



Tennessee Valley Authority, Sequoyah Nuclear Plant, P.O. Box 2000, Soddy Daisy, Tennessee 37384

January 25, 2017

10 CFR 50.4  
10 CFR 50.55a

ATTN: Document Control Desk  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001

Sequoyah Nuclear Plant, Units 1 and 2  
Renewed Facility Operating License Nos. DPR-77 and DPR-79  
NRC Docket Nos. 50-327 and 328

**Subject: Submittal of Fourth Ten-Year Interval Inservice Inspection and Inservice Testing Program Plans**

- Reference:**
1. TVA letter to NRC dated November 18, 2015, "Sequoyah Nuclear Plant - American Society of Mechanical Engineers Operation and Maintenance Code Relief Requests for Fourth Ten-Year Inservice Test Interval"
  2. NRC letter to TVA dated May 12, 2016, "Sequoyah Nuclear Plant, Units 1 And 2 - Relief Requests RP-01, RP-02, RP-04, RP-06, RP-08, and RV-01 Related to the Inservice Testing Program, Fourth 10-Year Interval (CAC Nos. MF7099 and MF7100)"

In accordance with 10 CFR 50.55a, TVA is submitting the Inservice Program Plans for the fourth ten-year interval for Sequoyah Nuclear Plant (SQN), Units 1 and 2.

Enclosure 1 provides a copy of the Inservice Inspection (ISI) Program Plan in accordance with the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (B&PV), Section XI, IWA-1400(c), "Owner's Responsibility." The fourth ten-year interval began on May 1, 2016. The program has been updated to comply with the 2007 Edition and the 2008 Addenda of the ASME Section XI code.

By Reference Letter 1, TVA informed NRC, the fourth ten-year Inservice Testing (IST) Program Plan would be provided after approval of the requested reliefs. NRC approved the relief requests in Reference Letter 2. Enclosure 2 provides a copy of the IST Program Plan in accordance with the ASME Operation and Maintenance (OM) Code, ISTA-3200(a), "Administrative Requirements." The fourth ten-year interval began on September 1, 2016. The program has been updated to comply with the 2004 Edition and the 2006 Addenda of the ASME OM Code.

The program plans are attached for information only and do not require NRC approval. There are no regulatory commitments contained within this letter.

If there are any questions or if additional information is needed, please contact Mr. Michael McBrearty, Site Licensing Manager, at (423) 843-7170.

Sincerely,

A handwritten signature in black ink, appearing to read 'Gregory A. Boerschig', with a stylized flourish at the end.

Gregory A. Boerschig  
Site Vice President (Interim)  
Sequoyah Nuclear Plant

Enclosure:    1. Fourth Ten-Year Interval Inservice Inspection Program Plan  
                  2. Fourth Ten-Year Interval Inservice Testing Program Plan

cc: (w/ Enclosure)  
     NRC Regional Administrator - Region II  
     NRC Senior Resident Inspector - Sequoyah Nuclear Plant  
     NRC SQN Project Manager

## **ENCLOSURE 1**

### **Fourth Ten-Year Interval Inservice Inspection Program Plan**



Sequoyah Nuclear Plant

**Unit 1 & 2**

Surveillance Instruction

**0-SI-DXI-000-114.4**

**ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2**

Revision 0000

Quality Related

Level of Use: Information Use

Effective Date: 05-05-2016

Responsible Organization: PGM, Engineering Program Group

Prepared By: Jeremy W. Mayo

Approved By: Brandon Catalanotto

<b>SQN</b> <b>Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM</b> <b>UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4</b> <b>Rev. 0000</b> <b>Page 2 of 359</b>
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### **Current Revision Description**

#### Initial Revision

This is the initial program plan for the ASME Section XI Fourth 10 Year ISI Interval prepared to meet the 2007 Edition with the 2008 Addenda of ASME Section XI.

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## 1.0 INTRODUCTION

### 1.1 PURPOSE

In accordance with Title 10 Code of Federal Regulations (CFR) Part 50, 50.55a(g) this program implements and partially satisfies the requirements of the Sequoyah Nuclear Plant (SQN) ISI Program for both Unit 1 and Unit 2. This procedure also fulfills the requirements of NPG-SPP-09.1, Part A, "ASME Section XI Inservice Inspection and Augmented Nondestructive Examinations" and fulfills the inservice inspection and augmented inspections portion of NPG-SPP-09.1, Part F, "Risk-Informed Inspection and Augmented Inspection and Test Program Development and Implementation". This program is organized to comply with the Inservice Inspection (ISI) nondestructive examination (NDE) requirements of the 2007 Edition, 2008 Addenda of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, Division 1, Subsection IWA, IWB, IWC, IWD, IWE, and IWF.

This ISI/NDE Program is an administrative Surveillance Instruction (SI) employed to obtain data via NDE of ASME Section XI Code Class 1, 2, and 3 equivalent components to determine acceptance of components for continued service during operation and if a flaw is an isolated case or of a generic nature. It shall serve as TVA's ISI/NDE plan in accordance with the requirements of IWA-1400 for the Fourth ISI inspection interval.

This procedure specifies the number of components to be examined, the examination methods to be used and provides schedule tables from which specific items are scheduled for examination. These items are described and detailed in the interval schedules for planned inspections and tests, as revised by the ISI scan plans for each outage. Section 7.11 contains additional information.

### 1.2 SCOPE (APPLICABILITY)

This program outlines details for planning and implementing the Fourth 10-Year ISI Interval Program and NDE for ASME Section XI Code Class 1, 2, and 3 equivalent components and their supports at SQN in accordance with IWA- 2431, Inspection Program and the Risk-Informed Inservice Inspection (RI-ISI) Program in accordance with Code Case N-716-1 and IWA-2420(a) which requires that each inspection plan shall include the following:

- A. Inspection Period and Interval dates
- B. The Edition and Addenda that apply to the required examination and tests
- C. The classification and identification of components subject to examination and test

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## 1.2 SCOPE (APPLICABILITY) (continued)

D. Code Cases proposed for use and the extent of their application

Section XI, requirements for the Containment ISI (IWE/IWL) Program are covered by other instructions or procedures and are **NOT** part of this plan.

