including the 1996 Addenda

- 4.1 On September 22, 1999 10 CFR 50.55a was revised mandating the implementation of the 1995 Edition, through and including the 1996 Addenda of ASME Section XI, Appendix VIII, "Performance Demonstration for Ultrasonic Examination Systems". Appendix VIII is comprised of multiple supplements for varying scopes of ultrasonic application. The NRC has mandated each supplement's use in accordance with a specific schedule for implementation. Additionally, by implementing Appendix VIII for each of the specific supplements, it also requires the use of Appendix VII from the 1995 Edition through the 1996 Addenda within the same schedule.
- 4.2 The Examination Category Item Numbers listed in Table 2.3 shall be ultrasonically examined in accordance with ASME Section XI, 1980 Edition through and including the 1981 Winter Addenda until the specified date. Beginning with the specified date, the ultrasonic examinations (preservice and inservice) shall be in accordance with ASME Section XI, Appendix VIII, 1995 Edition through and including the 1996 Addenda and the additional requirements of 10 CFR 50.55a.

- 4.3 Personnel performing ultrasonic examination of the Examination Category Item Numbers listed in Table 2.3 shall be qualified in accordance with ASME Section XI, Appendix VII, 1992 Edition until the specified date. Beginning with the specified date, personnel performing these examinations (preservice and inservice) shall be qualified in accordance with ASME Section XI, Appendix VII, 1995 Edition through and including the 1996 Addenda and the additional requirements of 10 CFR 50.55a. When updating to the requirements of Appendix VII, 1995 Edition, 1996 Addenda, IWA-2300 accepts existing qualifications using SNT-TC-1A until the re-qualification is required. Re-qualification shall be in full compliance with the 1995 Edition through the 1996 Addenda including the use of CP-189.

TABLE 2.3				
1995 EDITION, 1996 ADDENDA IMPLEMENTATION				
SCHEDULE				
Item Number	Specified Date to Begin New Requirements	New Appendix VIII Examinations Requirements	New Certification Requirements	Notes
Examination Category: B-A				
B1.11	11/20/00	Supps. 1, 4 & 6	App. VII, 95E, 96A	
B1.12	11/20/00	Supps. 1, 4 & 6	App. VII, 95E, 96A	
B1.21 Clad	11/20/00	Supps. 1, 4 & 6	App. VII, 95E, 96A	
B1.22 Clad	11/20/00	Supps. 1, 4 & 6	App. VII, 95E, 96A	
B1.30	11/20/00	Supps. 1, 4 & 6	App. VII, 95E, 96A	
B1.40	11/20/00	Supps. 1, 4 & 6	App. VII, 95E, 96A	
B1.51	11/20/00	Supps. 1, 4 & 6	App. VII, 95E, 96A	
Examination Category: B-B				
B2.11	11/20/00	Supps. 1, 4 & 6	App. VII, 95E, 96A	
B2.12	11/20/00	Supps. 1, 4 & 6	App. VII, 95E, 96A	
B2.21	11/20/00	Supps. 1, 4 & 6	App. VII, 95E, 96A	
B2.22	11/20/00	Supps. 1, 4 & 6	App. VII, 95E, 96A	
B2.31	11/20/00	Supps. 1, 4 & 6	App. VII, 95E, 96A	
B2.32	11/20/00	Supps. 1, 4 & 6	App. VII, 95E, 96A	
B2.40	11/20/00	Supps. 1, 4 & 6	App. VII, 95E, 96A	
B2.51	11/20/00	Supps. 1, 4 & 6	App. VII, 95E, 96A	
B2.52	11/20/00	Supps. 1, 4 & 6	App. VII, 95E, 96A	
B2.60	11/20/00	Supps. 1, 4 & 6	App. VII, 95E, 96A	
B2.70	11/20/00	Supps. 1, 4 & 6	App. VII, 95E, 96A	
B2.80	11/20/00	Supps. 1, 4 & 6	App. VII, 95E, 96A	
Examination Category: B-D				

TABLE 2.3
1995 EDITION, 1996 ADDENDA IMPLEMENTATION
SCHEDULE

Item Number	Specified Date to Begin New Requirements	New Appendix VIII Examinations Requirements	New Certification Requirements	Notes
B3.90	11/22/02	Supps. 1 & 7	App. VII, 95E, 96A	
B3.100	11/22/02	Supps. 1 & 5	App. VII, 95E, 96A	
B3.110	11/20/00	Supps. 1, 4 & 6	App. VII, 95E, 96A	
B3.120	11/20/00	Supps. 1, 4 & 6	App. VII, 95E, 96A	
B3.130	11/20/00	Supps. 1, 4 & 6	App. VII, 95E, 96A	
B3.140	11/20/00	Supps. 1, 4 & 6	App. VII, 95E, 96A	
B3.150	11/20/00	Supps. 1, 4 & 6	App. VII, 95E, 96A	
B3.160	11/20/00	Supps. 1, 4 & 6	App. VII, 95E, 96A	
Examination Category: B-F				
B5.10	11/22/02	Supps. 1 & 10	App. VII, 95E, 96A	
Examination Category: B-G-1				
B6.20	5/22/00	Supps. 1 & 8	App. VII, 95E, 96A	
B6.30	5/22/00	Supps. 1 & 8	App. VII, 95E, 96A	
B6.40	5/22/00	Supps. 1 & 8	App. VII, 95E, 96A	
B6.150	5/22/00	Supps. 1 & 8	App. VII, 95E, 96A	
B6.180	5/22/00	Supps. 1 & 8	App. VII, 95E, 96A	
B6.210	5/22/00	Supps. 1 & 8	App. VII, 95E, 96A	
Examination Category: B-J				
B9.11 Stainless	5/22/00	Supps. 1 & 2	App. VII, 95E, 96A	
B9.12 Stainless	5/22/00	Supps. 1 & 2	App. VII, 95E, 96A	
B9.31 Stainless	5/22/00	Supps. 1 & 2	App. VII, 95E, 96A	
B9.11 Ferritic	5/22/00	Supps. 1 & 3	App. VII, 95E, 96A	
B9.12 Ferritic	5/22/00	Supps. 1 & 3	App. VII, 95E, 96A	
B9.31 Ferritic	5/22/00	Supps. 1 & 3	App. VII, 95E, 96A	
B9.11 Dissimilar	11/22/02	Supps. 1 & 10	App. VII, 95E, 96A	
B9.12 Dissimilar	11/22/02	Supps. 1 & 10	App. VII, 95E, 96A	
B9.31 Dissimilar	11/22/02	Supps. 1 & 10	App. VII, 95E, 96A	
Examination Category: B-L-1 AND B-M-1				
B12.10	No Changes, Appendix VIII does not apply			
B12.40	No Changes, Appendix VIII does not apply			
Examination Category: B-0				
B14.10	No Changes, Appendix VIII does not apply			
Examination Category: C-A				
C1.10	No Changes, Appendix VIII does not apply			
C1.20	No Changes, Appendix VIII does not apply			
C1.30	No Changes, Appendix VIII does not apply			

**TABLE 2.3
1995 EDITION, 1996 ADDENDA IMPLEMENTATION
SCHEDULE**

Item Number	Specified Date to Begin New Requirements	New Appendix VIII Examinations Requirements	New Certification Requirements	Notes
Examination Category: C-B				
C2.21	No Changes, Appendix VIII does not apply			
C2.22	No Changes, Appendix VIII does not apply			
C2.32	No Changes, Appendix VIII does not apply			
Examination Category: C-D				
C4.10	5/22/00	Supps. 1 & 8	App. VII, 95E, 96A	
C4.20	5/22/00	Supps. 1 & 8	App. VII, 95E, 96A	
C4.30	5/22/00	Supps. 1 & 8	App. VII, 95E, 96A	
C4.40	5/22/00	Supps. 1 & 8	App. VII, 95E, 96A	
Examination Category: C-F-1				
C5.11 SS or HA	5/22/00	Supps. 1 & 2	App. VII, 95E, 96A	
C5.12 SS or HA	5/22/00	Supps. 1 & 2	App. VII, 95E, 96A	
C5.21 SS or HA	5/22/00	Supps. 1 & 2	App. VII, 95E, 96A	
C5.22 SS or HA	5/22/00	Supps. 1 & 2	App. VII, 95E, 96A	
C5.11 Dissimilar	11/22/02	Supps. 1 & 10	App. VII, 95E, 96A	
C5.12 Dissimilar	11/22/02	Supps. 1 & 10	App. VII, 95E, 96A	
C5.21 Dissimilar	11/22/02	Supps. 1 & 10	App. VII, 95E, 96A	
C5.22 Dissimilar	11/22/02	Supps. 1 & 10	App. VII, 95E, 96A	
Examination Category: C-F-2				
C5.51	5/22/00	Supps. 1 & 3	App. VII, 95E, 96A	
C5.52	5/22/00	Supps. 1 & 3	App. VII, 95E, 96A	
C5.61	5/22/00	Supps. 1 & 3	App. VII, 95E, 96A	
C5.62	5/22/00	Supps. 1 & 3	App. VII, 95E, 96A	

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CODE CASES

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CODE CASES

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1.0 Adoption of Code Cases

This Section addresses the adoption of Code Cases during the Second Inservice Inspection Interval. All Code Cases adopted for ASME Section XI activities for use during the Second Interval are listed in Tables 3.1, 3.2, and 3.3. The use of Code Cases is in accordance with ASME Section XI, IWA-2440, 10 CFR 50.55a, and Regulatory Guide 1.147. As permitted by ASME Section XI with the additional provisions of Regulatory Guide 1.147, ASME Section XI Code Cases may be adopted and used as described below.

