THIRD TEN-YEAR INSPECTION INTERVAL INSERVICE INSPECTION PLAN FOR DUANE ARNOLD ENERGY CENTER PALO, IOWA

IES UTILITIES INC.

1.0 Inspection Plan Preparation and Approval Statements

The DAEC Inservice Inspection Plan was reviewed and approved by the following DAEC personnel:

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INTRODUCTION AND PLAN DESCRIPTION

1.0 Introduction

1.1 This Inservice Inspection Plan outlines the requirements for the Non-Destructive Examination of Class 1, 2, and 3 pressure retaining components and their supports at Duane Arnold Energy Center (DAEC).

1.2 This Inservice Inspection Plan will be effective from November 1, 1996 through and including November 1, 2005, which represents the third ten-year interval of the Inservice Inspection Program for DAEC.

1.3 The key features of this Plan are the Introduction and Plan Description, Relief Requests, Technical Approach and Positions, and Summary Tables. The details of the Inservice Inspection Program are addressed in other documents that are available at DAEC. These documents include, but are not limited to, component detail drawings, piping and instrumentation diagrams, piping isometric drawings, a component listing of each weld, valve, support, etc., procedures, calibration blocks, schedules, and other records required to define and execute the Inservice Inspection Plan at the DAEC.

2. Basis of Inservice Inspection Plan

2.1 The commercial operation date for Duane Arnold Energy Center is February 1, 1975. The end of the first interval was extended from February 1, 1985, to October 31, 1985, due to a recirculation inlet nozzle safe-end replacement outage that lasted from June 17, 1978 through March 10, 1979. The extended interval is consistent with the ASME B&PV Code Section XI, Paragraph IWA-2400(c) and IES letters dated December 13, 1983 (NG-83-4036) and January 24, 1984 (NG-84-0213). The end of the second interval was originally scheduled for November 1, 1995. The second interval was also extended 1 year, as permitted by IWA-2430(d) of the ASME Section XI 1989 Edition and the revised rule making of 10CFR50.55a(g)(6)(A)(3)(v). The end of the second interval was extended into the third inspection interval, up to the end of refueling outage (RFO-14) scheduled for October 1996.

2.2 The three inspection periods during the third inspection interval are as follows:

First Period: November 1, 1996 - November 1, 1999 (36 Months)
Second Period: November 1, 1999 - November 1, 2002 (36 Months)
Third Period: November 1, 2002 - November 1, 2005 (36 Months)

2.3 This Plan was developed in accordance with the requirements delineated in the ***May 31, 1995*** issue of 10 CFR 50.55a and the 1989 Edition of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, Subsections IWA, IWB, IWC, and IWD for Inspection Program B.

2.3.1 The ISI Plan for Subsection IWF was developed in accordance with ASME Section XI Code Case N-491, which is approved for use in ISI Programs per USNRC Regulatory Guide 1.147, Revision 11. Inspection Program B of Table 2410-2 of Code Case N-491 will be employed.

2.3.2 As permitted by 10CFR50.55a(b)(2)(ii), the extent of examination of Code Class 1 Category B-J pipe welds may be determined by the requirements of ASME Section XI, 1974 Edition with Addenda through the Summer 1975, Tables IWB-2500 and IWB-2600. However, DAEC has elected to implement Selection of B-J welds as described in DAEC Technical Approach and Position TAP-I005.

2.3.3 Inservice pressure testing following repair/replacements by welding for Class 1, 2 and 3 components will be performed in accordance with ASME Section XI Code Case N-416-1. This Code Case has not been generically approved for use in USNRC Regulatory Guide 1.147 but was approved for use at DAEC as an alternative to Hydrostatic Pressure testing in Request dated April 6, 1995 during the 2nd inspection interval. It is included in Section 17 of this ISI Plan as Relief Request No. PR-004.

2.3.4 An ISI Plan per Subsections IWE and IWL is not included in this submittal. These subsections of Section XI are currently not endorsed by 10CFR50.55a.

2.3.5 The Plan for inservice testing of pumps and valves per Subsections IWP and IWV is not part of this ISI Plan and was issued as a separate submittal.

2.3.6 As allowed by USNRC Regulatory Guide 1.147, Revision 11, certain ASME Section XI Code Cases have been determined acceptable for application to ISI Programs. The following Code Cases are being adopted by DAEC and incorporated in the 3rd interval ISI Program Plan. Additionally, DAEC wishes to use Code Cases not currently identified in Regulatory Guide 1.147 and has requested relief to use specific Code Cases which are identified in Sections 9, 11, 14, and 16. Once approval is obtained for use of these additional Code Cases the ISI Program Plan will be revised accordingly.

Case N-198-1 - Exemption From Examination for ASME Class 1 and 2 Piping Located at Containment Penetrations(NDE-R023).

Case N-307-1 -	Revised Ultrasonic Examination Volume for Class 1 Bolting. Table IWB-2500-1. Examination Category B-G-1. When Examinations Are Conducted From the Center Drilled Hole.
Case N-416-1 -	Alternative Rules for Hydrostatic Testing of Repair or Replacement of Class 1, 2, and 3 Piping.
Case N-427 -	Code Cases in Inspection Plans, Section XI, Division 1.
Case N-432 -	Repair Welding Using Automatic or Machine Gas Tungsten-Arc Welding (GTAW) Temperbead Technique, Section XI, Division 1.
Case N-457 -	Qualification Specification Notch Location for Ultrasonic Examination of Bolts and Studs.
Case N-460 -	Alternative Examination Coverage for Class 1 and 2 Welds.
Case N-461 -	Alternative Rules for Piping Calibration Block Thickness.
Case N-463-1 -	Evaluation Procedures and Acceptance Criteria for Flaws in Class 1 Ferritic Piping that Exceed the Acceptance Standards of IWB-3514.2.
Case N-491 -	Alternative Rules for the Examination of Class 1, 2 and 3 and MC Components and Supports of Light Water Cooled Power Plants.
Case N-495 -	Hydrostatic Testing of Relief Valves Section XI, Division 1.
Case N-496 -	Helical-coil Threaded Inserts.
Case N-498-1 -	Alternative Rules for 10 Year Hydrostatic Pressure Testing for Class 1, 2 and Class 3 Systems.
Case N-503 -	Limited Certification of Nondestructive Examination Personnel Section XI, Division 1.
Case N-508-1 -	Rotation of Serviced Snubbers and Pressure Relief Valves for the Purpose of Testing Section XI, Division 1 (TAP-I010).

Case N-509 - Alternative Rules for the Selection and Examinations of Class 1, 2, and 3 Integrally Welded Attachments, Section XI, Division 1:

Case N-522 - Pressure Testing of Containment Piping, Section XI, Division 1.

Case N-524 - Alternative Examination Requirements for Longitudinal Welds in Class 1 and 2 Piping, Section XI, Division 1.

Case N-535 - Alternative Requirements for Inservice Inspection Intervals, Section XI, Division 1 (NDE-R024).

3.0 System Classification

3.1 Per IWA-1400(a) of the 1989 Edition of Section XI, it is the owner's responsibility to determine the appropriate Code Classes for each component and to identify the system boundaries subject to inspection. IWA-1300 states that components identified for inspection and testing shall be included in the inservice inspection plan, and that the selection of components for the inservice inspection plan is subject to review by the regulatory and enforcement authorities having jurisdiction at the plant site. IWA-1320(a) states that the system group classification criteria of the regulatory authorities having jurisdiction at the power plant site governs the application of the rules of Section XI. IWA-1400(a), footnote 2, states that classification criteria are specified in 10CFR50. This reference is to footnote 9 of 10CFR50.55a which specifies that Regulatory Guide 1.26 and Section 3.2.2 of NUREG-0800 may be used for this purpose. Section 3.2.2 of NUREG-0800 allows the use of either the NRC Group Classification system of Regulatory Guide 1.26 or the ANS Safety Classification system (referring to the method described in ANSI/ANS-52.1-1983) which can be cross-referenced to Regulatory Guide 1.26.

The component classifications of the ASME Code (Class 1, 2, or 3) determine the rules and requirements for inspection and testing and define the Section XI examination boundaries. Because early vintage nuclear plants were designed and constructed before Section III of the ASME Boiler and Pressure Vessel Code was incorporated into 10CFR50.55a, the ASME Section XI Code classifications for ISI may differ from the original design classifications. Therefore, while the ASME Code classifications determine the rules for repairs and replacements and the component inspection requirements, all repairs and replacements are performed to meet, at a minimum, the specifications of the original design code.

Historically, the safety-related classification process and criteria have not been clearly defined. Various documents used in this process have alluded to such phrases as "safety-related" or "important to safety" but no complete, consistent guideline existed as to why some equipment is more important to nuclear safety than other equipment or what documents are applicable. As a result, various interpretations/inconsistencies have evolved in the use of the term "safety-related", often times confusing regulatory and other non-functional requirements as to its applicability.

Other phrases widely used in codes, standards, and other documents have also been correctly and incorrectly interpreted to be synonymous to "safety-related". "Basic component" defined in 10CFR21 is equivalent to "safety-related". "Important to Safety" which was previously used as a synonym to "safety-related" is currently an unresolved NRC generic issue and officially undefined.

The Updated Final Safety Analysis Report (UFSAR) uses the term "safety" in a broader context than "safety-related". The UFSAR uses phrases such as "safety functions", "nuclear safety systems", "instruments required for safety" and others. The relationship of the term "safety-related" to those other commonly referred to terms such as "safety", "protection systems" etc. is not necessarily synonymous with the term "safety-related".

There also exists further confusion regarding the term "safety-related". This confusion results from the different uses and interpretations applied to this term. The term safety-related is typically used in the following ways:

3.1.1 From a design engineering standpoint, the term "safety-related" is used to identify items which are (1) part of the reactor coolant pressure boundary, (2) required to shut down the reactor and maintain it in a safe shutdown condition, or (3) required to prevent or mitigate the consequences of accidents which could result in potential off-site exposures comparable to 10CFR100.11 guidelines.

3.1.2 Typically, three methods of procurement are utilized, commonly referred to as: safety-related, commercial grade, and non-safety-related. A safety-related procurement refers to the purchase of an item under the provisions of 10CFR21 from a vendor with a quality assurance program that meets the requirements of 10CFR50 Appendix B. A commercial grade procurement refers to an item which will be dedicated for safety-related use, but is not purchased to an approved 10CFR50 Appendix B Quality Assurance program nor are 10CFR21 requirements imposed on the vendor. Once a commercial grade item is dedicated it becomes a basic component. A non-safety-related procurement refers to an item which does not have a safety-related function.

3.1.3 Also, selected items may be classified as safety-related even though their function is non-safety-related. This is done to institute greater controls over procurement, maintenance, or replacement of such items.

3.2 As a result, it is important to understand the context in which the term "safety-related" is used and what is meant. For this document the term "safety-related" pertains to the function a system or component performs.

3.3 The NRC issued the construction permit for the Duane Arnold Energy Center (DAEC) in June 1968. The plant design was completed when IES Utilities Inc. (IES) applied for an operating license for DAEC and submitted the Final Safety Analysis Report (FSAR) for the facility to the NRC in March 1971. This license was issued by the NRC in January 1974. The United States of America Standards (USAS) used for the original design and construction of DAEC were B31.1 (1967), Code for Power Piping, and B31.7 (1969 edition with 1970/1971 addenda), Code for Nuclear Power Piping. The "General Design Criteria for Nuclear Power Plant Construction Permits" was published for comment in the Federal Register in July 1967. The final version of these design criteria was not incorporated into the Code of Federal Regulations (10CFR50, Appendix A) until February 1971, approximately the same time that IES submitted their FSAR to the NRC. The IES license for DAEC is based, in part, on design and construction of the plant to USAS B31.1, USAS B31.7, and the IES interpretation of the intent of the Draft General Design Criteria published in July 1967.

The piping and pressure retaining components of all DAEC systems were both functionally and seismically classified according to service and location prior to construction by Bechtel (Architect Engineer) and/or General Electric (the plant Engineer-Constructor). These design classifications are as follows:

Quality Group A - Piping and equipment pressure parts within the reactor coolant pressure boundary through the outer most isolation valves, inclusive .

Quality Group B - Piping and equipment pressure parts downstream of the outer most isolation valves, extensions of the containment, and the emergency core cooling system.

Quality Group C - Auxiliaries to the emergency core cooling system or radioactive waste process piping and equipment pressure parts, excluding power generation systems.

Quality Group D - Balance of plant piping and equipment pressure parts. including power generation systems. Certain piping in this group such as Off Gas. Well Water and portions of the Fuel Pool Cooling is designated "non-critical" . This "non-critical" piping is identified by the "D" designation.

Quality Group D+QA - Balance of plant piping and equipment pressure parts. including power generation systems. Certain piping in this group such as feedwater and main steam outside of the containment are designated "B or D" to establish a category for added quality controls. QA Level 1 or 2. for B designation. and Level 3 or 4 for D designated quality group D+QA piping.

The current ASME Code component classifications did not exist at the time of DAEC design and construction. The ASME Code Class 1. 2. and 3 designations were added and defined in more recent editions of the ASME Boiler and Pressure Vessel Code. The scope of earlier editions of the ASME Code was limited to systems and portions of systems that comprised the reactor coolant pressure boundary. Hence the unique wording of 10CFR50.55a(g)(1) for nuclear power facilities whose construction permit was issued prior to January 1, 1971:

> "Components which are part of the reactor coolant pressure boundary and their supports must meet the requirements applicable to components which are classified as ASME Code Class 1. Other safety-related pressure vessels, piping, pumps and valves must meet the requirements applicable to components which are classified as ASME Code Class 2 or Class 3."

The initial DAEC ISI program was based on the 1970 Edition of Section XI. This program was submitted as part of the original FSAR (Appendix J), which was accepted by the NRC. However, the inspection rules and requirements of the 1970 Edition of Section XI were minimal and have changed significantly since then. Federal regulations require that ISI programs be updated, to the extent practical, to comply with the inspection and testing requirements of the edition and addenda of the ASME Code incorporated by reference in 10CFR50.55a one year prior to the start of each ten-year inspection interval.

During subsequent revisions of the ISI program. other safety-related systems were added to the ISI program and ASME Code Class designations were assigned to establish the examination boundaries and define the required inspections and tests for the associated components. Systems, or portions of systems, were considered safety-related if they were determined to mitigate the consequences of an accident based on the analyses contained in Section 15 of the UFSAR. Although the General Electric Design Classifications do not directly correlate to ASME Code Class 1, 2. and 3, and NRC Quality Groups A. B. C. and D of Regulatory Guide 1.26. they were used as the basis for establishing the ASME Section XI examination boundaries. For the purposes of ISI, the DAEC Safety Class (SC) I safety-related components were designated ASME Section XI Code Class 1, the SC II safety-related components were designated ASME Section XI Code Class 2, and the SC III safety-related components were designated ASME Section XI Code Class 3. The DAEC D+QA systems, including both safety-related and nonsafety-related systems, (except the Main Steam lines outside MSIV to Stop valves, and portions of the Emergency Service Water piping) were generally designated Non-Code Class.

Because DAEC was designed and constructed prior to the issuance of Regulatory Guide 1.26 (safety guide 26) and NUREG-0800, these documents were not used to establish the original Section XI examination boundaries, however, in accordance with the requirements of ASME Section XI 1974 Summer 75 IWA-1000 footnote 2, these guidance documents were used during the first ten year ISI program update. IES has formally committed to the use of either Regulatory Guide 1.26 or NUREG-0800, Section 3.2.2. The DAEC ISI program for the third ten-year inspection interval will continue to employ Regulatory Guide 1.26, NUREG-0800 and other approved ANS guidance documents to determine the applicability of component inspections and to determine examination boundaries. DAEC Updated Final Safety Analysis Report "UFSAR" was used for guidance and provides the basis for establishing the applicable system safety classifications contained in this document.

4.0 Augmented Inservice Inspection Requirements

4.1 The following augmented inservice inspection requirements are being implemented under a separate program not included in this submittal. DAEC's augmented inspection program is implemented in accordance with the latest licensing agreements pertaining to these requirements:

4.1.1 Generic Letter 88-01, NRC Position on IGSCC in BWR Austenitic Stainless Steel Piping.

4.1.2 Generic Letter 94-03, Intergranular Stress Corrosion Cracking of Core Shrouds In Boiling Water Reactors

4.1.3 NUREG 0313, Rev. 2, Technical Report on Material Selection and Processing Guidelines for BWR Coolant Pressure Boundary Piping.

4.1.4 NUREG 0619, BWR Feedwater Nozzle and Control Rod Drive Return Line Nozzle Cracking.

4.1.5 USNRC Regulatory Guide 1.150, Revision 1, Examination of Reactor Pressure Vessel Welds during Preservice and Inservice Inspection

4.1.6 NRC IE Bulletin 80-13, Cracking in Core Spray Spargers

4.1.7 Generic Letter 87-11, Relaxation in Arbitrary Intermediate Pipe Rupture Requirements.

5.0 **Repair and Replacement Program Requirements**

5.1 The DAEC Repair/Replacement program requirements are being implemented under a separate program document not included in this submittal. DAEC's Repair/Replacement program is implemented in accordance with the 1989 Edition of ASME Section XI, as amended by the 1989 Addenda (IWX-4000, IWX-7000), and the latest licensing agreements pertaining to these requirements. The ASME Section XI Repair/Replacement program for DAEC will be administered in accordance with the aforementioned rules and maintained in accordance with IWA-1400, IWA-6200 and available for review on-site.

6.0 **Snubber Testing Program Requirements**

6.1 The DAEC Snubber Testing Program requirements are being implemented under separate program document not included in this submittal. DAEC's Snubber Testing Program is implemented in accordance with the 1995 Edition of O&M Subsection ISTD (Reference NDE-R020) including Service Life Monitoring. This Program will be administered in accordance with the aforementioned rules and available for review on-site.

7.0 **Contents of Inservice Inspection Plan**

7.1 The Inservice Inspection Plan addresses the requirements for inservice inspection of components and system pressure testing separately, although some Sections of the Plan are common to both. The applicability of each of the Sections identified in this Plan are as follows:

7.1.1 Inservice Inspection

Sections 4, 7, 8, 9, 10, 11, and 12

7.1.2 System Pressure Testing

Sections 13, 14, 15, 16, and 17

7.2 **Section 1 - Table of Contents**

Provides the organizational format for the Inservice Inspection Plan.

7.3 **Section 2 - Revision Summary Sheet**

Provides the revision status of the effected pages in the Inservice Inspection Plan.

7.4 **Section 3 - Introduction and Plan Description**

Provides details on the scope, basis and contents of the Inservice Inspection Plan, system classifications, and augmented inservice inspection requirements.

7.5 **Section 4 - Application of Exemption Criteria**

Provides the basis for determining the Class 1, 2, and 3 exempted components from surface and volumetric examination requirements per IWB, IWC, and IWD-1200.

7.6 **Section 5 - List of Applicable Piping and Instrumentation Diagrams (P&IDs)**

Provides a listing of P&IDs corresponding to each system that contains components subject to examination under this Plan.

7.7 **Section 6 - List of Applicable Piping Isometric Drawings**

Provides a listing of piping isometric drawings corresponding to each system that contains components subject to volumetric, surface, VT-1, or VT-3 examinations under this Plan.

7.8 **Section 7 - List of Applicable Calibration Standards**

Provides a listing of ultrasonic calibration block standards currently available for performance of volumetric examinations under this Plan.

7.9 **Sections 8 - Inservice Inspection Summary Tables**

The DAEC Inservice Inspection Summary Tables provide the following information:

7.9.1 <u>Examination Category</u>

Provides the examination category as identified in ASME Section XI, Tables IWB-2500-1, IWC-2500-1, IWD-2500-1, IWF-2500-1, and identification of specific Code Cases being implemented. Only those examination categories applicable to DAEC are identified.

7.9.2 Item Number and Item Description

Provides the item number and description as defined in ASME Section XI. Tables IWB-2500-1, IWC-2500-1, IWD-2500-1, IWF-2500-1, and identification of specific Code Cases being implemented. Only those item numbers applicable to DAEC are identified.

7.9.3 Number of Components

Provides the total population of components potentially subject to examination. The number of components actually examined during the inspection interval will be as indicated in Section 18, based upon the Code requirements for the subject item number (e.g., 25% of Examination Category B-J, Item Number B9.11 components will be examined during the inspection interval).

7.9.4 Exam Requirements

Provides the examination method(s) required by ASME Section XI, Tables IWB-2500-1, IWC-2500-1, IWD-2500-1, and IWF-2500-1.

7.9.5 Relief Request

Provides a listing of relief requests applicable to the item number. If a relief request number is identified, see the corresponding relief request in Section 12.

7.9.6 Technical Approach and Position

Provides a listing of technical approach and positions applicable to the item number. If a technical approach and position number is identified, see the corresponding technical approach and position in Section 10.

7.10 Section 9 - Inservice Inspection Technical Approach and Position Index/Summaries

Provides a summary and the revision status of all technical approach and positions related to inservice inspection.

7.11 Section 10 - Inservice Inspection Technical Approach and Positions

When the requirements of ASME Section XI are not easily interpreted, DAEC has reviewed general licensing/regulatory requirements and industry practice to determine a practical method of implementing the Code requirements. The technical approach and position documents contained in this section have been provided to clarify DAEC's implementation of ASME Section XI requirements for inservice inspection.

7.12 **Section 11 - Inservice Inspection Relief Request Index/Summaries**

Provides a summary and the revision status of all relief requests related to inservice inspection.

7.13 **Section 12 - Inservice Inspection Relief Requests**

This section contains relief requests written in accordance with 10 CFR 50.55a (g)(5) when specific ASME Section XI requirements for inservice inspection are considered impractical. The enclosed relief requests are subject to change throughout the inspection interval. If examination requirements are determined to be impractical during the course of the interval, additional or modified relief requests will be submitted in accordance with 10 CFR 50.55a (g)(5).

7.14 **Sections 13 - System Pressure Testing Summary Tables**

The DAEC System Pressure Testing Summary Tables provide the following information:

7.14.1 Examination Category

Provides the examination category as identified in ASME Section XI, Tables IWB-2500-1, IWC-2500-1, and IWD-2500-1. Only those examination categories applicable to DAEC are identified.

7.14.2 Item Number

Provides the item number as identified per the applicable Table of IWB, IWC, and IWD-2500-1.

7.14.3 Test Type

Describes the required Code test that is being performed

7.14.4 Test Frequency

Provides for the frequency that a required Code pressure test is being performed. The tests are being performed either on a 40 month, 120 month, or refueling outage basis.

7.14.5 Relief Request

Provides a listing of relief requests applicable to the test block. If a relief request number is identified, see the corresponding relief request in Section 17.

7.14.6 Technical Approach and Position

Provides a listing of technical approach and positions applicable to the test block. If a technical approach and position number is identified, see the corresponding technical approach and position in Section 15.

7.15 Section 14 - System Pressure Testing Technical Approach and Position Index/Summaries

Provides a summary and the revision status of all technical approach and positions related to system pressure testing.

7.16 Section 15 - System Pressure Testing Technical Approach and Positions

When the requirements of ASME Section XI are not easily interpreted, DAEC has reviewed general licensing/regulatory requirements and industry practice to determine a practical method of implementing the Code requirement. The technical approach and position documents contained in this section have been provided to clarify DAEC's implementation of ASME Section XI requirements for system pressure testing.

7.17 Section 16 - System Pressure Testing Relief Request Index/Summaries

Provides a summary and the revision status of all relief requests related to system pressure testing.

7.18 Section 17 - System Pressure Testing Relief Requests

This section contains relief requests written in accordance with 10 CFR 50.55a (g)(5) when specific ASME Section XI requirements for system pressure testing are considered impractical. The enclosed relief requests are subject to change throughout the inspection interval. If testing requirements are determined to be impractical during the course of the interval, additional or modified relief requests will be submitted in accordance with 10 CFR 50.55a(g)(5).

7.19 Section 18 - Component Examination Summary Listing

This section contains the tables and schedule for selection and examination of components in accordance with the requirements of ASME Section XI.

APPLICATION OF EXEMPTION CRITERIA

1. **Section XI Class 1 Exemptions:**

1.1 Subparagraph IWB-1220(a) gives specific guidance permitting exemption of components from the volumetric and surface examination requirements of IWB-2500 if they are connected to the reactor coolant system (RCS) and are part of the reactor coolant pressure boundary, and are of such a size and shape so that upon postulated rupture, the resulting flow of coolant from the RCS under normal plant operating conditions is within the capacity of makeup systems which are operable from on-site emergency power.

DAEC Station requested General Electric (GE) to perform an analysis to determine the applicability of IWB-1220(a) and identify those systems and piping line sizes that could be exempted. This analysis was performed by GE document 22A2750, and results documented in section 5.2.5.3.3 to the Updated Final Safety Analysis Report.

The calculation identifies and provides that those portions of steam piping with an inside diameter of 2.24 inches and water piping with an inside diameter of 1.12 inches may be exempted from the surface and volumetric examination requirements of Table IWB-2500-1. The systems credited in this calculation with providing normal makeup are the Reactor Core Isolation Cooling (RCIC) and Control Rod Drive (CRD) systems.

In determining the size of the water and steam lines excluded from surface and volumetric examination, water lines were defined as those which penetrate the reactor pressure vessel (RPV) below the normal water level and steam lines as those which penetrate the RPV above the normal water level.

The reactor coolant makeup system consists of the following system(s):

System	Pump Flow Rate	Maximum Fluid Temp.	Emergency Power
CRD System	42 GPM	140° F	Yes, On-site
RCIC System	425 GPM	140° F	Yes, On-site

Water flow rates from a liquid line break are taken as 8000 lbs/sec/ft^2 at 1000 psi. Steam flow rates from a steam line are taken as 2000 lbs/sec/ft^2 at 1000 psi. Make-up water weighs 8.33 lbs per gallon at 70° F. On this basis, the exclusion diameters based on reactor coolant make-up system capacity are as follows:

$$D_W = \frac{\sqrt{M_{70}\left[\frac{V_{70}}{V_{140}}\right]}}{17.8}$$

$$D_s = 2 \quad D_w$$

Dw= Inside diameter of piping containing water which may be exempted from examination

Ds= Inside diameter of piping containing steam which may be exempted from examination

m= Total make-up flow rate of water in gallons per minute.

Using RCIC as the minimum make-up flow.

Dw= $\sqrt{\frac{400}{17.8}}$ = 1.12" water Ds= 2 x 1.12 = 2.24" steam

1.2 Piping that is NPS 1 and smaller, and the components and connections in piping that is NPS 1 and smaller, are exempt from the volumetric and surface examination requirements of IWB-2500 per IWB-1220(b).

1.3 The supports connected to components which are exempt from examination under IWB-1220 are also exempt from the examination requirements of IWF-2500 and Table IWF-2500-1 per Code Case N-491, Paragraph -1230.

1.4 The integral attachments of supports connected to components which are exempt from examination under IWB-1220 are also exempt from the examination requirements of IWB-2500 and Table IWB-2500-1 per Code Case N-509, paragraph 1.1(a).

1.5 The above exemptions effect portions of the following systems:

System	P&ID
Nuclear Boiler	M-114
Rx Vessel Instrumentation	M-115
Rx Recirculation	M-116
CRD Hydraulic	M-117,M-118
Residual Heat Removal	M-119,M-120
Core Spray	M-121
HPCI	M-122,M-123
RCIC	M-124,M-125
Standby Liquid Control	M-127
MSIV Leakage Control	M-184

2.0 Section XI Class 2 Exemptions

2.1 Components Within RHR, ECC, and CHR Systems (or Portions of Systems)

2.1.1 Vessels, piping, pumps, valves and other components that are NPS 4 and smaller are exempt from the volumetric and surface examination requirements of IWC-2500 per IWC-1221(a).

2.1.2 Component connections that are NPS 4 and smaller (including nozzles, socket fittings, and other connections) in vessels, piping, pumps, valves and other components of any size are exempt from the surface and volumetric examination requirements of IWC-2500 per IWC-1221(b).

2.1.3 Piping and other components of any size beyond the last shutoff valve in open ended portions of systems that do not contain water during normal plant operations are exempt from the volumetric and surface examination requirements of IWC-2500 per IWC-1221(f).

2.1.4 The supports connected to components which are exempt from examination under IWC-1220 are also exempt from the examination requirements of IWF-2500 and Table IWF-2500-1 per Code Case N-491, Paragraph -1230.

2.1.5 The integral attachments of supports connected to components which are exempt from examination under IWC-1220 are also exempt from the examination requirements of IWC-2500 and Table IWC-2500-1 per Code Case N-509, paragraph 1.1(a).

2.2 Components Within Systems (Or Portions of Systems) Other than RHR, ECC, and CHR Systems

2.2.1 Vessels, piping, pumps, valves and other components that are NPS 4 and smaller are exempt from the volumetric and surface examination requirements of IWC-2500 per IWC-1222(a).

2.2.2 Component connections that are NPS 4 and smaller (including nozzles, socket fittings, and other connections) in vessels, piping, pumps, valves and other components of any size are exempt from the surface and volumetric examination requirements of IWC-2500 per IWC-1222(b).

2.2.3 Piping and other components of any size beyond the last shutoff valve in open ended portions of systems that do not contain water during normal plant operations are exempt from the volumetric and surface examination requirements of IWC-2500 per IWC-1222(d).

2.2.4 Vessels, piping, pumps, valves and other components of any size in systems or portions of systems that operate (when system function is required) at a pressure less than or equal to 275 psig and at a temperature less than or equal to 200°F are exempt from the surface and volumetric examination requirements of IWC-2500 per IWC-1222(c).

2.2.5 The supports connected to components which are exempt from examination under IWC-1220 are also exempt from the examination requirements of IWF-2500 and Table IWF-2500-1 per Code Case N-491, Paragraph -1230.

2.2.6 The integral attachments of supports connected to components which are exempt from examination under IWC-1220 are also exempt from the examination requirements of IWC-2500 and Table IWC-2500-1 per Code Case N-509, paragraph 1.1(a).

2.2.7 Piping support members and piping support components that are encased in concrete shall be exempted from the surface examination requirements of IWC-2500 per IWC-1230.

2.3 The above exemptions effect portions of the following systems:

System	P&ID
Main Steam	M-103
Turbine Seal	M-104
Condensate Demineralizer	M-109
Rx Building Cooling Water	M-112
Residual Heat Removal	M-113,M-119,M-120
Nuclear Boiler	M-114
Rx Vessel Instrumentation	M-115
CRD Hydraulic	M-118
Core Spray	M-121
HPCI	M-122,M-123
RCIC	M-124,M-125
Standby Liquid Control	M-126
Compressed Air	M-130
Fuel Pool Cooling & Cleanup	M-134
Radwaste Sump	M-137
Containment Atmosphere Control	M-143
Turbine Bldg Sample	M-147
Drywell Cooling	M-157
Aux. Heating Boiler & Main Loop	M-160
Containment Atmosphere Monitoring	M-181
MSIV Leakage Control	M-184

3.0 **<u>Section XI Class 3 Exemptions:</u>**

3.1 The integral attachments of supports and restraints to components that are NPS 4 and smaller within the system boundaries of Examination Categories D-A, D-B, and D-C of Table IWD-2500-1 will be exempted from visual examination (VT-3).

3.2 The integral attachments of supports and restraints to components that exceed NPS 4 will be exempted from visual examination (VT-3) of Table IWD-2500-1 provided the components are located within systems (or portions of systems) whose function is not required in support of RHR, ECC, and CHR systems and the components operate at a pressure of 275 psig or less and at a temperature of 200°F or less.

3.3 The supports connected to components which are exempt from examination under IWD-1220 are also exempt from the examination requirements of IWF-2500 and Table IWF-2500-1 per Code Case N-491, Paragraph -1230.

3.4 The above exemptions effect portions of the following systems:

System	P&ID
Main Steam	M-103
Steam Air Ejector	M-105
RHR Service Water	M-113
Emergency Service Water	M-113
Nuclear Boiler	M-114
Residual Heat Removal	M-119,M-120
HPIC	M-122
RCIC	M-124
River Water	M-129
Diesel Generator	M-132
Fuel Pool Cooling	M-134
Circulation Water	M-142
Well Cooling Water	M-144
Service Water Pumphouse	M-146
Control Bldg Cooling	M-169
Rx Bldg HVAC	M-171
Air Flow Standby Filter Unit Control	M-173

LIST OF APPLICABLE PIPING AND INSTRUMENTATION DIAGRAMS

P & ID No.	DRAWING TITLE	ASME CLASS
M-100	LEGEND	N/A
M-101	LEGEND	N/A
M-102	LEGEND	N/A
M-103	MAIN STEAM TURBINE STOP & CONTROL VALVES SH 1	2 & 3
M-104	TURBINE STEAM SEAL SH 1	2
M-105	STEAM AIR EJECTOR	3
M-106	CONDENSATE FEEDWATER SH1	NONCLASS
M-107	CONDENSATE FEEDWATER SH2	NONCLASS
M-108	CONDENSATE DEMINERALIZER	NONCLASS
M-109	CONDENSATE DEMINERALIZER	2 & AUG
M-110	MAKE-UP DEMINERALIZER	NONCLASS
M-111	GENERAL SERVICE WATER	NONCLASS
M-112	REACTOR BUILDING COOLING WATER	2
M-113	RHR SERVICE WATER & EMERG. SERVICE WATER	2, 3
M-114	NUCLEAR BOILER	1, 2 & 3 (AUG)
M-115	REACTOR VESSEL INSTRUMENTATION	1 & 2
M-116	REACTOR RECIRCULATION	1
M-117	CRD HYDRAULIC, SH 1	1
M-118	CRD HYDRAULIC, SH 2	1, 2
M-119	RESIDUAL HEAT REMOVAL	1, 2 & 3
M-120	RESIDUAL HEAT REMOVAL	1, 2 & 3
M-121	CORE SPRAY	1 & 2
M-122	HIGH PRESSURE COOLANT INJECTION SH 1	1, 2 & 3
M-123	HIGH PRESSURE COOLANT INJECTION SH 2	1, 2, AUG
M-124	REACTOR CORE ISOLATION COOLING SH 1	1, 2 & 3
M-125	REACTOR CORE ISOLATION COOLING SH 2	1 & 2
M-126	STANDBY LIQUID CONTROL	1 & 2
M-127	REACTOR WATER CLEANUP	1, AUG
M-128	REACTOR WATER FILTER DEMINERALIZER	NONCLASS
M-129	RIVER WATER SUPPLY & INTAKE STRUCTURE	3
M-130	COMPRESSED AIR Sheets 1 - 8 & 10	NONCLASS
M-130	COMPRESSED AIR Sheets 9	2
M-131	TURBINE LUBE OIL	NONCLASS
M-132	DIESEL GENERATOR SH's 1, 2, & 3	3
M-133	FIRE PROTECTION	NONCLASS
M-134	FUEL POOL COOLING & CLEANUP	2, 3 AUG
M-135	FUEL POOL DEMINERALIZER	NONCLASS
M-136	SERVICE CONDENSATE	NONCLASS
M-137	RADWASTE SUMP SYSTEM Sheet 1	2
M-138	EQUIPMENT RADWASTE	NONCLASS
M-139	FLOOR DRAIN RADWASTE	NONCLASS
M-140	RADWASTE SOLIDS HANDLING	NONCLASS
M-141	OFF GAS	NONCLASS
M-142	CIRCULATION WATER	3

LIST OF APPLICABLE PIPING AND INSTRUMENTATION DIAGRAMS

P&ID No.	DRAWING TITLE	ASME CLASS
M-143	CONTAINMENT ATMOSPHERE CONTROL SH 1, 2, & 3	2
M-144	WELL COOLING WATER SH 1	3
M-144	PRODUCTION WELL 1, 2, 3, AND 4	NONCLASS
M-145	MISC. TURBINE GENERATOR	NONCLASS
M-146	SERVICE WATER PUMPHOUSE	3
M-147	TURBINE BUILDING SAMPLE	2
M-148	AREA RADIATION MONITORING	NONCLASS
M-149	OFF GAS RECOMBINER	NONCLASS
M-150	HVAC PLANT AIR FLOW	NONCLASS
M-151	CONTROL BUILDING & TSC AIR FLOW	NONCLASS
M-152	REACTOR BUILDING AIR FLOW	NONCLASS
M-153	TURBINE BUILDING AIR FLOW	NONCLASS
M-154	HVAC RADWASTE BUILDING AIR FLOW	NONCLASS
M-156	DRYWELL AIR FLOW	NONCLASS
M-157	DRYWELL COOLING WATER SH 1	2
M-158	HVAC AIR FLOW AND STANDBY GAS TREATMENT	NONCLASS
M-159	VENTILATION TURBINE BUILDING	NONCLASS
M-160	AUX. HEATING BOILER & MAIN LOOP SH 1	2
M-161	AIR CONDITIONING CONTROL BUILDING	NONCLASS
M-162	AUX. HEATING REACTOR BUILDING	NONCLASS
M-163	AUX. HEATING TURBINE BUILDING	NONCLASS
M-164	VENTILATION RADWASTE BUILDING	NONCLASS
M-165	MAIN PLANT AIR INTAKE & M.G. ROOM	NONCLASS
M-166	COOLING & HEATING PLANT AIR SUPPLY	NONCLASS
M-167	ADM. BUILDING HEATING AND COOLING	NONCLASS
M-168	ADM. BUILDING HEATING AND COOLING	NONCLASS
M-169	CONTROL BUILDING COOLING & PLANT CHILLED WTR. SH 2, 3	3
M-170	HVAC MISC. CONTROL	NONCLASS
M-171	REACTOR BUILDING HVAC COOLING	3
M-172	AIR FLOW, HTG. CLG. MACH SHOP OFF GAS RETENTION BLDG.	NONCLASS
M-173	AIR FLOW STANDBY FILTER UNIT CONTROL	3
M-174	DRYWELL HEATING & VENTILATION FAN	NONCLASS
M-175	AIR FLOW PUMPHOUSE	NONCLASS
M-176	VENTILATION & OFF GAS STACK REACTOR BUILDING	NONCLASS
M-177	INTAKE, TSC, & WELL HS. HTG. AND VENTILATION CONTROL	NONCLASS
M-178	HVAC, MISC. CONTROL ROOM	NONCLASS
M-179	LEGEND (HVAC)	N/A
M-180	CHLORINATION & ACID FEED	NONCLASS
M-181	CONTAINMENT ATMOSPHERE MONITORING	2
M-182	RADWASTE EVAPORATION	NONCLASS
M-183	RADWASTE SAMPLE	NONCLASS
M-184	MSIV LEAKAGE CONTROL	1 & 2
M-185	FIRE PROTECTION CARBON MONOXIDE	NONCLASS
M-186	RADWASTE LIQUID WASTE STORAGE & HANDLING	2
M-187	POST ACCIDENT SAMPLING	NONCLASS

List of Applicable Piping Isometric Drawings

P&ID No.	DESCRIPTION	ISI ISOMETRIC DWG. No.
M-114	Main Steam 'A'	1.2-1
M-114	Main Steam 'B'	1.2-2
M-114	Main Steam 'C'	1.2-3
M-114	Main Steam 'D'	1.2-4
M-114	Feedwater 'A' and 'B'	1.2-5
M-114	Feedwater 'C' and 'D'	1.2-6
M-121	Core Spray 'A'	1.2-7
M-121	Core Spray 'B	1.2-8
M-122	HPCI - Steam Side	1.2-9
M-123	HPCI - Water Side	1.2-10
M-127	RWCU - Suction Side	1.2-11A
M-127	RWCU - Discharge Side	1.2-11B
M-117	CRD Return	1.2-12A
M-117	CRD Return	1.2-12B
M-114	RHR Head Spray	1.2-13
M-119	RHR 18B	1.2-14
M-120	RHR-20A	1.2-15
M-119	RHR-20B	1.2-16
M-124	RCIC - Steam	1.2-17
M-125	RCIC - Water	1.2-18
M-116	Recirc 'A' - Bypass 'A'	1.2-19A
M-116	Recirc 'A' - Drain Line	1.2-19B

List of Applicable Piping Isometric Drawings

P&ID No.	DESCRIPTION	ISI ISOMETRIC DWG. No.
M-116	Recirc Manifold 'A' and Risers E, F, G, H	1.2-20
M-116	Recirc 'B' - Bypass 'B'	1.2-21A
M-116	Recirc 'B' Drain Line	1.2-21B
M-116	Recirc Manifold 'B' and Risers A, B, C, D	1.2-22
M-114	RPV Head Spray Spare	1.2-23
M-114	RPV Head Vent	1.2-24
M-115	Jet Pump Inst. 'A'	1.2-25
M-115	Jet Pump Inst. 'B'	1.2-26
M-126	SBLC	1.2-27
M-115	Vessel Instr. N-11A	1.2-28
M-115	Vessel Instr. N-11B	1.2-29
M-115	Vessel Instr. N-12A	1.2-30
M-115	Vessel Instr. N-12B	1.2-31
M-116 M-127	Bottom Head Drain	1.2-32
M-115	Vessel Instr. N-16A	1.2-33
M-115	Vessel Instr. N-16B	1.2-34
M-114	Main Steam Drain	1.2-35
M-116	Recirc Pump	1.3-01
M-116	Recirc Pump A Supports	1.3-02
M-116	Recirc Pump B Supports	1.3-03
M-119 M-120	RHR Ht. Exchanger A&B	2.1-01

List of Applicable Piping Isometric Drawings

P&ID No.	DESCRIPTION	ISI ISOMETRIC DWG. No.
M-120	RHR Pump Suction (S.E.)	2.2-32
M-119	RHR Pump Suction (N.W.)	2.2-33
M-119 M-120	RHR Pump Shutdown	2.2-34
M-120	RHR Pump Discharge(S.E.)	2.2-36
M-120	RHR Heat Exchanger Discharge (S.E.)	2.2-37A
M-120	RHR Heat Exchanger Discharge (S.E.)	2.2-37B
M-120	RHR Heat Exchanger Discharge (S.E.)	2.2-38
M-119	RHR Pump Discharge(N.W.)	2.2-39
M-119	RHR Heat Exchanger Discharge (N.W.)	2.2-40
M-119	RHR Heat Exchanger Discharge (N.W.)	2.2-41
M-119 M-134	RHR Fuel Pool Cooling and Cleanup	2.2-43
M-123	HPCI Pump Suction	2.2-44
M-123	HPCI Pump Discharge	2.2-45
M-122	HPCI Turbine Steam Inlet	2.2-46
M-122	HPCI Turbine Steam Exhaust	2.2-47
M-121	Core Spray Suction (S.E.)	2.2-48
M-119 & M-121	Core Spray Discharge (S.E.)	2.2-49
M-119	Core Spray Discharge (S.E.)	2.2-50
M-121	Core Spray Suction (N.W.)	2.2-51
M-120 & M-121	Core Spray Discharge (N.W.)	2.2-52A

List of Applicable Piping Isometric Drawings

P&ID No.	DESCRIPTION	ISI ISOMETRIC DWG. No.
M-120 & M-121	Core Spray Discharge (N.W.)	2.2-52B
M-103	Main Steam Loop 'A'	2.2-53
M-103	Main Steam Loop 'B'	2.2-54
M-103	Main Steam Loop 'C'	2.2-55
M-103	Main Steam Loop 'D'	2.2-56
M-103	Main Steam Bypass	2.2-57
M-103	Main Steam Bypass	2.2-58
M-118	Scram Discharge HDR (South)	2.2-60
M-118	Scram Discharge HDR(North)	2.2-61
M-109 M-119 M-125	RCIC Pump Suction	2.2-62
M-113	HPCI, RCIC and Reactor Building - ESW	3.1-1
M-146	Water Pumphouse - ESW	3.1.2
M-113	HPCI and Reactor Building - ESW	3.1-3
M-146	Water Pumphouse - ESW	3.1-4
M-113	Turbine Building - ESW	3.1-5
M-113	Turbine Building - ESW	3.1-6
M-113	Reactor Building - ESW	3.1-7
M-113	Turbine Building - ESW	3.1-8

List of Applicable Piping Isometric Drawings

P&ID No.	DESCRIPTION	ISI ISOMETRIC DWG. No.
M-113	Turbine Building - ESW	3.1-9
M-146	Water Pumphouse - RW	3.1-10
M-146	Water Pumphouse - RW	3.1-11
M-146	Water Pumphouse - RW	3.1-12
M-129	Intake Structure - RW	3.1-13
M-129	Intake Structure - RW	3.1-14
M-142	Water Pumphouse - RW	3.1-15
M-114	Reactor Building -Main Steam	3.1-16
M-114	Reactor Building -Main Steam	3.1-17
M-114	Reactor Building -Main Steam	3.1-18
M-114	Reactor Building -Main Steam	3.1-19
M-114	Reactor Building -Main Steam	3.1-20
M-114	Reactor Building -Main Steam	3.1-21
M-113	Reactor Building -RHR Service Water	3.1-22
M-113	HPCI Building - RHR Service Water	3.1-23
M-113	HPCI and Reactor Building - RHRSW	3.1-24
M-129	Intake Structure - RW	3.1-25
M-129	Intake Structure - RW	3.1-26
M-146	Water Pumphouse - RW	3.1-27
M-113	HPCI and Reactor Building - RHRSW	3.1-28
M-146	Water Pumphouse - RHRSW	3.1-29
M-146	Water Pumphouse - RHRSW	3.1-30

List of Applicable Piping Isometric Drawings

P&ID No.	DESCRIPTION	ISI ISOMETRIC DWG. No.
M-113	HPCI and Reactor Building - RHRSW	3.1-31
M-113	HPCI. RCIC and Reactor Building - ESW	3.1-32
M-113	HPCI Building - RHRSW	3.1-33
M-146	Water Pumphouse - RHRSW	3.1-34
M-146	Water Pumphouse - RHRSW	3.1-35
M-113	Reactor Building - RHRSW	3.1-36
M-113	HPCI Building - RHRSW	3.1-37
M-113	Reactor Building - ESW	3.1-38

List of Applicable Calibration Standards Drawings
Class 1 Carbon Steel

Cal. Block ID#	Nominal Pipe Size	Pipe Schedule	Thickness (inches)	Heat No.	Cal. Block Dwg. No.
IE-01	2"	Sch. 80	0.218	L4449	---------
IE-02	3"	Sch. 80	0.300	N55489	131C7903
IE-03	4"	Sch. 80	0.337	84A711	131C7903
IE-04	4"	Sch. 160	0.531	J616162	LMT-362
IE-05	6"	Sch. 80	0.432	L40321	131C7903
IE-58	6"	Sch. 160	0.719	23250	LMT-428
IE-06	8"	Sch. 80	0.500	123748	131C7903
IE-59	9", 508	Sch. 160	1.6195	523477	LMT-419
IE-07	10"	Sch. 80	0.593	62163	131C7903
IE-08	11"	---	1.090	51122	LMT-358
IE-09	12"	---	0.687	DXR8155	131C7903
IE-10	16"	---	0.843	49069	131C7903
IE-11	18"	---	0.937	89C753	131C7903
IE-51	20"	Sch. 80	1.031	N72753	-------
IE-12	20"	---	1.5	M52851	166B7258
IE-13	22"	Sch 80	1.125	L20112	LMT-357
IE-60	6.375"	---	1.27	17528	LMT-474

List of Applicable Calibration Standards Drawings
Class 1 Stainless Steel

Cal. Block ID#	Nominal Pipe Size	Pipe Schedule	Thickness (inches)	Heat No.	Cal. Block Dwg. No.
IE-14	1.5"	Sch. 80	0.200	432346	LMT-355
IE-15	2"	Sch. 80	0.215	308028	-------
IE-55	2.5"	Sch. 80	0.276	74835	LMT-407
IE-16	3"	Sch. 80	0.300	M6445	131C7903
IE-17	4"	Sch. 160	0.531	M2458	LMT-361
IE-18	4"	Sch. 80	0.337	80359	131C7903
IE-56	4"	Sch. 40	0.220	14241	LMT-430
IE-57	4" (316L)	Sch. 80	0.337	AJ9219	LMT-429
IE-19	8"	Sch. 80	0.500	80407	131C7903
IE-20	10"	Sch. 80	0.985	10SS 304WOL	-------
IE-21	10"	---	0.594	651345	131C7903
IE-22	16"	---	0.844	132002	131C7903
IE-54	18"	---	0.935	A3533	-------
IE-23	18"	Sch. 80	1.300	67695-A	-------
IE-24	20"	---	1.500	3160816A	166B7258
IE-25	20"	Sch. 80	1.031	10093	-------
IE-26	22"	Sch. 80	1.125	28730	-------

List of Applicable Calibration Standards Drawings
Class 2 Carbon Steel

Cal. Block ID#	Nominal Pipe Size	Pipe Schedule	Thickness (inches)	Heat No.	Cal. Block Dwg. No.
IE-38	6"	Sch. 40	0.280	N8023	LMT-7-28-77
IE-39	8"	Sch. 40	0.322	CS001	-------
IE-40	10"	Sch. 40	0.365	N8024	LMT-7-28-77
IE-41	12"	Sch. 40	0.406	N8025	LMT-7-28-77
IE-42	16"	Sch. 40	0.500	N8026	LMT-7-28-77
IE-43	18"	Sch. 40	0.562	N8027	LMT-7-28-77
IE-44	20"	Sch. 40	0.594	N14071	LMT-7-28-77
IE-45	8"	Sch. 100	0.594	L20632	LMT-084
IE-46	10"	Sch. 100	0.719	58205	LMT-087
IE-47	12"	Sch. 100	0.844	57083	LMT-086
IE-48	14"	---	0.375	L02777	LMT-167
IE-49	16"	---	0.375	L80611	LMT-168
IE-50	18"	---	0.375	N15689	LMT-169
IE-52	20"	---	0.375	N94046-20	LMT-170
IE-53	24"	---	0.375	N94046-24	LMT-171

List of Applicable Calibration Standards Drawings
Class 1 Inconel 600

Cal. Block ID#	Nominal Pipe Size	Pipe Schedule	Thickness	Heat No.	Cal. Block Dwg. No.
IE-27	12"	--------	0.75"	NX9724	LMT-038
IE-28	8.7"	--------	0.66"	72534	LMT-360
IE-29	11"	--------	1.09"	72614	LMT-359

List of Applicable Calibration Standards Drawings
Step Wedge Blocks

Cal. Block ID#	Material Type	Heat No.	Thickness Range	Cal. Block Dwg. No.
QD-UT-1	SA 516 GR 70 CS	432L0241-L216703	.250"-2.000"	N/A
QD-UT-2	A216 WCB CS	N/A	.900"-3.900"	N/A
QD-UT-3	316 SS	89764	.500"-2.500"	N/A
QD-UT-4	304 SS	89908	.500"-2.500"	N/A
QD-UT-5	A-36 CS	Y75453	.500"-2.500"	N/A
QD-UT-6	Cast CF8M SS	N/A	.250"-2.000"	N/A
QD-UT-7	304 SS	89908	.101"-.500"	N/A
QD-UT-8	Inconel	N/A	.428"-1.591"	N/A
QD-UT-9	Aluminum	N/A	.208"-.728"	N/A
QD-UT-10	AISI 1018 CS	S/N 798705	.100"-.500"	N/A
QD-UT-11	Copper	N/A	.1"-.4700"	N/A
QD-UT-12	1018 CS	A08146	.1"-.5"	N/A
QD-UT-13	1018 CS	A07588	.250"-1.00"	N/A

List of Applicable Calibration Standards Drawings
RPV Blocks and Studs

Cal. Block ID#	Nominal Pipe Size	Pipe Schedule	Thickness (inches)	Heat No.	Cal. Block Dwg. No.
IE-30	PLATE	N/A	5.5"	B0402	LMT-SK
IE-31	PLATE	N/A	6.625"	P2112	SK-4-7-78
IE-32	PLATE	N/A	6.625"	P2130	SK-4-7-78
IE-33	PLATE	N/A	6.625"	T1937	SK-4-7-78
IE-34	PLATE	N/A	6.625"	P2076	SK-4-7-78
IE-35	PLATE	N/A	4.0"	B0390	SK-4-7-78
IE-36	STUDS	N/A	5.187"	8083916	IE-36
IE-37	STUDS	N/A	2.75"	61994	N/A
IE-61	NOZ TO SAFEND	N/A	.8445"	40580-1	IOWA-N201
83B (N2)	NOZ-THERMALSLEEVE	N/A	N/A	125M	103E1034
58B (N1)	NOZ TO SAFEND	N/A	N/A	218993	D2371-175

Inservice Inspection Summary Table
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Examination Category	Item Number	Description	Total Number of Components	Exam Requirements	Relief Request	Technical Approach & Position
B-A	B1.11	Circumferential Shell Welds	4	Volumetric	NDE-R001	
	B1.12	Longitudinal Shell Welds	8	Volumetric	NDE-R001	
	B1.21	Circumferential Head Welds	2	Volumetric	NDE-R001	
	B1.22	Meridional Head Welds	15	Volumetric	NDE-R001	
	B1.30	Shell-to-Flange Weld	1	Volumetric	NDE-R001 NDE-R022	
	B1.40	Head-to-Flange Weld	1	Volumetric & Surface	NDE-R001	
	B1.50	Repair Welds-Beltline Region	1	Volumetric	NDE-R001	
B-D	B3.90	Nozzle-to-Vessel Welds in Reactor Vessel	34	Volumetric		
	B3.100	Nozzle Inside Radius Section in Reactor Vessel	34	Volumetric		
B-E	B4.11	Partial Penetration Vessel Nozzle Welds	2	Visual, VT-2	PR-003	TAP-P011
	B4.12	Partial Penetration Control Rod Drive Nozzle Welds	89	Visual, VT-2	PR-003	TAP-P011
	B4.13	Partial Penetration Instrumentation Nozzle Welds	30	Visual, VT-2	PR-003	TAP-P011

Inservice Inspection Summary Table
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Examination Category	Item Number	Description	Total Number of Components	Exam Requirements	Relief Request	Technical Approach & Position
B-F	B5.10	Dissimilar Metal Nozzle-to-Safe End Butt Welds NPS 4 or Larger	14	Volumetric & Surface	NDE-R013	
	B5.20	Dissimilar Metal Nozzle-to-Safe End Butt Welds Less than NPS 4	8	Surface		
	B5.130	Dissimilar Metal Butt Welds in Piping NPS 4 or Larger	8	Volumetric & Surface	NDE-R013	
	B5.140	Dissimilar Metal Butt Welds in Piping Less than NPS 4	2	Surface		
	B5.150	Dissimilar Metal Socket Welds in Piping	N/A	Surface		
B-G-1	B6.10	Reactor Vessel Closure Head Nuts	60	Visual, VT-1	NDE-R017	
	B6.20	Reactor Vessel Closure Studs, in Place	60	Volumetric		
	B6.30	Reactor Vessel Closure Studs, when Removed	4	Volumetric & Surface		
	B6.40	Threads in Reactor Vessel Flange	60	Volumetric		
	B6.50	Reactor Vessel Closure Washers, Bushings	60	Visual, VT-1		
	B6.180	Bolts & Studs in Pumps	2 Sets of 16	Volumetric		
	B6.190	Flange Surface, When Connection Disassembled, in Pumps	2 sets of 16	Visual, VT-1		
	B6.200	Nuts, Bushings, & Washers in Pumps	2 Sets of 16	Visual, VT-1		

Inservice Inspection Summary Table
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Examination Category	Item Number	Description	Total Number of Components	Exam Requirements	Relief Request	Technical Approach & Position
B-G-2	B7.10	Bolts, Studs, & Nuts in Reactor Vessel	3 locations	Visual, VT-1		
	B7.50	Bolts, Studs, & Nuts in Piping	5 locations	Visual, VT-1		
	B7.60	Bolts, Studs, & Nuts in Pumps	2 Sets of 16	Visual, VT-1		
	B7.70	Bolts, Studs, & Nuts in Valves	36 valves	Visual, VT-1		
	B7.80	Bolts, Studs, & Nuts in CRD Housings	89 Sets	Visual, VT-1		
B-H Code Case N-509	B8.10	Integrally Welded Attachments to Reactor Vessel	See B-K	Volumetric or Surface		TAP-I007
B-J	B9.11	Circumferential Welds in Piping NPS 4 or Larger	442	Volumetric & Surface	NDE-R012 NDE-R013 NDE-R023	TAP-I005
	B9.12	Longitudinal Welds in Piping NPS 4 or Larger, Code Case 524	103	Volumetric & Surface	NDE-R012 NDE-R023	TAP-I005
	B9.21	Circumferential Welds in Piping Less than NPS 4	43	Surface	NDE-R012 NDE-R023	TAP-I005
	B9.22	Longitudinal Welds in Piping Less than NPS 4	0	Surface	NDE-R012	
	B9.31	Branch Pipe Connection Welds NPS 4 or Larger	18	Volumetric & Surface	NDE-R012 NDE-R013	TAP-I005
	B9.32	Branch Pipe Connection Welds Less than NPS 4	5	Surface		TAP-I005

Inservice Inspection Summary Table
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Examination Category	Item Number	Description	Total Number of Components	Exam Requirements	Relief Request	Technical Approach & Position
B-J	B9.40	Socket Welds	112	Surface		TAP-I005
B-K-1 Code Case 509	B10.10	Integrally Welded Attachments to Pressure Vessels	5 (one vessel)	Surface	NDE-R018 NDE-R019	TAP-I007
	B10.20	Integrally Welded Attachments to Piping	32	Surface	NDE-R018 NDE-R019	TAP-I007
	B10.30	Integrally Welded Attachments to Pumps	4 (Per Pump)	Surface	NDE-R018 NDE-R019	TAP-I007
B-L-2	B12.20	Pump Casings	2	Visual, VT-3		TAP-I009
B-M-2	B12.50	Valve Bodies, Exceeding NPS 4	45	Visual, VT-3		TAP-I009
B-N-1	B13.10	Vessel Interior	13	Visual, VT-3		
B-N-2	B13.20	Interior Attachments within Beltline Region in Reactor Vessel	8	Visual, VT-1		
	B13.30	Interior Attachments beyond Beltline Region in Reactor Vessel	30	Visual, VT-3		
	B13.40	Core Support Structure in Reactor Vessel	5	Visual, VT-3		
B-O	B14.10	Welds in CRD Housing, Peripheral CRDs	28	Volumetric or Surface		
C-A	C1.10	Circumferential Shell Welds	2 (one vessel)	Volumetric		
	C1.20	Circumferential Head Welds	1 (one vessel)	Volumetric		

Inservice Inspection Summary Table

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Examination Category 1	Item Number	Description	Total Number of Components	Exam Requirements	Relief Request	Technical Approach & Position
C-A	C1.30	Tubesheet-to-Shell Welds	N/A	Volumetric		
C-B	C2.22	Nozzle Inner Radius	2	Volumetric		
	C2.31	Reinforcing P ate Welds to Nozzle & Vessel for Nozzles with Reinforcing Plates in Vessels > 1/2" Nominal Thickness	N/A	Surface		
	C2.33	Nozzle-to-Shell (or Head) Welds when Inside of Vessel is Inaccessible, for Vessels > 1/2" Nominal Thickness with Reinforcing Plates	N/A	Visual, VT-2		TAP-P011
C-C Code Case 509	C3.10	Integrally Welded Attachments to Pressure Vessels	5 (one vessel)	Surface	NDE-R018	TAP-I007
	C3.20	Integrally Welded Attachments to Piping	61	Surface	NDE-R018	TAP-I007
	C3.30	Integrally Welded Attachments to Pumps	0	Surface	NDE-R018	TAP-I007
C-F-1	C5.11	Circumferential Welds in Austenitic Stainless Steel or High Alloy Piping ≥3/8" Nominal Wall Thickness for Piping > NPS 4	N/A	Volumetric & Surface	NDE-R012	
	C5.21	Circumferential Welds in Austenitic Stainless Steel or High Alloy Piping >1/5" Nominal Wall Thickness for Piping ≥ NPS 2 and ≤ NPS 4	N/A	Volumetric & Surface	NDE-R012	
	C5.41	Circumferential Branch Connection Welds in Austenitic Stainless Steel or High Alloy Piping >NPS 4 (≥ NPS 2 Reference Table IWC-2500-1, Note 1)	N/A	Volumetric & Surface	NDE-R012	

Inservice Inspection Summary Table
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Examination Category [1]	Item Number	Description	Total Number of Components	Exam Requirements	Relief Request	Technical Approach & Position
C-F-2	C5.51	Circumferential Welds in Carbon or Low Alloy Steel Piping ≥3/8" Nominal Wall Thickness for Piping > NPS 4	902	Volumetric & Surface	NDE-R012	TAP-I006
	C5.52	Longitudinal Welds in Carbon or Low Alloy Steel Piping ≥3/8" Nominal Wall Thickness for Piping > NPS 4	N/A	Volumetric & Surface	NDE-R012	TAP-I006
	C5.81	Circumferential Welds in Carbon or Low Alloy Steel Pipe Branch Connections of Branch Piping > NPS 4 (Reference Table IWC-2500-1, Note 1 and IWA-1220c)	4	Surface	NDE-R012	TAP-I006
	C5.82	Longitudinal Welds in Carbon or Low Alloy Steel Pipe Branch Connections of Branch Piping > NPS 4 (Reference Table IWC-2500-1, Note 1 and IWA-1220c)	0	Surface		
D-A Code Case 509	D[illegible]	Integral Attachments - Piping	68	Visual, VT-1	NDE-R018	TAP-I007
	D1.30	Integral Attachments - Pumps	N/A	Visual, VT-1	NDE-R018	TAP-I007
	D1.40	Integral Attachments - Valves	N/A	Visual, VT-1	NDE-R018	TAP-I007
F-A Code Case 491	F1.10	Class I Component Supports	165	Visual, VT-3		TAP-I008
	F1.20	Class II Component Supports	333	Visual, VT-3		TAP-I008
	F1.30	Class III Component Supports	238	Visual, VT 3		TAP-I008
	F1.40	Supports Other Than Piping Supports (Class 1, 2, 3, and MC)	19	Visual, VT-3		TAP-I008

Note 1: The number of components identified includes those welds in piping < 3/8" nominal wall thickness in accordance with Note 2 of Table IWC-2500-1, Category C-F-2.

INSERVICE INSPECTION
TECHNICAL APPROACH AND POSITION INDEX/SUMMARIES

Position	Page(s)	Rev.	Date Approved	Summary
TAP-I001	10-1	0	New Issued	Substitute Examinations and Tests Appendix F Article F-3000
TAP-I002	10-2	0	New Issued	Preparation of Inservice Inspection Summary Reports (Form NIS-1)
TAP-I003	10-3	0	New Issued	Components Exempt From Examination
TAP-I004	10-4	0	New Issued	Weld Reference System
TAP-I005	10-5 to 10-7	0	New Issued	Selection of B-J Welds for Examination Criteria
TAP-I006	10-8 to 10-10	0	New Issued	Selection of C-F Pressure Retaining Welds for Examination
TAP-I007	10-11 to 10-12	0	New Issued	Alternative Rules For the Selection and Examination of Class 1, 2, and 3 Integrally Welded Attachments (Code Case N-509).
TAP-I008	10-13 to 10-14	0	New Issued	Alternative Rules For Examination of Class 1, 2, 3, and MC Component Supports (Code Case N-491)
TAP-I009	10-15 to 10-18	0	New Issued	Additional, and Subsequent examination requirements for pump and valves internal surface examinations that reveal indications
TAP-I010	10-19	0	New Issued	Rotation of Serviced Snubbers and Pressure Relief Valves for the Purpose of Testing (Code Case N-508-1)

TECHNICAL APPROACH AND POSITION NUMBER: TAP-I001

COMPONENT IDENTIFICATION

Code Classes:	1, 2, and 3
References:	IWA-2420(a)(5) IWA-2240

Examination Category:	Not Applicable
Item Number:	Not Applicable
Description:	Substitute Examinations and Tests Appendix F Article F-3000

CODE REQUIREMENT

IWA-2420(a)(5) identifies that the Inspection Plan, required by IWA-2420, shall include and define components by category and item number for each component in which Code requirements are not being satisfied and the Inspection Plan include substitute examinations and tests. Guidance for preparation of inspection plans is contained in ASME Section XI, Appendix F.

IWA-2240 contains provisions to satisfy applicable Code requirements through alternative examinations or substitute examination methods to those specified by the code, by demonstrated justification of the technique to the on-site inspectors.

POSITION

Per the requirements of 10CFR50.55a(g)(5)(iii), if a licensee determines that conformance to certain Code requirements is impractical for the facility, the licensee shall notify the Commission and submit, as specified in 10CFR50.4, information to support the determinations.

The 1989 Edition of Section XI Code contains provisions in IWA-2240 to satisfy applicable Code requirements, permitting alternative examination or substitute examination methods to those specified by the code, with demonstrated and technical justification, whereby the requirements of 10CFR50.55a <u>are met</u>. IWA-2420 (Appendix -F) substitute examination or test to replace code required examinations when considered to be impractical, and are identified subsequent to the inspection plan preparation, shall be evaluated for technical justification and a formal "Relief Request" submitted to the Commission for approval per the requirements of 10CFR50.55a(g)(5)(iv).

TECHNICAL APPROACH AND POSITION NUMBER: TAP-I002

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COMPONENT IDENTIFICATION

Code Classes:	1 and 2
References:	IWA-6220(c)
Examination Category:	Not Applicable
Item Number:	Not Applicable
Description:	Preparation of Inservice Inspection Summary Reports (Form NIS-1)

CODE REQUIREMENT

IWA-6220(c) states, "Inservice inspection summary reports shall be prepared at the completion of each inspection conducted during a refueling outage. Examinations, tests, replacements, and repairs conducted since the preceding summary report shall be included."

POSITION

The primary purpose of the inservice summary report is to document:

1) The examinations and tests performed as required by the Inspection Plan,

2) The results of those examinations and tests, and

3) The repairs, replacements, and corrective measures taken in response to the results of those examinations and tests.

In addition to 1, 2, and 3 above, repairs and replacements that are a result of plant modifications, planned component changeouts, and routine maintenance activities are also required to be included on Form NIS-2 per IWA-4000 and IWA-7000, however, they have no relationship to repairs, replacements or corrective measures taken in response to the results of required Section XI inservice inspection, examinations, and tests.

DAEC's position is that only those Form NIS-2s which document repairs and replacements resulting from Section XI inservice inspection examinations and tests will be included in the Inservice Inspection Summary Report.

DAEC will maintain these records on file in accordance with IWA-6310, including Form NIS-2s, as required by IWA-4000 and IWA-7000 for repairs and replacements resulting from activities other than required inservice inspection examinations and tests.

TECHNICAL APPROACH AND POSITION NUMBER: TAP-I003

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COMPONENT IDENTIFICATION

Code Classes:	2 and 3
References:	IWC-1220 IWD-1220
Examination Category:	Not Applicable
Item Number:	Not Applicable
Description:	Components Exempt from Examination

CODE REQUIREMENT

IWC-1220, "Components Exempt from Examination", and IWD-1220, "Items Exempt from Examination", detail the Class 2 and 3 components which are not required to be examined per Tables IWC-2500-1 and IWD-2500-1, respectively.

POSITION

When evaluating Class 2 and 3 components per IWC-1220 and IWD-1220, respectively, components exempt from examination, the phrase, "components that are NPS 4 and smaller" will be understood to mean that vessels, pumps, valves and other components with a cumulative inlet and/or outlet piping NPS 4 and less are exempt from the examinations of Tables IWC-2500-1 and IWD-2500-1.

This position is consistent with the exemption of piping NPS 4 and less, because fluid loss due to failure of vessels, pumps, valves, and components connected by NPS 4 piping and smaller would not exceed the capacity of the NPS 4 piping.

This position is also supported by ASME Code Case N-408-2, Footnote 2, which states;

> "In piping, is defined as having a cumulative inlet and a cumulative outlet pipe cross-sectional area neither of which exceeds the nominal OD cross-sectional area of the designated size."

As an additional note, Code Case N-408-2 is approved for use in Regulatory Guide 1.147, Revision 11.

TECHNICAL APPROACH AND POSITION NUMBER: TAP-I004

COMPONENT IDENTIFICATION

Code Classes: 1 and 2
References: IWA-2600
Examination Category: Not Applicable
Item Number: Not Applicable
Description: Weld Reference System

CODE REQUIREMENT

IWA-2610, "Weld Reference System" states a reference system shall be established for all welds and areas subject to surface or volumetric examination.

Each such weld and area shall be located and identified by a system of reference points. The system shall permit identification of each weld, location of each weld centerline, and designation of regular intervals along the weld length.

POSITION

At the time DAEC was constructed, datum reference markings nor a reference system were required by Code. Application of such physical markings to each and every area subject to surface or volumetric examination (in an operating plant) would require significant expenditure of resources and result in additional, unnecessary personnel radiation exposure. In many instances, limited or no physical access is available to permit such markings.

It is DAEC's position to continue using the present weld identification method successfully employed during the two previous 10 year inspection intervals. This is accomplished by procedurally describing datum or reference points such that subsequent location of the examination area can be repeatedly achieved.

During the course of performing examinations for the third inspection interval, in accordance with the requirements of the Inservice Inspection Program Plan, weld reference points will be physically applied to welds where flaw indications are detected and determined to be relevant. Flaw indications or relevant conditions qualified for continued service through evaluation shall be reexamined during subsequent inspection periods in accordance with IWX-2420.

Where new welds are installed as a result of repair and replacement and require preservice inspection the requirements of IWA-2600 will be met.

TECHNICAL APPROACH AND POSITION NUMBER: TAP-I005

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COMPONENT IDENTIFICATION

Code Classes:	1
References:	IWB-2500
	Table IWB-2500-1
Examination Category:	B-J
Item Number:	B9.10, B9.20, B9.30, B9.40
Description:	Selection of B-J Welds for Examination Criteria

CODE REQUIREMENT

Pursuant to the requirements of 10CFR50.55a (b)(2)(ii) a licensee is permitted, providing the application for the facility construction permit was docketed prior to July 1, 1978, to determine the extent of examination for Code Class 1 pipe welds per Table IWB-2500 and Table 2600, Category B-J of Section XI of the ASME Code in the 1974 Edition and addenda through the Summer 1975.

Table IWB-2500, Category B-J of the 1974/S1975 ASME Section XI Code, requires that examinations performed each inspection interval shall cover all of the area of 25% of the circumferential joints and 25% of the pipe branch connections.

When using later editions and addenda of ASME Section XI (1978 Edition and later), Table IWB -2500-1, Category B-J, footnote 1(b) requires that the examination of welds shall include all terminal ends and joints in pipe or branch runs connected to other components where the stress levels exceed the following limits under loads associated with specific seismic events and operational conditions:

1) primary plus secondary stress range of $2.4S_m$ for ferritic and austenitic steel
2) cumulative usage factor, U, of 0.4

POSITION

Because DAEC piping was designed primarily per ANSI B31.7-1969 edition through 1970/1971 addenda, not all of the parameters (S_m and U) were available for weld selection purposes. These parameters are ASME Section III piping design characteristics. Stress data per ANSI B31.7 does exist; however, correspondence to Class 1 welds locations is not readily evident or available in many cases. Also, ANSI B31.7 does include S_m values for materials (Appendix A table A.1) but it does not include a cumulative usage factor parameter similar to U of ASME Section III.

By selecting all terminal end welds and branch connection welds to the extent practical, the most potentially high stress welds should be included in the third interval weld selection.

TECHNICAL APPROACH AND POSITION NUMBER: TAP-I005

POSITION (Cont'd)

The basis for selection of Category B-J welds for examination such that 25% of the total welds not exempted by IWB-1220 are examined during the interval is per the following criteria:

1. All accessible terminal ends in each pipe or branch run connected to vessels.
2. All accessible terminal ends in each pipe or branch run connected to other components.
3. All dissimilar metal piping welds between combinations of:
   - carbon or low alloy steels to high alloy steels
   - carbon or low alloy steels to high nickel alloys
   - high alloy steels to high nickel alloys
4. All branch connection welds
5. Additional piping welds so that the total number of circumferential butt welds (or branch connection or socket welds) selected for examination equals 25% of the circumferential butt welds (or branch connection or socket welds) in the Class 1 reactor coolant pressure boundary. This total does not include welds excluded by IWB-1220. These additional welds may be located in one loop. Also, to the extent practical, selection of these additional welds will be made at structural discontinuities to the extent practical.
6. Category B-J welds selected for examination during the third Inspection Interval shall be selected from those welds examined in the same period of previous inspection intervals whenever possible.

The following table provides a breakdown of the systems within the ISI Class 1 boundaries designated ASME Section XI item B-J.

System Identification	B9.11	B9.21	B9.31	B9.32	B9.40
Main Steam	88	8	9		
Feedwater	76		1		
Core Spray	40				
High Pressure Coolant Injection	19				
Reactor Water Cleanup	31				1
Residual Head Removal	49		1		
Reactor Core Isolation Cooling	27				
Recirculation	108		7	5	47
Reactor Head	2				
Jet Pump	2				
Control Rod Drive		35			
Standby Liquid Control					26
Reactor Vessel Instrumentation					18
Reactor Bottom Head Drain					20
TOTALS (155 require examination)	442	43	18	5	112

TECHNICAL APPROACH AND POSITION NUMBER: TAP-I005

Due to the implementation of Code Case N-524. no longitudinal welds have been included in the system list. There are however. 103 longitudinal welds total.

The following table provides the distribution of Category B-J welds for examination and results of each system prorating by item number. The table is also representative of the category B-F welds which are being examined to satisfy selection and examination requirements of category B-J welds in accordance with ASME Code interpretation XI-1-83-33.

WELD SELECTION TABLE for CATEGORY B-J PRESSURE RETAINING WELDS IN PIPING (3rd 10 YEAR INTERVAL)

SYSTEM IDENTIFICATION	B-J B9.11 v/s	B-F 5.10 v/s	B-J B9.21 s	B-F 5.20 s	B-J B9.31 v/s	B-F 5.130 v/s	B-J B9.32 s	B-F 5.140 s	B-J B9.40 s	Total B-J/B-F welds sched.
Main Steam	20% 22 welds		19% 2 welds		50% 2 welds		N/A		N/A	26 B-J welds
Feedwater	17% 19 welds		N/A		5.6% 1 weld		N/A		N/A	20 B-J welds
Core Spray	9% 10 welds	2 Welds	N/A		N/A	4 Welds	N/A		N/A	4 B-J we[illegible] 6 B-F w[illegible]
High Press Coolant Inj	4% 4 welds		N/A		N/A		N/A		N/A	4 B-J welds
Reactor Water Cleanup	7% 8 welds		N/A		N/A	1 Weld	N/A		1% 1 weld	8 B-J welds 1 B-F welds
Residual Heat Removal	11% 12 welds		N/A		5.6% 1 weld	3 Welds	N/A		N/A	10 B-J welds 3 B-F welds
Rx. Core Iso. Cooling	6% 7 welds		N/A		N/A		N/A		N/A	7 B-J welds
Recirculation	24% 27 welds	10 Welds	N/A		39% 2 welds		100% 1 weld		42% 12 welds	32 B-J welds 10 B-F welds
Reactor Head Vent	1% 1 weld		N/A		N/A		N/A	1 Weld	N/A	1 B-F welds
Jet Pump	1% 1 weld	2 Welds	N/A		N/A		N/A		N/A	2 B-F welds
Control Rod Drive	N/A		81% 9 welds	1 Weld	N/A		N/A	1 weld	N/A	7 B-J welds 2 B-F welds
Standby Liquid Control	N/A		N/A	1 Weld	N/A		N/A		23% 6 welds	5 B-J welds 1 B-F welds
Rx. Vessel Instrum.	N/A		N/A	6 Welds	N/A		N/A		16% 4 welds	6 B-F welds
Rx. Bottom Head Drain	N/A		N/A		N/A		N/A		18% 5 welds	5 B-J welds
	TOTAL B9.11 111 welds		TOTAL B9.21 11 welds		TOTAL B9.31 6 welds		TOTAL B9.32 1 weld		TOTAL B9.40 28 welds	TOTAL 128 B-J welds 32 B-F welds 160 TO[illegible]

TECHNICAL APPROACH AND POSITION NUMBER: TAP-I006

COMPONENT IDENTIFICATION

Code Classes:	2
References:	IWC-2500 Table IWC-2500-1
Examination Category:	C-F-2
Item Number:	C5.50, C5.60, C5.70, C5.80
Description:	Selection of C-F Pressure Retaining Welds for Examination

CODE REQUIREMENT

Pursuant to the requirements of 10CFR50.55a (b)(2)(iii) a licensee is permitted, providing the application for the facility construction permit was docketed prior to July 1, 1978, to determine the extent of examination for Code Class 2 pipe welds per Table IWC-2520 and Table IWC-2520-1, Category C-F of Section XI of the ASME Code in the 1974 Edition and addenda through the Summer 1975.

Table IWC-2500, Category C-F of the 1974/S1975 ASME Section XI Code, requires that examinations performed each inspection interval shall cover 100% of the weld area (i.e.; circumferential joints, longitudinal, and pipe branch connections).

When using later editions and addenda of ASME Section XI (1978 Edition and later), Table IWC -2500-1, Category C-F, footnote 2(b) requires that the examination of welds shall be distributed among terminal ends and structural discontinuities. Structural discontinuities are defined as pipe to vessels, valve bodies, pump casings and pipe fittings (tees, elbows, reducers etc.).

POSITION

Because the DAEC facility construction permit was docketed prior to July 1, 1978, and examination of Code Class 2 pipe welds per Table IWC-2520 and Table IWC-2520-1, Category C-F of Section XI of the ASME Code in the 1974 Edition and addenda through the Summer 1975 is optional in lieu of the code of reference (1989 edition) in paragraph 2, DAEC elects to examine Code Class 2 pipe welds per IWC-2500 and Table IWC-2500-1, Category C-F-1, C-F-2 of Section XI of the ASME Code in the 1989 Edition.

The weld selection shall be in accordance with the requirements as identified in the footnotes of the tables IWC-2500-1 Category C-F-1, C-F-2 of the code. The welds selected shall include 7.5%, but not less than 28 welds, of all carbon and low alloy steel welds not exempted by IWC-1220 of the code. DAEC has no Category C-F-1 pressure retaining welds, therefore all selection criteria is specific to the C-F-2 Category.

TECHNICAL APPROACH AND POSITION NUMBER: TAP-I006
(Page 2 of 3)

POSITION (Cont'd)

The basis for selection of Category C-F welds for examination such that 7.5%. and not less than 28 welds of the total welds not exempted by IWC-1220 are examined during the interval is per the following criteria:

1. The examinations shall be distributed among the class 2 systems prorated, to the degree practicable, on the number of nonexempt carbon and low alloy steel welds in each system. If a system contains 30% of the nonexempt welds, then 30% of the nondestructive examinations required by C-F-2 should be performed on that system.

2. Within a system, the examinations shall be distributed among terminal ends and structural discontinuities prorated, to the degree practicable, on the number of nonexempt terminal ends and structural discontinuities.

3. Within each system, the examinations shall be distributed between line sizes prorated to the degree practicable.

There are 6 RHR, ECCS, Containment Heat Removal, systems that are within the ASME Class 2 boundary and they are as follows.

a.	Residual Heat Removal (RHR)	433 nonexempt welds	48 % prorated total
b.	High Pressure Coolant Injection (HPCI)	150 nonexempt welds	17% prorated total
c.	Core Spray (CS)	136 nonexempt welds	15% prorated total
d.	Main Steam (MS)	142 nonexempt welds	16% prorated total
e.	Scram Discharge (SD)	27 nonexempt welds	3% prorated total
* f.	Reactor Core Isolation Cooling (RCIC)	14 exempt welds	1% prorated total
		902 total category C-F nonexempt welds	

* All welds in the RCIC system are exempted by table IWC-2500-1, therefore the 1 prorated weld selected for examination shall be included among the RHR welds.