### NOTE

In accordance with 10 CFR 50.55a(g)(6)(ii)(B) Licensees do NOT have to submit to the NRC for approval of their containment inservice inspection programs that were developed to satisfy the requirements of Subsection IWE and Subsection IWL with specified conditions. The program elements and the required documentation must be maintained on site for audit.

Section XI Repair/Replacement Activities performed as a result of the implementation of this plan are in accordance with NPG-SPP-09.1.3.

All System Pressure Test requirements and examinations specified in this plan are in accordance with 0-TI-SPT-000-301.0.

Steam Generator Tube examinations that are specified in this plan are in accordance with 0-SI-SXI-068-114.3.

Refer to Attachment 7 for ASME Section XI Code Class Boundary Drawings and the ISI Drawings identifying the components and systems to be examined.

IWB-1220, IWC-1220, and IWD-1220 describe the Class 1, 2, and 3 components that are exempt from volumetric and surface examinations and for their supports IWF-1230 is used. Applicable exemption are found in Section 7.2.

Personnel responsible for performance of the examinations should familiarize themselves with the requirements of this plan prior to performing the examinations. Specifics concerning performance of NDE are NOT part of this plan, but are included in the Inspection Services Organization Programs Manual [Refer to Inspection and Examination Program (IEP) series].

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### 1.3 CODES OF RECORD AND CODE CASES

#### A. CURRENT CODE REQUIREMENTS

The Code of Record for the Fourth 10-Year ISI Interval of Unit 1 and Unit 2 is the 2007 Edition with 2008 Addenda of the ASME Boiler and Pressure Vessel Code, Section XI, Division 1 as required to be listed in this plan in accordance with IWA-2420(a)(2) and required in accordance with Title 10 Code of Federal Regulations (CFR) Part 50.55(a) Codes and Standards, Paragraph (g)(4), [10 CFR 50.55a(g)(4)], that is contained in Federal Register Notice (FRN) Vol. 79, No. 214 / November 5, 2014 / Rules and Regulations and became effective on December 5, 2014 as corrected by FRN / Vol. 79, No. 238 / December 11, 2014.

10 CFR 50.55a mandated additional requirements and/or exceptions are listed below along with the applicable 10 CFR 50 reference:

<b>10 CFR 50.55a Reference</b>	<b>Mandated Additional Requirements/Conditions</b>
10 CFR 50.55a(b)(2)(ii)	<p><b>Pressure-retaining welds in ASME Code Class 1 piping (applies to Table IWB-2500 and IWB-2500-1 and Category B-J).</b> The extent of examination for Examination Category B-J welds may be in accordance with the 1974 Edition, Summer 1975 Addenda of ASME Section XI. Extent of examination is defined as the criteria for the selection of the Class 1 Category B-J welds to be examined. The extent of examination specifies the length of weld to be examined.</p> <p><b>Compliance Note:</b> Code Case N-716-1 is being used in lieu of this alternative.</p>
10 CFR 50.55a(b)(2)(xiv)	<p><b>Section XI condition: Appendix VIII personnel qualification.</b> All personnel qualified for performing ultrasonic examinations in accordance with Appendix VIII must receive 8 hours of annual hands-on training on specimens that contain cracks. Licensees applying the 1999 Addenda through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section may use the annual practice requirements in VII-4240 of Appendix VII of Section XI in place of the 8 hours of annual hands-on training provided that the supplemental practice is performed on material or welds that contain cracks, or by analyzing prerecorded data from material or welds that contain cracks. In either case, training must be completed no earlier than 6 months prior to performing ultrasonic examinations at a licensee's facility.</p> <p><b>Compliance Note:</b> TVA Inspection and Examination Procedures (IEPs) are being used to meet his condition.</p>
10 CFR 50.55a(b)(2)(xviii)(A)	<p><b>NDE personnel certification: First provision.</b> Level I and II nondestructive examination personnel must be recertified on a 3-year interval in lieu of the 5-year interval specified in the 1997 Addenda and 1998 Edition of IWA-2314, and IWA-2314(a) and IWA-2314(b) of the 1999 Addenda through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section.</p> <p><b>Compliance Note:</b> TVA Inspection and Examination Procedures (IEPs) are being used to meet this condition.</p>

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### 1.3 CODES OF RECORD AND CODE CASES (continued)

<b>10 CFR 50.55a Reference</b>	<b>Mandated Additional Requirements/Conditions</b>
10 CFR 50.55a(b)(2)(xix)	<p><b>Section XI condition: Substitution of alternative methods.</b> The provisions for substituting alternative examination methods, a combination of methods, or newly developed techniques in the 1997 Addenda of IWA-2240 must be applied when using the 1998 Edition through the 2004 Edition of Section XI of the ASME BPV Code. The provisions in IWA-4520(c), 1997 Addenda through the 2004 Edition, allowing the substitution of alternative methods, a combination of methods, or newly developed techniques for the methods specified in the Construction Code are not approved for use. The provisions in IWA-4520(b)(2) and IWA-4521 of the 2008 Addenda through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section, allowing the substitution of ultrasonic examination for radiographic examination specified in the Construction Code are not approved for use.</p> <p><b>Compliance Note:</b> Since the 2007 Edition with the 2008 Addenda is being used for IWA-2240 in this plan, the remainder of this condition is being met in as noted in NPG-SPP-09.1.3, ASME Section XI Repair/Replacement Program.</p>
10 CFR 50.55a(b)(2)(xxi)(A)	<p><b>Table IWB–2500–1 examination requirements: First provision.</b> The provisions of Table IWB 2500–1, Examination Category B–D, Full Penetration Welded Nozzles in Vessels, Items B3.120 and B3.140 (Inspection Program B) of the 1998 Edition must be applied when using the 1999 Addenda through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section. A visual examination with magnification that has a resolution sensitivity to detect a 1-mil width wire or crack, utilizing the allowable flaw length criteria in Table IWB–3512–1, 1997 Addenda through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section, with a limiting assumption on the flaw aspect ratio (i.e., <math>a/l = 0.5</math>), may be performed instead of an ultrasonic examination.</p> <p><b>Compliance Note:</b> TVA Inspection and Examination Procedures (IEPs) are being used to meet this condition.</p>
10 CFR 50.55a(b)(2)(xxii)	<p><b>Section XI condition: Surface Examination.</b> The use of the provision in IWA-2220, "Surface Examination," of Section XI, 2001 Edition through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section, that allow use of an ultrasonic examination method is prohibited.</p> <p><b>Compliance Note:</b> TVA Inspection and Examination Procedures (IEPs) are being used to meet this condition.</p>