1.1 Adoption of Code Cases Listed for Generic Use in Regulatory Guide 1.147

Code Cases that are listed for generic use in the latest revision of Regulatory Guide 1.147 may be included into the ISI program provided any additional provisions specified in the Regulatory Guide are also incorporated.

1.2 Adoption of Code Cases Not Listed in Regulatory Guide 1.147

Adoption of Code Cases that have been approved by the Board of Nuclear Codes and Standards, but that have not been listed for generic use in Regulatory Guide 1.147, may be requested in the form of a "Request for Alternative" in accordance with 10 CFR 50.55a(a)(3). Once approved, these Requests for Alternatives will be available for use until such time that the Code Cases are adopted into Regulatory Guide 1.147, at which time compliance with the provisions contained in the regulatory Guide is required.

For convenience to the user of this ISI Plan, Requests for Alternative are included as an attachment to this section when their volume and format permit. Alternatively when the Request for Alternative is not attached, the appropriate internal correspondence number is provided to assist in retrieval from Entergy Document Control Centers. All other Requests for Alternatives and Relief Requests (those not associated with NRC approval of Code Cases) are addressed in Section 4 of this ISI Plan. Table 3.2 identifies those Requests for Alternatives that are provided as an attachment to this section.

1.3 Use of Annulled Code Cases

As permitted by Regulatory Guide 1.147 (D) (3), Code Cases that have been adopted for use in the current interval that are subsequently annulled by ASME, may be used for the remainder of the interval.

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1.4 Code Case Revisions

As permitted by Regulatory Guide 1.147 (D) (2), activities performed to a specific revision of an approved Code Case need not be changed because a subsequent revision of the Code Case is listed as the approved version in the Regulatory Guide.

1.5 Adoption of Code Cases Issued Subsequent to Filing the Inservice Inspection Plan

Code Cases issued by ASME Section XI subsequent to filing the Inservice Inspection Plan with the NRC may be incorporated within the provisions of paragraphs 1.1 or 1.2 by either a revision or a PCN to this ISI Plan.

TABLE 3.1

CODE CASES ADOPTED from REGULATORY GUIDE 1.147

Code Case Number	Title	Reg. Guide 1.147 Revision
N-335-1	Rules for Ultrasonic Examination of Similar and Dissimilar Metal Piping Welds, Section XI, Division 1. (Inc W85)	12
N-416-1	Alternative Pressure Test Requirements for Welded Repairs or Installation of Replacement Items by Welding, Class 1, 2, and 3, Section XI, Division 1	12 (Limitations) (See Note 1)
N-435-1	Alternative Examination Requirements for Vessels with Wall Thickness 2 in. or Less, Section XI, Division 1	12
N-460	Alternative Examination Coverage for Class 1 and 2 Welds, Section XI, Division 1	12
N-461	Alternative Rules for Piping Calibration Block Thickness, Section XI, Division 1	12 (Limitations) (See Note 2)
N-496-1	Helical Coil Threaded Inserts, Section XI Division 1	12
N-498-1	Alternative Rules for 10-Year Hydrostatic Pressure Testing for Class 1, 2, and 3 Systems, Section XI, Division 1	12
N-509	Alternative Rules for the Selection and Examination of Class 1, 2, and 3 Integrally Welded Attachments, Section XI, Division 1	12 (Limitations) (See Note 3)

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Code Case Number	Title	Reg. Guide 1.147 Revision
N-521	Alternative Rules for Deferral of Inspections of Nozzle-to-Vessel Welds, Inside Radius Sections, and Nozzle-to-Safe End Welds of a Pressurized Water Reactor (PWR) Vessel, Section XI, Division 1	12 (Limitations) (See Note 4)
N-524	Alternative Examination Requirements for Longitudinal Welds in Class 1 and 2 Piping, Section XI, Division 1	12

Table 3.1 Notes:

1. Additional surface examinations should be performed on the root (pass) layer of butt and socket welds of the pressure retaining boundary of Class 3 components when a surface examination is required on the final, in accordance with Section III.
2. Thickness measurements and weld joint contour/component must be known and used by the inspector who conducts the UT examination.
3. A minimum 10% sample of integrally welded attachment for each item in each Code Class per interval should be examined.

TABLE 3.2

CODE CASES APPROVED THROUGH REQUESTS FOR ALTERNATIVES

Code Case Number	Title	Submittal Letter Number	Approved By The NRC	Attached
N-508-1	Rotation of Serviced Snubbers and Pressure Relief Valves for the Purposes of Testing	GNRO 96/00071 GNRO 96/00102 GNRO 97/00003	GNRI 96/00200 GNRI 97/00031	NO
N-532	Alternative Requirements to Repair and Replacement Documentation Requirements and Inservice Summary Report Preparation and Submission as Required by IWA-4000 and IWA-6000	1CAN069704	GNRI 97/08144	NO
N-546	Alternative Requirements for Qualification of VT-2	GNRO 96/00069 GNRO 97/00003	GNRI 97/00031 (See Note 1)	NO

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Code Case Number	Title	Submittal Letter Number	Approved By The NRC	Attached
	Examination Personnel	GNRO 97/00042		

Table 3.2 Notes:

1. The use of Code Case N-546 includes:
 - (a) Development of procedural guidelines for obtaining consistent, quality VT-2 visual examinations in accordance with ASME Section XI, IWA-2210.
 - (b) Document and maintenance of records to verify the qualification of persons selected to perform VT-2 visual examinations in accordance with IWA-1400(k).
 - (c) Independent review and evaluation of leakage by persons other than those that performed the VT-2 visual examinations in accordance with IWA-1400(n).
 - (d) VT-2 inspections requiring the oversight of an authorized nuclear inservice inspector in accordance with IWA-1400(f).
 - (e) VT-2 results evaluated in accordance with IWB/IWC/IWD-3000, and Corrective measures in accordance with IWA-5250.

TABLE 3.3
CODE CASES ADOPTED from 10 CFR 50.55a

Code Case Number	Title	Notes
N-513	Evaluation Criteria for Temporary Acceptance of Flaws in Class 3 Piping	1
N-523-1	Mechanical Clamping Devices for Class 2 and 3 Piping	2

Table 3.3 Notes:

1. The use of Code Case N-513 includes:
 - (a) Licensees must apply all of the Code Cases provisions
 - (b) When implementing the Code Case, the specific safety factors in paragraph 4.0 of the Code Case shall be satisfied.
 - (c) The NRC approves the use of Code Case N-513 only for application to pipes and tubes and it is not permissible to apply it to:

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1. Components such as pumps, valves expansion joints, and heat exchangers.
 2. Leakage through a flange gasket.
 3. Threaded connection employing nonstructural seal welds for leakage prevention. Through seal weld leakage is not a structural flaw, thread integrity must be maintained.
 4. Degraded socket welds.
2. When using Code Case N-523-1 all of its provisions shall be applied and the NRC limits its use to Class 3 applications.

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ATTACHMENTS

<u>Relief Request</u>	<u>Pages</u>	<u>Revision</u>
ISI2-08	1 - 3	0
ISI2-09	1-3	0

SECTION 4
RELIEF REQUESTS

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1.0 Purpose and Scope

1.1 Section 4 identifies Requests for Alternative that have been approved by the NRC under the provisions of 10 CFR 50.55a(a)(3) and Requests for Relief that have been approved by the NRC under the provisions of 10 CFR 50.55a(g)(6).

1.2 Requests for Alternatives that approve the use of Code Cases are addressed in Section 3 of this ISI Plan.

2.0 Request for Alternative/ Request for Relief Index

For convenience to the user of this ISI Plan, Requests for Alternative and Requests for Relief are included as an attachment to this section when their volume and format permit. Alternatively when the Request for Alternative or the Request for Relief is not attached, the appropriate internal correspondence number is provided to assist in retrieval from Entergy Document Control Centers. Table 2.1 provides an index for all Requests for Alternatives and Requests for Relief that are within the scope of this section and indicates which are included as an attachment.