TECHNICAL APPROACH AND POSITION NUMBER: TAP-I006

POSITION (Cont'd)

4. Category C-F welds selected for examination during the third Inspection Interval shall be selected from those welds examined in the same period of previous inspection intervals whenever possible.

WELD SELECTION TABLE for CATEGORY C-F-2 CARBON STEEL WELDS (3rd 10 YEAR INTERVAL)

SYSTEM DESCRIPTION	NON-EXEMPT WELDS	CODE REQUIRED 7.5% TRUE (EQUATE)	PRORATING OF WELDS IN TOTAL NON-EXEMPT WELDS	TOTAL WELDS DISTRIBUTED THIS SYSTEM
RHR	433	32.47 (33)	48.0%	32.6 (34*)
HPCI	150	11.25 (11)	16.7%	11.4 (12)
CS	136	10.2 (10)	15.1%	10.2 (10)
MS	142	10.65 (11)	15.7%	10.9 (11)
SD	27	2.03 (2)	3.0%	2.2 (2)
RCIC	14 (exempt)	1.05 (1)	1.5%	1.0 (0*)
	TOTAL 902	SELECTED 68	100%	PRORATED 68 (69*)

* Prorated total for RHR has been adjusted (increased by 1 weld), to reflect the addition of exempted RCIC welds. If there are less than three items to be examined in an Examination Category, the items may be examined in any two periods, or in any one period if there is only one item, in lieu of the percentage requirements of Table IWB-2412-1.

TECHNICAL APPROACH AND POSITION NUMBER: TAP-I007
(Page 1 of 2)

COMPONENT IDENTIFICATION

Code Classes:	1, 2, and 3
References:	IWB-2500, IWC-2500, IWD-2500 Tables IWB-2500-1, IWC-2500-1, IWD-2500-1
Examination Category:	B-H, B-K-1, C-C, D-A, D-B, D-C
Item Number:	B10.10 through B10.40, C3.10 through C3.40, D1.10 through D1.40
Description:	Alternative Rules For the Selection and Examination of Class 1, 2, and 3 Integrally Welded Attachments (Code Case N-509).

CODE REQUIREMENT

Table IWB-2500-1, Categories B-H, and B-K-1 require a volumetric or surface examination as applicable of integrally welded attachments exceeding 5/8" design thickness.

Table IWC 2500-1, Category C-C requires a surface examination of all integrally welded attachments exceeding 3/4" design thickness.

Table IWD 2500-1, Category D-A, D-B, and D-C require a visual (VT-3) examination of all integrally welded attachments corresponding to those component supports selected by IWF-2510(b).

POSITION

Code Case N-509, "Alternative Rules for the Selection and Examination of Integrally Welded Attachments, Section XI, Division 1", provides an alternative to the Tables of IWB/C/D-2500-1 for integrally welded attachments. The alternative requires a surface examination (IWB/ IWC), of 10% of the integrally welded attachments associated with the component supports selected for examination under IWF-2510 and a visual (VT-1) examination for 10% of the selected integrally welded attachments for IWD. In addition an examination is required whenever component support member deformation is identified. This Code Case recognizes the results of over 20 years of inservice inspections and the considerable attention that component supports have received through NRC bulletins. DAEC has elected to adopt this Code Case recognizing the following noted differences from the Code.

The Code Case does not include the exemption of "attachment base material design thickness of less than 5/8 in." as specified in IWB-2500-1 B-H and B-K-1. It also does not address the exemption of "attachment base material design thickness of less than 3/4 in." as noted in IWC-2500-1 category C-C.

TECHNICAL APPROACH AND POSITION NUMBER: TAP-I007

POSITION (Cont'd)

Therefore, DAEC has included all integral attachments in the base count for which the sample selection was developed. The integral attachments selected for examination shall be associated with component supports selected for examinations under the IWF-2510 article of ASME Section XI, 1990 addenda. And the sample selection shall be 10% of the total count of integral attachments in each category as indicated in the following table of selection and distribution.

All integral attachments selected for examination during the third Inspection Interval shall be selected from those integral attachments examined in the same period of previous inspection intervals whenever possible. If there are less than three items to be examined in an Examination Category, the items shall be examined in any two periods, or in any one period if there is only one item, in lieu of the percentage requirements of Table IWB-2412-1.

ASME Category	ITEM No.	TOTAL No.	10% SAMPLE
B-K	B10.10	5	1
B-K	B10.20	32	3
B-K	B10.30	4	1
C-C	C3.10	5	1
C-C	C3.20	61	6
D-A	D1.20	68	7
TOTAL		175	19

TECHNICAL APPROACH AND POSITION NUMBER: TAP-I008

COMPONENT IDENTIFICATION

Code Classes:	1, 2, and 3
References:	IWF-2500 Tables IWF-2500-1
Examination Category:	F-A
Item Number:	F1.10 through F1.70
Description:	Alternative Rules For Examination of Class 1, 2, 3, and MC Component Supports (Code Case N-491).

CODE REQUIREMENT

Table IWF-2500-1, Category F-A requires a visual (VT-3) examination of essentially 100% of the supports each inspection interval corresponding to those component supports selected by IWF-2510.

POSITION

Code Case N-491, "Alternative Rules for Examination of Class 1, 2, 3, and MC Component Supports, Section XI, Division 1", provides an alternative to the Tables of IWF-2500-1 for component and piping supports. The alternative requires a Visual examination (VT-3), of 25% of the Class 1 supports, 15% of the Class 2 supports, and 10% of the Class 3 supports corresponding to those component supports selected by IWF-2510. In addition an examination is required whenever component support failure mode could be generic in nature with supports of the same type, and function is identified. This Code Case recognizes the results of over 20 years of inservice inspections and the considerable attention that component supports have received through NRC bulletins. DAEC has elected to adopt this Code Case recognizing the noted differences from the Code.

The component supports selected for examination shall be associated with components selected for examinations under the IWF-2510 article of ASME Section XI, 1989 Edition no addenda. And the sample selection shall be 25%, 15%, or 10% accordingly with the Class 1, 2, and 3 component supports in each category as indicated in the following table of selection and distribution.

TECHNICAL APPROACH AND POSITION NUMBER: TAP-I008
(Page 2 of 2)

POSITION (Cont'd)

All component supports selected for examination during the third Inspection Interval shall be selected from those component supports examined in the same period of previous inspection intervals whenever possible. If there are less than three items to be examined in an Examination Category, the items shall be examined in any two periods, or in any one period if there is only one item, in lieu of the percentage requirements of Table IWB-2412-1.

ASME Category	ITEM No. (N-491)	TOTAL NUMBER	SELECTED			
			100 %	25%	15%	10%
F-A	F1.10 Class I Component Supports	165		*42		
	F1.20 Class II Component Supports	333			*50	
	F1.30 Class III Component Supports	238				*24
	F1.40 Supports Other Than Piping Supports (Class 1, 2, 3, and MC)	19	19			
TOTAL		755				

* Includes integral attachment supports selected in accordance with Category B-K (N-509) for examination.

TECHNICAL APPROACH AND POSITION NUMBER: TAP-I009

(Page 1 of 4)

COMPONENT IDENTIFICATION

Code Classes:	1, 2, and 3
References:	IWB-2430, IWB-2500 Tables IWB-2500-1
Examination Category:	B-L-2, B-M-2.
Item Number:	B12.20, B12.50
Description:	Additional, and Subsequent examination requirements for pump and valves internal surface examinations that reveal indications .

CODE REQUIREMENT

Table IWB-2500-1, Category B-L-2, B-M-2 requires a visual (VT-3) examination of essentially 100% of the internal surfaces each inspection interval corresponding to those components selected by IWB-2500.

IWB-2430, Examinations that reveal flaws or relevant conditions exceeding the acceptance standards of Table IWB-3410-1, shall be extended to include additional examinations during the current outage. The additional examinations shall include an additional number of welds, areas, or parts included in the inspection item equal to the number of welds, areas, or parts included in the inspection items that were scheduled to be performed during the present, and subsequent inspection period (IWA-2420). If examinations are not scheduled for the welds, areas, or parts included in the inspection items in the subsequent inspection period, examinations shall be taken from the next most immediate period containing scheduled examinations for the welds, areas, or parts included in the inspection items. The additional examinations shall be selected from welds, areas, or parts of similar material, size, and service.

If the additional examinations required reveal flaws or relevant conditions exceeding the acceptance standards, Table IWB-3410-1, the examinations shall be further extended to include additional examinations during the current outage. These additional examinations shall include the remaining number of welds, areas, or parts of similar material, size, and service **subject to the same type of flaws or relevant conditions**.

For the inspection periods following the period in which the expanded examinations were completed, the examinations shall be performed as originally scheduled in accordance with the original inspection plan.

POSITION

The components selected for examination shall be associated with components selected for examinations under the IWB-2500 article of ASME Section XI, 1989 Edition no addenda. And the sample selection shall be limited to one pump in each group of pumps performing a similar

TECHNICAL APPROACH AND POSITION NUMBER: TAP-I009

function in the system. In the case of valves, examinations are limited to one valve within a group of valves that are of the same size, constructional design, and manufacturing method, performing similar functions in the system. All components scheduled for examination in category B-L-2, and B-M-2 (see tables below) during the third Inspection Interval shall be selected from those components requiring disassembly for maintenance, repair, or volumetric examination during the inspection interval.

Examinations that reveal flaws or relevant conditions exceeding the acceptance standards of Table IWB-3410-1, shall be extended to include additional examinations during the current outage **only if a pump performing a similar function in the system, or in the case of valves, a valve of the same size, constructional design, and manufacturing method, performing similar functions in the system, is scheduled for disassembly for maintenance, repair, or volumetric examination.**

The additional examinations shall include an additional number of pumps, or valves included in the inspection group (see table below) equal to the number of pumps, or valves included in the inspection group that was scheduled to be performed during the present, and subsequent inspection period (IWA-2420). If examinations are not scheduled for the pumps, or valves included in the inspection group in the subsequent inspection period, examinations shall be taken from the next most immediate period containing scheduled examinations for the pumps, or valves included in the inspection group. The additional examinations shall be selected from pumps, or valves of similar material, size, design, and service.

If the additional examinations required reveal flaws or relevant conditions exceeding the acceptance standards, Table IWB-3410-1, the examinations shall be further extended to include the remaining number of pumps, or valves in the inspection group during the current outage **only if a pump performing a similar function in the system, or in the case of valves, a valve of the same size, constructional design, and manufacturing method, performing similar functions in the system, is scheduled for disassembly for maintenance, repair, or volumetric examination.** If the revealed flaws or relevant conditions identified in these additional examinations are determined to be of **the same type of flaws (generic) or relevant condition, the remaining number of pumps, or valves in the inspection group shall be disassembled and inspected during the current outage.**

PUMP GROUPING TABLE

SYSTEM	PUMP	SIZE	DESIGN	MANUFACTURE METHOD	FUNCTION
GROUP 1					
RC	1P-201A	VARIABLE SPEED	MOTOR DRIVEN CENTRIFUGAL	CAST	RECIRCULATION
RC	1P-201B	VARIABLE SPEED	MOTOR DRIVEN CENTRIFUGAL	CAST	RECIRCULATION

TECHNICAL APPROACH AND POSITION NUMBER: TAP-I009

(Page 3 of 4)

VALVE GROUPING TABLE

SYSTEM	VALVE	SIZE	DESIGN	MANUFACTURE METHOD	FUNCTION
GROUP 1					
CS	MO-2117	8"	GATE	CAST	ISOLATION
CS	MO-2137	8"	GATE	CAST	ISOLATION
CS	V21-0042	8"	GATE	CAST	ISOLATION
GROUP 2					
CS	V21-0043	8"	CHECK	CAST	ISOLATION
CS	V21-0072	8"	CHECK	CAST	ISOLATION
CS	V21-0073	8"	CHECK	CAST	ISOLATION
GROUP 3					
FW	MO-4441	16"	CHECK	CAST	ISOLATION
FW	MO-4442	16"	CHECK	CAST	ISOLATION
GROUP 4					
FW	V14-0001	16"	CHECK	CAST	ISOLATION
FW	V14-0003	16"	CHECK	CAST	ISOLATION
GROUP 5					
FW	V14-0002	16"	GATE	CAST	ISOLATION
FW	V14-0004	16"	GATE	CAST	ISOLATION
GROUP 6					
MS	CV-4412	20"	GLOBE	CAST	ISOLATION
MS	CV-4413	20"	GLOBE	CAST	ISOLATION
MS	CV-4415	20"	GLOBE	CAST	ISOLATION
MS	CV-4416	20"	GLOBE	CAST	ISOLATION
MS	CV-4418	20"	GLOBE	CAST	ISOLATION
MS	CV-4419	20"	GLOBE	CAST	ISOLATION
MS	CV-4420	20"	GLOBE	CAST	ISOLATION
MS	CV-4421	20"	GLOBE	CAST	ISOLATION
GROUP 7					
MS	PSV-4400	6"	RELIEF	CAST	PRESS RELIEF
MS	PSV-4401	6"	RELIEF	CAST	PRESS RELIEF
MS	PSV-4402	6"	RELIEF	CAST	PRESS RELIEF
MS	PSV-4405	6"	RELIEF	CAST	PRESS RELIEF
MS	PSV-4406	6"	RELIEF	CAST	PRESS RELIEF
MS	PSV-4407	6"	RELIEF	CAST	PRESS RELIEF
GROUP 8					
MS	PSV-4403	6"	SAFETY/RELIEF	CAST	PRESS RELIEF
MS	PSV-4404	6"	SAFETY/RELIEF	CAST	PRESS RELIEF
GROUP 9					
PS	MO-2238	10"	GATE	CAST	ISOLATION
PS	MO-2239	10"	GATE	CAST	ISOLATION
GROUP 10					
PS	MO-2312	12"	GATE	CAST	ISOLATION
GROUP 11					
PS	V23-0049	12"	CHECK	CAST	ISOLATION
GROUP 12					
RC	MO-4601	22"	GATE	CAST	ISOLATION
RC	MO-4602	22"	GATE	CAST	ISOLATION
RC	MO-4627	22"	GATE	CAST	ISOLATION
RC	MO-4628	22"	GATE	CAST	ISOLATION
GROUP 13					
RH	MO-1908	18"	GATE	CAST	ISOLATION
RH	MO-1909	18"	GATE	CAST	ISOLATION
RH	V19-0148	18"	GATE	CAST	ISOLATION
GROUP 14					
RH	MO-1905	20"	GATE	CAST	ISOLATION
RH	MO-2003	20"	GATE	CAST	ISOLATION
RH	V19-0147	20"	GATE	CAST	ISOLATION
RH	V20-0081	20"	GATE	CAST	ISOLATION

TECHNICAL APPROACH AND POSITION NUMBER: TAP-I009

(Page 4 of 4)

VALVE GROUPING TABLE

SYSTEM	VALVE	SIZE	DESIGN	MANUFACTURE METHOD	FUNCTION
GROUP 15					
RH	V20-0082	20"	CHECK	CAST	ISOLATION
RH	V19-0149	20"	CHECK	CAST	ISOLATION

TECHNICAL APPROACH AND POSITION NUMBER: TAP-I010

COMPONENT IDENTIFICATION

Code Classes: 1, 2, and 3
References: IWA-7000
Examination Category: N/A
Item Number: N/A
Description: Rotation of Serviced Snubbers and Pressure Relief Valves for the Purpose of Testing.

CODE REQUIREMENT

IWA-7210(b) states "Any items to be used for replacement shall meet the following requirements unless the alternative of (c) below is adopted: (1) the applicable Construction Code to which the original item was constructed: and (2) the existing design requirements. If the original item was constructed without Code requirements, the item to be used for replacement shall be inaccordance with the design, fabrication, and examination requirements for the original item unless the alternative of (c) below is adopted."

POSITION

Code Case N-508-1, "Rotation of Serviced Snubbers and Pressure Relief Valves for the Purpose of Testing" provides alternative rules to those stated above for the purpose of testing snubbers and relief valves. The alternative requires the following:
(a) Items being removed and installed shall be of the same design and construction;
(b) Items being removed shall have no evidence of failure at the time of removal;
(c) Items being rotated shall be removed and installed by mechanical means;
(d) Items being installed shall previously have been in service;
(e) Preservice inspections and pressure tests shall be performed as required by IWA-7000;
(f) The Owner shall maintain a method of tracking the items to ensure traceability of inservice and testing records;
(g) Use of an NIS-2 form is not required except as provided in (i) below;
(h) Testing of removed snubbers and pressure relief valves, including required sample expansions, shall be performed in accordance with the Owner's test program;
(i) Repair or replacement of removed items, when required, shall be performed in accordance with IWA-4000 or IWA-7000.

The DAEC will implement the alternative requirements of Code Case N-508-1 when rotating snubbers and pressure relief valves for the purpose of testing.

INSERVICE INSPECTION RELIEF REQUESTS

The following sections (11 and 12) contain an index and relief requests written in accordance with 10CFR50.55a(a)(3) and (g)(5) when specific ASME Section XI requirements for inservice inspection are considered impractical or pose an undo burden on the licensee. The relief requests contained in Section 12 are subject to change during the course of the ten year inspection interval as a result of changes in technology, plant design or as a result of installed modifications. If examinations or tests are determined to be impractical, or result in hardship or unusual difficulty without a commensurate increase in the level of quality or safety, during the course of the interval, additional or modified relief requests will be submitted in accordance with 10CFR50.55(a)(3) and (g)(5).

The following Table is an index which summarizes each relief request and provides for sequential numbering to maintain continuity for the remaining inspection intervals for DAEC. Relief request numbers in parenthesis are representative of those used during the second ten year inspection interval.

INSERVICE INSPECTION
RELIEF REQUEST INDEX/SUMMARIES

Relief Request	Page(s)	Rev	Date Approved	Summary
NDE-R001 (NDE-001)	12-1 to 12-4	0	New Request	Revised Reactor Vessel Circumferential. Longitudinal. and Meridional Welds Limitations
NDE-R002 (NDE-003)	12-5	1	July, 1987 **Revised**	Exemption criteria for (NDE) examination of Code Class 2 piping systems
NDE-R003 (NDE-011)	12-6	1	9/24/93 **Revised**	Examination of RHR Pump Suction Piping Integral welded attachments HBB-24-H-10-1
NDE-R004 (RR-002)	12-7 to 12-8	3	9/24/93 **Revised**	Repair of "D" outboard MSIV Relief from IWA/IWB-4000 requirements.
NDE-R005 (NDE-012)	12-9 to 12-10	1	**Reissued**	Limited examination of HEA-CC-08 (1 thru 4) RHR Heat Exchanger Integral Attachment Welds.
NDE-R006 (NDE-013)	12-11 to 12-12	1	**Reissued**	Limited examination of Recirculation Bypass Weld RBA-J007
NDE-R007 (NDE-014)	12-13 to 12-14	1	**Reissued**	Limited examination of Recirculation Bypass Weld RBA-J012
NDE-R008 (NDE-015)	12-15 to 12-16	1	**Reissued**	Limited examination of Reactor Water Cleanup Weld CUB-F004
NDE-R009 (NDE-016)	12-17 to 12-20	1	**Reissued**	Limited examination of Residual Heat Removal System Weld RHB-J002
NDE-R010 (NDE-017)	12-21 to 12-23	1	**Reissued**	Limited examination of Recirculation Bypass Weld RBB-J006
NDE-R011	12-24 to 12-25	0	New Request	Use of Existing Calibration Blocks for Ultrasonic Examination of Pressure retaining welds in Reactor Vessel
NDE-R012	12-26 to 12-28	0	New Request	Alternative examination of Class 1 and 2 piping longitudinal seam welds.
NDE-R013	12-29 to 12-30	0	New Request	Expansion criteria for welds governed by Generic Letter 88-01 & NUREG 0313,Rev. 2.
NDE-R014	12-31 to 12-32	0	New Request	Exemption from Appendix III calibration block notch dimensions.
NDE-R015	12-33 to 12-36	0	New Request	Use of the 1989 Addenda of Section XI to govern Repair Procedures (IWX-4000) Replacements (IWX-7000).
NDE-R016	12-37 to 12-38	0	New Request	Successive examination requirements for Class 1 and 2 vessels.

INSERVICE INSPECTION
RELIEF REQUEST INDEX/SUMMARIES

Relief Request	Page(s)	Rev.	Date Approved	Summary
NDE-R017	12-39 to 12-40	0	New Request	Use of the examination requirements, examination method, and acceptance standard of the 1989 Addenda of ASME Section XI for reactor vessel closure head nuts.
NDE-R018	12-41	0	New Request	Alternative rules for the selection and examination of Class 1, 2, and 3 integrally welded attachments
NDE-R019	12-42 to 12-43	0	New Request	Integrally welded shear lugs
NDE-R020	12-44 to 12-45	0	New Request	Use of the 1995 Edition of the O&M Code Subsection ISTD
NDE-R021 (NDE-018)	12-46 to 12-49	1	**Reissued**	RHR Heat Exchanger weld HEA-CB-2
NDE-R022	12-50 to 12-51	0	New Request	Shell-to-Flange Weld VCB-C005
NDE-R023	12-52 to 12-56	0	New Request	Inaccessible welds located at containment penetration assemblies (Code Case N-198-1)
NDE-R024	12-57 to 12-58	0	New Request	Scheduling of Inservice Inspections for Components inspected under Program B (Code Case N-535)

RELIEF REQUEST NUMBER: NDE-R001
(NDE-001)
(Page 1 of 4)

COMPONENT IDENTIFICATION

Code Class: 1
References: IWB-2500
Table IWB-2500-1

Examination Category: B-A
Item Number: B1.11. B1.12. B1.22. B1.30, B1.51
Description: Circumferential Welds (Vessel)
Longitudinal Welds (Vessel)
Meridional Welds (Bottom Head)
Shell to Flange Welds
Repair Welds (Beltline Region)
Component Numbers: Weld numbers as indicated on attached table

CODE REQUIREMENT

Section XI (1989 Edition), Table IWB-2500-1 Category B-A, Item B1.11, B1.12, B1.22, B1.30, B1.51, requires a volumetric examination, which includes essentially 100% of weld length once during the ten year interval.

Relief is requested from performing essentially 100% of the weld length for subject Reactor Vessel Welds as indicated on the attached limited examination table.

BASIS FOR RELIEF

Per Tables IWB 2500-1, applicable Class 1 pressure retaining welds are required to be volumetrically examined, essentially 100% of the weld, once every ten years. DAEC has adopted Code Case N-460 in the ISI Program Plan, as permitted by USNRC Regulatory Guide 1.147, Revision 11. Code Case N-460, and 10CFR50.55 permit a reduction in examination coverage of Class 1 reactor vessel welds provided the coverage reduction is less than 10%. DAEC is requesting relief from the 100% coverage requirements for only the reactor vessel welds in which the examination coverage will be less then 90% as indicated on the attached table.

The DAEC plant design was completed and a license to operate was requested in 1971. The reactor vessel was designed and installed to ASME Section III, 1965 Edition, 1967 Addenda. The parameters for accessibility for Inservice Inspection was not a requirement at that time and therefore not <u>necessarily</u> factored into component and system configurations, thereby creating conditions where ASME Section XI Code required examination coverage of reactor vessel welds can not be obtained.

RELIEF REQUEST NUMBER: NDE-R001
(NDE-001)
(Page 2 of 4)

BASIS FOR RELIEF (Cont'd)

During refueling outages 11, 12 and 13, DAEC performed an extensive weld accessibility study of the reactor vessel using the General Electric GERIS 2000 Ultrasonic examination system. The maximum extent of examination coverage has been outlined on the attached exam limitation table.

ALTERNATE EXAMINATION

DAEC will examine applicable pressure retaining reactor vessel welds to the maximum extent practical within the limitations of the examination technique or design of the component. Should reportable indications be found in the accessible portions of the listed welds, an engineering evaluation will be performed to determine if the inaccessible portion of the weld would be affected.

Subsequent to examination of an affected welds, NDE data sheets will describe in detail, the extent of the limitation (should the extent of examination be less than that indicated in the following table), and any alternative examination techniques used to obtain coverage. This information shall be submitted to the NRC as required.

The inaccessible portions of the reactor vessel welds will continue to be subject to the applicable system pressure test requirements of IWA, and IWB-5000 with a VT-2, visual examination.

APPLICABLE TIME PERIOD

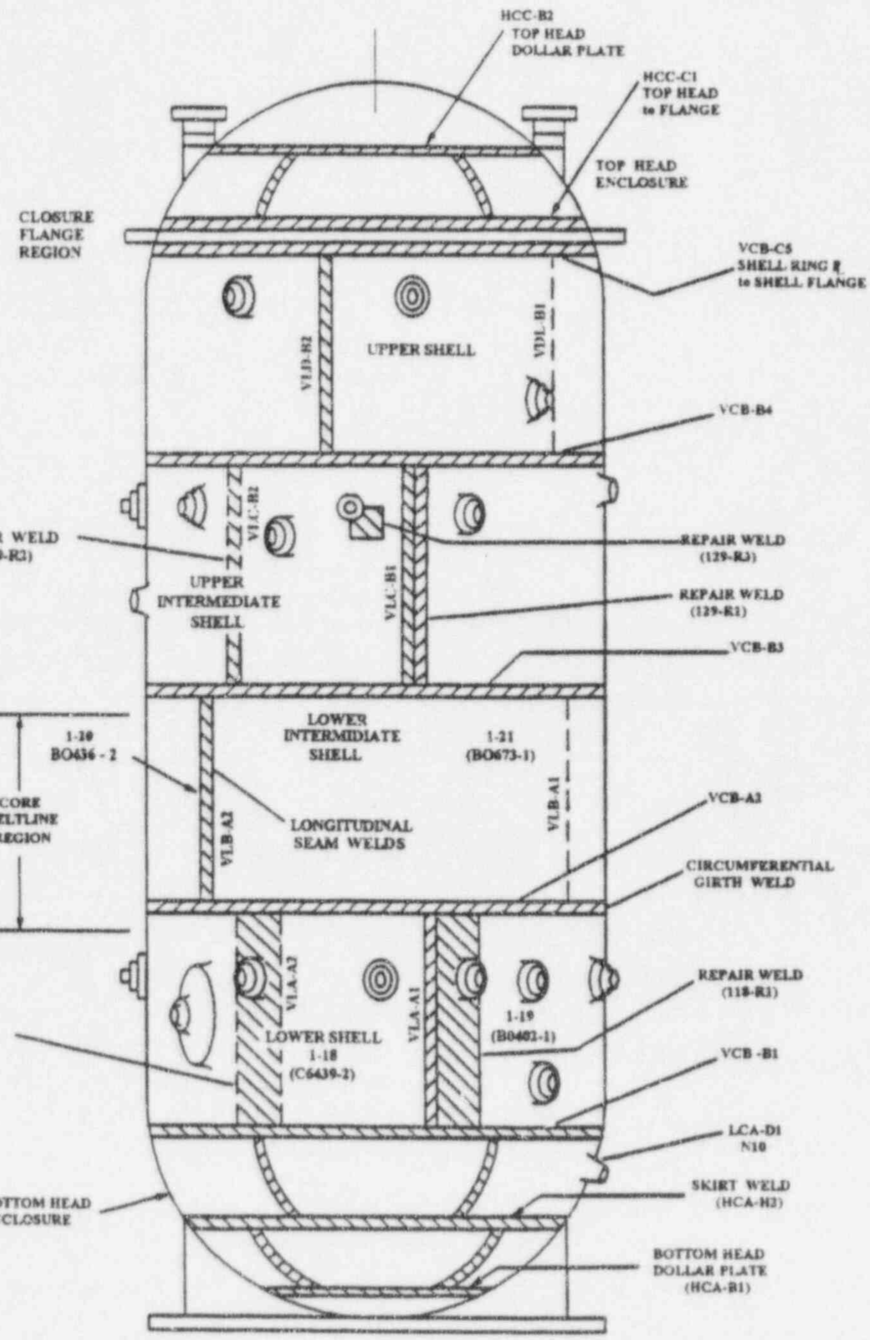
Relief is requested for the third ten-year interval of the Inservice Inspection Program for DAEC.

RELIEF REQUEST NUMBER: NDE-R001
(NDE-001)
(Page 3 of 4)
REACTOR VESSEL WELD LIMITED EXAMINATION TABLE

ASME Item No.	Weld Description	Weld ID	Accessible Exam Coverage	Comments
B1.11	Circumferential weld	VCB-B1	100%	(one side)
B1.11	Circumferential weld	VCB-A2	100%	
B1.11	Circumferential weld	VCB-B3	100%	
B1.11	Circumferential weld	VCB-B4	50%	
B1.12	Longitudinal Welds	VLA-A001	85%	
B1.12	Longitudinal Welds	VLA-A002	85%	
B1.12	Longitudinal Welds	VLB-A001	92%	
B1.12	Longitudinal Welds	VLB-A002	92%	
B1.12	Longitudinal Welds	VLC-B001	100%	
B1.12	Longitudinal Welds	VLC-B002	100%	
B1.12	Longitudinal Welds	VLD-B001	85%	
B1.12	Longitudinal Welds	VLD-B002	85%	
B1.21	Circ Weld (Bott Hd)	HCA-B001	100%	
B1.22	Meridional Welds (Bottom Head)	HMA-B001	84%	
B1.22	Meridional Welds (Bottom Head)	HMA-B002	84%	
B1.22	Meridional Welds (Bottom Head)	HMA-B003	84%	
B1.22	Meridional Welds (Bottom Head)	HMA-B004	84%	
B1.22	Meridional Welds (Bottom Head)	HMA-B005	84%	
B1.22	Meridional Welds (Bottom Head)	HMA-B006	84%	
B1.22	Meridional Welds (Bottom Head)	HMA-B007	39%	
B1.22	Meridional Welds (Bottom Head)	HMA-B008	32%	
B1.22	Meridional Welds (Bottom Head)	HMA-B009	33%	
B1.30	Shell to Flange Welds	VCB-C005	100%	(one side)
B1.51	Repair Welds (Beltline Region)	(VLA-A001) 118 R1	85%	
B1.51	Repair Welds (Beltline Region)	(VLA-A002) 118 R1	85%	

RELIEF REQUEST NUMBER: NDE-R001

(Page 4 of 4)
SKETCH
Reactor vessel



SCHEMATIC OF THE RPV SHOWING ARRANGEMENT
OF VESSEL PLATES AND WELDS

RELIEF REQUEST NUMBER: NDE-R002

(NDE-008)
(Page 1 of 1)

COMPONENT IDENTIFICATION

Code Class:	1
References:	IWB-2412, IWB-2500 IWB-2500-1 Code Case N509 (draft)

Examination Category:	B-K-1
Item Number:	B10.10
Description:	Examination of Integral Attached Supports for Vessels, Piping, Pumps, and Valves
Component Numbers:	Main Steam Attachments; MSA-BK-35, MSB-BK-40, MSC-BK-38, MSD-BK-34

CODE REQUIREMENT

IWB-2500-1 Inspection program B requires a surface examination of 100% of each integral (welded) attachment during the 1st and 2nd inspection intervals only. Code case N-509 requires a sample selection of Class 1 integral attachment welds during the 3rd and 4th interval also.

BASIS FOR RELIEF

Disassembly of the referenced piping restraints would be required to perform the Code required surface examinations. The disassembly process would include the removal of existing welds and re-welding the supports. The requirement to disassemble the class 1 system piping restraint for the sole purpose of performing an examination of the integral attachments has only a very small potential of increasing plant safety margins and a very incommensurate impact on the expenditures of plant manpower and radiation exposure.

ALTERNATE EXAMINATION

Selection of the ASME Class 1, 2, and 3 integral attachments will be performed using guidance provided in Code Case N-509 (draft). Support selection will be in accordance with Code Case N-491. Accessibility and ALARA are primary considerations being employed in determining the sample selection of integral attachments and supports for the third interval inspection program. The subject Main Steam components are not being included in the selection for the third interval inspection program.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection Program for DAEC.

RELIEF REQUEST NUMBER: NDE-R003
(NDE-011)
(Page 1 of 1)

COMPONENT IDENTIFICATION

Code Class: 2
References: IWC-2500
IWC-2500-1

Examination Category: C-C
Item Number: C3.20
Description: Examination of Integral Attachments on Class 2 Piping.
Component Numbers: RHR Pump Suction Piping, RHA-CE009 (HBB-24-H-10-1)

CODE REQUIREMENT

IWC-2500-1 requires a surface examination of 100% of each integral (welded) attachment.

BASIS FOR RELIEF

Due to the date of construction for the DAEC piant, limitations in design and geometry have prohibited the access and examination of the 100% weld length as required by Code. In order to perform examinations on the restricted 20% of each subject weld, the RHR Pump suction piping would need to be elevated and temporarily supported to provide access for the examination personnel. The dose rates in this area are 15 tc 20 MR/Hr. Performing an examination of the integral attachments has only a very small potential of increasing plant safety margins and a very disproportionate impact on the expenditures of plant manpower and radiation exposure.

ALTERNATE EXAMINATION

Selection of the ASME Class 1, 2, and 3 integral attachments will be performed using guidance provided in Code Case N-509 (draft). Support selection will be in accordance with Code Case N-491. Accessibility and ALARA are primary considerations being employed to determine the sample selection of integral attachments and supports for the third interval inspection program. The subject RHR piping components are not being included in the selection for the third interval inspection program.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection Program for DAEC.

RELIEF REQUEST NUMBER: NDE-R004
(RR-0002)
(Page 1 of 2)

COMPONENT IDENTIFICATION

Code Class:	1
References:	IWA-4000 IWB-4000, IWB-4120

Examination Category:	B-M-2
Item Number:	B12.50
Description:	Valve bodies Exceeding NPS 4" Casting Repairs
Component Numbers:	Main Steam Isolation Valve "D" Outboard, CV-4421

CODE REQUIREMENT

ASME Section XI IWA-4000, Requires repairs to be performed in accordance to the owner's design specification and construction code. IWB-4120, requires the complete removal of the defect or flaw. IWB-4230, after final grinding, cavities prepared for welding, shall be examined by magnetic particle or liquid penetrant to ensure indications have been reduced to an acceptable limit in accordance with IWA-3000.

BASIS FOR RELIEF

The subject MSIV is an ASME Section XI Class 1 valve, the body is fabricated from ASTM/ASME SA-216, grade WCB, cast carbon steel, procured under GE Specification 21A9230 Rev. 2. The unacceptable defect was uncovered during a routine maintenance machining operation to correct unacceptable seat leakage. The indication was determined to be a subsurface casting shrinkage brought to the surface by the re-boring operation. An evaluation of the original construction radiographs confirmed the presence of the subsurface defects and that the flaws were acceptable to the radiography requirements. A code repair to the MSIV would require a PWHT of the valve body casting. Prior experience with PWHT has demonstrated that unacceptable distortion of the valve body may occur. Correction of the distortion may not be feasible. Application of imbedded flaw acceptance criteria after performing a weld overlay in the affected area should demonstrate acceptable structural integrity.

ALTERNATE EXAMINATION

1. Excavation of the flaw to a depth not to exceed 20% of the wall thickness (0.6 inch in this case). Perform an MT to document remaining flaw dimensions.

2. Using a 200°F preheat, perform a low heat input, multi-pass weld to fill the excavated cavity. Verify weld integrity by performing a visual examination and hot MT of each layer of the weld metal. Shielded metal arc welding (SMAW), using small diameter electrodes

RELIEF REQUEST NUMBER: NDE-R004
(RR-0002)
(Page 2 of 2)

ALTERNATE EXAMINATION (Cont'd)

will be employed. The fluxing action of the SMAW electrodes (E7018 in this case) will aid in removal of any casting impurities that may be present in the flawed area.

3. Finish machining of the weld and perform an MT of the machined surface.

4. Radiograph of the repaired area to verify that no defects exist in the weld deposit and that the casting around the repaired area meets the original construction code.

5. Demonstrate structural integrity for the remaining embedded flaw by performing bounding analyses using the appropriate Section XI embedded flaw evaluation methods.

6. Radiograph of the repaired area will be performed twice during the next four refueling outages starting with RFO13, RFO14, RFO-15, or RFO-16 (RFO13 and RFO14 were included in the DAEC Second Ten Year Interval).

APPLICABLE TIME PERIOD

This relief was approved for the last period of the second ten-year interval and the first period of the third ten-year interval of the Inservice Inspection Program for DAEC.

RELIEF REQUEST NUMBER: NDE-R005
(NDE-012)
(Page 1 of 2)

COMPONENT IDENTIFICATION

Code Classes: 2
References: IWC-2500
Table IWC-2500-1
Code Case N-509

Examination Categories: C-C
Item Numbers: C3.10
Description: Integral Attachment Welds.
Component Numbers: HEA-CC-08 (1 through 4) RHR Heat Exchanger Integral Attachment Welds.

CODE REQUIREMENT

Section XI (1989 Edition), Table IWC-2500-1 Category C-C, Item C3.10 requires a surface examination of essentially 100% of weld length once during the ten year interval. Relief is requested from performing essentially 100% of the weld length for HEA-CC-08 (1 through 4).

BASIS FOR RELIEF

The design of the support (see attached sketch) does not allow access to the entire length of weld as required for the code examination. In order to perform the surface examination of the inaccessible 14" portion on each support, the RHR heat exchanger would be required to be supported by some alternate supports while the bolts were removed allowing access for the examination. The dose rates in this area are 50 to 70 MR/HR. The benefit of examining the 14" of weld for each support has only a small potential of increasing plant safety margins and a very disproportionate impact on expenditures of plant manpower and radiation exposure.
IES Utilities Inc. proposes to perform a surface examination of the accessible 82.5% of the weld length for one of the four welds (HEA-CC-08, 1 through 4) and utilize the examination coverage specified in Code Case N-460.

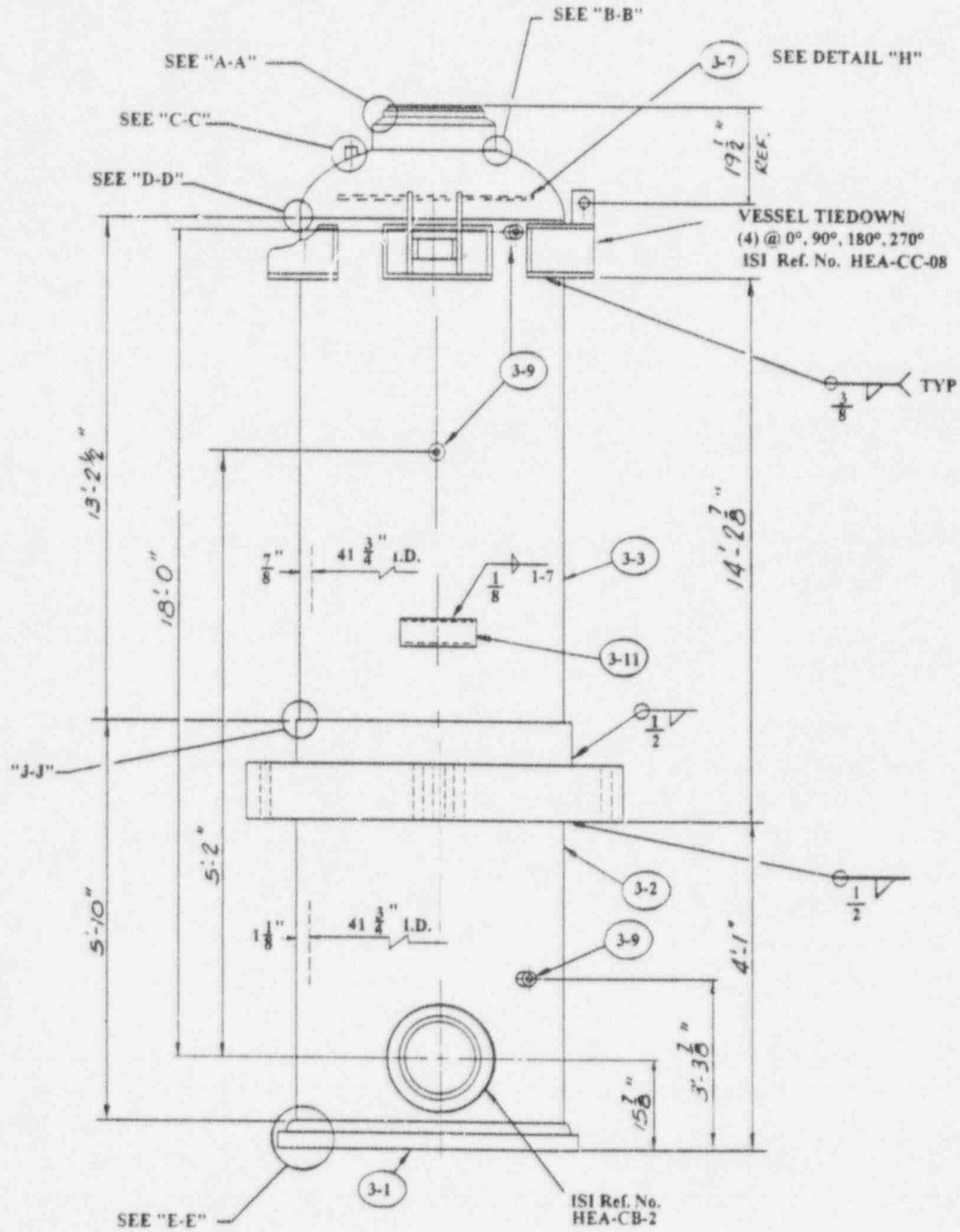
ALTERNATE EXAMINATION

Performing the Code required surface examination of the inaccessible (17.5%) portion of the subject component has only a small potential for increasing plant safety margins and a very disproportionate impact on expenditures of plant manpower and radiation exposure. As an alternative to existing Section XI requirements, DAEC shall perform a surface examination of the accessible (82.5%) portion of the welds on one integral attachment.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection Program for DAEC.

RELIEF REQUEST NUMBER: NDE-R005
(NDE-012)
SKETCH RHR-Hx HEA-CC-08



RELIEF REQUEST NUMBER: NDE-R006
(NDE-013)
(Page 1 of 2)

COMPONENT IDENTIFICATION

Code Classes: 1
References: IWB-2500
Table IWB-2500-1

Examination Categories: B-J
Item Numbers: B9.11
Description: All pressure retaining welds
Component Numbers: Recirculation Bypass Welds RBA-J007.

CODE REQUIREMENT

Section XI (1989 Edition), Table IWB-2500-1 Category B-J, Item B9.11 requires a volumetric examination which includes essentially 100% of weld length once during the ten year interval.

Relief is requested from performing essentially 100% of the weld length for Recirculation Bypass Welds RBA-J007.

BASIS FOR RELIEF

The weld is a tee-to-flange configuration which limits the volumetric (UT) examination to a one-sided exam from the tee side. In addition, the tee configuration limits the one-side examination to 85% of the weld length. In order to perform a radiography of the weld, draining the recirculation system would be required, thus increasing exposure to personnel by a factor of 1.7 (29mr/hr vs. 50mr/hr) for a total of 120mr for the additional 15% coverage. The benefit of examining the additional 15% weld length has only a small potential of increasing plant safety margins and a very disproportionate impact on expenditures of plant manpower and radiation exposure to perform the radiography.

Per Tables IWB 2500-1, applicable Class 1 pressure retaining welds are required to be volumetrically and/or surface examined, essentially 100% of the weld, once every ten years. DAEC has adopted Code Case N-460 in the ISI Program Plan, as permitted by USNRC Regulatory Guide 1.147, Revision 11. Code Case N-460 permits a reduction in examination coverage of Class 1 and 2 welds provided that the coverage reduction is less than 10%.

ALTERNATE EXAMINATION

As an alternative to existing Section XI requirements, DAEC proposes to perform volumetric examination to the accessible portion of the weld and obtain a total of 85% coverage for this weld length. The examination records specified in Code Case N-460 shall be utilized to identify

RELIEF REQUEST NUMBER: NDE-R006
(NDE-013)
(Page 2 of 2)

ALTERNATE PROVISIONS (Cont'd)

the reduction in coverage. To perform the additional 15% of weld length draining the Recirculation System would be required, thus increasing exposure to personnel. The benefit of examining the additional 15% has only a small potential of increasing plant safety margins and a disproportionate impact on expenditures of plant manpower and radiation exposure to perform the radiography.

DAEC will examine applicable pressure retaining piping welds to the maximum extent practical within the limitations of the examination technique or design of the component. Should reportable indications be found in the accessible portions of the listed weld, an engineering evaluation will be performed to determine if the inaccessible portion of the weld would be affected.

Subsequent to examination of an affected weld, NDE data sheets will describe in detail, the extent of the limitation and any alternative examination techniques used to obtain coverage.

The inaccessible portions of the weld will continue to be subject to the applicable system pressure test requirements of IWA, and IWB-5000 with a VT-2, visual examination.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection Program for DAEC. This relief request was implemented during the 2nd Ten Year Interval. This weld was included in the RFO08 Outage Summary Report.

RELIEF REQUEST NUMBER: NDE-R007

(NDE-014)
(Page 1 of 2)

COMPONENT IDENTIFICATION

Code Classes:	1
References:	IWB-2500, Table IWB-2500-1

Examination Categories:	B-J
Item Numbers:	B9.11
Description:	All pressure retaining Welds
Component Numbers:	RBA-J012 Recirculation Bypass Weld

CODE REQUIREMENT

Section XI (1989 Edition), Table IWB-2500-1 Category B-J, Item B9.11 requires a volumetric and/or surface examination which includes essentially 100% of weld length once during the ten year interval.

Relief is requested from performing essentially 100% of the weld length for Recirculation Bypass Welds RBA-J012.

BASIS FOR RELIEF

Relief is requested on the basis that the proposed alternative would provide an acceptable level of quality and safety.

DAEC piping was designed primarily per the United States of America Standards (USAS); B31.1 (1967), Code for Power Piping, and B31.7 (1968 edition with 1970/1971 addenda), the parameters for accessibility and Inservice Inspection was not necessarily always factored into component and piping weld configurations, thereby creating conditions where ASME Section XI Code required examination coverage of certain pipe welds can not be obtained.

Per Tables IWB-2500-1, applicable Class 1 pressure retaining welds are required to be volumetrically and/or surface examined, essentially 100% of the weld, once every ten years. DAEC has adopted Code Case N-460 in the ISI Program Plan, as permitted by USNRC Regulatory Guide 1.147, Revision 11. Code Case N-460 permits a reduction in examination coverage of Class 1 and 2 welds provided that the coverage reduction is less than 10%.

The subject weld is a valve-to-weldolet configuration which limits the volumetric (UT) examination coverage to 76% of the weld length. In order to perform a radiography of the weld, draining the recirculation system would be required, thus increasing exposure to personnel by a factor of 1.7 (29mr/hr vs. 50mr/hr) for a total of 435 mr for the additional 24% coverage.

RELIEF REQUEST NUMBER: NDE-R007

(NDE-014)
(Page 2 of 2)

BASIS FOR RELIEF (Cont'd)

The benefit of examining the additional 24% weld length has only a small potential of increasing plant safety margins and a very disproportionate impact on expenditures of plant manpower and radiation exposure to perform the radiography. During ISI examination of these welds, they were examined to maximum extent practical within the limitations of examination technique and design. Also, these welds have been subjected to system pressure testing during the previous two ten year inspection in accordance IWA, and IWB-5000.

ALTERNATE EXAMINATION

As an alternative to existing Section XI requirements, DAEC proposes to perform volumetric examination utilizing the required 45° shear supplemented with a 70° Refracted Longitudinal exam of the accessible weld and obtain a total of 76% coverage for this weld and utilize the alternative examination coverage report specified in Code Case N-460.

DAEC will examine applicable pressure retaining piping welds to the maximum extent practical within the limitations of the examination technique or design of the component. Should reportable indications be found in the accessible portions of listed weld, an engineering evaluation will be performed to determine if the inaccessible portion of the weld would be affected.

Subsequent to examination of the affected weld, NDE data sheets will describe in detail, the extent of the limitation and any alternative examination techniques used to obtain coverage.

The inaccessible portions of weld will continue to be subject to the applicable system pressure test requirements of IWA, and IWB-5000 with a VT-2, visual examination.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection Program for DAEC. This relief request was implemented during the 2nd Ten Year Interval. RBA-J012 was included in the RFO08 Outage Summary Report.

RELIEF REQUEST NUMBER: NDE-R008
(NDE-015)
(Page 1 of 2)

COMPONENT IDENTIFICATION

Code Classes:	1
References:	IWA-2500, Table IWB-2500-1

Examination Categories:	B-F
Item Numbers:	B5.130
Description:	All pressure retaining welds
Component Numbers:	CUB-F004 Reactor Water Cleanup Weld

CODE REQUIREMENT

Section XI (1989 Edition), Table IWB-2500-1 Category B-F, Item B5.130 requires a volumetric and surface examination which includes essentially 100% of weld length once during the ten year interval.

Relief is requested from performing essentially 100% of the weld length for Reactor Water Cleanup Weld CUB-F004.

BASIS FOR RELIEF

Per Tables IWB 2500-1, applicable Class 1 pressure retaining welds are required to be volumetrically and/or surface examined, essentially 100% of the weld, once every ten years. DAEC has adopted Code Case N-460 in the ISI Program Plan, as permitted by USNRC Regulatory Guide 1.147, Revision 11. Code Case N-460 permits a reduction in examination coverage of Class 1 welds provided that the coverage reduction is less than 10%.

This weld is a elbow-to-valve configuration which limits the volumetric (UT) coverage to a one-sided exam. This results in approximately 70% coverage of the weld length. In order to perform a radiography of the weld, draining the Reactor Water Cleanup System would be required, which would result in an increase in exposure to personnel by a factor of 1.7 (10mr/hr vs. 17mr/hr) for a total of 70 mr for the additional 30% coverage. The benefit of examining the additional 30% weld length has only a small potential of increasing plant safety margins and a very disproportionate impact on expenditures of plant manpower and radiation exposure.

RELIEF REQUEST NUMBER: NDE-R008
(NDE-015)
(Page 2 of 2)

ALTERNATE EXAMINATION

As an alternative to existing Section XI requirements, DAEC proposes to perform volumetric examination of 70% of the weld length. DAEC will examine applicable pressure retaining piping welds to the maximum extent practical within the limitations of the examination technique or design of the component. Should reportable indications be found in the accessible portions of the listed weld, an engineering evaluation will be performed to determine if the inaccessible portion of the weld would be affected.

Subsequent to examination of an affected weld, NDE data sheets will describe in detail, the extent of the limitation and any alternative examination techniques used to obtain coverage.

The inaccessible portions of the weld will continue to be subject to the applicable system pressure test requirements of IWA, and IWB-5000 with a VT-2, visual examination.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection Program for DAEC. This relief request was implemented during the 2nd Ten Year Interval. This weld was examined in the RFO09 Outage Summary Report.

RELIEF REQUEST NUMBER: NDE-R009
(NDE-016)
(Page 1 of 4)

COMPONENT IDENTIFICATION

Code Classes:	1
References:	IWB-2500, Table IWB-2500-1

Examination Categories:	B-J
Item Numbers:	B9.31
Description:	All pressure retaining
Component Numbers:	Residual Heat Removal System Weld RHB-J002

CODE REQUIREMENT

Section XI (1989 Edition), Table IWB-2500-1 Category B-J, Item B9.31 requires a volumetric and surface examination which includes essentially 100% of weld length once during the ten year interval.

Relief is requested from performing volumetric examination of essentially 100% of the weld length for Residual Heat Removal System Weld RHB-J002.

BASIS FOR RELIEF

Per Tables IWB 2500-1, applicable Class 1 pressure retaining welds are required to be volumetrically and/or surface examined, essentially 100% of the weld, once every ten years. DAEC has adopted Code Case N-460 in the ISI Program Plan, as permitted by USNRC Regulatory Guide 1.147, Revision 11. Code Case N-460 permits a reduction in examination coverage of Class 1 welds provided that the coverage reduction is less than 10%.

This weld is a branch connection to weldolet configuration which limits the volumetric (UT) coverage to a one-sided exam. This results in approximately 75% coverage of the weld length. In order to perform a radiography of the weld, the Residual Heat Removal System would be required to be drained, which would result in an increase in exposure to personnel by a factor of 1.7 (200mr/hr vs. 340mr/hr) for a total of 140mr for the additional 25% coverage. This does not include the operational time in valve line-ups and draining the system. The benefit of examining the additional 25% weld length has only a small potential of increasing plant safety margins and a very disproportionate impact on expenditures of plant manpower and radiation exposure.

RELIEF REQUEST NUMBER: NDE-R009
(NDE-016)
(Page 2 of 4)

ALTERNATE EXAMINATION

As an alternative to existing Section XI requirements, DAEC proposes to perform volumetric examination of the 75% weld length. DAEC will examine applicable pressure retaining piping welds to the maximum extent practical within the limitations of the examination technique or design of the component. Should reportable indications be found in the accessible portions of the listed weld, an engineering evaluation will be performed to determine if the inaccessible portion of the weld would be affected.

Subsequent to examination of the affected weld, NDE data sheets will describe in detail, the extent of the limitation and any alternative examination techniques used to obtain coverage.

The inaccessible portions of weld will continue to be subject to the applicable system pressure test requirements of IWA, and IWB-5000 with a VT-2, visual examination.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection Program for DAEC. This relief request was implemented during the 2nd Ten Year Interval. This weld was included in the RFO013 Outage Summary Report.

RELIEF REQUEST NUMBER: NDE-R009
(NDE-016)
(Page 3 of 4)
SKETCH RHB-J002

GE Nuclear Energy

WALL THICKNESS PROFILE SHEET

SITE: DUANE ARNOLD UNIT: 1
PROJECT: 1DX36 TASK: IFJPV
REPORT NO.: I95039

SYSTEM: RHR

COMPONENT ID NO.: RHB-J002

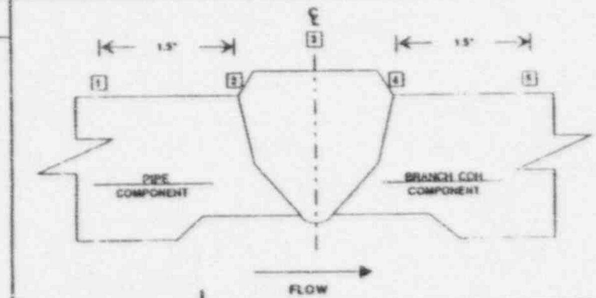
POSITION	0°	90°	180°	270°
1	1.04"	N/A	N/A	N/A
2	1.04"	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	.96"	N/A	N/A	N/A
5	.96"	N/A	N/A	N/A

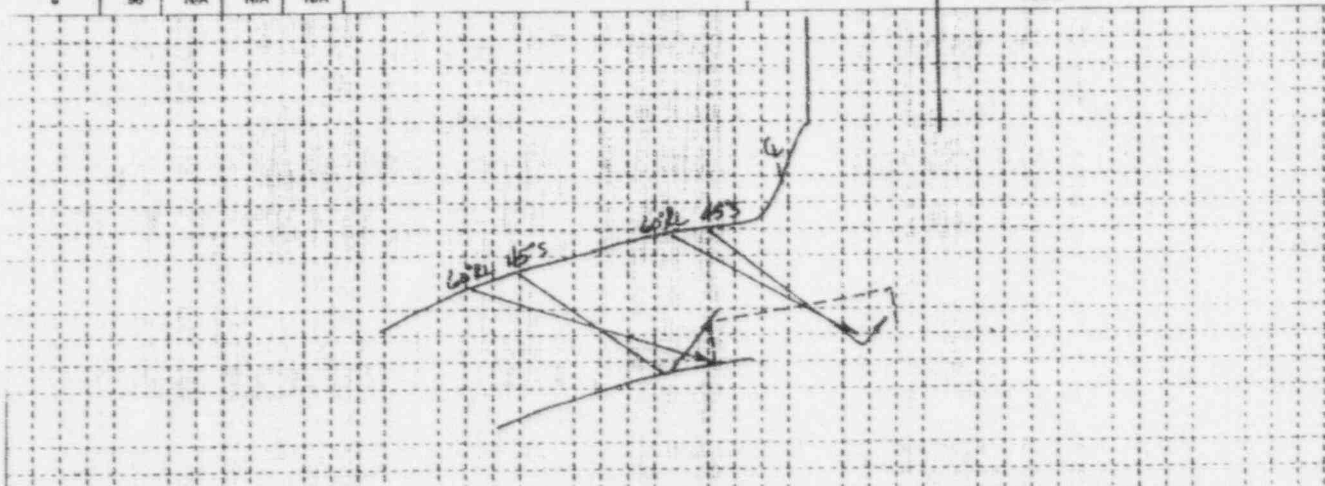
CROWN HEIGHT: FLUSH

CROWN WIDTH: .70"

NOM DIAMETER: 4.0"

WELD LENGTH: 19.50"





DRAWN BY: D. 2 Hill LEVEL: II DATE: 3-25-95
GE REVIEWED BY: [signature] LEVEL: III DATE: 3/30/95

UTILITY LEVEL III REVIEW: [signature] DATE: 3-30-95

ANII REVIEW: William [signature] DATE: 3-31-95

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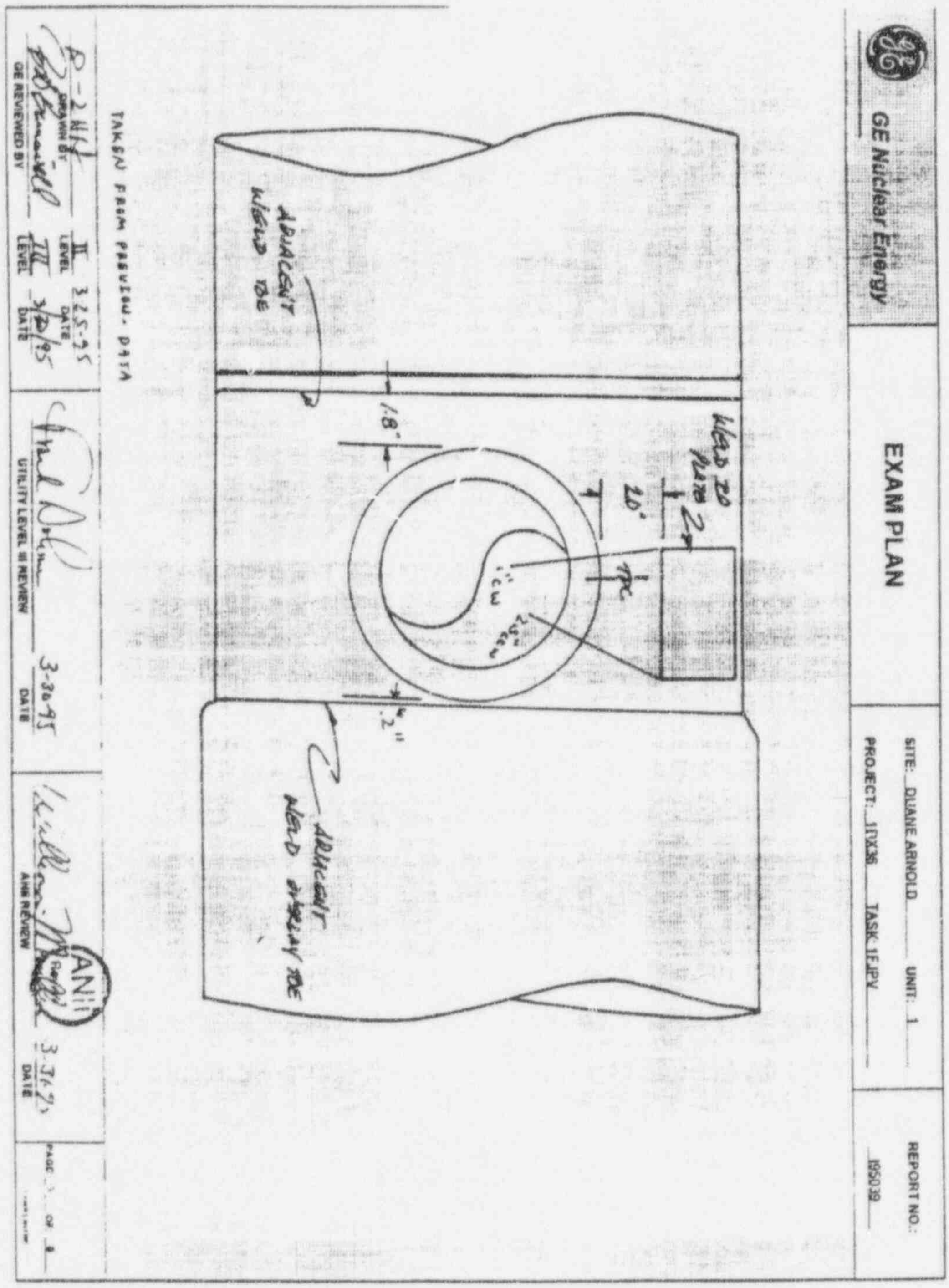
PAGE 1 OF 1

RELIEF REQUEST NUMBER: NDE-R009
(NDE-016)
(Page 4 of 4)
SKETCH RHB-J002



RELIEF REQUEST NUMBER: NDE-R010
(NDE-017)
(Page 1 of 3)

COMPONENT IDENTIFICATION

Code Classes: 1
References: IWB-2500,
Table IWB-2500-1

Examination Categories: B-J
Item Numbers: B9.11
Description: All pressure retaining welds
Component Numbers: Recirculation Bypass Weld RBB-J006

CODE REQUIREMENT

Section XI (1989 Edition), Table IWB-2500-1 Category B-J, Item B9.11 requires a volumetric and surface examination which includes essentially 100% of weld length once during the ten year interval.

Relief is requested from performing volumetric examination of essentially 100% of the weld length for Recirculation Bypass Weld RBB-J006.

BASIS FOR RELIEF

Per Tables IWB-2500-1, applicable Class 1 pressure retaining welds are required to be volumetrically and/or surface examined, essentially 100% of the weld, once every ten years. DAEC has adopted Code Case N-460 in the ISI Program Plan, as permitted by USNRC Regulatory Guide 1.147, Revision 11. Code Case N-460 permits a reduction in examination coverage of Class 1 welds provided that the coverage reduction is less than 10%.

This weld is a pipe to tee configuration which limits the volumetric (UT) coverage to a one-sided exam. This results in approximately 84% coverage of the weld length. In order to perform a radiography of the weld, the Recirculation System would require draining, which would result in an increase in exposure to personnel by a factor of 1.7 (100mr/hr vs. 170mr/hr) for a total of 140mr for the additional 16% coverage. This does not include the operational time in valve line-ups and draining the system. The benefit of examining the additional 16% weld length has only a small potential of increasing plant safety margins and a very disproportionate impact on expenditures of plant manpower and radiation exposure.

RELIEF REQUEST NUMBER: NDE-R010
(NDE-017)
(Page 2 of 3)

ALTERNATE EXAMINATION

As an alternative to existing Section XI requirements, DAEC proposes to perform volumetric examination of the 84% weld length. DAEC will examine applicable pressure retaining piping welds to the maximum extent practical within the limitations of the examination technique or design of the component. Should reportable indications be found in the accessible portions of the listed weld, an engineering evaluation will be performed to determine if the inaccessible portion of the weld would be affected.

Subsequent to examination of the affected weld, NDE data sheets will describe in detail, the extent of the limitation and any alternative examination techniques used to obtain coverage.

The inaccessible portions of the weld will continue to be subject to the applicable system pressure test requirements of IWA, and IWB-5000 with a VT-2, visual examination.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection Program for DAEC. This relief request was implemented during the 2nd Ten Year Interval. This weld was included in the RFO013 Outage Summary Report.

RELIEF REQUEST NUMBER: NDE-R010
(NDE-017)
(Page 3 of 3)
SKETCH RBB-J006

GE Nuclear Energy

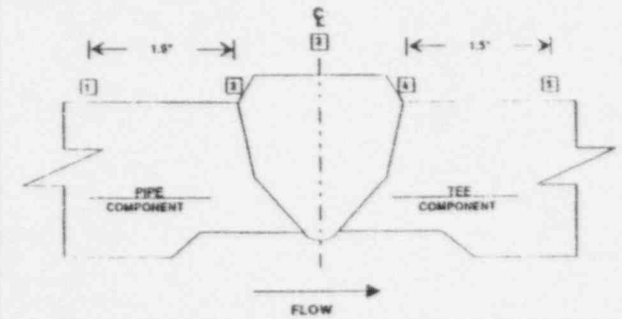
WALL THICKNESS PROFILE SHEET

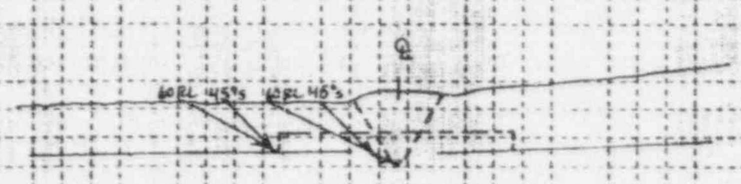
SITE: DUANE ARNOLD UNIT: 1
PROJECT: 1DX36 TASK: IFJPV
REPORT NO.: I95043

SYSTEM: RECIRCULATION
COMPONENT ID NO.: RBB-J006

POSITION	0°	90°	180°	270°
1	N/A	N/A	.35"	N/A
2	N/A	N/A	.36"	N/A
3	N/A	N/A	.48"	N/A
4	N/A	N/A	.40"	N/A
5	N/A	N/A	.49"	N/A

CROWN HEIGHT: .05"
CROWN WIDTH: .60"
NOM DIAMETER: 4.00"
WELD LENGTH: 14.50"





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GE REVIEWED BY (signature)	III	3/28/95					

RELIEF REQUEST NUMBER: NDE-R011

(Page 1 of 2)

COMPONENT IDENTIFICATION

Code Classes: 1
References: IWA-2232
Appendix I. I-2100. Article 4 ASME Section V

Examination Categories: B-A
Item Numbers: B1.10. B1.20. B1.30. B1.40
Description: Use of Existing Calibration Blocks for Ultrasonic Examination of Pressure retaining welds in Reactor Vessel.
Component Numbers : N/A

CODE REQUIREMENT

IWA-2232 states that ultrasonic examination shall be conducted in accordance with Appendix I.

Appendix I, I-2100 states that ultrasonic examination of vessel welds greater than 2 inches in thickness shall be conducted in accordance with Article 4 of section V, as supplemented by Appendix Supplements identified in table I-2000-1.

Article 4 ASME Section V states that the calibration block fabrication and material shall be one of the following; (1) a nozzle dropout, (2) a component prolongation or; (3) material of the same material specification product form, and heat treatment condition as one of the materials being joined.

Appendix I, Supplement 4 states the alternative calibration block design of fig. I-S4 may be used in lieu of blocks fabricated in accordance with Articles 4 and 5 of Section V provided the block meets Supplement 1 of Article 4 and 5 of Section V.

BASIS FOR RELIEF

The RPV calibration blocks currently being used at DAEC, when reviewed against the 1989 ASME Section XI and Section V, were identified as marginal in certain block design characteristic . This is because the requirements and examination techniques existing at the time of their fabrication were significantly different then those employed today. The current block dimensions, while in compliance with the original fabrication requirements, satisfy all but two of the side drilled hole dimensional requirements of the 1989 Section XI Code for calibration standards. Calibration reflectors (side drilled holes), though they do not meet the 1989 Code requirements, have been proven adequate during the last two inspection intervals. Any alterations to the existing calibration standards would be undesirable since the potential is high that the

RELIEF REQUEST NUMBER: NDE-R011

BASIS FOR RELIEF (Cont'd)

alterations may effect comparisons of past calibration and examination results with future examinations. ASME Section XI requirements to detect service induced flaws is directly associated with the ability for traceability to previous examination results available from these existing calibration blocks. This is supported by Regulatory Guide 1.150, Position C.2 which states in part "Where possible, the same calibration block should be used for successive inservice examinations of the same RPV."

It would be impractical to fabricate a new set of calibration blocks and establish new baseline examination values for those affected examinations in order to satisfy current block dimensional requirements. Based on the above, DAEC requests relief from the ASME Section XI, Appendix-I requirements for calibration block design, fabrication requirements and, material specifications, in order to allow the continued use of the existing calibration blocks in the following table:

Cal Blk #	Nominal Pipe Size	Pipe Schedule	Thickness (inches)	Heat No.	Cal Blk Dwg. No.
IE-30	PLATE	N/A	5.5"	B0402	LMT-SK
IE-31	PLATE	N/A	6.625"	P2112	SK-4-7-78
IE-32	PLATE	N/A	6.625"	P2130	SK-4-7-78
IE-33	PLATE	N/A	6.625"	T1937	SK-4-7-78
IE-34	PLATE	N/A	6.625"	P2076	SK-4-7-78
IE-35	PLATE	N/A	4.0"	B0390	SK-4-7-78

ALTERNATE EXAMINATION

All future calibration blocks will meet the design, fabrication, and material specification requirements of ASME Section XI, Appendix I, III, and Article 4 and 5 of ASME Section V, and will be provided with the documentation necessary to demonstrate compliance with these requirements. Additionally, when using existing calibration blocks that lack certain design requirements or appropriate documentation, adequate assurance that the blocks will establish the proper ultrasonic calibration and sensitivity, and a comparison will be made between the attenuation of the calibration block and the material being examined.

A demonstration was conducted to verify that the vessel calibration block (IE-30) is compatible with the ultrasonic equipment that will be utilized for the vessel examination. The results were found to be acceptable under the 1989 Section XI requirements and will be documented under IWA-2240 requirements.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection Program for DAEC.

RELIEF REQUEST NUMBER: NDE-R012

(Page 1 of 3)

COMPONENT IDENTIFICATION

Code Classes: 1 and 2
Reference: IWB-2500, Table IWB-2500-1
IWC-2500, Table IWC-2500-1

Examination Categories: B-J, C-F-1, C-F-2
Item Numbers: B9.11, B9.12, B9.21, B9.22, C5.11, C5.12, C5.21, C5.22, C5.41, C5.42, C5.51, C5.52, C5.81, C5.82
Description: Alternative Examination of Class 1 and 2 Piping Longitudinal Seam Welds.
Component Numbers: Various

CODE REQUIREMENT

Subarticle IWB-2500 of ASME Section XI states that Class 1 components shall be examined and tested as specified in Table IWB-2500-1. Table IWB-2500-1 requires a surface and volumetric examination be performed on longitudinal pipe welds on piping greater than or equal to 4" NPS and a surface examination only on longitudinal pipe welds less than 4" NPS.

Subarticle IWC-2500 of ASME Section XI states that Class 2 components shall be examined and tested as specified in Table IWC-2500-1. Table IWC-2500-1 requires a surface and volumetric examination be performed on longitudinal pipe welds having a nominal pipe wall thickness greater than or equal to 3/8 inch for piping > 4" NPS. It also specifies and requires a surface examination only for those longitudinal pipe welds contained in pipe branch connections having a pipe diameter (in BWR's) greater than 4" NPS.

BASIS FOR RELIEF

Specific relief is requested on the basis that the proposed alternative would provide an acceptable level of quality and safety. The area of the longitudinal seam weld which is most susceptible to failure is that portion immediately adjacent to the circumferential weld. During the circumferential welding process, this area is most likely to undergo material changes, resulting in flaw development and potential failure. This critical area is included in the required volume of material examined during the volumetric scanning of the circumferential weld.

RELIEF REQUEST NUMBER: NDE-R012
(Page 2 of 3)

ALTERNATE EXAMINATION

DAEC proposes as an alternative to the Code required volumetric examination and/or surface examination of Class 1 and 2 longitudinal pipe welds, to perform the examinations in accordance with ASME Section XI Code Case N-524 (draft), "Alternative Examination Requirements for Longitudinal Pipe Welds in Class 1 and 2 Piping ; Section XI, Division 1", which states;

(a) When only a surface examination is required, examination of the longitudinal piping welds is not required beyond those portions of the welds within the examination boundaries of the intersecting circumferential welds.

(b) When both surface and volumetric examinations are required, examination of the longitudinal piping welds is not required beyond those portions of the welds within the examination boundaries of the intersecting circumferential welds provided the following requirements are met;

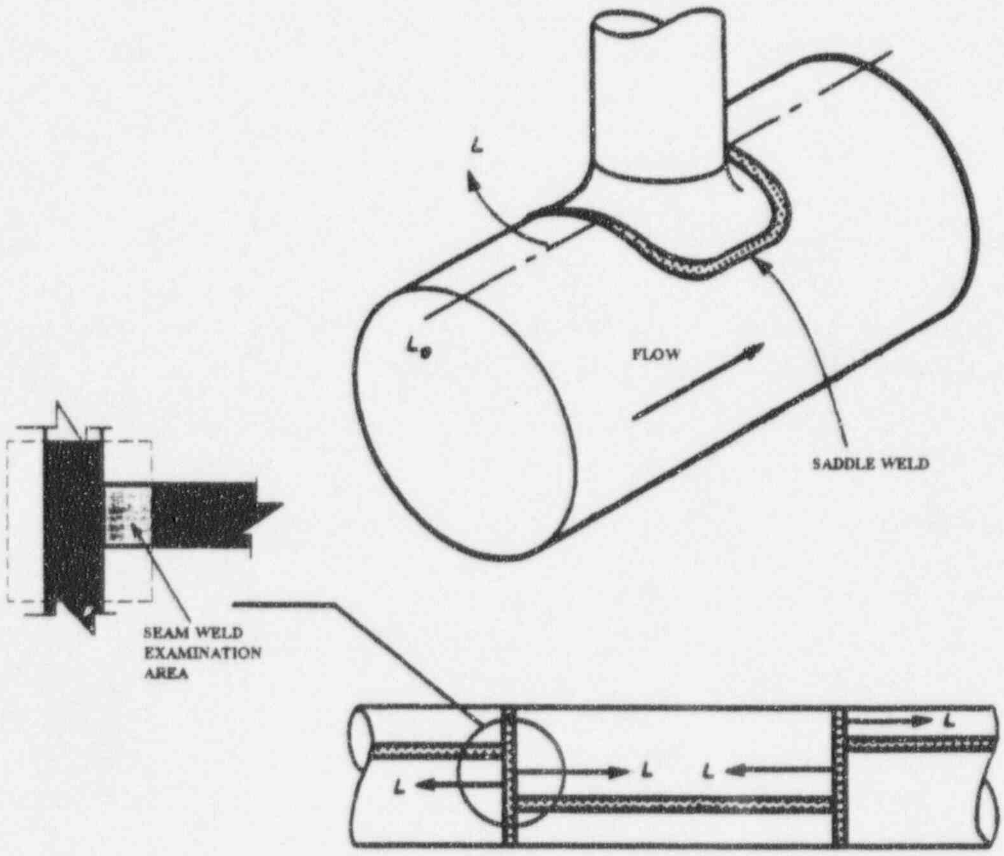
(1) Where longitudinal welds are specified and locations are known, examination requirements shall be met for both transverse and parallel flaws at the intersection of the welds and for that length of the longitudinal weld within the circumferential weld examination volume;

(2) Where longitudinal welds are specified but locations are unknown, or the existence of longitudinal welds is uncertain, the examination requirements shall be met for both transverse and parallel flaws within the entire examination volume of the intersecting circumferential welds.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection program for DAEC.

RELIEF REQUEST NUMBER: NDE-R012
(Page 3 of 3)
SKETCH
Longitudinal Seam



RELIEF REQUEST NUMBER: NDE-R013

COMPONENT IDENTIFICATION

Code Classes:	1
References:	IWB-2430

Examination Categories:	B-F, B-J
Item Numbers:	B5.10, B5.130, B9.11, B9.31,
Description:	Expansion Criteria for Welds Governed by Generic Letter 88-01 and NUREG-0313, Rev. 2.
Component Numbers:	All full penetration circumferential and branch pipe connection welds in austenitic stainless steel piping that is NPS 4 or larger and contains reactor coolant at a temperature greater than 200°F during power operation.

CODE REQUIREMENT

IWB-2430 outlines the additional examinations that must be performed when indications are revealed that exceed the acceptance standards of IWB-3000.

BASIS FOR RELIEF

Each of the subject welds falls under the augmented inspection program required by Generic Letter 88-01, and NUREG-0313, Rev. 2. This program governs examination methods, examination frequency, and sample expansion. The sample expansion requirements of this program are designed such that additional examinations are limited to welds that have the same susceptibility to Intergranular Stress Corrosion Cracking (IGSCC) as the weld in which the flaw was found. This methodology ensures that welds at a high risk for cracking are examined during the same refueling outage, while not requiring expenditure of the Man-Rem and outage time associated with examining additional low risk welds.

In many instances, the examinations performed to meet the requirements of Generic Letter 88-01 are also applied to the percentages required by ASME Section XI. In these cases it is not practical to apply the expansion criteria of both Generic Letter 88-01/NUREG-0313 and ASME Section XI when unacceptable IGSCC flaw indications are identified.

Based on the above, DAEC requests relief from the ASME Section XI requirements for additional examinations when unacceptable flaw indications are identified in the subject welds.

RELIEF REQUEST NUMBER: NDE-R013
(Page 2 of 2)

ALTERNATE EXAMINATION

In instances when examinations are being performed to meet the requirements of Generic Letter 88-01, and also applied to the percentages required by ASME Section XI, DAEC will perform sample expansions as required by Generic Letter 88-01 and NUREG-0313, Rev. 2 should unacceptable IGSCC flaw indications be identified in the welds. The expanded sample will be examined utilizing the volumetric and surface examination techniques.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection program for DAEC.

RELIEF REQUEST NUMBER: NDE-R014

COMPONENT IDENTIFICATION

Code Classes: 1 and 2
References: IWA-2232
Appendix III, 3430

Examination Categories:	B-F, B-J, C-F-1, C-F-2
Item Numbers:	B5.10, B5.130, B9.11, B9.12, B9.31, C5.11, C5.12, C5.51, C5.52
Description:	Exemption from Appendix III Calibration Reflectors Requirements.
Component Numbers:	Use of Existing Calibration Blocks for Ultrasonic Examination of Class 1 and 2 components.

CODE REQUIREMENT

IWA-2232 states that ultrasonic examination shall be conducted in accordance with Appendix I.

Appendix I, I-2200 states that ultrasonic examination of vessel welds less than 2 inches thick and all piping welds shall be conducted in accordance with Appendix III, as supplemented by Appendix I.

Appendix III, III-3430 outlines the calibration reflector requirements for calibration blocks. It basically requires calibration blocks to be fabricated to meet fig. III-3230-2 with the associated notches meeting fig. III-3430-1 and table 3430-1.

BASIS FOR RELIEF

The piping calibration blocks currently being used at the Duane Arnold Energy Center, when reviewed against the 1989 ASME Section XI Code, were identified as marginal in certain notch dimensional requirements. There are a total of 50 piping calibration blocks, of which 36 were identified with some inconsistencies with the code required dimensions. The inconsistencies identified were notches slightly shorter than required, notches not as deep as required, notches not a minimum of 1.5" away from the edge of the block, and notches deeper than required.

It would be impractical to fabricate a new set of calibration blocks in order to satisfy the notch requirements of the current code nor would it be justifiable to machine the notches to meet the dimensional requirements. In order to accurately compare the successive examinations performed the same calibration block should be used. This is supported by Regulatory Guide 1.150, position C.2 which states in part "Where possible, the same calibration block should be used for successive inservice examinations of the same RPV."

RELIEF REQUEST NUMBER: NDE-R014

BASIS FOR RELIEF (Cont'd.)