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### 1.3 CODES OF RECORD AND CODE CASES (continued)

<b>10 CFR 50.55a Reference</b>	<b>Mandated Additional Requirements/Conditions</b>
10 CFR 50.55a(g)(6)(ii)(D)(1)	<p><b>Augmented ISI requirements: Reactor vessel head inspections.</b> All licensees of pressurized water reactors must augment their inservice inspection program with ASME Code Case N-729-1, subject to the conditions specified in paragraphs (g)(6)(ii)(D)(2) through (6) of this section.</p> <p><b>(Program Note: (g)(6)(ii)(D)(4)</b> By September 1, 2009, ultrasonic examinations must be performed using personnel, procedures, and equipment that have been qualified by blind demonstration on representative mockups using a methodology that meets the conditions specified in paragraphs (g)(6)(ii)(D)(4)(i) through (iv), instead of the qualification requirements of Paragraph -2500 of ASME Code Case N-729-1. References herein to Section XI, Appendix VIII, must be to the <b>2004 Edition with no Addenda</b> of the ASME BPV Code.)</p> <p><b>Compliance Note:</b> TVA Inspection and Examination Procedures (IEPs) are being used to meet these conditions and the augmented requirements are in Attachments 10 and 11.</p>
10 CFR 50.55a(g)(6)(ii)(E)(1)	<p><b>Augmented ISI requirements: Reactor coolant pressure boundary visual inspections.</b> All licensees of pressurized water reactors must augment their inservice inspection program by implementing ASME Code Case N-722-1, subject to the conditions specified in paragraphs (g)(6)(ii)(E)(2) through (4) of this section. The inspection requirements of ASME Code Case N-722-1 do not apply to components with pressure retaining welds fabricated with Alloy 600/82/182 materials that have been mitigated by weld overlay or stress improvement.</p> <p><b>Compliance Note:</b> TVA Inspection and Examination Procedures (IEPs) are being used to meet these conditions and the augmented requirements are in Attachments 10 and 11 of this ISI plan.</p>
10 CFR 50.55a(g)(6)(ii)(F)(1)	<p><b>Augmented ISI requirements: Examination requirements for Class 1 piping and nozzle dissimilar-metal butt welds.</b> Licensees of existing, operating pressurized-water reactors as of July 21, 2011 shall implement the requirements of ASME Code Case N-770-1, subject to the conditions specified in paragraphs (g)(6)(ii)(F)(2) through (g)(6)(ii)(F)(10) of this section, by the first refueling outage after August 22, 2011.</p> <p><b>Compliance Note:</b> TVA Inspection and Examination Procedures (IEPs) are being used to meet these conditions and the augmented requirements are in Attachments 10 and 11 of this ISI plan.</p>

The SQN RI-ISI Program shall be utilized as outlined in Section 7.13 for the Fourth 10-Year ISI interval as an alternative inspection program. This program describes an acceptable alternative approach to the existing ASME Section XI requirements for scope and frequency of piping and component weld inspections, and satisfies the criteria of Code Case N-716-1 providing an acceptable level of quality and safety by providing an alternative to the requirements of Subsections IWB and IWC for inservice inspection of Class 1 and 2 piping welds and Class 2 components.

<p align="center"><b>SQN</b> <b>Unit 1 &amp; 2</b></p>	<p align="center"><b>ASME SECTION XI ISI/NDE PROGRAM</b> <b>UNIT 1 AND UNIT 2</b></p>	<p align="center"><b>0-SI-DXI-000-114.4</b> <b>Rev. 0000</b> <b>Page 11 of 359</b></p>
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### **1.3 CODES OF RECORD AND CODE CASES (continued)**

The extent of examination for Class 1 and 2 piping welds and Class 2 components within the scope of Code Case N-716-1 for the Fourth 10-Year ISI Interval shall be in accordance with the RI-ISI Program. The extent of examination for other components and items shall remain in accordance with the requirements of ASME Section XI or as provided in NRC authorized alternative requests or granted relief requests. See Section 7.13 for the details of the RI-ISI Program.

#### **B. CODE CASES**

Code Cases used shall be implemented in their entirety unless otherwise accepted by NRC as stated in Regulatory Guide 1.147. When a Code Case is authorized for use by the NRC through an alternative request and the Code Case is subsequently published in the Regulatory Guide 1.147 and SQN intends to continue to implement the Code Case, SQN is to follow all provisions in the Code Case with conditions (limitation or modifications) issued in Regulatory Guide 1.147, if any.

As required to be listed in this plan in accordance with IWA-2420(a)(4) and IWA-2441(a), the following Code Cases were accepted for use by the NRC in Regulatory Guide 1.147, Revision 17, and are available and listed for use in this Plan for Sequoyah Unit 1 and Unit 2. These Code Cases at their current revision level may continue to be utilized until the end of the inspection interval, except when conditioned with (limitations or modifications) on the use of a Code Case that is necessary to enhance safety, as described in Section B of Regulatory Guide 1.147. Code Cases may be used provided all the provisions in each Code Case and its conditions (limitations or modifications) that are issued for acceptable use in Regulatory Guide 1.147, if any, are followed during the inspection interval.

Additionally, Code Cases N-722-1, N-729-1, and N-770 are Code Cases that are required for use in accordance with 10 CFR 50.55a and are addressed in Attachments 10 and 11.