TABLE 2.1			
Relief Request No.	Request Description	Entergy Correspondence	ATTACHED
		NRC SER Correspondence	
ISI2-08, Revision 0	System Pressure Test Corrective Actions	CNRO 98/00004	Yes
		CNRI 98/00002, ILN 98-0162	
ISI2-09 Revision 0	System Pressure Tests for Insulated Components	CNRO-98/00003	Yes
		ILN: 99-0025	
ISI2-010 Revision 0			
N/A	Use of the 1992 Edition with Portions of the 1993 Addenda of ASME Section XI	GNRO 96/00066	No
		GNRI 96/0244, ILN 96-0248	

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3.0 Relief Requests

The attached Relief Requests are identical to what is approved by the NRC with the exception of sections that are added to each relief request after NRC approval. This section reflects conditions that may have been included in the NRC Safety Evaluation that result in additional requirements/action that were not part of the initial request.

**Relief Request ISI2-08
System Pressure Test Corrective Actions**

I. Code Requirement

In a letter to Entergy, the NRC authorized the use of the 1992 Edition and portions of the 1993 Addenda of the ASME Boiler and Pressure Vessel Code, Section XI for the updated inservice inspection program at Entergy's nuclear sites¹.

ASME Section XI, 1992 Edition, 1993 Addenda, Subarticle IWA-5250(a)(2) states that if leakage occurs at a bolted connection during a system pressure test, one bolt shall be removed, VT-3 examined, and evaluated for degradation in accordance with IWA-3100.

II. Requested Authorization

Entergy requests authorization to perform an alternative to the code-required removal and VT-3 visual examination of bolting if leakage occurs during a system pressure test of Class 1, 2, and 3 systems.

III. Basis for Requesting Authorization

Entergy believes the actions specified in IWA-5250(a)(2) are not always the most prudent course of action to determine the condition of the bolting and/or the root cause of the leak.

A situation which may be encountered involves a leaking joint following complete replacement of bolting materials (studs, bolts, nuts, washers, etc.). When the associated system process piping is pressurized during plant start-up, the joint leaks. The root cause of this leakage may be due to thermal expansion of the

¹Letter dated December 12, 1996 from Mr. William D. Beckner, Director - Project Directorate IV-1, Office of Nuclear Reactor Regulation, NRC to Mr. Jerrold G. Dewease, Vice President - Operations Support, Entergy Operations, Inc., "Evaluation of Entergy Operations, Inc. Request for Authorization to Update Inservice Inspection Programs to the 1992 and Portions of the 1993 ASME Boiler and Pressure Vessel Code, Section XI for Arkansas Nuclear One, Units 1 and 2, Grand Gulf Nuclear Station, River Bend Station, and Waterford Steam Electric Station, Unit 3 (TAC Nos. M94472, M94471, M94454, M94473, and M94488)"

pipng and bolting materials and subsequent process fluid seepage at the joint gasket. In such cases, re-torquing the joint bolting usually stops the leak. Removing any of the joint bolting to evaluate for corrosion would be unwarranted in this situation if the bolting material is new. ASME Section XI Interpretation XI-1-92-01 recognizes this situation as one in which the requirements of IWA-5250(a)(2) do not apply.

Additionally, IWA-5250(a)(2) does not address other factors which may indicate the condition of mechanical joint bolting. Entergy considers this requirement to be unnecessarily prescriptive and restrictive.

Other factors which should be considered when evaluating bolting condition at a leaking mechanical joint include, but are not limited to:

- joint bolting materials
- service age of joint bolting materials
- location of the leakage
- history of leakage at the joint
- evidence of corrosion with the joint assembled
- corrosiveness of process fluid
- plant/industry studies of similar bolting materials in a similar environment

IV. Proposed Alternative Examination

In accordance with 10 CFR 50.55a(a)(3)(i), Entergy proposes the following alternative to the requirements of IWA-5250(a)(2).

When leakage is identified at bolted connections by visual VT-2 examination during system pressure testing, an evaluation will be performed. The evaluation will determine the susceptibility of the bolting to corrosion, assess the potential for failure, and identify appropriate corrective actions. The following factors will be considered, as necessary, when evaluating the leakage:

- 1) Bolting materials
- 2) Corrosiveness of the process fluid
- 3) Leakage location
- 4) Leakage history at connection
- 5) Visual evidence of corrosion at connection (connection assembled)

- 6) Industry studies and history of similar bolting in similar environment
- 7) Condition and leakage history of adjacent components

Furthermore if the initial evaluation indicates the need for a more in-depth evaluation, the actions specified in IWA-5250(a)(2) shall be performed.

Entergy believes this proposed alternative provides an equivalent level of quality and safety when evaluating leakage and bolting material condition at Class 1, 2, and 3 bolted connections.

V. Conclusion

10CFR50.55a(a)(3) states:

"Proposed alternatives to the requirements of (c), (d), (e), (f), (g), and (h) of this section or portions thereof may be used when authorized by the Director of the Office of Nuclear Reactor Regulation. The applicant shall demonstrate that:

- (i) The proposed alternatives would provide an acceptable level of quality and safety, or
- (ii) Compliance with the specified requirements of this section would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety."

Entergy believes that the proposed alternative, to use a systematic approach with an engineering evaluation, provides an acceptable level of quality and safety. Therefore, we request the proposed alternative be authorized pursuant to 10CFR50.55a(a)(3)(i).

**Relief Request ISI2-09
System Pressure Tests for Insulated Components**

I. Code Requirement

ASME Section XI, 1992 Edition, Subarticle IWA-5242(a) states that for systems borated for the purpose of controlling reactivity, insulation shall be removed from pressure-retaining bolted connections for a direct VT-2 visual examination. The VT-2 examination must be performed at system test pressure in accordance with Subarticle IWA-5211.

II. Requested Authorization

Entergy requests authorization to perform an alternative to removing insulation for VT-2 visual examinations of bolted connections in Class 1 and 2 borated systems as required by IWA-5242(a) during system pressure tests.

III. Basis for Requesting Authorization

Entergy requests relief from the requirements of IWA-5242(a) during system pressure tests for the following reasons:

1. Code Class 1 and 2 systems borated for the purpose of controlling reactivity are large, extensive systems which extend into multiple plant areas and elevations. Scaffolding is required to access many of the bolted connections. In addition, many of these connections are located in difficult to access areas and in medium to high radiation areas. Insulation removal combined with scaffolding requirements results in increased personnel exposure, additional radwaste, and increased financial cost.
2. Visual VT-2 examinations of Class 1 systems, primarily the Reactor Coolant System (RCS) piping and components, are performed while ascending in power from Mode 3 to Mode 2 during plant startup. During such times, the RCS is at normal operating pressure of approximately 2250 psig with reactor coolant temperature at approximately 550° F. (These parameters are controlled by each plant's specific Technical Specifications and procedures for this condition.) Performing a visual VT-2 examination, installing insulation, and removing scaffolding at bolted connections under these operating conditions represents a personnel safety hazard. Since the majority of Class 1 piping is inside the containment building bio-shield wall, removing and reinstalling insulation along with disassembly of scaffolding may substantially increase the outage duration.

3. In response to NRC Generic Letter 88-05, "Boric Acid Corrosion Of Carbon Steel Reactor Pressure Boundary Components In PWR Plants," Entergy established a program to inspect boric acid leaks discovered in the containment building and to evaluate the impact of those leaks on carbon steel or low alloy steel components. Per this program, evidence of leaks, including boric acid crystals or residue, is inspected and evaluated regardless of whether the leak was discovered at power or during an outage. Based on the evaluation, appropriate corrective actions are initiated to prevent recurrence of the leak and to repair, if necessary, any degraded materials or components.
4. To ensure that degradation mechanisms in stainless steels are mitigated, Entergy maintains a program for controlling materials (insulation, thread lubricant, boron, etc.) that may come in contact with safety-related components, including bolting. This program ensures impurities are not present in concentrations that would promote development of stress corrosion cracking in stainless steel bolted connections.

The only carbon steel and low alloy pressure boundary components at Entergy plants in systems borated for the purpose of controlling reactivity are clad with stainless steel. Specifically, these clad components are the reactor vessel, steam generators (primary side), pressurizer, and portions of the reactor coolant system piping. Other pressure boundary piping and components in borated systems within inservice inspection boundaries are constructed of stainless steel. There is substantial information, such as EPRI NP-5679, attesting to the resistance of stainless steels to boric acid corrosion.

IV. Proposed Alternative Examination

Entergy proposes an alternative examination methodology utilizing current material control programs and additional inspection activities as discussed below.

1. Bolted connections in systems borated for the purpose of controlling reactivity shall receive a VT-2 visual examination without removing the insulation following a 4-hour hold time at required test conditions. If evidence of leakage is detected either by discovery of active leakage or evidence of boric acid crystals, the insulation shall be removed and the bolted connection shall be re-examined. If necessary, the connection shall be evaluated in accordance with the corrective measures of IWA-5250.

2. Insulation at bolted connections in systems borated for the purpose of controlling reactivity shall be removed during each refueling outage and a VT-2 visual examination performed at cold conditions. The connection is not required to be pressurized. Any evidence of leakage shall be evaluated in accordance with IWA-5250.