The calibration blocks with notches slightly shorter than the 1" required are listed below:

IE-06, IE-07, IE-09, IE-10, IE-11, IE-15, IE-19, IE-21, IE-22, IE-48, IE-54, IE-55, IE-56, IE-59, IE-60, IE-61

The notch length has no effect on the sensitivity of the examination and therefore would not require any additional machining.

The calibration blocks with notches not as deep as required are listed below:

IE-02, IE-03, IE-06, IE-07, IE-08, IE-09, IE-10, IE-11, IE-12, IE-13, IE-14, IE-19, IE-21, IE-22, IE-24, IE-25, IE-26, IE-27, IE-28, IE-29, IE-48, IE-49, IE-52, IE-53, IE-54, IE-57

The notch at a shallower dimension than required would result in a more sensitive examination because the reference DAC curve would be established at a higher dB value. Therefore, to maintain continuity between examinations no additional machining will be performed.

The calibration blocks with notches less than 1.5" from the edge of the block are listed below:

IE-08, IE-28, IE-29, IE-39, IE-45, IE-46, IE-47, IE-48, IE-49, IE-50, IE-51, IE-52, IE-53, IE-56, and IE-57

This is a 1989 Appendix III requirement (ref. Fig. III-3230-2) and was not applicable when these blocks were fabricated. These blocks generally conform to the design shown in III-3230-2 as stated in III-3430, which states in part "Alternate block design and layout may be used, provided similar beam paths are utilized." All of the calibration blocks identified above do use similar beam paths which are not effected by the edge of the block.

The calibration block with notches deeper than allowed is IE-18. This block is a 4" sch. 80 SS block. The worst case notch is outside the 10% tolerance (ref. Table III-3430-1) by +.0046". A calibration comparison between the notch that meets the requirements and the one that doesn't, was performed with a 5 MHz, 1/4" dia. transducer with a 45° wedge. The signal difference from the "within tolerance notch" and the "outside tolerance notch" is a -.3 dB, which is negligible and barely distinguishable difference and would not have effected the scanning or recording level of the examination.

ALTERNATE EXAMINATION

Based on the above, Duane Arnold Energy Center requests relief from the ASME Section XI, Appendix III requirements for calibration block notch dimensions, in order to allow the continued use of the existing calibration blocks as supported by Reg. Guide 1.150. All future calibration blocks will be designed and fabricated to the requirements of Appendix III of the 1989 Edition of ASME Section XI.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection Program for DAEC.

RELIEF REQUEST NUMBER: NDE-R015
(Page 1 of 4)

COMPONENT IDENTIFICATION

Code Classes:	1, 2, and 3
References:	IWA, IWB, IWC, IWD, and IWF-4000 (IWX-4000) IWA, IWB, IWC, IWD, and IWF-7000 (IWX-7000)

Examination Category:	Not Applicable
Item Number:	Not Applicable
Description:	Use of the 1989 Addenda of Section XI to Govern Repair Procedures (IWX-4000) and Replacements (IWX-7000)
Component Numbers:	All Class 1, 2, and 3 pressure retaining components and their supports.

CODE REQUIREMENT

IWX-4000 provides the rules and requirements for repair of pressure retaining components and their supports, and for the attachment of replacements to the system by welding or brazing.

IWX-7000 provides the rules and requirements for the specification and construction of items to be used for replacement.

BASIS FOR RELIEF

The 1989 Addenda to Section XI made several changes to Articles IWX-4000 and IWX-7000. Very few of these changes were technical in nature. Instead, the changes restructured some of the requirements, clarified others that were difficult to interpret, and eliminated redundant requirements. Of the actual technical changes made, these changes either add enhancements to the program, add requirements not applicable to DAEC, or delete requirements for the use of Section III for installation of non-welded piping joints and allow the use of the original code of construction.

The following is a detailed summary of each of the changes made to IWX-4000 and IWX-7000 in the 1989 Addenda to Section XI.

IWA-4130: This section was restructured to differentiate between a repair program and a repair plan. The repair program is the document or set of documents that defines the managerial and administrative control for the completion of repairs. The repair plan is the document that identifies the essential requirements for

RELIEF REQUEST NUMBER: NDE-R015

BASIS FOR RELIEF (Cont'd)

IWA-4130: (Cont'd) completion of the repair. This section also includes additional items that must be identified in the repair plan. These items include, but are not limited to :

1. The Code Edition of Section XI governing the repair.
2. The original construction code for the item being repaired.
3. The construction code applicable to the repair.
4. A description of the work to be performed.
5. Material requirements.

IWA-4322: This section was clarified to specify that material must be mechanically removed from thermally processed areas.

IWA-4700: Seal welds were added to the items exempted from hydrostatic testing. Also, the statement identifying repairs not exempted from hydrostatic testing was deleted. There was no need for this statement since this section already identifies the only repairs that could be exempted.

IWA-7320: The title of this section was changed from "Welding" to "Installation". The section was changed to address individual requirements for installation by welding or brazing and installation by mechanical methods. Also, it now delineates specific requirements for pressure testing mechanical connections. Prior to the 1989 Addenda, the requirements for pressure testing mechanical connections were only inferred by IWA-5214.

IWB-4300: This section on heat exchanger tube sleeving was added. However, since DAEC has no Class 1 heat exchangers, this change has no effect on the program.

IWB-7100: The scope was changed from "installation of replacements" to "Class 1 system replacements". Also a reference to the requirements of IWA-7000 now applies.

IWB-7300: The title of this section was changed from "Installation not Requiring Welding" to "Mechanical Joints and Connections".

IWB-7320: This section (Bolted Connections) was deleted. This change allows the use of the original construction code for determining bolt size and torquing loads, in lieu of the methods specified in Section III, Appendix E.

RELIEF REQUEST NUMBER: NDE-R015
(Page 3 of 4)

BASIS FOR RELIEF (Cont'd)

IWB-7400: This section (Installation Requiring Welding) was deleted. There was no need for this section since the same requirements are already identified in IWA-7320.

IWB-7600: This section (Materials) was deleted. There was no need for this section since the same requirements are already identified in IWA-7200.

IWC-7200: This number was changed to IWC-7100. Also, the section was changed to state that the rules of IWA-7000 apply. The only technical difference this change makes is that it allows the use of the original construction code for determining bolt size and torquing loads, in lieu of the methods specified in Section III, Appendix E. This is because the change eliminates the requirement to follow the rules of IWB-7320.

IWC-7300: This section (Non-welded Piping Joints) was deleted. This change allows non-welded piping joints to meet the requirements of the original construction code, in lieu of those specified in NC-3671.

IWC-7600: This section (Materials) was deleted. There was no need for this section since the same requirements are already identified in IWA-7200.

IWD-7200: This number was changed to IWD-7100. Also, the section was changed to state that the rules of IWA-7000 apply. The only technical difference this change makes is that it allows the use of the original construction code for determining bolt size and torquing loads, in lieu of the methods specified in Section III, Appendix E. This is because the change eliminates the requirement to follow the rules of IWB-7320.

IWD-7300: This section (Non-welded Piping Joints) was deleted. This change allows non-welded piping joints to meet the requirements of the original construction code, in lieu of those specified in NC-3671.

IWD-7600: This section (Materials) was deleted. There was no need for this section since the same requirements are already identified in IWA-7200.

IWF-7000: The title of this section was changed from "Scope" to "General Requirements". Also, the section was changed to state that the rules of IWA-7000 apply.

IWF-7300: This section (Installation not Requiring Welding), which was simply a title, was deleted.

RELIEF REQUEST NUMBER: NDE-R015

BASIS FOR RELIEF (Cont'd)

IWF-7310: This section (Mechanical Joints) was deleted. There was no need for this section since the same requirements are already identified in IWA-7200.

IWF-7400: This section (Installation Requiring Welding) was deleted. There was no need for this section since the same requirements are already identified in IWA-7320.

IWF-7600: This section (Materials) was deleted. There was no need for this section since the same requirements are already identified in IWA-7200.

It is felt that use of the aforementioned Edition and Addenda of Section XI will provide the basis for an enhanced Inservice Inspection Program.

Based on the above, DAEC requests relief from the rules and requirements of the 1989 Edition of ASME Section XI, for Repair Procedures (IWX-4000) and Replacements (IWX-7000).

ALTERNATE EXAMINATION

DAEC will use the 1989 Edition of ASME Section XI, as amended by the 1989 Addenda, to govern Repair Procedures (IWX-4000) and Replacements (IWX-7000).

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection Program for DAEC.

RELIEF REQUEST NUMBER: NDE-R016
(Page 1 of 2)

COMPONENT IDENTIFICATION

Code Classes: 1 and 2
References: IWB-2420
IWC-2420

Examination Categories: Various
Item Numbers: Various
Description: Successive Examinations of Class 1 and 2 Vessels
Component Numbers: Various

CODE REQUIREMENT

IWB-2420 and IWC-2420 outline the successive examinations that must be performed when indications are revealed that exceed the acceptance standards of IWB-3000 and IWC-3000, respectively.

BASIS FOR RELIEF

Relief is requested on the basis that the alternatives would provide an acceptable level of quality and safety.

Industry experience has shown that most vessel flaws located during inservice inspection volumetric examinations are not planar or crack-like; they are embedded volumetric anomalies resulting from material manufacture or component fabrication, e.g., laminations, mid-plate segregates, slag, side-wall lack of fusion, etc. Similarly, most of those flaws are located mid-wall or in a neutral zone with regard to stresses. Analysis show these type of flaws to be non-propagating or benign for growth considerations. The industry's ultrasonic examination capability for flaw identification is available and has been readily demonstrated. The expense and additional radiation exposure to perform out-of interval or unscheduled examinations of benign embedded fabrication flaws are extensive and do not offer any commensurate increase in safety.

ALTERNATE EXAMINATION

As an alternative to IWB-2420 and IWC-2420, DAEC will not perform successive examinations per the requirements of IWB-2420 and IWC-2420 on vessel flaws which through analysis, have been determined to originate from material manufacture or fabrication subject to the following limitation:

a) The flaw is characterized as subsurface in accordance with IWA-3000 and is not located within 1/4 t of the material outer surface;

RELIEF REQUEST NUMBER: NDE-R016
(Page 2 of 2)

ALTERNATE PROVISIONS (Cont'd)

b) The NDE technique and evaluation which identified and characterized the flaw as originating from material manufacture or fabrication is documented in the flaw evaluation report; and

c) The flaw has been determined acceptable for continued service in accordance with IWB-3132.4, or IWC-3122.4, and demonstrated to have acceptable growth until the next scheduled inspection or the end of service lifetime of the component.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection program for DAEC.

RELIEF REQUEST NUMBER: NDE-R017

(Page 1 of 2)

COMPONENT IDENTIFICATION

Code Class:	1
References:	IWB-2500 Table IWB-2500-1

Examination Category:	B-G-1
Item Number:	B6.10
Description:	Use of the Examination Requirements. Examination Method, and Acceptance Standard of the 1989 Addenda of ASME Section XI for Reactor Vessel Closure Head Nuts.
Component Numbers:	All reactor vessel closure head nuts

CODE REQUIREMENT

IWB-2500 states that components shall be examined and tested as specified in Table IWB-2500-1.

Table IWB-2500-1 requires a surface examination to be performed on reactor vessel closure head nuts.

BASIS FOR RELIEF

Table IWB-2500-1 of the 1989 Edition of ASME Section XI requires a surface examination to be performed on the reactor vessel closure head nuts. However, Table IWB-2500-1 does not provide the corresponding "Examination Requirements/Figure Number" and "Acceptance Standard". These provisions were still in the course of preparation.

Provisions for the "Examination Requirements/Figure Number" and "Acceptance Standard" for the reactor vessel closure head nuts were later incorporated in the 1989 Addenda of ASME Section XI. This Addenda also changed the examination method to a VT-1 visual examination.

It would be impractical to follow the incomplete examination requirements for the reactor vessel closure head nuts delineated in the 1989 Edition of ASME Section XI, when the 1989 Addenda has incorporated the complete examination requirements.

Based on the above, DAEC requests relief from the requirements specified in Table IWB-2500-1 of the 1989 Edition of ASME Section XI for reactor vessel closure head nuts.

RELIEF REQUEST NUMBER: NDE-R017

ALTERNATE EXAMINATION

As an alternate examination, DAEC will perform a VT-1 visual examination of the surface of all reactor closure head nuts, utilizing the acceptance criteria of IWB-3517, as delineated in the 1989 Addenda to ASME Section XI.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection Program for DAEC.

RELIEF REQUEST NUMBER: NDE-R018
(Page 1 of 1)

COMPONENT iDENTIFICATION

Code Class: 1, 2, and 3
References: Tables iWB, IWC and IWD-2500-1

Examination Category: B-H, B-K-1, C-C, D-A, D-B, and D-C
Description: Alternative Rules For the Selection and Examination of Class 1, 2, and 3 Integrally Welded Attachments.
Component Numbers: All Integrally Welded Attachments in Examination Categories B-H, B-K-1, C-C, D-A, D-B, and D-C.

CODE REQUIREMENT

Table IWB-2500-1, Category B-K-1 requires a volumetric or surface examination as applicable of integrally welded attachments exceeding 5/8" design thickness.

Table IWC 2500-1, Category C-C requires a surface examination of all integrally welded attachments exceeding 3/4" design thickness.

Table IWD 2500-1, Category D-A and D-B require a visual (VT-3) examination of all integrally welded attachments corresponding to those component supports selected by IWF-2510(b).

BASIS FOR RELIEF

Specific relief is requested on the basis that the proposed alternative would provide an acceptable level of quality and safety. Code Case N-509, "Alternative Rules for the Selection and Examination of Integrally Welded Attachments, Section XI, Division 1", provides an alternative to the Tables of IWB/C/D-2500-1 for integrally welded attachments. The alternative requires a surface examination (IWB/ IWC), of 10% of the integrally welded attachments associated with the component supports selected for examination under IWF-2510 and a visual examination for 10 % of the selected integrally welded attachments for IWD. In addition an examination is required whenever component support member deformation is identified. This Code Case recognizes the results of over 20 years of inservice inspections and the considerable attention that component supports have received through NRC bulletins.

ALTERNATE EXAMINATION

In lieu of performing the Code required examinatio EC proposes to examine integrally welded attachments in accordance with Code Case N-5 [illegible] rements.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection Program for DAEC.

RELIEF REQUEST NUMBER: NDE-R019

COMPONENT IDENTIFICATION

Code Class: 1 and 2
References: IWB and IWC-2500
Tables IWB and IWC-2500-1
Code Case N-509

Examination Category: B-K-1 and C-C
Description: Integrally Welded Shear Lugs
Component Numbers: Applicable Integrally Welded Attachments

CODE REQUIREMENT

IWB-2500 states that components shall be examined and tested as specified in Table IWB-2500-1.

Table IWB-2500-1, Category B-K-1 requires a volumetric or surface examination as applicable of integrally welded attachments exceeding 5/8" design thickness.

IWC-2500 states that components shall be examined and tested as specified in Table IWB-2500-1.

Table IWC 2500-1, Category C-C requires a surface examination of all integrally welded attachments exceeding 3/4" design thickness.

BASIS FOR RELIEF

Specific relief is requested on the basis that the proposed alternative would provide an acceptable level of quality and safety.

Certain of the integrally welded attachments on class 1 and 2 pipe supports are shear lugs adjacent to a pipe clamp or restraint. The shear lugs on horizontal piping runs prevent movement along the axis of the pipe. The shear lugs on vertical piping runs transfer load from the pipe to the support in the downward direction. Shear lugs are typically welded on the two sides orthogonal to the support by a groove plus a fillet weld as shown in Figure IWB-2500-15 or IWC-2500-5(a). Sometimes the shear lug is attached by a fillet all around as shown in Figure IWC-2500-5(b). In order to examine 100% of the surface for 1/2" on either side of the weld, the pipe clamp or restraint must be disassembled. The Code does not usually require a component to be disassembled solely for examination. Disassembly may require considerable time, the erection of an alternate support and, depending on the location, may result in significant exposure. Examining the accessible portions of the lug without removing the clamp will cover, at a minimum, approximately 80% of the required surface and is sufficient to detect service induced flaws in the attachment welds.

RELIEF REQUEST NUMBER: NDE-R019
(Page 2 of 2)

ALTERNATE EXAMINATION

In lieu of performing the Code required examinations. DAEC proposes to examine integrally welded attachments in accordance with applicable Code requirements to the maximum extent practical without removal of the clamp. The applicable NDE data record will describe in detail the extent of the limitation and be available for review. If indications are detected adjacent to the intervening piping clamp, the clamp will be removed to further evaluate the flaw.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection Program for DAEC.

RELIEF REQUEST NUMBER: NDE-R020

COMPONENT IDENTIFICATION

Code Classes:	1, 2, and 3
References:	ASME, Section XI, IWF-5000 (1989 Edition) ASME / ANSI OM-1995, Subsection ISTD Code Case N-491 (TAP-I008)

Examination Category:	F-A
Item Number:	F1.10, F1.20, F1.30, & F1.40
Description:	Use of the 1995 Edition of ASME / ANSI OM, Subsection ISTD
Component Numbers:	All Class 1, 2, and 3 Snubbers

CODE REQUIREMENT

IWF-5000 references the use of ASME / ANSI OM-1987, Part 4 for rules governing visual inspection & functional testing of Class 1, 2, & 3 snubers.

BASIS FOR RELIEF

Changes incorporated in the 1995 Edition of ASME / ANSI OM, Subsection ISTD have eliminated several conflicts with other codes & standards and has provided more detail / guidance, making this edition much easier to implement. Very few of these changes were technical in nature.

The following is a summary of the 1995 Edition of ASME / ANSI OM, Subsection ISTD changes having significance to DAEC;

ISTD 1.1	Applicability was expanded to include all Safety Related Snubbers. The OM-1987, Part 4, edition applied only to ASME Class 1, 2, 3, and MC Component Snubbers.
ISTD 2.1	Examination Boundary shall include the snubber assembly from pin to pin, inclusive. ASME, Section XI, IWF-1000, will be utilized from building structure-to-snubber and snubber-to-pressure retaining component. The OM-1987, Part 4, edition does not provide a clear examination boundary.
ISTD 6.5	Inservice examination intervals are based on refueling cycles in lieu of number of months.
Table ISTD 6.5.2-1	Visual examination table is based on refueling outage frequencies (This table is identical to DAEC's current Technical Specification requirements). The OM-1987, Part 4, edition is based on calendar months.

RELIEF REQUEST NUMBER: NDE-R020
(Page 2 of 2)

BASIS FOR RELIEF (Cont'd)

ISTD 7.1 Drag force testing of mechanical snubbers only. The OM-1987, Part 4, edition requires drag force testing for both mechanical & hydraulic snubbers. The industry has determined that drag test requirements for hydraulic snubbers is unnecessary.

ALTERNATE EXAMINATION

DAEC will use the 1995 Edition of ASME / ANSI OM, Subsection ISTD for snubber testing with the following deviations and additions:

Testing of accessible snubbers may be performed during the operating cycle. Test frequency will be based on refueling outages.

DAEC will maintain a Service Life Monitoring Program for all safety related snubbers. The Service Life Monitoring Program shall include the following as a minimum;

- An initial snubber life shall be predicted.
- Service Life shall be reevaluated at least once each refueling cycle based on service data or other information.
- If a snubber's service life will be exceeded prior to the next refueling outage, the snubber will be replaced, reconditioned, or a technical justification for extended life will be prepared.
- A root cause evaluation will be performed for any examination or test failure.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection Program for DAEC.

RELIEF REQUEST NUMBER: NDE-R021
(NDE-018)
(Page 1 of 4)

COMPONENT IDENTIFICATION

Code Class:	2
References:	IWC-2500 Table IWC-2500-1

Examination Category:	C-B
Item Number:	C2.21
Description:	Pressure retaining nozzle to shell welds in vessel Fig. IWC-2500-4 (a) through (b)
Component Numbers:	RHR Heat Exchanger weld HEA-CB-2

CODE REQUIREMENT

Code requires a volumetric and surface examination of essentially 100% of the weld volume as indicated in the sketch IWC-2500-4 (b).

BASIS FOR RELIEF

This weld is of a shell to nozzle configuration which limits the volumetric (UT) coverage to a one-sided examination. In addition, the nozzle is located next to the tube sheet flange which limits the volumetric examination coverage. This results in approximately 71% volumetric coverage of the weld length. In order to perform a radiograph of the weld, the Residual Heat Removal System would require draining, and either the pipe or the tube sheet would need to be opened to provide access to the internal surfaces resulting in excessive exposure to personnel. It is calculated that the additional exposure would be a factor of 1.7 (12mr/hr. vs. 20mr/hr.) for a total of 50mr of additional dose to examine the inaccessible 29% of the weld. In order to remove the pipe from the RHR nozzle, the pipe would need to be cut in two places and then reassembled by welding requiring approximately 102 hours of maintenance time plus the additional preservice examination required for the new welds to reassemble the system. Total dose for the project would be about 2R. Removal of the tube sheet is not desirable since several of the RHR Heat Exchanger tubes would need to be removed along with the tube sheet. The benefit of examining the additional 29% of the weld length has a small potential of increasing plant safety margins and a very disproportionate impact on expenditures of plant manpower and radiation exposure.

As stated in 10CFR50.55a(g)(1) and (g)(4), for plants whose construction permits were issued prior to January 1, 1971, components shall meet the requirements set forth in ASME Section XI to the extent practical within the limitations of design, geometry and materials of construction of the component. Sketch HEA-CB-2 clearly illustrate the geometric constraints designed into the RHR Heat Exchanger nozzle, making the subject examination requirements impractical.

RELIEF REQUEST NUMBER: NDE-R021
(NDE-018)

ALTERNATE EXAMINATION

As an alternative examination, DAEC shall volumetric examination the accessible 71% of the nozzle to shell weld length, and perform the code required surface examination. DAEC shall also be implementing the alternative examination coverage allowed by Code Case N-460.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection Program for DAEC.

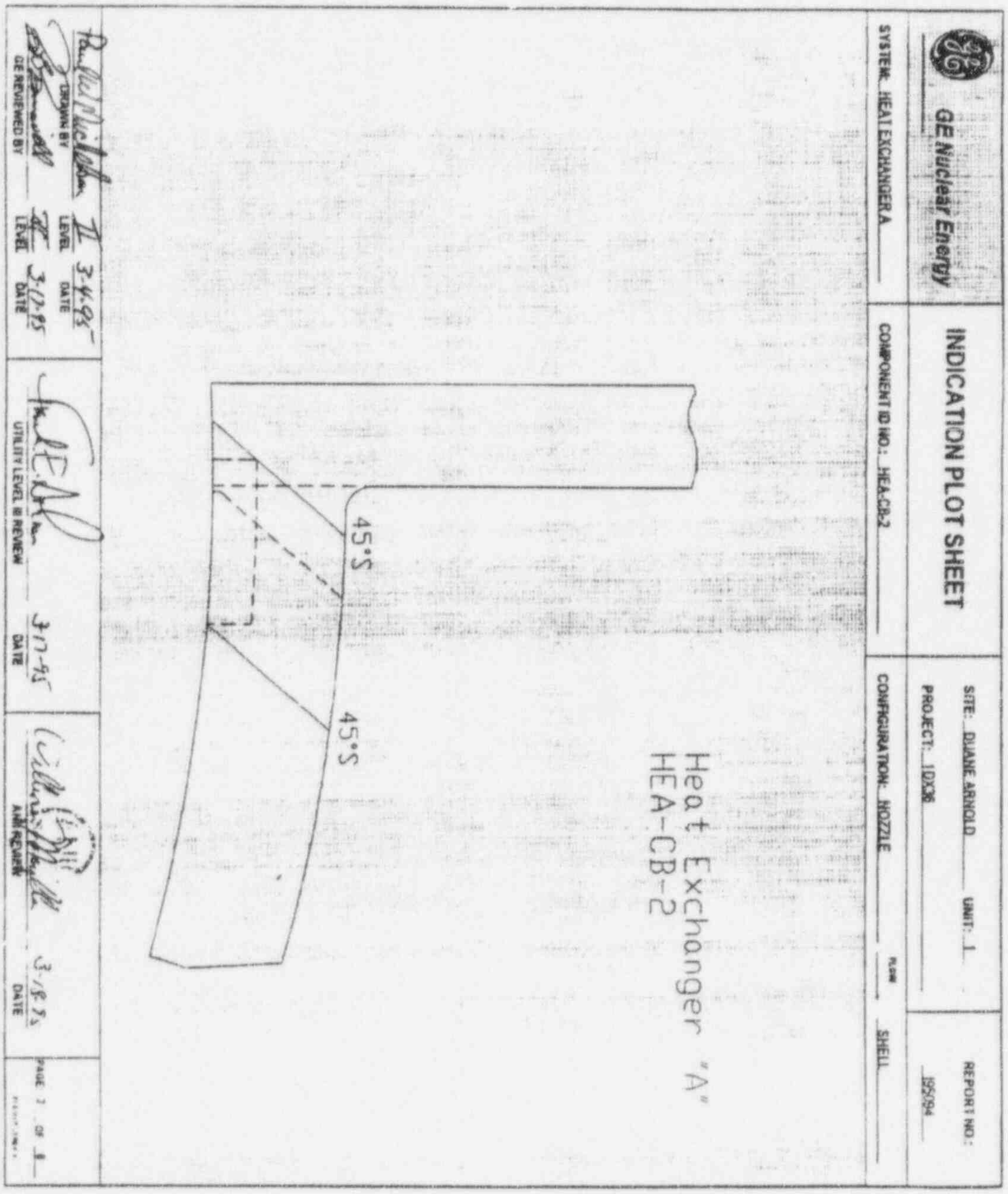
RELIEF REQUEST NUMBER: NDE-R021

(NDE-018)

(Page 3 of 4)

SKETCH HEA-CB-2

RHR Heat Exchanger nozzle-to-shell



RELIEF REQUEST NUMBER: NDE-R021

(NDE-018)

(Page 4 of 4)

SKETCH HEA-CB-2

RHR Heat Exchanger nozzle-to-shell

GE Nuclear Energy

INDICATION PLOT SHEET

SYSTEM: HEAT EXCHANGER A

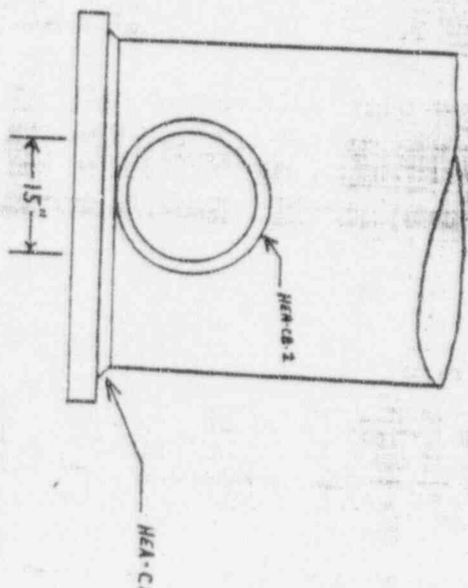
COMPONENT ID NO.: HEA-CB-2

SITE: DUANE ARNOLD UNIT: 1

PROJECT: 1DX36

CONFIGURATION: NOZZLE FLOW SHELL

REPORT NO.: I95094



DRAWN BY LEVEL II DATE 3-4-95

GE REVIEWED BY LEVEL III DATE 2-7-95

UTILITY LEVEL III REVIEW DATE 3-17-95

ANII REVIEW DATE 3/17/95

PAGE 1 OF 1

RELIEF REQUEST NUMBER: NDE-R022
(Page 1 of 2)

COMPONENT IDENTIFICATION

Code Class: 1
References: IWB-2500
Table IWB-2500-1

Examination Category: B-A
Item Number: B1.30
Description: Shell to Flange Welds

Component Numbers: VCB-C005, Reactor Vessel Shell to Flange Weld

CODE REQUIREMENT

Section XI (1989 Edition), Table IWB-2500-1 Category B-A, Item B1.30, requires a volumetric examination, which includes essentially 100% of weld length once during the ten year interval.

Note 4 of Table IWB-2500-1 states "The examination of shell-to-flange welds may be performed during the first and third inspection periods in conjunction with the nozzle examinations of Exam. Cat. B-D (Program B). At least 50% of shell-to-flange welds shall be examined by the end of the first inspection period, and the remainder by the end of the third inspection period.

Relief is requested from performing 50% of the weld length during the first inspection period for the subject Reactor Vessel Shell-to-Flange Weld.

BASIS FOR RELIEF

NUREG 0619, 4.3.1 states in part "Should future developments and the results of inservice UT examinations demonstrate that UT techniques can detect small nozzle thermal fatigue cracks with acceptable reliability and consistency these techniques could then form the basis for modification of the inspection criteria that follow." The DAEC has performed this demonstration and plans on performing the UT examination of our feedwater nozzles during RFO14. In order to save exposure and manpower all vessel weld examinations were deferred to RFO14 (1996). This included the remaining 1/3 (252° to 0°) of the subject shell-to-flange weld which is to complete the required examination for the 2nd Ten Year Interval. The DAEC will be scheduling the first period examinations required for the Third Ten Year Interval during RFO14 to reduce exposure and manpower and to utilize the specialized examination equipment needed to perform the NUREG 0619 feedwater examinations. In order to meet the requirements for the Third Ten Year Interval an additional 50% of the weld VCB-C005 would be required to be examined in RFO14. The total amount of the weld VCB-C005 examined in RFO14 would be approximately 83%. Thus exceeded the intent of the code by 33% in one period even though the extra 33% is being examined to complete the prior interval requirements. The DAEC proposes to examine a total of

RELIEF REQUEST NUMBER: NDE-R022

BASIS FOR RELIEF (Cont'd)

50% of VCB-C005 during RFO14 (33% to complete the 2nd Ten Year Interval requirements and an additional 17% to be credited to the Third Ten Year Interval). The area that will be examined is 252° to 72° equaling 50% of the total length of weld. To perform a total of 83% during RFO14 has a small potential of increasing plant safety margins and a very disproportionate impact on expenditures of plant manpower and radiation exposure. In order to maintain the successive examination requirement (ref IWB-2420) the area examined during RFO14 (first period of the Third Ten Year Interval) will be examined during the first period of the Fourth Ten Year Interval. The following table shows the history and proposed future examinations of VCB-C005:

	1st Interval	2nd Interval	3rd Interval	4th Interval
Period 1	108° - 252°	0° - 108°	0° - 72°	252° - 72°
Period 2	0° - 108°	108° - 252°		
Period 3	252° - 0°	252° - 0°	72° - 252°	72° - 252°

ALTERNATE EXAMINATION

DAEC will examine a total of 50% of the shell-to-flange weld (VCB-C005) during RFO14 with 33% being credited to the 2nd Ten Year Interval and 17% being credited to the Third Ten Year Interval. The area examined will be scheduled for the first period of the 4th Ten Year Interval in order to meet the successive examination requirement under IWB-2420.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection Program for DAEC.

RELIEF REQUEST NUMBER: NDE-R023
(Page 1 of 5)

COMPONENT IDENTIFICATION

Code Class: 1
References: IWB-2500
Table IWB-2500-1
Examination Category: B-J
Item Number: B9.11, B9.12, B9.21
Description: Inaccessible Welds Located at Containment Penetration Assemblies
(See Attached Tables for Component IDs)

CODE REQUIREMENT

IWB-2500 states that components shall be examined and tested as specified in Table IWB-2500-1.

Table IWB-2500-1 requires volumetric and surface examinations to be performed on circumferential welds NPS 4 and larger and surface examinations to be performed on circumferential welds les than NPS 4.

BASIS FOR RELIEF

Each of the lines identified in the attached table penetrates the primary containment by means of a penetration assembly similar in design to those shown in Figures 1 and 2. These lines, due to the design of the penetration assembly, have at least one circumferential pressure retaining weld that is inaccessible for surface and volumetric examination.

As stated in 10 CFR 50.55a(g)(1) and (g)(4), for plants whose construction permits were issued prior to January 1, 1971, components shall meet the requirements set forth in ASME Section XI to the extent practical within the limitations of design, geometry and materials of construction of the components.

Figures 1 and 2 clearly illustrate the design constraints which make the subject welds inaccessible for examination by surface or volumetric techniques.

Based on the above, the DAEC requests relief from the ASME Section XI requirements for surface and volumetric examinaton of the subject welds. This is supported by Code Case N-198.

RELIEF REQUEST NUMBER: NDE-R023

ALTERNATE EXAMINATION

As an alternate examinaton, the DAEC will perform a VT-2 visual examination in the annular area of each of the subject penetration assemblies each refueling outage in conjunction with the Class 1 System Leakage or Hydrostatic Test.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection Program for DAEC.

RELIEF REQUEST NUMBER: NDE-R023
(Page 3 of 5)

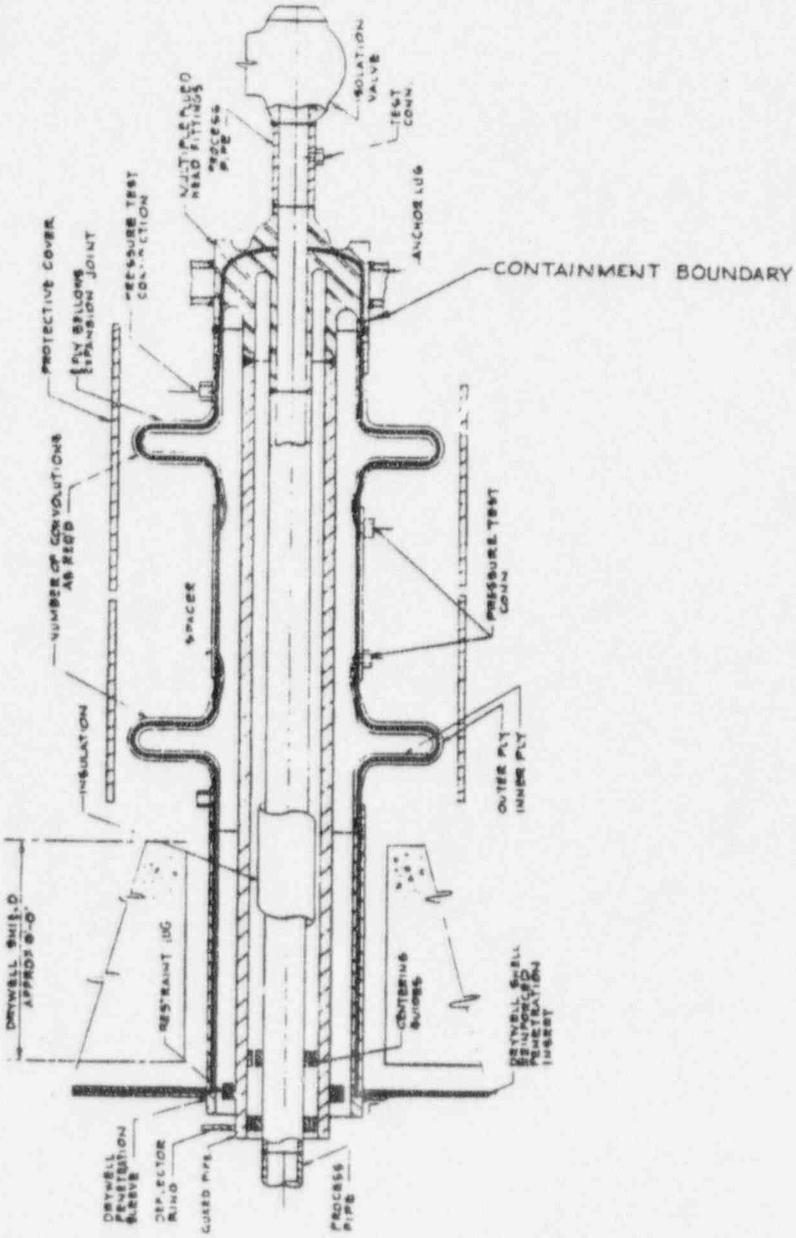


Figure 1

RELIEF REQUEST NUMBER: NDE-R023
(Page 4 of 5)

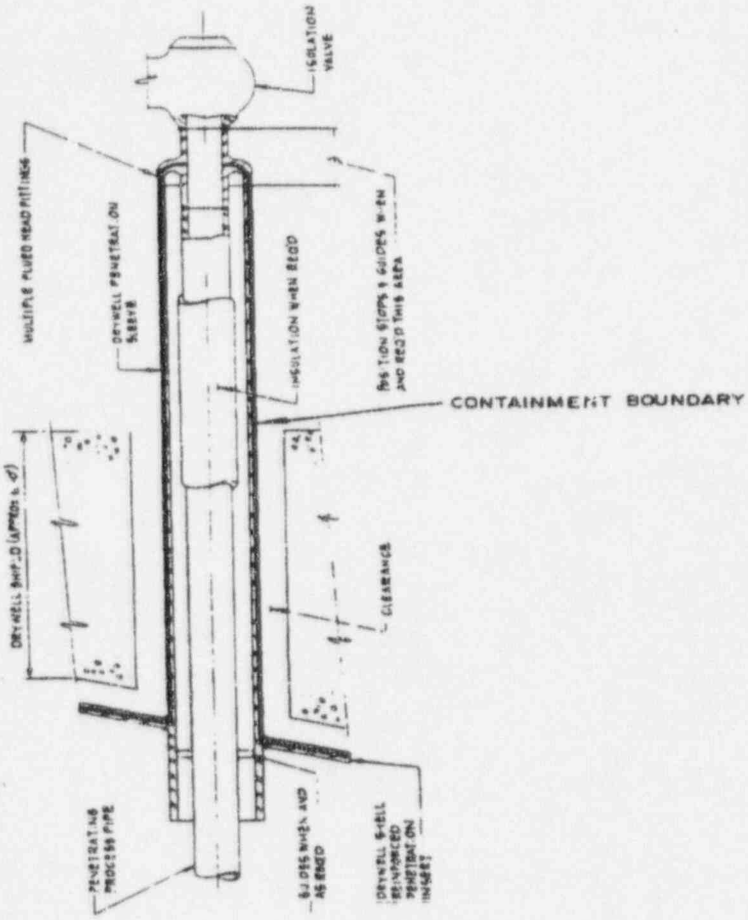


Figure 2

RELIEF REQUEST NUMBER: NDE-R023
(Page 5 of 5)

SYSTEM	PENETRATION	FIGURE	# WELDS PER PENETRATION
MAIN STEAM	X-7A	FIGURE 1	1
MAIN STEAM	X-7B	FIGURE 1	1
MAIN STEAM	X-7C	FIGURE 1	1
MAIN STEAM	X-7D	FIGURE 1	1
FEEDWATER	X-9A	FIGURE 1	1
FEEDWATER	X-9B	FIGURE 1	1
CORE SPRAY	X-16A	FIGURE 1	1
CORE SPRAY	X-16B	FIGURE 1	1
HPCI	X-11	FIGURE 1	1
RWCU	X-15	FIGURE 1	1
CONTROL ROD	X-36	FIGURE 2	1
RHR	X-12	FIGURE 1	1
RHR	X-13A	FIGURE 1	1
RHR	X-13B	FIGURE 1	1
RCIC	X-10	FIGURE 1	1
STANDBY LIQUID	X-42	FIGURE 2	1
MAIN STEAM DRAIN	X-8	FIGURE 2	1

RELIEF REQUEST NUMBER: NDE-R024

COMPONENT IDENTIFICATION

Code Class: 1, 2, and 3
References: IWA-2430(d)

Examination Category:	Not Applicable
Item Number:	Not Applicable
Description:	Scheduling of Inservice Inspections for Components inspected under Program B.

CODE REQUIREMENT

IWA-2430(d) states "For components inspected under Program B, each of the inspection intervals may be extended or decreased by as much as 1 year. Adjustments shall not cause successive intervals to be altered by more than 1 year from the original pattern of intervals."

IWB-2500-1, Cat. B-A, Note 4 states "The examination of shell-to-flange welds may be performed during the first and third inspection periods in conjunction with the nozzle examinations of Exam. Cat. B-D (Program B). At least 50% of shell-to-flange welds shall be examined by the end of the first inspection period, and the remainder by the end of the third inspection period."

IWB-2500-1, Cat. B-D, Note 2 states "At least 25% but not more than 50% (credited) of the nozzles shall be examined by the end of the first inspection period, and the remainder by the end of the inspection interval."

BASIS FOR RELIEF

NUREG 0619, 4.3.1 states in part "Should future developments and the results of inservice UT examinations demonstrate that UT techniques can detect small nozzle thermal fatigue cracks with acceptable reliability and consistency these techniques could then form the basis for modification of the inspection criteria that follow." The DAEC has performed this demonstration and plans on performing the UT examination of our feedwater nozzles during RFO14. In order to save exposure and manpower all vessel weld examinations were deferred to RFO14. The DAEC has also scheduled the first period examinations required for the Third Ten Year Interval during RFO14 to reduce exposure and manpower and to utilize the specialized examination equipment needed to perform the NUREG 0619 feedwater examinations. In order to meet the requirements of the two notes above 50% of the vessel-to-flange weld (VCB-C005) (Ref Relief Request NDE-R022) and a total of 13 Nozzle-to-vessel welds with the associated inner radius (38% of 34 total nozzles) has been scheduled to be completed in RFO14. The DAEC has also scheduled an additional 8 Nozzle-to-safeend welds to be credited to the Third Ten Year Interval during RFO14.

RELIEF REQUEST NUMBER: NDE-R024
(Page 2 of 2)

ALTERNATE EXAMINATION

The DAEC will perform the necessary examinations per Table IWB-2500-1 Cat B-A, Note 4 and Cat. B-D, Note 2 during RFO14. The DAEC RFO14 encompasses both the Third Period of the Second Ten Year Interval and the First Period of the Third Ten Year Interval. This approach has been accepted by Code Case N-535 as long as the examinations performed are not credited to both intervals. The additional examinations performed in RFO14 will not be credited to both intervals and the Summary Report shall identify the interval in which the examinations will be credited.

The DAEC plans on utilizing Code Case N-535 for future outages and will follow the requirements specified in the code case.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection Program for DAEC.

Pressure Test Summary Table

As an alternative to existing Section XI requirements for pressure testing, DAEC will adopt the provisions of Code Case N-498-1.

In lieu of performing a hydrostatic pressure test at a pressure above nominal operating pressure or system pressure for which overpressure protection is required, as required by Table IWA-5210-1 of the Code, Examination Categories B-E, B-P, C-B, C-H, D-A, D-B, and D-C, a system pressure test at nominal operating pressure and temperature shall be performed using the categories and item numbers as indicated below to control the System Pressure Testing program.

ISI Class	Category	Item Number	
		Operational	Hydrostatic
Class 1	B-P	B15.10	B15.11
Class 2	C-H	C7.10	C7.20
Class 3	D-B	D2.10	D2.20

The proposed alternate item numbers meet the intent of the ASME Section XI Code because the examination requirements, examination method, acceptance standard, extent, and frequency of examination remain unchanged.

System Pressure Testing Summary Table
(Page 2 of 7)

System	Class	Exam Category	Item No.	Test Type	Freq. /Mo.	P&ID Sheet #	Relief Request	Technical Approach & Position
	1	B-P	B15.10	IWB-5221	Refuel	M-103		
NSSS			B15.11		Outage	M-104		TAP-P001
(MS)						M-114		TAP-P007
(FW)						M-122		TAP-P010
(MSIVLCS)	2	C-H	C7.10	IWC-5221	40	M-123	PR-001	TAP-P011
			C7.20			M-124	PR-003	TAP-P013
(Leakage)						M-125		
	3	D-B	D2.10	IWD-5221	40	M-147		
			D2.20			M-160		
			B4.10	IWB-5222				
NSSS			B4.11			M-103		
(MS)		B-E	B4.12			M-104		
(FW)	1		B4.13			M-114		
(MSIVLCS)		B-P	B15.10			M-122		
			B15.11			M-123		TAP-P001
(Hydro)						M-124		TAP-P007
						M-125	PR-001	TAP-P010
	2	C-H	C7.10	IWC-5222	120	M-147	PR-003	TAP-P011
			C7.20			M-160	PR-005	TAP-P013
	3	D-B	D2.10	IWD-5223				
			D2.20					
RWCU	1	B-P	B15.10	IWB-5221	40/	M-116	PR-001	TAP-P001
			B15.11		120	M-127	PR-003	TAP-P010
				IWB-5222				TAP-P011
SBLC			B15.10	IWB-5221		M-115	PR-001	
(Leakage)	1	B-P	B15.11		40	M-126	PR-003	TAP-P001
	2	C-H	C7.10	IWC-5222				TAP-P010
			C7.20					TAP-P011

System Pressure Testing Summary Table
(Page 3 of 7)

System	Class	Exam Category	Item No.	Test Type	Freq. /Mo.	P&ID Sheet #	Relief Request	Technical Approach & Position
SBLC (Hydro)	1	B-P	B15.10 B15.11	IWB-5221	120	M-115	PR-001 PR-003	TAP-P001
	2	C-H	C7.10 C7.20	IWC-5222		M-126		TAP-P010 TAP-P011
CS LOOP A	1	B-P	B15.10 B15.11	IWB-5221 IWB-5222	40 /120	M-121	PR-001 PR-003	TAP-P001 TAP-P010 TAP-P011 TAP-P013
	2	C-H	C7.10 C7.20	IWC-5221 IWC-5222				
CS LOOP B	1	B-P	B15.10 B15.11	IWB-5221 IWB-5222	40 /120	M-121	PR-001 PR-003	TAP-P001 TAP-P010 TAP-P011 TAP-P013
	2	C-H	C7.10 C7.20	IWC-5221 IWC-5222				
HPCI	1	B-P	B15.10 B15.11	IWB-5221 IWB-5222	40 /120	M-103 M-114 M-122 M-123	PR-001 PR-003 PR-006 PR-007	TAP-P001 TAP-P003 TAP-P010 TAP-P011 TAP-P012 TAP-P013
	2	C-H	C7.10 C7.20	IWC-5221 IWC-5222				
	3	D-B	D2.10 D2.20	IWD-5223 IWD-5222				

System Pressure Testing Summary Table
(Page 4 of 7)

System	Class	Exam Category	Item No.	Test Type	Freq. /Mo.	P&ID Sheet #	Relief Request	Technical Approach & Position
RBCCW	2	C-H	C7.10 C7.20	IWC-5221 IWC-5222	40 /120	M-112	PR-002 PR-003	TAP-P010 TAP-P011
RCIC	1	B-P	B15.10 B15.11	IWB-5221 IWB-5222	40 /120	M-114 M-124 M-125 M-103	PR-001 PR-003	TAP-P001 TAP-P010 TAP-P011 TAP-P012 TAP-P013
	3	D-B	D2.10 D2.20	IWD-5223 IWD-5222				
RHR LOOP A	1	B-P	B15.10 B15.11	IWB-5221 IWB-5222	40 /120	M-116 M-119 M-120 M-121 M-134	PR-001 PR-003	TAP-P001 TAP-P010 TAP-P011 TAP-P012 TAP-P013
	2	C-H C-B	C7.10 C7.20	IWC-5221 IWC-5222				

System Pressure Testing Summary Table

System	Class	Exam Category	Item No.	Test Type	Freq. /Mo.	P&ID Sheet #	Relief Request	Technical Approach & Position
RHR LOOP B	1	B-P	B15.10 B15.11	IWB-5221 IWB-5222	40 /120	M-116 M-119 M-120 M-121 M-134	PR-001 PR-003	TAP-P001 TAP-P009 TAP-P010 TAP-P011 TAP-P012 TAP-P013
	2	C-H C-B	C7.10 C7.20	IWC-5221 IWC-5222				
RHR	3	D-B	D2.10 D2.20	IWD-5221 IWD-5223	40 /120	M-119 M-134	PR-001 PR-003	TAP-P010 TAP-P012
SUMPS DRAINS	2	C-H	C7.10 C7.20	IWC-5221 IWC-5222	40 /120	M-137 M-186	PR-002	TAP-P010
FPC	Aug.	D-B	D2.10 D2.20	IWD-5221 IWD-5223	40 /120	M-134	PR-001 PR-003	TAP-P010 TAP-P011
Condensate	Aug.	D-B	D2.10 D2.20	IWD-5221 IWD-5223	40 /120	M-109	PR-001 PR-003	TAP-P010 TAP-P011
RHRSW LOOP A/B	3	D-B	D2.10 D2.20	IWD-5222 IWD-5223	40 /120	M-113 M-119 M-120 M-129 M-132 M-144 M-146	PR-001 PR-003	TAP-P006 TAP-P010 TAP-P011 TAP-P012 TAP-P013

System Pressure Testing Summary Table

(Page 6 of 7)

System	Class	Exam Category	Item No.	Test Type	Freq. /Mo.	P&ID Sheet #	Relief Request	Technical Approach & Position
ESW LOOP A/B	3	D-B	D2.10 D2.20	IWD-5222 IWD-5223	40 /120	M-113 M-119 M-120 M-121 M-142 M-144 M-146 M-169 sh 2 M-169 sh 3 M-171 M-173	PR-001 PR-003	TAP-P006 TAP-P010 TAP-P011 TAP-P012 TAP-P013
EMERG DIESEL	3	D-B	D2.10 D2.20	IWD-5221 IWD-5223	40 /120	M-132 sh 1 M-132 sh 2 M-132 sh 3		TAP-P010 TAP-P011
INSTR/SERV AIR/N2	2	C-H	C7.10 C7.20	IWC-5221 IWC-5222	40 /120	M-114 M-130	PR-002 PR-003	TAP-P010 TAP-P011
CRD's	1	B-E B-P	B4.10 B4.12 B15.10 B15.11	IWB-5221 IWB-5222	40 /120	M-117 M-118	PR-001 PR-003	TAP-P001 TAP-P004 TAP-P005 TAP-P010 TAP-P011 TAP-P012 TAP-P013
	2	C-H	C7.10 C7.20	IWC-5221 IWC-5222				

System Pressure Testing Summary Table
(Page 7 of 7)

System	Class	Exam Category	Item No.	Test Type	Freq. /Mo.	P&ID Sheet #	Relief Request	Technical Approach & Position
CAD CAC	2	C-H	C7.10 C7.20	IWC-5221 IWC-5222	40 /120	M-120 M-143 sh 1-3 M-181	PR-001	TAP-P010 TAP-P011
RECIR Pump Instr	2	C-H	C7.10 C7.20	IWC-5221 IWC-5222	40 /120		PR-001	TAP-P010 TAP-P011
RX. VES INSTRU	1	B-P	B15.10 B15.11	IWB-5221 IWB-5222	40 /120	M-115 M-116	PR-001	TAP-P001 TAP-P010 TAP-P011
WELL Wtr.	2	C-H	C7.10 C7.20	IWC-5221 IWC-5222	40 /120	M-157	PR-003	TAP-P010 TAP-P011
RIVER Wtr.	3	D-B	D2.10 D2.20	IWD-5221 IWD-5222 IWD-5223	40 /120	M-129 M-146	PR-001 PR-003	TAP-P002 TAP-P010 TAP-P011

SYSTEM PRESSURE TESTING
TECHNICAL APPROACH AND POSITION INDEX/SUMMARIES

Position	Page(s)	Rev.	Date Approved	Summary
TAP-P001 (NDE-09)	15-1 to 15-2	1	2/14/92 **Revised**	System Leakage and Hydrostatic Testing of Class 1 Pressure Retaining Components
TAP-P002 (HT-001)	15-3	2	5/1/86 **Revised**	Isolated piping between check valve and stop valves in River water system
TAP-P003 (HT-002)	15-4	1	5/1/86 **Revised**	Isolated piping between check valve and MO-2300 in HPCI system
TAP-P004 (HT-004)	15-5	1	5/1/86 **Revised**	Isolated piping and components associated with the CRD Hydraulic system
TAP-P005 (HT-005)	15-6 to 15-7	1	5/1/86 **Revised**	Piping and components associated with the CRD insert and withdrawal system
(HT-006)	N/A	0	5/1/86 **Not Reqd**	Recirc. Pump seal pressure sensing line piping. (Owner upgrade class 1)
TAP-P006 (HT-007)	15-8	1	5/1/86 **Revised**	Isolated piping downstream of PSE-2079A in the ESW and RHRSW system
(HT-008)	N/A	0	5/1/86 **Not Reqd**	Non-isolated piping and components associated with the Class 2 NSS system
(HT-009)	N/A	0	5/1/86 **Not Reqd**	Non-isolated piping and components associated with various Class 3 systems
(HT-010)	N/A	0	5/1/86 **Not Reqd**	Non-isolated piping and components associated with various Class 2 systems
TAP-P007 (HT-011)	15-9	1	5/1/86 **Revised**	Class 2 piping between MSIV and Turbine Stop valves.
TAP-P008 (HT-012)	15-10	1	5/1/86 **Revised**	Isolated piping and components associated with the CRD Scram discharge system
TAP-P009 (HT-013)	15-11 to 15-12	1	5/1/86 **Revised**	Embedded piping downstream of FPC system RHR cross connect.
TAP-P010	15-13 to 15-14	0	New	Valve seats as pressurization boundaries.
TAP-P011	15-15 to 15-16	0	New	Implementation of "System Pressure Test" (using Code Case N-498-1)
TAP-P012	15-17 to 15-18	0	New	Hydrostatic and Operational Pressure Testing of Open Ended and Buried piping

SYSTEM PRESSURE TESTING
TECHNICAL APPROACH AND POSITION INDEX/SUMMARIES

Position	Page(s)	Rev.	Date Approved	Summary
TAP-P013	15-19 to 15-20	0	New	Test Temperature for Hydrostatic Testing of Systems Containing Ferritic Steel Components

TECHNICAL APPROACH AND POSITION NUMBER: TAP-P001
(NDE-09)
(Page 1 of 2)

COMPONENT IDENTIFICATION

Code Classes:	1
References:	IWA-5221 IWA-5224
Examination Categories:	B-P
Item Number:	B15.10, B15.11, B15.40, B15.41, B15.50, B15.51, B15.60, B15.61, B15.70, B15.71
Description:	All ASME Class 1 Pressure Retaining Components within the Drywell containment areas

CODE REQUIREMENT

ASME Section XI requires that all Class 1 pressure retaining components be pressurized and visual (VT-2) examined in accordance with:

1) IWA-5211(a) system leakage test following the opening and reclosing of a component in the Class 1 system.

2) IWA-5211(b) system hydrostatic test conducted during a plant shutdown at a pressure above nominal operating pressure or system pressure for which overpressure protection is provided.

3) IWA-5212(c) The system test conditions shall be maintained essentially constant during the course of the visual examination.

Hydrostatic test boundaries (IWA-5224) shall be defined by system boundaries in which the components have the same code classifications and are designed to the same pressure rating.

BASIS FOR POSITION

DAEC's position is that regardless of the type of pressure test performed (i.e. Operational or Hydrostatic), the Class 1 pressurization boundary which extends into the Drywell containment areas is hazardous for inspection (VT-2) personnel due to radiation exposure and the extremely confined proximity to pressurized components.

The IES Safety Manual prohibits Drywell entry, except for emergency, above 400 psig. Therefore, visual (VT-2) examinations shall be conducted after the pressure holding period of IWA-5213 is satisfied, and the pressure is lowered to a level (<400 psig). The corresponding temperature will be in accordance with plant Technical Specification heatup and cooldown rate established by fracture prevention criteria. Additionally, small leaks not identified visually during the proposed inspection would be identified by radiation, temperature detection systems and plant leakage detection systems which conform to position "C" of Reg. Guide 1.45, "Reactor Coolant Pressure Boundary Leakage Detection Systems". The increased radiation exposure and exposure to pressurized system hazards during the Code required inspection would be a burden on the licensee without increased personnel's ability to identify leaks in the drywell area.

TECHNICAL APPROACH AND POSITION NUMBER: TAP-P001

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PROPOSED ALTERNATE PROVISIONS

DAEC Safety Manual prohibits Drywell entry, except for emergency, above 400 psig. Therefore, visual (VT-2) examinations shall be conducted after the pressure holding period of IWA-5213 is satisfied, and the pressure is lowered to a level (<400 psig) and a temperature in accordance with plant Technical Specification heatup and cooldown rate established by fracture prevention criteria.

APPLICABLE TIME PERIOD

For the DAEC third Interval Inservice Inspection program, a system pressure test in accordance with IWA-5000 and IWA-5245 will be performed.

TECHNICAL APPROACH AND POSITION NUMBER: TAP-P002

(HT-001)
(Page 1 of 1)

COMPONENT IDENTIFICATION

Code Classes:	3
References:	IWD-2500-1 IWD-5221

Examination Categories:	D-B
Item Number:	D2.10
Description:	All ASME Class 3 Pressure Retaining Piping and Components between the check valves and stop valves at the discharge of each River Water pump

CODE REQUIREMENT

Each pressure retaining component within the boundary of each system specified in the examination categories of table IWD-2500-1 shall be pressure tested and examined in accordance with table IWD-2500-1.

BASIS FOR POSITION

There is no practical method of pressurizing the section of piping and components between V-29-1 and V-29-2, V-29-3 and V-29-4, V29-5 and V-29-6, V29-7 and V29-8 valves when conducting the Code required hydrostatic test.

PROPOSED ALTERNATE PROVISIONS

DAEC proposes to implement the alternative rules for 10-year Hydrostatic Testing for class 3 systems as provided in Code Case N-498-1 as applicable.

APPLICABLE TIME PERIOD

For the DAEC third Interval Inservice Inspection program, a system pressure test in accordance with Code Case N-498-1, IWA-5000 and IWD-5221 will be performed.

TECHNICAL APPROACH AND POSITION NUMBER: TAP-P003
(HT-002)
(Page 1 of 1)

COMPONENT IDENTIFICATION

Code Classes: 2
References: IWC-2500-1
IWC-5210(a)

Examination Categories: C-H
Item Number: C7.40, C7.80
Description: Class 2 Pressure Retaining Piping and Components between check valve V-23-4 and MO-2300.

CODE REQUIREMENT

The pressure retaining components within each system boundary shall be subject to the system pressure test and visually examined by the method specified in table IWC-2500-1 (i.e. IWC-5222), Examination category C-H;

(1) A system hydrostatic pressure test in accordance with IWA-5211 (d) conducted during a plant shutdown at a pressure above nominal operating pressure or system pressure for which overpressure protection is provided.

BASIS FOR POSITION

There is no practical method of pressurizing the section of piping between the two HPCI valves (upstream of the subject check valve) without removing the valves internals, or replacing it with a testable check.

PROPOSED ALTERNATE PROVISIONS

DAEC proposes to implement the alternative rules for 10-year Hydrostatic Testing for class 2 systems as provided in Code Case N-498-1 (Category C-H, 1989 Edition) as applicable.

(1) A system pressure test in accordance with IWC-5210 (1) for systems or portion of a system not required to operate during normal reactor operation but for which periodic system or component functional testing is performed to meet Owner's requirements.

APPLICABLE TIME PERIOD

For the DAEC third Interval Inservice Inspection program, a system pressure test in accordance with Code Case N-498-1, IWA-5000 and IWC-5221 will be performed.

TECHNICAL APPROACH AND POSITION NUMBER: TAP-P004

(HT-004)
(Page 1 of 1)

COMPONENT IDENTIFICATION

Code Classes: 2
References: IWC-2500-1
IWC-5210(a)

Examination Categories: C-H
Item Number: C7.40, C7.80
Description: Class 2 Pressure Retaining Piping and Components associated with the CRD Hydraulic control units between valves CV-1850 and V-18-1453.

CODE REQUIREMENT

The pressure retaining components within each system boundary shall be subject to the system pressure test and visually examined by the method specified in table IWC-2500-1 (i.e. IWC-5222), Examination category C-H;

(1) A system hydrostatic pressure test in accordance with IWA-5211 (d) conducted during a plant shutdown at a pressure above nominal operating pressure or system pressure for which overpressure protection is provided.

The system Hydrostatic pressure test shall be at least 1.25 times the system pressure P_{sv} for systems with design temperatures >200°F.

BASIS FOR POSITION

There is no practical method of pressurizing the section of piping between the identified valves (upstream of the CV-1850 valve) on each hydraulic unit.

PROPOSED ALTERNATE PROVISIONS

DAEC proposes to implement the alternative rules for 10-year Hydrostatic Testing for class 2 systems as provided in Code Case N-498-1 (Category C-H, 1989 Edition) as applicable. A system pressure test shall be performed in accordance with IWC-5221, IWA-5223.

APPLICABLE TIME PERIOD

For the DAEC third interval Inservice Inspection program, a system pressure test in accordance with Code Case N-498-1, IWA-5000 and IWC-5221 will be performed.

TECHNICAL APPROACH AND POSITION NUMBER: TAP-P005

(HT-005)

COMPONENT IDENTIFICATION

Code Classes: 2
References: IWC-2500-1
IWC-5210(a)

Examination Categories: C-H
Item Number: C7.40, C7.80
Description: Class 2 Pressure Retaining Piping and Components associated with the CRD mechanisms insert and withdrawal lines.

CODE REQUIREMENT

The pressure retaining components within each system boundary shall be subject to the system pressure test and visually examined by the method specified in table IWC-2500-1 (i.e. IWC-5222), Examination category C-H:

(1) A system hydrostatic pressure test in accordance with IWA-5211 (d) conducted during a plant shutdown at a pressure above nominal operating pressure or system pressure for which overpressure protection is provided

The system Hydrostatic pressure test shall be at least 1.25 times the system pressure Psv for systems with design temperatures >200°F.

BASIS FOR POSITION

The CRD insert and withdrawal piping is not isolable from the reactor vessel due to designed leakage through the CRD mechanism. Testing this piping at the Code required hydrostatic test pressure of 1.25 times the system pressure would require the reactor vessel maximum allowable pressure to be exceeded. There is no practical method of pressurizing the identified section of piping without jeopardizing the reactor vessels structural integrity.

PROPOSED ALTERNATE PROVISIONS

DAEC proposes to implement the alternative rules for 10-year Hydrostatic Testing for class 2 systems as provided in Code Case N-498-1 (Category C-H 1989 Edition) as applicable. The CRD insert and withdrawal piping shall be inspected while the reactor vessel pressure test is being conducted at the pressure designated for the class 1 test.

TECHNICAL APPROACH AND POSITION NUMBER: TAP-P005

(HT-005)

APPLICABLE TIME PERIOD

For the DAEC third Interval Inservice Inspection program, a system pressure test in accordance with Code Case N-498-1, IWA-5000, IWC-5221 will be performed as applicable.

TECHNICAL APPROACH AND POSITION NUMBER: TAP-P006

(HT-007)
(Page 1 of 1)

COMPONENT IDENTIFICATION

Code Classes:	3
References:	IWD-2500-1 IWD-5221 IWD-5222 IWA-5244

Examination Categories:	D-A
Item Number:	D1.10
Description:	All ASME Class 3 Pressure Retaining Piping and Components downstream of valves MO-1998A and B, PSE-2079A and PSE-2079B.

CODE REQUIREMENT

Each pressure retaining component within the boundary of each system specified in the examination categories of table IWD-2500-1 shall be pressure tested and examined in accordance with table IWD-2500-1.

In non-redundant systems, IWA-5244(c), where the buried components are non-isolable, such as the return lines to the heat sink, the visual examination VT-2 shall consist of only a verification that flow during operation is not impaired.

BASIS FOR POSITION

The above referenced ESW, RHR Service Water piping is bounded by two large (24 inch) butterfly valves MO-1998A and MO-1998B, and two rupture disk valves PSE-2079A and B (the last "shutoff" valves in an open ended system). This portion of the system has no leaktight significance to the operation, or safety of the system. The butterfly valves do not have a leakage limit and the internal rupture disks have been removed from the PSE valves. The subject piping is essentially open ended, limiting the ability to perform a code hydrostatic test or pressure drop test.

PROPOSED ALTERNATE PROVISIONS

DAEC proposes to implement the alternative rules for 10-year Hydrostatic Testing for class 3 systems as provided in Code Case N-498-1 (Category D-A, D-B, D-C, 1989 Edition) as applicable.

APPLICABLE TIME PERIOD

For the DAEC third Interval Inservice Inspection program, a system pressure test in accordance with Code Case N-498-1, IWA-5244 and IWD-5221 will be performed.

TECHNICAL APPROACH AND POSITION NUMBER: TAP-P007

(HT-011)

COMPONENT IDENTIFICATION

Code Classes:	2
References:	IWC-2500-1 IWC-5210(a)
Examination Categories:	C-H
Item Number:	C7.40, C7.60, C7.80
Description:	Class 2 Pressure Retaining Piping and Components in the Main Steam system, between the outboard MSIVs to the Main Steam Turbine stop valves.

CODE REQUIREMENT

The pressure retaining components within each system boundary shall be subject to the system pressure test and visually examined by the method specified in table IWC-2500-1 (i.e. IWC-5222), Examination category C-H.

BASIS FOR POSITION

The test requirements for the above mentioned piping and components are not practical due to the system design. Hydrostatic testing at the Code required pressure would result in the over pressurization of the reactor coolant system. This section of piping is designed to an internal pressure of 1140 psig which would equate to a test pressure of 1425 psig. Due to the inherent design features of the MSIVs, performing an elevated pressure test in the steam line against the back side of the MSIVs would cause the seats to lift, subjecting the reactor coolant system to an undesirable and potentially unsafe pressure.

PROPOSED ALTERNATE PROVISIONS

DAEC proposes to implement the alternative rules for 10-year Hydrostatic Testing for class 2 systems as provided in Code Case N-498-1 (Category C-H, 1989 Edition) as applicable.

APPLICABLE TIME PERIOD

For the DAEC third Interval Inservice Inspection program, a system pressure test in accordance with Code Case N-498-1, IWA-5000 and IWC-5221 will be performed.

TECHNICAL APPROACH AND POSITION NUMBER: TAP-P008

(HT-012)

COMPONENT IDENTIFICATION

Code Classes:	2
References:	IWC-2500-1 IWC-5210(a)

Examination Categories:	C-H
Item Number:	C7.40, C7.80
Description:	Class 2 Pressure Retaining Piping and Components in the Scram Discharge flow path downstream of the Scram Discharge Manual Isolation Valve V-18-1542.

CODE REQUIREMENT

The pressure retaining components within each system boundary shall be subject to the system pressure test and visually examined by the method specified in table IWC-2500-1 (i.e. IWC-5222), Examination Category C-H.

BASIS FOR POSITION

The design pressure for the Scram Discharge piping and components is 1146 psig. Therefore, the Code required test pressure is 1433 psig. The Scram Discharge volume is provided with float-type level switches that have a failure mode of collapsing or leaking ball floats. As a result, the system supplier (General Electric Co.) has issued an advisory letter recommending that the maximum hydrostatic test pressure for the switches be limited to a maximum of 1250 psig. Due to the arrangement of the DAEC Scram Discharge piping, it is not possible to isolate all of the switches from the elevated test pressure during the Code required hydrostatic test.

PROPOSED ALTERNATE PROVISIONS

DAEC proposes to implement the alternative rules for 10-year Hydrostatic Testing for class 2 systems as provided in Code Case N-498-1 (Category C-H, 1989 Edition) as applicable.

APPLICABLE TIME PERIOD

For the DAEC third Interval Inservice Inspection program, a system pressure test in accordance with Code Case N-498-1, IWA-5000 and IWC-5221 will be performed.

TECHNICAL APPROACH AND POSITION NUMBER: TAP-P009

(HT-013)

COMPONENT IDENTIFICATION

Code Classes:	2
References:	IWC-2500-1 IWC-5210(a) IWA-5244(a)
Examination Categories:	C-H
Item Number:	C7.40, C7.80
Description:	Class 2 Pressure Retaining Piping and Components in the piping segment (8-HBB-25) approximately 51 feet in length downstream of the fuel pool cooling, RHR cross-connect valve V-34-1 is embedded in concrete walls.

CODE REQUIREMENT

The pressure retaining components within each system boundary shall be subject to the system pressure test and visually examined by the method specified in table IWC-2500-1 (i.e. IWC-5222), Examination category C-H.

In non-redundant systems, IWA-5244(a), where the buried components are isolable by means of valves, the visual examination VT-2 shall consist of a leakage test that determines the rate of pressure loss. Alternatively, the test may determine the change in flow between the ends of the buried components. The acceptable rate of pressure loss or flow shall be established by the Owner.

BASIS FOR POSITION

The above referenced FPC, RHR cross-connect piping is bounded by eight valves, MO-2011 (18"), MO-2016 (18"), MO-1920 (18"), MO-1912 (18"), MO-1909 (18"), V-19-125, or V-19-55 (3/4"), V-19-27 (2") and V-34-1 (8"). Each of these valves have no leaktight significance to the operation, or safety of the system, subsequently no leakage limits have been established nor are they required. Due to the potential for seat leakage through the (6) larger valves (98" accumulative) the subject piping is essentially open ended, rendering the ability to perform a code hydrostatic test or pressure drop test impractical. While the owner is responsible to determine an acceptable pressure loss, or change in flow between the ends of the buried components, the collective seat leakage through this combination of valves make it impractical to attempt to measure possible leakage in the 51 foot of concrete embedded piping.

TECHNICAL APPROACH AND POSITION NUMBER: TAP-P009
(HT-013)

PROPOSED ALTERNATE PROVISIONS

DAEC will implement the alternative rules for 10-year Hydrostatic Testing for class 2 systems as provided in Code Case N-498-1 (Category C-H, 1989 Edition) as applicable. The accessible pipe segments will be visual (VT-2) examined for indications of leakage in accordance with IWC-5221. The inaccessible portions of the encased piping and components shall be exempt from examination requirements in accordance with IWC-1230

APPLICABLE TIME PERIOD

For the third Interval Inservice Inspection program, DAEC shall perform a system pressure test in accordance with IWA-5244 and IWC-5221 using guidance from Code Case N-498-1.

TECHNICAL APPROACH AND POSITION NUMBER: TAP-P010

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COMPONENT IDENTIFICATION

Code Classes:	1, 2, and 3
References:	IWA-5221 IWA-5222 IWA-5223 IWA-5224 Code Case N-498-1

Examination Categories:	B-P, C-H, D-A, D-B, D-C
Item Number:	B15.10 through B15.71 C7.10 through C7.80 D1.10 through D3.10
Description:	Valve Seats as Pressurization Boundaries.

CODE REQUIREMENT

ASME Section XI requires that the pressurization boundary for operational pressure testing extend to the components containing pressurized reactor coolant under the plant mode of normal reactor startup (IWA-5221), only those components pressurized under the test mode during a system functional test (IWA-5222), and components pressurized during normal system service (IWA-5223).

Hydrostatic test boundaries (IWA-5224) shall be defined by system boundaries in which the components have the same code classifications and are designed to the same pressure rating.

The boundary subject to pressurization extends to all Class 1 pressure retaining components, and all class 2 and 3 components required to support the systems safety function (Code Case N-498-1).

BASIS FOR POSITION

DAEC's position is that regardless of the type of pressure test specified (i.e. Leakage, Functional, Inservice, Hydrostatic, or N-498-1), the pressurization boundary extends up to the valve seat of the valve utilized for isolation. For example, in order to hydrostatically test the Class 1 components, the valve that provides the Class break would be utilized as the isolation point. In this case the true pressurization boundary, and ISI Class break, is actually at the center line of the valve seat.

TECHNICAL APPROACH AND POSITION NUMBER: TAP-P010

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BASIS FOR POSITION (Con't)

Any requirement to test beyond the valve seat is dependent only on whether or not the piping on the other side of the valve seat is ISI Class 1, 2, or 3.

The extension of the pressurization boundary during an operational test would require an abnormal valve line-up. Extending the boundary for a hydrostatic test would require the over pressurization of low pressure piping at systems that have a high/low pressure interface (such as RHR and Core Spray).

PROPOSED ALTERNATE PROVISIONS

In order to simplify preparation of the walkdown checklists, DAEC will perform a VT-2 visual examination of the entire pressurized boundary, including isolation valve's body and bonnet for both the pressurized and non-pressurized portions of the valves.

APPLICABLE TIME PERIOD

For the DAEC third Interval Inservice Inspection program, a system pressure test in accordance with IWA-5000, IWB-5220, IWC-5220, and IWD-5220 will be performed using guidance from Code Case N-498-1 as applicable.

TECHNICAL APPROACH AND POSITION NUMBER: TAP-P011

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COMPONENT IDENTIFICATION

Code Classes:	1, 2, and 3
References:	IWA-5000, IWB-5000, IWC-5000 and IWD-5000 ASME Code Case N-498-1
Examination Categories:	B-E, B-P, C-B, C-H, D-A, D-B, and D-C
Item Numbers:	B4.10 through B4.13 B15.10 through B15.71 C2.33 C7.10 through C7.80 D1.10 through D3.10
Description:	System Pressure Testing (using Code Case N-498-1) of pressure retaining components subjected to a system hydrostatic pressure test.

CODE REQUIREMENT

Table IWB-2500-1, Table IWC-2500-1 and Table IWD-2500-1 requires an elevated pressure hydrostatic test be performed once each inspection interval.

IWA-5211(d) requires the pressure retaining components within each system boundary to be subjected to a system hydrostatic pressure test.

BASIS FOR POSITION

DAEC proposes to adopt the alternative rules for testing presented in ASME Boiler and Pressure Vessel Code Section XI, Code Case N-498-1, "Alternative Rules for 10-Year Hydrostatic Pressure Testing for Class 1, 2 and 3 Systems, Section XI, Division 1".

Code Case N-498-1 responds to an inquiry for alternative rules for the hydrostatic testing required each inspection interval by ASME Section XI. This response states that, in lieu of a hydrostatic test, a test may be performed at nominal operating pressure provided that the appropriate hold times are maintained and the boundary subject to pressurization includes all Class 1 components (or Class 2, and 3 components in a system respectively).

DAEC will utilize the pressure associated with 100% rated reactor power (1025 psig) as the nominal operating pressure for all Class 1 components. This pressure will also be utilized for Class 2 systems, or portions of systems, that are nonisolable from the vessel, and normally function or may be required to function at reactor vessel pressure. These systems, or portions of systems, are considered to have a nominal operating pressure less than or equal to vessel nominal operating pressure.

TECHNICAL APPROACH AND POSITION NUMBER: TAP-P011

BASIS FOR POSITION (Cont'd)

For all other Class 2, and 3 piping, regardless of the type test specified (functional, or inservice) the pressure attained during the "system pressure" test at DAEC in accordance with Code Case N-498-1 shall be that associated with the systems nominal operating pressure.

In-plant instrumentation will be utilized whenever possible to provide documentation of pressurization during an examination. If no system pressure instrumentation is available, flow instrumentation may be utilized to show that the line was experiencing normal flow (and therefore normal pressure) during the visual examination. If no pressure or flow instrumentation is available, a pressure gauge will be added to the system during the test to verify pressurization.

When a system (or portion of a system) is not pressurized during a system pressure test, or when a system can not be run long enough to meet the appropriate hold time, then a separate hydrostatic test will be performed on that system. This hydrostatic test will be conducted at a pressure not less than the nominal operating pressure experienced by the subject piping.

APPLICABLE TIME PERIOD

This alternative test method using guidance from Code Case N-498-1 shall be implemented throughout the third Interval Inservice Inspection program at DAEC.

TECHNICAL APPROACH AND POSITION NUMBER: TAP-P012

COMPONENT IDENTIFICATION

Code Classes:	2 and 3
References:	IWA-5244 IWC-5222, IWC-1230 IWD-5223

Examination Categories:	C-H, D-A, D-B, D-C
Item Number:	C7.30 through C7.80 D1.10 through D3.10
Description:	Hydrostatic and Operational Pressure Testing of Open Ended and Buried (encased) piping.

CODE REQUIREMENT

The referenced sections of ASME Section XI require that open-ended (or buried, non-redundant, non-isolable) piping be tested by demonstrating acceptable flow (IWA-5244), open flow (IWC-5222d), or adequate flow (IWD-5223d) in the line during system operation.

BASIS FOR POSITION

Article IWA-5000 provides no guidance in setting acceptance criteria for what can be considered an adequate flow. In lieu of any formal guidance provided by the Code, DAEC has established the following acceptance criteria:

- For opened ended lines on systems that require Inservice Testing (IST) of pumps, adherence to IST acceptance criteria is considered as reasonable proof of adequate flow through the lines.

- For pump minimum flow lines, assurance that the pump discharge pressure does not equal the maximum total dynamic head capacity of the pump upon pump startup is considered as reasonable proof of adequate flow through the minimum flow lines (note that the minimum flow lines are only utilized for short duration's when starting the pump).

- For lines in which the open end is accessible to visual examination while the system is in operation, visual evidence of flow discharging the line is considered as reasonable proof of adequate flow through the open ended line.

TECHNICAL APPROACH AND POSITION NUMBER: TAP-P012

POSITION (Con't)

- For the open ended portion of the HPCI and RCIC turbine steam exhaust line adequate flow will be demonstrated by not exceeding normal steam exhaust line pressures during system functional testing.

- For the open ended portion of the HPCI exhaust drain pot discharge line to the Torus, adequate flow will be demonstrated by the absence of a high level alarm on the HPCI exhaust line drain pot.

- For lines buried, embedded (encased) in concrete, or encapsulated by guard structures, of which only the ends are accessible to visual examination, a visual examination while the system is in operation for evidence of flow discharging the accessible portion of the line is considered as reasonable proof of adequate flow through the buried piping.

This acceptance criteria will be utilized in order to meet the requirements of IWA-5244(c), IWC-5222(d) and IWD-5223(d).

PROPOSED ALTERNATE PROVISIONS

DAEC's position is that proof of adequate flow is all that is required for testing these open ended lines and that no further visual examination is necessary. This is consistent with the requirements for buried piping, which is not subject to visual examination.

APPLICABLE TIME PERIOD

For the DAEC third Interval Inservice Inspection program, a system pressure test in accordance with Code Case N-498-1, IWA-5000, IWC-5221, and/or IWD-5222 will be performed.

TECHNICAL APPROACH AND POSITION NUMBER: TAP-P013

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COMPONENT IDENTIFICATION

Code Classes:	2 and 3
References:	IWC-5230(b) IWD-5230(a)

Examination Categories:	C-H, D-A, D-B, D-C
Item Number:	C7.20 through C7.80, D1.20, D2.10, D3.10
Description:	Test Temperature for Hydrostatic Testing of Systems Containing Ferritic Steel Components.

CODE REQUIREMENT

The referenced sections of ASME Section XI require that the system test temperature, during a system hydrostatic test in systems constructed of ferritic steel components for which fracture toughness requirements were not specified nor required in the construction of the components, shall be determined by the owner.

BASIS FOR POSITION

Fracture toughness requirements were not specified (or required) for Class 2 or 3 components when DAEC was constructed. Since fracture toughness requirements were not specified, a minimum test requirement of 60°F has been established for hydrostatic testing of systems containing ferritic steel components.

The purpose of using a minimum test temperature is to ensure that the system is not highly stressed when the temperature is at or below the nil-ductility temperature (NDT) of the metal. At this temperature, fracture will initiate with essentially no prior plastic deformation, causing a sudden catastrophic failure.

The NDT of a metal is very sensitive to many parameters including carbon content, presence of other alloy elements, grain size, grain orientation and heat treatment. These factors combine to make the choice of an "average nil-ductility" difficult.

The minimum temperature requirement that will be used can be justified by the following:

- The systems to be tested are frequently operated at temperatures near or below this temperature and no catastrophic failure has ever occurred.

TECHNICAL APPROACH AND POSITION NUMBER: TAP-P013

BASIS FOR POSITION (Con't)

- Piping systems are designed to withstand stresses due to internal pressure, dead weight, and thermal growth during system operations as well as various dynamic loads, including earthquake and hydrodynamic loads. During a hydrostatic test the only stresses that the system experiences are due to dead weight and a pressure of 1.10 to 1.25 times design. The stresses developed in a piping system during a hydrostatic test do not approach the allowable stresses for the piping.