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### 1.3 CODES OF RECORD AND CODE CASES (continued)

Code Case	Title/Conditions
N-432-1	<p><i>Repair Welding Using Automatic or Machine Gas Tungsten-Arc Welding (GTAW) Temper Bead Technique</i></p> <p>Applicability: 1971 Edition with the Summer 1973 Addenda up to and including 2013 Edition</p>
N-508-4	<p><i>Rotation of Serviced Snubbers and Pressure Retaining Items for the Purpose of Testing, Section XI, Division 1</i></p> <p>Applicability: 1989 Edition up to and including 2007 Edition with the 2008 Addenda</p> <p>When Section XI requirements are used to govern the examination and testing of snubbers and the ISI Code of Record is earlier than Section XI, 2006 Addenda, Footnote 1 shall not be applied.</p>
N-513-3	<p>Evaluation Criteria for Temporary Acceptance of Flaws in Moderate Energy Class 2 or 3 Piping, Section XI, Division 1</p> <p>Applicability: 1983 Edition with the Winter 1985 Addenda up to and including the 2007 Edition with the 2008 Addenda</p> <p>The repair or replacement activity temporarily deferred under the provisions of this Code Case shall be performed during the next scheduled outage.</p>
N-516-3	<p>Underwater Welding, Section XI, Division 1</p> <p>Applicability: 1977 Edition with the Summer 1978 Addenda up to and including the 2013 Edition</p> <p>Licensees must obtain NRC approval in accordance with 10 CFR 50.55a(z) regarding the technique to be used in the weld repair or replacement of irradiated material underwater.</p>
N-526	<p>Alternative Requirements for Successive Inspections of Class 1 and 2 Vessels, Section XI, Division 1.</p> <p>Applicability: 1974 Edition up to and including the 2010 Edition with the 2011 Addenda</p>
N-532-5	<p>Alternative Requirements to Repair and Replacement Documentation Requirements and Inservice Summary Report Preparation and Submission as Required by IWA-4000 and IWA-6000, Section XI, Division 1</p> <p>Applicability: 1995 Edition with the 1996 Addenda up to and including the 2010 Edition</p>

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### 1.3 CODES OF RECORD AND CODE CASES (continued)

Code Case	<i>Title/Conditions</i>
N-561-2	<p>Alternative Requirements for Wall Thickness Restoration of Class 2 and High Energy Class 3 Carbon Steel Piping, Section XI, Division 1</p> <p>Applicability: 1977 Edition up to and including the 2013 Edition</p> <p>(1) Paragraph 5(b): for repairs performed on a wet surface, the overlay is only acceptable until the next refueling outage.</p> <p>(2) Paragraph 7(c): if the cause of the degradation has not been determined, the repair is only acceptable until the next refueling outage.</p> <p>(3) The area where the weld overlay is to be applied must be examined using ultrasonic methods to demonstrate that no crack-like defects exist.</p> <p>(4) Piping with wall thickness less than the diameter of the electrode shall be depressurized before welding.</p>
N-562-2	<p>Alternative Requirements for Wall Thickness Restoration of Class 3 Moderate Energy Carbon Steel Piping, Section XI, Division 1</p> <p>Applicability: 1977 Edition up to and including the 2013 Edition</p> <p>(1) Paragraph 5(b): for repairs performed on a wet surface, the overlay is only acceptable until the next refueling outage.</p> <p>(2) Paragraph 7(c): if the cause of the degradation has not been determined, the repair is only acceptable until the next refueling outage.</p> <p>(3) The area where the weld overlay is to be applied must be examined using ultrasonic methods to demonstrate that no crack-like defects exist.</p> <p>(4) Piping with wall thickness less than the diameter of the electrode shall be depressurized before welding.</p>
N-569-1	<p>Alternative Rules for Repair by Electrochemical Deposition of Class 1 and 2 Steam Generator Tubing, Section XI, Division 1</p> <p>Applicability: 1977 Edition with the Summer 1978 Addenda up to and including the 2013 Edition</p> <p>NOTES: Steam generator tube repair methods require prior NRC approval through the Technical Specifications. This Code Case does not address certain aspects of this repair, e.g., the qualification of the inspection and plugging criteria necessary for staff approval of the repair method. In addition, if the user plans to "reconcile," as described in Footnote 2, the reconciliation is to be performed in accordance with IWA-4200 in the 1995 Edition, 1996 Addenda of ASME Section XI.</p>
N-586-1	<p>Alternative Additional Examination Requirements for Classes 1, 2, and 3 Piping, Components, and Supports, Section XI, Division 1.</p> <p>Applicability: 1977 Edition with the Summer 1978 Addenda up to and including the 2007 Edition with the 2008 Addenda</p>



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### 1.3 CODES OF RECORD AND CODE CASES (continued)

Code Case	<i>Title/Conditions</i>
N-600	Transfer of Welder, Welding Operator, Brazer, and Brazing Operator Qualifications Between Owners, Section XI, Division 1  Applicability: 1977 Edition with the Summer 1978 Addenda up to and including the 2010 Edition with the 2011 Addenda
N-613-1	Ultrasonic Examination of Penetration Nozzles in Vessels, Examination Category B-D, Item Nos. B3.10 and B3.90, Reactor Nozzle-to-Vessel Welds, Figs. IWB-2500-7(a), (b), and (c), Section XI, Division 1  Applicability: 1989 Edition with the 1989 Addenda up to and including 2007 Edition with the 2008 Addenda
N-629	Use of Fracture Toughness Test Data to Establish Reference Temperature for Pressure Retaining Materials, Section XI, Division 1  Applicability: 1977 Edition with the Summer 1978 Addenda up to and including the 2010 Edition with the 2011 Addenda
N-639	Alternative Calibration Block Material, Section XI, Division 1  Applicability: 1986 Edition with the 1878 Addenda up to and including 2013 Edition  Chemical ranges of the calibration block may vary from the materials specification if (1) it is within the chemical range of the component specification to be inspected, and (2) the phase and grain shape are maintained in the same ranges produced by the thermal process required by the material specification.
N-641	Alternative Pressure-Temperature Relationship and Low Temperature Overpressure Protection System Requirements, Section XI, Division 1  Applicability 1977 Edition with the Summer 1978 Addenda up to and including the 2013 Edition
N-643-2	Fatigue Crack Growth Rate Curves for Ferritic Steels in PWR Water Environment, Section XI, Division 1  Applicability: 1977 Edition with the Summer 1978 Addenda up to and including the 2013 Edition
N-648-1	Alternative Requirements for Inner Radius Examination of Class 1 Reactor Vessel Nozzles, Section XI Division 1  Applicability: 1977 Edition with the Summer 1978 Addenda up to and including the 2013 Edition  In lieu of a UT examination, licensees may perform a VT-1 examination in accordance with the code of record for the Inservice Inspection Program utilizing the allowable flaw length criteria of Table IWB-3512-1 with limiting assumptions on the flaw aspect ratio.
N-651	Ferritic and Dissimilar Metal Welding Using SMAW Temper Bead Technique Without Removing the Weld Bead Crown for the First Layer, Section XI, Division 1  Applicability: 1977 Edition with the Summer 1978 Addenda up to and including the 2013 Edition