V. Conclusion

10CFR50.55a(a)(3) states:

"Proposed alternatives to the requirements of (c), (d), (e), (f), (g), and (h) of this section or portions thereof may be used when authorized by the Director of the Office of Nuclear Reactor Regulation. The applicant shall demonstrate that:

- (i) The proposed alternatives would provide an acceptable level of quality and safety, or
- (ii) Compliance with the specified requirements of this section would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety."

Entergy believes that the proposed alternative presented above provides an acceptable level of quality and safety for ensuring the integrity of bolted connections in systems borated for reactivity control. Therefore, we request the proposed alternative be authorized pursuant to 10CFR50.55a(a)(3)(i).

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1.0 Pressure Testing

1.1 Requirements, acceptance standards, and corrective actions required for the performance of pressure testing are contained in ECP-PT-001.

1.2 Exam required: Visual, VT-2

2.0 ASME Class 1 Components

2.1 Code Class/Category: Class 1, Exam Category B-P, pressure retaining components.

2.2 Class 1 pressure retaining components must undergo a System Leakage Test prior to plant startup following each refueling outage.

2.3 Class 1 pressure retaining components must undergo a System Leakage Test at or near the end of each interval.

2.4 The ISI Boundary Diagrams listed below and the ISI Line List contained in Appendix A define the Class 1 system boundaries.

3.0 ASME Class 2 Components

3.1 Code Class/Category: Class 2, Exam Category C-H, pressure retaining components.

3.2 Class 2 pressure retaining components must undergo a System Leakage Test during each inspection period.

3.3 The ISI Boundary Diagrams listed below and the ISI Line List contained in Appendix A define the Class 2 system boundaries.

4.0 ASME Class 3 Components

4.1 Code class/category: Class 3 Exam Category D-B, pressure retaining components.

4.2 All Class 3 pressure retaining components must meet the following requirements:

4.2.1 Class 3 pressure retaining components must undergo a System Leakage Test during each inspection period

4.2.2 Class 3 pressure retaining components must undergo a system hydrostatic test at or near the end of the ten year inspection interval or during the same inspection period of each ten year inspection interval.

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- 4.3 As an alternative to the hydrostatic test required by 4.2.2, a system leakage test may be performed in accordance with Code Case N-498-1.
- 4.4 The ISI Boundary Diagrams listed below and the ISI Line List contained in Appendix A define the Class 3 system boundaries.

5.0 ISI Boundary Diagram W3 Index

ISI Boundary Diagram	System Name
G-1564-853 sht. 3	CHILLED WATER
G-1564-853 sht. 5	CHILLED WATER
G-1564-853 sht. 4	CHILLED WATER
G-1564-853 sht. 6	CHILLED WATER
G-1564-853 sht. 7	CHILLED WATER
G-1564-853 sht. 11	CHILLED WATER
G-1564-164 sht. 5	STEAM GENERATOR BLOWDOWN
G-1564-162 sht. 1	BORON MANAGEMENT
G-1564-171 sht. 1	BORON MANAGEMENT
G-1564-163	BORON MANAGEMENT
G-1564-167 sht. 3	BORON MANAGEMENT
G-1564-168 sht. 1	BORON MANAGEMENT
G-1564-168 sht. 2	BORON MANAGEMENT
G-1564-170 sht. 4	BORON MANAGEMENT
G-1564-171 sht. 2	BORON MANAGEMENT
G-1564-164 sht. 2	CONTAINMENT AIR
G-1564-175 sht. 2	CONTAINMENT AIR
G-1564-175 sht. 3	CONTAINMENT AIR
G-1564-160 sht. 1	COMPONENT COOLING WATER
G-1564-160 sht. 3	COMPONENT COOLING WATER
G-1564-160 sht. 4	COMPONENT COOLING WATER
G-1564-160 sht. 2	COMPONENT COOLING WATER
G-1564-160 sht. 5	COMPONENT COOLING WATER
G-1564-160 sht. 6	COMPONENT COOLING WATER
G-1564-164 sht. 2	COMPONENT COOLING WATER
G-1564-153 sht. 4	CONDENSATE
G-1564-160 sht. 6	CONDENSATE
G-1564-163	CONDENSATE
G-1564-163	CHEMICAL AND VOLUME CONTROL
G-1564-168 sht. 1	CHEMICAL AND VOLUME CONTROL
G-1564-168 sht. 2	CHEMICAL AND VOLUME CONTROL
G-1564-168 sht. 3	CHEMICAL AND VOLUME CONTROL

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ISI Boundary Diagram	System Name
G-1564-171 sht. 1	CHEMICAL AND VOLUME CONTROL
G-1564-179	CHEMICAL AND VOLUME CONTROL
G-1564-179	CHEMICAL AND VOLUME CONTROL
G-1564-163	CONTAINMENT SPRAY
G-1564-161 sht. 2	DEMINERALIZED WATER
G-1564-164 sht. 2	EMERGENCY DIESEL GENERATOR AIR SUPPLY
G-1564-164 sht. 1	EMERGENCY DIESEL
G-1564-161 sht. 1	PLANT FIRE PROTECTION
G-1564-163	FUEL POOL
G-1564-169	FUEL POOL
G-1564-153 sht. 4	FW
G-1564-160 sht. 6	FW
G-1564-175 sht. 2	HEATING, VENTILATION, AIR CONDITION
G-1564-856 sht. 6	HEATING, VENTILATION, AIR CONDITION
G-1564-853 sht. 2	HV HEATING, VENTILATION, AIR CONDITION
G-1564-152 sht. 4	INSTRUMENT AIR
G-1564-152 sht. 6	INSTRUMENT AIR
G-1564-166 sht. 2	INSTRUMENT AIR
G-1564-164 sht. 2	LUBE OIL
G-1564-151 sht. 1	MAIN STEAM
G-1564-165 sht. 3	MAIN STEAM
G-1564-166 sht. 1	NITROGEN GAS
G-1564-166 sht. 2	NITROGEN GAS
G-1564-167 sht. 2	REACTOR COOLANT
G-1564-172	REACTOR COOLANT
G-1564-168 sht. 1	REACTOR COOLANT
G-1564-172	REACTOR COOLANT
G-1564-179	REACTOR COOLANT
G-1564-157	STATION AIR
G-1564-164 sht. 1	STATION AIR
G-1564-163	SAFETY INJECTION
G-1564-167 sht. 1	SAFETY INJECTION
G-1564-167 sht. 2	SAFETY INJECTION
G-1564-167 sht. 3	SAFETY INJECTION
G-1564-167 sht. 4	SAFETY INJECTION
G-1564-168 sht. 1	SAFETY INJECTION
G-1564-162 sht. 2	SAMPLING SYSTEM
G-1564-170 sht. 4	WASTE MANAGEMENT
G-1564-173 sht. 3	WASTE MANAGEMENT

SECTION 6 CALIBRATION STANDARDS

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SECTION 6
CALIBRATION STANDARDS

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- 1.0 Calibration standards are used to calibrate ultrasonic examination equipment. These standards were used during preservice examination and the first ISI interval, and are maintained at W3.
- 2.0 Calibration Block Thickness - Calibration block thickness is the same nominal thickness as the material being examined. Any calibration block thickness that is within $\pm 25\%$ of the material being examined may be considered to be the same nominal thickness. (As permitted by Code Case N-461).
- 3.0 Additions or changes to the calibration blocks contained in these tables shall be requested with the use of a PCN in accordance with Section 12.
- 4.0 Table 6.1 identify the calibration blocks available for use at Waterford 3:

Table 6.1			
Waterford 3 Calibration Blocks			
CAL BLOCK	MATERIAL TYPE	DESCRIPTION	APPLICATION
UT-1	Carbon	11" thick clad	Reactor Vessel Upper Shell
UT-2	Carbon	9" thick clad	Reactor Vessel Middle Shell / Closure Head / Steam Generator Primary
UT-3	Carbon	7" thick clad	Steam Generator Stay Cylinders
UT-4	Carbon	5" thick clad	Reactor Vessel Bottom Head / Pressurizer Shell / Hot Legs
UT-6	Carbon	3½" thick clad	Cold Legs
UT-8	Carbon	7" x 11" x 33"	Reactor Vessel Flange & Ligament Area
UT-10	Carbon	Nozzle profile	Reactor Vessel Inlet & Outlet Nozzles
UT-11	Carbon	Nozzle profile	Steam Generator Hot Leg & Cold Leg Nozzle Inner Radii
UT-12	Carbon	120° Nozzle Section	Pressurizer Surge Nozzle Inner Radius
UT-13	Carbon	120° Nozzle Section	Pressurizer Spray Nozzle Inner Radius
UT-14	Carbon	120° Nozzle Section	Pressurizer Safety Nozzle Inner Radius
UT-15	Carbon/ Cast Stainless	36" diam., 3-1/8" thick	Cold Leg to RC Pump Safe-end Welds
UT-15C	Carbon	36" diam., 3 1/8" thick	Cold Leg to RC Pump Safe-end Weld (Carbon Steel Side)
UT-15SA	Cast Stainless	36" diam., 3 1/8" thick	Cold Leg to RC Pump Safe-end Weld (Cast Stainless Steel side, axial direction)
UT-15SC	Cast Stainless	36" diam., 3-1/8" thick	Cold Leg to RC Pump Safe-end Weld (Cast Stainless Steel side, circumferential direction)
UT-16	Carbon/ Cast Stainless	12.75" diam., 1-5/64" thick	Safety Injection Shutdown Cooling and Pressurizer Surge Safe-ends