- The measures required to heat the piping system or the pressurizing medium are prohibitive when one considers the length of some piping runs and the corresponding volume of pressurization medium required. Setting a minimum temperature higher than 60 ^{O}F with no basis represents a hardship in terms of testing.

PROPOSED ALTERNATE PROVISIONS

DAEC's position is since fracture toughness requirements were not specified, a minimum test requirement of 60°F has been established for hydrostatic testing of systems containing ferritic steel components.

APPLICABLE TIME PERIOD

For the DAEC third Interval Inservice Inspection program, a system pressure test in accordance with IWA-5000, IWC-5220, and IWD-5220 will be performed using guidance from Code Case N-498-1 as applicable.

SYSTEM PRESSURE TESTING
RELIEF REQUEST INDEX/SUMMARIES

Relief Request	Page(s)	Rev.	Date Approved	Summary
PR-001	17-1 to 17-2	0	New	Alternate corrective measures for bolted connections.
PR-002	17-3 to 17-4	0	New	Alternate testing for Class 2 pressure retaining containment penetrations, connected to nonsafety-related piping systems.
PR-003	17-5 to 17-6	0	New	Alternate testing for 10 year system hydrostatic testing of class 1, 2, and 3 systems Code Case N-498-1
PR-004	17-7 to 17-8	0	4/11/95	Alternate Testing for ISI Class 1, 2, and 3 repaired/replaced components, Code Case N-416-1 (This was previously approved for the DAEC).
PR-005	17-9 to 17-10	0	New	Class 3 pressure retaining safety or relief valve discharge piping subject to Hydrostatic Testing per IWA-5000
PR-006 (HT-003)	17-11 to 17-12	1	5/1/86 **Revised**	Isolated piping downstream of MO-2202 in HPCI system
PR-007	17-13 to 17-14	0	New	Piping and components downstream of MO-2321 and MO-2300 in HPCI system

RELIEF REQUEST NUMBER: PR-001
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COMPONENT IDENTIFICATION

Code Classes:	1, 2, and 3
References:	IWA-5250

Examination Categories:	B-P, C-H, D-A, D-B, and D-C
Item Numbers:	B15.10 through B15.71 C7.10 through C7.80 D1.10 through D3.10

Description:	Alternate corrective measures for bolted connections.
Component Numbers:	All Class 1, 2, and Class 3 pressure retaining components subject to system pressure testing.

CODE REQUIREMENT

IWA-5250(a)(2) requires that if leakage occurs at a bolted connection, the bolting shall be removed, VT-3 visually examined for corrosion, and evaluated in accordance with IWA-3100.

BASIS FOR RELIEF

In the event of a bolted connection leak detected during the conduct of a system pressure test, current ASME Section XI Code requirements specify that all bolting must be removed for the purpose of a VT-3 visual examination and evaluated in accordance with IWA-3100. This would require placing the component or piping system out of service which could result in a plant shutdown, a delay of plant startup or, for continued operation, a reduction in plant safety. Additionally, removal of all bolting for examination serves no practical purpose if the bolting is fabricated of a material which is not susceptible to corrosion due to contact with the leaking medium. It is DAECs position that the following proposed alternative provides an acceptable level of quality and safety equivalent to that provided by the applicable Code requirements.

ALTERNATE EXAMINATION

If leakage occurs at a bolted connection, during the performance of a system pressure test, an engineering evaluation shall be performed to determine if the associated bolting is susceptible to corrosion which could result in further degradation and increased leakage. This evaluation shall address at a minimum:

1) type and location of leakage
2) historical leakage
3) bolting material and its resistance to corrosion by the leaking medium
4) visual evidence of corrosion
5) history of bolting material degradation, due to corrosion, in a similar environment

RELIEF REQUEST NUMBER: PR-001

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ALTERNATE EXAMINATION (Cont'd)

If the engineering evaluation indicates that the bolting material is not susceptible to corrosion. then bolt removal for visual examination and further evaluation shall not be required. However, termination of leakage shall be addressed and corrective measures taken as necessary.

If it is determined, by the engineering evaluation, that a VT-3 examination is required, but the leakage is identified when the bolted connection is in service, an evaluation may be performed to justify deferral of bolt removal until the next time the affected component or applicable portion of the piping system is removed from service. However, the removal of the bolts for VT-3 visual examination and evaluation will not be deferred beyond the next refueling outage.

If the evaluation determines the need for a VT-3 visual examination of the bolting, one bolt closest to the source of leakage shall be removed, and in lieu of performing the Code required VT-3 visual examination the bolting will be VT-1 visually examined per IWA-2211(a) and evaluated in accordance with IWB-3517.1. If the removed bolt has evidence of degradation, all remaining bolting shall be removed and VT-1 examined and evaluated accordingly. All examinations and evaluations shall be traceable to the VT-2 documentation originally detecting the leakage and applicable records will be maintained per IWA-6000.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection Program for DAEC.

RELIEF REQUEST NUMBER: PR-002

COMPONENT IDENTIFICATION

Code Classes: 2
References: IWA-5000
IWC-5000
IWA-5221, IWA-5222

Examination Categories: C-H
Item Numbers: C7.20 through C7.80

Description: Alternate testing for containment penetration piping.
Component Numbers: Class 2 pressure retaining components penetrating containment connected to nonsafety-related piping subject to pressure testing per IWA-5000.

CODE REQUIREMENT

IWB-5210(a)(1) requires that pressure retaining components following opening and closing within each system boundary be subjected to a system leakage test after pressurization to nominal operating pressure.

IWB-5210(a)(2) requires the pressure retaining components within each system boundary to be subjected to a system hydrostatic pressure test.

BASIS FOR RELIEF

The portion of piping that penetrates containment and the associated inboard and outboard containment isolation valves are required to be constructed in accordance with Class 1 or Class 2 design requirements. In instances where the piping penetration is for a nonsafety-related system, the sole function of the penetration piping and associated valves is to provide containment isolation and maintain containment integrity in the event of a failure of the attached nonsafety-related piping. In all cases during normal plant operation, the isolation valves associated with these penetrations are maintained in the locked closed position, are administratively closed (controlled procedurally), or they close upon receipt of a containment isolation signal. The integrity of these penetrations is verified by 10CFR50, Appendix J, leakage testing.

Additionally, per Code Case N-522, "Pressure Testing of Containment Piping Section XI, Division 1," it has been determined that pressure testing of these containment penetrations per 10CFR50, Appendix J, is an acceptable alternative to the requirements of Table IWC-2500-1, Category C-H, for piping penetrating containment that is attached to non-Code Class piping.

Performing system pressure tests each inspection period and a hydrostatic test each inspection

RELIEF REQUEST NUMBER: PR-002
(Page 2 of 2)

BASIS FOR RELIEF (Cont'd)

interval per Section XI, Table IWC-2500-1, is redundant to Appendix J testing. Additional pressure testing per the requirements of Table IWC-2500-1, Category C-H, provides no commensurate increase in quality or safety with cost benefit. It is DAEC's position that pressure testing of piping in nonsafety-related systems penetrating containment pursuant to the requirements of 10CFR50, Appendix J, in lieu of Section XI pressure testing requirements provides an acceptable level of quality and safety.

ALTERNATE EXAMINATION

As an alternative to Section XI pressure testing requirements for piping penetrating containment and attached to a nonsafety-related system, DAEC will adopt the provisions of ASME Section XI Code Case N-522.

Pressure testing shall be performed in accordance with the requirements and frequency specified in 10CFR50, Appendix J, in lieu of the additional requirements specified in Table IWC-2500-1, Category C-H.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection Program for DAEC.

RELIEF REQUEST NUMBER: PR-003
(Page 1 of 2)

COMPONENT IDENTIFICATION

Code Classes:	1, 2, and 3
References:	IWA-5000, IWB-5000, IWC-5000 and IWD-5000 ASME Code Case N-498-1

Examination Categories:	B-E, B-P, C-B, C-H, D-A, D-B, and D-C
Item Numbers:	B4.10 through B4.13 B15.10 through B15.71 C2.33 C7.10 through C7.80 D1.10 through D3.10
Description:	Alternate testing for 10 year system hydrostatic testing of class 1, 2, and 3 systems Code Case N-498-1.
Component Numbers:	All pressure retaining components within each system boundary subjected to a system hydrostatic pressure test.

CODE REQUIREMENT

IWA-5211(d) requires the pressure retaining components within each system boundary to be subjected to a system hydrostatic pressure test.

BASIS FOR RELIEF

ASME Code Case N-498 currently provides an alternative for Class 1 and 2 system hydrostatic testing allowing use of a reduced pressure equal to system nominal operating pressure. Recently published Code Case N-498-1, while repeating these alternative pressure requirements for Class 1 and 2, also adopted and included rules for Class 3 systems. Also, Code Case N-498-1 clarified the intent of using installed plant instrumentation without the need for test gauging or imposing the requirements of IWA-5260 when performing these nominal operating pressure tests.

It is DAEC's position that conducting system pressure tests on Class 1 and 2 systems consistent with the requirements of N-498-1, in conjunction with performing the applicable volumetric, surface, and visual examinations in accordance with the owner's ISI Program, provides a level of quality and safety equivalent to, or greater than, that provided by the Code hydrostatic test pressure and instrumentation requirements.

Code Case N-498-1 also permits the reduced pressure testing in lieu of Hydrostatic Tests for Class 3 Systems.

RELIEF REQUEST NUMBER: PR-003
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BASIS FOR RELIEF (Cont'd)

DAEC employs a very proactive erosion/corrosion monitoring and control program which periodically measures wall thickness in selected Class 3 piping and components. This program primarily focuses on those portions of piping which are most susceptible to erosion, micro biologically influenced corrosion (MIC) and other identified corrosion mechanisms which are inherent to the service water and like systems. The screening criteria for selection of piping and components to be chosen for "Thickness Examination" includes: (1) sections susceptible to wall thinning by erosion, (2) low flow sections, (3) intermittent or no flow sections, and (4) those portions of piping subject to thermal variance.

It is DAEC's intention to select those portions of piping and components for examination most susceptible to erosion and corrosion thereby giving a conservative representation of overall pressure boundary integrity.

It is DAEC's position that performing system pressure tests on Class 3 systems consistent with the requirements of N-498-1, together with augmented test programs (e.g. erosion/corrosion monitoring for piping determined to be most susceptible to erosion and corrosion), provides a level of quality and safety equivalent to, or greater than, that provided by the Code hydrostatic test pressure and instrumentation requirements.

ALTERNATE EXAMINATION

As an alternative to existing Section XI requirements, DAEC will adopt the provisions of Code Case N-498-1.

In lieu of performing a hydrostatic pressure test at a pressure above nominal operating pressure or system pressure for which overpressure protection is required, as required by Table IWA-5210-1, Examination Categories B-E, B-P, C-B, C-H, D-A, D-B, and D-C, a system pressure test at nominal operating pressure and temperature shall be performed.

In lieu of instrumentation requirements specified in IWA-5260, existing plant instrumentation will be used per IWA-5212(b). Where gauging may be required and does not exist, the rules of IWA-5260 shall be used. For Class 3 Systems, DAEC shall also continue to maintain and implement an erosion/corrosion monitoring program for piping determined to be most susceptible to erosion and corrosion, as previously described.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection Program for DAEC.

RELIEF REQUEST NUMBER: PR-004
(Page 1 of 2)

COMPONENT IDENTIFICATION

Code Classes:	1, 2, and 3
References:	IWA-4700(a), IWA-4700(b) IWA-5214
Examination Categories:	B-P, C-H, D-A, and D-B
Item Numbers:	B15.11, B15.51, B15.61, B15.71 C7.20, C7.40, C7.60, and C7.80 D1.10 and D2.10
Description:	Alternate Testing for ISI Class 1, 2 and Class 3 Repaired/Replaced Components, Code Case N-416-1.
Component Numbers:	All Class 1, 2 and Class 3 pressure retaining components subject to Hydrostatic Testing per IWA-4700.

CODE REQUIREMENT

IWA-4700(a) requires an elevated pressure hydrostatic test to be performed after welded repair/replacement of classed components, except those exempted by IWA-4700(b).

BASIS FOR RELIEF

Elevated pressure hydrostatic tests are difficult to perform and often represent a true hardship. Some of the difficulties associated with elevated pressure testing include the following:

- Hydrostatic testing often requires complicated or abnormal valve line-ups in order to properly vent, fill and isolate the component requiring testing.

- Relief valves with setpoints lower than the hydrostatic test pressure must be gagged or removed and blind flanged. This process requires the draining and refilling of the system.

- Valves that are not normally used for isolation (e.g., normally open pump discharge valves) are often required to provide pressure isolation for an elevated pressure hydrostatic test. These valves frequently require time consuming seat maintenance in order to allow for pressurization.

- The radiation exposure required to perform a hydrostatic pressure test is high (in comparison to operational pressure testing) due to the large amount of time required to prepare the volume for testing (i.e. installing relief valve gags, performing appropriate valve line-ups, etc.).

- In order to isolate some portions of systems, freeze seals may be required.

RELIEF REQUEST NUMBER: PR-004

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BASIS FOR RELIEF (Cont'd)

The difficulties encountered in performing a hydrostatic pressure test are prohibitive when weighed against the benefits. Industry experience, which is corroborated by DAEC's experience, shows that most through wall leakage is detected during system operation as opposed to during elevated pressure tests such as ten-year system hydrostatic tests.

Little benefit is gained from the added challenge to the piping system provided by an elevated pressure hydrostatic test (when compared to an operational test), especially when one considers that the piping stress experienced during a hydrostatic test does not include the quite significant stresses affiliated with the thermal growth and dynamic loading associated with design basis events. As an industry, it has been historically documented that leakage will occur and be detected at nominal operating pressures of a system. Elevating pressure 10-25% has no meaningful impact.

Use of hydrostatic test deferrals, which are presently allowed per Code Case N-416 for Class 2 components, is not a satisfactory solution because the required test must be eventually performed, and it is the performance of the test itself that is burdensome.

These arguments are also supported by NRC endorsement of Code Case N-498-1, "Alternative Rules for 10 Year Hydrostatic Pressure Testing for Class 1, 2 and 3 Systems, Section XI, Division 1". This relief request is a logical extension of that Code Case.

Based on the above, DAEC requests relief from the ASME Section XI requirements for performing elevated pressure hydrostatic tests on Class 1, 2, and 3 repaired/replaced components.

ALTERNATE EXAMINATION

DAEC proposes to perform pressure testing on Class 1, 2, and 3 repaired/replaced components in accordance with the requirements of ASME Section XI Code Case N-416-1. This Code Case offers an acceptable alternative to Section XI requirements. In addition to the NDE requirements of the Code Case, DAEC will also perform a surface examination of the root pass layer of a repair/replacement weld on Class 3 components in accordance with the NDE requirements of ASME Section III.

With the pressures currently required by Section XI, elevated pressure hydrostatic tests do not offer a commensurate increase in safety with cost benefit and places undo burden upon a licensee to perform these tests.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection Program for DAEC.

RELIEF REQUEST NUMBER: PR-005

(Page 1 of 2)

COMPONENT IDENTIFICATION

Code Classes: 3
References: IWD-5210(b), IWD-5223(f)
IWA-5211(d)

Examination Categories: D-B
Item Numbers: D2.10

Description: 10 year system hydrostatic testing of class 3 systems.

Component Numbers: Class 3 pressure retaining safety or relief valve discharge piping subject to Hydrostatic Testing per IWA-5000.

CODE REQUIREMENT

IWD-5210(b) requires an elevated pressure hydrostatic test to be performed in accordance with IWA-5000 each inspection interval.

IWD-5223(f) requires a system hydrostatic test be performed at a pressure equal to 90% of the safety or relief valve discharge piping submergence head, for that piping which discharges into the containment suppression pool.

BASIS FOR RELIEF

The difficulties encountered in performing a hydrostatic pressure test are prohibitive when weighed against the benefits. Industry experience, which is corroborated by DAEC's experience, shows that little benefit is gained from the added challenge to the piping system provided by an elevated pressure hydrostatic test (when compared to an operational test), especially when one considers that the piping stress experienced during a hydrostatic test does not include the quite significant stresses affiliated with the thermal growth and dynamic loading associated with design basis events. As an industry, it has been historically documented that leakage will occur and be detected at nominal operating pressures of a system. Elevating pressure 10-25% has no meaningful impact, most through wall leakage is detected during system operation as opposed to during elevated pressure tests such as ten-year system hydrostatic tests.

Additionally the Code required hydrostatic test pressure for the subject discharge piping would be 2.2 psi based on the piping submergence head. This is significantly less then that expected during normal system startup and operation. performing the code hydrostatic pressure test at this pressure has no meaningful impact on increased plant safety.

These arguments are also supported by the ASME Section XI 1992 edition of the Code in which the requirements of IWD-5223(f) have been removed.

RELIEF REQUEST NUMBER: PR-005

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BASIS FOR RELIEF (Cont'd)

Based on the above, DAEC requests relief from the ASME Section XI requirements for performing elevated pressure hydrostatic tests on Class 3 safety or relief valve discharge piping which discharges into the containment suppression pool.

ALTERNATE EXAMINATION

In accordance with DAEC Technical Specifications during normal plant startup operations, each relief valve is manually opened with the reactor pressure ≥ 100 psig. Relief valve tailpipe and discharge piping momentarily experiences a discharge pressure of about 25 psi. Tailpipe pressure, temperature and suppression pool temperatures are monitored as necessary. DAEC proposes to ensure discharge piping integrity through normal plant startup operations.

With the pressures (2.2 psi) currently required by Section XI, elevated pressure hydrostatic tests do not offer a commensurate increase in safety with cost benefit and places undo burden upon a licensee to perform these tests.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection Program for DAEC.

RELIEF REQUEST NUMBER: PR-006

(HT-003)

COMPONENT IDENTIFICATION

Code Classes:	2
References:	IWC-2500-1 IWC-5210(a)
Examination Categories:	C-H
Item Number:	C7.40, C7.80
Description:	Class 2 Pressure Retaining Piping and Components in the turbine steam system and related turbine auxiliaries downstream of MO-2202, extending to V-22-16, V-22-19, and CV-2234.

CODE REQUIREMENT

The pressure retaining components within each system boundary shall be subject to the system pressure test and visually examined by the method specified in table IWC-2500-1 (i.e. IWC-5222), Examination category C-H;

(1) A system hydrostatic pressure test in accordance with IWA-5211 (d) conducted during a plant shutdown at a pressure above nominal operating pressure or system pressure for which overpressure protection is provided.

BASIS FOR RELIEF

There is no practical method of isolating and pressurizing the section of piping from the HPCI Turbine casing, downstream to the subject valves without having seal gland leakage. Regulatory Guide 1.26 provides guidance for classification of ASME Class components, the HPCI turbine unit is considered exempt from the ASME Class requirements, excluding this portion of the system from the ASME requirements for hydrostatic testing. It is also impossible to operate this system at the Code required pressure and temperature for the required 4 hour test condition hold time in accordance with IWA-5213 without increasing the torus temperature to an undesirable temperature.

ALTERNATE EXAMINATION

DAEC proposes to implement the alternative rules for 10-year Hydrostatic Testing for class 2 systems as provided in Code Case N-498-1 (Category C-H, 1989 Edition) with the following exception;

A system pressure test shall be performed in accordance with IWC-5210 (1), [IWA-5211(b)] for the above subject system or portion of a system not required to operate during normal reactor operation but for which periodic system or component functional testing is performed to meet Owner's requirements. This test shall consist of performing the required visual (VT-2) inspections in conjunction with a periodic HPCI turbine test performed in accordance with the ASME Section XI Inservice Testing program. This VT-2 inspection shall be performed once

RELIEF REQUEST NUMBER: PR-006
(HT-003)
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ALTERNATE EXAMINATION (Cont'd)

per period rather than once per interval. The Test Hold Time shall be a minimum of 20 minutes starting when the tech. spec. flow and pressure requirements have been met.

APPLICABLE TIME PERIOD

For the DAEC third Interval Inservice Inspection program, a system pressure test in accordance with Code Case N-498-1, IWA-5000 and IWC-5221 will be performed.

RELIEF REQUEST NUMBER: PR-007

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COMPONENT IDENTIFICATION

Code Classes:	2
References:	IWC-2500-1 IWC-5210(a)

Examination Categories:	C-H
Item Number:	C7.40, C7.80
Description:	Class 2 Pressure Retaining Piping and Components in the High Pressure Coolant Injection System (water side) downstream of MO-2321 and MO-2300, extending to MO-2312, CV-2315, and MO-2318.

CODE REQUIREMENT

The pressure retaining components within each system boundary shall be subject to the system pressure test and visually examined by the method specified in table IWC-2500-1 (i.e. IWC-5222), Examination category C-H:

(1) A system hydrostatic pressure test in accordance with IWA-5211 (d) conducted during a plant shutdown at a pressure above nominal operating pressure or system pressure for which overpressure protection is provided.

BASIS FOR RELIEF

Hydrostatic pressure tests can be difficult to perform, often requiring complicated or abnormal valve line-ups in order to properly vent, fill and isolate the systems requiring testing (ref. Relief Request PR-003).

It is also impossible to operate this system at the Code required pressure and temperature for the required 4 hour test condition "hold time" in accordance with IWA-5213 without increasing the torus temperature to an undesirable temperature.

ALTERNATE EXAMINATION

DAEC proposes to implement the alternative rules for 10-year Hydrostatic Testing for class 2 systems as provided in Code Case N-498-1 (Category C-H, 1989 Edition) with the following exception:

A system pressure test shall be performed in accordance with IWC-5210 (1), [IWA-5211(b)] for the above subject system or portion of a system not required to operate during normal reactor

RELIEF REQUEST NUMBER: PR-007
(Page 2 of 2)

ALTERNATE EXAMINATION (Cont'd)

operation but for which periodic system or component functional testing is performed to meet Owner's requirements. This test shall consist of performing the required visual (VT-2) inspections in conjunction with a periodic HPCI turbine test performed in accordance with the ASME Section XI Inservice Testing program. This test shall be performed once per period rather than once per interval. The Test Hold Time shall be a minimum of 20 minutes starting when the tech. spec. flow and pressure requirements have been met.

APPLICABLE TIME PERIOD

For the DAEC third Interval Inservice Inspection program. a system pressure test in accordance with Code Case N-498-1. IWA-5000 and IWC-5221 will be performed.

Component Examination Summary Listing

1.0 All components and component supports potentially subject to inservice NDE examination under the 1989 Edition of Section XI are contained in Table 18-1.

2.0 The table identifies the number of components and component supports selected for examination during the third inspection interval and provides a schedule by period, for the applicable required examination to be performed. The components and component supports selected are those anticipated to be examined during the third interval; however, other components and component supports may be substituted based on access, ALARA considerations, and installation of plant design modifications. The total number of components and component supports for each Code Category/Item No. by system is provided in the attached "Section XI Summary Report and Long Term Plan". Deviations from the "Long Term Plan" shall not be considered a change to this Program, provided the "Inservice Inspection Examination Summary Table" is satisfied.

3.0 Table 18-1 is broken into three sections for Code Class and sorted by, Code Category/Item No., Examination Description, System Identification, required NDE examination method, Scheduled Period, and Comments. DAEC will maintain, on site, a controlled comprehensive ISI examination plan and schedule and will be made available for review.

Inservice Inspection Examination Summary Table
(Page 2 of 7)

Examination Category	Item Number	Examination Description	System Identification	Exam Requirements	Period Scheduled 1	2	3	Comments
B-A	B1.11	Circumferential Shell Welds	Reactor Vessel	Volumetric			4	NDE-R001
	B1.12	Longitudinal Shell Welds	Reactor Vessel	Volumetric			8	NDE-R001
	B1.21	Circumferential Head Welds	Reactor Vessel	Volumetric			2	NDE-R001
	B1.22	Meridional Head Welds	Reactor Vessel	Volumetric			15	NDE-R001
	B1.30	Shell-to-Flange Weld	Reactor Vessel	Volumetric	1/2		1/2	NDE-R001 NDE-R022
	B1.40	Head-to-Flange Weld	Reactor Vessel	Volumetric & Surface	1/3	1/3	1/3	NDE-R001
	B1.50	Repair welds - Beltline Region	Reactor Vessel	Volumetric			1	NDE-R001
B-D	B3.90	Nozzle-to-Vessel Welds in Reactor Vessel	Reactor Vessel	Volumetric	13		20	(1) Exempt by 1220(c)
	B3.100	Nozzle Inside Radius Section in Reactor Vessel	Reactor Vessel	Volumetric	13		20	(1) Exempt by 1220(c)
B-E	B4.11	Partial Penetration Vessel Nozzle Welds	All Class 1	Visual, VT-2			2	PR-003 Code Case 498-1
	B4.12	Partial Penetration Control Rod Drive Nozzle Welds	All Class 1	Visual, VT-2			89	PR-003 Code Case 498-1
	B4.13	Partial Penetration Instrumentation Nozzle Welds	All Class 1	Visual, VT-2			30	PR-003 Code Case 498-1

Inservice Inspection Examination Summary Table
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Examination Category	Item Number	Examination Description	System Identification	Exam Requirements	Period Scheduled 1	2	3	Comments
B-F	B5.10	Dissimilar Metal Nozzle-to-Safe End Butt Welds NPS 4 or Larger	Various Class 1	Volumetric & Surface	6	0	8	Note (2) nozzle exam with Rx. Ves. tool
	B5.20	Dissimilar Metal Nozzle-to-Safe End Butt Welds Less than NPS 4	Various Class 1	Surface	3	1	4	
	B5.130	Dissimilar Metal Butt Welds in Piping NPS 4 or Larger	Various Class 1	Volumetric & Surface	1	4	3	
	B5.140	Dissimilar Metal Butt Welds in Piping Less than NPS 4	Various Class 1	Surface		1	1	
	B5.150	Dissimilar Metal Socket Welds in Piping	Various Class 1	Surface	--	--	--	
B-G-1	B6.10	Reactor Vessel Closure Head Nuts	Reactor Vessel	Surface	1/3	1/3	1/3	
	B6.20	Reactor Vessel Closure Studs, in Place	Reactor Vessel	Volumetric	1/3	1/3	1/3	
	B6.30	Reactor Vessel Closure Studs, when Removed	Reactor Vessel	Volumetric & Surface	4	0	0	
	B6.40	Threads in Reactor Vessel Flange	Reactor Vessel	Volumetric	1/3	1/3	1/3	
	B6.50	Reactor Vessel Closure Washers, Bushings	Reactor Vessel	Visual, VT-1	1/3	1/3	1/3	
	B6.180	Bolts & Studs in Pumps	All Class 1	Volumetric				Inspected only when disassembled
	B6.190	Flange Surface, When Connection Disassembled, in Pumps	All Class 1	Visual, VT-1				Inspected only when disassembled
	B6.200	Nuts, Bushings, & Washers in Pumps	All Class 1	Visual, VT-1				Inspected only when disassembled

Inservice Inspection Examination Summary Table
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Examination Category	Item Number	Examination Description	System Identification	Exam Requirements	Period Scheduled 1	2	3	Comments
B-G-2	B7.10	Bolts, Studs, & Nuts in Reactor Vessel	Various Class 1	Visual, VT-1	1/3	1/3	1/3	
	B7.50	Bolts, Studs, & Nuts in Piping	Various Class 1	Visual, VT-1				Inspected only when disassembled
	B7.60	Bolts, Studs, & Nuts in Pumps	Various Class 1	Visual, VT-1				Inspected only when disassembled
	B7.70	Bolts, Studs, & Nuts in Valves	Various Class 1	Visual, VT-1				Inspected only when disassembled
	B7.80	Bolts, Studs, & Nuts in CRD Housings	Reactor Vessel	Visual, VT-1				Inspected only when disassembled
B-H	B8.10	Integrally Welded Attachments to Reactor Vessel	Reactor Vessel	Volumetric or Surface	--	--	--	See Category B-K of Code Case 509
B-J	B9.11	Circumferential Welds in Piping NPS 4 or Larger	Various Class 1	Volumetric & Surface	21	31	42	TAP-I005
	B9.12	Longitudinal Welds in Piping NPS 4 or Larger	Various Class 1	Volumetric & Surface	--	--	--	TAP-I005
	B9.21	Circumferential Welds in Piping Less than NPS 4	Various Class 1	Surface	1	3	5	TAP-I005
	B9.22	Longitudinal Welds in Piping Less than NPS 4	Various Class 1	Surface	--	--	--	TAP-I005
	B9.31	Branch Pipe Connection Welds NPS 4 or Larger	Various Class 1	Volumetric & Surface	1	2	3	TAP-I005
	B9.32	Branch Pipe Connection Welds Less than NPS 4	Various Class 1	Surface		1		TAP-I005
	B9.40	Socket Welds	Various Class 1	Surface	5	8	10	TAP-I005

Inservice Inspection Examination Summary Table
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Examination Category	Item Number	Examination Description	System Identification	Exam Requirements	Period Scheduled 1	2	3	Comments
B-K-1 Code Case 509	B10.10	Integrally Welded Attachments to Reactor Vessel	Various Class 1	Surface			1	TAP-I007
	B10.20	Integrally Welded Attachments to Piping	Various Class 1	Surface	1	1	1	TAP-I007
	B10.30	Integrally Welded Attachments to Pumps	Various Class 1	Surface			1	TAP-I007
B-L-2	B12.20	Pump Casings	Various Class 1	Visual, VT-3				2 pumps Inspected only when disassembled
B-M-2	B12.50	Valve Bodies, Exceeding NPS 4	Various Class 1	Visual, VT-3				Selected valves Inspected only when disassembled
B-N-1	B13.10	Vessel Interior	Various Class 1	Visual, VT-3	1	1	1	13 welds inspected each period
B-N-2	B13.20	Interior Attachments within Beltline Region in Reactor Vessel	Reactor Vessel	Visual, VT-1			8	Performed with automated vessel exam
	B13.30	Interior Attachments beyond Beltline Region in Reactor Vessel	Reactor Vessel	Visual, VT-3			30	Performed with automated vessel exam
	B13.40	Core Support Structure in Reactor Vessel	Reactor Vessel	Visual, VT-3			5	Performed with automated vessel exam
B-O	B14.10	Welds in CRD Housing, Peripheral CRDs	Reactor Vessel	Volumetric or Surface			3	
C-A	C1.10	Circumferential Shell Welds	RHR	Volumetric	1		1	
	C1.20	Circumferential Head Welds	RHR	Volumetric		1		
	C1.30	Tubesheet-to-Shell Welds		Volumetric	--	--	--	

Inservice Inspection Examination Summary Table
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Examination Category	**Item Number**	**Examination Description**	System Identification	**Exam Requirements**	Period Scheduled 1	2	3	Comments
C-B	C2.21	Nozzle-to-Shell (or Head) Weld without Reinforcing Plates in Vessels > 1/2" Nominal Thickness	RHR	Volumetric & Surface	--	1	1	
	C2.22	Nozzle Inner Radius		Volumetric	--	1	1	
	C2.31	Reinforcing Plate Welds to Nozzle & Vessel for Nozzles with Reinforcing Plates in Vessels > 1/2" Nominal Thickness		Surface	--	--	--	
	C2.33	Nozzle-to-Shell (or Head) Welds when Inside of Vessel is Inaccessible, for Vessels > 1/2" Nominal Thickness with Reinforcing Plates		Visual, VT-2	--	--	--	
C-C Code Case 509	C3.10	Integrally Welded Attachments to Pressure Vessels	Various Class 2	Surface			1	TAP-I007
	C3.20	Integrally Welded Attachments to Piping	Various Class 2	Surface	2	2	3	TAP-I007
	C3.30	Integrally Welded Attachments to Pumps		Surface	--	--	--	TAP-I007
C-F-1	C5.11	Circumferential Welds in Austenitic Stainless Steel or High Alloy Piping ≥ 3/8" Nominal Wall Thickness for Piping > NPS 4		Volumetric & Surface	--	--	--	
	C5.12	Longitudinal Welds in Austenitic Stainless Steel or High Alloy Piping ≥ 3/8" Nominal Wall Thickness for Piping > NPS 4		Volumetric & Surface	--	--	--	

Inservice Inspection Examination Summary Table
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Examination Category	Item Number	Examination Description	System Identification	Exam Requirements	Period Scheduled 1	2	3	Comments
C-F-2	C5.51	Circumferential Welds in Carbon or Low Alloy Steel Piping ≥ 3/8" Nominal Wall Thickness for Piping > NPS 4	Various Class 2	Volumetric & Surface	12	24	33	1 RCIC exempt exam is placed with RHR TAP-I006
	C5.52	Longitudinal Welds in Carbon or Low Alloy Steel Piping ≥ 3/8" Nominal Wall Thickness for Piping > NPS 4		Volumetric & Surface				
	C5.81	Circumferential Welds in Carbon or Low Alloy Steel Pipe Branch Connections of Branch Piping > NPS 4 (Reference Table IWC-2500-1, Note 1)	Various Class 2	Surface	1			
D-A Code Case 509	D1.10	Integral Attachments - Pressure Vessels		Visual, VT-1	--	--	--	
	D1.20	Integral Attachments - Piping		Visual, VT-1	2	2	3	1 exam in different period than last interval TAP-I007
	D1.30	Integral Attachments - Pumps		Visual, VT-1	--	--	--	
	D1.40	Integral Attachments - Valves		Visual, VT-1	--	--	--	
F-A Code Case 491	F1.10	Class I Component Supports	Various Class 1	Visual, VT-3	14	13	15	TAP-I008
	F1.20	Class II Component Supports	Various Class 2	Visual, VT-3	14	16	22	TAP-I008
	F1.30	Class III Component Supports	Various Class 3	Visual, VT 3	6	7	12	TAP-I008
	F1.40	Supports Other Than Piping Supports (Class 1, 2, 3, and MC)		Visual, VT-3	5	7	7	TAP-I008

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DUANE ARNOLD ENERGY CENTER UNIT 1

INSERVICE INSPECTION PLAN
SECTION XI

February 28, 1996
REVISION 00

Prepared By: GPARK Date 2/28/96

Reviewed By: Scott D Presler Date 2/28/96

Approved By: Kevin L. Scherich Date 2/28/96

DATE: 02/28/96
REVISION: 00

DUANE ARNOLD ENERGY CENTER UNIT 1

CODE EDITION:

CLASS 1 SECTION XI SUMMARY
TABLE A

CATEGORY B-A - PRESSURE RETAINING WELDS IN REACTOR VESSEL

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	ZONE SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER		2ND PER		3RD PER		COMMENTS
B1.11	CIRCUMFERENTIAL SHELL WELDS	VOLUMETRIC	REACTOR PRESSURE VESSEL	4	4	0	0	0	0	4	0	DEFERRAL - PERMIS
							0%		0%		100%	(SEE NDE-R001)
B1.12	LONGITUDINAL SHELL WELDS	VOLUMETRIC	REACTOR PRESSURE VESSEL	8	8	0	0	0	0	8	0	DEFERRAL - PERMIS
							0%		0%		100%	(SEE NDE-R001)
B1.21	CIRCUMFERENTIAL HEAD WELDS	VOLUMETRIC	REACTOR PRESSURE VESSEL	4	4	1	0	1	0	2	0	DEFERRAL - PERMIS
							25%		50%		100%	(SEE NDE-R001)
B1.22	MERIDIONAL HEAD WELDS	VOLUMETRIC	REACTOR PRESSURE VESSEL	15	15	0	0	0	0	15	0	DEFERRAL - PERMIS
							0%		0%		100%	(SEE NDE-R001)
B1.30	SHELL-TO-FLANGE WELD	VOLUMETRIC	REACTOR PRESSURE VESSEL	3	2	1	0	0	0	1	0	PARTIAL DEFERRAL
							50%		50%		100%	PERMISSIBLE - NOTI ,NOTE 4 (AT LEAST OF THE WELD EXAMIN BY END OF 1ST PER.
1.40	HEAD-TO-FLANGE WELD	VOLUMETRIC SURFACE	REACTOR PRESSURE VESSEL	3	3	1	0	1	0	1	0	PARTIAL DEFERRAL
							33%		66%		100%	PERMISSIBLE-NOTE 3 PARTIAL EXAM FROM FLANGE FACE, REMAI AT END OF INT.)
B1.51	REPAIR WELDS-BELTLINE REGION		REACTOR PRESSURE VESSEL	1	1	0	0	0	0	1	0	DEFERRAL
							0%		0%		100%	PERMISSIBLE-ALLWELI REPAIR AREAS (SEE NDE-R001)
			CATEGORY TOTAL	38	37	3	0	2	0	32	0	
							8%		13%		100%	

CLASS 1 SECTION XI SUMMARY

TABLE A

CATEGORY B-B - PRESSURE RETAINING WELDS IN VESSELS OTHER THAN REACTOR VESSELS

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER	2ND PER	3RD PER	COMMENTS
B2.11	PRESSURIZER-CIRCUMFERENTIAL SHELL-TO-HEAD WELDS		N/A						
B2.12	PRESSURIZER-LONGITUDINAL SHELL-TO-HEAD WELDS		N/A						
B2.21	PRESSURIZER-CIRCUMFERENTIAL HEAD WELDS		N/A						
B2.22	PRESSURIZER-MERIDIONAL HEAD WELDS		N/A						
B2.31	STEAM GENERATORS (PRIMARY SIDE)-CIRCUMFERENTIAL HEAD WELDS		N/A						
B2.32	STEAM GENERATORS (PRIMARY SIDE)-MERIDIONAL HEAD WELDS		N/A						
B2.40	STEAM GENERATORS (PRIMARY SIDE)-TUBESHEET-TO-HEAD WELD		N/A						
B2.51	HEAT EXCHANGERS (PRIMARY SIDE)-HEAD-CIRCUMFERENTIAL HEAD WELDS		N/A						
B2.52	HEAT EXCHANGERS (PRIMARY SIDE)-HEAD-MERIDIONAL HEAD WELDS		N/A						
B2.60	HEAT EXCHANGERS (PRIMARY SIDE)-SHELL-TUBESHEET-TO-HEAD WELDS		N/A						
B2.70	HEAT EXCHANGERS (PRIMARY SIDE)-SHELL-LONGITUDINAL WELDS		N/A						
B2.80	HEAT EXCHANGERS (PRIMARY SIDE)-SHELL-TUBESHEET-TO-SHELL WELDS		N/A						

CLASS 1 SECTION XI SUMMARY

TABLE A

CATEGORY B-B - PRESSURE RETAINING WELDS IN VESSELS OTHER THAN REACTOR VESSELS

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER		2ND PER		3RD PER		COMMENTS
			CATEGORY TOTAL	0	0	0	0	0	0	0	0	
							0%		0%		0%	

CLASS 1 SECTION XI SUMMARY

TABLE A

CATEGORY B-D - FULL PENETRATION WELDS OF NOZZLES IN VESSELS (INSPECTION PROGRAM A)

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER	2ND PER	3RD PER	COMMENTS
B3.10	REACTOR VESSEL-NOZZLE-TO-VESSEL WELDS		N/A						
B3.100	REACTOR VESSEL-NOZZLE INSIDE RADIUS SECTION	VOLUMETRIC	CONTROL ROD DRIVE RETURN	1	1	1 0 100%	0 0 100%	0 0 100%	DEFERRAL PERMISSIBLE-NOTE 2 (25%-50% BY END OF 1 PERIOD,REMAINDER BY END OF INT.)
		VOLUMETRIC	CORE SPRAY SYSTEM	2	2	2 0	0 0	0 0	
		VOLUMETRIC	FEEDWATER SYSTEM	4	4	1 0	0 0	3 0	
		VOLUMETRIC	JET PUMP INSTRUMENTATION	2	2	1 0 50%	0 0 50%	1 0 100%	
		VOLUMETRIC	LIQUID LEVEL CONTROL SYSTEM - CORE	1	1	0 0 0%	0 0 0%	1 0 100%	
		VOLUMETRIC	MAIN STEAM	4	4	1 0	0 0	3 0	
		VOLUMETRIC	REACTOR BOTTOM HEAD DRAIN	1	0	0 0 0%	0 0 0%	0 0 0%	
		VOLUMETRIC	REACTOR HEAD SPARE	1	1	0 0	0 0	1 0	
		VOLUMETRIC	REACTOR HEAD VENT	1	1	1 0	0 0	0 0	
		VOLUMETRIC	REACTOR VESSEL INSTRUMENTATION	6	6	1 0 16%	0 0 16%	5 0 100%	
		VOLUMETRIC	RECIRCULATION PUMP SUCTION	2	2	1 0 50%	0 0 50%	1 0 100%	
		VOLUMETRIC	RECIRCULATION SYSTEM RISER	8	8	3 0 37%	0 0 37%	5 0 100%	
		VOLUMETRIC	RESIDUAL HEAT REMOVAL	1	1	1 0 100%	0 0 100%	0 0 100%	

CLASS 1 SECTION XI SUMMARY
TABLE A

CATEGORY B-D - FULL PENETRATION WELDS OF NOZZLES IN VESSELS (INSPECTION PROGRAM B)

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	ZONE SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER		2ND PER		3RD PER		COMMENTS
			ITEM TOTAL	34	33	13	0	0	0	20	0	
							39%		39%		100%	
B3.110	PRESSURIZER-NOZZLE-TO-VESSEL WELDS		N/A									
B3.120	PRESSURIZER-NOZZLE INSIDE RADIUS SECTION		N/A									
B3.130	STEAM GENERATORS (PRIMARY SIDE)-NOZZLE-TO-VESSEL WELDS		N/A									
B3.140	STEAM GENERATORS (PRIMARY SIDE)-NOZZLE INSIDE RADIUS SECTION		N/A									
3.150	HEAT EXCHANGERS (PRIMARY SIDE)-NOZZLE-TO-VESSEL WELDS		N/A									
B3.160	HEAT EXCHANGERS (PRIMARY SIDE)-NOZZLE INSIDE RADIUS SECTION		N/A									
B3.20	REACTOR VESSEL-NOZZLE INSIDE RADIUS SECTION		N/A									
B3.30	PRESSURIZER-NOZZLE-TO-VESSEL WELDS		N/A									
B3.40	PRESSURIZER-NOZZLE INSIDE RADIUS SECTION		N/A									
B3.50	STEAM GENERATORS (PRIMARY SIDE)-NOZZLE-TO-VESSEL WELDS		N/A									
B3.60	STEAM GENERATORS (PRIMARY SIDE)-NOZZLE INSIDE RADIUS SECTION		N/A									

CLASS 1 SECTION XI SUMMARY

TABLE A

CATEGORY B-D - FULL PENETRATION WELDS OF NOZZLES IN VESSELS (INSPECTION PROGRAM A)

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER	2ND PER	3RD PER	COMMENTS
B3.70	HEAT EXCHANGERS (PRIMARY SIDE)-NOZZLE-TO-VESSEL WELDS		N/A						
B3.80	HEAT EXCHANGERS (PRIMARY SIDE)-NOZZLE INSIDE RADIUS SECTION		N/A						
B3.90	REACTOR VESSEL-NOZZLE-TO-VESSEL WELDS	VOLUMETRIC	CONTROL ROD DRIVE RETURN	1	1	1 0 100%	0 0 100%	0 0 100%	DEFERRAL PERMISSIBLE-NOTE3,NO 2(25%-50% BY END OF 1ST PERIOD, REMAINDE BY END OF INT.)
		VOLUMETRIC	CORE SPRAY SYSTEM	2	2	2 0	0 0	0 0	
		VOLUMETRIC	FEEDWATER SYSTEM	4	4	1 0	0 0	3 0	
		VOLUMETRIC	JET PUMP INSTRUMENTATION	2	2	1 0 50%	0 0 50%	1 0 100%	
		VOLUMETRIC	LIQUID LEVEL CONTROL SYSTEM - CORE	1	1	0 0 0%	0 0 0%	1 0 100%	
		VOLUMETRIC	MAIN STEAM	4	4	1 0	0 0	3 0	
		VOLUMETRIC	REACTOR BOTTOM HEAD DRAIN	1	0	0 0 0%	0 0 0%	0 0 0%	
		VOLUMETRIC	REACTOR HEAD SPARE	1	1	0 0	0 0	1 0	
		VOLUMETRIC	REACTOR HEAD VENT	1	1	1 0	0 0	0 0	
		VOLUMETRIC	REACTOR VESSEL INSTRUMENTATION	6	6	1 0 16%	0 0 16%	5 0 100%	
		VOLUMETRIC	RECIRCULATION PUMP SUCTION	2	2	1 0 50%	0 0 50%	1 0 100%	
		VOLUMETRIC	RECIRCULATION SYSTEM RISER	8	8	3 0 37%	0 0 37%	5 0 100%	

CLASS 1 SECTION XI SUMMARY

TABLE A

CATEGORY B-D - FULL PENETRATION WELDS OF NOZZLES IN VESSELS (INSPECTION PROGRAM B)

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	ZONE SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER		2ND PER		3RD PER		COMMENTS
B3.90	REACTOR VESSEL-NOZZLE-TO-VESSEL WELDS	VOLUMETRIC	RESIDUAL HEAT REMOVAL	1	1	1	0	0	0	0	0	DEFERRAL PERMISSIBLE-NOTE3,NO 2(25%-50% BY END OF 1ST PERIOD, REMAINDE BY END OF INT.)
							100%		100%		100%	
			ITEM TOTAL	34	33	13	0	0	0	20	0	
							39%		39%		100%	
			CATEGORY TOTAL	68	56	26	0	0	0	40	0	
							39%		39%		100%	

CLASS 1 SECTION XI SUMMARY

TABLE A

CATEGORY B-E - PRESSURE RETAINING PARTIAL PENETRATION WELDS IN VESSELS

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER		2ND PER		3RD PER		COMMENTS
B4.10	PARTIAL PENETRATION WELDS		N/A									
B4.11	VESSEL NOZZLES	VISUAL	REACTOR PRESSURE VESSEL	2	2	0	0 0%	0	0 0%	2	0 100%	DEFERRAL PERMISSIBLE CODE CASE N498-1
B4.12	CONTROL ROD DRIVE NOZZLES	VISUAL	REACTOR PRESSURE VESSEL	2	2	0	0 0%	0	0 0%	2	0 100%	DEFERRAL PERMISSIBLE CODE CASE N498-1
B4.13	INSTRUMENTATION NOZZLES	VISUAL	REACTOR PRESSURE VESSEL	1	1	0	0 0%	0	0 0%	1	0 100%	DEFERRAL PERMISSIBLE CODE CASE N498-1
B4.20	PRESSURIZER-HEATER PENETRATION WELDS		N/A									
			CATEGORY TOTAL	5	5	0	0 0%	0	0 0%	5	0 100%	

CLASS 1 SECTION XI SUMMARY
TABLE A

CATEGORY B-F - PRESSURE RETAINING DISSIMILAR METAL WELDS

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	ZONE SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER		2ND PER		3RD PER		COMMENTS
B5.10	REACTOR VESSEL-NOZZLE-TO-SAFE END BUTT WELDS >= 4 INCHES NOMINAL PIPE SIZE	VOLUMETRIC SURFACE	CORE SPRAY SYSTEM	2	2	1	0	0	0	1	0	DEFERRAL NOT PERMISSIBLE, NOTE 2(EXAM MAY BE PERFORMED COINCIDENT WITH CAT B-D)
							50%		50%		100%	
		VOLUMETRIC SURFACE	JET PUMP INSTRUMENTATION	2	2	1	0	0	0	1	0	
							50%		50%		100%	
		VOLUMETRIC SURFACE	RECIRCULATION PUMP SUCTION	2	2	1	0	0	0	1	0	
							50%		50%		100%	
		VOLUMETRIC SURFACE	RECIRCULATION SYSTEM RISER	8	8	3	0	0	0	5	0	
							37%		37%		100%	
			ITEM TOTAL	14	14	6	0	0	0	8	0	
							42%		42%		100%	
B5.100	HEAT EXCHANGERS-NOZZLE-TO-SAFE END BUTT WELDS >= 4 INCHES NOMINAL PIPE SIZE		N/A									
B5.110	HEAT EXCHANGERS-NOZZLE-TO-SAFE END BUTT WELDS < 4 INCHES NOMINAL PIPE SIZE		N/A									
B5.120	HEAT EXCHANGERS-NOZZLE-TO-SAFE END SOCKET WELDS		N/A									
B5.130	PIPING-DISSIMILAR METAL BUTT WELDS >= 4 INCHES NOMINAL PIPE SIZE	VOLUMETRIC SURFACE	CORE SPRAY SYSTEM	4	4	1	0	2	0	1	0	DEFERRAL NOT PERMISSIBLE, NOTE 2(EXAM MAY BE PERFORMED COINCIDENT WITH CAT B-D)
							25%		75%		100%	
		VOLUMETRIC SURFACE	REACTOR WATER CLEANUP	1	1	0	0	1	0	0	0	
							0%		100%		100%	
		VOLUMETRIC SURFACE	RESIDUAL HEAT REMOVAL	3	3	0	0	1	0	2	0	
							0%		33%		100%	

CLASS 1 SECTION XI SUMMARY

TABLE A

CATEGORY B-F - PRESSURE RETAINING DISSIMILAR METAL WELDS

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER	2ND PER	3RD PER	COMMENTS
			ITEM TOTAL	8	8	1 0 12%	4 0 62%	3 0 100%	
B5.140	PIPING-DISSIMILAR METAL BUTT WELDS < 4 INCHES NOMINAL PIPE SIZE	SURFACE	CONTROL ROD DRIVE RETURN	1	1	0 0 0%	1 0 100%	0 0 100%	DEFERRAL NOT PERMISSIBLE, NOTE 2(EXAM MAY BE PERFORMED COINCIDENT WITH CAT B-D)
		SURFACE	REACTOR BOTTOM HEAD DRAIN	1	1	0 0 0%	0 0 0%	1 0 100%	
			ITEM TOTAL	2	2	0 0 0%	1 0 50%	1 0 100%	
B5.150	PIPING-DISSIMILAR METAL SOCKET WELDS		N/A						
B5.20	REACTOR VESSEL-NOZZLE-TO-SAFE END BUTT WELDS < 4 INCHES NOMINAL PIPE SIZE	SURFACE	CONTROL ROD DRIVE RETURN	1	1	1 0 100%	0 0 100%	0 0 100%	DEFERRAL NOT PERMISSIBLE, NOTE 2(EXAM MAY BE PERFORMED COINCIDENT WITH CAT B-D)
		SURFACE	LIQUID LEVEL CONTROL SYSTEM - CORE	1	1	0 0 0%	0 0 0%	1 0 100%	
		SURFACE	REACTOR VESSEL INSTRUMENTATION	6	6	2 0 33%	1 0 50%	3 0 100%	
			ITEM TOTAL	8	8	3 0 37%	1 0 50%	4 0 100%	
B5.30	REACTOR VESSEL-NOZZLE-TO-SAFE END SOCKET WELDS		N/A						

CLASS 1 SECTION XI SUMMARY

TABLE A

CATEGORY B-F - PRESSURE RETAINING DISSIMILAR METAL WELDS

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER		2ND PER		3RD PER		COMMENTS
B5.40	PRESSURIZER-NOZZLE-TO-SAFE END BUTT WELDS >= 4 INCHES NOMINAL PIPE SIZE		N/A									
B5.50	PRESSURIZER-NOZZLE-TO-SAFE END BUTT WELDS < 4 INCHES NOMINAL PIPE SIZE		N/A									
B5.60	PRESSURIZER-NOZZLE-TO-SAFE END SOCKET WELDS		N/A									
B5.70	STEAM GENERATOR-NOZZLE-TO-SAFE END BUTT WELDS >= 4 INCHES NOMINAL PIPE SIZE		N/A									
B5.80	STEAM GENERATOR-NOZZLE-TO-SAFE END BUTT WELDS < 4 INCHES NOMINAL PIPE SIZE		N/A									
B5.90	STEAM GENERATOR-NOZZLE-TO-SAFE END SOCKET WELDS		N/A									
			CATEGORY TOTAL	32	32	10	0	6	0	16	0	
							31%		50%		100%	

CLASS 1 SECTION XI SUMMARY

TABLE A

CATEGORY B-G-1 - PRESSURE RETAINING BOLTING GREATER THAN 2 INCHES IN DIAMETER

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	ZONE SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER		2ND PER		3RD PER		COMMENTS
B6.10	REACTOR VESSEL-CLOSURE HEAD NUTS	VISUAL	REACTOR PRESSURE VESSEL	60	60	20	0 33%	21	0 68%	19	0 100%	DEFERRAL NOT PERMISSIBLE,NOTE1(MA BE EXAMINED INPLACE, WHEN DISASSEMBLED, REMOVED)
B6.100	STEAM GENERATORS-FLANGE SURFACE, WHEN CONNECTION DISASSEMBLED		N/A									
B6.110	STEAM GENERATORS-NUTS, BUSHINGS, AND WASHERS		N/A									
B6.120	HEAT EXCHANGERS-BOLTS AND STUDS		N/A									
B6.130	HEAT EXCHANGERS-FLANGE SURFACE, WHEN CONNECTION DISASSEMBLED		N/A									
B6.140	HEAT EXCHANGERS-NUTS, BUSHINGS, AND WASHERS		N/A									
B6.150	PIPING-BOLTS AND STUDS		N/A									
B6.160	PIPING-FLANGE SURFACE, WHEN CONNECTION DISASSEMBLED		N/A									
B6.170	PIPING-NUTS, BUSHINGS, AND WASHERS		N/A									
B6.180	PUMPS-BOLTS AND STUDS	VOLUMETRIC	RECIRCULATION PUMP	2	0	0	0 0%	0	0 0%	0	0 0%	DEFERRAL NOT PERMISSIBLE,NOTE1(MA BE EXAMINED INPLACE, WHEN DISASSEMBLED, REMOVED)
B6.190	PUMPS-FLANGE SURFACE, WHEN CONNECTION DISASSEMBLED	VISUAL	RECIRCULATION PUMP	2	0	0	0 0%	0	0 0%	0	0 0%	DEFERRAL NOT PERMISSIBLE
B6.20	REACTOR VESSEL-CLOSURE STUDS, IN PLACE	VOLUMETRIC	REACTOR PRESSURE VESSEL	56	56	17	0 30%	20	0 66%	19	0 100%	DEFERRAL NOT PERMISSIBLE

CLASS 1 SECTION XI SUMMARY
TABLE A

CATEGORY B-G-1 - PRESSURE RETAINING BOLTING GREATER THAN 2 INCHES IN DIAMETER

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	ZONE SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER		2ND PER		3RD PER		COMMENTS
B6.20	REACTOR VESSEL-CLOSURE STUDS, IN PLACE	VISUAL	RECIRCULATION PUMP	2	0	0	0 0%	0	0 0%	0	0 0%	DEFERRAL NOT PERMISSIBLE
			ITEM TOTAL	58	56	17	0 30%	20	0 66%	19	0 100%	
B6.200	PUMPS-NUTS, BUSHINGS, AND WASHERS	VISUAL	RECIRCULATION PUMP	2	0	0	0 0%	0	0 0%	0	0 0%	DEFERRAL NOT PERMISSIBLE
B6.210	VALVES-BOLTS AND STUDS		N/A									
B6.220	VALVES-FLANGE SURFACE, WHEN CONNECTION DISASSEMBLED		N/A									
B6.230	VALVES-NUTS, BUSHINGS, AND WASHERS		N/A									
B6.30	REACTOR VESSEL-CLOSURE STUDS, WHEN REMOVED	VOLUMETRIC SURFACE	REACTOR PRESSURE VESSEL	4	4	4	0 100%	0	0 100%	0	0 100%	DEFERRAL PERMISSIBLE
B6.40	REACTOR VESSEL-THREADS IN FLANGE	VOLUMETRIC	REACTOR PRESSURE VESSEL	60	60	20	0 33%	20	0 66%	20	0 100%	DEFERRAL NOT PERMISSIBLE, NOTE 2(EXAM ONLY WHEN CONNECTIONS ARE DISASSEMBLED)
B6.50	REACTOR VESSEL-CLOSURE WASHERS, BUSHINGS	VISUAL	REACTOR PRESSURE VESSEL	60	60	21	0 35%	20	0 68%	19	0 100%	DEFFERAL NOT PERMISSIBLE
B6.60	PRESSURIZER-BOLTS AND STUDS		N/A									
B6.70	PRESSURIZER-FLANGE SURFACE, WHEN CONNECTION DISASSEMBLED		N/A									
B6.80	PRESSURIZER-NUTS, BUSHINGS, AND WASHERS		N/A									
B6.90	STEAM GENERATORS-BOLTS AND STUDS		N/A									

CLASS 1 SECTION XI SUMMARY

TABLE A

CATEGORY B-G-1 - PRESSURE RETAINING BOLTING GREATER THAN 2 INCHES IN DIAMETER

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER		2ND PER		3RD PER		COMMENTS
			CATEGORY TOTAL	248	240	82	0	81	0	77	0	
							34%		67%		100%	

CLASS 1 SECTION XI SUMMARY
TABLE A

CATEGORY B-G-2 - PRESSURE RETAINING BOLTING, 2 INCHES AND LESS IN DIAMETER

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	ZONE SYSTEM DESCRIPTION	# OF COMP	NO. REQ	1ST PER		2ND PER		3RD PER		COMMENTS
B7.10	REACTOR VESSEL-BOLTS, STUDS, AND NUTS	VISUAL	REACTOR HEAD SPARE	1	1	0	0	1	0	0	0	DEFERRAL NOT PERMISSIBLE, NOTE1(EXAM MAY BE PERFORMED, INPLACE, WHEN DISASSEMBLED, REMOVED)
							0%		100%		100%	
		VISUAL	REACTOR HEAD VENT	1	1	0	0	0	0	1	0	
		VISUAL	RESIDUAL HEAT REMOVAL	1	1	1	0	0	0	0	0	
							100%		100%		100%	
			ITEM TOTAL	3	3	1	0	1	0	1	0	
							33%		66%		100%	
B7.20	PRESSURIZER-BOLTS, STUDS, AND NUTS		N/A									
B7.30	STEAM GENERATORS-BOLTS, STUDS, AND NUTS		N/A									
B7.40	HEAT EXCHANGERS-BOLTS, STUDS, AND NUTS		N/A									
B7.50	PIPING-BOLTS, STUDS, AND NUTS	VISUAL	REACTOR HEAD VENT	1	6	2	0	2	0	2	0	DEFERRAL NOT PERMISSIBLE, NOTE1(EXAM MAY BE PERFORMED, INPLACE, WHEN DISASSEMBLED, REMOVED)
							33%		66%		100%	
		VISUAL	RECIRCULATION PUMP SUCTION	2	0	0	0	0	0	0	0	
							0%		0%		0%	
		VISUAL	RECIRCULATION SYSTEM PUMP VALVE BYPASS	2	0	0	0	0	0	0	0	
							0%		0%		0%	
			ITEM TOTAL	5	6	2	0	2	0	2	0	
							33%		66%		100%	
B7.60	PUMPS-BOLTS, STUDS, AND NUTS	VISUAL	RECIRCULATION PUMP	2	0	0	0	0	0	0	0	DEFERRAL NOT PERMISSIBLE, NOTE1(EXAM MAY BE
							0%		0%		0%	

PERFORMED, INPLACE,
WHEN DISASSEMBLED,
REMOVED)

CLASS 1 SECTION XI SUMMARY

TABLE A

CATEGORY B-G-2 - PRESSURE RETAINING BOLTING, 2 INCHES AND LESS IN DIAMETER

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	ZONE SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER	2ND PER	3RD PER	COMMENTS
B7.70	VALVES-BOLTS, STUDS, AND NUTS	VISUAL	FEEDWATER SYSTEM	4	0	0 0 0%	0 0 0%	0 0 0%	DEFERRAL NOT PERMISSIBLE, NOTE 2(EXAM LIMITED TO COMPONENTS UNDER CAT B-M-2)
		VISUAL	LIQUID LEVEL CONTROL SYSTEM - CORE	3	0	0 0 0%	0 0 0%	0 0 0%	
		VISUAL	MAIN STEAM	24	0	0 0	0 0	0 0	
		VISUAL	REACTOR BOTTOM HEAD DRAIN	3	0	0 0 0%	0 0 0%	0 0 0%	
		VISUAL	REACTOR WATER CLEANUP	1	0	0 0 0%	0 0 0%	0 0 0%	
		VISUAL	RECIRCULATION PUMP SUCTION	4	0	0 0 0%	0 0 0%	0 0 0%	
		VISUAL	RECIRCULATION SYSTEM DRAIN	4	0	0 0 0%	0 0 0%	0 0 0%	
		VISUAL	RECIRCULATION SYSTEM PUMP VALVE BYPASS	2	0	0 0 0%	0 0 0%	0 0 0%	
		VISUAL	RESIDUAL HEAT REMOVAL	1	0	0 0 0%	0 0 0%	0 0 0%	
			ITEM TOTAL	46	0	0 0 ******%	0 0 ******%	0 0 ******%	
B7.80	CRD HOUSINGS-BOLTS, STUDS, AND NUTS	VISUAL	REACTOR PRESSURE VESSEL	89	0	0 0 0%	0 0 0%	0 0 0%	DEFERRAL NOT PERMISSIBLE, 20 ASSEMBLIES EXAMINED PER REFUELING OUTAGE

CLASS 1 SECTION XI SUMMARY

TABLE A

CATEGORY B-G-2 - PRESSURE RETAINING BOLTING, 2 INCHES AND LESS IN DIAMETER

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	ZONE SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER		2ND PER		3RD PER		COMMENTS
			CATEGORY TOTAL	145	9	3	0	3	0	3	0	
						33%		66%		100%		

CLASS 1 SECTION XI SUMMARY

TABLE A

2 - PRESSURE RETAINING BOLTING, 2 INCHES AND LESS IN DIAMETER

DESCRIPTION	EXAM METHOD	ZONE SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER		2ND PER		3RD PER		COMMENTS	TS
		CATEGORY TOTAL	145	9	3	0	3	0	3	0		
					33%		66%		100%			

CLASS 1 SECTION XI SUMMARY
TABLE A

CATEGORY B-J - PRESSURE RETAINING WELDS IN PIPING

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	ZONE SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER	2ND PER	3RD PER	COMMENTS
B9.11	CIRCUMFERENT'AL PIPE WELDS >=	VOLUMETRIC	CORE SPRAY SYSTEM	40	4	0 0	0 0	4 0	DEFERRAL NOT
	4 IN. NOM'NAL PIPE SIZE	SURFACE				0%	0%	100%	PERMISSIBLE, SEE
									TAP-I005 FOR SELECTI
		VOLUMETRIC	FEEDWATER SYSTEM	76	19	6 0	8 0	5 0	
		SURFACE				31%	73%	100%	
		VOLUMETRIC	HIGH PRESSURE	19	5	0 0	1 0	4 0	
		SURFACE	COOLANT INJECTION,			0%	20%	100%	
			CL-1						
		VOLUMETRIC	JET PUMP	2	0	0 0	0 0	0 0	
		SURFACE	INSTRUMENTATION			0%	0%	0%	
		VOLUMETRIC	MAIN STEAM	88	24	6 0	10 0	8 0	
		SURFACE				25%	66%	100%	
		VOLUMETRIC	REACTOR CORE	27	7	2 0	3 0	2 0	
		SURFACE	ISOLATION COOLING			28%	71%	100%	
		VOLUMETRIC	REACTOR HEAD SPARE	1	0	0 0	0 0	0 0	
		SURFACE				0%	0%	0%	
		VOLUMETRIC	REACTOR HEAD VENT	1	0	0 0	0 0	0 0	
		SURFACE				0%	0%	0%	
		VOLUMETRIC	REACTOR WATER	31	7	2 0	0 0	5 0	
		SURFACE	CLEANUP			28%	28%	100%	
		VOLUMETRIC	RECIRCULATION	19	6	0 0	2 0	4 0	
		SURFACE	MANIFOLD			0%	33%	100%	
		VOLUMETRIC	RECIRCULATION PUMP	36	0	0 0	0 0	0 0	
		SURFACE	SUCTION			0%	0%	0%	
		VOLUMETRIC	RECIRCULATION	18	2	0 0	1 0	1 0	
		SURFACE	SYSTEM PUMP VALVE			0%	50%	100%	
			BYPASS						
		VOLUMETRIC	RECIRCULATION	35	9	0 0	5 0	4 0	
		SURFACE	SYSTEM RISER			0%	55%	100%	

CLASS 1 SECTION XI SUMMARY
TABLE A

CATEGORY B-J - PRESSURE RETAINING WELDS IN PIPING

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	ZONE SYSTEM DESCRIPTION	# OF COMP	NO. REQ	1ST PER		2ND PER		3RD PER		COMMENTS
						# OF COMPONENTS SCHEDULED/COMPLETED						
B9.11	CIRCUMFERENTIAL PIPE WELDS >= 4 IN. NOMINAL PIPE SIZE	VOLUMETRIC SURFACE	RESIDUAL HEAT REMOVAL	49	11	5	0	1	0	5	0	DEFERRAL NOT PERMISSIBLE, SEE TAP-I005 FOR SELECTI
							45%		54%		100%	
			ITEM TOTAL	442	94	21	0	31	0	42	0	
							22%		55%		100%	
B9.12	LONGITUDINAL PIPE WELDS >= 4 IN. NOMINAL PIPE SIZE	VOLUMETRIC SURFACE	MAIN STEAM	46	0	0	0	0	0	0	0	DEFERRAL NOT PERMISSIBLE, CODE CA N524 APPLIED
							0%		0%		0%	
		VOLUMETRIC SURFACE	RECIRCULATION MANIFOLD	3	0	0	0	0	0	0	0	
							0%		0%		0%	
		VOLUMETRIC SURFACE	RECIRCULATION PUMP SUCTION	42	0	0	0	0	0	0	0	
							0%		0%		0%	
		VOLUMETRIC SURFACE	RECIRCULATION SYSTEM RISER	6	0	0	0	0	0	0	0	
							0%		0%		0%	
		VOLUMETRIC SURFACE	RESIDUAL HEAT REMOVAL	3	0	0	0	0	0	0	0	
							0%		0%		0%	
			ITEM TOTAL	100	0	0	0	0	0	0	0	
							*******%		*******%		*******%	
B9.21	CIRCUMFERENTIAL PIPE WELDS < 4 IN. NOMINAL PIPE SIZE	SURFACE	CONTROL ROD DRIVE RETURN	35	7	1	0	3	0	3	0	DEFERRAL NOT PERMISSIBLE, SEE TAP-I005 FOR SELECTI
							14%		57%		100%	
		SURFACE	MAIN STEAM	8	2	0	0	0	0	2	0	
			ITEM TOTAL	43	9	1	0	3	0	5	0	
							11%		44%		100%	
B9.22	LONGITUDINAL PIPE WELDS < 4 IN. NOMINAL PIPE SIZE		N/A									

CLASS 1 SECTION XI SUMMARY
TABLE A

CATEGORY B-J - PRESSURE RETAINING WELDS IN PIPING

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER		2ND PER		3RD PER		COMMENTS
B9.31	BRANCH CONNECTION WELDS >= 4	VOLUMETRIC	FEEDWATER SYSTEM	1	1	0	0	1	0	0	0	DEFERRAL NOT
	IN. NOMINAL PIPE SIZE	SURFACE					0%		100%		100%	PERMISSIBLE, SEE
												TAP-I005 FOR SELECTI
		VOLUMETRIC	MAIN STEAM	9	2	1	0	1	0	0	0	
		SURFACE					50%		100%		100%	
		VOLUMETRIC	RECIRCULATION PUMP	7	2	0	0	0	0	2	0	
		SURFACE	SUCTION				0%		0%		100%	
		VOLUMETRIC	RESIDUAL HEAT	1	1	0	0	0	0	1	0	
		SURFACE	REMOVAL				0%		0%		100%	
			ITEM TOTAL	18	6	1	0	2	0	3	0	
							16%		50%		100%	
32	BRANCH CONNECTION WELDS < 4	VOLUMETRIC	RECIRCULATION PUMP	4	1	0	0	1	0	0	0	DEFERRAL NOT
	IN. NOMINAL PIPE SIZE	SURFACE	SUCTION				0%		100%		100%	PERMISSIBLE, SEE
												TAP-I005 FOR SELECTI
		SURFACE	RECIRCULATION	1	0	0	0	0	0	0	0	
			SYSTEM DRAIN				0%		0%		0%	
			ITEM TOTAL	5	1	0	0	1	0	0	0	
							0%		100%		100%	
B9.40	SOCKET WELDS	SURFACE	LIQUID LEVEL	26	5	1	0	4	0	0	0	DEFERRAL NOT
			CONTROL SYSTEM -				20%		100%		100%	PERMISSIBLE, SEE
			CORE									TAP-I005 FOR SELECTI
		SURFACE	REACTOR BOTTOM	20	4	1	0	0	0	3	0	
			HEAD DRAIN				25%		25%		100%	
		SURFACE	REACTOR VESSEL	18	1	0	0	0	0	1	0	
			INSTRUMENTATION				0%		0%		100%	
		SURFACE	REACTOR WATER	1	1	0	0	1	0	0	0	
			CLEANUP				0%		100%		100%	

CLASS 1 SECTION XI SUMMARY

TABLE A

CATEGORY B-J - PRESSURE RETAINING WELDS IN PIPING

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER		2ND PER		3RD PER		COMMENTS
B9.40	SOCKET WELDS	SURFACE	RECIRCULATION SYSTEM DRAIN	47	12	3	0	3	0	6	0	DEFERRAL NOT PERMISSIBLE, SEE TAP-I005 FOR SELECTI
						25%		50%		100%		
			ITEM TOTAL	112	23	5	0	8	0	10	0	
						21%		56%		100%		
			CATEGORY TOTAL	720	133	28	0	45	0	60	0	
						21%		54%		100%		

CLASS 1 SECTION XI SUMMARY
TABLE A

CATEGORY B-K - INTEGRAL ATTACHMENTS FOR CLASS 1 VESSELS, PIPING, PUMPS, AND VALVES

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	ZONE SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER	2ND PER	3RD PER	COMMENTS
B10.10	REACTOR VESSEL, INTEGRALLY WELDED ATTACHMENTS	SURFACE	REACTOR PRESSURE VESSEL	5	1	0 0 0%	0 0 0%	1 0 100%	CODE CASE N509, SEE TAP-I007
B10.20	INTEGRALLY WELDED ATTACHMENTS TO PIPING	SURFACE	MAIN STEAM	16	1	1 0 100%	0 0 100%	0 0 100%	CODE CASE N509, SEE TAP-I007
		SURFACE	RECIRCULATION MANIFOLD	4	0	0 0 0%	0 0 0%	0 0 0%	
		SURFACE	RECIRCULATION PUMP SUCTION	12	2	0 0 0%	1 0 50%	1 0 100%	
			ITEM TOTAL	32	3	1 0 33%	1 0 66%	1 0 100%	
10.30	INTEGRALLY WELDED ATTACHMENTS FOR PUMPS	SURFACE	RECIRCULATION PUMP	8	1	0 0 0%	0 0 0%	1 0 100%	CODE CASE N509, SEE TAP-I007
B10.40	VALVES INTEGRALLY WELDED ATTACHMENTS		N/A						
			CATEGORY TOTAL	45	5	1 0 20%	1 0 40%	3 0 100%	

CLASS 1 SECTION XI SUMMARY

TABLE A

CATEGORY B-K-1 - INTEGRAL ATTACHMENTS FOR PIPING, PUMPS, AND VALVES

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER		2ND PER		3RD PER		COMMENTS
B10.10	INTEGRALLY WELDED ATTACHMENTS FOR PIPING		N/A									
B10.20	INTEGRALLY WELDED ATTACHMENTS FOR PUMPS		N/A									
B10.30	INTEGRALLY WELDED ATTACHMENTS FOR VALVES		N/A									
			CATEGORY TOTAL	0	0	0	0	0	0	0	0	
							0%		0%		0%	

CLASS 1 SECTION XI SUMMARY

TABLE A

CATEGORY B-L-1 - PRESSURE RETAINING WELDS IN PUMP CASING

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER		2ND PER		3RD PER		COMMENTS
B12.10	PUMPS-PUMP CASING WELDS		N/A									
			CATEGORY TOTAL	0	0	0	0	0	0	0	0	
							0%		0%		0%	

CLASS 1 SECTION XI SUMMARY
TABLE A

CATEGORY B-L-2 - PUMP CASINGS

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	ZONE SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER		2ND PER		3RD PER		COMMENTS
B12.20	PUMPS-PUMP CASINGS	VISUAL	RECIRCULATION PUMP SUCTION	2	0	0	0 0%	0	0 0%	0	0 0%	DEFERRAL PERMISSIBLE NOTE 2(EXAM REQUIRED ONLY WHEN DISASSEMBLED)
			CATEGORY TOTAL	2	0	0	0 0%	0	0 0%	0	0 0%	

CLASS 1 SECTION XI SUMMARY

TABLE A

CATEGORY B-M-1 - PRESSURE RETAINING WELDS IN VALVE BODIES

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER		2ND PER		3RD PER		COMMENTS
B12.30	VALVES-VALVE BODY WELDS < 4 INCHES NOMINAL PIPE SIZE		N/A									
B12.40	VALVES-VALVE BODY WELDS >= 4 INCHES NOMINAL PIPE SIZE		N/A									
			CATEGORY TOTAL	0	0	0	0	0	0	0	0	
							0%		0%		0%	

CLASS 1 SECTION XI SUMMAPY
TABLE A

CATEGORY B-M-2 - VALVE BODIES

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	ZONE SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER		2ND PER		3RD PER		COMMENTS
B12.50	VALVES-VALVE BODIES EXCEEDING 4 INCHES NOMINAL PIPE SIZE	VISUAL	CORE SPRAY SYSTEM	6	0	0	0	0	0	0	0	DEFERRAL PERMISSIBLE
							0%		0%		0%	NOTE 2(EXAM REQUIRED ONLY WHEN DISASSEMBLED)
		VISUAL	FEEDWATER SYSTEM	6	0	0	0	0	0	0	0	
		VISUAL	HIGH PRESSURE COOLANT INJECTION, CL-1	4	0	0	0	0	0	0	0	
							0%		0%		0%	
		SURFACE VISUAL	MAIN STEAM	16	4	4	0	0	0	0	0	
							100%		100%		100%	
		VISUAL	RECIRCULATION PUMP SUCTION	4	0	0	0	0	0	0	0	
							0%		0%		0%	
		VISUAL	RESIDUAL HEAT REMOVAL	9	0	0	0	0	0	0	0	
							0%		0%		0%	
			ITEM TOTAL	45	4	4	0	0	0	0	0	
							100%		100%		100%	
			CATEGORY TOTAL	45	4	4	0	0	0	0	0	
							100%		100%		100%	

CLASS 1 SECTION XI SUMMARY

TABLE A

CATEGORY B-N-1 - INTERIOR OF REACTOR VESSEL

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER		2ND PER		3RD PER		COMMENTS
B13.10	REACTOR VESSEL-VESSEL INTERIOR	VISUAL	REACTOR PRESSURE VESSEL	13	39	13	0	13	0	13	0	DEFERRAL NOT PERMISSIBLE, NOTE1(AREAS EXAMINED SHALL BE THAT MADE AVAILABLE DURING RFOs).
						33%		66%		100%		
			CATEGORY TOTAL	13	39	13	0	13	0	13	0	
						33%		66%		100%		

CLASS 1 SECTION XI SUMMARY

TABLE A

CATEGORY B-N-2 - INTEGRALLY WELDED CORE SUPPORT STRUCTURES AND INTERIOR ATTACHMENTS TO REACTOR VESSEL

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER		2ND PER		3RD PER		COMMENTS
B13.20	REACTOR VESSEL (BWR)-INTERIOR ATTACHMENTS WITHIN BELTLINE REGION	VISUAL	REACTOR PRESSURE VESSEL	8	8	0	0 0%	0	0 0%	8	0 100%	DEFERRAL PERMISSIBLE
B13.30	REACTOR VESSEL (BWR)-INTERIOR ATTACHMENTS BEYOND BELTLINE REGION	VISUAL	REACTOR PRESSURE VESSEL	30	30	0	0 0%	0	0 0%	30	0 100%	DEFERRAL PERMISSIBLE
B13.40	REACTOR VESSEL (BWR)-CORE SUPPORT STRUCTURE	VISUAL	REACTOR PRESSURE VESSEL	5	5	0	0 0%	0	0 0%	5	0 100%	DEFERRAL PERMISSIBLE ACCESSIBLE AREAS
B13.50	REACTOR VESSEL (PWR)-INTERIOR ATTACHMENTS WITHIN BELTLINE REGION		N/A									
B13.60	REACTOR VESSEL (PWR)-INTERIOR ATTACHMENTS BEYOND BELTLINE REGION		N/A									
			CATEGORY TOTAL	43	43	0	0 0%	0	0 0%	43	0 100%	

CLASS 1 SECTION XI SUMMARY

TABLE A

CATEGORY B-N-3 - REMOVABLE CORE SUPPORT STRUCTURES

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER		2ND PER		3RD PER		COMMENTS
B13.70	REACTOR VESSEL (PWR)-CORE SUPPORT STRUCTURE		N/A									
			CATEGORY TOTAL	0	0	0	0	0	0	0	0	
							0%		0%		0%	

CLASS 1 SECTION XI SUMMARY

TABLE A

CATEGORY B-O - PRESSURE RETAINING WELDS IN CONTROL ROD HOUSINGS

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	ZONE SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER		2ND PER		3RD PER		COMMENTS
B14.10	REACTOR VESSEL-WELDS IN CONTROL ROD DRIVE HOUSINGS	VOLUMETRIC	REACTOR PRESSURE VESSEL	28	3	0	0	0	0	3	0	DEFERRAL PERMISSIBLE
							0%		0%		100%	
			CATEGORY TOTAL	28	3	0	0	0	0	3	0	
							0%		0%		100%	

CLASS 1 SECTION XI SUMMARY
TABLE A

CATEGORY B-P - ALL PRESSURE RETAINING COMPONENTS

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER	2ND PER	3RD PER	COMMENTS
B15.10	REACTOR VESSEL-SYSTEM LEAKAGE TEST	VISUAL	CLASS 1 SYSTEMS	2	5	2 0 40%	2 0 80%	1 0 100%	DEFERRAL NOT PERMISSIBLE
B15.11	REACTOR VESSEL-SYSTEM HYDROSTATIC TEST	VISUAL	CLASS 1 SYSTEMS	1	1	0 0 0%	0 0 0%	1 0 100%	CODE CASE N498-1
B15.20	PRESSURIZER-SYSTEM LEAKAGE TEST		N/A						
B15.21	PRESSURIZER-SYSTEM HYDROSTATIC TEST		N/A						
B15.30	STEAM GENERATORS-SYSTEM LEAKAGE TEST		N/A						
B15.31	STEAM GENERATORS-SYSTEM HYDROSTATIC TEST		N/A						
.40	HEAT EXCHANGERS-SYSTEM LEAKAGE TEST		N/A						
B15.41	HEAT EXCHANGERS-SYSTEM HYDROSTATIC TEST		N/A						
B15.50	PIPING-SYSTEM LEAKAGE TEST		N/A						
B15.51	PIPING-SYSTEM HYDROSTATIC TEST		N/A						
B15.60	PUMPS-SYSTEM LEAKAGE TEST		N/A						
B15.61	PUMPS-SYSTEM HYDROSTATIC TEST		N/A						
B15.70	VALVES-SYSTEM LEAKAGE TEST		N/A						
B15.71	VALVES-SYSTEM HYDROSTATIC TEST		N/A						
			CATEGORY TOTAL	3	6	2 0 33%	2 0 66%	2 0 100%	