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### 1.3 CODES OF RECORD AND CODE CASES (continued)

Code Case	Title/Conditions
N-661-2	<p>Alternative Requirements for Wall Thickness Restoration of Classes 2 and 3 Carbon Steel Piping for Raw Water Service, Section XI, Division 1</p> <p>Applicability: 1977 Edition up to and including the 2013 Edition</p> <p>(1) Paragraph 4(b): for repairs performed on a wet surface, the overlay is only acceptable until the next refueling outage.</p> <p>(2) Paragraph 7(c): if the cause of the degradation has not been determined, the repair is only acceptable until the next refueling outage.</p> <p>(3) The area where the weld overlay is to be applied must be examined using ultrasonic methods to demonstrate that no crack-like defects exist.</p> <p>(4) Piping with wall thickness less than the diameter of the electrode shall be depressurized before welding.</p>
N-705	<p>Evaluation Criteria for Temporary Acceptance of Degradation in Moderate Energy Class 2 or 3 Vessels and Tanks, Section XI, Division 1</p> <p>Applicability: 1983 Edition with the Winter 1985 Addenda up to and including the 2013 Edition</p>
N-712	<p>Class 1 Socket Weld Examinations, Section XI, Division 1</p> <p>Applicability: 1986 Edition up to and including the 2010 Edition with the 2011 Addenda</p>
N-716-1	<p>Alternative Piping Classification and Examination Requirements, Section XI, Division 1</p> <p>Applicability: 1995 Edition up to and including the 2013 Edition</p>
N-722-1	<p>Additional Examinations for PWR Pressure Retaining Welds in Class 1 Components Fabricated With Alloy 600/82/182 Materials, Section XI, Division 1</p> <p>Applicability: 1980 Edition up to and including the 2013 Edition – <b>NRC Mandatory</b></p> <p><b>10 CFR 50.55a(g)(6)(ii)(E)(1)</b>, All licensees of pressurized water reactors shall augment their inservice inspection program by implementing ASME Code Case N-722-1 subject to the <b>conditions specified in paragraphs (g)(6)(ii)(E)(2) through (g)(6)(ii)(E)(4)</b> of 10 CFR 50.55a. The inspection requirements of ASME Code Case N-722-1 do not apply to components with pressure retaining welds fabricated with Alloy 600/82/182 materials that have been mitigated by weld overlay or stress improvement.</p>
N-729-1	<p>Alternative Examination Requirements for PWR Reactor Vessel Upper Heads With Nozzles Having Pressure-Retaining Partial-Penetration Welds, Section XI, Division 1</p> <p>Applicability: 1980 Edition up to and including the 2004 Edition – <b>NRC Mandatory</b></p> <p><b>10 CFR 50.55a(g)(6)(ii)(D)(1)</b>, All licensees of pressurized water reactors shall augment their inservice inspection program with ASME Code Case N-729-1 subject to the <b>conditions specified in paragraphs (g)(6)(ii)(D)(2) through (6)</b> of 10 CFR 50.55a. Licensees of existing operating reactors as of September 10, 2008 shall implement their augmented inservice inspection program by December 31, 2008. Once a licensee implements this requirement, the First Revised NRC Order EA-03-009 no longer applies to that licensee and shall be deemed to be withdrawn. <b>NOTE:</b> Paragraph <b>(g)(6)(ii)(D)(4)</b> requires the use of the <b>2004 Edition of Section XI, Appendix VIII</b> with this Code Case.</p>
N-731	<p>Alternative Class 1 System Leakage Test Pressure Requirements, Section XI, Division 1</p> <p>Applicability: 1989 Edition up to and including the 2013 Edition</p>

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### 1.3 CODES OF RECORD AND CODE CASES (continued)

Code Case	<i>Title/Conditions</i>
N-735	Successive Inspection of Class 1 and 2 Piping Welds, Section XI, Division 1 Applicability: 1995 Edition with the 1996 Addenda up to and including the 2013 Edition
N-747	Reactor Vessel Head-to-Flange Weld Examinations, Section XI, Division 1 Applicability: 1989 Edition up to and including the 2013 Edition
N-751	Pressure Testing of Containment Penetration Piping, Section XI, Division 1 Applicability: 1989 Edition up to and including the 2013 Edition  When a 10 CFR 50, Appendix J, Type C test is performed as an alternative to the requirements of IWA-4540 (IWA-4700 in the 1989 edition through the 1995 edition) during repair and replacement activities, nondestructive examination must be performed in accordance with IWA-4540(a)(2) of the 2002 Addenda of Section XI.
N-765	Alternative to Inspection Interval Scheduling Requirements of IWA-2430, Section XI, Division 1 Applicability: 1989 Edition up to and including the 2007 Edition with the 2008 Addenda
N-770-1	Alternative Examination Requirements and Acceptance Standards for Class 1 PWR Piping and Vessel Nozzle Butt Welds Fabricated With UNS N06082 or UNS W86182 Weld Filler Material With or Without Application of Listed Mitigation Activities, Section XI, Division 1 Applicability: 1989 Edition up to and Including the 2013 Edition – <b>NRC Mandatory</b>  <b>10 CFR 50.55a(g)(6)(ii)(F)(1)</b> , Licensees of existing, operating pressurized-water reactors as of July 21, 2011 shall implement the requirements of ASME Code Case N-770-1, subject to the conditions specified in paragraphs <b>(g)(6)(ii)(F)(2)</b> through <b>(g)(6)(ii)(F)(10)</b> of <b>10 CFR 50.55a</b> , by the first refueling outage after August 22, 2011.

### C. CODE INTERPRETATIONS

Specific Code Interpretations that are used in this plan that correspond to the use of Section XI requirements are listed in the table below. Code Interpretations used by SQN as part of this plan are used with the understanding that they are neither reviewed or approved by the NRC.

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### 1.3 CODES OF RECORD AND CODE CASES (continued)

SECTION XI CODE INTERPRETATIONS USED			
Interpretation and Subject	Date Issued and File No.	Question and Reply	ISI Program Applicability
None at this time.	N/A	N/A	N/A
Notes: None			

#### D. HISTORY OF PSI AND ISI PROGRAMS

For Unit 1 and Unit 2 a Preservice Inspection (PSI) Program was **NOT** required. TVA performed a self-imposed PSI program in accordance with the 1974 Edition, Summer 1975 Addenda, of ASME Section XI. SI-114 was the PSI Program for SQN Units 1 and 2.