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Table 6.1			
Waterford 3 Calibration Blocks			
CAL BLOCK	MATERIAL TYPE	DESCRIPTION	APPLICATION
UT-16S	Cast Stainless	12.75" diam., 1 5/64" thick	Safety Injection Shutdown Cooling and Pressurizer Surge Safe-ends (Cast Stainless Steel side)
UT-16C	Carbon	12.75" diam., 1 5/64" thick	Safety Injection Shutdown Cooling and Pressurizer Surge Safe-ends (Carbon Steel side)
UT-17	Carbon/ Stainless	8" diam., 1-1/2" thick	Pressurizer Spray Safe-ends
UT-17S	Stainless	8" diam., 1-1/2" thick	Pressurizer Safety Safe-ends (Stainless Steel side)
UT-17C	Carbon	8" diam., 1-1/2" thick	Pressurizer Safety Safe-ends (Carbon Steel side)
UT-18	Carbon/ Stainless	5" diam., 1-14" thick	Pressurizer Spray Safe-ends
UT-18S	Stainless	5" diam., 1-1/4" thick	Pressurizer Spray Safe-end (Stainless Steel side)
UT-18C	Carbon	4" diam., 1-1/4" thick	Pressurizer Spray Safe-end (Carbon steel side)
UT-20A	Carbon	7" diam. x 56.25" length	Reactor Vessel Closure Studs
UT-23S	Cast Stainless	12.75" diam., 1 1/2" thick	Pressurizer Surge Line
UT-25	Carbon	1.375" thick clad	Shutdown Cooling Heat Exchanger Shell Welds
UT-37	Carbon	7" thick unclad	Steam Generator Secondary / Feedwater Nozzle Extension
UT-38	Carbon	5" thick unclad	Steam Generator Secondary
UT-44	Carbon	2" thick unclad	Steam Generator Stay Cylinder Cap-to-Tube Sheet Welds
UT-102	Stainless	3" diam., sch. 160	HPSI
UT-103A	Stainless	4" diam., sch. 120	Pressurizer Spray Piping
UT-105	Stainless	8" diam., sch. 120	Safety Injection Class 1 & 2
UT-106	Stainless	12" diam., sch. 140	Safety Injection Class 1
UT-108	Stainless	12" diam., sch. 160	Safety Injection Class 1 & 2
UT-111	Stainless	6" diam., sch. 40	Safety Injection and Containment Spray Recirc.
UT-112	Stainless	6" diam., sch. 80	Shutdown Cooling Class 2
UT-113	Stainless	8" diam., sch. 40	Containment Spray Suction / Safety Injection Class 2
UT-115	Stainless	10" diam., sch. 40	HS Suction / Containment Spray / Safety Injection Class 2
UT-119	Stainless	14" diam., sch. 120	Shutdown cooling Class 1 & 2

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CALIBRATION STANDARDS

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Table 6.1			
Waterford 3 Calibration Blocks			
CAL BLOCK	MATERIAL TYPE	DESCRIPTION	APPLICATION
UT-120	Stainless	14" diam., sch. 30	Containment Spray Suction / LPSI Suction /Shutdown Cooling Class 2
UT-123	Stainless	20" diam., sch. 20	LPSI Suction
UT-124	Carbon	18" diam., sch. 80	Feedwater
UT-125	Carbon	20" diam., sch. 80	Feedwater
UT-126	Carbon	34" diam., 1.175" thick	Main Steam
UT-127A	Carbon	40-1/2" diam., 1.429" thick	Main Steam
UT-128A	Carbon	43-1/4" diam., 2.75" thick	Main Steam
UT-134A	Carbon	4-3/4" diam. x 33" length	RC Pump Flange Studs
UT-140	Stainless	4" diam., sch. 80	HPSI Discharge
UT-141	Stainless	6" diam., sch. 160	Pressurizer Safety Piping / SI Reducer-to-Valve Welds Class 2

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CLASS 1 PUMPS
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SECTION 7 CLASS 1 PUMPS AND VALVES

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**SECTION 7
CLASS 1 PUMPS
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1.0 Class 1 Pumps Subject to VT-3 Examination of Internal Surfaces

1.1 Class 1 pumps subject to examination of internal surfaces are identified in Table 7.1.

TABLE 7.1				
Category B-L-2, Item No. B12.20: Pump Casing				
Group I				
Item No.	Item Description	ISI Dwg.	NDE Method	Schedule Period
37-005	RCP 1A CASING INTERNAL PRESSURE BOUNDARY SURFACE	1-5100	VT-3	1,2,3
38-005	RCP 1B CASING INTERNAL PRESSURE BOUNDARY SURFACE	1-5200	VT-3	1,2,3
39-005	RCP 2A CASING INTERNAL PRESSURE BOUNDARY SURFACE	1-5300	VT-3	1,2,3
40-005	RCP 2B CASING INTERNAL PRESSURE BOUNDARY SURFACE	1-5400	VT-3	1,2,3

Notes:

1. Examination of only one pump from the group of pumps is required a maximum of once during the inspection interval.
2. Examination is required only when the pump is disassembled for maintenance or repair. Examination of the internal pressure boundary is required to the extent practicable and does not include internal components of the pump. Examination is required only once during the inspection interval.

2.0 Class I Valves Subject to VT-3 Examination of Internal Surfaces

2.1 Table 7.2 groups all Class 1 valves each into groups of valves that are of the same size, manufacturing method and that are performing similar functions in the system, such as containment isolation and system overpressure protection.

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TABLE 7.2						
CATEGORY B-M-2, ITEM NO. B12.50						
Examination Method Visual, VT-3						
Item No.	Item Description	Function	ISI Dwg.	Line No.	Period	
GROUP #1						
RC-317A-A	6" x 8" RELIEF VALVE INTERNALS	OPP	1-4501	1RC6-18A	1,2,3	
RC-317B-A	6" x 8" RELIEF VALVE INTERNALS	OPP	1-4501	1RC6-18B	1,2,3	
GROUP #2						
SI-142A-A	8" CHECK VALVE INTERNALS	RCS ISO.	1-4204	1SI8-142RL2B	1,2,3	
SI-142B-A	8" CHECK VALVE INTERNALS	RCS ISO.	1-4104	1SI8-126RL1B	1,2,3	
SI-143A-A	8" CHECK VALVE INTERNALS	RCS ISO.	1-4203	1SI8-134RL2A	1,2,3	
SI-143B-A	8" CHECK VALVE INTERNALS	RCS ISO.	1-4103	1SI8-118RL1A	1,2,3	
GROUP #3						
SI-329A	12" CHECK VALVE INTERNALS	RCS ISO.	1-4103	1SI12-120TK1A	1,2,3	
SI-329B	12" CHECK VALVE INTERNALS	RCS ISO.	1-4104	1SI12-128TK1B	1,2,3	
SI-330A-A	12" CHECK VALVE INTERNALS	RCS ISO.	1-4203	1SI12-136TK2A	1,2,3	
SI-330B	12" CHECK VALVE INTERNALS	RCS ISO.	1-4204	1SI12-144TK2B	1,2,3	
GROUP #4						
SI-331A	12" GATE VALVE INTERNALS	SIT ISO.	1-4103	1SI12-119RL1A	1,2,3	
SI-331B	12" GATE VALVE INTERNALS	SIT ISO.	1-4104	1SI12-127RL1B	1,2,3	
SI-332A	12" GATE VALVE INTERNALS	SIT ISO.	1-4203	1SI12-135RL2A	1,2,3	
SI-332B	12" GATE VALVE INTERNALS	SIT ISO.	1-4204	1SI12-143RL2B	1,2,3	
GROUP #5						
SI-335A-A	12" CHECK VALVE INTERNALS	RCS ISO.	1-4103	1RC12-37RL1A	1,2,3	
SI-335B-A	12" CHECK VALVE INTERNALS	RCS ISO.	1-4104	1RC12-38RL1B	1,2,3	

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 CLASS 1 PUMPS
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TABLE 7.2						
CATEGORY B-M-2, ITEM NO. B12.50						
Examination Method Visual, VT-3						
Item No.	Item Description	Function	ISI Dwg.	Line No.	Period	
SI-336A-A	12" CHECK VALVE INTERNALS	RCS ISO.	1-4203	1RC12-39RL2A	1,2,3	
SI-336B-A	12" CHECK VALVE INTERNALS	RCS ISO.	1-4204	1RC12-40RL2B	1,2,3	
GROUP #6						
SI-401A	14" GATE VALVE INTERNALS	RCS ISO.	1-4202	1RC14-45RL2	1,2,3	
SI-401B	14" GATE VALVE INTERNALS	RCS ISO.	1-4102	1RC14-44RL1	1,2,3	
SI405A	14" GATE VALVE INTERNALS	RCS ISO.	1-4202	1SI14-146A	1,2,3	
SI405B	14" GATE VALVE INTERNALS	RCS ISO.	1-4102	1SI14-146B	1,2,3	

Note

1. Examination of only one valve from each group of valves is required a maximum of once during the inspection interval.
2. Examination is required only when the valve is disassembled for maintenance or repair. Examination of the internal pressure boundary is required to the extent practicable and does not include internal components of the valve. Examination is required only once during the inspection interval.