CLASS 1 SECTION XI SUMMARY

TABLE A

CATEGORY B-Q - STEAM GENERATOR TUBING

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER		2ND PER		3RD PER		COMMENTS
B16.10	STEAM GENERATOR TUBING IN STRAIGHT TUBE DESIGN		N/A									
B16.20	STEAM GENERATOR TUBING IN U-TUBE DESIGN		N/A									
			CATEGORY TOTAL	0	0	0	0	0	0	0	0	
							0%		0%		0%	

CLASS 2 SECTION XI SUMMARY

TABLE B

CATEGORY C-A - PRESSURE RETAINING WELDS IN PRESSURE VESSELS

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	ZONE SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER		2ND PER		3RD PER		COMMENTS
C1.10	SHELL CIRCUMFERENTIAL WELDS	VOLUMETRIC	PRESSURE VESSEL	2	2	1	0	0	0	1	0	WELDS AT GROSS STRUCTURAL DISCONTINUITY ONLY, NOTE3(MULTIPLE VESSE ONLY ONE REQUIRED)
							50%		50%		100%	
C1.20	HEAD CIRCUMFERENTIAL WELDS	VOLUMETRIC	PRESSURE VESSEL	1	1	0	0	1	0	0	0	NOTE3 (MULITPLE VESSELS ONLY ONE REQUIRED)
							0%		100%		100%	
C1.30	TUBESHEET-TO-SHELL WELDS		N/A									
			CATEGORY TOTAL	3	3	1	0	1	0	1	0	
							33%		66%		100%	

CLASS 2 SECTION XI SUMMARY
TABLE B

CATEGORY C-B - PRESSURE RETAINING NOZZLE WELDS IN VESSELS

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER	2ND PER	3RD PER	COMMENTS
C2.11	NOZZLE-TO-SHELL (OR HEAD) WELD <= 1/2 IN. NOMINAL THICKNESS		N/A						
C2.21	NOZZLE-TO-SHELL (OR HEAD) WELD > 1/2 IN. NOMINAL THICKNESS WITHOUT REINFORCING PLATE	VOLUMETRIC SURFACE	PRESSURE VESSEL	2	2	0 0 0%	1 0 50%	1 0 100%	ALL NOZZLES AT TERMINAL ENDS
C2.22	NOZZLE INSIDE RADIUS SECTION > 1/2 IN. NOMINAL THICKNESS WITHOUT REINFORCING PLATE	VOLUMETRIC	PRESSURE VESSEL	2	2	0 0 0%	1 0 50%	1 0 100%	
C2.31	REINFORCING PLATE WELDS TO NOZZLE AND VESSEL > 1/2 IN. NOMINAL THICKNESS		N/A						
C2.32	NOZZLE-TO-SHELL (OR HEAD) WELDS WHEN INSIDE OF VESSEL IS ACCESSIBLE > 1/2 IN. NOMINAL		N/A						
C2.33	NOZZLE-TO-SHELL (OR HEAD) WELDS WHEN INSIDE OF WELD IS INACCESSIBLE > 1/2 IN. NOMINAL		N/A						
			CATEGORY TOTAL	4	4	0 0 0%	2 0 50%	2 0 100%	

CLASS 2 SECTION XI SUMMARY
TABLE B

CATEGORY C-C - INTEGRAL ATTACHMENTS FOR CLASS 2 VESSELS, PIPING, PUMPS, AND VALVES

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	ZONE SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER		2ND PER		3RD PER		COMMENTS
C3.10	PRESSURE VESSELS INTEGRALLY WELDED ATTACHMENTS	SURFACE	PRESSURE VESSEL	5	1	0	0	0	0	1	0	CODE CASE N509, SEE
							0%		0%		100%	TAP-I007
C3.20	PIPING INTEGRALLY WELDED ATTACHMENTS	SURFACE	CORE SPRAY SYSTEM	12	2	1	0	0	0	1	0	CODE CASE N509, SEE
							50%		50%		100%	TAP-I007
		SURFACE	HIGH PRESSURE COOLANT INJECTION, CL-2	14	2	1	0	1	0	0	0	
							50%		100%		100%	
		SURFACE	MAIN STEAM	1	0	0	0	0	0	0	0	
		SURFACE	REACTOR CORE ISOLATION COOLING	2	1	0	0	0	0	1	0	
							0%		0%		100%	
		SURFACE	RESIDUAL HEAT REMOVAL	32	2	0	0	1	0	1	0	
							0%		50%		100%	
			ITEM TOTAL	61	7	2	0	2	0	3	0	
							28%		57%		100%	
C3.30	PUMPS INTEGRALLY WELDED ATTACHMENTS		N/A									
C3.40	VALVES INTEGRALLY WELDED ATTACHMENTS		N/A									
			CATEGORY TOTAL	66	8	2	0	2	0	4	0	
							25%		50%		100%	

CLASS 2 SECTION XI SUMMARY

TABLE B

CATEGORY C-D - PRESSURE RETAINING BOLTING GREATER THAN 2 INCHES IN DIAMETER

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER		2ND PER		3RD PER		COMMENTS
C4.10	PRESSURE VESSELS-BOLTS AND STUDS		N/A									
C4.20	PIPING-BOLTS AND STUDS		N/A									
C4.30	PUMPS-BOLTS AND STUDS		N/A									
C4.40	VALVES-BOLTS AND STUDS		N/A									
			CATEGORY TOTAL	0	0	0	0	0	0	0	0	
							0%		0%		0%	

CLASS 2 SECTION XI SUMMARY

TABLE B

CATEGORY C-F-1 - PRESSURE RETAINING WELDS IN AUSTENITIC STAINLESS STEEL PIPING

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER		2ND PER		3RD PER		COMMENTS
C5.11	CIRCUMFERENTIAL PIPE WELDS >=3/8 IN. NOMINAL WALL THICKNESS FOR PIPING >NPS 4"		N/A									
C5.12	LONGITUDINAL PIPE WELDS >=3/8 IN. NOMINAL WALL THICKNESS FOR PIPING >NPS 4"		N/A									
C5.21	CIRCUMFERENTIAL PIPE WELDS > 1/5 IN. NOMINAL WALL THICKNESS FOR PIPING >= NPS 2" AND <=		N/A									
C5.22	LONGITUDINAL PIPE WELDS > 1/5 IN. NOMINAL WALL THICKNESS FOR PIPING >= NPS 2" AND <= NPS 4"		N/A									
C5.30	SOCKET WELDS		N/A									
C5.41	CIRCUMFERENTIAL PIPE BRANCH CONNECTIONS OF BRANCH PIPING >= NPS 2"		N/A									
C5.42	LONGITUDINAL PIPE BRANCH CONNECTIONS OF BRANCH PIPING >= NPS 2"		N/A									
			CATEGORY TOTAL	0	0	0	0	0	0	0	0	
							0%		0%		0%	

CLASS 2 SECTION XI SUMMARY

TABLE B

CATEGORY C-F-2 - PRESSURE RETAINING WELDS IN CARBON OR LOW ALLOY STEEL PIPING

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	ZONE SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER		2ND PER		3RD PER		COMMENTS
C5.51	CIRCUMFERENTIAL PIPING WELDS >= 3/8" IN NOMINAL WALL THICKNESS FOR PIPING > NPS 4"	VOLUMETRIC SURFACE	CORE SPRAY SYSTEM	136	10	2	0	1	0	7	0	SEE TAP-I006 FOR SELECTION
							20%		30%		100%	
		VOLUMETRIC SURFACE	HIGH PRESSURE COOLANT INJECTION, CL-2	150	12	2	0	8	0	2	0	
							16%		83%		100%	
		VOLUMETRIC SURFACE	MAIN STEAM	142	11	1	0	6	0	4	0	
							9%		63%		100%	
		VOLUMETRIC SURFACE	REACTOR CORE ISOLATION COOLING	14	0	0	0	0	0	0	0	
							0%		0%		0%	
		VOLUMETRIC SURFACE	RESIDUAL HEAT REMOVAL	433	34	6	0	8	0	20	0	
							17%		41%		100%	
		VOLUMETRIC SURFACE	SCRAM DISCHARGE	27	2	1	0	1	0	0	0	
							50%		100%		100%	
			ITEM TOTAL	902	69	12	0	24	0	33	0	
							17%		52%		100%	
C5.52	LONGITUDINAL PIPING WELDS >= 3/8" IN NOMINAL WALL THICKNESS FOR PIPING > NPS 4"		N/A									
C5.61	CIRCUMFERENTIAL PIPING WELDS > 1/5" IN NOMINAL WALL THICKNESS FOR PIPING >= NPS 2" AND <=		N/A									
C5.62	LONGITUDINAL PIPING WELDS > 1/5" IN NOMINAL WALL THICKNESS FOR PIPING >= NPS 2" AND <=		N/A									
C5.70	SOCKET WELDS		N/A									
C5.81	CIRCUMFERENTIAL PIPE BRANCH CONNECTIONS OF BRANCH PIPING >= NPS 2"	VOLUMETRIC SURFACE	MAIN STEAM	4	1	1	0	0	0	0	0	NOT APPLICABLE TO TH DAEC
							100%		100%		100%	

CLASS 2 SECTION XI SUMMARY
TABLE B

CATEGORY C-F-2 - PRESSURE RETAINING WELDS IN CARBON OR LOW ALLOY STEEL PIPING

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER		2ND PER		3RD PER		COMMENTS
C5.82	LONGITUDINAL PIPE BRANCH CONNECTIONS OF BRANCE PIPING >= NPS 2"		N/A									
			CATEGORY TOTAL	906	70	13	0	24	0	33	0	
						18%		52%		100%		

CLASS 2 SECTION XI SUMMARY

TABLE B

CATEGORY C-G - PRESSURE RETAINING WELDS IN PUMPS AND VALVES

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER		2ND PER		3RD PER		COMMENTS
C6.10	PUMPS-PUMP CASING WELDS		N/A									
C6.20	VALVES-VALVE BODY WELDS		N/A									
			CATEGORY TOTAL	0	0	0	0	0	0	0	0	
							0%		0%		0%	

CLASS 2 SECTION XI SUMMARY
TABLE B

CATEGORY C-H - ALL PRESSURE RETAINING COMPONENTS

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER		2ND PER		3RD PER		COMMENTS
C7.10	PRESSURE VESSELS-SYSTEM PRESSURE TEST	VISUAL	CONTROL ROD DRIVE HOUSINGS (ALL 89)	1	2	1	0	1	0	0	0	
							50%		100%		100%	
		VISUAL	CORE SPRAY SYSTEM	1	2	1	0	1	0	0	0	
		VISUAL	HIGH PRESSURE COOLANT INJECTION,STEAM SIDE	1	2	1	0	1	0	0	0	
							50%		100%		100%	
		VISUAL	MAIN STEAM	1	2	1	0	1	0	0	0	
		VISUAL	RESIDUAL HEAT REMOVAL	1	2	1	0	1	0	0	0	
							50%		100%		100%	
			ITEM TOTAL	5	10	5	0	5	0	0	0	
							50%		100%		100%	
C7.20	PRESSURE VESSELS-SYSTEM HYDROSTATIC TEST	VISUAL	CONTROL ROD DRIVE HOUSINGS (ALL 89)	1	1	0	0	0	0	1	0	
							0%		0%		100%	
		VISUAL	CORE SPRAY SYSTEM	1	1	0	0	0	0	1	0	
		VISUAL	HIGH PRESSURE COOLANT INJECTION,STEAM SIDE	1	1	0	0	0	0	1	0	
							0%		0%		100%	
		VISUAL	MAIN STEAM	1	1	0	0	0	0	1	0	
		VISUAL	RESIDUAL HEAT REMOVAL	1	1	0	0	0	0	1	0	
							0%		0%		100%	
			ITEM TOTAL	5	5	0	0	0	0	5	0	
							0%		0%		100%	
C7.30	PIPING-SYSTEM PRESSURE TEST		N/A									

CLASS 2 SECTION XI SUMMARY

TABLE B

CATEGORY C-H - ALL PRESSURE RETAINING COMPONENTS

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER	2ND PER	3RD PER	COMMENTS
C7.40	PIPING-SYSTEM HYDROSTATIC TEST		N/A						
C7.50	PUMPS-SYSTEM PRESSURE TEST		N/A						
C7.60	PUMPS-SYSTEM HYDROSTATIC TEST		N/A						
C7.70	VALVES-SYSTEM PRESSURE TEST		N/A						
C7.80	VALVES-SYSTEM HYDROSTATIC TEST		N/A						
			CATEGORY TOTAL	10	15	5 0	5 0	5 0	
						33%	66%	100%	

CLASS 3 SECTION XI SUMMARY

TABLE C

CATEGORY D-A - INTEGRAL ATTACHMENTS FOR CLASS 3 VESSELS, PIPING, PUMPS, AND VALVES

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER		2ND PER		3RD PER		COMMENTS
D1.10	PRESSURE VESSEL INTEGRALLY WELDED ATTACHMENTS		N/A									
D1.20	PIPING INTEGRALLY WELDED ATTACHMENTS	VISUAL	EMERGENCY SERVICE WATER SYSTEM	12	2	1	0	0	0	1	0	CODE CASE N509 (SEE TAP-I007 FOR SELECTION)
							50%		50%		100%	
		VISUAL	MAIN STEAM	26	3	1	0	1	0	1	0	
		VISUAL	RESIDUAL HEAT REMOVAL SERVICE WATER SYSTEM	17	1	0	0	0	0	1	0	
							0%		0%		100%	
		VISUAL	RIVER WATER SUPPLY SYSTEM	13	1	0	0	1	0	0	0	
							0%		100%		100%	
			ITEM TOTAL	68	7	2	0	2	0	3	0	
							28%		57%		100%	
D1.30	PUMPS INTEGRALLY WELDED ATTACHMENTS		N/A									
D1.40	VALVES INTEGRALLY WELDED ATTACHMENTS		N/A									
			CATEGORY TOTAL	68	7	2	0	2	0	3	0	
							28%		57%		100%	

CLASS 3 SECTION XI SUMMARY
TABLE C

CATEGORY D-B - SYSTEMS IN SUPPORT OF EMER.CORE COOLING, CONT.HT REMVL, ATMOS.CLEANUP AND REACTOR RHR

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER		2ND PER		3RD PER		COMMENTS
D2.10	SYSTEM PRESSURE TEST	VISUAL	EMERGENCY SERVICE WATER SYSTEM	1	2	1	0	0	0	1	0	
							50%		50%		100%	
		VISUAL	RESIDUAL HEAT REMOVAL SERVICE WATER SYSTEM	1	2	1	0	0	0	1	0	
							50%		50%		100%	
		VISUAL	RIVER WATER SUPPLY SYSTEM	1	2	1	0	0	0	1	0	
							50%		50%		100%	
			ITEM TOTAL	3	6	3	0	0	0	3	0	
							50%		50%		100%	
D2.20	SYSTEM HYDROSTATIC TEST	VISUAL	EMERGENCY SERVICE WATER SYSTEM	1	1	0	0	1	0	0	0	
							0%		100%		100%	
		VISUAL	RESIDUAL HEAT REMOVAL SERVICE WATER SYSTEM	1	1	0	0	1	0	0	0	
							0%		100%		100%	
		VISUAL	RIVER WATER SUPPLY SYSTEM	1	1	0	0	1	0	0	0	
							0%		100%		100%	
			ITEM TOTAL	3	3	0	0	3	0	0	0	
							0%		100%		100%	
			CATEGORY TOTAL	6	9	3	0	3	0	3	0	
							33%		66%		100%	

CLASS 1 SECTION XI SUMMARY

TABLE D

CATEGORY F-A - SUPPORTS

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER		2ND PER		3RD PER		COMMENTS
F1.10	CLASS 1 PIPING SUPPORTS	VISUAL	CONTROL ROD DRIVE RETURN	11	3	1	0	1	0	1	0	CODE CASE N491, SEE TAP-I008
							33%		66%		100%	
		VISUAL	CORE SPRAY SYSTEM	6	2	1	0	0	0	1	0	
		VISUAL	FEEDWATER SYSTEM	22	5	2	0	2	0	1	0	
		VISUAL	HIGH PRESSURE COOLANT INJECTION, CL-1	10	3	1	0	1	0	1	0	
							33%		66%		100%	
		VISUAL	LIQUID LEVEL CONTROL SYSTEM - CORE	7	2	0	0	1	0	1	0	
							0%		50%		100%	
		VISUAL	MAIN STEAM	26	7	3	0	2	0	2	0	
		VISUAL	MAIN STEAM DRAIN - COMMON	1	0	0	0	0	0	0	0	
							0%		0%		0%	
		VISUAL	REACTOR BOTTOM HEAD DRAIN	2	0	0	0	0	0	0	0	
							0%		0%		0%	
		VISUAL	REACTOR CORE ISOLATION COOLING	9	2	1	0	1	0	0	0	
							50%		100%		100%	
		VISUAL	REACTOR WATER CLEANUP	18	4	2	0	0	0	2	0	
							50%		50%		100%	
		VISUAL	RECIRCULATION MANIFOLD	4	1	0	0	0	0	1	0	
							0%		0%		100%	
		VISUAL	RECIRCULATION PUMP SUCTION	18	5	2	0	2	0	1	0	
							40%		80%		100%	
		VISUAL	RECIRCULATION SYSTEM DRAIN	6	2	0	0	0	0	2	0	
							0%		0%		100%	
		VISUAL	RECIRCULATION SYSTEM PUMP VALVE BYPASS	6	1	0	0	1	0	0	0	
							0%		100%		100%	

CLASS 1 SECTION XI SUMMARY
TABLE D

CATEGORY F-A - SUPPORTS

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	ZONE SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER		2ND PER		3RD PER		COMMENTS
F1.10	CLASS 1 PIPING SUPPORTS	VISUAL	RESIDUAL HEAT REMOVAL	19	5	1	0	2	0	2	0	CODE CASE N491, SEE TAP-I008
							20%		60%		100%	
			ITEM TOTAL	165	42	14	0	13	0	15	0	
							33%		64%		100%	
F1.20	CLASS 2 PIPING SUPPORTS	VISUAL	CORE SPRAY SYSTEM	57	9	3	0	3	0	3	0	CODE CASE N491, SEE TAP-I008
							33%		66%		100%	
		VISUAL	HIGH PRESSURE COOLANT INJECTION, CL-2	61	9	2	0	3	0	4	0	
							22%		55%		100%	
		VISUAL	MAIN STEAM	49	8	2	0	3	0	3	0	
		VISUAL	REACTOR CORE ISOLATION COOLING	14	2	0	0	0	0	2	0	
							0%		0%		100%	
		VISUAL	RESIDUAL HEAT REMOVAL	134	20	6	0	6	0	8	0	
							30%		60%		100%	
		VISUAL	SCRAM DISCHARGE	18	4	1	0	1	0	2	0	
			ITEM TOTAL	333	52	14	0	16	0	22	0	
							26%		57%		100%	
F1.30	CLASS 3 PIPING SUPPORTS	VISUAL	EMERGENCY SERVICE WATER SYSTEM	64	7	2	0	3	0	2	0	CODE CASE N491, SEE TAP-I008
							28%		71%		100%	
		VISUAL	MAIN STEAM	65	7	1	0	1	0	5	0	
		VISUAL	RESIDUAL HEAT REMOVAL SERVICE WATER SYSTEM	80	8	3	0	0	0	5	0	
							37%		37%		100%	
		VISUAL	RIVER WATER SUPPLY SYSTEM	29	3	0	0	3	0	0	0	
							0%		100%		100%	

CLASS 1 SECTION XI SUMMARY

TABLE D

CATEGORY F-A - SUPPORTS

ASME SEC. XI ITEM #	ITEM DESCRIPTION	EXAM METHOD	ZONE SYSTEM DESCRIPTION	# OF COMP	NO. REQ	# OF COMPONENTS SCHEDULED/COMPLETED 1ST PER		2ND PER		3RD PER		COMMENTS
			ITEM TOTAL	238	25	6	0	7	0	12	0	
							24%		52%		100%	
F1.40	SUPPORTS OTHER THAN PIPING SUPPORT (CLASS 1,2,3, AND MC)	VISUAL	FEEDWATER SYSTEM	4	4	1	0	1	0	2	0	CODE CASE N491, SEE TAP-I008
							25%		50%		100%	
		VISUAL	HIGH PRESSURE COOLANT INJECTION, CL-1	1	1	1	0	0	0	0	0	
							100%		100%		100%	
		VISUAL	PRESSURE VESS[illegible]	5	5	0	0	3	0	2	0	
		VISUAL	REACTOR PRESSURE VESSEL	1	[illegible]	0	0	0	0	1	0	
							[illegible]%		0%		100%	
		VISUAL	RECIRCULATION PUMP	12	6	2	0	2	0	2	0	
		VISUAL	RESIDUAL HEAT REMOVAL	2	2	1	0	1	0	0	0	
							50%		100%		100%	

DJM SYSTEMS ENGINEERING, INC.
ISI Data Base Management System

IES UTILITIES INC.

IES UTILITIES INC.

DUANE ARNOLD ENERGY CENTER UNIT 1

INSERVICE INSPECTION LONG TERM PLAN
SECTION XI SCHEDULED COMPONENTS

March 18, 1996
REVISION 00

Prepared By: [signature] Date 3/18/96

Reviewed By: Scott Presler Date 3/19/96

Approved By: [signature] Date 3/19/96

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1	FIRST PERIOD OUTAGE 2	FIRST PERIOD OUTAGE 3	SECOND PERIOD OUTAGE 1	SECOND PERIOD OUTAGE 2	THIRD PERIOD OUTAGE 1	THIRD PERIOD OUTAGE 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RPV (FIG NO VS-01-41)											
000100	VCB-A002 REACTOR VESSEL (COURSE 1 TO 2)	B-A B1.11	UT0 UT45 UT60	3	-	-	-	-	X	-	75	RELIEF REQUEST NDE-R001 **IE-30**
000200	VCB-B001 REACTOR VESSEL (BOTT. HEAD TO COURSE 1)	B-A B1.11	UT0 UT45 UT60	3	-	-	-	-	X	-	75	RELIEF REQUEST NDE-R001 **IE-30**
000300	VCB-B003 REACTOR VESSEL (COURSE 2 TO 3)	B-A B1.11	UT0 UT45 UT60	3	-	-	-	-	X	-	75	RELIEF REQUEST NDE-R001 **IE-30**
000400	VCB-B004 REACTOR VESSEL WELD (COURSE 3 TO 4 CIRC WELD)	B-A B1.11	UT0 UT45 UT60	3	-	-	-	-	X	-	75	RELIEF REQUEST NDE-R001 **IE-30**
000500	VCB-C005 REACTOR VESSEL (COURSE 4-SHELL FLANGE)	B-A B1.30	UT0 UT45 UT60	3	X	-	-	-	-	-	75	EXAM AREA: STUD HOLE 60-12 , RELIEF REQUEST NDE-R001 **IE-30**
	RV (FIG NO VS-01-41)											
000510	VCB-C005 REACTOR VESSEL (COURSE 4-SHELL FLANGE)	B-A B1.30	UT0 UT45 UT60	3	-	-	-	-	X	-	75	EXAM AREA: STUD HOLE 12-40 , RELIEF REQUEST NDE-R001 **IE-30**
	RPV (FIG NO VS-01-41)											
000600	VLA-A001 REACTOR VESSEL (COURSE 1 VERT WELD @ 54 DEG)	B-A B1.12	UT0 UT45 UT60	3	-	-	-	-	X	-	75	RELIEF REQUEST NDE-R001 **IE-30**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL PLAN STATUS FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RPV (FIG NO VS-01-41)							
000700	VLA-A002 REACTOR VESSEL (COURSE 1 VERT WELD @ 234 DEG)	B-A B1.12	UT0 UT45 UT60	3 - - -	- -	X -	75	RELIEF REQUEST NDE-R001 **IE-30**
000800	VLB-A001 REACTOR VESSEL (COURSE 2 VERT WELD @ 130 DEG)	B-A B1.12	UT0 UT45 UT60	3 - - -	- -	X -	75	RELIEF REQUEST NDE-R001 **IE-30**
000900	VLB-A002 REACTOR VESSEL (COURSE 2 VERT WELD @ 310 DEG)	B-A B1.12	UT0 UT45 UT60	3 - - -	- -	X -	75	RELIEF REQUEST NDE-R001 **IE-30**
001000	VLC-B001 REACTOR VESSEL (COURSE 3 VERT WELD @ 67 DEG)	B-A B1.12	UT0 UT45 UT60	3 - - -	- -	X -	75	RELIEF REQUEST NDE-R001 **IE-30**
001100	VLC-B002 REACTOR VESSEL (COURSE 3 VERT WELD @ 247 DEG)	B-A B1.12	UT0 UT45 UT60	3 - - -	- -	X -	75	RELIEF REQUEST NDE-R001 **IE-30**
001200	VLD-B001 REACTOR VESSEL (COURSE 4 VERT WELD @ 140 DEG)	B-A B1.12	UT0 UT45 UT60	3 - - -	- -	X -	75	RELIEF REQUEST NDE-R001 **IE-30**
001300	VLD-B002 REACTOR VESSEL (COURSE 4 VERT WELD @ 320 DEG)	B-A B1.12	UT0 UT45 UT60	3 - - -	- -	X -	75	RELIEF REQUEST NDE-R001 **IE-30**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RPV (FIG NO VS-01-07)							
001400	HCA-B001 REACTOR VESSEL (BOTT. HEAD CIRC WELD)	B-A B1.21	UT0 UT45 UT60	3 - - -	- -	X -	75	RELIEF REQUEST NDE-R001 **IE-34**
	RPV (FIG NO VS-01-06)							
001500	HCC-B002 REACTOR VESSEL (TOP HEAD DOLLAR WELD, HOLE 60-20)	B-A B1.21	UT0 UT45 UT60	3 - - X	- -	- -	75	EXAM AREA: STUD HOLES 60-20 **IE-35**
	RV (FIG NO VS-01-06)							
001510	HCC-B002 REACTOR VESSEL (TOP HEAD DOLLAR WELD, HOLE 20-40)	B-A B1.21	UT0 UT45 UT60	3 - - -	- X	- -	75	EXAM AREA: STUD HOLES 20-40 **IE-35**
001520	HCC-B002 REACTOR VESSEL (TOP HEAD DOLLAR WELD, HOLE 40-60)	B-A B1.21	UT0 UT45 UT60	3 - - -	- -	X -	75	EXAM AREA: STUD HOLES 40-60 **IE-35**
	RPV (FIG NO VS-01-07)							
001600	HMA-B001 REACTOR VESSEL (BOTT. HEAD MERID. WELD @ 30 DEG)	B-A B1.22	UT0 UT45 UT60	3 - - -	- -	X -	75	RELIEF REQUEST NDE-R001 **IE-34**
001700	HMA-B002 REACTOR VESSEL (BOTT. HEAD MERID. WELD @ 90 DEG)	B-A B1.22	UT0 UT45 UT60	3 - - -	- -	X -	75	RELIEF REQUEST NDE-R001 **IE-34**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL PLAN STATUS FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RPV (FIG NO VS-01-07)							
001800	HMA-B003 REACTOR VESSEL (BOTT. HEAD MERID. WELD @ 150 DEG)	B-A B1.22	UT0 UT45 UT60	3 - - -	- -	X -	75	RELIEF REQUEST NDE-R001 **IE-34**
001900	HMA-B004 REACTOR VESSEL (BOTT. HEAD MERID. WELD @ 210 DEG)	B-A B1.22	UT0 UT45 UT60	3 - - -	- -	X -	75	RELIEF REQUEST NDE-R001 **IE-34**
002000	HMA-B005 REACTOR VESSEL (BOTT. HEAD MERID. WELD @ 270 DEG)	B-A B1.22	UT0 UT45 UT60	3 - - -	- -	X -	75	RELIEF REQUEST NDE-R001 **IE-34**
002100	HMA-B006 REACTOR VESSEL (BOTT. HEAD MERID. WELD @ 330 DEG)	B-A B1.22	UT0 UT45 UT60	3 - - -	- -	X -	75	RELIEF REQUEST NDE-R001 **IE-34**
002200	HMA-B007 REACTOR VESSEL (BOTT. HEAD DOLLAR VERT. WELD)	B-A B1.22	UT0 UT45 UT60	3 - - -	- -	X -	75	RELIEF REQUEST NDE-R001 **IE-34**
002300	HMA-B008 REACTOR VESSEL (BOTT. HEAD DOLLAR VERT. WELD)	B-A B1.22	UT0 UT45 UT60	3 - - -	- -	X -	75	RELIEF REQUEST NDE-R001 **IE-34**
002400	HMA-B009 REACTOR VESSEL (BOTT. HEAD DOLLAR VERT. WELD)	B-A B1.22	UT0 UT45 UT60	3 - - -	- -	X -	75	RELIEF REQUEST NDE-R001 **IE-34**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RPV (FIG NO VS-01-06)							
002500	HMC-B001 REACTOR VESSEL (TOP HEAD MERID. WELD @ 30 DEG)	B-A B1.22	UT0 UT45 UT60	3 - - -	- -	X -	75	**IE-35**
	RV (FIG NO VS-01-06)							
002620	HMC-B002 REACTOR VESSEL (TOP HEAD MERID. WELD @ 90 DEG)	B-A B1.22	UT0 UT45 UT60	3 - - -	- -	X -	75	**IE-35**
	RPV (FIG NO VS-01-06)							
002700	HMC-B003 REACTOR VESSEL (TOP HEAD MERID. WELD @ 150 DEG)	B-A B1.22	UT0 UT45 UT60	3 - - -	- -	X -	75	**IE-35**
002800	HMC-B004 REACTOR VESSEL (TOP HEAD MERID. WELD @ 210 DEG)	B-A B1.22	UT0 UT45 UT60	3 - - -	- -	X -	75	**IE-35**
003000	HMC-B005 REACTOR VESSEL (TOP HEAD MERID. WELD @ 270 DEG)	B-A B1.22	UT0 UT45 UT60	3 - - -	- -	X -	75	**IE-35**
003100	HMC-B006 REACTOR VESSEL (TOP HEAD MERID. WELD @ 330 DEG)	B-A B1.22	UT0 UT45 UT60	3 - - -	- -	X -	75	**IE-35**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	INSPECTION INTERVAL ASME SEC. XI CATGY ITEM NO	NDE METH	PLAN STATUS FIRST PERIOD (OUTAGE 1 2 3)	SECOND PERIOD (OUTAGE 1 2)	THIRD PERIOD (OUTAGE 1 2)	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO VS-01-08)							
003220	HCA-H002 REACTOR VESSEL (SKIRT TO BOTT. HEAD)	B-K B10.10	MT	3 - - -	- -	X -	75	(CODE CASE N-509), TAP-I008 **NA**
	RV (FIG NO VS-01-06)							
003300	HCC-C001 REACTOR VESSEL(STUD HOLES 60-20)	B-A B1.40	MT UT0 UT45 UT60	3 X - -	- -	- -	75	EXAM AREA: STUD HOLES 60-20 **IE-35**
003310	HCC-C001 REACTOR VESSEL(STUD HOLES 20-40)	B-A B1.40	MT UT0 UT45 UT60	3 - - -	- X	- -	75	EXAM AREA: STUD HOLES 20-40 **IE-35**
003320	HCC-C001 REACTOR VESSEL(STUD HOLES 40-60)	B-A B1.40	MT UT0 UT45 UT60	3 - - -	- -	X -	75	EXAM AREA: STUD HOLES 40-60 **IE-35**
	RV (FIG NO 1.1-05)							
003400	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 60-1)	B-G-1 B6.40	UT-0	3 - - X	- -	- -	75	**IE-30**
003401	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 1-2)	B-G-1 B6.40	UT-0	3 - - X	- -	- -	75	**IE-30**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO 1.1-05)							
003402	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 2-3)	B-G-1 B6.40	UT-0	3 - - X	- -	- -	75	**IE-30**
003403	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 3-4)	B-G-1 B6.40	UT-0	3 - - X	- -	- -	75	**IE-30**
003404	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 4-5)	B-G-1 B6.40	UT-0	3 - - X	- -	- -	75	**IE-30**
003405	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 5-6)	B-G-1 B6.40	UT-0	3 - - X	- -	- -	75	**IE-30**
003406	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 6-7)	B-G-1 B6.40	UT-0	3 - - X	- -	- -	75	**IE-30**
003407	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 7-8)	B-G-1 B6.40	UT-0	3 - - X	- -	- -	75	**IE-30**
003408	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 8-9)	B-G-1 B6.40	UT-0	3 - - X	- -	- -	75	**IE-30**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH		INSPECTION INTERVAL PLAN STATUS FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO 1.1-05)												
003409	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 9-10)	B-G-1 B6.40	UT-0	3	-	-	X	-	-	-	-	75	**IE-30**
003410	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 10-11)	B-G-1 B6.40	UT-0	3	-	-	X	-	-	-	-	75	**IE-30**
003411	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 11-12)	B-G-1 B6.40	UT-0	3	-	-	X	-	-	-	-	75	**IE-30**
003412	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 12-13)	B-G-1 B6.40	UT-0	3	-	-	X	-	-	-	-	75	**IE-30**
003413	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 13-14)	B-G-1 B6.40	UT-0	3	-	-	X	-	-	-	-	75	**IE-30**
003414	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 14-15)	B-G-1 B6.40	UT-0	3	-	-	X	-	-	-	-	75	**IE-30**
003415	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 15-16)	B-G-1 B6.40	UT-0	3	-	-	X	-	-	-	-	75	**IE-30**

INSPECTION INTERVAL — PLAN STATUS — PRESERVICE YEAR

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO 1.1-05)							
003416	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 16-17)	B-G-1 B6.40	UT-0 3	- - X	- -	- -	75	**IE-30**
003417	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 17-18)	B-G-1 B6.40	UT-0 3	- - X	- -	- -	75	**IE-30**
003418	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 18-19)	B-G-1 B6.40	UT-0 3	- - X	- -	- -	75	**IE-30**
003419	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 19-20)	B-G-1 B6.40	UT-0 3	- - X	- -	- -	75	**IE-30**
003420	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 20-21)	B-G-1 B6.40	UT-0 3	- - -	- X	- -	75	**IE-30**
003421	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 21-22)	B-G-1 B6.40	UT-0 3	- - -	- X	- -	75	**IE-30**
003422	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 22-23)	B-G-1 B6.40	UT-0 3	- - -	- X	- -	75	**IE-30**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	INSPECTION INTERVAL ASME SEC. XI CATGY ITEM NO	NDE METH		PLAN STATUS FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO 1.1-05)								
003423	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 23-24)	B-G-1 B6.40	UT-0	3	- - -	- X	- -	75	**IE-30**
003424	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 24-25)	B-G-1 B6.40	UT-0	3	- - -	- X	- -	75	**IE-30**
003425	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 25-26)	B-G-1 B6.40	UT-0	3	- - -	- X	- -	75	**IE-30**
003426	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 26-27)	B-G-1 B6.40	UT-0	3	- - -	- X	- -	75	**IE-30**
003427	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 27-28)	B-G-1 B6.40	UT-0	3	- - -	- X	- -	75	**IE-30**
003428	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 28-29)	B-G-1 B6.40	UT-0	3	- - -	- X	- -	75	**IE-30**
003429	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 29-30)	B-G-1 B6.40	UT-0	3	- - -	- X	- -	75	**IE-30**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO 1.1-05)							
003430	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 30-31)	B-G-1 B6.40	UT-0	3 - - -	- X	- -	75	**IE-30**
003431	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 31-32)	B-G-1 B6.40	UT-0	3 - - -	- X	- -	75	**IE-30**
003432	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 32-33)	B-G-1 B6.40	UT-0	3 - - -	- X	- -	75	**IE-30**
003433	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 33-34)	B-G-1 B6.40	UT-0	3 - - -	- X	- -	75	**IE-30**
003434	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 34-35)	B-G-1 B6.40	UT-0	3 - - -	- X	- -	75	**IE-30**
003435	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 35-36)	B-G-1 B6.40	UT-0	3 - - -	- X	- -	75	**IE-30**
003436	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 36-37)	B-G-1 B6.40	UT-0	3 - - -	- X	- -	75	**IE-30**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO 1.1-05)							
003437	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 37-38)	B-G-1 B6.40	UT-0	3 - - -	- X	- -	75	**IE-30**
003438	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 38-39)	B-G-1 B6.40	UT-0	3 - - -	- X	- -	75	**IE-30**
003439	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 39-40)	B-G-1 B6.40	UT-0	3 - - -	- X	- -	75	**IE-30**
003440	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 40-41)	B-G-1 B6.40	UT-0	3 - - -	- -	X -	75	**IE-30**
003441	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 41-42)	B-G-1 B6.40	UT-0	3 - - -	- -	X -	75	**IE-30**
003442	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 42-43)	B-G-1 B6.40	UT-0	3 - - -	- -	X -	75	**IE-30**
003443	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 43-44)	B-G-1 B6.40	UT-0	3 - - -	- -	X -	75	**IE-30**

REACTOR PRESSURE VESSEL

INSPECTION INTERVAL — PLAN STATUS — PRESERVICE YEAR

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO 1.1-05)							
003444	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 44-45)	B-G-1 B6.40	UT-0	3 - - -	- -	X -	75	**IE-30**
003445	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 45-46)	B-G-1 B6.40	UT-0	3 - - -	- -	X -	75	**IE-30**
003446	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 46-47)	B-G-1 B6.40	UT-0	3 - - -	- -	X -	75	**IE-30**
003447	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 47-48)	B-G-1 B6.40	UT-0	3 - - -	- -	X -	75	**IE-30**
003448	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 48-49)	B-G-1 B6.40	UT-0	3 - - -	- -	X -	75	**IE-30**
003449	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 49-50)	B-G-1 B6.40	UT-0	3 - - -	- -	X -	75	**IE-30**
003450	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 50-51)	B-G-1 B6.40	UT-0	3 - - -	- -	X -	75	**IE-30**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL PLAN STATUS FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO 1.1-05)							
003451	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 51-52)	B-G-1 B6.40	UT-0	3 - - -	- -	X -	75	**IE-30**
003452	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 52-53)	B-G-1 B6.40	UT-0	3 - - -	- -	X -	75	**IE-30**
003453	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 53-54)	B-G-1 B6.40	UT-0	3 - - -	- -	X -	75	**IE-30**
003454	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 54-55)	B-G-1 B6.40	UT-0	3 - - -	- -	X -	75	**IE-30**
003455	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 55-56)	B-G-1 B6.40	UT-0	3 - - -	- -	X -	75	**IE-30**
003456	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 56-57)	B-G-1 B6.40	UT-0	3 - - -	- -	X -	75	**IE-30**
003457	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 57-58)	B-G-1 B6.40	UT-0	3 - - -	- -	X -	75	**IE-30**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	PLAN STATUS FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO 1.1-05)												
003458	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 58-59)	B-G-1 B6.40	UT-0	3	-	-	-	-	-	X	-	75	**IE-30**
003459	CLSR HD-LGMNTS LIGAMENT - REACTOR VESSEL(BETWEEN STUDS 59-60)	B-G-1 B6.40	UT-0	3	-	-	-	-	-	X	-	75	**IE-30**
003500	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #1)	B-G-1 B6.10	VT-1	3	-	-	X	-	-	-	-	75	RELIEF REQUEST NDE-R017 **NA**
003501	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #2)	B-G-1 B6.10	VT-1	3	-	-	X	-	-	-	-	75	RELIEF REQUEST NDE-R017 **NA**
003502	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #3)	B-G-1 B6.10	VT-1	3	-	-	X	-	-	-	-	75	RELIEF REQUEST NDE-F017 **NA**
003503	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #4)	B-G-1 B6.10	VT-1	3	-	-	X	-	-	-	-	75	RELIEF REQUEST NDE-R017 **NA**
003504	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #5)	B-G-1 [illegible].10	VT-1	3	-	-	X	-	-	-	-	75	RELIEF REQUEST NDE-R017 **NA**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD 1	FIRST PERIOD 2	FIRST PERIOD 3	SECOND PERIOD 1	SECOND PERIOD 2	THIRD PERIOD 1	THIRD PERIOD 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO 1.1-05)											
003506	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #6)	B-G-1 B6.10	VT-1	3	-	- X	-	-	-	-	75	RELIEF REQUEST NDE-R017 **NA**
003507	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #7)	B-G-1 B6.10	VT-1	3	-	- X	-	-	-	-	75	RELIEF REQUEST NDE-R017 **NA**
003508	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #8)	B-G-1 B6.10	VT-1	3	-	- X	-	-	-	-	75	RELIEF REQUEST NDE-R017 **NA**
003509	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #9)	B-G-1 B6.10	VT-1	3	-	- X	-	-	-	-	75	RELIEF REQUEST NDE-R017 **NA**
003510	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #10)	B-G-1 B6.10	VT-1	3	-	- X	-	-	-	-	75	RELIEF REQUEST NDE-R017 **NA**
003511	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #11)	B-G-1 B6.10	VT-1	3	-	- X	-	-	-	-	75	RELIEF REQUEST NDE-R017 **NA**
003512	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #12)	B-G-1 B6.10	VT-1	3	-	- X	-	-	-	-	75	RELIEF REQUEST NDE-R017 **NA**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO 1.1-05)							
003513	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #13)	B-G-1 B6.10	VT-1	3 - - X	- -	- -	75	RELIEF REQUEST NDE-R017 **NA**
003514	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #14)	B-G-1 B6.10	VT-1	3 - - X	- -	- -	75	RELIEF REQUEST NDE-R017 **NA**
003515	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #15)	B-G-1 B6.10	VT-1	3 - - X	- -	- -	75	RELIEF REQUEST NDE-R017 **NA**
003516	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #16)	B-G-1 B6.10	VT-1	3 - - X	- -	- -	75	RELIEF REQUEST NDE-R017 **NA**
003517	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #17)	B-G-1 B6.10	VT-1	3 - - X	- -	- -	75	RELIEF REQUEST NDE-R017 **NA**
003518	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #18)	B-G-1 B6.10	VT-1	3 - - X	- -	- -	75	RELIEF REQUEST NDE-R017 **NA**
003519	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #19)	B-G-1 B6.10	VT-1	3 - - X	- -	- -	75	RELIEF REQUEST NDE-R017 **NA**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO 1.1-05)											
003520	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #20)	B-G-1 B6.10	VT-1	3	-	-	-	X	-	-	75	RELIEF REQUEST NDE-R017 **NA**
003521	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #21)	B-G-1 B6.10	VT-1	3	-	-	-	X	-	-	75	RELIEF REQUEST NDE-R017 **NA**
003522	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #22)	B-G-1 B6.10	VT-1	3	-	-	-	X	-	-	75	RELIEF REQUEST NDE-R017 **NA**
003523	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #23)	B-G-1 B6.10	VT-1	3	-	-	-	X	-	-	75	RELIEF REQUEST NDE-R017 **NA**
003524	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #24)	B-G-1 B6.10	VT-1	3	-	-	-	X	-	-	75	RELIEF REQUEST NDE-R017 **NA**
003525	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #25)	B-G-1 B6.10	VT-1	3	-	-	-	X	-	-	75	RELIEF REQUEST NDE-R017 **NA**
003526	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #26)	B-G-1 B6.10	VT-1	3	-	-	-	X	-	-	75	RELIEF REQUEST NDE-R017 **NA**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO 1.1-05)							
003527	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #27)	B-G-1 B6.10	VT-1	3 - - -	- X	- -	75	RELIEF REQUEST NDE-R017 **NA**
003528	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #28)	B-G-1 B6.10	VT-1	3 - - -	- X	- -	75	RELIEF REQUEST NDE-R017 **NA**
003529	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #29)	B-G-1 B6.10	VT-1	3 - - -	- X	- -	75	RELIEF REQUEST NDE-R017 **NA**
003530	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #30)	B-G-1 B6.10	VT-1	3 - - -	- X	- -	75	RELIEF REQUEST NDE-R017 **NA**
003531	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #31)	B-G-1 B6.10	VT-1	3 - - -	- X	- -	75	RELIEF REQUEST NDE-R017 **NA**
003532	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #32)	B-G-1 B6.10	VT-1	3 - - -	- X	- -	75	RELIEF REQUEST NDE-R017 **NA**
003533	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #33)	B-G-1 B6.10	VT-1	3 - - -	- X	- -	75	RELIEF REQUEST NDE-R017 **NA**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD 1 2 3	SECOND PERIOD 1 2	THIRD PERIOD 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO 1.1-05)							
003534	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #34)	B-G-1 B6.10	VT-1	3 - - -	- X	- -	75	RELIEF REQUEST NDE-R017 **NA**
003535	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #35)	B-G-1 B6.10	VT-1	3 - - -	- X	- -	75	RELIEF REQUEST NDE-R017 **NA**
003536	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #36)	B-G-1 B6.10	VT-1	3 - - -	- X	- -	75	RELIEF REQUEST NDE-R017 **NA**
003537	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #37)	B-G-1 B6.10	VT-1	3 - - -	- X	- -	75	RELIEF REQUEST NDE-R017 **NA**
003538	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #38)	B-G-1 B6.10	VT-1	3 - - -	- X	- -	75	RELIEF REQUEST NDE-R017 **NA**
003539	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #39)	B-G-1 B6.10	VT-1	3 - - -	- X	- -	75	RELIEF REQUEST NDE-R017 **NA**
003540	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #40)	B-G-1 B6.10	VT-1	3 - - -	- X	- -	75	RELIEF REQUEST NDE-R017 **NA**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL PLAN STATUS FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO 1.1-05)											
003541	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #41)	B-G-1 B6.10	VT-1	3	-	-	-	-	X	-	75	RELIEF REQUEST NDE-R017 **NA**
003542	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #42)	B-G-1 B6.10	VT-1	3	-	-	-	-	X	-	75	RELIEF REQUEST NDE-R017 **NA**
003543	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #43)	B-G-1 B6.10	VT-1	3	-	-	-	-	X	-	75	RELIEF REQUEST NDE-R017 **NA**
003544	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #44)	B-G-1 B6.10	VT-1	3	-	-	-	-	X	-	75	RELIEF REQUEST NDE-R017 **NA**
003545	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #45)	B-G-1 B6.10	VT-1	3	-	-	-	-	X	-	75	RELIEF REQUEST NDE-R017 **NA**
003546	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #46)	B-G-1 B6.10	VT-1	3	-	-	-	-	X	-	75	RELIEF REQUEST NDE-R017 **NA**
003547	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #47)	B-G-1 B6.10	VT-1	3	-	-	-	-	X	-	75	RELIEF REQUEST NDE-R017 **NA**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL / PLAN STATUS: FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO 1.1-05)											
003548	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #48)	B-G-1 B6.10	VT-1 3	-	-	-	-	-	X	-	75	RELIEF REQUEST NDE-R017 **NA**
003549	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #49)	B-G-1 B6.10	VT-1 3	-	-	-	-	-	X	-	75	RELIEF REQUEST NDE-R017 **NA**
003550	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #50)	B-G-1 B6.10	VT-1 3	-	-	-	-	-	X	-	75	RELIEF REQUEST NDE-R017 **NA**
003551	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #51)	B-G-1 B6.10	VT-1 3	-	-	-	-	-	X	-	75	RELIEF REQUEST NDE-R017 **NA**
003552	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #52)	B-G-1 B6.10	VT-1 3	-	-	-	-	-	X	-	75	RELIEF REQUEST NDE-R017 **NA**
003553	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #53)	B-G-1 B6.10	VT-1 3	-	-	-	-	-	X	-	75	RELIEF REQUEST NDE-R017 **NA**
003554	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #54)	B-G-1 B6.10	VT-1 3	-	-	-	-	-	X	-	75	RELIEF REQUEST NDE-R017 **NA**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY / ITEM NO	NDE METH	INSPECTION INTERVAL	PLAN STATUS: FIRST PERIOD (OUTAGE 1 2 3)	SECOND PERIOD (OUTAGE 1 2)	THIRD PERIOD (OUTAGE 1 2)	PRESERVICE YEAR	INSTRUCTIONS / **CALIBRATION BLOCK**
	RV (FIG NO 1.1-05)								
003555	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #55)	B-G-1 B6.10	VT-1	3	- - -	- -	X -	75	RELIEF REQUEST NDE-R017 **NA**
003556	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #56)	B-G-1 B6.10	VT-1	3	- - -	- -	X -	75	RELIEF REQUEST NDE-R017 **NA**
003557	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #57)	B-G-1 B6.10	VT-1	3	- - -	- -	X -	75	RELIEF REQUEST NDE-R017 **NA**
003558	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #58)	B-G-1 B6.10	VT-1	3	- - -	- -	X -	75	RELIEF REQUEST NDE-R017 **NA**
003559	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #59)	B-G-1 B6.10	VT-1	3	- - -	- -	X -	75	RELIEF REQUEST NDE-R017 **NA**
003560	CLSR HD-NUTS NUT - REACTOR VESSEL(STUD #60)	B-G-1 B6.10	VT-1	3	- - X	- -	- -	75	RELIEF REQUEST NDE-R017 **NA**
003600	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #1)	B-G-1 B6.20	UT0	3	- - X	- -	- -	75	**IE-36**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	PLAN STATUS FIRST PERIOD (OUTAGE 1 2 3)	SECOND PERIOD (OUTAGE 1 2)	THIRD PERIOD (OUTAGE 1 2)	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO 1.1-05)							
003602	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #2)	B-G-1 B6.20	UTO	3 - - X	- -	- -	75	**IE-36**
003603	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #3)	B-G-1 B6.20	UTO	3 - - X	- -	- -	75	**IE-36**
003604	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #4)	B-G-1 B6.20	UTO	3 - - X	- -	- -	75	**IE-36**
003605	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #5)	B-G-1 B6.20	UTO	3 - - X	- -	- -	75	**IE-36**
003606	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #6)	B-G-1 B6.20	UTO	3 - - X	- -	- -	75	**IE-36**
003607	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #7)	B-G-1 B6.20	UTO	3 - - X	- -	- -	75	**IE-36**
003608	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #8)	B-G-1 B6.20	UTO	3 - - X	- -	- -	75	**IE-36**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO 1.1-05)												
003609	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #9)	B-G-1 B6.20	UTO	3	-	-	X	-	-	-	-	75	**IE-36**
003610	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #10)	B-G-1 B6.20	UTO	3	-	-	X	-	-	-	-	75	**IE-36**
003611	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #11)	B-G-1 B6.20	UTO	3	-	-	X	-	-	-	-	75	**IE-36**
003612	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #12)	B-G-1 B6.20	UTO	3	-	-	X	-	-	-	-	75	**IE-36**
003613	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #13)	B-G-1 B6.20	UTO	3	-	-	X	-	-	-	-	75	**IE-36**
003614	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #14)	B-G-1 B6.20	UTO	3	-	-	X	-	-	-	-	75	**IE-36**
003615	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #15)	B-G-1 B6.20	UTO	3	-	-	X	-	-	-	-	75	**IE-36**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO 1.1-05)							
003616	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #16)	B-G-1 B6.30	MT UTO	3 - - X	- -	- -	75	**IE-36**
003617	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #17)	B-G-1 B6.30	MT UTO	3 - - X	- -	- -	75	**IE-36**
003618	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #18)	B-G-1 B6.30	MT UTO	3 - - X	- -	- -	75	**IE-36**
003619	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #19)	B-G-1 B6.30	MT UTO	3 - - X	- -	- -	75	**IE-36**
003620	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #20)	B-G-1 B6.20	UTO	3 - - X	- -	- -	75	**IE-36**
003621	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #21)	B-G-1 B6.20	UTO	3 - - -	- X	- -	75	**IE-36**
003622	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #22)	B-G-1 B6.20	UTO	3 - - -	- X	- -	75	**IE-36**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO 1.1-05)							
003623	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #23)	B-G-1 B6.20	UTO	3 - - -	- X	- -	75	**IE-36**
003624	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #24)	B-G-1 B6.20	UTO	3 - - -	- X	- -	75	**IE-36**
003625	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #25)	B-G-1 B6.20	UTO	3 - - -	- X	- -	75	**IE-36**
003626	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #26)	B-G-1 B6.20	UTO	3 - - -	- X	- -	75	**IE-36**
003627	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #27)	B-G-1 B6.20	UTO	3 - - -	- X	- -	75	**IE-36**
003628	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #28)	B-G-1 B6.20	UTO	3 - - -	- X	- -	75	**IE-36**
003629	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #29)	B-G-1 B6.20	UTO	3 - - -	- X	- -	75	**IE-36**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO 1.1-05)							
003630	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #30)	B-G-1 B6.20	UTO	3 - - -	- X	- -	75	**IE-36**
003631	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #31)	B-G-1 B6.20	UTO	3 - - -	- X	- -	75	**IE-36**
003632	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #32)	B-G-1 B6.20	UTO	3 - - -	- X	- -	75	**IE-36**
003633	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #33)	B-G-1 B6.20	UTO	3 - - -	- X	- -	75	**IE-36**
003634	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #34)	B-G-1 B6.20	UTO	3 - - -	- X	- -	75	**IE-36**
003635	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #35)	B-G-1 B6.20	UTO	3 - - -	- X	- -	75	**IE-36**
003636	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #36)	B-G-1 B6.20	UTO	3 - - -	- X	- -	75	**IE-36**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL FIRST PERIOD OUTAGE 1 2 3	PLAN STATUS SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO 1.1-05)							
003637	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #37)	B-G-1 B6.20	UTO	3 - - -	- X	- -	75	**IE-36**
003638	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #38)	B-G-1 B6.20	UTO	3 - - -	- X	- -	75	**IE-36**
003639	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #39)	B-G-1 B6.20	UTO	3 - - -	- X	- -	75	**IE-36**
003640	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #40)	B-G-1 B6.20	UTO	3 - - -	- X	- -	75	**IE-36**
003641	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #41)	B-G-1 B6.20	UTO	3 - - -	- -	X -	75	**IE-36**
003642	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #42)	B-G-1 B6.20	UTO	3 - - -	- -	X -	75	**IE-36**
003643	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #43)	B-G-1 B6.20	UTO	3 - - -	- -	X -	75	**IE-36**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL PLAN STATUS FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO 1.1-05)							
003644	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #44)	B-G-1 B6.20	UTO	3 - - -	- -	X -	75	**IE-36**
003645	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #45)	B-G-1 B6.20	UTO	3 - - -	- -	X -	75	**IE-36**
003646	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #46)	B-G-1 B6.20	UTO	3 - - -	- -	X -	75	**IE-36**
003647	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #47)	B-G-1 B6.20	UTO	3 - - -	- -	X -	75	**IE-36**
003648	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #48)	B-G-1 B6.20	UTO	3 - - -	- -	X -	75	**IE-36**
003649	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #49)	B-G-1 B6.20	UTO	3 - - -	- -	X -	75	**IE-36**
003650	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #50)	B-G-1 B6.20	UTO	3 - - -	- -	X -	75	**IE-36**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD 1	FIRST PERIOD 2	FIRST PERIOD 3	SECOND PERIOD 1	SECOND PERIOD 2	THIRD PERIOD 1	THIRD PERIOD 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO 1.1-05)											
003651	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #51)	B-G-1 B6.20	UTO	3 -	-	-	-	-	X	-	75	**IE-36**
003652	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #52)	B-G-1 B6.20	UTO	3 -	-	-	-	-	X	-	75	**IE-36**
003653	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #53)	B-G-1 B6.20	UTO	3 -	-	-	-	-	X	-	75	**IE-36**
003654	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #54)	B-G-1 B6.20	UTO	3 -	-	-	-	-	X	-	75	**IE-36**
003655	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #55)	B-G-1 B6.20	UTO	3 -	-	-	-	-	X	-	75	**IE-36**
003656	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #56)	B-G-1 B6.20	UTO	3 -	-	-	-	-	X	-	75	**IE-36**
003657	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #57)	B-G-1 B6.20	UTO	3 -	-	-	-	-	X	-	75	**IE-36**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO 1.1-05)											
003658	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #58)	B-G-1 B6.20	UTO	3 -	-	-	-	-	X	-	75	**IE-36**
003659	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #59)	B-G-1 B6.20	UTO	3 -	-	-	-	-	X	-	75	**IE-36**
003660	CLSR HD-STUDS STUD - REACTOR VESSEL(STUD #60)	B-G-1 B6.20	UTO	3 -	-	X	-	-	-	-	75	**IE-36**
003700	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #1)	B-G-1 B6.50	VT-1	3 -	-	X	-	-	-	-	75	**NA**
003702	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #2)	B-G-1 B6.50	VT-1	3 -	-	X	-	-	-	-	75	**NA**
003703	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #3)	B-G-1 B6.50	VT-1	3 -	-	X	-	-	-	-	75	**NA**
003704	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #4)	B-G-1 B6.50	VT-1	3 -	-	X	-	-	-	-	75	**NA**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO 1.1-05)											
003705	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #5)	B-G-1 B6.50	VT-1	3 -	-	X	-	-	-	-	75	**NA**
003706	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #6)	B-G-1 B6.50	VT-1	3 -	-	X	-	-	-	-	75	**NA**
003707	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #7)	B-G-1 B6.50	VT-1	3 -	-	X	-	-	-	-	75	**NA**
003708	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #8)	B-G-1 B6.50	VT-1	3 -	-	X	-	-	-	-	75	**NA**
003709	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #9)	B-G-1 B6.50	VT-1	3 -	-	X	-	-	-	-	75	**NA**
003710	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #10)	B-G-1 B6.50	VT-1	3 -	-	X	-	-	-	-	75	**NA**
003711	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #11)	B-G-1 B6.50	VT-1	3 -	-	X	-	-	-	-	75	**NA**

INSPECTION INTERVAL — PLAN STATUS — PRESERVICE YEAR

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH		FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO 1.1-05)												
003712	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #12)	B-G-1 B6.50	VT-1	3	-	-	X	-	-	-	-	75	**NA**
003713	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #13)	B-G-1 B6.50	VT-1	3	-	-	X	-	-		-	75	**NA**
003714	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #14)	B-G-1 B6.50	VT-1	3	-	-	X	-	-	-	-	75	**NA**
003715	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #15)	B-G-1 B6.50	VT-1	3	-	-	X	-	-	-	-	75	**NA**
003716	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #16)	B-G-1 B6.50	VT-1	3	-	-	X	-	-	-	-	75	**NA**
003717	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #17)	B-G-1 B6.50	VT-1	3	-	-	.	-	-	-	-	75	**NA**
003718	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #18)	B-G-1 B6.50	VT-1	3	-	-	X	-	-	-	-	75	**NA**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD 1 2 3	SECOND PERIOD 1 2	THIRD PERIOD 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO 1.1-05)							
003719	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #19)	B-G-1 B6.50	VT-1	3 - - X	- -	- -	75	**NA**
003720	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #20)	B-G-1 B6.50	VT-1	3 - - X	- -	- -	75	**NA**
003721	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #21)	B-G-1 B6.50	VT-1	3 - - -	- X	- -	75	**NA**
003722	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #22)	B-G-1 B6.50	VT-1	3 - - -	- X	- -	75	**NA**
003723	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #23)	B-G-1 B6.50	VT-1	3 - - -	- X	- -	75	**NA**
003724	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #24)	B-G-1 B6.50	VT-1	3 - - -	- X	- -	75	**NA**
003725	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #25)	B-G-1 B6.50	VT-1	3 - - -	- X	- -	75	**NA**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO 1.1-05)												
003726	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #26)	B-G-1 B6.50	VT-1	3	-	-	-	-	X	-	-	75	**NA**
003727	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #27)	B-G-1 B6.50	VT-1	3	-	-	-	-	X	-	-	75	**NA**
003728	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #28)	B-G-1 B6.50	VT-1	3	-	-	-	-	X	-	-	75	**NA**
003729	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #29)	B-G-1 B6.50	VT-1	3	-	-	-	-	X	-	-	75	**NA**
003730	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #30)	B-G-1 B6.50	VT-1	3	-	-	-	-	X	-	-	75	**NA**
003731	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #31)	B-G-1 B6.50	VT-1	3	-	-	-	-	X	-	-	75	**NA**
003732	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #32)	B-G-1 B6.50	VT-1	3	-	-	-	-	X	-	-	75	**NA**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO 1.1-05)							
003733	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #33)	B-G-1 B6.50	VT-1	3 - - -	- X	- -	75	**NA**
003734	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #34)	B-G-1 B6.50	VT-1	3 - - -	- X	- -	75	**NA**
003735	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #35)	B-G-1 B6.50	VT-1	3 - - -	- X	- -	75	**NA**
003736	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #36)	B-G-1 B6.50	VT-1	3 - - -	- X	- -	75	**NA**
003737	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #37)	B-G-1 B6.50	VT-1	3 - - -	- X	- -	75	**NA**
003738	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #38)	B-G-1 B6.50	VT-1	3 - - -	- X	- -	75	**NA**
003739	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #39)	B-G-1 B6.50	VT-1	3 - - -	- X	- -	75	**NA**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO 1.1-05)							
003740	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #40)	B-G-1 B6.50	VT-1	3 - - -	- X	- -	75	**NA**
003741	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #41)	B-G-1 B6.50	VT-1	3 - - -	- -	X -	75	**NA**
003742	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #42)	B-G-1 B6.50	VT-1	3 - - -	- -	X -	75	**NA**
003743	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #43)	B-G-1 B6.50	VT-1	3 - - -	- -	X -	75	**NA**
003744	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #44)	B-G-1 B6.50	VT-1	3 - - -	- -	X -	75	**NA**
003745	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #45)	B-G-1 B6.50	VT-1	3 - - -	- -	X -	75	**NA**
003746	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #46)	B-G-1 B6.50	VT-1	3 - - -	- -	X -	75	**NA**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO 1.1-05)											
003747	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #47)	B-G-1 B6.50	VT-1	3	-	-	-	-	X	-	75	**NA**
003748	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #48)	B-G-1 B6.50	VT-1	3	-	-	-	-	X	-	75	**NA**
003749	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #49)	B-G-1 B6.50	VT-1	3	-	-	-	-	X	-	75	**NA**
003750	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #50)	B-G-1 B6.50	VT-1	3	-	-	-	-	X	-	75	**NA**
003751	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #51)	B-G-1 B6.50	VT-1	3	-	-	-	-	X	-	75	**NA**
003752	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #52)	B-G-1 B6.50	VT-1	3	-	-	-	-	X	-	75	**NA**
003753	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #53)	B-G-1 B6.50	VT-1	3	-	-	-	-	X	-	75	**NA**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO 1.1-05)											
003754	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #54)	B-G-1 B6.50	VT-1	3 -	-	-	-	-	X	-	75	**NA**
003755	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #55)	B-G-1 B6.50	VT-1	3 -	-	-	-	-	X	-	75	**NA**
003756	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #56)	B-G-1 B6.50	VT-1	3 -	-	-	-	-	X	-	75	**NA**
003757	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #57)	B-G-1 B6.50	VT-1	3 -	-	-	-	-	X	-	75	**NA**
003758	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #58)	B-G-1 B6.50	VT-1	3 -	-	-	-	-	X	-	75	**NA**
003759	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #59)	B-G-1 B6.50	VT-1	3 -	-	-	-	-	X	-	75	**NA**
003760	CLSR HD-WSHRS WASHER - REACTOR VESSEL(STUD #60)	B-G-1 B6.50	VT-1	3 -	-	X	-	-	-	-	75	**NA**

CONTROL ROD DRIVE RETURN

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL PLAN STATUS FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	CR (FIG NO 1.2-12A)							
004600	CRA-D001 REACTOR VESSEL - NOZZLE	B-D B3.90	UT0 UT45 UT60	3 X - -	- -	- -	75	**IE-30**
004700	CRA-D001-INNER RAD REACTOR VESSEL - NOZZLE	B-D B3.100	UT70	3 X - -	- -	- -	75	USE APPROPRIATE UT ANGLE AS DETERMINED BY CALIBRATION PROCEDURES **IE-30**

CORE SPRAY SYSTEM

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	CS (FIG NO 1.2-07)											
004800	CSA-D001 REACTOR VESSEL - NOZZLE	B-D B3.90	UT0 UT45 UT60	3 X	-	-	-	-	-	-	75	**IE-30**
004900	CSA-D001-INNER RAD REACTOR VESSEL - NOZZLE	B-D B3.100	UT70	3 X	-	-	-	-	-	-	75	USE APPROPRIATE UT ANGLE AS DETERMINED BY CALIBRATION PROCEDURES **IE-30**
	CS (FIG NO 1.2-08)											
'05000	CSB-D001 REACTOR VESSEL - NOZZLE	B-D B3.90	UT0 UT45 UT60	3 X	-	-	-	-	-	-	75	**IE-30**
005100	CSB-D001-INNER RAD REACTOR VESSEL - NOZZLE	B-D B3.100	UT70	3 X	-	-	-	-	-	-	75	USE APPROPRIATE UT ANGLE AS DETERMINED BY CALIBRATION PROCEDURES **IE-30**

FEEDWATER SYSTEM

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL PLAN STATUS: FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	FW (FIG NO 1.2-05)							
005300	FWA-D001 REACTOR VESSEL - NOZZLE	B-D B3.90	UT0 UT45 UT60	3 X - -	- -	- -	75	**IE-30**
005400	FWA-D001-INNER RAD NOZZLE - NOZZLF BORE	B-D B3.100	UT70	3 X - -	- -	- -	75	USE APPROPRIATE UT ANGLE AS DETERMINED BY CALIBRATION PROCEDURES **IE-30**
005800	FWB-D001 REACTOR VESSEL - NOZZLE	B-D B3.90	UT0 UT45 UT60	3 - - -	- -	X -	75	**IE-30**
005900	FWB-D001-INNER RAD NOZZLE - NOZZLE BORE	B-D B3.100	UT70	3 - - -	- -	X -	75	USE APPROPRIATE UT ANGLE AS DETERMINED BY CALIBRATION PROCEDURES **IE-30**
	FW (FIG NO 1.2-06)							
006300	FWC-D001 REACTOR VESSEL - NOZZLE	B-D B3.90	UT0 UT45 UT60	3 - - -	- -	X -	75	**IE-30**
006400	FWC-D001-INNER RAD NOZZLE - NOZZLE BORE	B-D B3.100	UT70	3 - - -	- -	X -	75	USE APPROPRIATE UT ANGLE AS DETERMINED BY CALIBRATION PROCEDURES **IE-30**
006800	FWD-D001 REACTOR VESSEL - NOZZLE	B-D B3.90	UT0 UT45 UT60	3 - - -	- -	X -	75	**IE-30**

FEEDWATER SYSTEM

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	FW (FIG NO 1.2-06)							
006900	FWD-D001-INNER RAD NOZZLE - NOZZLE BORE	B-D B3.100	UT70	3 - - -	- -	X -	75	USE APPROPRIATE UT ANGLE AS DETERMINED BY CALIBRATION PROCEDURES **IE-30**

INSPECTION INTERVAL — PLAN STATUS — PRESERVICE YEAR

REACTOR HEAD SPARE

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	HS (FIG NO 1.2-23)							
007300	HSB-D001 REACTOR VESSEL - NOZZLE	B-D B3.90	UT0 UT45 UT60	3 - - -	- -	X -	75	**IE-35**
007400	HSB-D001-INNER RAD REACTOR VESSEL - NOZZLE	B-D B3.100	UT70	3 - - -	- -	X -	75	USE APPROPRIATE UT ANGLE AS DETERMINED BY CALIBRATION PROCEDURES **IE-35**

REACTOR HEAD VENT		INSPECTION INTERVAL ASME SEC. XI CATGY ITEM NO	NDE METH	PLAN STATUS FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION							
	HV (FIG NO 1.2-24)							
007500	HVA-D001 REACTOR VESSEL - NOZZLE	B-D B3.90	UT0 UT45 UT60	3 X - -	- -	- -	75	**IE-35**
007600	HVA-D001-INNER RAD REACTOR VESSEL - NOZZLE	B-D B3.100	UT70	3 X - -	- -	- -	75	USE APPROPRIATE UT ANGLE AS DETERMINED BY CALIBRATION PROCEDURES **IE-35**

JET PUMP INSTRUMENTATION

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	JP (FIG NO 1.2-25)											
007700	JPA-D001 REACTOR VESSEL - NOZZLE	B-D B3.90	UT0 UT45 UT60	3 X	-	-	-	-	-	-	75	**IE-30**
007800	JPA-D001-INNER RAD REACTOR VESSEL - NOZZLE	B-D B3.100	UT70	3 X	-	-	-	-	-	-	75	USE APPROPRIATE UT ANGLE AS DETERMINED BY CALIBRATION PROCEDURES **IE-30**
	JP (FIG NO 1.2-26)											
007900	JPB-D001 REACTOR VESSEL - NOZZLE	B-D B3.90	UT0 UT45 UT60	3 -	-	-	-	-	X	-	75	**IE-30**
008000	JPB-D001-INNER RAD REACTOR VESSEL - NOZZLE	B-D B3.100	UT70	3 -	-	-	-	-	X	-	75	USE APPROPRIATE UT ANGLE AS DETERMINED BY CALIBRATION PROCEDURES **IE-30**

LIQUID LEVEL CONTROL SYSTEM - CORE

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	LC (FIG NO 1.2-27)							
008100	LCA-D001 REACTOR VESSEL - NOZZLE	B-D B3.90	UT0 UT45 UT60	3 - - -	- -	X -	75	**IE-30**
008200	LCA-D001-INNER RAD REACTOR VESSEL - NOZZLE	B-D B3.100	UT70	3 - - -	- -	X -	75	USE APPROPRIATE UT ANGLE AS DETERMINED BY CALIBRATION PROCEDURES **IE-30**

MAIN STEAM

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL / PLAN STATUS: FIRST PERIOD (OUTAGE 1 2 3)	SECOND PERIOD (OUTAGE 1 2)	THIRD PERIOD (OUTAGE 1 2)	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	MS (FIG NO 1.2-01)							
008300	MSA-D001 REACTOR VESSEL - NOZZLE	B-D B3.90	UT0 UT45 UT60	3 X - -	- -	- -	75	**IE-30**
008400	MSA-D001-INNER RAD REACTOR VESSEL - NOZZLE INSIDE RADIUS	B-D B3.100	UT70	3 X - -	- -	- -	75	USE APPROPRIATE UT ANGLE AS DETERMINED BY CALIBRATION PROCEDURES **IE-30**
	MS (FIG NO 1.2-02)							
008500	MSB-D001 REACTOR VESSEL - NOZZLE	B-D B3.90	UT0 UT45 UT60	3 - - -	- -	X -	75	**IE-30**
008600	MSB-D001-INNER RAD REACTOR VESSEL - NOZZLE	B-D B3.100	UT70	3 - - -	- -	X -	75	USE APPROPRIATE UT ANGLE AS DETERMINED BY CALIBRATION PROCEDURES **IE-30**
	MS (FIG NO 1.2-03)							
008700	MSC-D001 REACTOR VESSEL - NOZZLE	B-D B3.90	UT0 UT45 UT60	3 - - -	- -	X -	75	**IE-30**
008800	MSC-D001-INNER RAD REACTOR VESSEL - NOZZLE INSIDE RADIUS	B-D B3.100	UT70	3 - - -	- -	X -	75	USE APPROPRIATE UT ANGLE AS DETERMINED BY CALIBRATION PROCEDURES **IE-30**

MAIN STEAM

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	MS (FIG NO 1.2-04)							
008900	MSD-D001 REACTOR VESSEL - NOZZLE	B-D B3.90	UT0 UT45 UT60	3 - - -	- -	X -	75	**IE-30**
009000	MSD-D001-INNER RAD REACTOR VESSEL - NOZZLE INSIDE RADIUS	B-D B3.100	UT70	3 - - -	- -	X -	75	USE APPROPRIATE UT ANGLE AS DETERMINED BY CALIBRATION PROCEDURES **IE-30**

RECIRCULATION PUMP SUCTION

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RC (FIG NO 1.2-19A)							
009100	RCA-D001 REACTOR VESSEL - NOZZLE	B-D B3.90	UT0 UT45 UT60	3 - - -	- -	X -	75	**IE-30**
009200	RCA-D001-INNER RAD REACTOR VESSEL - NOZZLE INSIDE RADIUS	B-D B3.100	UT70	3 - - -	- -	X -	75	USE APPROPRIATE UT ANGLE AS DETERMINED BY CALIBRATION PROCEDURES **IE-30**
	RC (FIG NO 1.2-21A)							
009300	RCB-D001 REACTOR VESSEL - NOZZLE	B-D B3.90	UT0 UT45 UT60	3 X - -	- -	- -	75	**IE-30**
009400	RCB-D001-INNER RAD REACTOR VESSEL - NOZZLE INSIDE RADIUS	B-D B3.100	UT70	3 X - -	- -	- -	75	USE APPROPRIATE UT ANGLE AS DETERMINED BY CALIBRATION PROCEDURES **IE-30**

				INSPECTION INTERVAL PLAN STATUS			PRESERVICE YEAR	
RESIDUAL HEAT REMOVAL				FIRST PERIOD	SECOND PERIOD	THIRD PERIOD		
		ASME SEC. XI		- - - - - - O U T A G E - - - - - -				
SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	CATGY ITEM NO	NDE METH	1 2 3	1 2	1 2		INSTRUCTIONS **CALIBRATION BLOCK**
	RH (FIG NO 1.2-13)							
009500	RHA-D001 REACTOR VESSEL - NOZZLE	B-D B3.90	UT0 UT45 UT60	3 X - -	- -	- -	75	**IE-35**
009600	RHA-D001-INNER RAD REACTOR VESSEL - NOZZLE	B-D B3.100	UT70	3 X - -	- -	- -	75	USE APPROPRIATE UT ANGLE AS DETERMINED BY CALIBRATION PROCEDURES **IE-35**

RECIRCULATION SYSTEM RISER

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RR (FIG NO 1.2-22)												
009700	RRA-D001 REACTOR VESSEL - NOZZLE	B-D B3.90	UT0 UT45 UT60	3	-	-	-	-	-	X	-	75	**IE-30**
009800	RRA-D001-INNER RAD REACTOR VESSEL - NOZZLE	B-D B3.100	UT70	3	-	-	-	-	-	X	-	75	USE APPROPRIATE UT ANGLE AS DETERMINED BY CALIBRATION PROCEDURES **IE-30**
009900	RRB-D001 REACTOR VESSEL - NOZZLE	B-D B3.90	UT0 UT45 UT60	3	-	-	-	-	-	X	-	75	**IE-30**
010000	RRB-D001-INNER RAD REACTOR VESSEL - NOZZLE	B-D B3.100	UT70	3	-	-	-	-	-	X	-	75	USE APPROPRIATE UT ANGLE AS DETERMINED BY CALIBRATION PROCEDURES **IE-30**
010100	RRC-D001 REACTOR VESSEL - NOZZLE	B-D B3.90	UT0 UT45 UT60	3	-	-	-	-	-	X	-	75	**IE-30**
010200	RRC-D001-INNER RAD REACTOR VESSEL - NOZZLE	B-D B3.100	UT70	3	-	-	-	-	-	X	-	75	USE APPROPRIATE UT ANGLE AS DETERMINED BY CALIBRATION PROCEDURES **IE-30**
010300	RRD-D001 REACTOR VESSEL - NOZZLE	B-D B3.90	UT0 UT45 UT60	3	X	-	-	-	-	-	-	75	**IE-30**

RECIRCULATION SYSTEM RISER

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	FIRST PERIOD OUTAGE 1	FIRST PERIOD OUTAGE 2	FIRST PERIOD OUTAGE 3	SECOND PERIOD OUTAGE 1	SECOND PERIOD OUTAGE 2	THIRD PERIOD OUTAGE 1	THIRD PERIOD OUTAGE 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RR (FIG NO 1.2-22)												
010400	RRD-D001-INNER RAD REACTOR VESSEL - NOZZLE	B-D B3.100	UT70	3	X	-	-	-	-	-	-	75	USE APPROPRIATE UT ANGLE AS DETERMINED BY CALIBRATION PROCEDURES **IE-30**
	RR (FIG NO 1.2-20)												
010500	RRE-D001 REACTOR VESSEL - NOZZLE	B-D B3.90	UT0 UT45 UT60	3	-	-	-	-	-	X	-	75	**IE-30**
10600	RRE-D001-INNER RAD REACTOR VESSEL - NOZZLE	B-D B3.100	UT70	3	-	-	-	-	-	X	-	75	USE APPROPRIATE UT ANGLE AS DETERMINED BY CALIBRATION PROCEDURES **IE-30**
010700	RRF-D001 REACTOR VESSEL - NOZZLE	B-D B3.90	UT0 UT45 UT60	3	X	-	-	-	-	-	-	75	**IE-30**
010800	RRF-D001-INNER RAD REACTOR VESSEL - NOZZLE	B-D B3.100	UT70	3	X	-	-	-	-	-	-	75	USE APPROPRIATE UT ANGLE AS DETERMINED BY CALIBRATION PROCEDURES **IE-30**
010900	RRG-D001 REACTOR VESSEL - NOZZLE	B-D B3.90	UT0 UT45 UT60	3	-	-	-	-	-	X	-	75	**IE-30**
011000	RRG-D001-INNER RAD REACTOR VESSEL - NOZZLE	B-D B3.100	UT70	3	-	-	-	-	-	X	-	75	USE APPROPRIATE UT ANGLE AS DETERMINED BY CALIBRATION PROCEDURES **IE-30**

RECIRCULATION SYSTEM RISER

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RR (FIG NO 1.2-20)							
011100	RRH-D001 REACTOR VESSEL - NOZZLE	B-D B3.90	UT0 UT45 UT60	3 X - -	- -	- -	75	**IE-30**
011200	RRH-D001-INNER RAD REACTOR VESSEL - NOZZLE	B-D B3.100	UT70	3 X - -	- -	- -	75	USE APPROPRIATE UT ANGLE AS DETERMINED BY CALIBRATION PROCEDURES **IE-30**

REACTOR VESSEL INSTRUMENTATION

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL / PLAN STATUS: FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	VI (FIG NO 1.2-28)							
011300	VIA-D001 REACTOR VESSEL - NOZZLE	B-D B3.90	UT0 UT45 UT60	3 - - -	- -	X -	75	**IE-30**
011400	VIA-D001-INNER RAD REACTOR VESSEL - NOZZLE	B-D B3.100	UT70	3 - - -	- -	X -	75	USE APPROPRIATE UT ANGLE AS DETERMINED BY CALIBRATION PROCEDURES **IE-30**
	VI (FIG NO 1.2-29)							
011500	VIB-D001 REACTOR VESSEL - NOZZLE	B-D B3.90	UT0 UT45 UT60	3 - - -	- -	X -	75	**IE-30**
011600	VIB-D001-INNER RAD REACTOR VESSEL - NOZZLE	B-D B3.100	UT70	3 - - -	- -	X -	75	USE APPROPRIATE UT ANGLE AS DETERMINED BY CALIBRATION PROCEDURES **IE-30**
	VI (FIG NO 1.2-30)							
011700	VIC-D001 REACTOR VESSEL - NOZZLE	B-D B3.90	UT0 UT45 UT60	3 - - -	- -	X -	75	**IE-30**
011800	VIC-D001-INNER RAD REACTOR VESSEL - NOZZLE	B-D B3.100	UT70	3 - - -	- -	X -	75	USE APPROPRIATE UT ANGLE AS DETERMINED BY CALIBRATION PROCEDURES **IE-30**