##### First 10-Year ISI Interval

The SQN Unit 1 operating license (low power) was issued on July 1, 1981. The first inspection interval ISI program was conducted in accordance with 1-SI-SXI-000-114.0 (July 1, 1981 through December 15, 1995). The first inspection interval was extended approximately 1171 days for resolution of environmental qualification concerns and another 415 days for resolution of erosion/corrosion issues, in accordance with IWA-2430 (e) with the unit continuously out of service. Excluding these out of service extensions the Unit 1 first inspection interval was extended by 42 days.

The SQN Unit 2 operating license (low power) was issued on June 1, 1982. The first inspection interval ISI program was conducted in accordance with 2-SI-SXI-000-114.0 (June 1, 1982 through December 15, 1995). The first inspection interval was extended approximately 996 days for resolution of environmental qualification concerns, and another 234 days for resolution of erosion/corrosion issues, in accordance with IWA-2430(e) with the unit continuously out of service. Excluding these out of service extensions, the unit 2 first inspection interval was extended by 63 days.

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### 1.3 CODES OF RECORD AND CODE CASES (continued)

#### Second 10-Year ISI Interval

The SQN Unit 1 and Unit 2 second inspection interval ISI Program was conducted in accordance with 0-SI-SXI-000-114.2 (December 16, 1995 thru May 31, 2006). The Unit 1 and Unit 2 Second 10-Year ISI Interval was extended by 167 days.

#### Third 10-Year ISI Interval

The SQN Unit 1 and Unit 2 third inspection interval ISI Program was conducted in accordance with 0-SI-SXI-000-114.3 (June 1, 2006 thru April 30, 2016). The Unit 1 and Unit 2 Third 10-Year ISI interval was reduced by 365 days and later extended by 335 days.

### 1.4 FREQUENCY INSPECTION INTERVAL AND INSPECTION PERIODS

The inservice examinations required by ASME Section XI shall be performed during each 10-year interval of service (inspection interval). The inspection intervals represent calendar years after the unit has been placed into commercial service. In accordance with IWA-2420(a)(1) the inspection period and interval dates for the Fourth 10-Year ISI Interval are listed in this section. The ISI examinations required by ASME Section XI, Division 1, IWA-2431, Inspection Program shall be performed during this inspection interval which is currently scheduled for (May 1, 2016 through April 30, 2025) for Unit 1 and Unit 2. The inspection interval may be decreased or extended by as much as one year to coincide with a plant outage, but is subject to the requirements in IWA-2430. See note below on inspection interval extensions.

#### NOTES

- 1) Any decrease or extension is to take into consideration the previous inspection interval extensions in section 1.3D. If the unit is out of service continuously for six months or more, the inspection interval may be extended for an equivalent period in accordance with IWA-2430(d).
- 2) The total extension for both the first and second inspection intervals for Unit 1 is 209 days and for Unit 2 is 230 days. The third inspection interval is being reduced by 31 days. The total extension for the first, second, and third inspection intervals is 178 days for Unit 1 and 199 days for Unit 2. The third interval reduction regains some of the 1 year margin while still allowing U2R20 to fall in the 3rd period of the 3rd interval.

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## 1.4 FREQUENCY INSPECTION INTERVAL AND INSPECTION PERIODS (continued)

### Fourth 10 Year ISI Interval Periods for Unit 1 and Unit 2

- First Period  
Class 1, 2 and 3 (5/1/2016 through 4/30/2019)
- Second Period  
Class 1, 2 and 3 (5/1/2019 through 4/30/2022)
- Third Period  
Class 1, 2 and 3 (5/1/2022 through 4/30/2025)

This SI may be performed in any mode and is applicable for all operational modes.

Except for examinations that may be deferred to the end of the inspection interval, the required examinations shall be performed in accordance with the following schedule that complies with IWB- 2411, Program and Table IWB-2411-1; IWC-2411, Program and Table IWC-2411-1; IWD-2411, Program and Table IWD-2411-1; IWF-2410 and Table IWF-2410-1 Inspection Program.

The examinations deferred to the end of the inspection interval shall be completed by the end of the inspection interval.

### **NOTE**

When examinations are limited due to design, configuration, interference etc., the item should be considered for substitution where possible with another item.

## 2.0 DEVELOPMENTAL REFERENCES

The following are developmental references classified as supporting documents and required to be listed by IWA-2425 in this plan.

### 2.1 SQN UNIT 1 TECHNICAL SPECIFICATIONS

SQN Unit 1 Technical Specifications Section 5.5.5

### 2.2 SQN UNIT 2 TECHNICAL SPECIFICATIONS

SQN Unit 2 Technical Specifications Section 5.5.5

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## **2.3 SEQUOYAH NUCLEAR PLANT UPDATED FINAL SAFETY ANALYSIS REPORT**

Sequoyah Nuclear Plant Updated Final Safety Analysis Report, 3.2, 5.2.6, 5.2.8, and 5.4.4

## **2.4 NRC DOCUMENTS**

- A. 10 CFR Part 50.55a, Code of Federal Regulations, Codes and Standards
- B. 10 CFR Part 50.2, Code of Federal Regulations, Definitions
- C. Regulatory Guide 1.14, Reactor coolant Pump flywheel Integrity
- D. Regulatory Guide 1.26, Quality Group Classification and Standards for Water, Steam, and Radioactive Waste Containing Components of Nuclear Power Plants
- E. Regulatory Guide 1.147, Inservice Inspection Code Case Acceptability ASME Section XI Division 1
- F. IE Bulletins
  - 1. NRC Bulletin 79-13, Cracking in Feedwater system piping
  - 2. NRC Bulletin 88-08, Thermal Stresses on Piping Connected to Reactor Coolant Systems, and Supplement 1
  - 3. NRC Bulletin 88-09 and Information Notice 87-44 Supplement 1, Thimble Tube Thinning in Westinghouse Reactors
  - 4. NRC Bulletin 2002-01, Reactor Pressure Vessel Head Degradation and Reactor Coolant Pressure Boundary Integrity
  - 5. NRC Bulletin 2004-01, Inspection of Alloy 82/182/600 Materials Used in the Fabrication of Pressurizer Penetrations and Steam Space Piping Connections at Pressurized Water Reactors. Referenced in section 14.0 of Attachments 10 and 11.