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EXAMINATION SELECTION
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**SECTION 8
EXAMINATION SELECTION
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1.0 This section provides a summary listing of all items subject to inservice inspection during the Second Inspection Interval at Waterford 3.

1.1 Examination Summary Table

The Examination Summary Table 1 provides the following information:

1.1.1 Examination Category

This column lists the examination category as identified in ASME Section XI, Tables IWB-2500-1, IWC-2500-1, IWD-2500-1, and IWF-2500-1. Only those examination categories applicable to Waterford 3 are identified.

1.1.2 Total

This column lists the population of components subject to examination.

1.1.3 Select

The column lists the number of components actually examined during the inspection interval and is based upon the Code requirements for the subject examination categories (e.g., 7.5% of Examination Category C-F-1, components will be examined during the inspection interval), included in Tables IWB-2500-1, IWC-2500-1, IWD-2500-1, and IWF-2500-1.

1.1.4 % Selected

This column provides the percentage of the total number of items subject to examination contained in an examination category that are selected for examination

1.1.5 (1st, 2nd, 3rd) Period

These columns provide the number of items in the examination category that are scheduled to be examined during that period.

1.1.6 % Selected in (1st, 2nd, 3rd)

These columns provide the percentage of the total number of items selected for examination that are selected to be examined that period. These percentages must meet the requirements of IWX-2412-1, unless otherwise noted in the remarks column.

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Examination Category	Total	Select	% Selected	1st Period	% 1st	2nd Period	% 2nd	3rd Period	% 3rd
B-A	26	26	100%	4	15.38%	2	7.69%	20	76.92%
B-B	36	8	22%	2	25%	2	25%	4	50%
B-D	34	34	100%	10	29.41%	8	23.53%	16	47.06%
B-F	5	5	100%	1	20%	2	40%	2	40%
B-G-1	408	264	64%	81	30.68%	54	20.45%	129	48.86%
B-G-2	32	12	37%	4	33.33%	4	33.33%	4	33.33%
B-J	723	182	25%	61	33.52%	60	32.97%	61	33.52%
B-K	15	6	40%	2	33.33%	2	33.33%	2	33.33%
B-L-1	8	0	0%	0	0%	0	0%	0	0%
B-L-2	4	0	0%	0	0%	0	0%	0	0%
B-M-1	2	1	50%	0	0%	0	0%	1	100%
B-M-2	22	1	4%	1	100%	0	0%	0	0%
B-N-1	1	1	100%	1	100%	1	100%	1	100%
B-N-2	22	22	100%	0	0%	0	0%	22	100%
B-N-3	1	1	100%	0	0%	0	0%	1	100%
B-O	128	16	12%	0	0%	0	0.00%	16	100%
C-A	18	10	55%	4	40%	3	30.00%	3	30.00%
C-B	20	10	50%	3	30%	6	60.00%	5	50.00%
C-C	265	33	12%	10	30.30%	10	30.30%	13	39.39%
C-F-1	1479	112	7.57%	31	27.68%	36	32.14%	45	40.18%
C-F-1 - AUG	50	50	100%	18	36%	12	24.00%	20	40.00%
C-F-2	164	30	32%	6	26.67%	11	40.00%	11	36.67%
C-F-2 - AUG	102	102	100%	32	31.37%	37	36.27%	33	32.35%
C-G	7	3	42%	1	33.33%	1	33.33%	1	33.33%
D-A	252	26	10%	7	26.92%	9	34.62%	10	38.46%
F-A F01.010	211	55	26%	20	36.36%	15	27.27%	21	38.18%
F-A F01.020	633	97	15%	28	28.87%	30	30.93%	40	41.24%
F-A F01.030	913	96	10%	24	25%	38	39.58%	39	40.63%
F-A F01.040	36	17	47%	5	29.41%	6	35.29%	6	35.29%
RG1.I4	8	8	100%	4	50%	4	50%	4	50.00%

¹ Because B-G-1 and B-G-2 bolting contained in pumps and valves is only required to be inspected when the component is disassembled and inspected to the requirements of B-L-2 or B-M-2, percentages of completion for each period may not meet the requirements of Table IWB-2412-1. B-G-1 and B-G-2 bolting contained in flanged connections of piping which contains Examination Category B-J welds shall be inspected and the minimum/maximum percentages specified in Table IWB-2412-1 met.

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SUCCESSIVE EXAMINATIONS**

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SECTION 9
SUCCESSIVE EXAMINATIONS

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- 1.0 This section describes the ASME Section XI Code Requirements for successive examinations as identified by IWB-2420.
- 2.0 Where examinations identify flaws that require successive examinations, the successive examinations are scheduled in the applicable Appendix containing the item. The successive exams are also summarized in this section in table 9.1.

TABLE 9.1 SUCCESSIVE CODE EXAMINATIONS				
Item	Item Description	ISI Drawings	Exam Req'd	Schedule
CCRR-0182	RIGID RESTRAINT	4305-5697	VT-3	Period 1
CCRR-0758	RIGID RESTRAINT	4305-6268	VT-3	Period 1
CCRR-1119	RIGID RESTRAINT	4305-9598	VT-3	Period 1
MSRR-0007	RIGID RESTRAINT	4305-4934	VT-3	Period 1
MSRR-0018	RIGID RESTRAINT	4305-4931	VT-3	Period 1
MSRR-0253	RIGID RESTRAINT	4305-6915	VT-3	Period 1
MSRR-0268	RIGID RESTRAINT	4305-6915	VT-3	Period 1
MSRR-0273	RIGID RESTRAINT	4305-6916	VT-3	Period 1
RCRR-0321	RIGID RESTRAINT	8469-725	VT-3	Period 1
45-001	S/G #1 NOZZLE EXTENSION PIECE TO 18" PIPE	2-4102, 4305-3255	UT	(1)
45-023	S/G #1 FW NOZZLE TO NOZZLE EXT. PIECE WELD	2-4102, 4305-3255	UT	(1)
46-001	S/G NOZZLE EXTENSION PIECE TO 18" PIPE	2-4202, 4305-3270	UT	(1)
46-021	S/G FW NOZZLE TO NOZZLE EXTENSION PIECE WELD	2-4202, 4305-3270	UT	(1)

Notes:

1. Examine Welds between 40% and 60% of the total component fatigue life in accordance with ER-W3-99-0198-04

SECTION 10
RISK-INFORMED
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AUGMENTED EXAMINATIONS

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**SECTION 11
AUGMENTED EXAMINATIONS**

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1.0 Scope

- 1.1 This section of the Inservice Inspection Program describes inspection requirements that augment the ASME Section XI Code required examinations. It will describe the requirements for examination, component identification, type of examinations, drawings, procedures and the schedule of examinations.
- 1.2 When examinations are performed solely for the purpose of fulfilling an augmented examination requirement they are identified in the "Require" column in Appendices "B", "C", and "D" as "AUG".
- 1.3 When examinations are performed to satisfy both an augmented examination requirement and also credited towards meeting an ASME Section XI requirement they are identified in the "Require" column in Appendices "B", "C", and "D" as "BOTH". These examinations must meet ASME Section XI, requirements and the augmented requirements.
- 1.4 The ultrasonic examination techniques and requirements contained within this section are to be implemented when performing the applicable augmented examination until the requirements of ASME Section XI, Appendix VIII become effective as described in Section 2. At that time, the requirements of ASME Section XI, Appendix VIII as modified by 10 CFR 50.55a shall be used.