REACTOR VESSEL INSTRUMENTATION

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	VI (FIG NO 1.2-31)							
011900	VID-D001 REACTOR VESSEL - NOZZLE	B-D B3.90	UT0 UT45 UT60	3 - - -	- -	X -	75	**IE-30**
012000	VID-D001-INNER RAD REACTOR VESSEL - NOZZLE	B-D B3.100	UT70	3 - - -	- -	X -	75	USE APPROPRIATE UT ANGLE AS DETERMINED BY CALIBRATION PROCEDURES **IE-30**
	VI (FIG NO 1.2-33)							
012100	VIE-D001 REACTOR VESSEL - NOZZLE	B-D B3.90	UT0 UT45 UT60	3 X - -	- -	- -	75	**IE-30**
012200	VIE-D001-INNER RAD REACTOR VESSEL - NOZZLE	B-D B3.100	UT70	3 X - -	- -	- -	75	USE APPROPRIATE UT ANGLE AS DETERMINED BY CALIBRATION PROCEDURES **IE-30**
	VI (FIG NO 1.2-34)							
012300	VIF-D001 REACTOR VESSEL - NOZZLE	B-D B3.90	UT0 UT45 UT60	3 - - -	- -	X -	75	**IE-30**
012400	VIF-D001-INNER RAD REACTOR VESSEL - NOZZLE	B-D B3.100	UT70	3 - - -	- -	X -	75	USE APPROPRIATE UT ANGLE AS DETERMINED BY CALIBRATION PROCEDURES **IE-30**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO VS-01-06)							
012430	VFA-E001 REACTOR VESSEL - NOZZLE	B-E B4.11	VT-2	3 - - -	- -	X -	75	EXAMINED DURING STP-46G009 **NA**
012450	VFA-E002 REACTOR VESSEL - NOZZLE	B-E B4.11	VT-2	3 - - -	- -	X -	75	EXAMINED DURING STP-46G009 **NA**
	RV (FIG NO 1.1-08)							
12500	1R215(02-19) REACTOR VESSEL - CRD HOUSING	B-O B14.10	UT45	3 - - -	- -	X -	75	**IE-18**
012900	1R215(02-27) REACTOR VESSEL - CRD HOUSING	B-O B14.10	UT45	3 - - -	- -	X -	75	**IE-18**
024000	1R215(42-27) REACTOR VESSEL - CRD HOUSING	B-O B14.10	UT45	3 - - -	- -	X -	75	**IE-18**
	RV (FIG NO VS-01-01)							
024600	PL #1-19 REPAIR REPAIR ON PL #1-19 (SHELL 1)	B-A B1.51		3 - - -	- -	X -	75	REPAIR IS LOCATED NEXT TO VLA-A001 OR VLA-A002 (BOTH LOCATIONS REQUIRE EXAMINATION BECAUSE OF UNCERTAINTY OF WHICH WELD WAS REPAIRED) **IE-30**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO VS-01-08)											
024700	VSK-K001 RPV VESSEL SKIRT AND SKIRT KNUCKLE	F-A F1.40	VT-3	3	-	-	-	-	X	-	75	**NA**

MAIN STEAM

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	MS (FIG NO 1.2-01)												
024800	CV-4412 CONTROL VALVE GLOBE E-3	B-M-2 B12.50	VT-3 PT	3	-	X	X	-	-	-	-	75	PERFORM A PT EXAM OF VALVE BODY SEAT IF VALVE IS OPENED (AR95-0760.01). **NA**
025200	MSA-J002 NOZZLE - SAFEEND E-5	B-J B9.11	MT UT45	3	-	-	X	-	-	-	-	75	**IE-51**
025300	MSA-J003 SAFEEND - PIPE E-5	B-J B9.11	MT UT45	3	-	-	X	-	-	-	-	75	**IE-51**
026600	MSA-J016 SOCKOLET - PIPE E-4	B-J B9.11	MT UT45	3	-	-	-	-	X	-	-	75	**IE-58**
026700	MSA-J017 PIPE - FLANGE E-4	B-J B9.11	MT UT45	3	-	-	-	-	X	-	-	75	**IE-58**
028300	MSA-J036 PIPE - CONTROL VALVE GLOBE E-3	B-J B9.11	MT UT45	3	-	-	-	-	-	X	-	75	**IE-51**
028400	MSA-J038 CONTROL VALVE GLOBE - PIPE E-3	B-J B9.11	MT UT45	3	-	-	-	-	-	X	-	75	**IE-51**

MAIN STEAM

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL PLAN STATUS FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	MS (FIG NO 1.2-01)											
028700	MSA-K008 CLASS 1 WELDED - HANGER LUGS E-5	B-K B10.20	MT	3 -	-	X	-	-	-	-	75	(CODE CASE N-509), TAP-I008 **NA**
028800	MSA-K008 CLASS 1 WELDED - HANGER LUGS E-5	F-A F1.10	VT-3	3 -	-	X	-	-	-	-	75	**NA**
029100	MSA-K011B CLASS 1 MECHANICALLY ATTACHED E-5	F-A F1.10	VT-3	3 -	-	-	-	-	X	-	75	**NA**
	MS (FIG NO 1.2-02)											
030800	MSB-J002 NOZZLE - SAFEEND C-5	B-J B9.11	MT UT45	3 -	-	X	-	-	-	-	75	**IE-51**
030900	MSB-J003 SAFEEND - PIPE C-5	B-J B9.11	MT UT45	3 -	-	X	-	-	-	-	75	**IE-51**
033200	MSB-J024 BRANCH CONNECTION - SOCKOLET C-6	B-J B9.31	MT UT45	3 -	-	-	-	X	-	-	75	**IE-58**
033300	MSB-J025 SOCKOLET - PIPE C-6	B-J B9.11	MT UT45	3 -	-	-	-	X	-	-	75	**IE-58**

MAIN STEAM

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	MS (FIG NO 1.2-02)								
033400	MSB-J026 PIPE - FLANGE C-6	B-J B9.11	MT UT45	3	- - -	- X	- -	75	**IE-58**
033500	MSB-J029 PIPE - 90 DEGREE SHORT RADIUS ELBOW C-6	B-J B9.11	MT UT45	3	- - -	- X	- -	75	**IE-51**
034400	MSB-J041 PIPE - CONTROL VALVE GLOBE C-7	B-J B9.11	MT UT45	3	- - -	- -	X -	75	**IE-51**
035400	MSB-K019 CLASS 1 WELDED - HANGER LUGS C-6	F-A F1.10	VT-3	3	- - -	- -	X -	75	**NA**
035600	MSB-K028 CLASS 1 WELDED - HANGER LUGS C-6	F-A F1.10	VT-3	3	- - X	- -	- -	75	**NA**
	MS (FIG NO 1.2-03)								
037000	MSC-J002 NOZZLE - SAFEEND C-5	B-J B9.11	MT UT45	3	- - -	- X	- -	75	**IE-51**
037200	MSC-J004 PIPE - 90 DEGREE LONG RADIUS ELBOW C-4	B-J B9.11	MT UT45	3	- - -	- X	- -	75	**IE-51**

MAIN STEAM

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	MS (FIG NO 1.2-03)							
039300	MSC-J023 SOCKOLET - PIPE C-4	B-J B9.11	MT UT45	3 - - -	- -	X -	75	**IE-58**
039400	MSC-J024 PIPE - FLANGE C-4	B-J B9.11	MT UT45	3 - - -	- -	X -	75	**IE-58**
040700	MSC-J039 PIPE - CONTROL VALVE GLOBE C-3	B-J B9.11	MT UT45	3 - - X	- -	- -	75	**IE-51**
040800	MSC-J041 CONTROL VALVE GLOBE - PIPE C-3	B-J B9.11	MT UT45	3 - - X	- -	- -	75	**IE-51**
041300	MSC-K011A CLASS 1 WELDED - HANGER LUGS C-4	F-A F1.10	VT-3	3 - - -	- X	- -	75	**NA**
	MS (FIG NO 1.2-04)							
043200	CV-4421 CONTROL VALVE GLOBE E-8	B-M-2 B12.50	VT-3 PT	3 - X X	- -	- -	75	PERFORM RT EXAM OF NON-CODE REPAIR AREA PER NRC SER FOR RR-002, REV 2 (TWICE DURING THE NEXT 4 RFOs(RFO13,14,15,16)ALSO A PT EXAM IS REQD ON VALVE BODY SEAT IF VALVE OPENED **NA**

MAIN STEAM

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD 1 2 3	SECOND PERIOD 1 2	THIRD PERIOD 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	MS (FIG NO 1.2-04)							
043600	MSD-J002 NOZZLE - SAFEEND E-5	B-J B9.11	MT UT45	3 - - -	- X	- -	75	**IE-51**
043700	MSD-J003 SAFEEND - PIPE E-5	B-J B9.11	MT UT45	3 - - -	- X	- -	75	**IE-51**
043800	MSD-J004 PIPE - 90 DEGREE LONG RADIUS ELBOW E-6	B-J B9.11	MT UT45	3 - - -	- X	- -	75	**IE-51**
044400	MSD-J012 PIPE - 90 DEGREE LONG RADIUS ELBOW E-6	B-J B9.11	MT UT45	3 - - -	- -	X -	75	**IE-51**
045100	MSD-J019 BRANCH CONNECTION - SOCKOLET E-6	B-J B9.31	MT UT45	3 - - X	- -	- -	75	**IE-58**
045200	MSD-J020 SOCKOLET - PIPE E-6	B-J B9.11	MT UT45	3 - - -	- -	X -	75	**IE-58**
045300	MSD-J021 PIPE - FLANGE E-6	B-J B9.11	MT UT45	3 - - -	- -	X -	75	**IE-58**

MAIN STEAM

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	MS (FIG NO 1.2-04)							
047600	MSD-K034 CLASS 1 WELDED - HANGER LUGS E-7	F-A F1.10	VT-3	3 - - -	- X	- -	75	REL.REQ. NDE-R002 FULL SURFACE/VT-3/4 EXAMS CANNOT BE PERFORMED ON LUGS DUE TO ACCESS **NA**
047800	MSD-K039 CLASS 1 MECHANICALLY ATTACHED E-7	F-A F1.10	VT-3	3 - - X	- -	- -	75	**NA**

FEEDWATER SYSTEM

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY / ITEM NO	NDE METH	INSPECTION INTERVAL PLAN STATUS FIRST PERIOD (OUTAGE 1 2 3)	SECOND PERIOD (OUTAGE 1 2)	THIRD PERIOD (OUTAGE 1 2)	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	FW (FIG NO 1.2-05)							
048500	FWA-J002 SAFEEND - NOZZLE B-5	B-J B9.11	MT UT45	3 - - X	- -	- -	75	**IE-07**
048700	FWA-J003 PIPE - SAFEEND B-5	B-J B9.11	MT UT45	3 - - -	- -	X -	75	**IE-07**
049700	FWA-J014 90 DEGREE LONG RADIUS ELBOW - PIPE B-5	B-J B9.11	MT UT45	3 - - -	- X	- -	75	**IE-07**
049900	FWA-J016 TEE - PIPE B-4	B-J B9.11	MT UT45	3 - - -	- -	X -	75	**IE-07**
050000	FWA-K004 CLASS 1 MECHANICALLY ATTACHED B-5	F-A F1.10	VT-3	3 - - X	- -	- -	75	**NA**
050300	FWB-J003 SAFEEND - NOZZLE B-5	B-J B9.11	MT UT45	3 - - X	- -	- -	75	**IE-07**
052100	FWB-J027 90 DEGREE LONG RADIUS ELBOW - TEE B-4	B-J B9.11	MT UT45	3 - - -	- -	X -	75	**IE-10**

FEEDWATER SYSTEM

FW (FIG NO 1.2-05)

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	FIRST PERIOD OUTAGE 1	FIRST PERIOD OUTAGE 2	FIRST PERIOD OUTAGE 3	SECOND PERIOD OUTAGE 1	SECOND PERIOD OUTAGE 2	THIRD PERIOD OUTAGE 1	THIRD PERIOD OUTAGE 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
052400	FWB-J033 90 DEGREE SHORT RADIUS ELBOW - GATE B-4	B-J B9.11	MT UT45	3	-	-	-	-	X	-	-	75	**IE-10**
052500	FWB-J034 CHECK - 90 DEGREE SHORT RADIUS ELBOW B-4	B-J B9.11	MT UT45	3	-	-	-	-	X	-	-	75	**IE-10**
052600	FWB-J037 PIPE - CHECK B-4	B-J B9.11	MT UT45	3	-	-	-	-	X	-	-	75	**IE-10**
052900	FWB-J041 MOTOR OPERATED CHECK - TEE B-3	B-J B9.11	MT UT45	3	-	-	-	-	X	-	-	75	**IE-10**
053100	FWB-K016 CLASS 1 MECHANICALLY ATTACHED B-5	F-A F1.10	VT-3	3	-	-	X	-	-	-	-	75	**NA**
053400	FWB-K020A CLASS 1 MECHANICALLY ATTACHED B-5	F-A F1.10	VT-3	3	-	-	-	-	-	X	-	75	**NA**
053900	FWB-K032 CLASS 1 MECHANICALLY ATTACHED - GATE B-4	F-A F1.40	VT-3	3	-	-	-	-	-	X	-	75	**NA**

FEEDWATER SYSTEM

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	PLAN STATUS FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	FW (FIG NO 1.2-05)												
054000	FWB-K036 CLASS 1 MECHANICALLY ATTACHED - CHECK B-4	F-A F1.40	VT-3	3	-	-	-	-	X	-	-	75	**NA**
	FW (FIG NO 1.2-06)												
054700	FWC-J002 SAFEEND - NOZZLE B-5	B-J B9.11	MT UT45	3	-	-	-	-	-	X	-	75	**IE-07**
056400	FWC-J025 90 DEGREE LONG RADIUS ELBOW - TEE B-6	B-J B9.11	MT UT45	3	-	-	X	-	-	-	-	75	**IE-10**
056900	FWC-J034 PIPE B-6	B-J B9.11	MT UT45	3	-	-	-	-	X	-	-	75	**IE-10**
057000	FWC-J034A PIPE - CHECK B-6	B-J B9.11	MT UT45	3	-	-	-	-	X		-	75	**IE-10**
057200	FWC-J037 BRANCH CONNECTION - WELDOLET B-7	B-J B9.31	MT UT45	3	-	-	-	-	X	-	-	75	Examine from 16" pipe side **IE-03,IE-10**
057300	FWC-J038 MOTOR OPERATED CHECK - PIPE B-7	B-J B9.11	MT UT45	3	-	-	-	-	X	-	-	75	**IE-10**

FEEDWATER SYSTEM

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	FW (FIG NO 1.2-06)								
057900	FWC-K020 CLASS 1 MECHANICALLY ATTACHED B-5	F-A F1.10	VT-3	3	- - -	- X	- -	75	ADDITIONAL PER QDR 93-133. **NA**
058300	FWC-K029 CLASS 1 MECHANICALLY ATTACHED - GATE B-6	F-A F1.40	VT-3	3	- - X	- -	- -	75	**NA**
058400	FWC-K033 CLASS 1 MECHANICALLY ATTACHED - CHECK B-6	F-A F1.40	VT-3	3	- - -	- -	X -	75	**NA**
058600	FWD-J002 SAFEEND - NOZZLE B-5	B-J B9.11	MT UT45	3	- - X	- -	- -	75	**IE-07**
058800	FWD-J00? PIPE - SAFEEND B-5	B-J B9.11	MT UT45	3	- - X	- -	- -	75	**IE-07**
0598(0	FWD-J013 PIPE - 90 DEGREE LONG RADIUS ELBOW B-5	B-J B9.11	MT UT45	3	- - -	- -	X -	75	**IE-07**
060100	FWD-J017 TEE - PIPE B-6	B-J B9.11	MT UT45	3	- - X	- -	- -	75	**IE-07**

FEEDWATER SYSTEM

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	FW (FIG NO 1.2-06)							
060300	FWD-K014 CLASS 1 MECHANICALLY ATTACHED B-5	F-A F1.10	VT-3	3 - - -	- X	- -	75	**NA**

CORE SPRAY SYSTEM

CS (FIG NO 1.2-07)

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	FIRST PERIOD OUTAGE 1	FIRST PERIOD OUTAGE 2	FIRST PERIOD OUTAGE 3	SECOND PERIOD OUTAGE 1	SECOND PERIOD OUTAGE 2	THIRD PERIOD OUTAGE 1	THIRD PERIOD OUTAGE 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
061000	CSA-F002 SAFEEND - NOZZLE F-7	B-F B5.10	PT UT45	3	X	-	-	-	-	-	-	75	METAL COVER. IE-61 ACCEPTABLE PER (NG-95-1059) **IE-61**
061200	CSA-F002A PIPE - SAFEEND F-7	B-F B5.130	PT UT45	3	-	-	X	-	-	-	-	75	**IE-19 IE-28**
061400	CSA-F004 PIPE F-7	B-F B5.130	PT UT45	3	-	-	-	-	X	-	-	75	**IE-19 IE-06**
063400	CSA-J027 90 DEGREE LONG RADIUS ELBOW - PIPE F-6	B-J B9.11	MT UT45	3	-	-	-	-	-	X	-	75	**IE-06**
063500	CSA-J028 PIPE - 90 DEGREE LONG RADIUS ELBOW F-6	B-J B9.11	MT UT45	3	-	-	-	-	-	X	-	75	**IE-06**
063900	CSA-K026 CLASS 1 MECHANICALLY ATTACHED F-6	F-A F1.10	VT-3	3	-	-	X	-	-	-	-	75	**NA**

CS (FIG NO 1.2-08)

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	FIRST PERIOD OUTAGE 1	FIRST PERIOD OUTAGE 2	FIRST PERIOD OUTAGE 3	SECOND PERIOD OUTAGE 1	SECOND PERIOD OUTAGE 2	THIRD PERIOD OUTAGE 1	THIRD PERIOD OUTAGE 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
064300	CSB-F002 SAFEEND - NOZZLE E-7	B-F B5.10	PT UT45	3	-	-	-	-	-	X	-	75	METAL COVER. IE-61 ACCEPTABLE PER (NG-95-1059) **IE-61**

CORE SPRAY SYSTEM

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL PLAN STATUS FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	CS (FIG NO 1.2-08)							
064500	CSB-F002A PIPE - SAFEEND E-7	B-F B5.130	PT UT45	3 - - -	- -	X -	75	**IE-19 IE-28**
064700	CSB-F004 PIPE - PIPE E-7	B-F B5.130	PT UT45	3 - - -	X -	- -	75	**IE-19 IE-06**
066800	CSB-J028 PIPE - 90 DEGREE LONG RADIUS ELBOW E-6	B-J B9.11	MT UT45	3 - - -	- -	X -	75	**IE-06**
066900	CSB-J029 MOTOR OPERATED GATE - PIPE E-6	B-J B9.11	MT UT45	3 - - -	- -	X -	75	**IE-06**
067000	CSB-K010 CLASS 1 MECHANICALLY ATTACHED E-7	F-A F1.10	VT-3	3 - - -	- -	X -	75	**NA**

HIGH PRESSURE COOLANT INJECTION, CL-1

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	PS (FIG NO 1.2-09)												
068000	PSA-J006 PIPE - MOTOR CPERATED GATE G-6	B-J B9.11	MT UT45	3	-	-	-	-	-	X	-	75	**IE-07**
068100	PSA-J009 MOTOR OPERATED GATE - PIPE G-6	B-J B9.11	MT UT45	3	-	-	-	-	-	X	-	75	**IE-07**
068900	PSA-J024 90 DEGREE LONG RADIUS ELBOW - PIPE G-6	B-J B9.11	MT UT45	3	-	-	-	-	-	X	-	75	**IE-07**
069300	PSA-K008 CLASS 1 MECHANICALLY ATTACHED - MOTOR OPERATED GAT G-6	F-A F1.40	VT-3	3	-	-	X	-	-	-	-	75	**NA**
069500	PSA-K015 CLASS 1 MECHANICALLY ATTACHED G-6	F-A F1.10	VT-3	3	-	-	-	-	X	-	-	75	**NA**
069700	PSA-K018 CLASS 1 MECHANICALLY ATTACHED G-6	F-A F1.10	VT-3	3	-	-	-	-	-	X	-	75	**NA**
	PS (FIG NO 1.2-10)												
070500	PSB-J003 CHECK - 90 DEGREE LONG RADIUS ELBOW C-7	B-J B9.11	MT UT45	3	-	-	-	-	-	X	-	75	**IE-09**

HIGH PRESSURE COOLANT INJECTION, CL-1

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	PS (FIG NO 1.2-10)							
070700	PSB-J008 MOTOR OPERATED GATE - PIPE C-6	B-J B9.11	MT UT45	3 - - -	- X	- -	75	**IE-09**
070900	PSB-K006 CLASS 1 MECHANICALLY ATTACHED C-6	F-A F1.10	VT-3	3 - - X	- -	- -	75	**NA**

REACTOR WATER CLEANUP

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL / PLAN STATUS FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	CU (FIG NO 1.2-11A)							
072100	CUA-J008 PIPE - SOCKOLET F-8	B-J B9.40	PT	3 - - -	- X	- -	75	**NA**
072400	CUA-J010 45 DEGREE ELBOW - MOTOR OPERATED GATE F-8	B-J B9.11	PT UT45	3 - X -	- -	- -	75	**IE-18**
073200	CUA-J015 90 DEGREE LONG RADIUS ELBOW - PIPE F-7	B-J B9.11	PT UT45	3 - X -	- -	- -	75	**IE-18**
075000	CUA-K013AA CLASS 1 MECHANICALLY ATTACHED F-7	F-A F1.10	VT-3	3 - - -	- -	X -	75	**NA**
075200	CUA-K014A CLASS 1 MECHANICALLY ATTACHED F-7	F-A F1.10	VT-3	3 - - -	- -	X -	75	**NA**
075400	CUA-K020AA CLASS 1 MECHANICALLY ATTACHED F-7	F-A F1.10	VT-3	3 - X -	- -	- -	75	**NA**
	CU (FIG NO 1.2-11B)							
075800	CUB-F004 90 DEGREE LONG RADIUS ELBOW - CHECK G-ST6	B-F B5.130	PT UT45	3 - - -	- X	- -	75	**IE-03 IE-18**

REACTOR WATER CLEANUP

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY / ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	CU (FIG NO 1.2-11B)											
077000	CUB-J013 90 DEGREE LONG RADIUS ELBOW - PIPE G-5T6	B-J B9.11	PT UT45	3	-	-	-	-	-	X	75	**IE-18**
077200	CUB-J014 PIPE - 90 DEGREE LONG RADIUS ELBOW G-5T6	B-J B9.11	PT UT45	3	-	-	-	-	-	X	75	**IE-18**
077800	CUB-J019 FLOW ORIFICE - PIPE G-4	B-J B9.11	PT UT45	3	-	-	-	-	-	X	75	**IE-18**
078000	CUB-J022 PIPE - FLOW ORIFICE G-4	B-J B9.11	PT UT45	3	-	-	-	-	-	X	75	**IE-18**
078300	CUB-J025 MOTOR OPERATED GLOBE - PIPE G-4	B-J B9.11	PT UT45	3	-	-	-	-	-	X	75	**IE-18**
079000	CUB-K012 CLASS 1 MECHANICALLY ATTACHED G-5T6	F-A F1.10	VT-3	3	-	X	-	-	-	-	75	**NA**

CONTROL ROD DRIVE RETURN

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL PLAN STATUS FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	CR (FIG NO 1.2-12A)							
079400	CRA-F002 SAFEEND - NOZZLE E-2	B-F B5.20	PT	3 X - -	- -	- -	75	REMOVAL OF INNER & OUTER SHIELDS REQUIRED **IE-04 IE-17**
079600	CRA-F004 REDUCER - PIPE E-2	B-F B5.140	PT	3 - - -	- X	- -	75	**IE-55 IE-02**
079800	CRA-J003 PIPE - SAFEEND E-2	B-J B9.21	PT	3 - - -	- X	- -	75	**NA**
080300	CRA-J011 PIPE - CHECK E-2	B-J B9.21	MT	3 - - -	- -	X -	75	**NA**
081900	CRA-J031 PIPE - 90 DEGREE LONG RADIUS ELBOW E-2	B-J B9.21	MT	3 - - -	- -	X -	75	**NA**
082200	CRA-K017AA CLASS 1 MECHANICALLY ATTACHED E-2	F-A F1.10	VT-3	3 - - -	- X	- -	75	**NA**
082500	CRA-K026 CLASS 1 MECHANICALLY ATTACHED E-2	F-A F1.10	VT-3	3 - - -	- -	X -	75	**NA**

CONTROL ROD DRIVE RETURN

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	CR (FIG NO 1.2-12B)							
082700	CRA-J032 PIPE E-3	B-J B9.21	MT , , ,	3 - - -	- -	X -	75	**NA**
082800	CRA-J034 CHECK - PIPE E-3	B-J B9.21	MT , , ,	3 - - -	- X	- -	75	**NA**
083200	CRA-J040 45 DEGREE ELBOW - PIPE E-3	B-J B9.21	MT , , ,	3 - - -	- X	- -	75	**NA**
084000	CRA-J047 GATE - 90 DEGREE SOCKET WELD ELBOW E-3	B-J B9.21	MT , , ,	3 - - X	- -	- -	75	**NA**
084400	CRA-K045A CLASS 1 MECHANICALLY ATTACHED E-3	F-A F1.10	VT-3	3 - - X	- -	- -	75	**NA**

RESIDUAL HEAT REMOVAL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	PLAN STATUS FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RH (FIG NO 1.2-13)								
084500	RHA-FLG-BOLTING FLANGE - BOLTING G-8	B-G-2 B7.10	VT-1	3	- - X	- -	- -	75	**NA**
084600	RHA-J002 FLANGE - NOZZLE G-8	B-J B9.11	MT UT45	3	- - -	- X	- -	75	**IE-59**
	RH (FIG NO 1.2-14)								
089700	RHB-F003 PIPE E-8	B-F B5.130	PT UT45	3	- - -	X -	- -	75	REMOVAL OF RHB-K004 REQUIRED FOR ACCESS **IE-11**
090200	RHB-J002 BRANCH CONNECTION - WELDOLET E-8	B-J B9.31	PT UT45	3	- - -	- -	X -	75	Examine from 18" pipe side **IE-54**
090400	RHB-J005 PIPE - GATE E-8	B-J B9.11	MT UT45	3	- - X	- -	- -	75	**IE-11**
090500	RHB-J007 GATE - 90 DEGREE LONG RADIUS ELBOW E-8	B-J B9.11	MT UT45	3	- - X	- -	- -	75	**IE-11**
091600	RHB-J023 90 DEGREE LONG RADIUS ELBOW - PIPE E-8	B-J B9.11	MT UT45	3	- - -	- -	X -	75	**IE-11**

RESIDUAL HEAT REMOVAL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL / PLAN STATUS: FIRST PERIOD (OUTAGE 1 2 3)	SECOND PERIOD (OUTAGE 1 2)	THIRD PERIOD (OUTAGE 1 2)	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RH (FIG NO 1.2-14)							
091700	RHB-J024 PIPE - MOTOR OPERATED GATE E-8	B-J B9.11	MT UT45	3 - - -	- -	X -	75	**IE-11**
091900	RHB-K009 CLASS 1 MECHANICALLY ATTACHED E-8	F-A F1.10	VT-3	3 - - -	- X	- -	75	**NA**
	RH (FIG NO 1.2-15)							
092700	RHC-F002 PIPE E-3	B-F B5.130	PT UT45	3 - - -	- -	X -	75	**IE-25 IE-51**
093500	RHC-J009 CONTROL VALVE CHECK - 90 DEGREE LONG RADIUS ELBOW E-3	B-J B9.11	MT UT45	3 - - -	- -	X -	75	**IE-51**
093600	RHC-J011 90 DEGREE LONG RADIUS ELBOW - CONTROL VALVE CHECK E-3	B-J B9.11	MT UT45	3 - - -	- -	X -	75	**IE-51**
094700	RHC-J025 MOTOR OPERATED GATE - PIPE E-4	B-J B9.11	MT UT45	3 - - X	- -	- -	75	**IE-51**
094800	RHC-K005 CLASS 1 MECHANICALLY ATTACHED E-3	F-A F1.40	VT-3	3 - - X	- -	- -	75	**NA**

RESIDUAL HEAT REMOVAL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RH (FIG NO 1.2-15)											
094900	RHC-K007 CLASS 1 MECHANICALLY ATTACHED E-3	F-A F1.10	VT-3	3 -	-	X	-	-	-	-	75	**NA**
095000	RHC-K008A CLASS 1 MECHANICALLY ATTACHED E-3	F-A F1.10	VT-3	3 -	-	-	-	-	X	-	75	**NA**
095100	RHC-K013 CLASS 1 MECHANICALLY ATTACHED E-3	F-A F1.10	VT-3	3 -	-	-	-	-	X	-	75	**NA**
095200	RHC-K016 CLASS 1 MECHANICALLY ATTACHED E-3	F-A F1.10	VT-3	3 -	-	-	-	X	-	-	75	**NA**
	RH (FIG NO 1.2-16)											
095900	RHD-F002 PIPE - PIPE E-7	B-F B5.130	PT UT45	3 -	-	-	-	-	-	X	75	**IE-51 IE-25**
096100	RHD-J001 PIPE - TEE E-7	B-J B9.11	MT UT45	3 -	-	X	-	-	-	-	75	**IE-25**
096400	RHD-J003 GATE - PIPE E-7	B-J B9.11	MT UT45	3 -	-	X	-	-	-	-	75	**IE-51**

RESIDUAL HEAT REMOVAL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL PLAN STATUS FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RH (FIG NO 1.2-16)							
096700	RHD-J009 CONTROL VALVE CHECK - 90 DEGREE LONG RADIUS ELBOW E-7	B-J B9.11	MT UT45	3 - - -	- -	- X	75	**IE-51**
098000	RHD-K005 CLASS 1 MECHANICALLY ATTACHED E-7	F-A F1.40	VT-3	3 - - -	- X	- -	75	**NA**

REACTOR CORE ISOLATION COOLING

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	FIRST PERIOD OUTAGE 1	FIRST PERIOD OUTAGE 2	FIRST PERIOD OUTAGE 3	SECOND PERIOD OUTAGE 1	SECOND PERIOD OUTAGE 2	THIRD PERIOD OUTAGE 1	THIRD PERIOD OUTAGE 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RS (FIG NO 1.2-17)												
098900	RSA-J001 SOCKOLET - PIPE E-7	B-J B9.11	MT UT45	3	-	-	-	-	-	X	-	75	**IE-03**
100100	RSA-J023 MOTOR OPERATED GATE - 90 DEGREE LONG RADIUS ELBOW E-6	B-J B9.11	MT UT45	3	-	-	X	-	-	-	-	75	**IE-03**
100600	RSA-J029 PIPE E-6	B-J B9.11	MT UT45	3	-	-	-	-	X	-	-	75	**IE-03**
101100	RSA-K024AA CLASS 1 MECHANICALLY ATTACHED E-6	F-A F1.10	VT-3	3	-	-	-	-	X	-	-	75	**NA**
	RS (FIG NO 1.2-18)												
101400	RSB-J001 PIPE - WELDOLET C-6	B-J B9.11	MT UT45	3	-	-	-	-	X	-	-	75	**IE-03**
101700	RSB-J004 90 DEGREE LONG RADIUS ELBOW - PIPE C-6	B-J B9.11	MT UT45	3	-	-	X	-	-	-	-	75	CLAMP FROM DBA-7-SS-71 IS REQUIRED TO BE REMOVED FOR ACCESS **IE-03**
101900	RSB-J008 PIPE - CONTROL VALVE CHECK C-6	B-J B9.11	MT UT45	3	-	-	-	-	-	X	-	75	**IE-03**

REACTOR CORE ISOLATION COOLING

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RS (FIG NO 1.2-18)											
102100	RSB-J011 MOTOR OPERATED GATE - PIPE C-6	B-J B9.11	MT UT45	3 -	-	-	-	X	-	-	75	**IE-03**
102400	RSB-K010A CLASS 1 MECHANICALLY ATTACHED C-6	F-A F1.10	VT-3	3 -	-	X	-	-	-	-	75	**NA**

RECIRCULATION PUMP SUCTION

INSPECTION INTERVAL — PLAN STATUS — PRESERVICE YEAR

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RC (FIG NO 1.2-19A)											
103000	RCA-F003 NOZZLE - SAFEEND CTF-5	B-F B5.10	PT UT45	3	-	-	-	-	X	-	75	REMOVAL OF INNER & OUTER SHIELDS REQUIRED **IE-61**
106100	RCA-J018 BRANCH CONNECTION B-5	B-J B9.31	PT UT45	3	-	-	-	-	X	-	75	Examine from 22" pipe side **IE-26**
106300	RCA-J019 BRANCH CONNECTION - SOCKOLET B-5	B-J B9.32	PT	3	-	-	-	X	-	-	75	**NA**
110100	RCA-K007A CLASS 1 WELDED - HANGER LUGS CTF-5	F-A F1.10	VT-3	3	-	X	-	-	-	-	75	**NA**
110500	RCA-K009 CLASS 1 WELDED - HANGER LUGS CTF-5	F-A F1.10	VT-3	3	-	-	-	-	X	-	75	**NA**
110600	RCA-K009 CLASS 1 WELDED - HANGER LUGS CTF-5	B-K B10.20	PT	3	-	-	-	-	X	-	75	(CODE CASE N-509), TAP-I008 **NA**
110700	RCA-K017 CLASS 1 WELDED - HANGER LUGS B-5	F-A F1.10	VT-3	3	-	-	-	X	-	-	75	**NA**

RECIRCULATION SYSTEM DRAIN

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RD (FIG NO 1.2-19B)											
114200	RDA-J002 PIPE - 90 DEGREE LONG RADIUS ELBOW B-5	B-J B9.40	PT	3 -	-	X	-	-	-	-	75	**NA**
114300	RDA-J003 90 DEGREE LONG RADIUS ELBOW - PIPE B-5	B-J B9.40	PT	3 -	-	X	-	-	-	-	75	**NA**
114600	RDA-J006 PIPE - 90 DEGREE LONG RADIUS ELBOW B-5	B-J B9.40	PT	3 -	-	-	-	X	-	-	75	**NA**
115400	RDA-J015 PIPE - 90 DEGREE LONG RADIUS ELBOW B-5	B-J B9.40	PT	3 -	-	-	-	-	X	-	75	**NA**
115500	RDA-J016 90 DEGREE LONG RADIUS FLBOW - PIPE B-5	B-J B9.40	PT	3 -	-	-	-	-	X	-	75	**NA**
115600	RDA-J018 PIPE - 90 DEGREE LONG RADIUS ELBOW B-5	B-J B9.40	PT	3 -	-	-	-	-	X	-	75	**NA**
117000	RDA-K017 CLASS 1 MECHANICALLY ATTACHED B-5	F-A F1.10	VT-3	3 -	-	-	-	-	X	-	75	**NA**

RECIRCULATION MANIFOLD

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL / PLAN STATUS: FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RM (FIG NO 1.2-20)							
117700	RMA-J002 MANIFOLD TO PIPE WELD OFF OF THE RECIRCULATION MAN G-4	B-J B9.11	PT UT45	3 - - -	- X	- -	75	**IE-21**
117900	RMA-J004 MANIFOLD TO PIPE WELD OFF OF THE RECIRCULATION MAN G-4	B-J B9.11	PT UT45	3 - - -	- -	X -	75	**IE-21**
118700	RMA-J008 MANIFOLD TO PIPE WELD OFF OF THE RECIRCULATION MAN G-4	B-J B9.11	PT UT45	3 - - -	- X	- -	75	**IE-21**
119500	RMA-K009 CLASS 1 WELDED - HANGER LUGS G-4	F-A F1.10	VT-3	3 - - -	- -	X -	75	**NA**

RECIRCULATION SYSTEM RISER

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	FIRST PERIOD (OUTAGE 1 2 3)	SECOND PERIOD (OUTAGE 1 2)	THIRD PERIOD (OUTAGE 1 2)	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RR (FIG NO 1.2-20)								
119600	RRE-F002 SAFEEND - NOZZLE G-4T5	B-F B5.10	PT UT45	3	- - -	- -	X -	75	REMOVAL OF INNER & OUTER SHIELDS REQUIRED. IE-61 ACCEPTABLE PER (NG-95-1059) **IE-61**
121100	RRF-F002 SAFEEND - NOZZLE G-4T5	B-F B5.10	PT UT45	3	X - -	- -	- -	75	REMOVAL OF INNER & OUTER SHIELDS REQUIRED. IE-61 ACCEPTABLE PER (NG-95-1059) **IE-61**
122600	RRG-F002 SAFEEND - NOZZLE G-4T5	B-F B5.10	PT UT45	3	- - -	- -	X -	75	REMOVAL OF INNER & OUTER SHIELDS REQUIRED. IE-61 ACCEPTABLE PER (NG-95-1059) **IE-61**
123500	RRG-J005 PIPE - 90 DEGREE LONG RADIUS ELBOW G-4T5	B-J B9.11	PT UT45	3	- - -	- -	X -	75	**IE-21**
123900	RRG-J007 PIPE G-4T5	B-J B9.11	PT UT45	3	- - -	- -	X -	75	**IE-21**
124100	RRH-F002 SAFEEND - NOZZLE G-4T5	B-F B5.10	PT UT45	3	X - -	- -	- -	75	REMOVAL OF INNER & OUTER SHIELDS REQUIRED. IE-61 ACCEPTABLE PER (NG-95-1059) **IE-61**
125000	RRH-J005 PIPE - 90 DEGREE LONG RADIUS ELBOW G-4T5	B-J B9.11	PT UT45	3	- - -	- X	- -	75	**IE-21**

RECIRCULATION PUMP SUCTION

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL / PLAN STATUS: FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RC (FIG NO 1.2-21A)							
126100	RCB-F002 NOZZLE - SAFEEND F-5	B-F B5.10	PT UT45	3 X - -	- -	- -	75	REMOVAL OF INNER & OUTER SHIELDS REQUIRED **IE-61**
131000	RCB-J030 BRANCH CONNECTION - WELDOLET C-8	B-J B9.31	PT UT45	3 - - -	- -	X -	75	Examine from 22" pipe side **IE-26**
134200	RCB-K010B CLASS 1 WELDED - HANGER LUGS BTF-5	F-A F1.10	VT-3	3 - - X	- -	- -	75	**NA**
134500	RCB-K029 CLASS 1 WELDED - HANGER LUGS C-8	F-A F1.10	VT-3	3 - - -	- X	- -	75	**NA**
134600	RCB-K029 CLASS 1 WELDED - HANGER LUGS C-8	B-K B10.20	PT	3 - - -	- X	- -	75	(CODE CASE N-509), TAP-I008 **NA**

RECIRCULATION SYSTEM PUMP VALVE BYPASS

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL PLAN STATUS FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RB (FIG NO 1.2-21A)							
135600	RBB-J001 WELDOLET - PIPE C-8	B-J B9.11	PT UT45	3 - - -	X -	- -	75	**IE-18**
136600	RBB-J008 TEE - PIPE C-8	B-J B9.11	PT UT45	3 - - -	- -	X -	75	**IE-57**
137500	RBB-K005A CLASS 1 MECHANICALLY ATTACHED C-8	F-A F1.10	VT-3	3 - - -	- X	- -	75	**NA**

RECIRCULATION SYSTEM DRAIN

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RD (FIG NO 1.2-21B)							
138100	RDB-J004 PIPE - 90 DEGREE LONG RADIUS ELBOW B-6	B-J B9.40	PT	3 - - -	- -	X -	75	**NA**
138200	RDB-J005 90 DEGREE LONG RADIUS ELBOW - PIPE B-6	B-J B9.40	PT	3 - - -	- -	X -	75	**NA**
138300	RDB-J006 PIPE - 90 DEGREE LONG RADIUS ELBOW B-6	B-J B9.40	PT	3 - - -	- -	X -	75	**NA**
139300	RDB-J018 PIPE - 90 DEGREE LONG RADIUS ELBOW B-6	B-J B9.40	PT	3 - - -	- X	- -	75	**NA**
139400	RDB-J019 90 DEGREE LONG RADIUS ELBOW - PIPE B-6	B-J B9.40	PT	3 - - -	- X	- -	75	**NA**
139500	RDB-J020 PIPE - GLOBE B-6	B-J B9.40	PT	3 - - X	- -	- -	75	**NA**
140000	RDB-K022 CLASS 1 MECHANICALLY ATTACHED B-6	F-A F1.10	VT-3	3 - - -	- -	X -	75	**NA**

RECIRCULATION MANIFOLD

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL PLAN STATUS FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RM (FIG NO 1.2-22)							
140600	RMB-J002 PIPE - MANIFOLD TO PIPE WELD OFF OF THE RECIRCULAT G-6	B-J B9.11	PT UT45	3 - - -	- -	X -	75	**IE-21**
141700	RMB-J009 PIPE - MANIFOLD TO PIPE WELD OFF OF THE RECIRCULAT G-6	B-J B9.11	PT UT45	3 - - -	- -	X -	75	**IE-21**
141900	RMB-J011 PIPE - MANIFOLD TO PIPE WELD OFF OF THE RECIRCULAT G-6	B-J B9.11	PT UT45	3 - - -	- -	X -	75	**IE-21**

RECIRCULATION SYSTEM RISER

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	PLAN STATUS FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RR (FIG NO 1.2-22)								
142700	RRA-F002 SAFEEND - NOZZLE G-5T6	B-F B5.10	PT UT45	3	- - -	- -	X -	75	REMOVAL OF INNER & OUTER SHIELDS REQUIRED. IE-61 ACCEPTABLE PER (NG-95-1059) **IE-61**
143600	RRA-J005 PIPE - 90 DEGREE LONG RADIUS ELBOW G-5T6	B-J B9.11	PT UT45	3	- - -	- X	- -	75	**IE-21**
144300	RRB-F002 SAFEEND - NOZZLE G-5T6	B-F B5.10	PT UT45	3	- - -	- -	X -	75	REMOVAL OF INNER & OUTER SHIELDS REQUIRED. IE-61 ACCEPTABLE PER (NG-95-1059) **IE-61**
145700	RRB-J007 PIPE G-5T6	B-J B9.11	PT UT45	3	- - -	- X	- -	75	**IE-21**
145900	RRC-F002 SAFEEND - NOZZLE G-5T6	B-F B5.10	PT UT45	3	- - -	- -	X -	75	REMOVAL OF INNER & OUTER SHIELDS REQUIRED. IE-61 ACCEPTABLE PER (NG-95-1059) **IE-61**
146500	RRC-J004 90 DEGREE LONG RADIUS ELBOW - PIPE G-5T6	B-J B9.11	PT UT45	3	- - -	- X	- -	75	**IE-21**
147000	RRC-J005 PIPE - 90 DEGREE LONG RADIUS ELBOW G-5T6	B-J B9.11	PT UT45	3	- - -	- X	- -	75	**IE-21**

RECIRCULATION SYSTEM RISER

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL PLAN STATUS FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RR (FIG NO 1.2-22)							
147400	RRC-J007 PIPE G-5T6	B-J B9.11	PT UT45	3 - - -	- -	X -	75	**IE-21**
147600	RRD-F002 SAFEEND - NOZZLE G-5T6	B-F B5.10	PT UT45	3 X - -	- -	- -	75	REMOVAL OF INNER & OUTER SHIELDS REQUIRED. IE-61 ACCEPTABLE PER (NG-95-1059) **IE-61**
148500	RRD-J005 PIPE - 90 DEGREE LONG RADIUS ELBOW G-5T6	B-J B9.11	PT UT45	3 - - -	- -	X -	75	**IE-21**

REACTOR HEAD SPARE

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL PLAN STATUS FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	HS (FIG NO 1.2-23)							
149200	HSB-FLG-BOLTING FLANGE - BOLTING G-5	B-G-2 B7.10	VT-1	3 - - -	- X	- -	75	**NA**

REACTOR HEAD VENT

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD 1	2	THIRD PERIOD 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	HV (FIG NO 1.2-24)											
149500	HVA-FLG-BOLTING NUT - FLANGE (N-7)	B-G-2 B7.10	VT-1	3 -	-	-	-	-	X	-	75	TOTAL 16 NUTS, 8 STUDS (NOZ. N-7). (LADDER) **NA**
149600	HVA-FLG-STUD STUD - FLANGE	B-G-2 B7.50	VT-1	3 -	X	X	X	X	X	X	75	TOTAL 8 STUDS (FLANGE AT PENETRATION DRYWELL) (LADDER) **NA**

JET PUMP INSTRUMENTATION

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL PLAN STATUS FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	JP (FIG NO 1.2-25)							
149700	JPA-F002 NOZZLE - SAFEEND E-5	B-F B5.10	PT UT45	3 X - -	- -	- -	75	REMOVAL OF INNER & OUTER SHIELDS REQUIRED. IE-61 ACCEPTABLE PER (NG-95-1059) **IE-61**
	JP (FIG NO 1.2-26)							
150100	JPB-F002 NOZZLE - SAFEEND E-5	B-F B5.10	PT UT45	3 - - -	- -	X -	75	REMOVAL OF INNER & OUTER SHIELDS REQUIRED. IE-61 ACCEPTABLE PER (NG-95-1059) **IE-61**

LIQUID LEVEL CONTROL SYSTEM - CORE

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	FIRST PERIOD OUTAGE 1	FIRST PERIOD OUTAGE 2	FIRST PERIOD OUTAGE 3	SECOND PERIOD OUTAGE 1	SECOND PERIOD OUTAGE 2	THIRD PERIOD OUTAGE 1	THIRD PERIOD OUTAGE 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	LC (FIG NO 1.2-27)												
150500	LCA-F002 NOZZLE C-8	B-F B5.20	PT	3	-	-	-	-	-	X	-	75	**NA**
152400	LCA-J020 PIPE - 90 DEGREE LONG RADIUS ELBOW DTE-8	B-J B9.40	PT	3	-	-	X	-	-	-	-	75	**NA**
152900	LCA-J025 PIPE - 90 DEGREE LONG RADIUS ELBOW E-8	B-J B9.40	PT	3	-	-	-	-	X	-	-	75	**NA**
153000	LCA-J026 PIPE - TEE E-8	B-J B9.40	PT	3	-	-	-	-	X	-	-	75	**NA**
153100	LCA-J026A TEE - PIPE E-8	B-J B9.40	PT	3	-	-	-	-	X	-	-	75	**NA**
153200	LCA-J027 CHECK - PIPE F-7	B-J B9.40	PT	3	-	-	-	-	X	-	-	75	**NA**
153500	LCA-K003A CLASS 1 MECHANICALLY ATTACHED DTE-8	F-A F1.10	VT-3	3	-	-	-	-	X	-	-	75	**NA**

LIQUID LEVEL CONTROL SYSTEM - CORE

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	LC (FIG NO 1.2-27)							
153900	LCA-K007A CLASS 1 MECHANICALLY ATTACHED DTE-8	F-A F1.10	VT-3	3 - - -	- -	X -	75	**NA**

REACTOR VESSEL INSTRUMENTATION

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL PLAN STATUS FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	VI (FIG NO 1.2-28)							
154300	VIA-F002 NOZZLE - SAFEEND F-5	B-F B5.20	PT	3 - - -	- -	X -	75	**IE-01 IE-15**
	VI (FIG NO 1.2-29)							
154800	VIB-F002 NOZZLE - SAFEEND F-5	B-F B5.20	PT	3 - - -	- -	X -	75	**NA**
155000	VIB-J003 SAFEEND - COUPLING F-5	B-J B9.40	PT	3 - - -	- -	X -	75	SAME BIOSHIELD AS FWC & N1[illegible] **NA**
	VI (FIG NO 1.2-30)							
155300	VIC-F002 NOZZLE - SAFEEND	B-F B5.20	PT	3 - - -	- -	X -	75	**NA**
	VI (FIG NO 1.2-31)							
155800	VID-F002 NOZZLE - SAFEEND	B-F B5.20	PT	3 - - X	- -	- -	75	**NA**

REACTOR BOTTOM HEAD DRAIN

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	PLAN STATUS FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	HD (FIG NO 1.2-32)								
156300	HDA-F031 PIPE E-5	B-F B5.140	PT	3	- - -	- -	X -	75	**NA**
156900	HDA-J017 GLOBE - PIPE E-5	B-J B9.40	MT	3	- - -	- -	X -	75	**NA**
157000	HDA-J018 PIPE - GLOBE E-5	B-J B9.40	MT	3	- - -	- -	X -	75	**NA**
157700	HDA-J027 45 DEGREE ELBOW - PIPE E-5	B-J B9.40	MT	3	- - X	- -	- -	75	**NA**
157800	HDA-J028 PIPE - 45 DEGREE ELBOW E-5	B-J B9.40	MT	3	- - -	- -	X -	75	**NA**

REACTOR VESSEL INSTRUMENTATION		INSPECTION INTERVAL		PLAN STATUS			PRESERVICE YEAR	
		ASME SEC. XI		FIRST PERIOD	SECOND PERIOD	THIRD PERIOD		
SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	CATGY ITEM NO	NDE METH	OUTAGE 1 2 3	1 2	1 2		INSTRUCTIONS **CALIBRATION BLOCK**
	VI (FIG NO 1.2-33)							
158900	VIE-F002 NOZZLE - SAFEEND E-5	B-F B5.20	PT	3 X - -	- -	- -	75	**IE-01**
	VI (FIG NO 1.2-34)							
159400	VIF-F002 NOZZLE - SAFEEND E-5	B-F B5.20	PT	3 - - -	- X	- -	75	**IE-01/IE-15**

MAIN STEAM DRAIN - COMMON

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL PLAN STATUS FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	MD (FIG NO 1.2-35)							
160100	MDR-J006 PIPE B-3	B-J B9.21	MT	3 - - -	- -	X -	75	**NA**
160200	MDR-J007 MOTOR OPERATED GATE - PIPE B-3	B-J B9.21	MT	3 - - -	- -	X -	75	**NA**

RECIRCULATION PUMP

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	FIRST PERIOD OUTAGE 1	FIRST PERIOD OUTAGE 2	FIRST PERIOD OUTAGE 3	SECOND PERIOD OUTAGE 1	SECOND PERIOD OUTAGE 2	THIRD PERIOD OUTAGE 1	THIRD PERIOD OUTAGE 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RP (FIG NO 1.3-03)												
163100	RPB-K001 CLASS 1 WELDED - HANGER LUGS B-6	F-A F1.40	VT-3	3	-	-	-	-	-	X	-	75	**NA**
163200	RPB-K001 CLASS 1 WELDED - HANGER LUGS B-6	B-K B10.30	PT	3	-	-	-	-	-	X	-	75	(CODE CASE N-509), TAP-I008 **NA**
163300	RPB-K002 CLASS 1 MECHANICALLY ATTACHED - UNKNOWN PUMP TYPE B-6	F-A F1.40	VT-3	3	-	-	X	-	-	-	-	75	**NA**
163400	RPB-K003 CLASS 1 WELDED - HANGER LUGS B-6	F-A F1.40	VT-3	3	-	-	X	-	-	-	-	75	**NA**
163600	RPB-K004A CLASS 1 MECHANICALLY ATTACHED - UNKNOWN PUMP TYPE B-6	F-A F1.40	VT-3	3	-	-	-	-	X	-	-	75	**NA**
163700	RPB-K005 CLASS 1 WELDED - HANGER LUGS B-6	F-A F1.40	VT-3	3	-	-	-	-	X	-	-	75	**NA**
164000	RPB-K006 CLASS 1 WELDED - HANGER LUGS B-6	F-A F1.40	VT-3	3	-	-	-	-	-	X	-	75	**NA**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	PLAN STATUS FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO VS-12-02)												
164300	BH-CRD HSING/ST TUB REACTOR VESSEL	B-N-2 B13.30	VT-3	3	-	-	-	-	-	X	-	75	(BOTTOM HEAD) EXAM REQUIRES COMPLETE FUEL CELL DISASSEMBLY & IS LOCATED BELOW CORE PLATE REMOVE GUIDE TUBE 14-19,18-19,&22-23 FOR EXAM **NA**
164400	BH-CRD STUB TUBES REACTOR VESSEL	B-N-2 B13.30	VT-3	3	-	-	-	-	-	X	-	75	(BOTTOM HEAD) EXAM REQUIRES COMPLETE FUEL CELL DISASSEMBLY & IS LOCATED BELOW CORE PLATE REMOVE GUIDE TUBE 14-19,18-19,&22-23 FOR EXAM **NA**
	RV (FIG NO VS-01-07)												
164500	BH-DRAIN HOLE REACTOR VESSEL	B-N-2 B13.30	VT-3	3	-	-	-	-	-	X	-	75	(BOTTOM HEAD) EXAM REQUIRES COMPLETE FUEL CELL DISASSEMBLY & IS LOCATED BELOW CORE PLATE REMOVE GUIDE TUBE 14-19,18-19,&22-23 FOR EXAM **NA**
	RV (FIG NO VS-13-01)												
164700	BH-INCORE HOUSING REACTOR VESSEL	B-N-2 B13.30	VT-3	3	-	-	-	-	-	X	-	75	(BOTTOM HEAD) EXAM REQUIRES COMPLETE FUEL CELL DISASSEMBLY & IS LOCATED BELOW CORE PLATE REMOVE GUIDE TUBE 14-19,18-19,&22-23 FOR EXAM **NA**
	RV (FIG NO VS-03-02)												
165500	CORE PLATE(0-180) REACTOR VESSEL	B-N-1 B13.10	VT-3	3	-	-	X	-	X	X	-	75	TOP GENERAL AREA - DEPENDENT ON FUEL OFF LOAD **NA**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO VS-03-02)												
165600	CORE PLATE(180-360) REACTOR VESSEL	B-N-1 B13.10	VT-3	3	-	X	-	X	-	-	X	75	TOP GENERAL AREA - DEPENDENT ON FUEL OFF LOAD **NA**
	RV (FIG NO VS-01-26)												
165900	CSB WELDS-150 DEG REACTOR VESSEL	B-N-2 B13.30	VT-1	3	-	-	-	-	-	X	-	75	CORE SPRAY BRACKET **NA**
166000	CSB WELDS-210 DEG REACTOR VESSEL	B-N-2 B13.30	VT-1	3	-	-	-	-	-	-	X	75	CORE SPRAY BRACKET **NA**
166100	CSB WELDS-30 DEG REACTOR VESSEL	B-N-2 B13.30	VT-1	3	-	-	-	-	-	X	-	75	CORE SPRAY BRACKET. VERIFY MISSING TACK WELD, NOZZLE 8 A OR C SPARGER? SEE VIDEO DAEC-93-13 (1:15:47), RFO13 TAPE #11 (1:16:18) **NA**
166200	CSB WELDS-330 DEG REACTOR VESSEL	B-N-2 B13.30	VT-1	3	-	-	-	-	-	-	X	75	CORE SPRAY BRACKET **NA**
	RV (FIG NO VS-03-01)												
166300	CSS-CORE PLATES REACTOR VESSEL	B-N-2 B13.40	VT-3	3	-	-	-	-	-	X	-	75	CORE SUPPORT STRUCTURE **NA**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO VS-12-04)							
166400	CSS-CR GUIDE TUBE REACTOR VESSEL	B-N-2 B13.40	VT-3	3 - - -	- -	X -	75	CORE SUPPORT STRUCTURE **NA**
	RV (FIG NO VS-03-09)							
166500	CSS-FUEL SUPP CAST REACTOR VESSEL	B-N-2 B13.40	VT-3	3 - - -	- -	X -	75	CORE SUPPORT STRUCTURE **NA**
166600	CSS-PERIPH FUEL SUP REACTOR VESSEL	B-N-2 B13.40	VT-3	3 - - -	- -	X -	75	CORE SUPPORT STRUCTURE **NA**
	RV (FIG NO VS-04-01)							
166700	CSS-TOP GUIDE REACTOR VESSEL	B-N-2 B13.40	VT-3	3 - - -	- -	X -	75	CORE SUPPORT STRUCTURE **NA**
	RV (FIG NO VS-01-30)							
166800	DHB-149 DEG REACTOR VESSEL	B-N-2 B13.30	VT-3	3 - - -	- -	X -	75	DRYER HOLDDOWN BRACKET **NA**
166900	DHB-211 DEG REACTOR VESSEL	B-N-2 B13.30	VT-3	3 - - -	- -	- X	75	DRYER HOLDDOWN BRACKET **NA**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	PLAN STATUS FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO VS-01-30)												
167000	DHB-31 DEG REACTOR VESSEL	B-N-2 B13.30	VT-3	3	-	-	-	-	-	X	-	75	DRYER HOLDDOWN BRACKET **NA**
167100	DHB-329 DEG REACTOR VESSEL	B-N-2 B13.30	VT-3	3	-	-	-	-	-	-	X	75	DRYER HOLDDOWN BRACKET **NA**
	RV (FIG NO VS-01-29)												
67200	DSB-180 DEG REACTOR VESSEL	B-N-2 B13.30	VT-3	3	-	-	-	-	-	X	-	75	DRYER SUPPORT BRACKET(was designated 152 deg) **NA**
167300	DSB-225 DEG REACTOR VESSEL	B-N-2 B13.30	VT-3	3	-	-	-	-	-	-	X	75	DRYER SUPPORT BRACKET(was designated as 208 deg) **NA**
167400	DSB-45 DEG REACTOR VESSEL	B-N-2 B13.30	VT-3	3	-	-	-	-	-	X	-	75	DRYER SUPPORT BRACKET(was designated as 28 deg) **NA**
167500	DSB-315 DEG REACTOR VESSEL	B-N-2 B13.30	VT-3	3	-	-	-	-	-	-	X	75	DRYER SUPPORT BRACKET(was designated as 332 deg) **NA**
	RV (FIG NO VS-01-27)												
68500	FWB WELDS-NE 315DEG REACTOR VESSEL	B-N-2 B13.30	VT-3	3	-	-	-	-	-	-	X	75	FEEDWATER BRACKET **NA**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO VS-01-27)											
168600	FWB WELDS-NW 225DEG REACTOR VESSEL	B-N-2 B13.30	VT-3	3 -	-	-	-	-	-	X	75	FEEDWATER BRACKET **NA**
168700	FWB WELDS-SE 45DEG REACTOR VESSEL	B-N-2 B13.30	VT-3	3 -	-	-	-	-	X	-	75	FEEDWATER BRACKET **NA**
168800	FWB WELDS-SW 135DEG REACTOR VESSEL	B-N-2 B13.30	VT-3	3 -		-	-	-	X	-	75	FEEDWATER BRACKET **NA**
	RV (FIG NO VS-01-28)											
168900	GRB WELDS-0DEG AZ REACTOR VESSEL	B-N-2 B13.30	VT-3	3 -	-	-	-	-	X	-	75	INCLUDES BOTH UPPER AND LOWER GUIDE ROD BRACKETS **NA**
169000	GRB WELDS-180DEG AZ REACTOR VESSEL	B-N-2 B13.30	VT-3	3 -	-	-	-	-	-	X	75	INCLUDES BOTH UPPER AND LOWER GUIDE ROD BRACKETS **NA**
169100	GUIDE ROD BRT (0) REACTOR VESSEL (0 DEG)	B-N-1 B13.10	VT-3	3 -	-	X	-	X	X	-	75	**NA**
169200	GUIDE ROD BRT (180) REACTOR VESSEL (180 DEG)	B-N-1 B13.10	VT-3	3 -	X	-	X	-	-	X	75	**NA**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL 1	2	3	PLAN STATUS SECOND PERIOD 1	2	THIRD PERIOD 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO VS-13-02)											
169300	INCR DRY TB PLUNGER REACTOR VESSEL	B-N-1 B13.10	VT-3	3 -	-	X	-	X	X	-	75	**NA**
169400	INCR DRY TUBES REACTOR VESSEL	B-N-1 B13.10	VT	3 -	-	X	-	X	X	-	75	**NA**
	RV (FIG NO VS-01-34)											
172800	JPR-SUPP PAD-108DEG REACTOR VESSEL	B-N-2 B13.20	VT-1	3 -	-	-	-	-	X	-	75	JET PUMP #5 **NA**
172900	JPR-SUPP PAD-144DEG REACTOR VESSEL	B-N-2 B13.20	VT-1	3 -	-	-	-	-	X	-	75	JET PUMP #7 **NA**
173000	JPR-SUPP PAD-216DEG REACTOR VESSEL	B-N-2 B13.20	VT-1	3 -	-	-	-	-	-	X	75	JET PUMP #9 **NA**
173100	JPR-SUPP PAD-252DEG REACTOR VESSEL	B-N-2 B13.20	VT-1	3 -	-	-	-	-	-	X	75	JET PUMP #11 **NA**
173200	JPR-SUPP PAD-288DEG REACTOR VESSEL	B-N-2 B13.20	VT-1	3 -	-	-	-	-	-	X	75	JET PUMP #13 **NA**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	FIRST PERIOD OUTAGE 1	FIRST PERIOD OUTAGE 2	FIRST PERIOD OUTAGE 3	SECOND PERIOD OUTAGE 1	SECOND PERIOD OUTAGE 2	THIRD PERIOD OUTAGE 1	THIRD PERIOD OUTAGE 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO VS-01-34)												
173300	JPR-SUPP PAD-324DEG REACTOR VESSEL	B-N-2 B13.20	VT-1	3	-	-	-	-	-	-	X	75	JET PUMP #15 **NA**
173400	JPR-SUPP PAD-36DEG REACTOR VESSEL	B-N-2 B13.20	VT-1	3	-	-	-	-	-	X	-	75	JET PUMP #1 **NA**
173500	JPR-SUPP PAD-72DEG REACTOR VESSEL	B-N-2 B13.20	VT-1	3	-	-	-	-	-	X	-	75	JET PUMP #3 **NA**
	RV (FIG NO VS-10-02)												
173800	SAMPLE HLDR-108DEG REACTOR VESSEL	B-N-1 B13.10	VT-3	3	-	-	X	-	X	X	-	75	INCLUDES UPPER AND LOWER **NA**
173900	SAMPLE HLDR-288DEG REACTOR VESSEL	B-N-1 B13.10	VT-3	3	-	X	-	X	-	-	X	75	INCLUDES UPPER AND LOWER **NA**
174000	SAMPLE HLDR-36DEG REACTOR VESSEL	B-N-1 B13.10	VT-3	3	-	-	X	-	X	X	-	75	INCLUDES UPPER AND LOWER **NA**
	RV (FIG NO VS-01-31)												
74100	SH WELDS-108 DEG-LW REACTOR VESSEL	B-N-2 B13.30	VT-3	3	-	-	-	-	-	X	-	75	SURVEILLANCE HOLDER **NA**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO VS-01-31)							
174200	SH WELDS-108 DEG-UP REACTOR VESSEL	B-N-2 B13.30	VT-3	3 - - -	- -	X -	75	SURVEILLANCE HOLDER **NA**
174300	SH WELDS-288 DEG-LW REACTOR VESSEL	B-N-2 B13.30	VT-3	3 - - -	- -	- X	75	SURVEILLANCE HOLDER **NA**
174400	SH WELDS-288 DEG-UP REACTOR VESSEL	B-N-2 B13.30	VT-3	3 - - -	- -	- X	75	SURVEILLANCE HOLDER **NA**
174500	SH WELDS-36 DEG-LW REACTOR VESSEL	B-N-2 B13.30	VT-3	3 - - -	- -	X -	75	SURVEILLANCE HOLDER **NA**
174600	SH WELDS-36 DEG-UP REACTOR VESSEL	B-N-2 B13.30	VT-3	3 - - -	- -	X -	75	SURVEILLANCE HOLDER **NA**
	RV (FIG NO VS-02-10)							
174700	SHRD LEDG/VES WLD REACTOR VESSEL (0-180 DEG)	B-N-2 B13.30	VT-3	3 - - -	- -	X -	75	SHROUD SUPPORT PLATE-TO-VESSEL WELD BETWEEN JET PUMPS 1-8 **NA**
174800	SHRD LEDG/VES WLD REACTOR VESSEL (180-360 DEG)	B-N-2 B13.30	VT-3	3 - - -	- -	- X	75	SHROUD SUPPORT PLATE-TO-VESSEL WELD BETWEEN JET PUMPS 9-16 **NA**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD 1	2	THIRD PERIOD 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO VS-02-11)											
175000	SHROUD LEDGE 0-180 REACTOR VESSEL (0-180 DEG)	B-N-1 B13.10	VT-3	3 -	-	X	-	X	X	-	75	SHROUD SUPPORT PLATE TO SHROUD WALL WELD BETWEEN JET PUMPS 1-8 & GENERAL VIEW **NA**
175100	SHROUD LEDGE180-360 REACTOR VESSEL (180-360 DEG)	B-N-1 B13.10	VT-3	3 -	X	-	X	-	-	X	75	SHROUD SUPPORT PLATE TO SHROUD WALL WELD BETWEEN JET PUMPS 9-16 & GENERAL VIEW **NA**
	RV (FIG NO VS-04-01)											
175500	TOP GUIDE REACTOR VESSEL	B-N-1 B13.10	VT-3	3 -	-	X	-	X	X	-	75	TOP GENERAL VIEW & BOTTOM SIDE OF THE GRID AREAS WHERE FUEL BUNDLES ARE REMOVED(INSPECT REMAINING 1/3) (REF. SIL 554) **NA**
	RV (FIG NO VS-01-06)											
175600	VESSEL HEAD REACTOR VESSEL	B-N-1 B13.10	VT-3	3 -	X	-	X	-	X	-	75	**NA**
	RV (FIG NO VS-12-01)											
178400	BH-CRD HSING/ST TUB REACTOR VESSEL	B-E B4.12	VT-2	3 -	-	-	-	-	X	-	75	(BOTTOM HEAD) EXAM PERFORMED DURING STP46G009 (REF CODE CASE N498) **NA**
	RV (FIG NO VS-12-02)											
178500	BH-CRD STUB TUBES REACTOR VESSEL	B-E B4.12	VT-2	3 -	-	-	-	-	X	-	75	(BOTTOM HEAD) EXAM PERFORMED DURING STP46G009 (REF CODE CASE N498) **NA**

REACTOR PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO VS-13-03)											
178600	BH-INCORE HOUSING REACTOR VESSEL	B-E B4.13	VT-2	3 -	-	-	-	-	X	-	75	(BOTTOM HEAD) EXAM PERFORMED DURING STP46G009 (REF CODE CASE N498) **NA**

CLASS 1 SYSTEMS SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	INSPECTION INTERVAL ASME SEC. XI CATGY ITEM NO	NDE METH		FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO ISONO-P)												
178697	STP 46G009 CLASS 1 PRESSURE TEST	B-P B15.11	VT-2	3	-	-	-	-	-	X	-	75	USE CODE CASE N-498-1 **NA**
178699	STP 46G022 CLASS 1 PRESSURE TEST	B-P B15.10	VT-2	3	-	X	X	X	X	-	X	75	**NA**

PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO 2.1-01)												
180125	HEA-CA-1 HEAT EXCHANGER C-6	C-A C1.10	UT45	3	-	-	-	-	-	X	-	75	**IE-12**
180150	HEA-CA-3 HEAT EXCHANGER C-6	C-A C1.10	UT45	3	-	-	X	-	-	-	-	75	**IE-12**
180200	HEA-CA-5 HEAT EXCHANGER A C-6	C-A C1.20	UT45	3	-	-	-	-	X	-	-	75	**IE-11**
180300	HEA-CB-2 HEAT EXCHANGER A C-6	C-B C2.21	MT UT45	3	-	-	-	-	-	X	-	75	**IE-12**
180325	HEA-CB-2 HEAT EXCHANGER A (INNER RAD.) C-6	C-B C2.22	UT45	3	-	-	-	-	-	X	-	75	**IE-12**
180400	HEA-CB-6 HEAT EXCHANGER A C-6	C-B C2.21	MT UT45	3	-	-	-	-	X	-	-	75	**IE-11**
180425	HEA-CB-6 HEAT EXCHANGER A (INNER RAD.) C-6	C-B C2.22	UT45	3	-	-	-	-	X	-	-	75	**IE-11**

PRESSURE VESSEL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RV (FIG NO 2.1-01)								
180450	HEA-CC-7 HEAT EXCHANGER C-6	C-C C3.10	MT	3	- - -	- -	X -	75	PERFORM TOP AND BOTTOM WELD (1/2 FILLET WELD BOTH SIDES) **NA**
180455	HEA-CC-7 HEAT EXCHANGER C-6	F-A F1.40	VT-3	3	- - -	- -	X -	75	**NA**
180510	HEA-CC-8(01) HEAT EXCHANGER A (0 DEG) C-6	F-A F1.40	VT-3	3	- - -	- X	- -	75	**NA**
180610	HEA-CC-8(02) HEAT EXCHANGER A (90 DEG) C-6	F-A F1.40	VT-3	3	- - -	- X	- -	75	**NA**
180710	HEA-CC-8(03) HEAT EXCEANGER A (180 DEG) C-6	F-A F1.40	VT-3	3	- - -	- X	- -	75	**NA**
180810	HEA-CC-8(04) HEAT EXCHANGER A (270 DEG) C-6	F-A F1.40	VT-3	3	- - -	- -	X -	75	**NA**

RESIDUAL HEAT REMOVAL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD (OUTAGE 1 2 3)	SECOND PERIOD (OUTAGE 1 2)	THIRD PERIOD (OUTAGE 1 2)	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RH (FIG NO 2.2-32)							
181200	RHA-CE009 CLASS 2 WELDED - HANGER LUGS C-2	F-A F1.20	VT-3	3 - - -	- -	X -	75	**NA**
181300	RHA-CE009 CLASS 2 WELDED - HANGER LUGS C-2	C-C C3.20	MT	3 - - -	- -	X -	75	TAP-I007 **NA**
181400	RHA-CE022 CLASS 2 MECHANICALLY ATTACHED C-2	F-A F1.20	VT-3	3 - - X	- -	- -	75	**NA**
181500	RHA-CE027 CLASS 2 MECHANICALLY ATTACHED C-3	F-A F1.20	VT-3	3 - - -	- -	X -	75	**NA**
182800	RHA-CF001 PIPE - UNKNOWN PUMP TYPE C-2	C-F-2 C5.51	MT UT45	3 - - -	- -	X -	75	**IE-48**
184500	RHA-CF030 PIPE - UNKNOWN PUMP TYPE C-3	C-F-2 C5.51	MT UT45	3 - - -	- -	X -	75	**IE-48**
184600	RHA-CF033 FLANGE - PIPE C-3	C-F-2 C5.51	MT UT45	3 - - -	- -	X -	75	**IE-48**

RESIDUAL HEAT REMOVAL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	PLAN STATUS FIRST PERIOD (OUTAGE 1 2 3)	PLAN STATUS SECOND PERIOD (OUTAGE 1 2)	PLAN STATUS THIRD PERIOD (OUTAGE 1 2)	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RH (FIG NO 2.2-32)								
186900	RHA-CF076 MOTOR OPERATED GATE - PIPE D-3	C-F-2 C5.51	MT UT45	3	- - -	- -	X -	75	**IE-53**
	RH (FIG NO 2.2-33)								
187600	RHB-CE050 CLASS 2 MECHANICALLY ATTACHED C-7	F-A F1.20	VT-3	3	- - -	- -	X -	75	**NA**
187800	RHB-CE057 CLASS 2 MECHANICALLY ATTACHED C-7	F-A F1.20	VT-3	3	- - X	- -	- -	75	**NA**
188700	RHB-CE076 CLASS 2 MECHANICALLY ATTACHED D-7	F-A F1.20	VT-3	3	- - -	- X	- -	75	**NA**
188800	RHB-CF001 PIPE - UNKNOWN PUMP TYPE C-8	C-F-2 C5.51	MT UT45	3	- - -	- -	X -	75	**IE-48**
189900	RHB-CF024 90 DEGREE LONG RADIUS ELBOW - MOTOR OPERATED GATE C-7	C-F-2 C5.51	MT UT45	3	- - -	- -	X -	75	**IE-48**
190300	RHB-CF029 PIPE - UNKNOWN PUMP TYPE C-7	C-F-2 C5.51	MT UT45	3	- - -	- -	X -	75	**IE-48**

RESIDUAL HEAT REMOVAL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH		FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RH (FIG NO 2.2-33)												
192800	RHB-CF079 MOTOR OPERATED GATE - PIPE D-7	C-F-2 C5.51	MT UT45	3	-	-	-	-	-	X	-	75	**IE-53**
	RH (FIG NO 2.2-34)												
193500	RHC-CE022A CLASS 2 MECHANICALLY ATTACHED D-2	F-A F1.20	VT-3	3	-	-	-	-	X	-	-	75	**NA**
193900	RHC-CE029 CLASS 2 MECHANICALLY ATTACHED D-2	F-A F1.20	VT-3	3	-	-	-	-	X	-	-	75	**NA**
194900	RHC-CE060 CLASS 2 WELDED - HANGER LUGS D-8	F-A F1.20	VT-3	3	-	-	-	-	X	-	-	75	**NA**
195200	RHC-CE074 CLASS 2 MECHANICALLY ATTACHED D-7	F-A F1.20	VT-3	3	-	-	X	-	-	-	-	75	**NA**
195500	RHC-CF001 90 DEGREE LONG RADIUS ELBOW - REDUCER C-2	C-F-2 C5.51	MT UT45	3	-	-	-	-	-	X	-	75	**IE-50**
195600	RHC-CF002 PIPE - 90 DEGREE LONG RADIUS ELBOW D-2	C-F-2 C5.51	MT UT45	3	-	-	-	-	-	X	-	75	**IE-50**

RESIDUAL HEAT REMOVAL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	FIRST PERIOD OUTAGE 1	FIRST PERIOD OUTAGE 2	FIRST PERIOD OUTAGE 3	SECOND PERIOD OUTAGE 1	SECOND PERIOD OUTAGE 2	THIRD PERIOD OUTAGE 1	THIRD PERIOD OUTAGE 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RH (FIG NO 2.2-34)												
198500	RHC-CF046 TEE - 45 DEGREE ELBOW D-7	C-F-2 C5.51	MT UT45	3	-	-	-	-	-	X	-	75	**IE-50**
198600	RHC-CF047 PIPE - TEE D-7	C-F-2 C5.51	MT UT45	3	-	-	X	-	-	-	-	75	**IE-50**
199700	RHC-CF066 MOTOR OPERATED GATE - 90 DEGREE SHORT RADIUS ELBOW E-8	C-F-2 C5.51	MT UT45	3	-	-	-	-	-	X	-	75	**IE-50**
200600	RHC-CF080 45 DEGREE ELBOW - TEE D-7	C-F-2 C5.51	MT UT45	3	-	-	-	-	X	-	-	75	**IE-50**
	RH (FIG NO 2.2-36)												
207400	RHE-CE007 CLASS 2 WELDED - HANGER STANTION B-3	F-A F1.20	VT-3	3	-	-	X	-	-	-	-	75	**NA**
207800	RHE-CE029 CLASS 2 WELDED - HANGER LUGS B-5	F-A F1.20	VT-3	3	-	-	-	-	X	-	-	75	**NA**
208000	RHE-CE036 CLASS 2 MECHANICALLY ATTACHED B-5	F-A F1.20	VT-3	3			-	-	-	X	-	75	**NA**

RESIDUAL HEAT REMOVAL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RH (FIG NO 2.2-36)												
209100	RHE-CF016 PIPE - 90 DEGREE LONG RADIUS ELBOW D-3	C-F-2 C5.51	MT UT45	3	-	-	-	-	X	-	-	75	**IE-41**
210400	RHE-CF040 GATE - 90 DEGREE LONG RADIUS ELBOW B-5	C-F-2 C5.51	MT UT45	3	-	-	-	-	-	X	-	75	**IE-41**
210900	RHE-CF048 MOTOR OPERATED GLOBE - TEE B-5	C-F-2 C5.51	MT UT45	3	-	-	-	-	-	X	-	75	**IE-50**
212400	RHE-CF076 REDUCER - NOZZLE D-6	C-F-2 C5.51	MT UT45	3	-	-	-	-	-	X	-	75	**IE-49**
	RH (FIG NO 2.2-37A)												
213200	RHF-CE078 CLASS 2 MECHANICALLY ATTACHED G-5	F-A F1.20	VT-3	3	-	-	-	-	-	X	-	75	**NA**
214000	RHF-CE107 CLASS 2 WELDED - HANGER LUGS DTF-5	F-A F1.20	VT-3	3	-	-	X	-	-	-	-	75	**NA**
215900	RHF-CF076 45 DEGREE ELBOW - PIPE ETG-6T7	C-F-2 C5.51	MT UT45	3	-	-	-	-	-	X	-	75	**IE-50**

RESIDUAL HEAT REMOVAL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RH (FIG NO 2.2-37A)												
216000	RHF-CF079 PIPE - REDUCER G-5	C-F-2 C5.51	MT UT45	3	-	-	X	-	-	-	-	75	**IE-50**
217000	RHF-CF096 MOTOR OPERATED GLOBE - PIPE F-4	C-F-2 C5.51	MT UT45	3	-	-	-	-	-	X	-	75	**IE-60**
218600	RHF-CF127 PIPE - GATE F-5	C-F-2 C5.51	MT UT45	3	-	-	X	-	-	-	-	75	**IE-50**
	RH (FIG NO 2.2-37B)												
219000	RHF-CE007 CLASS 2 WELDED - HANGER LUGS CTD-7	F-A F1.20	VT-3	3	-	-	X	-	-	-	-	75	**NA**
220200	RHF-CF001 NOZZLE - REDUCER C-6	C-F-2 C5.51	MT UT45	3	-	-	X	-	-	-	-	75	**IE-49**
220300	RHF-CF004 REDUCER - 45 DEGREE ELBOW C-6	C-F-2 C5.51	MT UT45	3	-	-	-	-	X	-	-	75	**IE-41**
222400	RHF-CF047 45 DEGREE ELBOW - PIPE ETG-6T7	C-F-2 C5.51	MT UT45	3	-	-	-	-	X	-	-	75	**IE-50**

RESIDUAL HEAT REMOVAL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	FIRST PERIOD OUTAGE 1	FIRST PERIOD OUTAGE 2	FIRST PERIOD OUTAGE 3	SECOND PERIOD OUTAGE 1	SECOND PERIOD OUTAGE 2	THIRD PERIOD OUTAGE 1	THIRD PERIOD OUTAGE 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RH (FIG NO 2.2-39)												
224100	RHI-CE052 CLASS 2 MECHANICALLY ATTACHED B-5	F-A F1.20	VT-3	3	-	-	-	-	-	X	-	75	**NA**
226300	RHI-CF043 GATE - 90 DEGREE LONG RADIUS ELBOW B-5	C-F-2 C5.51	MT UT45	3	-	-	-	-	-	X	-	75	**IE-41**
227500	RHI-CF061 PIPE - TEE D-4	C-F-2 C5.51	MT UT45	3	-	-	X	-	-	-	-	75	**IE-41**
228000	RHI-CF076 PIPE - 90 DEGREE LONG RADIUS ELBOW D-4	C-F-2 C5.51	MT UT45	3	-	-	-	-	X	-	-	75	**IE-41**
228400	RHI-CF081 REDUCER - NOZZLE C-4	C-F-2 C5.51	MT UT45	3	-	-	X	-	-	-	-	75	**IE-49**
	RH (FIG NO 2.2-40)												
230200	RHJ-CF001 NOZZLE - REDUCER C-4	C-F-2 C5.51	MT UT45	3	-	-	-	-	X	-	-	75	**IE-49**
230400	RHJ-CF005 PIPE - 90 DEGREE LONG RADIUS ELBOW C-3	C-F-2 C5.51	MT UT45	3	-	-	-	-	-	X	-	75	**IE-41**