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## **2.4 NRC DOCUMENTS (continued)**

### **G. Information Notices**

1. Notice 87-44 supplement 1, Thimble Tube Thinning in Westinghouse Reactors
2. Notice 98-42, Implementation of 10CFR50.55a(g) Inservice Inspection Requirements
3. Notice 00-17, Crack in Weld Area of Reactor Coolant System Hot Leg Piping at V.C. Summer
4. Notice 01-05, Through-Wall Circumferential Cracking of Reactor Pressure Vessel Head Control Rod Drive Mechanism Penetration Nozzles at Oconee Nuclear Station, Unit 3
5. Notice 01-09, Main Feedwater System Degradation in Safety-Related ASME Code Class 2 Piping Inside the Containment of a Pressurized Water Reactor
6. Notice 02-11, Recent Experience with Degradation of Reactor Pressure Vessel Head
7. Notice 02-13, Possible Indicators of Ongoing Reactor Pressure Vessel Head Degradation
8. Notice 03-11, Leakage Found on Bottom-Mounted Instrumentation Nozzles
9. Notice 04-08, Reactor Coolant Pressure Boundary Leakage Attributable to Propagation of Cracking in Reactor Vessel Nozzle Welds
10. Notice 04-09, Corrosion of Steel Containment and Containment Liner
11. Notice 04-11, Cracking in Pressurizer Safety and Relief Nozzles and in Surge Line Nozzle
12. Notice 09-04, Age-Related Constant Support Degradation
13. Notice 10-12, Containment Liner Corrosion
14. Notice 11-15, Steel Containment Degradation and Associated License Renewal Aging Management Issues
15. Notice 13-19, Quasi-Laminar Indications in Reactor Pressure Vessel Forgings
16. Notice 14-02, Failure to Properly Pressure Test Reactor Vessel Flange Leak-Off Lines



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## **2.4 NRC DOCUMENTS (continued)**

17. Notice 14-07, Degradation of Leak-Chase Channel Systems for Floor Welds of Metal Containment Shell and Concrete Containment Metallic Liner

### **H. Safety Evaluation Reports**

1. Safety Evaluation Report, Sequoyah Nuclear Plants, Units 1 and 2, and Watts Bar Nuclear Plant, Unit 1, Request for Relief G-RR-1 Regarding Preemptive Weld Overlays On Pressurizer Nozzles, (TAC Nos. MD 2381, MD2382, and MD2383), RIMS L44 070614 000.
  2. Safety Evaluation Report, Sequoyah Nuclear Plant, Units 1 and 2- Requests for Alternatives 13-ISI-1 and 13-ISI-2 to Extend the Reactor Vessel Weld Inservice Inspection Interval (TAC NOS. MF2900 and MF2901)
  3. Safety Evaluation Report, Sequoyah Nuclear Plant, Units 1 and 2-Relief Request 11-SPT-1 for Alternative System Leakage Test (TAC NOS. MF2327 and MF2328)
- I. Federal Register, Volume 79, No. 214 / November 5, 2014 / Rules and Regulations and became effective on December 5, 2014 as corrected by FRN / Vol. 79, No. 238 / December 11, 2014.
- J. Amendment to the Technical Specifications - Memorandum from R.W. Hernan, NRC, to J.A. Scalice, dated March 8, 2002, "Sequoyah Nuclear Plant, Units 1 and 2 - Issuance of Amendments Regarding the Reactor Coolant Pump Flywheel Inspection Program (TAC NOS. MB3823 and MB3824) (TS 01-13)"
- K. Amendment to the Technical Specifications - Memorandum from Robert J. Pascarelli, NRC, to Karl W. Singer, dated July 8, 2004, "Sequoyah Nuclear Plant, Units 1 and 2 - Issuance of Amendments Regarding Extending the Inspection Interval for Reactor Coolant Pump Flywheels (TAC NOS. MC2448 and MC2449) (TS 04-02)" (L44 040721 005)

## **2.5 PLANT PROCEDURES & INSTRUCTIONS**

### **A. Technical Instructions**

1. 0-TI-GXX-000-000.0, Plant Modifications and Design Change Control
2. 0-TI-SPT-000-301.0, ASME Section XI Pressure Testing Program Basis Document

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## **2.5 PLANT PROCEDURES & INSTRUCTIONS (continued)**

### **B. Surveillance Instructions**

1. 0-SI-SXI-068-114.3, Steam Generator Tubing Inservice Inspection and Augmented Inspections
2. 0-PI-OPS-000-011.0, Containment Access Control During Modes 1-4

### **C. SQN Maintenance Instructions**

1. 0-MI-MRR-068-005.0, Removal of Reactor Pressure Vessel Head and Attachments
2. 0-MI-MVV-000-008.0, Maintenance of Safety and Quality Related Valves
3. 2-MI-MXX-068-003.0, Removal and Installation of Steam Generator Primary Manway Covers
4. 0-MI-MXX-068-004.0, Removal and Replacement of Pressurizer Manway Covers
5. MI-2.8, Removal and Replacement of RCP Main and Seal Flange Bolts
6. MI-10.2.3, Removal, Inspection and Replacement of Reactor Coolant Pump Cartridge and Number 1 Seals
7. 1-MI-MXX-068-003.0, Removal and Installation of Steam Generator Primary Manway Covers

### **D. Inspection and Examination Procedures**

1. IEP-100, Administration of Nondestructive Examination (NDE) Procedures
2. IEP-101, Inspection Services Organization (ISO) Administrative Procedure
3. IEP-200, Qualification and Certification Requirements for TVA Nuclear (TVAN) Nondestructive Examination (NDE) Personnel
4. IEP-201, Qualification And Certification Of Nuclear Quality Control Inspectors
5. IEP-202, Quality Control (QC) And Nondestructive Examination (NDE) Monitoring Program
6. IEP-203, Control of Calibration Standards
7. IEP-204, Qualification Review For Contract Suppliers Of Quality Control (QC)/Nondestructive Examination (NDE) Examiners