2.0 Augmented Examinations

- 2.1 This section addresses the following augmented examinations W3:
 - 2.1.1 U.S. Nuclear Regulatory Commission Standard Review Plan (SRP), Section 3.6.1, "Plant Design For Protection Against Postulated Piping Failures In Fluid Systems Outside Containment" (NUREG-0800), and W-3 FSAR Section 3.6.1.
 - 2.1.2 U.S. Nuclear Regulatory Commission Standard Review Plan, Section 5.4.1.1, "Pump Flywheel Integrity" (NUREG-0800), W-3 FSAR Section 5.4.1.4, "Reactor Coolant Pump Flywheel Integrity", and U.S. Nuclear Regulatory Commission Regulatory Guide 1.14, Rev 1, "Reactor Coolant Pump Flywheel Integrity."
 - 2.1.3 U.S. Nuclear Regulatory Commission Regulatory Guide 1.150, Revision 1, "Ultrasonic Testing of the Reactor Pressure Vessel Welds During Preservice and Inservice Examination".
 - 2.1.4 U.S. Nuclear Regulatory Commission IE Bulletin 88-08, "Thermal Stresses in Piping Connected to Reactor Coolant Systems".
- 2.2 SRP 3.6.2, Determination of Break Location and Dynamic Effects Associated with Postulated Rupture of Piping (No-Break Zone exams).
 - 2.2.1 In compliance with NRC Standard Review Plan (SRP) 3.6.2, Waterford FSAR Section 6.6.8 has identified the following augmented weld examinations:

- 2.2.1.1 For Main Steam and Feedwater piping, all of the circumferential and longitudinal welds from both Steam Generators to the first rigid restraint past the outer containment isolation valve are being 100 percent volumetrically examined except as restricted by part geometry or access.
- 2.2.1.2 For Safety Injection piping, the augmented ISI requirements of SRP 6.6 and BTP MEB 3-1 will be imposed on the two 14-inch shutdown cooling lines and the four 8-inch LPSI lines penetrating containment. All of the circumferential and longitudinal (if any) welds on the two 14-inch shutdown cooling lines between the containment inboard and outboard isolation valves will be 100 percent volumetrically examined except as restricted by part geometry or access. All of the circumferential and longitudinal (if any) welds on the four 8-inch LPSI lines between the containment inboard and outboard isolation valves will be 100 percent volumetrically examined except as restricted by part geometry or access.
- 2.2.2 NBZ welds are identified in the Program Table Examination notes.
- 2.2.3 All NBZ welds greater than 4 inch nominal pipe size are 100% volumetrically examined once every ten-year interval.
- 2.2.4 Examination techniques and acceptance criteria are in accordance with ASME Section XI. The acceptance standards of IWB-3514 are applied. Where the specified examination coverage cannot be obtained, relief requests are prepared and submitted to the NRC for approval as required for ASME Code exams.
- 2.2.5 NBZ welds may be identified by their Requirements field by "AUG" or "AUG/CODE" which indicates an augmented examination:
 - 2.2.5.1 When a NBZ weld is selected for examination to meet ASME Code requirements and the weld is also a NBZ weld, the weld examination performed for Code credit meets or exceeds the NBZ requirement and is counted as both a Code and a NBZ examination. The weld is identified by "AUG/CODE" under the Require Field in Appendices "B", "C", and "D".
 - 2.2.5.2 When a NBZ weld is not selected for examination to meet Code requirements, the examination is performed to meet the NBZ criteria. The weld is identified by the "AUG" under the Require Field in Appendices "B", "C", and "D". These welds are not credited toward completion of Code exams.
- 2.3 U.S. Nuclear Regulatory Commission Regulatory Guide 1.14, Rev 1, "Reactor Coolant Pump Flywheel Integrity"

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AUGMENTED EXAMINATIONS

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- 2.3.1 The flywheels are examined due to a concern about high-energy missiles inside containment that could potentially damage and cause the simultaneous loss of multiple trains/loops of safety-related systems
- 2.3.2 This inspection requirement has been incorporated into W-3 Technical Specification 4.4.9, which requires that all 4 of the Reactor Coolant Pump Motor Flywheels receive inservice inspections during each 10-year interval per the instructions of this Regulatory Guide. The requirements are:
 - 2.3.2.1 an in-place ultrasonic volumetric examination of the bore and keyway areas at approximately 3-year periods to coincide with the ISI periods and
 - 2.3.2.2 a surface examination of all exposed surfaces and a complete volumetric examination at approximately 10-year intervals to coincide with the ISI interval.
- 2.3.3 These examinations are to be performed to the extent possible with the removal of the inspection covers but disassembly of the motors is not required.
- 2.3.4 These Tech Spec/Reg Guide requirements have been included in this ISI Plan as an augmented program.

- 2.4 U.S. Nuclear Regulatory Commission Regulatory Guide 1.150, Revision 1, "Ultrasonic Testing of the Reactor Pressure Vessel Welds During Preservice and Inservice Examination".
 - 2.4.1 Appendix VIII, as implemented by PDI, satisfies the objectives of this regulatory guide. RPV Supplements 4, 5, 6, and 7 are being implemented in lieu of Regulatory Guide 1.150.
 - 2.4.2 However, Regulatory Guide 1.150 is applicable for the Flange to Head and Flange to shell weld since an Appendix VIII qualified procedure is not applied.

- 2.5 U.S. Nuclear Regulatory Commission IE Bulletin 88-08, "Thermal Stresses in Piping Connected to Reactor Coolant Systems".
 - 2.5.1 Identify reactor coolant systems connected, unisolable piping that could be subjected to temperature distributions which would result in unacceptable thermal stresses
 - 2.5.2 For the UT procedure to reliably detect these cracks, the practices that provide reliable detection include
 - 2.5.2.1 using sufficient instrument gain so that cracks can be distinguished from non-relevant reflectors,
 - 2.5.2.2 using multiple-angle beam transducers on surfaces that have geometric discontinuities or weld conditions that limit scanning,

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- 2.5.2.3 recording any indication of a suspected flaw regardless of amplitude, and**
- 2.5.2.4 using examination personnel with demonstrated ability to detect and evaluate cracked stainless steel welds.**
- 2.5.2.5 A UT procedure that has been shown to be capable of detecting and sizing intergranular stress corrosion cracking is effective in detecting thermal fatigue cracks.**
- 2.5.3 Thirty-one (31) ultrasonic examinations are scheduled for the first period. These examinations are being performed on the Pressurizer Spray and Auxiliary Spray piping using special ultrasonic techniques.**

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PROGRAM CHANGE NOTICE

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**SECTION 12
PROGRAM CHANGE NOTICE**

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1.0 SCOPE

This section provides ENTERGY organizations the method for requesting changes to this Program Section. Changes are requested by using the Program Section Change Notice (PCN), Attachment 1 to this section. The PCN does not make Design Changes to the Plant or make changes to design documents. PCNs are processed in accordance with this Program Section and DEAM EP-P-002.

2.0 RESPONSIBILITY

2.1 ENTERGY Organizations

Submit PCNs to CE Programs for review and approval.

2.2 Central Engineering (CE) Programs

2.2.1 Approves or disapproves submitted change requests.

2.2.2 Incorporates approved PCNs into the Program Section

2.2.3 Maintains the Program Section PCN Log.

3.0 REFERENCES

3.1 DEAM EP-P-002, Control of Entergy Code Programs

3.2 ASME Section XI Code.

4.0 ATTACHMENTS

Attachment 1 - PCN Form

5.0 DEFINITIONS

5.1 PCN - A form originated by any ENTERGY organization requesting changes to the Program Section. The PCN provides a means of changing the ISI Program without the issuing a complete revision. The PCN form shall be similar to Attachment 1 of this section.

5.2 PCN Log - A record of Program Section PCNs received by CE.

6.0 DETAILS

6.1 A PCN may be initiated by any organization to request a change to the Program Section or the boundary diagrams referenced in Section 5 of this Program Section.

6.2 Any Section/Group may submit a PCN to CE Programs for review.

6.3 The CE Programs group responsible for maintenance of the Program Section has responsibility for approval or disapproval of requests.

6.4 Examples of changes to be documented via PCN:

6.4.1 The addition, deletion, or modification of components (valves, pumps, piping, hangers).

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- 6.4.2 Addition of welds due to repair or replacement.
- 6.4.3 Editorial corrections
- 6.4.4 Software changes
- 6.4.5 Changes to reference drawings or revisions
- 6.4.6 Requests for relief from examinations
- 6.4.7 Material or specification changes.
- 6.4.8 Modification or addition of examination technique.
- 6.5 All PCNs received by CE Programs must be recorded in the PCN log. At minimum, the log contains:
 - 6.5.1 The PCN number;
 - 6.5.2 The Originators initials and organization;
 - 6.5.3 A brief description of the PCN content.
 - 6.5.4 The PCN status (open/closed)
- 6.6 Preparation of PCNs
 - 6.6.1 Upon determining the need for a change to the Program Section, the originator prepares the PCN.
 - 6.6.1.1 The originator completes Part I of the form and identifies requested changes by attaching Program Section pages which are clearly marked (clouding, shading, or other conventional method) to indicate the desired changes.
 - 6.6.2 The responsible organization supervisor or superintendent reviews and approves all requests prior to submittal to CE Programs.
 - 6.6.3 Once the initiator has obtained approval, he contacts CE Programs and a PCN Number is assigned.
 - 6.6.4 The PCN is forwarded to CE Programs.
- 6.7 Central Engineering (CE) Programs
 - 6.7.1 The CE Programs Responsible Engineer (RE) reviews all submitted PCNs.
 - 6.7.2 A PCN log is maintained by CE Programs for all PCNs.
 - 6.7.3 If the RE determines the PCN should be disapproved, he indicates such on the PCN form, Part II, and provides justification for disapproval. After obtaining concurrence/signature from the CE Programs Supervisor, the RE forwards the original disapproved PCN to the originator.
 - 6.7.4 If the RE determines the PCN should be approved, he then assembles a change package including the PCN Form, and affected Program Section pages marked in a manner which allows for page replacement (identifying

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each page with the PCN number), and submits the package to a Checker for review. PCNs are to receive the same level of review and concurrence as the original Program Section revision. Additionally, for PCNs which satisfy changes originated by the Site organization (with no additional technical changes added by CE), submittal for Site review is not required.