RESIDUAL HEAT REMOVAL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RH (FIG NO 2.2-40)							
232500	RHJ-CF041 PIPE - 45 DEGREE ELBOW F-3	C-F-2 C5.51	MT UT45	3 - - -	- -	X -	75	**IE-50**
235000	RHJ-CF080 MOTOR OPERATED GLOBE - PIPE E-6	C-F-2 C5.51	MT UT45	3 - - -	- X	- -	75	**IE-12**
235300	RHJ-CF087 90 DEGREE SHORT RADIUS ELBOW - GLOBE E-6	C-F-2 C5.51	MT UT45	3 - - -	- X	- -	75	**IE-12**
	RH (FIG NO 2.2-41)							
235400	RHK-CE008A CLASS 2 WELDED - HANGER LUGS	F-A F1.20	VT-3	3 - - -	- -	X -	75	**NA**
	RH (FIG NO 2.2-43)							
237300	RHM-CE005 CLASS 2 MECHANICALLY ATTACHED D-7	F-A F1.20	VT-3	3 - - -	- -	X -	75	**NA**
237600	RHM-CE011 CLASS 2 WELDED - HANGER LUGS D-7	C-C C3.20	MT	3 - - -	- X	- -	75	TAP-I008 **NA**

RESIDUAL HEAT REMOVAL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RH (FIG NO 2.2-43)											
237700	RHM-CE011 CLASS 2 WELDED - HANGER LUGS D-7	F-A F1.20	VT-3	3	-	-	-	X	-	-	75	**NA**

HIGH PRESSURE COOLANT INJECTION, CL-2

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	PLAN STATUS FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	HP (FIG NO 2.2-44)												
243600	HPA-CE016 CLASS 2 WELDED - HANGER LUGS F-4	F-A F1.20	VT-3	3	-	-	-	-	-	X	-	75	**NA**
244100	HPA-CE035 CLASS 2 MECHANICALLY ATTACHED A-6	F-A F1.20	VT-3	3	-	-	X	-	-	-	-	75	**NA**
246400	HPA-CF033 PIPE - 180 DEGREE ELBOW A-6	C-F-2 C5.51	MT UT45	3	-	-	-	-	X	-	-	75	**IE-48**
247500	HPA-CF052 90 DEGREE LONG RADIUS ELBOW - MOTOR OPERATED GATE A-7	C-F-2 C5.51	MT UT45	3	-	-	X	-	-	-	-	75	**IE-48**
	HP (FIG NO 2.2-45)												
247900	HPB-CE013 CLASS 2 MECHANICALLY ATTACHED D-3T4	F-A F1.20	VT-3	3	-	-	-	-	-	X	-	75	**NA**
248400	HPB-CE052 CLASS 2 MECHANICALLY ATTACHED D-6	F-A F1.20	VT-3	3	-	-	-	-	X	-	-	75	**NA**
249600	HPB-CE072 CLASS 2 MECHANICALLY ATTACHED D-6	F-A F1.20	VT-3	3	-	-	-	-	-	X	-	75	**NA**

HIGH PRESSURE COOLANT INJECTION, CL-2

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	PLAN STATUS FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	HP (FIG NO 2.2-45)												
249700	HPB-CF001 UNKNOWN PUMP TYPE - 90 DEGREE REDUCING ELBOW D-2	C-F-2 C5.51	MT UT45	3	-	-	-	-	X	-	-	75	**IE-47**
250600	HPB-CF019 PIPE - FLANGE D-5	C-F-2 C5.51	MT UT45	3	-	-	-	-	X	-	-	75	**IE-47**
251700	HPB-CF044 TEE - 90 DEGREE LONG RADIUS ELBOW D-6	C-F-2 C5.51	MT UT45	3	-	-	-	-	X	-	-	75	**IE-47**
	HP (FIG NO 2.2-46)												
254700	HPC-CE059 CLASS 2 MECHANICALLY ATTACHED FTG-4T5	F-A F1.20	VT-3	3	-	-	-	-	-	X	-	75	**NA**
255500	HPC-CE077 CLASS 2 MECHANICALLY ATTACHED FTG-4T5	F-A F1.20	VT-3	3	-	-	X	-	-	-	-	75	**NA**
255600	HPC-CE077 CLASS 2 WELDED - HANGER LUGS FTG-4T5	C-C C3.20	MT	3	-	-	X	-	-	-	-	75	TAP-I008 **NA**
256300	HPC-CF005 TEE - PIPE E-3	C-F-2 C5.51	MT UT45	3	-	-	-	-	-	X	-	75	**IE-46**

HIGH PRESSURE COOLANT INJECTION, CL-2

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL / PLAN STATUS: FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	HP (FIG NO 2.2-46)							
257100	HPC-CF023 PIPE - FLANGE F-2	C-F-2 C5.51	MT UT45	3 - - -	- X	- -	75	**IE-46**
257200	HPC-CF024 TEE - PIPE F-2	C-F-2 C5.51	MT UT45	3 - - -	- X	- -	75	CLAMP FOR EBB-14-SS-13 IS REQUIRED TO BE REMOVED FOR ACCESS **IE-46**
257500	HPC-CF029 PIPE - 90 DEGREE LONG RADIUS ELBOW F-3T4	C-F-2 C5.51	MT UT45	3 - - -	- X	- -	75	**IE-46**
257700	HPC-CF033 PIPE - 90 DEGREE LONG RADIUS ELBOW F-3T4	C-F-2 C5.51	MT UT45	3 - - -	- X	- -	75	**IE-46**
	HP (FIG NO 2.2-47)							
262400	HPD-CE023 CLASS 2 MECHANICALLY ATTACHED BTE-4T7	F-A F1.20	VT-3	3 - - -	- X	- -	75	**NA**
262600	HPD-CE030 CLASS 2 WELDED - HANGER LUGS B-7	C-C C3.20	MT	3 - - -	- X	- -	75	TAP-I008 **NA**
262700	HPD-CE030 CLASS 2 WELDED - HANGER LUGS B-7	F-A F1.20	VT-3	3 - - -	- X	- -	75	**NA**

HIGH PRESSURE COOLANT INJECTION, CL-2

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	HP (FIG NO 2.2-47)							
263800	HPD-CF010 PIPE - REDUCER E-4	C-F-2 C5.51	MT UT45	3 - - X	- -	- -	75	**IE-50**
264500	HPD-CF025 90 DEGREE LONG RADIUS ELBOW - CHECK B-7	C-F-2 C5.51	MT UT45	3 - - -	- -	X -	75	**IE-49**

CORE SPRAY SYSTEM

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY / ITEM NO	NDE METH	INSPECTION INTERVAL	FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	CS (FIG NO 2.2-48)												
266800	CSA-CE030 CLASS 2 MECHANICALLY ATTACHED B-5	F-A F1.20	VT-3	3	-	-	-	-	X	-	-	75	**NA**
267300	CSA-CF001 PIPE - UNKNOWN PUMP TYPE C-3	C-F-2 C5.51	MT UT45	3	-	-	-	-	-	X	-	75	**IE-41**
268400	CSA-CF024 MOTOR OPERATED GATE - 45 DEGREE ELBOW B-5	C-F-2 C5.51	MT UT45	3	-	-	-	-	-	X	-	75	**IE-41**
269500	CSA-CF040 PIPE - 90 DEGREE LONG RADIUS ELBOW B-5	C-F-2 C5.51	MT UT45	3	-	-	-	-	X	-	-	75	**IE-41**
269900	CSA-CF045 MOTOR OPERATED GATE - PIPE B-5	C-F-2 C5.51	MT UT45	3	-	-	-	-	-	X	-	75	**IE-41**
	CS (FIG NO 2.2-49)												
270200	CSB-CE013 CLASS 2 WELDED - HANGER LUGS DTG-3T5	C-C C3.20	MT	3	-	-	X	-	-	-	-	75	TAP-I008 **NA**
270300	CSB-CE013 CLASS 2 WELDED - HANGER LUGS DTG-3T5	F-A F1.20	VT-3	3	-	-	X	-	-	-	-	75	**NA**

CORE SPRAY SYSTEM

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	FIRST PERIOD 1	FIRST PERIOD 2	FIRST PERIOD 3	SECOND PERIOD 1	SECOND PERIOD 2	THIRD PERIOD 1	THIRD PERIOD 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	CS (FIG NO 2.2-49)												
270800	CSB-CE029 CLASS 2 WELDED - HANGER LUGS G-5	F-A F1.20	VT-3	3	-	-	-	-	-	X	-	75	MAY USE VIP **NA**
270900	CSB-CE029 CLASS 2 WELDED - HANGER LUGS G-5	C-C C3.20	MT	3	-	-	-	-	-	X	-	75	TAP-I008 **NA**
271900	CSB-CE064 CLASS 2 MECHANICALLY ATTACHED G-5	F-A F1.20	VT-3	3	-	-	-	-	-	X	-	75	VIP **NA**
275400	CSB-CF068 REDUCER - MOTOR OPERATED GATE G-5	C-F-2 C5.51	MT UT45	3	-	-	X	-	-	-	-	75	**IE-45**
	CS (FIG NO 2.2-51)												
276900	CSD-CE007 CLASS 2 MECHANICALLY ATTACHED C-5	F-A F1.20	VT-3	3	-	-	-	-	X	-	-	75	**NA**
277700	CSD-CE033 CLASS 2 MECHANICALLY ATTACHED C-4	F-A F1.20	VT-3	3	-	-	X	-	-	-	-	75	**NA**
278100	CSD-CF003 MOTOR OPERATED GATE - PIPE C-5	C-F-2 C5.51	MT UT45	3	-	-	-	-	-	X	-	75	**IE-41**

CORE SPRAY SYSTEM

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	CS (FIG NO 2.2-51)							
278200	CSD-CF004 PIPE - 45 DEGREE ELBOW C-5	C-F-2 C5.51	MT UT45	3 - - X	- -	- -	75	**IE-41**
279200	CSD-CF017 45 DEGREE ELBOW - PIPE C-5	C-F-2 C5.51	MT UT45	3 - - -	- -	X -	75	**IE-41**
280600	CSD-CF047 PIPE - UNKNOWN PUMP TYPE C-4	C-F-2 C5.51	MT UT45	3 - - -	- -	X -	75	**IE-41**
	CS (FIG NO 2.2-52A)							
280700	CSE-CE012 CLASS 2 MECHANICALLY ATTACHED D-4	F-A F1.20	VT-3	3 - - -	- X	- -	75	**NA**
281500	CSE-CE027 CLASS 2 MECHANICALLY ATTACHED E-5	F-A F1.20	VT-3	3 - - X	- -	- -	75	**NA**
	CS (FIG NO 2.2-52B)							
284100	CSE-CE049A CLASS 2 WELDED - HANGER LUGS E-5	F-A F1.20	VT-3	3 - - -	- -	X -	75	**NA**

CORE SPRAY SYSTEM

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	CS (FIG NO 2.2-52B)												
286300	CSE-CF062 MOTOR OPERATED GATE - PIPE E-5	C-F-2 C5.51	MT UT45	3	-	-	-	-	-	X	-	75	**IE-45**

INSPECTION INTERVAL — PLAN STATUS — PRESERVICE YEAR

MAIN STEAM

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH		FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	MS (FIG NO 2.2-53)												
287000	MSA-CE021 CLASS 2 MECHANICALLY ATTACHED ETF-6T7	F-A F1.20	VT-3	3	-	-	X	-	-	-	-	75	**NA**
287200	MSA-CE025 CLASS 2 MECHANICALLY ATTACHED ETF-6T7	F-A F1.20	VT-3	3	-	-	-	-	-	X	-	75	**NA**
289700	MSA-CF039 BRANCH CONNECTION - SWEEPOLET E-7	C-F-2 C5.81	MT UT45	3	-	-	X	-	-	-	-	75	**NA**
	MS (FIG NO 2.2-54)												
290500	MSB-CE021 CLASS 2 MECHANICALLY ATTACHED ETF-7	F-A F1.20	VT-3	3	-	-	-	-	X	-	-	75	**NA**
290600	MSB-CE023 CLASS 2 MECHANICALLY ATTACHED ETF-7	F-A F1.20	VT-3	3	-	-	X	-	-	-	-	75	**NA**
290800	MSB-CE027A CLASS 2 MECHANICALLY ATTACHED ETF-7	F-A F1.20	VT-3	3	-	-	-	-	-	X	-	75	**NA**
291200	MSB-CF003 TEE - PIPE F-7	C-F-2 C5.51	MT UT45	3	-	-	-	-	X	-	-	75	**IE-07**

MAIN STEAM

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL PLAN STATUS FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	MS (FIG NO 2.2-54)							
291400	MSB-CF007 TEE - 90 DEGREE LONG RADIUS ELBOW F-7	C-F-2 C5.51	MT UT45	3 - - -	- X	- -	75	**IE-51**
291900	MSB-CF015 PIPE - 90 DEGREE LONG RADIUS ELBOW ETF-7	C-F-2 C5.51	MT UT45	3 - - -	- X	- -	75	**IE-51**
292000	MSB-CF016 90 DEGREE LONG RADIUS ELBOW - PIPE ETF-7	C-F-2 C5.51	MT UT45	3 - - -	- X	- -	75	**IE-51**
	MS (FIG NO 2.2-55)							
293600	MSC-CE016 CLASS 2 MECHANICALLY ATTACHED ETF-6T7	F-A F1.20	VT-3	3 - - -	- X	- -	75	**NA**
295100	MSC-CF015 90 DEGREE LONG RADIUS ELBOW - PIPE ETF-6T7	C-F-2 C5.51	MT UT45	3 - - -	- -	X -	75	**IE-51**
295600	MSC-CF028 90 DEGREE LONG RADIUS ELBOW - PIPE ETF-6T7	C-F-2 C5.51	MT UT45	3 - - -	- -	X -	75	**IE-51**
	MS (FIG NO 2.2-56)							
97000	MSD-CE022 CLASS 2 MECHANICALLY ATTACHED ETF-6T7	F-A F1.20	VT-3	3 - - -	- X	- -	75	**NA**

MAIN STEAM

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	FIRST PERIOD 1	2	3	SECOND PERIOD 1	2	THIRD PERIOD 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	MS (FIG NO 2.2-56)												
297400	MSD-CF002 CONTROL VALVE GLOBE - TEE E-8	C-F-2 C5.51	MT UT45	3	-	-	-	-	-	X	-	75	**IE-51**
297900	MSD-CF010 PIPE - 90 DEGREE LONG RADIUS ELBOW F-6	C-F-2 C5.51	MT UT45	3	-	-	-	-	-	X	-	75	**IE-51**
	MS (FIG NO 2.2-57)												
300300	MSE-CE033 CLASS 2 MECHANICALLY ATTACHED E-7	F-A F1.20	VT-3	3	-	-	-	-	-	X	-	75	**NA**
301000	MSE-CF006 REDUCER - TEE E-6	C-F-2 C5.51	MT UT45	3	-	-	-	-	X	-	-	75	**IE-09**
301100	MSE-CF007 SWEEPOLET - PIPE E-6	C-F-2 C5.51	MT UT45	3	-	-	X	-	-	-	-	75	**IE-05**
	MS (FIG NO 2.2-58)												
305800	MSF-CF024 TEE - REDUCER E-8	C-F-2 C5.51	MT UT45	3	-	-	-	-	X	-	-	75	**IE-09**

SCRAM DISCHARGE

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	FIRST PERIOD (OUTAGE 1 2 3)	SECOND PERIOD (OUTAGE 1 2)	THIRD PERIOD (OUTAGE 1 2)	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	SD (FIG NO 2.2-60)								
307900	SDS-CE001A CLASS 2 MECHANICALLY ATTACHED ETG-2T5	F-A F1.20	VT-3	3	- - -	- -	X -	75	LEAD BLANKET **NA**
308000	SDS-CE001B CLASS 2 MECHANICALLY ATTACHED	F-A F1.20	VT-3	3	- - -	- X	- -	75	**NA**
308800	SDS-CF001 PIPE - FLANGE ETG-2T5	C-F-2 C5.51	MT UT45	3	- - X	- -	- -	75	REQUIRES REMOVAL OF SDS-CE001A (H-8) FOR EXAMINATION **IE-07**
	SD (FIG NO 2.2-61)								
310200	SDN-CE001A CLASS 2 MECHANICALLY ATTACHED ETG-2T5	F-A F1.20	VT-3	3	- - -	- -	X -	75	LEAD BLANKET **NA**
310900	SDN-CE012B CLASS 2 MECHANICALLY ATTACHED	F-A F1.20	VT-3	3	- - X	- -	- -	75	LADDER (LEAD) **NA**
312000	SDN-CF010 PIPE - FLANGE ETG-2T5	C-F-2 C5.51	MT UT45	3	- - -	- X	- -	75	**IE-06**

REACTOR CORE ISOLATION COOLING

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL PLAN STATUS FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RC (FIG NO 2.2-62)							
312316	RCB-CE006 CLASS 2 WELDED INTEGRALLY ATTACHED	F-A F1.20	VT-3	3 - - -	- -	X -	75	EXEMPT BY IWC-2500-1, <3/8" THICK **NA**
312318	RCB-CE008 CLASS 2 MECHANICALLY ATTACHED	F-A F1.20	VT-3	3 - - -	- -	X -	75	EXEMPT BY IWC-2500-1, <3/8" THICK **NA**
312323	RCB-CE006 CLASS 2 WELDED INTEGRALLY ATTACHED	C-C C3.20	MT	3 - - -	- -	X -	75	EXEMPT BY IWC-2500-1, <3/8" THICK **NA**

CONTROL ROD DRIVE HOUSINGS (ALL 89)

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	CE (FIG NO ISONO-P)							
313500	STP 46G037 CLASS 2 PRESSURE TEST	C-H C7.10	VT-2	3 - X -	X -	- -	75	**NA**
313510	STP 46G037 CLASS 2 PRESSURE TEST	C-H C7.20	VT-2	3 - - -	- -	X -	75	USE OF CODE CASE N-498-1 **NA**

CORE SPRAY SYSTEM

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	CS (FIG NO ISONO-P)												
313800	STP 45A001 CLASS 2 PRESSURE TEST	C-H C7.10	VT-2	3	-	X	-	X	-	-	-	75	**NA**
313900	STP 45A001 CLASS 2 PRESSURE TEST	C-H C7.20	VT-2	3	-	-	-	-	-	X	-	75	USE OF CODE CASE N-498-1 **NA**

HIGH PRESSURE COOLANT INJECTION, STEAM SIDE

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	HP (FIG NO ISONO-P)												
314500	STP 45D001 CLASS 2 PRESSURE TEST	C-H C7.10	VT-2	3	-	-	X	-	X	-	-	75	**NA**
314510	STP 45D001 CLASS 2 PRESSURE TEST	C-H C7.20	VT-2	3	-	-	-	-	-	-	X	75	USE OF CODE CASE N-498-1 **NA**

MAIN STEAM

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL PLAN STATUS FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD 1 2	THIRD PERIOD 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	MS (FIG NO ISONO-P)							
315600	STP 46G036 CLASS 2 PRESSURE TEST	C-H C7.10	VT-2	3 - X -	X -	- -	75	**NA**
315610	STP 46G036 CLASS 2 PRESSURE TEST	C-H C7.20	VT-2	3 - - -	- -	X -	75	USE OF CODE CASE N-498-1 **NA**

RESIDUAL HEAT REMOVAL

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RH (FIG NO ISONO-P)							
316700	STP 45A002 CLASS 2 PRESSURE TEST	C-H C7.10	VT-2	3 - - X	- X	- -	75	**NA**
316800	STP 45A002 CLASS 2 PRESSURE TEST	C-H C7.20	VT-2	3 - - -	- -	- X	75	USE OF CODE CASE N498-1 **NA**

EMERGENCY SERVICE WATER SYSTEM

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	ES (FIG NO 3.1-01)								
318200	HBD-25-H-10-1 CLASS 3 MECHANICALLY ATTACHED	F-A F1.30	VT-3	3	- - -	- X	- -	75	**NA**
319100	HBD-25-SG-145 CLASS 3 WELDED	F-A F1.30	VT-3	3	- - -	- X	- -	75	**NA**
	ES (FIG NO 3.1-02)								
319900	HBD-25-H-7 CLASS 3 MECHANICALLY ATTACHED	F-A F1.30	VT-3	3	- - -	- -	X -	75	**NA**
	ES (FIG NO 3.1-03)								
320100	HBD-24-H-12 CLASS 3 MECHANICALLY ATTACHED	F-A F1.30	VT-3	3	- - X	- -	- -	75	**NA**
	ES (FIG NO 3.1-04)								
320700	HBD-24-H-2 CLASS 3 WELDED	F-A F1.30	VT-3	3	- - -	- -	X -	75	**NA**
320800	HBD-24-H-2 CLASS 3 WELDED	D-A D1.20	VT-1	3	- - -	- -	X -	75	INTEGRAL ATTACHMENT(TAP-I008) **NA**

EMERGENCY SERVICE WATER SYSTEM

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	ES (FIG NO 3.1-06)											
322500	HBD-27-SR-6 CLASS 3 WELDED	F-A F1.30	VT-3	3	-	- X	-	-	-	-	75	**NA**
322600	HBD-27-SR-6 CLASS 3 WELDED	D-A D1.20	VT-1	3	-	- X	-	-	-	-	75	INTEGRAL ATTACHMENT(TAP-I008) **NA**
	ES (FIG NO 3.1-09)											
324000	HBD-80-H-10 CLASS 3 MECHANICALLY ATTACHED	F-A F1.30	VT-3	3	-	-	-	X	-	-	75	**NA**

RIVER WATER SUPPLY SYSTEM

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL PLAN STATUS FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RW (FIG NO 3.1-11)							
326000	HBD-67-SA-39 CLASS 3 WELDED	F-A F1.30	VT-3	3 - - -	- X	- -	75	**NA**

MAIN STEAM

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	MS (FIG NO 3.1-17)								
330100	GBC-7-SS-265 CLASS 3 MECHANICALLY ATTACHED	F-A F1.30	VT-3	3	- - -	- -	X -	75	**NA**
	MS (FIG NO 3.1-18)								
331800	GBC-8-SS-260A CLASS 3 WELDED	F-A F1.30	VT-3	3	- - -	- -	X -	75	**NA**
	MS (FIG NO 3.1-19)								
332600	GBC-9-H-11 CLASS 3 WELDED	F-A F1.30	VT-3	3	- - X	- -	- -	75	**NA**
332700	GBC-9-H-11 CLASS 3 WELDED	D-A D1.20	VT-1	3	- - X	- -	- -	75	INTEGRAL ATTACHMENT(TAP-I008) **NA**
333300	GBC-9-SS-272 CLASS 3 WELDED	F-A F1.30	VT-3	3	- - -	- -	X -	75	**NA**
333400	GBC-9-SS-272 CLASS 3 WELDED	D-A D1.20	VT-1	3	- - -	- -	X -	75	INTEGRAL ATTACHMENT(TAP-I008) **NA**

MAIN STEAM

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL PLAN STATUS FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	MS (FIG NO 3.1-20)							
334700	GBC-10-H-16 CLASS 3 WELDED	F-A F1.30	VT-3	3 - - -	- X	- -	75	**NA**
334800	GBC-10-H-16 CLASS 3 WELDED	D-A D1.20	VT-1	3 - - -	- X	- -	75	INTEGRAL ATTACHMENT(TAP-I008) **NA**
335500	GBC-10-SS-276 CLASS 3 WELDED	F-A F1.30	VT-3	3 - - -	- -	X -	75	**NA**
	MS (FIG NO 3.1-21)							
336600	GBC-11-SS-257 CLASS 3 MECHANICALLY ATTACHED	F-A F1.30	VT-3	3 - - -	- -	X -	75	LADDER **NA**

RESIDUAL HEAT REMOVAL SERVICE WATER SYSTEM

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD OUTAGE 1	2	3	SECOND PERIOD OUTAGE 1	2	THIRD PERIOD OUTAGE 1	2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RE (FIG NO 3.1-22)											
337700	GBC-4-SR-73 CLASS 3 MECHANICALLY ATTACHED	F-A F1.30	VT-3	3 -	-	-	-	-	X	-	75	**NA**
	RE (FIG NO 3.1-23)											
338000	HBD-30-H-31 CLASS 3 MECHANICALLY ATTACHED	F-A F1.30	VT-3	3 -	-	-	-	-	X	-	75	**NA**
'38300	HBD-30-SR-68 CLASS 3 MECHANICALLY ATTACHED	F-A F1.30	VT-3	3 -	-	-	-	-	X	-	75	**NA**
	RE (FIG NO 3.1-24)											
339000	HBD-31-H-45 CLASS 3 MECHANICALLY ATTACHED	F-A F1.30	VT-3	3 -	-	X	-	-	-	-	75	**NA**
339500	HBD-31-H-50 CLASS 3 MECHANICALLY ATTACHED	F-A F1.30	VT-3	3 -	-	X	-	-	-	-	75	**NA**
339900	HBD-31-SS-71 CLASS 3 MECHANICALLY ATTACHED	F-A F1.30	VT-3	3 -	-	-	-	-	X	-	75	**NA**

RIVER WATER SUPPLY SYSTEM

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	FIRST PERIOD (OUTAGE 1 2 3)	SECOND PERIOD (OUTAGE 1 2)	THIRD PERIOD (OUTAGE 1 2)	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RW (FIG NO 3.1-26)							
340600	HBD-68-H-31 CLASS 3 WELDED	F-A F1.30	VT-3	3 - - -	- X	- -	75	**NA**
340700	HBD-68-H-31 CLASS 3 WELDED	D-A D1.20	VT-1	3 - - -	- X	- -	75	INTEGRAL ATTACHMENT(TAP-I008) **NA**
	RW (FIG NO 3.1-27)							
340800	HBD-68-H-6 CLASS 3 MECHANICALLY ATTACHED	F-A F1.30	VT-3	3 - - -	- X	- -	75	**NA**

				INSPECTION INTERVAL / PLAN STATUS			PRESERVICE YEAR	
RESIDUAL HEAT REMOVAL SERVICE WATER SYSTEM				FIRST PERIOD	SECOND PERIOD	THIRD PERIOD		
SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	OUTAGE 1 2 3	OUTAGE 1 2	OUTAGE 1 2		INSTRUCTIONS **CALIBRATION BLOCK**
	RE (FIG NO 3.1-28)							
341800	GBC-2-H-7 CLASS 3 MECHANICALLY ATTACHED	F-A F1.30	VT-3	3 - - X	- -	- -	75	 **NA**
	RE (FIG NO 3.1-37)							
348100	HBD-32-H-35 CLASS 3 WELDED	F-A F1.30	VT-3	3 - - -	- -	X -	75	 **NA**
348200	HBD-32-H-35 CLASS 3 WELDED	D-A D1.20	VT-1	3 - - -	- -	X -	75	INTEGRAL ATTACHMENT(TAP-IOO **NA**

EMERGENCY SERVICE WATER SYSTEM

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	FIRST PERIOD OUTAGE 1	FIRST PERIOD OUTAGE 2	FIRST PERIOD OUTAGE 3	SECOND PERIOD OUTAGE 1	SECOND PERIOD OUTAGE 2	THIRD PERIOD OUTAGE 1	THIRD PERIOD OUTAGE 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	ES (FIG NO ISONO-P)												
349100	STP 46G035 CLASS 3 PRESSURE TEST	D-B D2.10	VT-2	3	-	X	-	-	-	X	-	75	**NA**
349110	STP 46G035 CLASS 3 PRESSURE TEST	D-B D2.20	VT-2	3	-	-	-	X	-	-	-	75	USE OF CODE CASE N-498-1 **NA**

RESIDUAL HEAT REMOVAL SERVICE WATER SYSTEM

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL	FIRST PERIOD OUTAGE 1	FIRST PERIOD OUTAGE 2	FIRST PERIOD OUTAGE 3	SECOND PERIOD OUTAGE 1	SECOND PERIOD OUTAGE 2	THIRD PERIOD OUTAGE 1	THIRD PERIOD OUTAGE 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RE (FIG NO ISONO-P)												
349900	STP BS-46 CLASS 3 PRESSURE TEST	D-B D2.10	VT-2	3	-	-	X	-	-	-	X	75	**NA**
349910	STP BS-46 CLASS 3 PRESSURE TEST	D-B D2.20	VT-2	3	-	-	-	-	X	-	-	75	USE OF CODE CASE N-498-1 **NA**

RIVER WATER SUPPLY SYSTEM

SUMMARY NUMBER	EXAMINATION AREA IDENTIFICATION	ASME SEC. XI CATGY ITEM NO	NDE METH	INSPECTION INTERVAL PLAN STATUS FIRST PERIOD OUTAGE 1 2 3	SECOND PERIOD OUTAGE 1 2	THIRD PERIOD OUTAGE 1 2	PRESERVICE YEAR	INSTRUCTIONS **CALIBRATION BLOCK**
	RW (FIG NO ISONO-P)							
350100	STP 46G032 CLASS 3 PRESSURE TEST	D-B D2.10	VT-2	3 - - X	- -	- X	75	**NA**
350110	STP 46G032 CLASS 3 PRESSURE TEST	D-B D2.20	VT-2	3 - - -	- -	- -	75	USE OF CODE CASE N-498-1 **NA**

Approval Date: July 24, 1989
See Numerical Index for expiration and any reaffirmation dates.

Case N-198-1
Exemption From Examination for ASME Class 1 and 2 Piping Located at Containment Penetrations Section XI, Division 1

Inquiry: Under what conditions may exemptions from examination of Section XI, Division 1, apply to welds between the portion A to B of Class 1 or 2 piping located at containment penetrations, as shown in Fig. 1, when such welds are made inaccessible by addition of a concentric guard pipe to provide protection of the containment annulus from overpressurization?

Reply: It is the opinion of the Committee that the inaccessible welds in that portion A to B of Class 1 or 2 piping boundary, located at containment penetrations furnished with guard pipes, as shown in Fig. 1, may be exempted from examinations required by Section XI, Division 1.

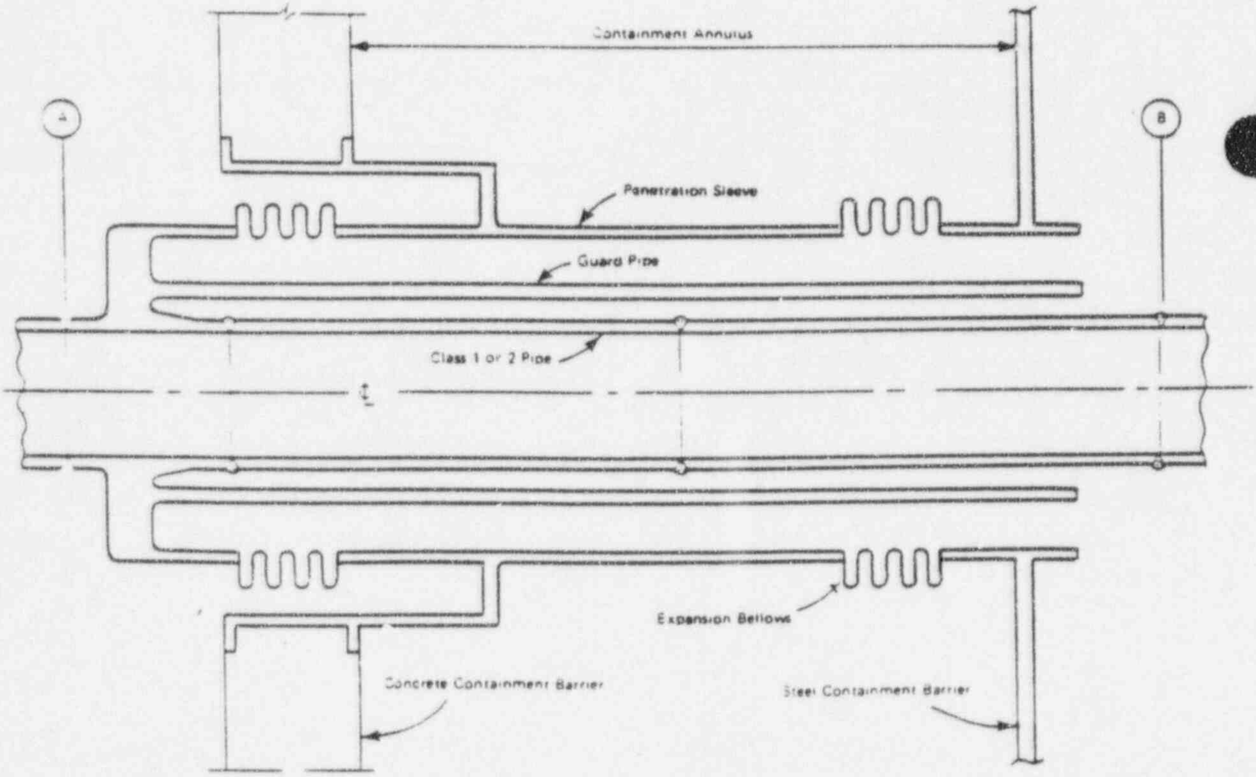

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FIG. 1 CONTAINMENT PENETRATION WITH GUARD PIPE

Approval Date: December 5, 1984

See Numeric Index for expiration and any reaffirmation dates.

Case N-307-1
Revised Ultrasonic Examination Volume for Class 1 Bolting, Table IWB-2500-1, Examination Category B-G-1, When the Examinations Are Conducted From the Center-Drilled Hole
Section XI, Division 1

Inquiry: When ultrasonic examinations are conducted from the center-drilled hole of Class 1 bolts or studs to satisfy the examination requirements of Section XI, Division 1, Table IWB-2500-1, Examination Category B-G-1, may the examination volume be limited to the cylindrical region defined by A-B-C-D-E-F-A in Fig. 1?

Reply: It is the opinion of the Committee that, when conducting ultrasonic examinations from the center-drilled hole of Class 1 bolts or studs to satisfy the examination requirements of Section XI, Division 1, Table IWB-2500-1, Examination Category B-G-1, the examination volume may be limited to the cylindrical region defined by A-B-C-D-E-F-A in Fig. 1 if the center bore hole surface is examined with a qualified supplemental ultrasonic, surface, or eddy current procedure. The examination procedure shall be qualified to cover the entire inner bore surface. If eddy current examination is used, the following requirements shall apply.

(a) The procedure qualification shall demonstrate the ability to detect and measure the length of the maximum allowable flaws of IWB-3515-1. Qualification of the procedure shall include detection of at least one crack in each material type (ferromagnetic or nonferromagnetic) to be examined. The length of the crack open to the surface shall not exceed the maximum allowable length of IWB-3515-1 for nonaxial flaws. The crack shall be located in a bore hole surface and oriented circumferentially. Alternatively, the crack may be located in a block with different geometry if the qualification demonstrates cracks can be detected in bore holes. Demonstration may be performed by showing equivalent response in both geometries (bore hole and block) using calibration discontinuities specified by the qualified procedure.

(1) The procedure qualification shall be documented in a Certification Report. Procedure qualification records shall be retained for the service life of the bolt or stud examined. The Certification Report shall include at least the following items:

(a) identification of procedure qualified;

(b) personnel performing and witnessing the qualification tests;

(c) description and drawings of the qualification specimens and the calibration blocks, as applicable;

(d) calibration and sensitivity details;

(e) methods of identifying flaw indications and discriminating between flaw indications and nonrelevant indications such as indications from probe liftoff, plating thickness changes, or permeability changes in ferromagnetic material;

(f) procedure for interpretation of results;

(g) qualification results; and

(h) signature of the Authorized Nuclear Inservice Inspector (ANII).

(2) Eddy current examinations shall be performed in accordance with a written procedure. Each procedure shall include at least the following information:

(a) bolt or stud configuration to be examined, including, as applicable, lengths, diameters, thread sizes, plating and base materials, and product forms (e.g., forging, bar, bolt or stud, rolled or cut threads);

(b) surface condition requirements and any applicable preparation methods;

(c) sizes and types of probes, including description and part or drawing numbers, and lengths of probe cable;

(d) manufacturers and models of eddy current equipment qualified;

(e) data recording equipment and methods;

(f) examination frequencies;

(g) maximum scanning speed permitted and demonstrated by procedure qualification;

(h) calibration procedure and calibration standards;

(i) examination technique (e.g., scanning instructions, hand probe, and mechanized probe device);

(j) reporting instructions;

(k) personnel qualification requirements;

(l) reference to the Certification Report.

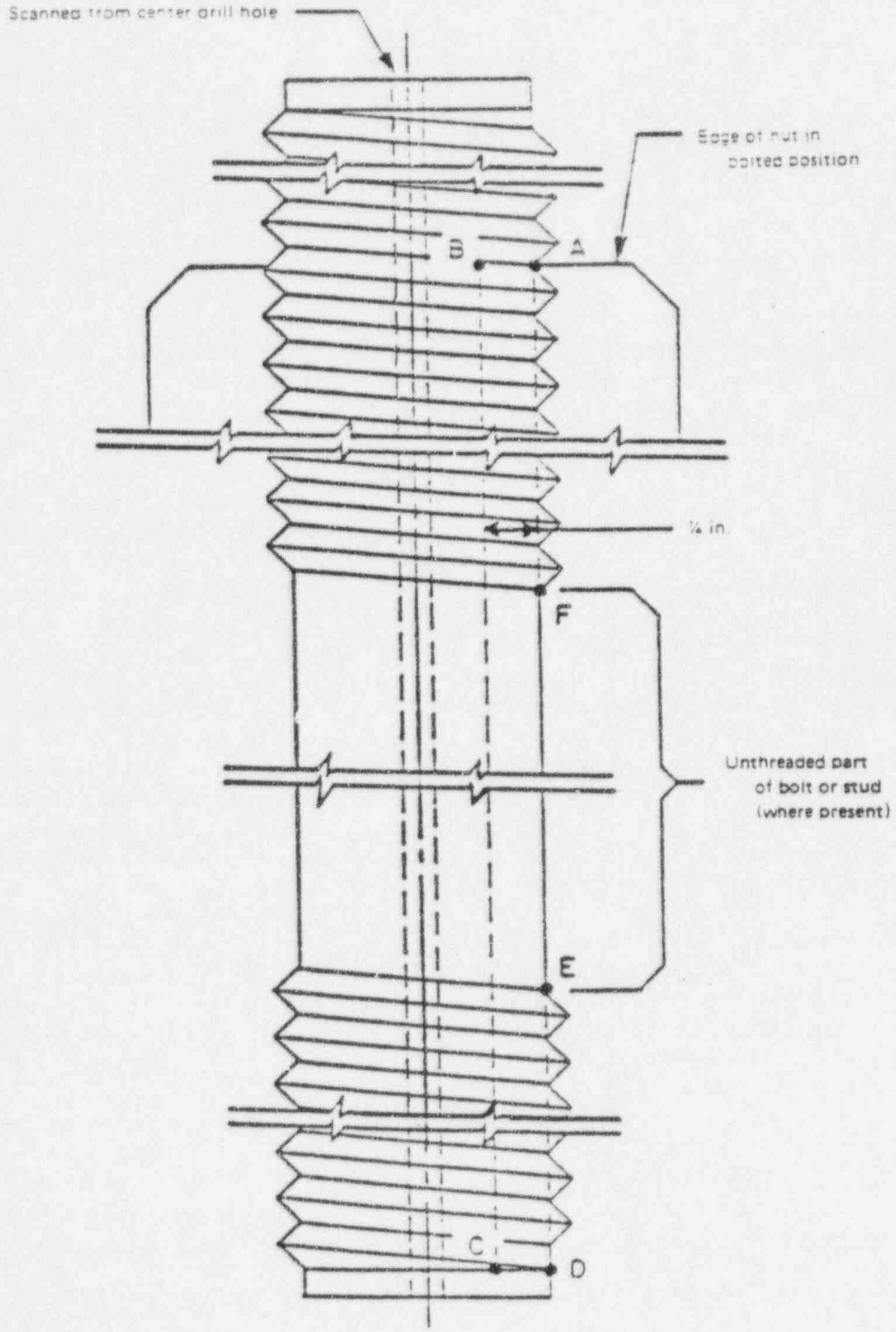


FIG. 1 REVISED EXAMINATION VOLUME FOR CLASS 1 BOLTING WHEN SCANNED FROM THE CENTER-DRILLED HOLE

Approval Date: February 15, 1994

See Numeric Index for expiration and any reaffirmation dates.

Case N-416-1
Alternative Pressure Test Requirement for Welded Repairs or Installation of Replacement Items by Welding, Class 1, 2 and 3
Section XI, Division 1

Inquiry: What alternative pressure test may be performed in lieu of the hydrostatic pressure test required by para. IWA-4000 for welded repairs or installation of replacement items by welding?

Reply: It is the opinion of the Committee that in lieu of performing the hydrostatic pressure test required by para. IWA-4000 for welded repairs or installation of replacement items by welding, a system leakage test may be used provided the following requirements are met.

(a) NDE shall be performed in accordance with the methods and acceptance criteria of the applicable Subsection of the 1992 Edition of Section III.

(b) Prior to or immediately upon return to service, a visual examination (VT-2) shall be performed in conjunction with a system leakage test, using the 1992 Edition of Section XI, in accordance with para. IWA-5000, at nominal operating pressure and temperature.

(c) Use of this Case shall be documented on an NIS-2 Form.

If the previous version of this case were used to defer a Class 2 hydrostatic test, the deferred test may be eliminated when the requirements of this revision are met.

Approval Date: December 5, 1985

See Numeric Index for expiration and any reaffirmation dates.

Case N-427
Code Cases in Inspection Plans
Section XI, Division 1

Inquiry: Under what conditions may Section XI Code Cases be used in Inspection Plans?

Reply: It is the opinion of the Committee that Section XI Code Cases which are proposed for use in Inspection Plans shall satisfy the rules and conditions described below.

(a) General

(1) Code Cases shall be identified in the Owner's Inspection Plan.

(2) Code Cases shall be applicable to the edition and addenda specified in the Inspection Plan.

(3) Code Cases shall be in effect at the time the Inspection Plan is filed with the regulatory and enforcement authorities having jurisdiction at the plant site except as provided in (4).

(4) Code Cases issued subsequent to filing the Inspection Plan may be proposed for use in amendments to the Inspection Plan.

(5) The use of any Code Case is subject to acceptance by the regulatory and enforcement authorities having jurisdiction at the plant site.

(b) Revised Code Cases

(1) Superceded Code Cases approved for use in accordance with (a) may continue to be used.

(2) Revisions to a previously approved Code Case may be substituted for that Code Case only with the approval of the regulatory and enforcement authorities having jurisdiction at the plant site.

(c) Annulled Code Cases. Code Cases approved for use in accordance with (a) or (b) may be used after annulment for the duration of that Inspection Plan.

Approval Date: February 20, 1986

See Numeric Index for expiration and any reaffirmation dates.

Case N-432
Repair Welding Using Automatic or Machine Gas Tungsten-Arc Welding (GTAW) Temper Bead Technique
Section XI, Division 1

Inquiry: May the automatic or machine GTAW process be used as an alternative to the SMAW process for performing the temper bead technique on Class 1 components?

Reply: It is the opinion of the Committee that repair to P-Nos. 1, 3, 12A, 12B, and 12C[1] base material and associated welds may be made by the automatic or machine GTAW temper bead technique without the specified postweld heat treatment requirements of Section III, provided the requirements of 1.0 through 5.0 below are met. The depth of repair is not limited provided the test assembly meets the requirements of 2.1.

1.0 GENERAL REQUIREMENTS

(a) The requirements of IWA-4000, as applicable, shall be met.

(b) Only the automatic or machine GTAW process using cold wire feed shall be used. No arc oscillation shall be used.

(c) Welding materials shall be controlled during repair so that they are identified as acceptable material until consumed.

(d) The neutron fluence in the repair areas shall be taken into account when establishing the weld metal composition limits.

(e) Peening shall not be permitted.

2.0 WELDING QUALIFICATIONS

The Welding Procedure Specification and the welding operators shall be qualified in accordance with Section IX and additional requirements of Section III, as modified by 2.1, 2.2, and 3.0(c) and (d).

[1] P-Nos. 12A, 12B, and 12C designations refer to specific material classifications originally identified in Section III, and subsequently reclassified in a later edition of Section IX.

2.1 Procedure Qualifications

(a) The test assembly materials for the welding procedure qualification shall be of the same specification type, grade, and class as the materials being repaired. The test assembly shall receive a postweld heat treatment that is at least equivalent to the time and temperature applied to the materials being repaired. The procedure and performance qualification tests may be combined, provided Section IX requirements are met. The test assembly dimensions, including joint details, shall be documented on the PQR.

(b) The test assembly thickness shall be at least five times the depth of repair, but need not exceed the thickness of the material to be repaired provided the required test specimens can be removed. When the thickness of the base metal to be repaired is greater than 2 in., the depth of the cavity in the test assembly shall be the greater of 1 in. or the depth of the cavity to be repaired. However, in no case shall the procedure qualification test assembly be less than 2 in. thick, nor shall the depth of the cavity in the test assembly be less than 1 in.

(c) The test assembly dimensions surrounding the cavity shall be at least the thickness of the component at the location of the repair or 6 in., whichever is greater. If the repair weld is to be performed remotely, the procedure qualification test assembly shall be completed with the same or duplicate sensing and control equipment to be used for the repair. The test assembly shall simulate the position and obstructions of the actual repair.

(d) The root width and the included angle of the cavity in the test assembly shall be no greater than the minimum specified to be used in the repair.

(e) This test assembly may be used to qualify procedures for weld buildup of pressure retaining materials. For this application, the depth of the cavity shall not be less than the thickness of the weld buildup or 1 in., whichever is greater. In addition, the area of the cavity shall not be less than the area of the weld buildup to be applied or 54 sq in., whichever is less.

(f) For all applications, the test assembly and cavity shall be of sufficient size to obtain the required test specimens.

(g) Welding material shall meet the requirements of Sections IX and III, and the Edition and Addenda

shall be stated in the repair program. The appropriate toughness testing requirements of NB-2000 shall be completed for the weld materials used.

(h) Welding procedure qualification destructive tests shall be performed in accordance with Sections IX and III for groove welds, and the Edition and Addenda shall be stated in the repair program. Dropweight tests, impact tests, side bend tests, and all weld metal tension tests of the weld deposit are required. A reference nilductility transition temperature (RT_{NDT}) of the weld metal and base metal shall be established in accordance with NB-2000. If RT_{NDT} is less than or equal to 60°F, the qualification test shall be considered acceptable. If RT_{NDT} is greater than 60°F, the qualification test shall be rejected and a requalification of the procedure shall be performed. Test specimens shall be obtained from the completed test assembly at the maximum practical depth of repair.

(i) Impact testing of the procedure qualification test assembly HAZ shall be conducted as follows.

The T_{NDT} of the unaffected base material shall be determined by dropweight test to establish the test temperature for the C_v tests. The C_v specimens representing the HAZ material and the unaffected base material shall be tested at the (T_{NDT} + 60°F) temperature of the unaffected base material. The HAZ C_v absorbed energy and lateral expansion shall be equal to or greater than the unaffected base material at the (T_{NDT} + 60°F) temperature of the base material.

2.2 Performance Qualification

The welding operator shall be qualified in accordance with Section IX and the following additional requirements. If the repair weld is to be performed where physical obstructions impair the welding operator's ability to perform, the welding operator shall also demonstrate the ability to deposit sound weld metal in the positions required, using the same parameters and simulated physical obstructions that are involved in the repair. Also, if the repair weld is to be performed remotely, the performance qualification test shall be completed with the same or duplicate sensing and control equipment to be used for the repair. For these applications, only nondestructive examination of the weld is required. The procedure and welding operator performance qualification tests may be combined, provided Section IX requirements are met.

3.0 REPAIR WELDING

Welding of the cavity or area being repaired shall be in accordance with the following.

(a) The cavity or area to be repaired by welding and a band around the cavity or area shall be preheated to 300°F minimum. This temperature shall be maintained for at least 30 min before welding is started, during welding, and until starting the postweld heat treatment of 450°F to 550°F described in (e) below. The width of the band shall be at least three times the thickness (3*T*) of the component to be welded, but need not exceed 10 in. The component thickness (*T*) shall be determined for the area to be welded prior to formation of the cavity. The interpass temperature shall not exceed 450°F.

(b) Thermocouples and recording instruments shall be used to monitor the preheat, interpass, and postweld heat treatment temperatures. Thermocouples shall be attached by welding or mechanical methods.

(c) The first six layers of the cavity shall be buttered as shown in Fig. 1, Steps 1 through 3.

(d) The essential welding variables shall be controlled as follows.

(1) The weld heat input for each of the first six layers shall be controlled to within ±10% of that used in the procedure qualification test.

(2) The remainder of the weld deposit shall be completed (see Fig. 1, Step 4) with the heat input equal to or less than that used for layers beyond the sixth in the procedure qualification.

(3) The finished surface of the repair shall be substantially flush with the surface of the component surrounding the repair.

(4) The technique described in this paragraph shall be performed in the procedure qualification test.

(e) At the completion of welding, the 3*T* band as defined in (a) above shall be maintained in the range of 450°F to 550°F for at least 2 hr.

4.0 EXAMINATION

(a) The repair area and the 3*T* band as defined in 3(a) shall be nondestructively examined after the completed weld has been at ambient temperature for at least 48 hr. The nondestructive examination of the repair welded region shall include radiography (if practical), ultrasonic examination, and surface examination.

(b) Areas from which weld-attached thermocouples have been removed shall be ground and examined using a surface examination method.

5.0 DOCUMENTATION

The use of this Code Case shall be recorded on Form NIS-2 or other applicable documents.

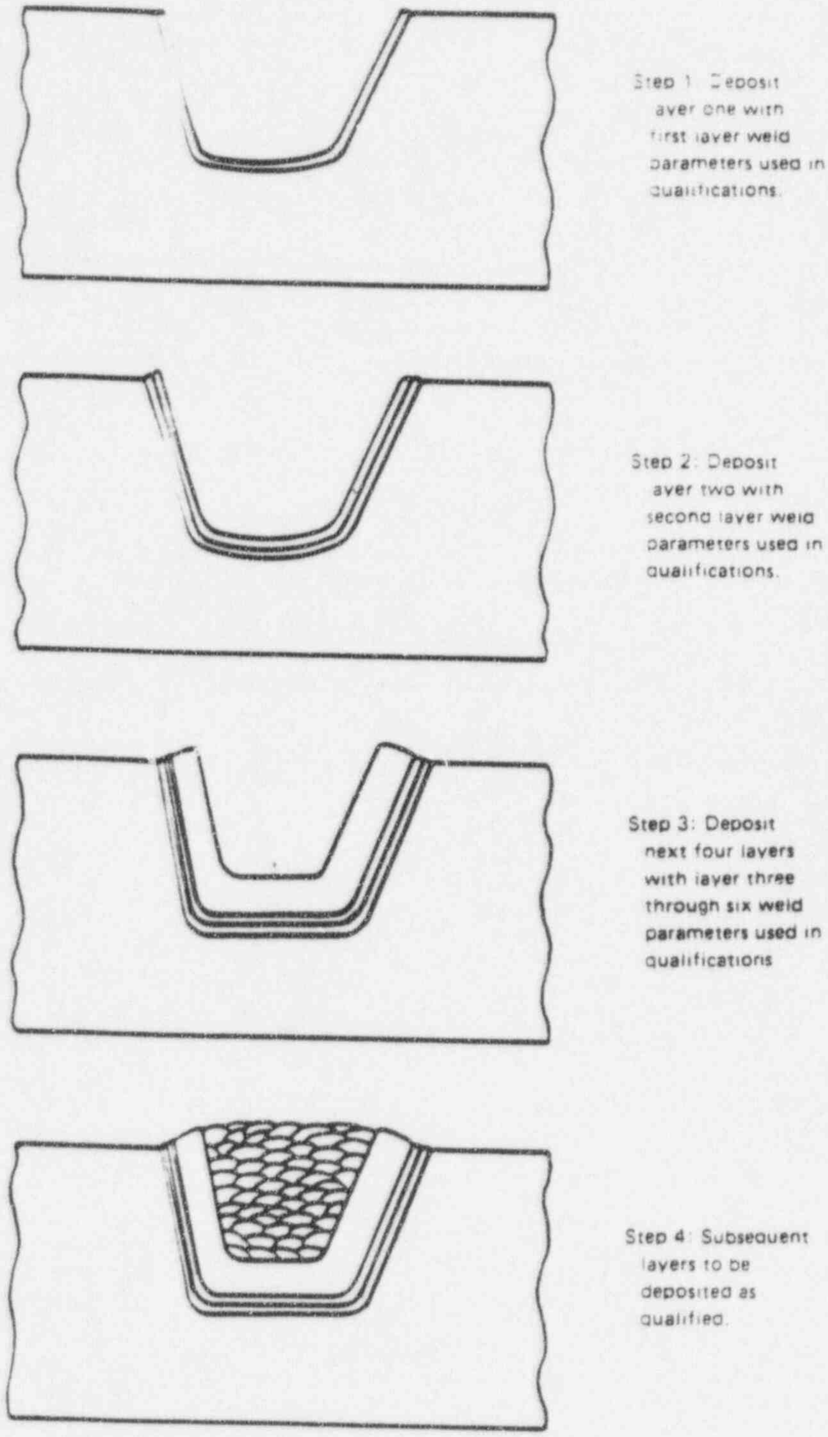


FIG. 1 AUTOMATIC OR MACHINE (GTAW) TEMPER BEAD TECHNIQUE

Approval Date: December 7, 1987

See Numeric Index for expiration and any reaffirmation dates.

Case N-457
Qualification Specimen Notch Location for Ultrasonic Examination of Bolts and Studs
Section XI, Division 1

Inquiry: When qualifying ultrasonic techniques for bolt or stud examination in accordance with Section XI, Division 1, VI-2430, may the qualification notch for maximum metal path qualification be located within one bolt or stud diameter from the end opposite the search unit?

Reply: It is the opinion of the Committee that for Section XI, Division 1, VI-2430, the qualification notch may be located within one diameter from the end opposite the search unit to demonstrate the ultrasonic technique qualification for the entire length or maximum metal path of the bolt or stud.

Approval Date: July 27, 1988

See Numeric Index for expiration and any reaffirmation dates.

Case N-460
Alternative Examination Coverage for Class 1 and Class 2 Welds
Section XI, Division 1

Inquiry: What alternative rules may be used for Section XI, Division 1, examination of Class 1 welds (IWB-2500) or Class 2 welds (IWC-2500) when the entire examination volume or area cannot be examined due to interference by another component or part geometry?

Reply: It is the opinion of the Committee that when the entire examination volume or area cannot be examined due to interference by another component or part geometry, a reduction in examination coverage on any Class 1 or Class 2 weld may be accepted provided the reduction in coverage for that weld is less than 10%. The applicable examination records shall identify both the cause and percentage of reduced examination coverage.

Approval Date: November 30, 1988

See Numeric Index for expiration and any reaffirmation dates.

Case N-461
Alternative Rules for Piping Calibration Block Thickness
Section XI, Division 1

Inquiry: When selecting calibration blocks in accordance with Section XI, Division 1, III-3410, what alternative wall thicknesses or pipe schedules may be used?

Reply: It is the opinion of the Committee that any calibration block thickness may be used that is within ±25% of the pipe wall thickness to be examined.

Approval Date: March 5, 1990

See Numerical Index for expiration and any reaffirmation dates.

Case N-463-1
Evaluation Procedures and Acceptance Criteria for Flaws in Class 1 Ferritic Piping That Exceed the Acceptance Standards of IWB-3514.2
Section XI, Division 1

Inquiry: Under Section XI, Division 1, may Class 1 ferritic piping containing a flaw that exceeds the acceptance standards of IWB-3514.2 be evaluated and accepted for continued service as provided in IWB-3132.4?

Reply: It is the opinion of the Committee that Class 1 ferritic piping containing a flaw that exceeds the acceptance standards of IWB-3514.2 may be accepted for continued service by following the rules given below.

1.0 EVALUATION PROCEDURES AND ACCEPTANCE CRITERIA

Ferritic piping containing a flaw exceeding the acceptance standards of IWB-3514.2 may be evaluated by analytical procedures to determine acceptability for continued service to the next inspection or to the end of service lifetime. The pipe containing the flaw is acceptable for continued service during the evaluated time period if the criteria of para. 1.2(a) or (b) are satisfied. The evaluation procedures and acceptance criteria shall be the responsibility of the owner and shall be submitted to the regulatory authorities having jurisdiction at the plant site. The evaluation shall be submitted to the enforcement authorities having jurisdiction at the plant site.

1.1 Evaluation Procedures

Evaluation procedures based on flaw size or applied stress such as those defined in Appendix A of this Case shall be used, subject to the following.

(a) The evaluation procedures and acceptance criteria are applicable to ferritic piping NPS 4 or greater and portions of adjoining pipe fittings within a distance of $\sqrt{R_2 t}$ from the weld center line, where R_2 is the outside radius and t is the thickness of the pipe.

(b) The evaluation procedures and acceptance criteria are applicable to seamless or welded wrought carbon steel piping and pipe fittings that have a specified minimum yield strength not greater than 40 ksi, and their associated weld materials.

1.2 Acceptance Criteria

A ferritic pipe containing a flaw exceeding the acceptance standards of IWB-3514.2 may be evaluated by analytical procedures such as those described in Appendix A of this Case and are acceptable for continued service during the evaluated time period when the critical flaw parameters satisfy the criteria in (a) or (b) below.

(a) Flaw Size Criteria

$$a_f \leq a_n$$

and

$$a_f \leq a_o$$

where

a_f = the maximum depth to which the detected flaw is calculated to grow by the end of the evaluation period

ℓ_f = the maximum length to which the detected flaw is calculated to grow by the end of the evaluation period.

a_n = the maximum allowable flaw depth corresponding to the flaw length ℓ_f for normal operating (including upset and test) conditions

a_o = the maximum allowable flaw depth corresponding to the flaw length ℓ_f for postulated emergency and faulted conditions

Tables of allowable flaw depths are given in Appendix A of this Case. The allowable flaw depths for the flawed pipe, a_n and a_o, are functions of the actual pipe stresses, the required safety margins, the pipe material properties, the end-of-evaluation-period flaw length and depth, flaw orientation, and the pipe failure mode.

(b) Applied Stress Criteria

$$P_b \leq S_c \text{ for circumferential flaws}$$

or

$$\sigma_h \leq S_a \text{ for axial flaws}$$

where

P_b = the maximum applied pipe primary bending stress

σ_h = the maximum applied pipe hoop stress

S_c = the allowable pipe bending stress for a pipe with a circumferential flaw

S_a = the allowable pipe hoop stress for a pipe with an axial flaw

Equations for these values are given in Appendix A of this Case. The allowable stress for the flawed pipe, S_c or S_a, is a function of the actual pipe stresses, the required safety margins, the pipe material properties, the end-of-evaluation-period flaw length and depth, flaw orientation, and the pipe failure mode.

APPENDIX A TO CODE CASE N-463 EVALUATION OF FLAWS IN FERRITIC PIPING

A-1000 INTRODUCTION

A-1100 SCOPE

(a) This Appendix provides a method for determining the acceptability for continued service of ferritic piping containing flaws that exceed the acceptance standards of IWB-3514.2. The evaluation methodology is based on:

(1) limit load failure of the pipe cross section (which is reduced by the flaw area) for ductile materials where the limit load is assured;

(2) elastic-plastic fracture mechanics where ductile flaw extension may occur prior to reaching limit load; and

(3) brittle fracture described by linear elastic fracture mechanics.

(b) This Appendix provides a screening procedure to determine the failure mechanism based on metal temperature, applied loads, flaw size, and the material properties. Flaws are evaluated by comparing the maximum flaw dimensions at the end of the evaluation period with the allowable flaw size, or by comparing the actual pipe applied stress with the allowable stress for the flaw size at the end of the evaluation period.

(c) This Appendix provides rules for flaw modeling and evaluation. Flaw growth analysis is based on fatigue. When stress corrosion cracking (SCC) is active, the growth shall be added to the growth from fatigue. Flaw acceptance criteria of para. 1.2 include safety margins on failure for the three failure mechanisms described above. The acceptance criteria shall be used to determine acceptability of the flawed piping for continued service until the next inspection (or until the end of service life-time) or to determine the time interval until a subsequent inspection.

A-1200 PROCEDURE OVERVIEW

The following is a summary of the analytical procedure.

(a) Determine the actual flaw configuration from the measured flaw in accordance with IWA-3000 using A-2000.

(b) Resolve the actual flaw into circumferential and axial flaw components using A-2000.

(c) Determine the stresses normal to the flaw at the location of the detected flaw for normal operating (including upset and test) conditions and emergency and faulted conditions.

(d) Perform a flaw growth analysis (described in A-3000) to establish the end of evaluation period flaw dimensions a_f and ℓ_f.

(e) Obtain actual pipe material properties at the temperature required for analysis, σ_y and J_{Ic}. When actual material properties are not available, minimum properties are given in Tables A-4211-1 and A-4212-1.

(f) Using the screening procedure described in A-4000, determine the failure mechanism for the material and temperature.

(g) Using the procedures described in either A-5000, A-6000, or A-7000 for the three failure modes, determine the allowable flaw depths a_n and a_o, or the allowable applied stress S_c or S_a.

(h) Using the critical flaw parameters a_f and ℓ_f, or the piping stresses P_b or σ_h, apply the flaw evaluation criteria of para. 1.2 to determine the acceptability of the pipe for continued service.

A-1300 NOMENCLATURE

The following nomenclature is used in this Appendix.

a = the general depth dimension for a flaw, in.

a_f = the maximum depth to which the detected flaw is calculated to grow by the end of the evaluation period, in.

a_n = the maximum allowable flaw depth corresponding to the flaw length ℓ_f for normal operating (including upset and test) conditions, in.

a_o = the maximum allowable flaw depth corresponding to the flaw length ℓ_f for postulated emergency and faulted conditions, in.

A = parameter to establish the Z-factor of Table A-6310-1, dimensionless

C_o = material constant in flaw growth equation

CL = orientation of a test specimen in the circumferential direction with longitudinal crack plane orientation

CVN = Charpy V-notched absorbed energy, ft-lb

D = pipe outside diameter, in.

da/dN = flaw growth rate, in./cycle

E = Youngs modulus, ksi
$E' = E/(1 - \mu^2)$, ksi
F = parameter for axial flaw stress intensity factor
F_m = parameter for circumferential flaw membrane stress intensity factor
F_b = parameter for circumferential flaw bending stress intensity factor
J_{1mm} = measure of toughness at 1 mm of crack growth at upper-shelf temperature, in.-lbs/in.^{2}
J_{Ic} = measure of toughness due to crack extension at upper shelf, transition, and lower shelf temperatures, in.-lbs/in.^{2}
K_I = mode I stress intensity factor, ksi$\sqrt{\text{in.}}$
ΔK_I = the maximum range of K_I fluctuation during a transient, ksi$\sqrt{\text{in.}}$
K_r' = a component of the screening criteria (SC), the ratio of the stress intensity factor to the material toughness, dimensionless
K_{Im} = mode I stress intensity factor for membrane loading, ksi$\sqrt{\text{in.}}$
K_{Ib} = mode I stress intensity factor for bending loading, ksi$\sqrt{\text{in.}}$
K_{Ir} = stress intensity factor for residual stress, ksi$\sqrt{\text{in.}}$
ℓ = general flaw length dimension, in.
ℓ_f = the maximum length to which the detected flaw is calculated to grow by the end of the evaluation period, in.
ℓ_{crit} = critical flaw length for stability of an axial through-the-wall flaw, in.
M = applied moment on the pipe, in.-kips
M_2 = parameter for circumferential collapse stress
n = material constant in flaw growth equation
NPS = nominal pipe size, in.
p = internal pressure, ksi
P = total axial load on pipe including pressure, kips
P_m = the primary membrane stress in the pipe at the flaw, ksi
P_b = the primary bending stress in the pipe at the flaw, ksi
P_b' = bending stress at limit load for any combination of primary and expansion stresses, ksi
P_e = pipe expansion stress, ksi
Q = flaw shape parameter, dimensionless
R = mean radius of pipe, in.
R_1 = inside radius of pipe, in.
R_2 = outside radius of pipe, in.
S_c = allowable bending stress for a circumferentially flawed pipe, ksi
S_a = allowable hoop membrane stress for an axially flawed pipe, ksi
S_c' = a component of the screening criteria (SC), the ratio of the sum of the primary bending and expansion stresses to the bending stress at limit load, dimensionless
S_m = the design stress intensity value as given in Table I-1.1 of Section III, ksi
(SC) = screening criteria parameter for determining the analysis method, dimensionless
(SF) = safety factor, dimensionless
t = pipe wall thickness, in.
α = parameter a/t, dimensionless
Z = load multiplier for ductile flaw extension, dimensionless
α = parameter $(a/t)/(a/\ell)$, dimensionless
β = angle to neutral axis of flawed pipe, radians
θ = one-half of the final flaw angle (see Fig. A-4221-1), radians
μ = Poisson's ratio
σ_f = flow stress as defined in Articles A-5320 and A-5420, ksi
σ_b' = reference limit load bending stress, ksi
σ_ℓ = reference limit load hoop stress, ksi
σ_h = hoop stress in pipe at the flaw, ksi
σ_y = material yield stress at temperature as specified in Tables A-4211-1, A-4212-1, or A-6310-2, ksi

A-2000 FLAW MODEL FOR ANALYSIS

A-2100 SCOPE

This Article provides the rules for flaw shape, multiple flaws, flaw orientation, and flaw location that are used to compare the flaw with the allowable flaw size.

A-2200 FLAW SHAPE

The flaw shall be completely bounded by a rectangular or circumferential planar area in accordance with the methods described in IWA-3300. Figures A-2200-1 and A-2200-2 illustrate flaw characterization for circumferential and axial pipe flaws.

A-2300 PROXIMITY TO CLOSEST FLAW

For multiple neighboring flaws, when the shortest distance between the boundaries of two neighboring

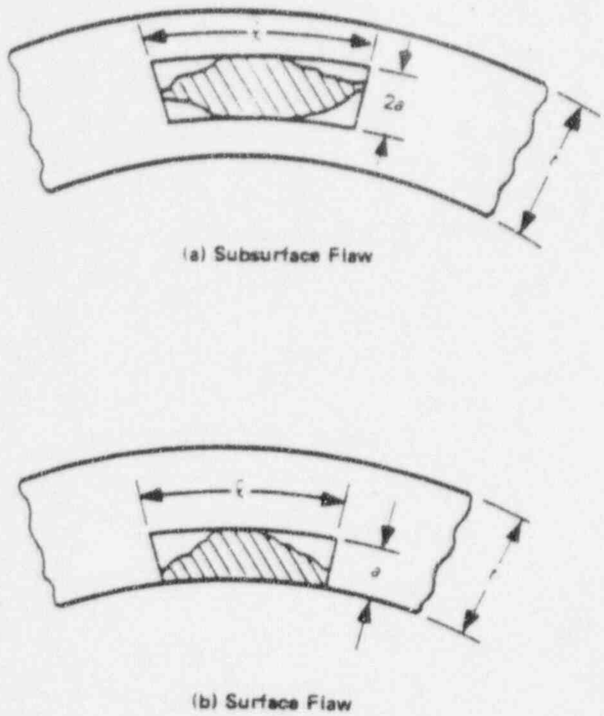


FIG. A-2200-1 FLAW CHARACTERIZATION—CIRCUMFERENTIAL FLAWS

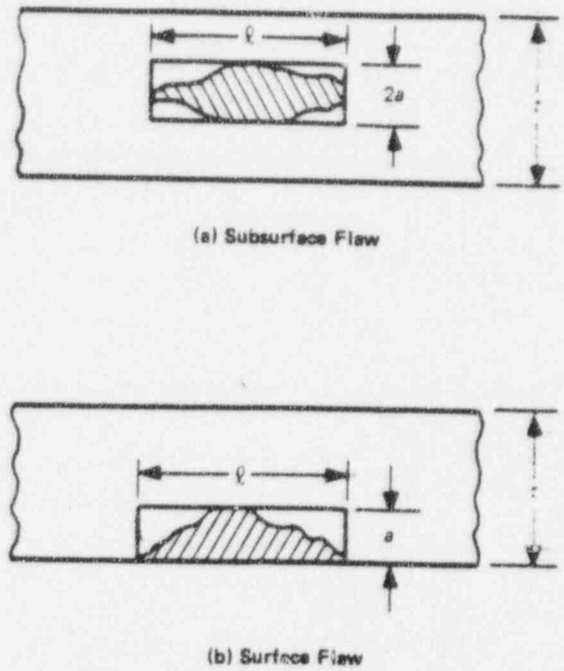


FIG. A-2200-2 FLAW CHARACTERIZATION—AXIAL FLAWS

flaws is within the proximity limits specified in IWA-3300, the neighboring flaws shall be bounded by a single rectangular or circumferential planar area in accordance with IWA-3300.

A-2400 FLAW ORIENTATION

Flaws that do not lie in either an axial[1] or a circumferential[2] plane shall be projected onto these planes in accordance with the rules of IWA-3340. The axial and circumferential flaws obtained by these projections shall be evaluated separately in accordance with this Appendix. Figures A-2400-1, A-2400-2, and A-2400-3 illustrate flaw characterization for skewed flaws.

A-2500 FLAW LOCATION

For the purpose of analysis, the flaw shall be considered in its actual location. The stresses due to system loading shall be computed at this location. Surface or subsurface flaw characterizations shall be used depending on the type of flaw. When the flaw is subsurface, but within the proximity limit of IWA-3340 of the surface of the component, the flaw shall be considered a surface flaw and bounded by a rectangular or circumferential planar area with the base on the surface.

A-3000 FLAW GROWTH ANALYSIS

A-3100 SCOPE

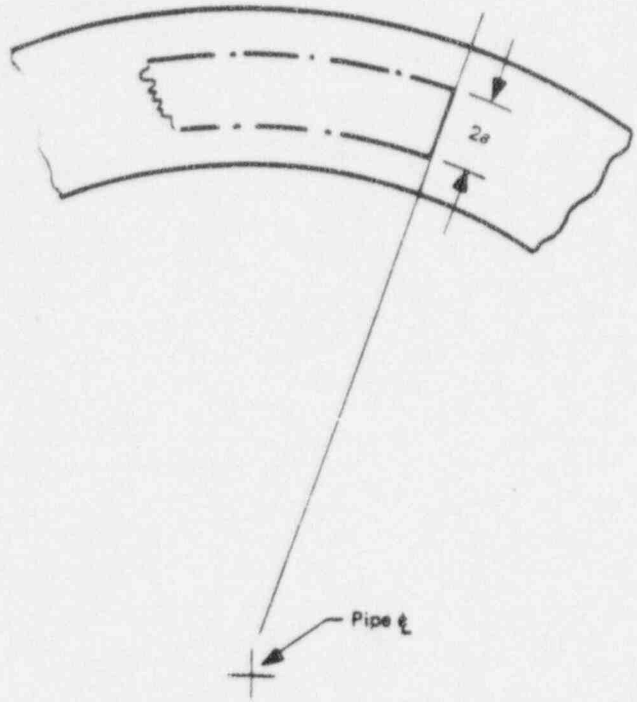
This Article provides the methodology for determination of subcritical flaw growth during the evaluation interval.

A-3200 SUBCRITICAL FLAW GROWTH ANALYSIS

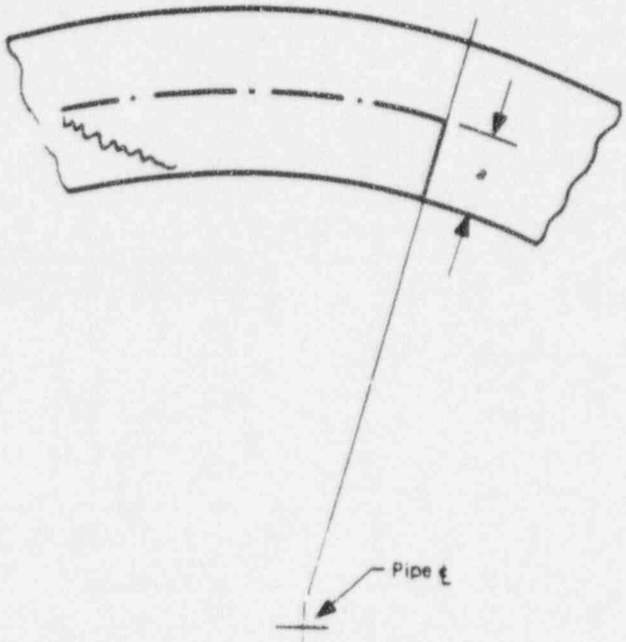
When a flaw is characterized in terms of an equivalent axial or circumferential flaw, the maximum depth a_f, and the maximum length ℓ_f, at the end of the evaluation period shall be determined. Subcritical crack growth shall be considered. When SCC is determined to be an active flaw growth mechanism for

[1] A plane containing the pipe axis.

[2] A plane perpendicular to the pipe axis.



(a) Subsurface Flaw



(b) Surface Flaw

FIG. A-2400-1 FLAW CHARACTERIZATION—SKEWED AXIAL FLAWS PROJECTED INTO AXIAL PLANE

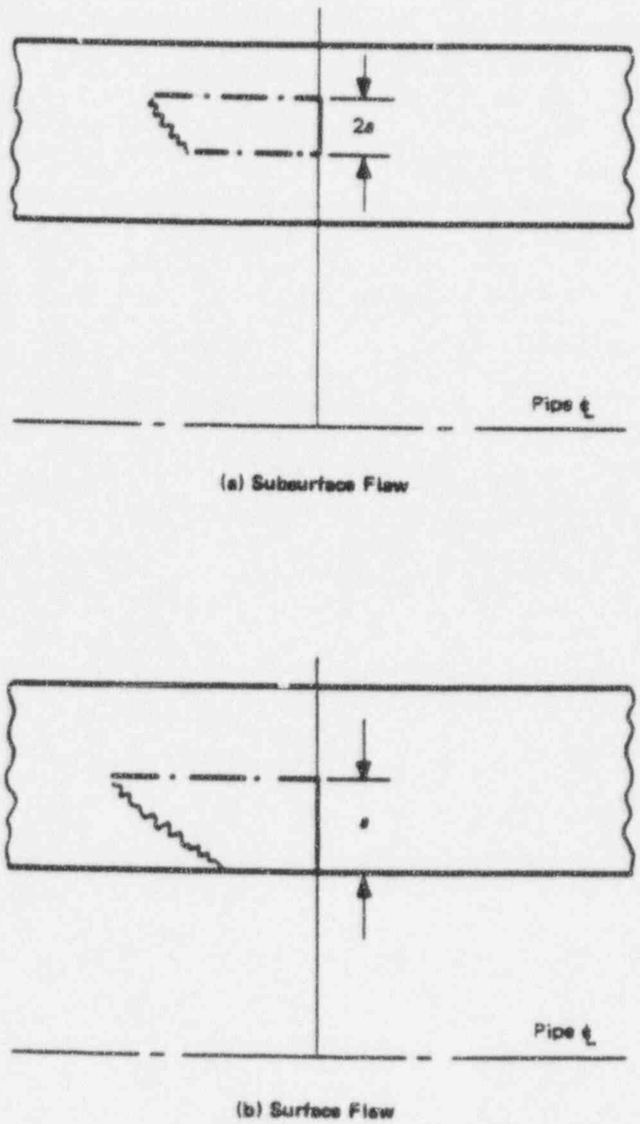


FIG. A-2400-2 FLAW CHARACTERIZATION—SKEWED CIRCUMFERENTIAL FLAWS PROJECTED INTO CIRCUMFERENTIAL PLANE

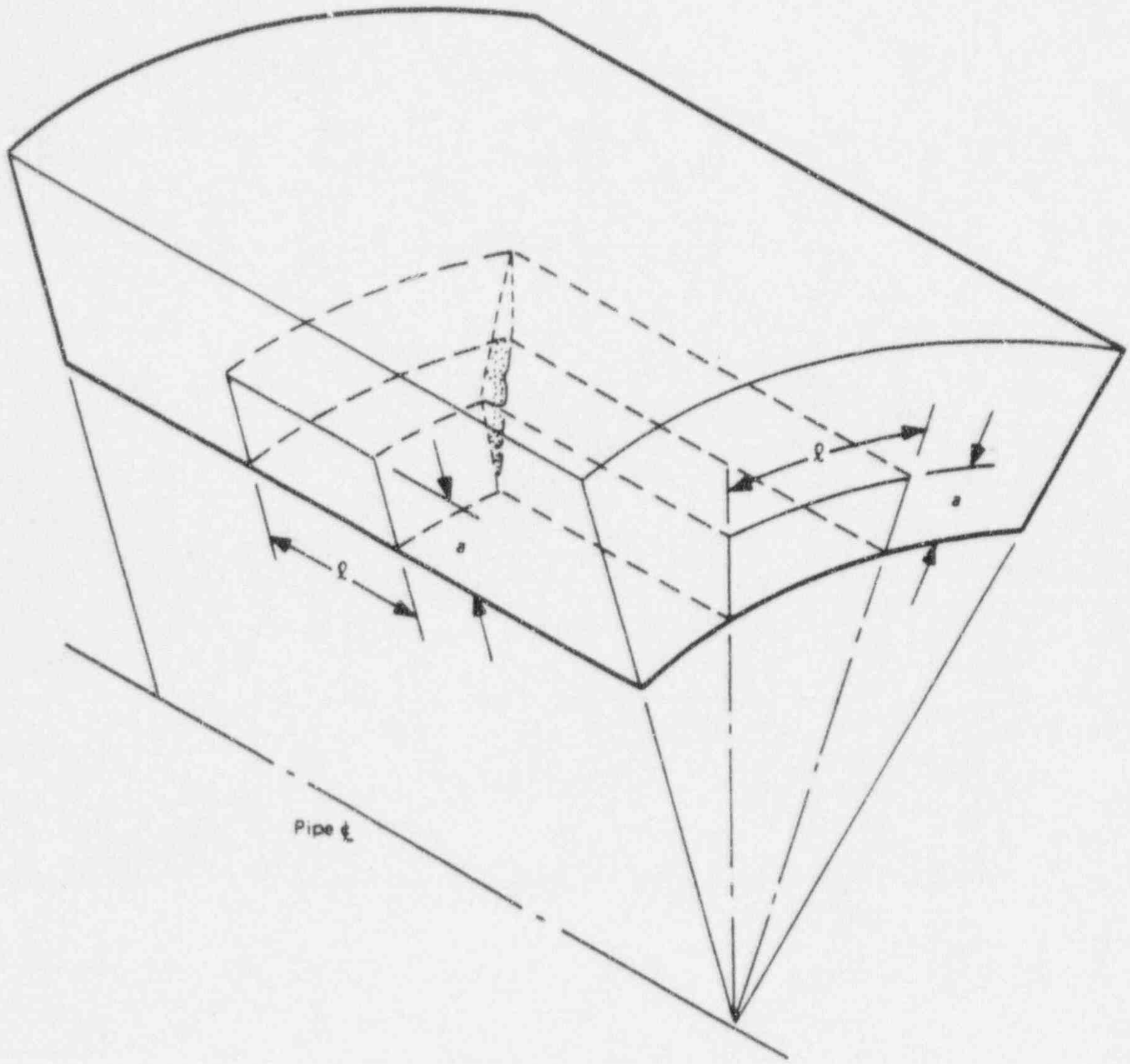


FIG. A-2400-3 FLAW CHARACTERIZATION—COMPOUND SKEWED FLAW PROJECTED INTO CIRCUMFERENTIAL AND AXIAL PLANES the pipe being evaluated, it shall also be considered. Residual stresses shall be included for both growth mechanisms.