- 6.7.5 PCNs that affect ASME Code Program Sections require ANII concurrence signature.
 - 6.7.6 After PCN comment incorporation, rechecking of changes, and concurrence reviews are complete, the RE prepares a transmittal with instructions for incorporation of the PCN into the current Program Section revision and forwards to Document Control for distribution.
 - 6.7.7 Revision of the Program Section to incorporate outstanding PCNs is accomplished in accordance with Section 5.6 of DEAM EP-P-002. The number of outstanding PCNs allowed to be issued prior to PCN incorporation by revision is to be determined by the Responsible Supervisor.
 - 6.7.8 Revisions to the Program Section are scheduled for completion ninety (90) days, or sooner, prior to the next scheduled refueling outage, as time allows.
- 6.8 Form Instructions
- 6.8.1.1 Indicate current revision of the affected Program Section to be revised.
 - 6.8.1.2 Describe the change which necessitates revision.
 - 6.8.1.3 List all reference documents.
 - 6.8.1.4 Requests require initiator plus supervisor approval signatures.
 - 6.8.1.5 PCNs are submitted to the CE Programs RE responsible for the Program Section.
 - 6.8.1.6 PCNs are logged in the Program Section PCN log.
 - 6.8.1.7 Following CE Program RE review, check appropriate block: Approval, Disapproval.

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PROGRAM SECTION CHANGE NOTICE

PART I - INITIATION SECTION

PCN NO.: _____
PCN PAGE: _____ OF _____

Program Section No. / Rev.: Program Section CEP-ISI-001 / _____

Program Section Title: ASME Section XI, Division 1 - Inservice Inspection Program

PROPOSED CHANGE:

(List section, page number, etc.; Attach markup)

REASON FOR CHANGE:

Initiator: _____ Date: _____ Organization: _____

Initiator's Supervisor: _____ Date: _____

PART II - DISPOSITION SECTION
DISPOSITION JUSTIFICATION:

DISPOSITION: Approved
Disapproved

Dispositioner / Date Checker / Date

Review / Date ANII Concurrence / Date

Concurred: _____ / _____
Responsible Supervisor Date

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ISI LINE LIST

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INSPECTION REQUIREMENTS

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Class 1 ISI Drawings	
DRAWING #	DRAWING TITLE
WTR-1-1100	Reactor Vessel
WTR-1-1200	Reactor Vessel Internals
WTR-1-1300	Reactor Vessel Closure Head
WTR-1-1400	Reactor Vessel Studs, Nuts, and Washers
WTR-1-2100	Pressurizer
WTR-1-3100	Steam Generator #1 – Primary
WTR-1-3200	Steam Generator #1 – Primary
WTR-1-4100	Reactor Coolant Piping Loop 1A & Hot Leg
WTR-1-4101	Reactor Coolant Piping Loop 1B
WTR-1-4102	Shutdown Cooling from Loop 1
WTR-1-4103	Safety Injection to Loop 1A
WTR-1-4104	Safety Injection to Loop 1B
WTR-1-4105	HPSI Line to Loop 1 Hot Leg
WTR-1-4106	Hot Leg Drain
WTR-1-4107	Cold Leg Drain – Loop 1A
WTR-1-4108	Charging Line to Loop 1A
WTR-1-4109	Cold Leg Drain – Loop 1B
WTR-1-4200	Reactor Coolant Piping – Loop 2A & Hot Leg
WTR-1-4201	Reactor Coolant Piping – Loop 2B
WTR-1-4202	Shutdown Cooling from Loop 2
WTR-1-4203	Safety Injection to Loop 2A
WTR-1-4204	Safety Injection to Loop 2B
WTR-1-4205	HPSI Line to Loop 2 Hot Leg
WTR-1-4206	Cold Leg Drain – Loop 2A
WTR-1-4207	Letdown Line from Loop 2B
WTR-1-4208	Charging Line to Loop 2A
WTR-1-4500	Pressurizer Surge
WTR-1-4501	Pressurizer Safety Valve Piping
WTR-1-4502	Combined Pressurizer Spray
WTR-1-4503	Pressurizer Spray from Loop 1A
WTR-1-4504	Pressurizer Spray from Loop 1B
WTR-1-4505	Pressurizer Auxiliary Spray
WTR-1-4506	Pressurizer Auxiliary Spray
WTR-1-5100	Reactor Coolant Pump 1A
WTR-1-5200	Reactor Coolant Pump 1B
WTR-1-5300	Reactor Coolant Pump 2A
WTR-1-5400	Reactor Coolant Pump 2B

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Class 2 ISI Drawings	
DRAWING #	DRAWING TITLE
WTR-2-1100	Shutdown Cooling Heat Exchanger A
WTR-2-1200	Shutdown Cooling Heat Exchanger B
WTR-2-3100	Steam Generator #1 – Secondary
WTR-2-3200	Steam Generator #2 – Secondary
WTR-2-4100	Main Steam Header A – Inside Containment
WTR-2-4101	Main Steam Header A – Outside Containment
WTR-2-4102	Main & Emergency Feed Header A
WTR-2-4103	Containment Spray & Safety Injection Suction Header A
WTR-2-4104	Low Pressure Safety Injection Pump A Suction
WTR-2-4105	Shutdown Cooling from Loop 2 – Outside Containment
WTR-2-4106	Shutdown Cooling from Loop 2 – Inside Containment
WTR-2-4107	High Pressure Safety Injection Pump A Suction
WTR-2-4108	Containment Spray Pump A Suction
WTR-2-4109	LPSI Pump A & CS Pump A Discharge to SDC HX A
WTR-2-4110	Shutdown Cooling Heat Exchanger A Discharge
WTR-2-4111	Safety Injection to Loop 2A
WTR-2-4112	Combine Safety Injection to Loop 2
WTR-2-4113	Safety Injection to Loop 2B
WTR-2-4114	Safety Injection from SI Tank 1A
WTR-2-4115	Safety Injection from SI Tank 1B
WTR-2-4116	High Pressure Safety Injection Pump A Discharge
WTR-2-4118	Containment Spray A Discharge Piping
WTR-2-4119	Containment Spray A Discharge Piping
WTR-2-4120	Containment Spray A Discharge Piping
WTR-2-4121	HPSI A Hot Leg Injection
WTR-2-4122	HPSI A & B to Reactor Coolant System Loop 2A
WTR-2-4123	HPSI to Reactor Coolant System Loop 2A
WTR-2-4124	HPSI A & B to Reactor Coolant System Loop 1A
WTR-2-4125	HPSI A & A/B Recirc.
WTR-2-4200	Main Steam Header B – Inside Containment
WTR-2-4201	Main Steam Header B – Outside Containment
WTR-2-4202	Main & Emergency Feed Header B
WTR-2-4203	Containment Spray & Safety Injection Suction Header B
WTR-2-4204	Low Pressure Safety Injection Pump B Suction
WTR-2-4205	Shutdown Cooling from Loop 1
WTR-2-4206	Shutdown Cooling from Loop 1
WTR-2-4207	High Pressure Safety Injection Pump B Suction
WTR-2-4208	Containment Spray Pump B Suction
WTR-2-4209	LPSI Pump B & CS Pump B Discharge to SDC HX B

Class 2 ISI Drawings	
DRAWING #	DRAWING TITLE
WTR-2-4210	Shutdown Cooling Heat Exchanger B Discharge
WTR-2-4211	Safety Injection To Loop 1A
WTR-2-4212	Safety Injection To Loop 1B
WTR-2-4213	High Pressure Safety Injection Pump A/B Suction
WTR-2-4214	Safety Injection from SI Tank 2A
WTR-2-4215	Safety Injection from SI Tank 2A
WTR-2-4216	High Pressure Safety Injection Pump B Discharge
WTR-2-4217	High Pressure Safety Injection Pump A/B Discharge
WTR-2-4218	Containment Spray B Discharge
WTR-2-4219	Containment Spray B Discharge
WTR-2-4220	Containment Spray B Discharge
WTR-2-4221	HPSI B Hot Leg Injection
WTR-2-4222	HPSI A & B to Reactor Coolant System Loop 2B
WTR-2-4223	HPSI B & A/B Recirc. to RWSP
WTR-2-4224	HPSI to Reactor Coolant Loop 1B
WTR-2-4225	HPSI Pump A/B Recir.
WTR-2-5100	Containment Spray Pump A
WTR-2-5200	Containment Spray Pump B
WTR-2-5300	High Pressure Safety Injection Pump A
WTR-2-5400	High Pressure Safety Injection Pump B
WTR-2-5500	High Pressure Safety Injection Pump A/B
WTR-2-5600	Low Pressure Safety Injection Pump A
WTR-2-5700	Low Pressure Safety Injection Pump B

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