A-3210 Subcritical Flaw Growth Due to Fatigue

(a) Fatigue flaw growth can be computed by

$$da/dN = C_o(\Delta K_I)^n$$

where K_I is the applied stress intensity factor, and n and C_o are constants dependent on the R ratio (K_{min}/K_{max}) and the environmental conditions (see A-4300 of Appendix A of Section XI).

(b) A cumulative fatigue flaw growth calculation shall be performed using operating conditions and transients that apply during the evaluation period. Each transient shall be considered in approximate chronological order as follows.

(1) Determine ΔK_I, the maximum range of K_I fluctuation associated with the transient.

(2) Determine the incremental flaw growth corresponding to ΔK_I from the reference fatigue flaw growth rates given in A-4300 of Apendix A of Section XI.

(c) After all transients have been considered, the procedure of (a) and (b) above yields the final flaw size a_f and ℓ_f at the end of the evaluation period considering only fatigue flaw growth.

A-3220 Subcritical Flaw Growth Due to Stress Corrosion Cracking (SCC)

Subcritical flaw growth due to SCC has not been observed to be a significant flaw growth mechanism in ferritic piping. When growth due to SCC is determined to be active, characterization shall be the responsibility of the Owner.

A-4000 SCREENING CRITERIA

A-4100 SCOPE

This Article is used to determine the failure mechanism and analysis method for the flawed pipe. Flaw size, temperature, available material properties, and pipe loadings are considered in the screening procedure.

TABLE A-4211-1 MATERIAL PROPERTIES FOR CARBON STEEL BASE METALS AND WELDMENTS [Note (1)]

Material Category	Temp. ≥ Upper Shelf		Temp. < Upper Shelf	
	σ_f (ksi)	J_{Ic} (lb/in.)	σ_f (ksi)	J_{Ic} (lb/in.)
1	27.1	600	27.3	45
2	27.1	350	27.3	45

GENERAL NOTES:

(a) Material Category 1: Seamless or welded wrought carbon steel pipe and pipe fittings that have a specified minimum yield strength not greater than 40 ksi and welds made with E7015, E7016, and E7018 electrodes in the as-welded or postweld heat treated conditions.

(b) Material Category 2: All other ferritic shielded metal arc and submerged arc welds with specified minimum tensile strengths not greater than 80 ksi in the as-welded or postweld heat treated conditions.

NOTE:

(1) Applicable to flawed pipes with circumferentially oriented flaws only.

A-4200 SCREENING CRITERIA

The sequence used to determine the failure mode and analysis method is given in Fig. A-4200-1. The upper part of the figure relates to material toughness determination. The lower part defines the appropriate analysis method [i.e., limit load controlled by plastic collapse, elastic-plastic fracture mechanics (EPFM), or linear elastic fracture mechanics (LEFM)].

A-4210 Material Flaw Tolerance

The material toughness J_{Ic} shall be determined at the upper shelf temperature and the transition and lower shelf temperature regions, as appropriate.

A-4211 Material Properties for Circumferentially Oriented Flaws

(a) J_{Ic} shall be obtained directly from heat-specific J_{Ic} experiments, or correlations with heat-specific CVN data or reasonable lower bound CVN data. Alternatively, values for J_{Ic} are provided in Table A-4211-1.

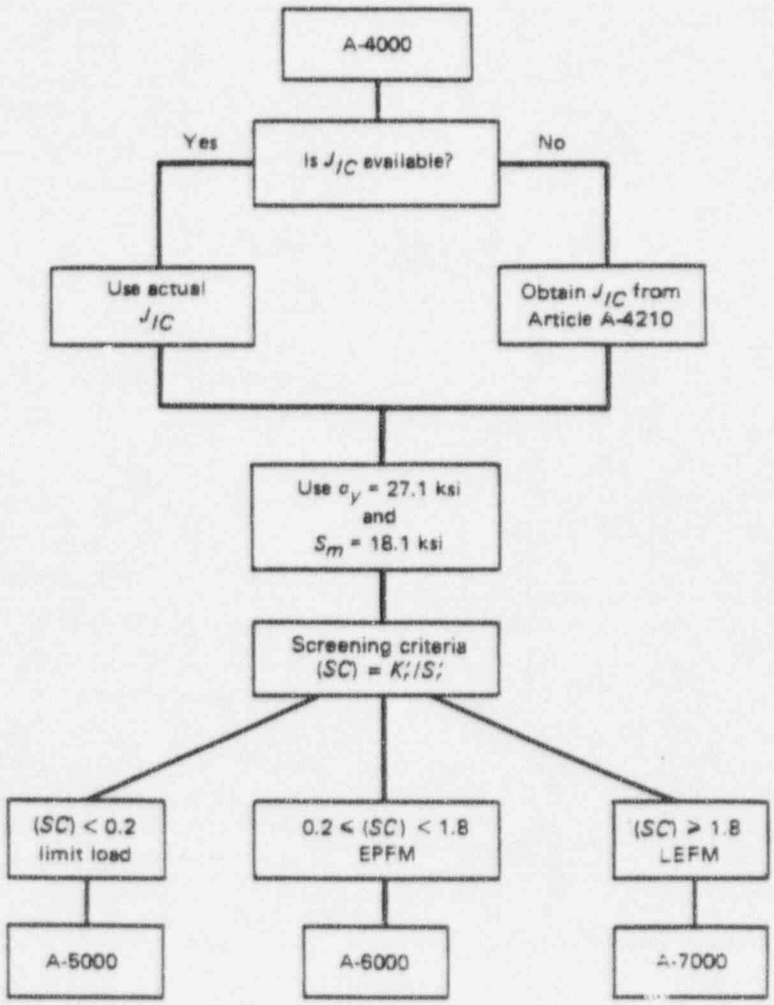


FIG. A-4200-1 FLOW CHART FOR SCREENING CRITERIA TO ESTABLISH THE ANALYSIS METHOD

TABLE A-4212-1 MATERIAL PROPERTIES FOR CARBON STEEL BASE METALS AND WELDMENTS[1]

Temp. ≥ Upper Shelf		Temp. < Upper Shelf	
σ_f (ksi)	J_{Ic} (lb/in.)	σ_f (ksi)	J_{Ic} (lb/in.)
27.1	300	27.3	45

NOTE:
(1) Applicable to flawed pipes with axial flaws only.

(b) The correlation at upper shelf temperatures for use with CVN data is

$$J_{1mm} = 10\text{CVN}$$

and J_{1mm} shall replace J_{Ic} when this Charpy correlation is used. In the absence of specific data, the upper shelf temperature for ferritic piping steels shall be 200°F. A lower temperature may be used to define upper shelf behavior when it is determined from valid heat-specific Charpy V-notch tests.

A-4212 Material Properties for Axially Oriented Flaws

J_{Ic} in the *CL* direction shall be obtained directly from heat-specific experiments or, if justified, from correlations with heat-specific CVN data or reasonable lower bound CVN data. If heat-specific or reasonable lower bound K_{Ic} data for ferritic piping materials with specified minimum yield not greater than 40 ksi are available for the *CL* direction, a conservative estimate for J_{Ic} shall be determined from

$$J_{Ic} = \frac{1000\,(K_{Ic})^2}{E}$$

Alternatively, values for J_{Ic} shall be obtained from Table A-4212-1. In the absence of specific data, the upper-shelf temperature for ferritic piping steels shall be 200°F. A lower temperature may be used to define upper-shelf behavior when determined from valid heat-specific Charpy V-notch tests.

A-4220 Analysis Method Determination

The equations necessary to calculate the components of the screening criteria K_r' and S_r' for specified applications involving circumferential or axial flaw orientations are given in A-4221.

A-4221 Screening Criteria Computations

The equations for K_r' and S_r' as used in Fig. A-4200-1 are

$$K_r' = [1000K_I^2/(E'J_{Ic})]^{0.5}$$

$$S_r' = (P_b + P_e)/\sigma'_b \text{ (circumferential flaws)} \qquad (1)$$

$$S_r' = (pD/2t)/\sigma_f \text{ (axial flaws)}$$

The revelant crack dimensions for this computation are shown in Figs. A-4221-1 and A-4221-2. The equations for K_I and σ_b' are given in A-4221.1 for circumferential flaws and for K_I and σ_ℓ in A-4221.2 for axial flaws.

A-4221.1 Circumferential Flaws

(a) Stress intensity factor K_I.

$$K_I = K_{Im} + K_{Ib}$$

where

$K_{Im} = [P/(2\pi Rt)](\pi a)^{0.5}F_m$

$K_{Ib} = [M/(\pi R^2 t) + P_e](\pi a)^{0.5}F_b$

and

$F_m = 1.10 + x[0.15241 + 16.772(x\theta/\pi)^{0.855} - 14.944(x\theta/\pi)]$

$F_b = 1.10 + x[-0.09967 + 5.0057(x\theta/\pi)^{0.565} - 2.8329(x\theta/\pi)]$

$x = a/t$

$\theta/\pi =$ ratio of crack length to pipe inner circumference

The above expressions for F_m and F_b are valid for

$\ell/a \geq 2$

$0.08 \leq x \leq 0.8$

$0.05 \leq \theta/\pi \leq 0.5$

for $0.5 \leq \theta/\pi \leq 1.0$, use $\theta/\pi = 0.5$

(b) Reference limit load bending stress σ_b'.

The reference bending stress at limit load [σ_b' in Eq. (1)] can be obtained for any specific membrane stress P_m by satisfying Eqs. (2) and (3) below. In these equations, and those for β, σ_y from Table A-4211-1 shall be used.

$$\sigma_b' = \frac{2\sigma_y}{\pi}\left[2\sin\beta - \frac{a}{t}\theta\right] \qquad (2)$$

where

$$\beta = \frac{1}{2}\left[\pi - \frac{a}{t}\theta - \pi\frac{P_m}{2.4S_m}\right]$$

or, if $(\theta + \beta) > \pi$

$$\sigma_b' = \frac{2\sigma_y}{\pi}\left[\left(s - \frac{a}{t}\right)\sin\beta\right] \qquad (3)$$

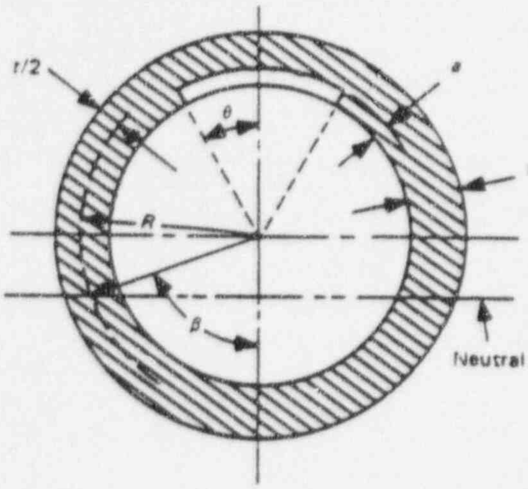


FIG. A-4221-1 CIRCUMFERENTIAL FLAW GEOMETRY

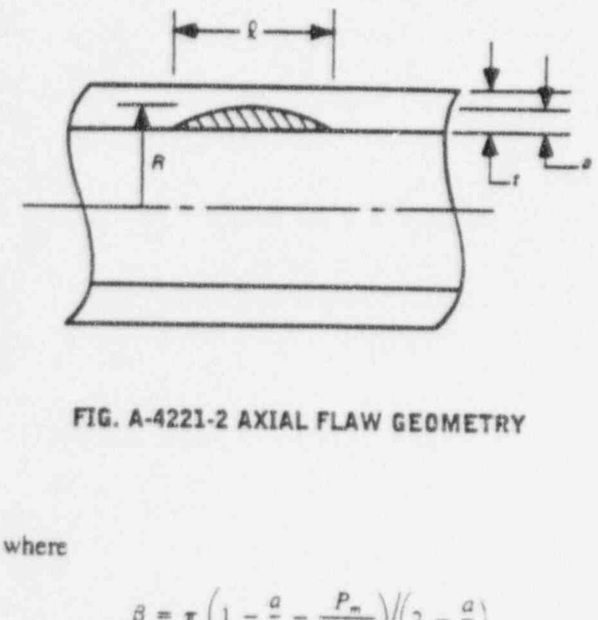


FIG. A-4221-2 AXIAL FLAW GEOMETRY

where

$$\beta = \pi\left(1 - \frac{a}{t} - \frac{P_m}{2.4S_m}\right)\bigg/\left(2 - \frac{a}{t}\right)$$

A-4221.2 Axial Flaws

(a) Stress intensity factor K_I.

$$K_I = (pR/t)(\pi a/Q)^{0.5}F$$

where

$Q = 1 + 4.593\,(a/\ell)^{1.65}$

$F = 1.12 + 0.053\alpha + 0.0055\alpha^2 + (1.0 + 0.02\alpha - 0.0191\alpha^2)\,(20 - R/t)^2/1400$

$\alpha = (a/t)/(a/\ell)$

(b) Reference limit load circumferential stress σ_ℓ

$$\sigma_\ell = \sigma_s[(1 - x)/(1 - x/M_2)]$$

where

$x = a/t$

$M_2 = [1 + (1.61/4Rt)\ell^2]^{0.5}$

A-5000 ALLOWABLE FLAW DEPTHS USING LIMIT LOAD CRITERIA

A-5100 SCOPE

This Article provides methodology for determining allowable flaw depths and allowable loads for flawed ferritic piping meeting the limit load criteria of A-4000.

A-5200 EVALUATION PROCEDURES

A flow chart for the evaluation options is given in Fig. A-5200-1 when the failure mode has been determined to be plastic collapse at limit load using the procedures of A-4000.

A-5300 CIRCUMFERENTIAL FLAWS

Allowable flaw depths based on a flow stress of $2.4S_m$ and a primary membrane stress of $0.5S_m$ or $1.0S_m$ shall be obtained from Tables A-5310-1 and A-5310-2, respectively. Alternatively, equations (from which these tables can be derived) for allowable pipe bending stresses given in A-5320 shall be solved using specified or actual (when available) material properties and actual piping system loadings.

A-5310 Allowable Flaw Depths (Tabular Solution)

Allowable flaw depths for a given final flaw length under normal operating (including upset and test) conditions are given in Table A-5310-1 and under emergency and faulted conditions in Table A-5310-2. Using the maximum value of the normal operating condition applied stress during the evaluation interval and the Z flaw parameter defined in A-3210, the maximum allowable flaw depth a_n of a circumferential flaw under these conditions shall be determined from Table A-5310-1. Similarly, the maximum allowable flaw depth a_o of a circumferential flaw under emergency and faulted conditions shall be determined from Table A-5310-2, using the maximum values of the applied stress for these conditions. The allowable flaw depths a_n and a_o shall be used in the acceptance criteria of para. 1.2(a) to determine the acceptability of the flawed pipe for continued service.

A-5320 Allowable Applied Stresses (Analytical Solution)

The allowable bending stress S_c in the flawed pipe for a given end-of-evaluation-period flaw size for either normal operating (including upset and test) or emergency and faulted conditions shall be determined using the formulas below. These formulas are valid for $P_b/P_m \geq 1.0$ and $P_m \leq 0.5\ S_m$ for normal operating (including upset and test) conditions or $P_m \leq 1.0\ S_m$ for emergency and faulted conditions. For circumferential flaws not penetrating the compressive side of the pipe such that $(\theta + \beta) \leq \pi$ (see Fig. A-4221-1), the relation between the applied loads and flaw depth at incipient plastic collapse is given by

$$P_b' = \frac{2\sigma_f}{\pi}\left[2 \sin \beta - \frac{a}{t} \sin \tau\right)$$

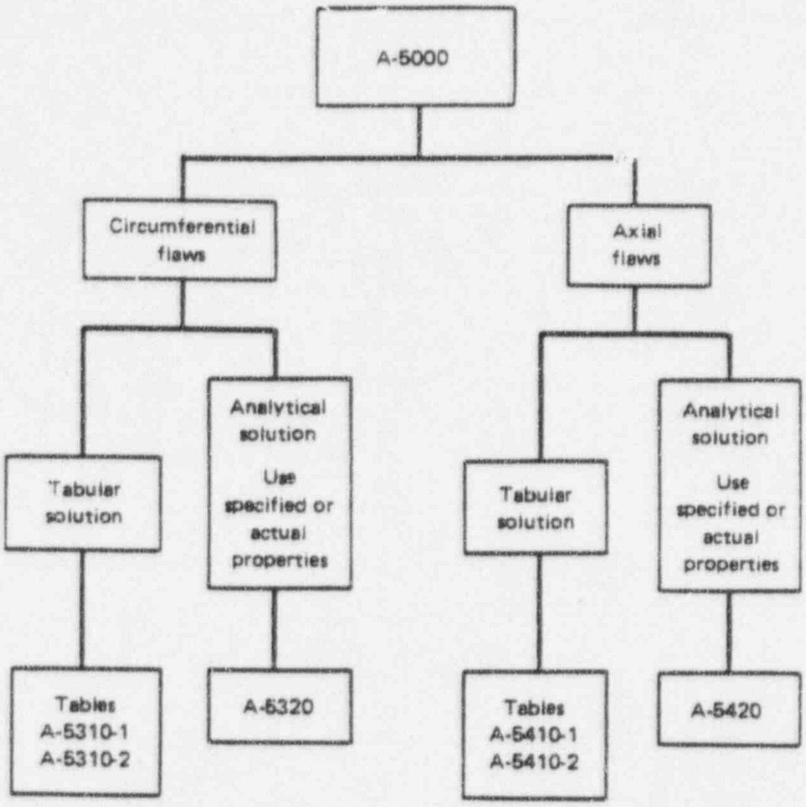


FIG. A-5200-1 FLOW CHART FOR MATERIALS MEETING THE LOAD LIMIT CRITERIA

where

$$\beta = \frac{1}{2}\left(\pi - \frac{a}{t}\theta - \pi\frac{P_m}{\sigma_f}\right)$$

and the other terms are defined in A-1300. σ_f shall be taken as the average of yield and ultimate stress, or 2.4 S_m when these values are not available. For longer flaws penetrating the compressive bending region when $(\theta + \beta) > \pi$, the relation between the applied loads and the flaw depth at incipient plastic collapse is given by

$$P_b' = \frac{2\sigma_f}{\gamma}\left[2 - \frac{a}{t}\right]\sin\beta$$

where

$$\beta = \frac{\pi}{2 - \frac{a}{t}}\left[1 - \frac{a}{t} - \frac{P_m}{\sigma_f}\right]$$

The allowable pipe bending stress S_c is

$$S_c = \frac{P_b'}{(SF)} - P_m\left[1 - \frac{1}{(SF)}\right]$$

where

S_c = allowable bending stress for a circumferentially flawed pipe

P'_b = bending stress at incipient plastic collapse

(SF) = safety factor

= 2.77 for normal operating (including upset and test) conditions

P_b' = 1.39 for emergency and faulted conditions

The limits of applicability of this equation are

$$0.75 \geq a/t > \text{values of Table IWB-3514-1}$$

The allowable pipe bending stress shall be used in the acceptance criteria of para. 1.2(b) to determine the acceptability of the flawed pipe for continued service.

TABLE A-5310-1 ALLOWABLE END-OF-EVALUATION PERIOD FLAW DEPTH[1]-TO-THICKNESS RATIO FOR CIRCUMFERENTIAL FLAWS NORMAL OPERATING (INCLUDING UPSET AND TEST) CONDITONS (LIMIT LOAD ANALYSIS)

$(P_m + P_b)/S_m$ [Note (2)]	Ratio of Flaw Length ℓ_f to Pipe Circumference [Note (3)]						
	0.0	0.05	0.1	0.2	0.3	0.4	0.5 or Greater
≥1.3	0.75	(4)	(4)	(4)	(4)	(4)	(4)
1.2	0.75	0.21	0.11	(4)	(4)	(4)	(4)
1.1	0.75	0.75	0.53	0.27	0.19	0.16	0.13
1.0	0.75	0.75	0.75	0.48	0.34	0.28	0.23
0.9	0.75	0.75	0.75	0.69	0.48	0.39	0.31
0.8	0.75	0.75	0.75	0.75	0.62	0.50	0.39
0.7	0.75	0.75	0.75	0.75	0.75	0.60	0.46
0.6	0.75	0.75	0.75	0.75	0.75	0.70	0.53
0.5	0.75	0.75	0.75	0.75	0.75	0.75	0.60
0.4	0.75	0.75	0.75	0.75	0.75	0.75	0.66
0.3	0.75	0.75	0.75	0.75	0.75	0.75	0.72
≤0.2	0.75	0.75	0.75	0.75	0.75	0.75	0.75

NOTES:

(1) Flaw depth = a_n for a surface flaw
= 2 a_n for a subsurface flaw
t = nominal thickness
Linear interpolation is permissible

(2) P_m = primary longitudinal membrane stress
P_b = primary bending stress
$P_b/P_m \geq 1.0$ and $P_m \leq 0.5\ S_m$
S_m = 18.1 ksi when the Z-factors of A-6000 are applied.

(3) Circumference based on pipe outside diameter.

(4) Table IWB-3514-1 shall be used.

TABLE A-5310-2 ALLOWABLE END-OF-EVALUATION PERIOD FLAW DEPTH[1]-TO-THICKNESS RATIO FOR CIRCUMFERENTIAL FLAWS EMERGENCY AND FAULTED CONDITIONS (LIMIT LOAD ANALYSIS)

$(P_m + P_b)/S_m$ [Note (2)]	Ratio of Flaw Length ℓ_f to Pipe Circumference [Note (3)]						
	0.0	0.05	0.1	0.2	0.3	0.4	0.5 or Greater
≥ 2.6	0.75	(4)	(4)	(4)	(4)	(4)	(4)
2.4	0.75	0.22	0.11	(4)	(4)	(4)	(4)
2.2	0.75	0.75	0.47	0.24	0.16	0.13	(4)
2.0	0.75	0.75	0.75	0.42	0.29	0.23	0.18
1.8	0.75	0.75	0.75	0.59	0.41	0.33	0.25
1.6	0.75	0.75	0.75	0.75	0.53	0.42	0.31
1.4	0.75	0.75	0.75	0.75	0.65	0.51	0.38
1.2	0.75	0.75	0.75	0.75	0.75	0.60	0.44
1.0	0.75	0.75	0.75	0.75	0.75	0.69	0.50
≤ 0.8	0.75	0.75	0.75	0.75	0.75	0.75	0.56

NOTES:

(1) Flaw depth = a_c for a surface flaw
= $2a_c$ for a subsurface flaw
t = nominal thickness
Linear interpolation is permissible

(2) P_m = primary longitudinal membrane stress
P_b = primary bending stress
$P_m/P_b \geq 1.0$ and $P_m \leq 1.0\ S_m$
S_m = 18.1 ksi when the Z-factors of A-6000 are applied.

(3) Circumference based on pipe outside diameter.

(4) Table IWB-3514-1 shall be used.

A-5400 AXIAL FLAWS

Allowable flaw depths shall be determined in accordance with A-5410. Alternatively, equations (from which these tables can be derived) for allowable flaw sizes given in A-5420 shall be solved using either specified or actual (when available) material properties and actual piping system loadings.

A-5410 Allowable Flaw Depths (Tabular Solution)

Allowable flaw depths for a given final flaw length under normal operating (including upset and test) conditions are given in Table A-5410-1 and for emergency and faulted conditions in Table A-5410-2. Using the maximum value of the normal operating condition pressure circumferential stress during the evaluation interval and the ℓ_f flaw parameter defined in A-3210, the maximum allowable flaw depth a_n of an axial flaw under these conditions shall be determined from Table A-5410-1. Similarly, the maximum allowable flaw depth a_o of an axial flaw under emergency and faulted conditions shall be determined from Table A-5410-2, using the maximum value of the applied circumferential stress for these conditions. The allowable flaw depths a_n and a_o shall be used in the acceptance criteria of para. 1.2(a) to determine the acceptability of the flawed pipe for continued service.

A-5420 Allowable Flaw Depths (Analytical Solutions)

The allowable flaw depths a_n and a_o in the flawed pipe for a given end of evaluation period flaw length ℓ_f for normal operating (including upset and test) or emergency and faulted conditions are determined using the following formula.

$$\sigma_h = \frac{\sigma_f}{(SF)}\left[\frac{t/a - 1}{t/a - 1/M_2}\right] \tag{4}$$

where

$\sigma_f = 2.4S_m$
$M_2 = [1 + (1.61/4Rt)\ell^2]^{1/2}$
$(SF) =$ safety factor
$= 3.0$ for normal operating (including upset and test) conditions
$= 1.5$ for emergency and faulted conditions

The limits of applicability of this equation are

$0.75 \geq a/t >$ values of Table IWB-3514-1, and
$\ell < \ell_{crit}$

where ℓ_{crit} is determined by the condition for the stability of through-wall flaws

$$\sigma_h = \sigma_f/M_2$$

The allowable flaw depths a_n and a_o, determined from Eq. (4) above, shall be used in the acceptance criteria of para. 1.2(a) to determine the acceptability of the flawed pipe for continued service.

A-6000 ALLOWABLE FLAW DEPTHS FOR FLAWED PIPE MEETING THE EPFM CRITERIA

A-6100 SCOPE

This Article provides the methodology for determining allowable flaw depths and loads for flawed ferritic piping meeting the criteria of A-4000 for materials for which fracture by ductile flaw extension may occur prior to reaching limit load.

A-6200 EVALUATION PROCEDURES

A flow chart for the evaluation options is given in Fig. A-6200-1 when the failure mode has been determined to be ductile flaw extension prior to reaching limit load.

A-6300 CIRCUMFERENTIAL FLAWS

The tabular solutions for circumferential flaws shall be used to determine the allowable flaw depths from the limit load solution of A-5310 with the ordinate stress ratio modified by Z factors given in A-6310. Alternatively, equations for allowable pipe bending stresses given in A-6320 shall be satisfied.

A-6310 Allowable Flaw Depths (Tabular Solution)

Allowable flaw depths for a given final flaw length shall be obtained from Table A-5310-1 for normal operating (including upset and test) conditions and from Table A-5310-2 for emergency and faulted conditions with the ordinate stress ratio for both tables modified by the Z factors of Table A-6310-1 or A-6310-2. The maximum allowable flaw depth, a_n or a_o, shall be determined using the maximum value of the applied stresses during the evaluation interval for the applicable conditions and the ℓ_f flaw length determined from A-3210. The allowable flaw depths shall be used in the acceptance criteria of para. 1.2(a) to determine the acceptability of the flawed pipe for continued service.

The Z factors in Table A-6310-1 or A-6310-2 shall be used as load multipliers to the stress ratio in Tables

TABLE A-5410-1 ALLOWABLE END-OF-EVALUATION PERIOD FLAW DEPTH[1]-TO-THICKNESS RATIO FOR AXIAL FLAWS, NORMAL OPERATING (INCLUDING UPSET AND TEST) CONDITIONS (LIMIT LOAD ANALYSIS)

Stress Ratio [Note (2)]	Nondimensional Flaw Length, $\ell_f/\sqrt{Rt}$ [Note (3)]														
	0.0	0.2	0.4	0.6	0.8	1.0	1.5	2.0	2.5	3.0	4.0	6.0'	7.0	8.0	9.0
0.40	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.72	0.68	0.65	0.61	0.57	0.56	0.55	(4)
0.45	0.75	0.75	0.75	0.75	0.75	0.75	0.74	0.67	0.63	0.59	0.55	0.51	0.50	0.49	(4)
0.50	0.75	0.75	0.75	0.75	0.75	0.75	0.69	0.61	0.56	0.53	0.49	0.45	0.43	(4)	(4)
0.55	0.75	0.75	0.75	0.75	0.75	0.74	0.62	0.54	0.49	0.46	0.42	0.38	(4)	(4)	(4)
0.60	0.75	0.75	0.75	0.75	0.75	0.68	0.55	0.47	0.42	0.38	0.34	0.31	(4)	(4)	(4)
0.65	0.75	0.75	0.75	0.75	0.68	0.60	0.46	0.38	0.33	0.30	0.27	(4)	(4)	(4)	(4)
0.70	0.75	0.75	0.75	0.75	0.57	0.48	0.34	0.27	0.23	0.21	0.18	(4)	(4)	(4)	(4)
0.75	0.75	0.75	0.68	0.50	0.38	0.30	0.19	0.15	0.12	0.11	(4)	(4)	(4)	(4)	(4)
0.80	0.75	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)

NOTES:

(1) Flaw depth = a_n for a surface flaw
$2a_n$ for a subsurface flaw
Linear interpolation is permissible

(2) Stress Ratio = $(pD/2t)/S_m$

(3) ℓ_f = end of evaluation period flaw length
R = mean radius of the pipe

(4) Table IWB-3514-1 shall be used.

TABLE A-5410-2 ALLOWABLE END-OF-EVALUATION PERIOD FLAW DEPTH[1]-TO-THICKNESS RATIO FOR AXIAL FLAWS, EMERGENCY AND FAULTED CONDITIONS (LIMIT LOAD ANALYSIS)

Stress Ratio [Note (2)]	Nondimensional Flaw Length, $\ell_f/\sqrt{Rt}$ [Note (3)]												
	0.0	0.2	0.4	0.6	0.8	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5
0.80	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.72	0.68	0.65	0.63	0.61	(4)
0.90	0.75	0.75	0.75	0.75	0.75	0.75	0.74	0.67	0.63	0.59	0.57	(4)	(4)
1.00	0.75	0.75	0.75	0.75	0.75	0.75	0.69	0.61	0.56	0.53	(4)	(4)	(4)
1.10	0.75	0.75	0.75	0.75	0.75	0.74	0.62	0.54	0.49	0.46	(4)	(4)	(4)
1.20	0.75	0.75	0.75	0.75	0.75	0.68	0.55	0.47	0.42	(4)	(4)	(4)	(4)
1.30	0.75	0.75	0.75	0.75	0.75	0.60	0.46	0.38	(4)	(4)	(4)	(4)	(4)
1.40	0.75	0.75	0.75	0.69	0.57	0.48	0.34	0.27	(4)	(4)	(4)	(4)	(4)
1.50	0.75	0.75	0.68	0.50	0.38	0.30	0.19	(4)	(4)	(4)	(4)	(4)	(4)
1.60	0.75	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)

NOTES:

(1) Flaw depth = a_n for a surface flaw
$2a_n$ for a subsurface flaw
Linear interpolation is permissible

(2) Stress Ratio = $(pD/2t)/S_m$

(3) ℓ_f = end of evaluation period flaw length
R = mean radius of the pipe

(4) Table IWB-3514-1 shall be used.

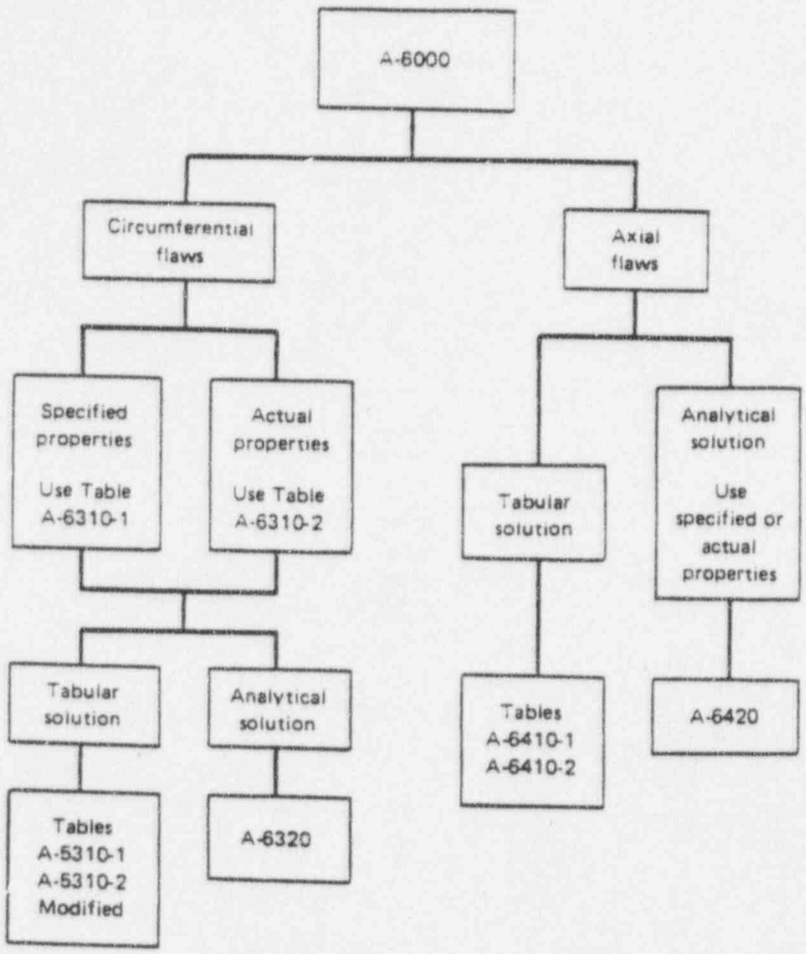


FIG. A-6200-1 FLOW CHART FOR MATERIALS FOR WHICH DUCTILE FLAW EXTENSION MAY OCCUR PRIOR TO LIMIT LOAD

A-5310-1 and A-5310-2 to determine the allowable flaw depth for appropriate material, pipe size, and operating condition, as follows.

Step 1. Determine the stress ratio for the appropriate operating condition as follows:

Stress Ratio $= Z\,(P_m + P_b + P_e/2.77)/S_m$

for normal operating (including upset and test) conditions, and

Stress Ratio $= Z\,(P_m + P_b + P_e/1.39)/S_m$

for emergency and faulted conditions. In both cases, use $S_m = 18.1$ ksi.

Step 2. Use Tables A-5310-1 and A-5310-2 for the evaluation, using the stress ratio computed from Step 1. Determine the allowable flaw depth, using linear interpolation if necessary.

A-6320 Allowable Applied Stress (Analytical Solution)

The allowable bending stress S_c in the flawed pipe for a given end of evaluation period flaw size for either normal operating (including upset and test) conditions or emergency and faulted conditions shall be determined using

$$S_c = \frac{1}{(SF)}\left(\frac{P_b'}{Z} - P_e\right) - P_m\left(1 - \frac{1}{Z(SF)}\right)$$

TABLE A-6310-1 LOAD MULTIPLIERS FOR CARBON STEEL BASE METALS AND WELDMENTS

Material Category	Z Factor
1	$Z = 1.20[1 - 0.021A(\mathrm{NPS} - 4)]$
2	$Z = 1.35[1 + 0.0184A(\mathrm{NPS} - 4)]$

where Z is a nondimensional term and

$A = [0.125(R/t) - 0.25]^{0.25}$ for $5 \le R/t \le 10$

$A = [0.4(R/t) - 3.0]^{0.25}$ for $10 < R/t \le 20$

GENERAL NOTES:

(a) Material Category 1: Seamless or welded wrought carbon steel pipe and pipe fittings that have a specified minimum yield strength not greater than 40 ksi and welds made with E7015, E7016, or E7018 electrodes in the as-welded or postweld heat treated conditions.

(b) Material Category 2: All other ferritic shielded metal arc and submerged arc welds with specified minimum tensile strengths not greater than 80 ksi in the as-welded or postweld heat treated conditions.

TABLE A-6310-2 LOAD MULTIPLIERS FOR CARBON STEEL BASE METALS AND WELDMENTS FOR USER-SPECIFIED DATA

Material Category [Note (1)]	Material Properties [Note (2)]	Z Factor [Note (3)]
1	$27.1 \le \sigma_y \le 40.0$	
	$600 \le J_{Ic} < 1050$	$Z = 2.281M_1[1 + 0.0210A(\mathrm{NPS} - 4)]/\sigma_y^{0.44}$
	$J_{Ic} \ge 1050$	$Z = 1.958M_1[1 + 0.0152A(\mathrm{NPS} - 4)]/\sigma_y^{0.44}$
2	$27.1 \le \sigma_y \le 40.0$	
	$350 \le J_{Ic} < 600$	$Z = 2.566M_1[1 - 0.0184A(\mathrm{NPS} - 4)]/\sigma_y^{0.44}$
	$600 \le J_{Ic} < 1050$	$Z = 2.281M_1[1 - 0.0210A(\mathrm{NPS} - 4)]/\sigma_y^{0.44}$
	$J_{Ic} \ge 1050$	$Z = 1.958M_1[1 - 0.0152A(\mathrm{NPS} - 4)]/\sigma_y^{0.44}$

NOTES:

(1) Material categories are defined in Table A-6310-1.

(2) σ_y and J_{Ic} are in units of ksi and in.-lb/in.^{2}, respectively. σ_y = 0.2% offset yield strength at temperature or the Section III, Appendix I value at temperature.

(3) M_1 is the ratio of the flow stress (σf) used in the limit load calculation to the design stress (S_m). When using Tables A-5310-1 and A-5310-2 to evaluate the allowable flaw size, use M_1 = 2.4 and S_m = 18.1 ksi. When a different S_m is used, the procedures of A-6320 shall be used. When Z is calculated to be less than $M_1/2.4$, use $Z = M_1/2.4$

$A = [0.125(R/t) - 0.25]^{0.25}$ for $5 \le R/t \le 10$

$A = [0.4(R/t) - 3.0]^{0.25}$ for $10 < R/t \le 20$

where

P'_b = bending stress at incipient plastic collapse determined from A-5320

Z = load multiplier from Table A-6310-1 for specified material properties or from Table A-6310-2 for actual material properties

(SF) = safety factor

= 2.77 for normal operating (including upset and test) conditions

= 1.39 for emergency and faulted conditions.

The limits of applicability of this equation are

$$0.75 \geq a/t > \text{values of Table IWB-3514-1}$$

The allowable pipe bending stress shall be used in the acceptance criteria of para. 1.2(b) to determine the acceptability of the flawed pipe for continued service.

A-6400 AXIAL FLAWS

Allowable flaw depths for materials where J_{Ic} in the CL direction is not less than 600 in.-lb/in.^{2} shall be determined in accordance with A-6410. Alternatively, equations for allowable flaw depths given in A-6420 shall be satisfied using specified or actual (when available) material properties and actual piping system loadings. Tables of allowable flaw sizes for materials with the specified properties given in A-4212 are in course of preparation.

A-6410 Allowable Flaw Depths (Tabular Solution)

Allowable flaw depths for a given final flaw length in a material with J_{Ic} in the CL direction of 600 in.-lb/in.^{2} or greater for normal operating (including upset and test) conditions shall be obtained from Table A-6410-1 and for emergency and faulted conditions in Table A-6410-2. Using the maximum value of the normal operating condition pressure circumferential stress during the evaluation interval and the ℓ_f flaw parameter defined in A-3210, the maximum allowable flaw depth, a_n, of an axial flaw under these conditions shall be determined from Table A-6410-1. Similarly, the maximum allowable flaw depth, a_c, of an axial flaw under emergency and faulted conditions shall be determined from Table A-6410-2, using the maximum value of the applied circumferential stress for these conditions. The allowable flaw depths a_n and a_c shall be used in the acceptance criteria of para. 1.2(a) to determine the acceptability of the flawed pipe for continued service.

A-6420 Allowable Flaw Depths (Analytical Solution)

In course of preparation.

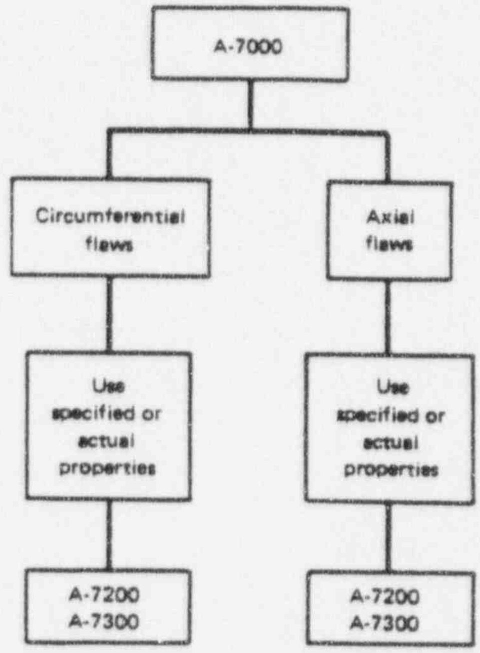


FIG. A-7200-1 FLOW CHART FOR MATERIALS MEETING THE LINEAR ELASTIC FRACTURE CRITERIA

A-7000 ALLOWABLE FLAW DEPTHS FOR FLAWED PIPE MEETING THE LEFM CRITERIA

A-7100 SCOPE

This Article provides the methodology for determining allowable flaw depths in flawed ferritic piping meeting the linear elastic fracture mechanics criteria of A-4000 when ductile crack extension does not occur prior to fracture. Solutions are given for both axial and circumferential flaws and are presented in the form of equations that shall be used with the material properties obtained in accordance with A-4211 or A-4212, for circumferential and axial flaws, respectively. Applied stresses shall include residual stresses.

A-7200 EVALUATION PROCEDURES

A flow chart for the evaluation options is given in Fig. A-7200-1 when the failure mode has been determined to be linear elastic fracture using the procedures of A-4000. The allowable flaw depth a_n or a_c shall be obtained by solving Eq. (5) for the flaw size a.

$$K_I = (J_{Ic}E'/1000)^{0.5} \tag{5}$$

where K_I contains the flaw size a and is defined for a circumferential flaw in A-7300 and for an axial flaw

TABLE A-6410-1 ALLOWABLE END-OF-EVALUATION PERIOD FLAW DEPTH-TO-THICKNESS RATIO FOR AXIAL FLAWS, NORMAL (INCLUDING UPSET AND TEST) CONDITIONS[1]

Stress Ratio [Note (2)]	Nondimensional Flaw Length, $\ell f/\sqrt{Rt}$ [Note (3)]														
	0.0	0.2	0.4	0.6	0.8	1.0	1.2	1.4	1.6	1.8	2.0	2.2	2.4	2.6	2.8
0.40	0.75	0.75	0.75	0.75	0.75	0.70	0.66	0.63	0.61	0.59	0.58	0.57	0.56	0.45	(4)
0.45	0.75	0.75	0.75	0.75	0.68	0.62	0.57	0.54	0.52	0.50	0.49	0.48	0.39	(4)	(4)
0.50	0.75	0.75	0.75	0.71	0.51	0.49	0.47	0.44	0.42	0.41	0.34	(4)	(4)	(4)	(4)
0.55	0.75	0.75	0.75	0.62	0.48	0.43	0.39	0.37	0.36	0.29	(4)	(4)	(4)	(4)	(4)
0.60	0.75	0.75	0.68	0.51	0.38	0.35	0.32	0.26	(4)	(4)	(4)	(4)	(4)	(4)	(4)
0.65	0.75	0.75	0.70	0.38	0.33	0.28	0.23	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)
0.70	0.75	0.70	0.59	0.30	0.27	0.19	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)
0.75	0.75	0.60	0.38	0.15	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)
0.80	0.75	0.50	0.12	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)

NOTES:
(1) $J_{Ic} \geq 600$ in.-lb/in² in the *CL* direction
(2) Stress Ratio = $(pD/2t)/18.1$
(3) ℓf = end of evaluation period flaw length
R = mean radius of the pipe
t = thickness
(4) Table IWB-3514-1 shall be used.

TABLE A-6410-2 ALLOWABLE END-OF-EVALUATION PERIOD FLAW DEPTH-TO-THICKNESS RATIO FOR AXIAL FLAWS, EMERGENCY AND FAULTED CONDITIONS[1]

Stress Ratio [Note (2)]	Nondimensional Flaw Length, $\ell f/\sqrt{Rt}$ [Note (3)]														
	0.0	0.2	0.4	0.6	0.8	1.0	1.2	1.4	1.6	1.8	2.0	2.2	2.4	2.6	2.8
0.80	0.75	0.75	0.75	0.75	0.75	0.70	0.66	0.63	0.61	0.59	0.58	0.57	0.56	0.45	(4)
0.95	0.75	0.75	0.75	0.75	0.68	0.62	0.57	0.54	0.52	0.50	0.49	0.48	0.39	(4)	(4)
1.00	0.75	0.75	0.75	0.71	0.51	0.49	0.47	0.44	0.42	0.41	0.34	(4)	(4)	(4)	(4)
1.10	0.75	0.75	0.75	0.62	0.48	0.43	0.39	0.37	0.36	0.29	(4)	(4)	(4)	(4)	(4)
1.20	0.75	0.75	0.68	0.51	0.38	0.35	0.32	0.26	(4)	(4)	(4)	(4)	(4)	(4)	(4)
1.30	0.75	0.75	0.70	0.38	0.33	0.28	0.23	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)
1.40	0.75	0.70	0.59	0.30	0.27	0.19	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)
1.50	0.75	0.60	0.38	0.15	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)
1.60	0.75	0.50	0.12	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)

NOTES:
(1) $J_{Ic} \geq 600$ in.-lb/in² in the *CL* direction
(2) Stress Ratio = $(pD/2t)/18.1$
(3) ℓf = end of evaluation period flaw length
R = mean radius of the pipe
t = thickness
(4) Table IWB-3514-1 hall be used.

in A-7400. The allowable flaw depth shall be used in the acceptance criteria of para. 1.2(a) to determine the acceptability of the flawed pipe for continued service.

Conversely, Eq. (5) may be rewritten as an equivalent criteria in terms of the stress intensity factor.

$$K_I \leq (J_{Ic}E'/1000)^{0.5}$$

For this criteria, the end of evaluation period flaw depth a_f shall be used to determine K_I in A-7300 and A-7400.

A-7300 CIRCUMFERENTIAL FLAWS

The stress intensity factor for a circumferential flaw (including the appropriate safety factor) is

$$K_I = K_{Im} + K_{Ib} + K_{Ir}$$

where

$K_{Im} = (SF)[P/(2\pi Rt)](\pi a)^{0.5}F_m$

$K_{Ib} = [(SF)M/(\pi R^2 t) - P_e](\pi a)^{0.5}F_b$

(SF) = safety factor

= 2.77 for normal operating (including upset and test) conditions

= 1.39 for emergency and faulted conditions

and the other terms are defined in A-4221.1(a). Residual stresses shall be included with a safety factor of 1.0.

A-7400 AXIAL FLAWS

The stress intensity factor for an axial flaw (including the appropriate safety factor) is

$$K_I = K_{Im} + K_{Ir}$$

where

$$K_{Im} = (SF)\frac{pR}{t}(\pi a/Q)^{0.5}F$$

(SF) = safety factor

= 3.0 for normal operating (including upset and test) conditions

= 1.5 for emergency and faulted conditions

and the other terms are defined in A-4221.2(a). Residual stresses shall be included with a safety factor of 1.0.

Approval Date: March 14, 1991

See Numerical Index for expiration and any reaffirmation dates.

Case N-491
Alternative Rules for Examination of Class 1, 2, 3, and MC Component Supports of Light-Water Cooled Power Plants
Section XI, Division 1

Inquiry: What alternative examination requirements to those stated in Section XI, Division 1, Subsection IWF may be used when determining the component supports subject to examination and establishing requirements for component supports?

Reply: It is the opinion of the Committee that the following alternative rules may be used for determining component supports subject to examination and for establishing examination requirements for Class 1, 2, 3, and MC component supports under Subsection IWF, Section XI, Division 1.

TABLE OF CONTENTS

-1000 SCOPE AND RESPONSIBILITY

-1100 SCOPE

This Case provides alternative rules for inservice inspection of Class 1, 2, 3, and MC component supports.

-1200 COMPONENT SUPPORTS SUBJECT TO EXAMINATION AND TEST

-1210 Examination Requirements

The examination requirements shall apply to the following:

(a) piping supports;
(b) supports other than piping supports.

-1220 Snubber Inspection Requirements

The inservice inspection requirements for snubbers shall be in accordance with the requirements of IWF-5000.

-1230 Supports Exempt from Examination

Component supports exempt from the examination requirements of -2000 are those connected to components and items exempted from examination under IWB-1220, IWC-1220, IWD-1220, and IWE-1220. In addition, portions of supports that are inaccessible by being encased in concrete, buried underground, or encapsulated by guard pipe are also exempt from the examination requirements of -2000.

-1300 SUPPORT EXAMINATION BOUNDARIES

Support examination boundaries shall be in accordance with IWF-1300.

-2000 EXAMINATION AND INSPECTION

-2100 SCOPE

The requirements of this Case apply to the examination and inspection of component supports, but not to the inservice test requirements of IWF-5000.

-2200 PRESERVICE EXAMINATION

-2210 Initial Examination

(a) All examinations listed in Table -2500-1 shall be performed completely, once, as a preservice examination. These preservice examinations shall be extended to include 100% of all supports not exempted by -1230.

(b) Examinations for systems that operate at a temperature greater than 200°F during normal plant operation shall be performed during or following initial system heatup and cooldown. Other examinations may be performed prior to initial system heatup and cooldown.

-2220 Adjustment, Repair, and Replacement

(a) Prior to return of the system to service, the applicable examinations listed in Table -2500-1 shall be performed on component supports that have been adjusted in accordance with -3000, repaired, or replaced.

(b) For systems that operate at a temperature greater than 200°F during normal plant operation, the Owner shall perform an additional preservice examination on the affected component supports during or following the subsequent system heatup and cooldown cycle unless determined unnecessary by evaluation. This examination shall be performed during operation or at the next refueling outage.

-2400 INSPECTION SCHEDULE

-2410 Inspection Program

(a) Inservice examinations shall be performed either during normal system operation or plant outages.

(b) The required examinations shall be completed in accordance with the inspection schedule provided in Table -2410-1 or Table -2410-2.

(c) The inspection period specified in (b) above may be decreased or extended by as much as one year to enable an inspection to coincide with a plant outage, within the limitations of IWA-2400.

(d) Following completion of Program A after 40 years, successive inspection intervals shall follow the 10 year inspection interval of Program B.

-2420 Successive Inspections

(a) The sequence of component support examinations established during the first inspection interval shall be repeated during each successive inspection interval, to the extent practical.

(b) When a component support must be subjected to corrective measures in accordance with -3000, that support shall be reexamined during the next inspection period listed in the inspection schedules of the inspection programs of -2410.

(c) When additional corrective measures are not required during the next inspection period as a result of the examinations required by (b) above, the inspection schedule may revert to the requirements of (a) above.

TABLE -2410-1
INSPECTION PROGRAM A

Inspection Interval	Inspection Period, Calendar Years of Plant Service	Minimum Examinations Completed, %	Maximum Examinations Credited, %
1st	3	100	100
2nd	7	33	67
	10	100	100
3rd	13	16	34
	17	40	50
	20	66	75
	23	100	100
4th	27	8	16
	30	25	34
	33	50	67
	37	75	100
	40	100	. . .

TABLE -2410-2
INSPECTION PROGRAM B

Inspection Interval	Inspection Period, Calendar Years of Plant Service Within the Interval	Minimum Examinations Completed, %	Maximum Examinations Credited, %
1st	3	16	34
	7	50	67
	10	100	100
Successive	3	16	34
	7	50	67
	10	100	100

-2430 Additional Examinations

(a) When component supports must be subjected to corrective measures in accordance with -3000, the component supports immediately adjacent to those for which corrective action is required shall be examined. Also, the examinations shall be extended to include additional supports within the system, equal in number and of the same type and function as those scheduled for examination during the inspection period.

(b) When corrective measures in accordance with -3000 are required as a result of the additional examinations, the remaining component supports within the system of the same type and function as in (a) above shall be examined.

(c)(1) When corrective measures in accordance with -3000 are required as a result of the additional examinations in (b) above, examinations shall be extended to include all nonexempt supports potentially subject to the same failure modes that required corrective measures in accordance with (a) and (b) above.

(2) These additional examinations shall include nonexempt component supports in other systems when support failures requiring corrective measures indicate non-system-related support failure modes.

(d) When corrective measures are required by (c) above, the Owner shall examine those exempt component supports that could be affected by the same observed failure modes and could affect nonexempt components.

-2500 EXAMINATION REQUIREMENTS

The following shall be examined in accordance with Table -2500-1.

(a) mechanical connections to pressure retaining components and building structure;

(b) weld connections to building structure;

(c) weld and mechanical connections at intermediate joints in multiconnected integral and nonintegral supports;

(d) clearances of guides and stops, alignment of supports, and assembly of support items;

(e) hot or cold settings of spring supports and constant load supports;

(f) accessible sliding surfaces.

TAB[illegible]500-1
EXAMINAT[illegible]CATEGORIES

EXAMINATION CATEGORY F-A, SUPPORTS

Item[1] No.	Support Type Examined	Examination Requirements/ Fig. No.	Examination Method	Acceptance Standard	Extent of Examination (See -2500)	Frequency of Examination[4]
F1.10	Class 1 Piping Supports	IWF-1300-1	Visual, VT-3	-3410	25% of Class 1[2]	Each inspection interval
F1.20	Class 2 Piping Supports	IWF-1300-1	Visual, VT-3	-3410	15% of Class 2[2]	Each inspection interval
F1.30	Class 3 Piping Supports	IWF-1300-1	Visual, VT-3	-3410	10% of Class 3[2]	Each inspection interval
F1.40	Supports Other than Piping Supports (Class 1, 2, 3, and MC)	IWF-1300-1	Visual, VT-3	-3410	100% of the supports[3]	Each inspection interval

NOTES:

(1) Item numbers shall be categorized to identify support types by component support function (e.g., A = supports such as one-directional rod hangers; B = supports such as multidirectional restraints; and C = supports that allow thermal movement, such as springs).

(2) The total percentage sample shall be comprised of supports from each system (e.g., Main Steam, Feedwater, or RHR), where the individual sample sizes are proportional to the total number of nonexempt supports of each type and function within each system.

(3) For multiple components other than piping, within a system of similar design, function, and service, the supports of only one of the multiple components are required to be examined.

(4) To the extent practical, the same supports selected for examination during the first inspection interval shall be examined during each successive inspection interval.

-2510 Supports Selected for Examination

Component and piping supports shall be examined in accordance with Table -2500-1. Component supports to be examined shall be the supports of those components that are required to be examined under IWB-2500, IWC-2500, IWD-2500, and IWE-2500 by volumetric, surface, or visual (VT-1 or VT-3) examination methods. Piping supports to be examined shall be the supports of piping not exempted under IWB-1220, IWC-1220, IWD-1220, and IWE-1220.

-2520 Method of Examination

The methods of examination shall comply with those in Table -2500-1. Alternative methods of examination meeting the requirements of IWA-2240 may be used.

-3000 STANDARDS FOR EXAMINATION EVALUATIONS

-3100 EVALUATION OF EXAMINATION RESULTS

-3110 Preservice Examinations

-3111 General. The preservice examinations performed to meet the requirements of -2200 shall be evaluated by comparing the examination results with acceptance standards specified in -3400.

-3112 Acceptance

-3112.1 Acceptance by Examination. Component supports whose examinations do not reveal conditions described in -3410(a) shall be acceptable for service.

-3112.2 Acceptance by Correction. Component supports whose examinations reveal conditions described in -3410(a) shall be unacceptable for service until such conditions are corrected by one or more of the following:

(a) adjustment and reexamination in accordance with -2200 for conditions such as

(1) detached or loosened mechanical connections;

(2) improper hot or cold settings of spring supports and constant load supports;

(3) misalignment of supports; or

(4) improper displacement settings of guides and stops.

(b) repair in accordance with IWA-4000 and reexamination in accordance with -2200;

(c) replacement in accordance with IWA-7000 and reexamination in accordance with -2200.

-3112.3 Acceptance by Evaluation or Test. As an alternative to the requirement of -3112.2, a component support that is unacceptable for service may be analyzed or tested to the extent necessary to substantiate its integrity for its intended service. Records and reports shall meet the requirements of IWA-6000.

-3120 Inservice Examinations

-3121 General. Inservice nondestructive examinations performed during or at the end of successive inspection intervals to meet the requirements of Table -2500-1 and conducted in accordance with procedures of IWA-2200 shall be evaluated by comparing the results of examinations with the acceptance standards specified in -3400.

-3122 Acceptance

-3122.1 Acceptance by Examination. Component supports whose examinations do not reveal conditions described in -3410(a) shall be acceptable for continued service. Verified changes or conditions from prior examinations shall be recorded in accordance with IWA-6220.

-3122.2 Acceptance by Correction. Component supports whose examinations reveal conditions described in -3410(a) shall be unacceptable for continued service until such conditions are corrected by one or more of the following:

(a) adjustment and reexamination in accordance with -2200 for conditions such as

(1) detached or loosened mechanical connections;

(2) improper hot or cold settings of spring supports and constant load supports;

(3) misalignment of supports; or

(4) improper displacement settings of guides and stops.

(b) repair in accordance with IWA-4000 and reexamination in accordance with -2200;

(c) replacement in accordance with IWA-7000 and reexamination in accordance with -2200.

E **-3122.3 Acceptance by Evaluation or Test.** As an alternative to the requirement of -3122.2, a component support or portion of a component support which is unacceptable for continued service may be analyzed and/or tested to the extent necessary to substantiate its integrity for its intended service. Records and reports shall meet the requirements of IWA-6000.

E -3200 SUPPLEMENTAL EXAMINATIONS

Examinations that detect conditions that require evaluation in accordance with the requirements of -3100 may be supplemented by other examination methods and techniques (IWA-2000) to determine the character of the flaw (i.e., size, shape, and orientation). Visual examinations that detect surface flaws that exceed -3400 criteria shall be supplemented by either surface or volumetric examination.

-3400 ACCEPTANCE STANDARDS

-3410 Acceptance Standards — Component Support Structural Integrity

(a) Component support conditions which are unacceptable for continued service shall include the following:

(1) deformations or structural degradations of fasteners, springs, clamps, or other support items;

(2) missing, detached, or loosened support items;

(3) arc strikes, weld splatter, paint, scoring, roughness, or general corrosion on close tolerance machined or sliding surfaces;

(4) improper hot or cold settings of spring supports and constant load supports; E

(5) misalignment of supports;

(6) improper clearances of guides and stops.

(b) Except as defined in (a) above, the following are examples of non-relevant conditions:

(1) fabrication marks (e.g., from punching, layout, bending, rolling, and machining);

(2) chipped or discolored paint;

(3) weld splatter on other than close tolerance machined or sliding surfaces;

(4) scratches and surface abrasion marks;

(5) roughness or general corrosion which does not reduce the load bearing capacity of the support;

(6) general conditions acceptable by the material, Design, or Construction Specifications.

See Numerical Index for expiration and any reaffirmation dates.

Case N-495
Hydrostatic Testing of Relief Valves
Section XI, Division 1

Inquiry: What alternative rules to those stated in Section XI, Division 1, IWC-5222, and IWD-5223 may be used when a relief valve is removed and is not subjected to a system hydrostatic test?

Reply: It is the opinion of the Committee that, as an alternative to the requirements of Section XI, Division 1, IWC-5222, and IWD-5223, a relief valve may be removed and not subjected to a system hydrostatic test when the following requirements are met.

(a) The relief valve functional testing meets the requirements of Subsection IWV.

(b) When the relief valve is reinstalled, a system inservice pressure test is performed on the mechanical joint in accordance with IWC-5221 or IWD-5221, as applicable.

Approval Date: March 14, 1991

See Numerical Index for expiration and any reaffirmation dates.

Case N-496
E **Helical-Coil Threaded Inserts**
Section XI, Division 1

Inquiry: What rules apply to the use of helical-coil threaded inserts in pressure retaining items under Section XI, Division 1?

Reply: It is the opinion of the Committee that helical-coil threaded inserts may be used in pressure retaining items provided the following requirements are met:

(a) The installation of the helical-coil threaded insert shall be performed in accordance with IWA-7000 and IWB-7000, IWC-7000, or IWD-7000, as applicable.

(b) The helical-coil threaded insert shall satisfy the design requirements of the Construction Code for the specified loadings to be applied to the threaded connection. For materials not listed in the Construction Code, primary stresses shall not exceed [illegible] of the minimum specified yield strength or $1/4$ of the minimum specified tensile strength of the applicable material, whichever is lower.

(c) The helical-coil threaded insert shall be purchased in accordance with the Owner's Quality Assurance Program. The supplier shall be evaluated for compliance with NCA-3800 or 10CFR50, Appendix B.

(d) Helical-coil threaded inserts shall be supplied with a Certified Material Test Report that provides traceability to the item, material specification, grade or class, mechanical properties, and heat treated condition.

(e) Helical-coil threaded inserts shall be installed in accordance with the manufacturer's instructions. E

(f) Use of this Case shall be documented in the appropriate Owner's Report.

Approval Date: May 11, 1994

See Numerical Index for expiration
and any reaffirmation dates.

Case N-498-1
Alternative Rules for 10-Year System Hydrostatic Testing for Class 1, 2, and 3 Systems
Section XI, Division 1

Inquiry: What alternative rules may be used in lieu of those required by Section XI, Division 1, Table IWB-2500-1, Category B-P, Table IWC-2500-1, Category C-H, and Table IWD-2500-1, Categories D-A, D-B, and D-C, as applicable, for the 10-year system hydrostatic test?

Reply:

(a) It is the opinion of the Committee that as an alternative to the 10-year system hydrostatic test required by Table IWB-2500-1, Category B-P, the following rules shall be used.

(1) A system leakage test (IWB-5221) shall be conducted at or near the end of each inspection interval, prior to reactor startup.

(2) The boundary subject to test pressurization during the system leakage test shall extend to all Class 1 pressure retaining components within the system boundary.

(3) Prior to performing the VT-2 visual examination, the system shall be pressurized to nominal operating pressure for at least 4 hours for insulated systems and 10 minutes for noninsulated systems. The system shall be maintained at nominal operating pressure during performance of the VT-2 visual examination.

(4) Test temperatures and pressures shall not exceed limiting conditions for the hydrostatic test curve as contained in the plant Technical Specifications.

(5) The VT-2 visual examination shall include all components within the boundary identified in (a)(2) above.

(6) Test instrumentation requirements of IWA-5260 are not applicable.

(b) It is the opinion of the Committee that, as an alternative to the 10-year system hydrostatic test required by Table IWC-2500-1, Category C-H, the following rules shall be used.

(1) A system pressure test shall be conducted at or near the end of each inspection interval or during the same inspection period of each inspection interval of Inspection Program B.

(2) The boundary subject to test pressurization during the system pressure test shall extend to all Class 2 components included in those portions of systems required to operate or support the safety system function up to and including the first normally closed valve, including a safety or relief valve, or valve capable of automatic closure when the safety function is required.

(3) Prior to performing the VT-2 visual examination, the system shall be pressurized to nominal operating pressure for a minimum of 4 hours for insulated systems and 10 minutes for noninsulated systems. The system shall be maintained at nominal operating pressure during performance of the VT-2 visual examination.

(4) The VT-2 visual examination shall include all components within the boundary identified in (b)(2) above.

(5) Test instrumentation requirements of IWA-5260 are not applicable.

(c) It is the opinion of the Committee that, as an alternative to the 10-year system hydrostatic test required by Table IWD-2500-1, Categories D-A, D-B, or D-C (D-B for the 1989 Edition with the 1991 and subsequent Addenda), as applicable, the following rules shall be used.

(1) A system pressure test shall be conducted at or near the end of each inspection interval or during the same inspection period of each inspection interval of Inspection Program B.

(2) The boundary subject to test pressurization during the system pressure test shall extend to all Class 3 components included in those portions of systems required to operate or support the safety system function up to and including the first normally closed valve, including a safety or relief valve, or valve capable of automatic closure when the safety function is required.

(3) Prior to performing the VT-2 visual examination, the system shall be pressurized to nominal operating pressure for at least 4 hours for insulated systems and 10 minutes for noninsulated systems. The system shall be maintained at nominal operating pressure during performance of the VT-2 visual examination.

(4) The VT-2 visual examination shall include all components within the boundary identified in (c)(2) above.

(5) Test instrumentation requirements of IWA-5260 are not applicable.

Approval Date: February 5, 1992

See Numerical Index for expiration and any reaffirmation dates.

Case N-503
Limited Certification of Nondestructive Examination Personnel
Section XI, Division 1

Inquiry: When certifying nondestructive examination personnel in accordance with Section XI, Division 1, what alternative rules to those tabulated below may be used for limited certification of nondestructive examination personnel who are restricted to performing examinations of limited scope (i.e., limited operations or limited techniques within the method)?

Reply: It is the opinion of the Committee that the following alternative rules may be used for limited certification of nondestructive examination personnel who are restricted to performing examinations of limited scope (i.e., limited operations or limited techniques within the method). Topics that are not relevant for the limited certification may be deleted from the SNT-TC-1A or Appendix VII training outline and may be accompanied by a corresponding reduction in training hours, examination content, and number of examination questions. Only questions related to the limited training are required. In addition, required experience may be reduced by a corresponding amount. The specific methods and techniques covered by limited certification and the training, examination, and experience requirements for limited certification shall be defined in the written practice and documented in the individual's certification records.

Reference	Edition/Addenda	
	From	Up to and Including
IWA-2300(a)(2)	1977 Edition with Summer 1978 Addenda	1980 Edition
IWA-2300(a)(3)	1980 Edition with Winter 1980 Addenda	1987 Edition with the 1987 Addenda
IWA-2350	1987 Edition with the 1988 Addenda	1992 Edition

Approval Date: May 11, 1994

See Numerical Index for expiration
and any reaffirmation dates.

Case N-508-1
Rotation of Serviced Snubbers and Pressure Relief Valves for the Purpose of Testing
Section XI, Division 1

Inquiry: What alternative rules to those stated in IWA-4000 (IWA-7000 for Editions and Addenda prior to the 1991 Addenda) may be used when, for the purpose of testing, snubbers and pressure relief valves are rotated from stock and installed on components (including piping systems) within the Section XI boundary?

Reply: It is the opinion of the Committee that, as an alternative to the provisions of IWA-4000 (IWA-7000 for Editions and Addenda prior to the 1991 Addenda) and for the purpose of testing, snubbers and relief valves may be rotated from stock and installed on components (including piping systems) within the Section XI boundary provided the following requirements are met:

(a) Items being removed and installed shall be of the same design and construction;

(b) Items being removed shall have no evidence of failure at the time of removal;

(c) Items being rotated shall be removed and installed only by mechanical means;

(d) Items being installed shall previously have been in service;

(e) Preservice inspections and pressure tests shall be performed as required by IWA-4000 (IWA-7000 for Editions and Addenda prior to the 1991 Addenda);

(f) The Owner shall maintain a method of tracking the items to ensure traceability of inservice inspection and testing records;

(g) Use of an NIS-2 form is not required except as provided in (i) below;

(h) Testing of removed snubbers and pressure relief valves, including required sample expansions, shall be performed in accordance with the Owner's test program;

(i) Repair or replacement of removed items, when required, shall be performed in accordance with IWA-4000 (IWA-4000 or IWA-7000 for Editions and Addenda prior to the 1991 Addenda).

Approval Date: November 25, 1992

See Numeric Index for expiration and any reaffirmation dates.

Case N-509
Alternative Rules for the Selection and Examinaion of Class 1, 2, and 3 Integrally Welded Attachments Section XI, Division 1

Inquiry: What alternative requirements to those of IWB, IWC, and IWD may be used to select and examine integrally welded attachments?

Reply: It is the opinion of the Committee that the following rules may be used to select and examine integrally welded attachments:

(a) This Case is limited to Examination Categories B-H, B-K-1, C-C, D-A, D-B, and D-C.

(b) Class 1, 2, and 3 component supports shall be selected for examination in accordance with IWF of the 1989 Edition with the 1990 Addenda.

(c) Except for the selection of component supports for examination, all references to Section XI within this Case shall be from the edition and addenda specified in the Owner's Inservice Inspection Program.

1.0 SCOPE

These requirements apply to examination and sample selection of Class 1, 2, and 3 integrally welded attachments of vessels, piping, pumps, and valves listed in Table 2500-1 as follows:

(a) Table 2500-1, Examination Category B-K shall be used for Class 1 integrally welded attachments in Examination Categories B-H and B-K-1 of IWB.

(b) Table 2500-1, Examination Category C-C shall be used for Class 2 integrally welded attachments in Examination Category C-C of IWC.

(c) Table 2500-1, Examination Category D-A shall be used for Class 3 integrally welded attachments in Examination Categories D-A, D-B, and D-C of IWD.

1.1 Exemption Criteria

(a) The exemption criteria provided in IWB-1220, IWC-1220, and IWD-1220 may be applied to Class 1, 2, and 3 components respectively, with integrally welded attachments, required to be examined in accordance with Table 2500-1.

(b) Class 1, 2, and 3 integrally welded attachment examinations performed as a result of component support deformation cannot be credited under the requirements of IWB-2411 or IWB-2412, IWC-2411 or IWC-2412, and IWD-2411 or IWD-2412, respectively.

1.2 Inspection Schedule

Class 1, 2, or 3 integrally welded attachments selected for examination by sample selection criteria in accordance with Table 2500-1, Examination Categories B-K, C-C, and D-A, shall meet the requirements of IWB-2411 or IWB-2412, IWC-2411 or IWC-2412, or IWD-2411 or IWD-2412, repectively.

1.3 Additional and Successive Examinations

(a) Class 1, 2, and 3 additional and successive examination requirements of IWB-2430 and IWB-2420 for Class 1, IWC-2430 and IWC-2420 for Class 2 and 3 as applicable, shall be applied to integrally welded attachments whose examinations reveal flaws or relevant conditions that exceed the acceptance standards of IWB-3000, IWC-3000, and IWD-3000, respectively.

(b) When integrally welded attachments are examined as a result of identified component support deformation and the results of these examinations exceed the applicable acceptance standards listed above, additional or successive examinations shall be performed when determined necessary based on an evaluation by the Owner.

TABLE 2500-1
EXAMINATION CATEGORIES

EXAMINATION CATEGORY B-K, INTEGRAL ATTACHMENTS FOR CLASS 1 VESSELS, PIPING, PUMPS, AND VALVES

Item No.	Parts Examined[1]	Examination Requirements/ Fig. No.	Examination Method	Acceptance Standard	Extent of Examination[2,3]	Frequency of Examination[6]
B10.10	Pressure Vessels Integrally Welded Attachments	IWB-2500-13, -14, and -15	Surface[7]	IWB-3516	100% of required areas of each welded attachment	Each identified occurrence and each inspection interval[4]
B10.20	Piping Integrally Welded Attachments	IWB-2500-13, -14, and -15	Surface	IWB-3516	100% of required areas of each welded attachment	Each identified occurrence and each inspection interval[5]
B10.30	Pumps Integrally Welded Attachments	IWB-2500-13, -14, and -15	Surface	IWB-3516	100% of required areas of each welded attachment	Each identified occurrence and each inspection interval[5]
B10.40	Valves Integrally Welded Attachments	IWB-2500-13, -14, and -15	Surface	IWB-3516	100% of required areas of each welded attachment	Each identified occurrence and each inspection interval[5]

NOTES:

(1) Examination is limited to those integrally welded attachments that meet the following conditions:
  (a) the attachment is on the outside surface of the pressure retaining component;
  (b) the attachment provides component support as defined in NF-1110; and
  (c) the attachment weld joins the attachment either directly to the surface of the component or to an integrally cast or forged attachment to the component.

(2) The extent of the examination includes essentially 100% of the length of the attachment weld at each attachment subject to examination.

(3) Selected samples of integrally welded attachments shall be examined each inspection interval.

(4) In the case of multiple vessels of similar design, function and service, only one integrally welded attachment of only one of the multiple vessels shall be selected for examination.

(5) For piping, pumps, and valves, a sample of 10% of the welded attachments associated with the component supports selected for examination under the 1990 Addenda, IWF-2510 shall be examined.

(6) Examination is required whenever component support member deformation (e.g., broken, bent, or pulled out parts) is identified during operation, refueling, maintenance, examination, inservice inspection, or testing.

(7) For the configuration shown in Fig. IWB-2500-14, a volumetric examination of volume A-B-C-D from side (B-C) of the circumferential welds may be performed in lieu of the surface examination of surfaces A-D and B-C.

TABLE 2500-1 (CONT'D)
EXAMINATION CATEGORIES

EXAMINATION CATEGORY C-C, INTEGRAL ATTACHMENTS FOR CLASS 2 VESSELS, PIPING, PUMPS, AND VALVES

Item No.	Parts Examined[1]	Examination Requirements/ Fig. No.	Examination Method	Acceptance Standard	Extent of Examination[2,3]	Frequency of Examination[6]
C3.10	**Pressure Vessels** Integrally Welded Attachments	IWC-2500-5	Surface	IWC-3512	100% of required areas of each welded attachment	Each identified occurrence and each inspection interval[4]
C3.20	**Piping** Integrally Welded Attachments	IWC-2500-5	Surface	IWC-3512	100% of required areas of each welded attachment	Each identified occurrence and each inspection interval[5]
C3.30	**Pumps** Integrally Welded Attachments	IWC-2500-5	Surface	IWC-3512	100% of required areas of each welded attachment	Each identified occurrence and each inspection interval[5]
C3.40	**Valves** Integrally Welded Attachments	IWC-2500-5	Surface	IWC-3512	100% of required areas of each welded attachment	Each identified occurrence and each inspection interval[5]

NOTES:
(1) Examination is limited to those integrally welded attachments that meet the following conditions:
(a) the attachment is on the outside surface of the pressure retaining component;
(b) the attachment provides component support as defined in NF-1110; and
(c) The attachment weld joins the attachment either directly to the surface of the component or to an integrally cast or forged attachment to the component.
(2) The extent of the examination includes essentially 100% of the length of the attachment weld at each attachment subject to examination.
(3) Selected samples of integrally welded attachments shall be examined each inspection interval.
(4) In the case of multiple vessels of similar design, function and service, only one integrally welded attachment of only one of the multiple vessels shall be selected for examination.
(5) For piping, pumps, and valves, a sample of 10% of the welded attachments associated with the component supports selected for examination under the 1990 Addenda, IWF-2510 shall be examined.
(6) Examination is required whenever component support member deformation (e.g., broken, bent, or pulled out parts) is identified during operation, refueling, maintenance, examination, inservice inspection, or testing.

TABLE 2500-1 (CONT'D)
EXAMINATION CATEGORIES

EXAMINATION CATEGORY D-A, INTEGRAL ATTACHMENTS FOR CLASS 3 VESSELS, PIPING, PUMPS, AND VALVES

Item No.	Parts Examined[1]	Examination Requirements/ Fig. No.	Examination Method	Acceptance Standard	Extent of Examination[2,3]	Frequency of Examination[3,4]
D1.10	**Pressure Vessels** Integrally Welded Attachments	IWD-2500-1	Visual, VT-1	IWD-3000	100% of required areas of each welded attachment	Each identified occurrence and each inspection interval
D1.20	**Piping** Integrally Welded Attachments	IWD-2500-1	Visual, VT-1	IWD-3000	100% of required areas of each welded attachment	Each identified occurrence and each inspection interval
D1.30	**Pumps** Integrally Welded Attachments	IWD-2500-1	Visual, VT-1	IWD-3000	100% of required areas of each welded attachment	Each identified occurrence and each inspection interval
D1.40	**Valves** Integrally Welded Attachments	IWD-2500-1	Visual, VT-1	IWD-3000	100% of required areas of each welded attachment	Each identified occurrence and each inspection interval

NOTES:
(1) Examination is limited to those integrally welded attachments that meet the following conditions:
(a) the attachment is on the outside surface of the pressure retaining component;
(b) the attachment provides component support as defined in NF-1110; and
(c) the attachment weld joins the attachment either directly to the surface of the component or to an integrally cast or forged attachment to the component.
(2) The extent of the examination includes essentially 100% of the length of the attachment weld at each attachment subject to examination.
(3) Selected samples of integrally welded attachments shall be examined each inspection interval. All integrally welded attachments selected for examination shall be subject to corrosion, as determined by the Owner, such as the integrally welded attachments of the Service Water or Emergency Service Water systems. In the case of multiple vessels of similar design, function and service, the integrally welded attachments of only one of the multiple vessels shall be selected for examination. For integrally welded attachments of piping, pumps, and valves a 10% sample shall be selected for examination. This percentage sample shall be proportional to the total number of nonexempt integrally welded attachments connected to the piping, pumps, and valves, located within each system subject to these examinations.
(4) Examination is required whenever component support member deformation (e.g., broken, bent, or pulled out parts) is identified during operation, refueling, maintenance, examination, inservice inspection, or testing.

Approval Date: December 9, 1993

See Numerical Index for expiration and any reaffirmation dates.

Case N-522
Pressure Testing of Containment Penetration Piping
Section XI, Division 1

Inquiry: What alternative to the rules of Table IWC-2500-1, Category C-H may be used for pressure testing piping that penetrates a containment vessel, when the piping and isolation valves that are part of the containment system are Class 2 but the balance of the piping system is outside the scope of Section XI?

Reply: It is the opinion of the Committee that 10 CFR 50, Appendix J, may be used as an alternative to the rules in Table IWC-2500-1, Category C-H, for pressure testing piping that penetrates a containment vessel, when the piping and isolation valves that are part of the containment system are Class 2 but the balance of the piping system is outside the scope of Section XI?

Approval Date: August 9, 1993

See Numerical index for expiration and any reaffirmation dates.

Case N-524
Alternative Examination Requirements for Longitudinal Welds in Class 1 and 2 Piping
Section XI, Division 1

Inquiry: What alternative requirements may be applied to the surface and volumetric examination of longitudinal piping welds specified in Table IWB-2500-1, Examination Category B-J, Table IWC-2500-1, Examination Categories C-F-1 and C-F-2 (Examination Category C-F prior to Winter 1983 Addenda), and Table IWC-2520, Examination Category C-G (1974 Edition, Summer 1975 Addenda)?

Reply: It is the opinion of the Committee that the following shall apply:

(a) When only a surface examination is required, examination of longitudinal piping welds is not required beyond those portions of the welds within the examination boundaries of intersecting circumferential welds.

(b) When both surface and volumetric examinations are required, examination of longitudinal piping welds is not required beyond those portions of the welds within the examination boundaries of intersecting circumferential welds provided the following requirements are met.

(1) Where longitudinal welds are specified and locations are known, examination requirements shall be met for both transverse and parallel flaws at the intersection of the welds and for that length of longitudinal weld within the circumferential weld examination volume;

(2) Where longitudinal welds are specified but locations are unknown, or the existence of longitudinal welds is uncertain, the examination requirements shall be met for both transverse and parallel flaws within the entire examination volume of intersecting circumferential welds.

Approval Date: December 12, 1994
See Numeric Index for expiration and any reaffirmation dates.

Case N-535
Alternative Requirements for Inservice Inspection Intervals
Section XI, Division 1

Inquiry: What alternative to the requirements of IWA-2430(d) may be used for scheduling inservice inspections for components inspected under Program B?

Reply: It is the opinion of the Committee that the following requirements may be used in lieu of IWA-2430(d) for scheduling inservice inspections for components inspected under Inspection Program B:

(a) Each inspection interval may be reduced or extended by as much as one year. Adjustments shall not cause successive intervals to be altered by more than one year from the original pattern of intervals. If an inspection interval is extended, neither the start and end dates nor the inservice inspection program for the successive interval need be revised.

(b) Examinations may be performed to satisfy the requirements of the extended interval in conjunction with examinations performed to satisfy the requirments of the successive interval. However, an examination performed to satisfy requirements of either the extended interval or the successive interval shall not be credited to both intervals.

(c) That portion of an inspection interval described as an inspection period may be reduced or extended by as much as one year to enable an inspection to coincide with a plant outage. This adjustment shall not alter the requirements for scheduling inspection intervals.

(d) The inspection interval for which an examination was performed shall be indentified on examination records.