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## **2.5 PLANT PROCEDURES & INSTRUCTIONS (continued)**

8. IEP-205, Radiographic Film Processing, Handling, And Storage Of TVA Radiographs And Acceptance Of Contractor Radiographs
9. IEP-206, Administration Of Model Inspection Plans (MIPS)
10. IEP-207, Control of TVA NDE Equipment And Supplies
11. IEP-208, Administration Of Radiation Safety Procedures For Isotope Radiography And Electrical X-Ray Devices
12. IEP-210, Inspection Services Organization Indoctrination And Training
13. IEP-300, Qualification and Certification of Ultrasonic TVA Nuclear (TVAN) Personnel for Preservice and Inservice ASME Section XI Examinations
14. IEP-301, NDE/QC Personnel Eye Examination Procedure
15. IEP-400, Industrial Radiography Operating And Emergency Procedure
16. IEP-401, Inspection Services Organization Industrial Radiography Transportation Security Plan
17. IEP-410, Operation Of Computer Radiography System(s) Using Phosphor Imaging Plates
18. IEP-500, Surface Condition Assessment And Improvement Process For Dissimilar Metal Weld Ultrasonic Examinations

### **E. Standard Programs and Processes**

1. NPG-SPP-01.2, Administration of Site Technical Procedures
2. NPG-SPP-31.2, Records Management
3. NPG-SPP-22.3, Corrective Action Program
4. NPG-SPP-03.3, NRC Commitment Management
5. NPG-SPP-03.5, Regulatory Reporting Requirements
6. NPG-SPP-04.1, Procurement of Material, Labor and Services
7. NPG-SPP-07.2, Outage Management
8. NPG-SPP-06.9.1, Conduct of Testing
9. NPG-SPP-06.9.2, Surveillance Test Program

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## **2.5 PLANT PROCEDURES & INSTRUCTIONS (continued)**

10. NPG-SPP-09.1, ASME Section XI
  11. NPG-SPP-09.1.1, Written Practice for Qualification for Alternative VT-2 and VT-3 Personnel
  12. NPG-SPP-09.1.2, ASME Section XI Pressure Test Programs
  13. NPG-SPP-09.1.3, ASME Section XI Repair/Replacement Activities Program
  14. NPG-SPP-09.1.4, Inservice Inspection Database
  15. NPG-SPP-09.3, Plant Modifications and Design Change Control
  16. NPG-SPP-09.7, Corrosion Control Program
- F. Standard Department Procedures
1. QADP-1, Conduct of Quality Assurance Assessment
  2. BP-257, Integrated Material Issues Management Plan
- G. Periodic Instructions
1. 0-PI-DXI-000-116.2, ASME Section XI IWE/IWL Containment Inservice Inspection Program (CISI) Unit 1 and Unit 2
  2. 0-PI-SXI-000-300.0, ASME Section XI Inservice Pressure Test Scheduling and Tracking

## **2.6 DRAWINGS**

- A. ISI Drawings (See Attachment 7)

## **2.7 REFERENCE DOCUMENTS**

- A. ASME Boiler and Pressure Vessel Code, Section XI, Division 1, 1998 Edition.
- B. ASME Boiler and Pressure Vessel Code, Section XI, Division 1, 1995 Edition
- C. ASME Boiler and Pressure Vessel Code, Section XI, Division 1, 1998 Edition
- D. ASME Boiler and Pressure Vessel Code, Section XI, Division 1, 2001 Edition through the 2003 Addenda

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## 2.7 REFERENCE DOCUMENTS (continued)

- E. ASME Boiler and Pressure Vessel Code, Section XI, Division 1, 2004 Edition
- F. ASME Section XI Code Cases as listed in section 1.3.
- G. Design Change Notice Drawing Deviation F-07706-A (B85 911107 124). Referenced in Attachments 10 and 11.
- H. Incident Investigation (II) No. II-S-92-027. Referenced in Attachments 10 and 11.
- I. N/A
- J. Memorandum from J. F. Murdock to J. B. Hosmer, dated June 3, 1988 (L29 880531 914). Referenced in Attachments 10 and 11.
- K. Memorandum from R. W. Fortenberry to S. J. Smith, dated July 21, 1988 (S57 880721 821). Referenced in Attachments 10 and 11.
- L. Memorandum from P. G. Trudel to S. J. Smith, dated August 19, 1988 (B25 880819 014). Referenced in Attachments 10 and 11.
- M. Memorandum from M. J. Ray to NRC, dated August 24, 1988 (L44 880824 802). Referenced in Attachments 10 and 11.
- N. Memorandum from L.E. Martin to P.G. Trudel, dated August 30, 1988 (S08 880830 843). Referenced in Attachments 10 and 11.
- O. Memorandum from P. G. Trudel to M. J. Ray, dated September 6, 1988 (B29 880906 008). Referenced in Attachments 10 and 11.
- P. Memorandum from P. G. Trudel to M. J. Burzynski, dated February 27, 1989 (B25 890227 002). Referenced in Attachments 10 and 11.
- Q. Memorandum from P.G. Trudel to M.J. Burzynski, dated April 20, 1990 (B25 900420 008). Referenced in Attachment 10.
- R. N/A
- S. Memorandum from J. E. Staub to G.L. Wade, dated November 29, 1993 (B25 931129 001). Referenced in Attachments 10 and 11.
- T. Memorandum from David E. Labarge, NRC to O.D. Kingsley Jr., dated March 15, 1994 (L44 940322 006). Referenced in Attachments 10 and 11.
- U. Memorandum from G. Bair to G. Wade dated January 23, 1996 (S57 960208 934). Referenced in Attachment 10 and 11.
- V. Augmented Nondestructive Examination Form, dated July 2, 1996 (B39 960703 001). Referenced in Attachment 11.
- W. Augmented Nondestructive Examination Form, dated October 24, 1996 (B38 961024 800). Referenced in Attachment 10.
- X. Augmented Nondestructive Examination Form, dated March 1, 2000 (B39 000305 001). Referenced in Attachment 10.

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## 2.7 REFERENCE DOCUMENTS (continued)

- Y. Augmented Nondestructive Examination Form, dated March 5, 2000 (B39 000306 001). Referenced in Attachment 10.
- Z. Augmented Nondestructive Examination Form, dated March 16, 2000 (B39 000316 001). Referenced in Attachment 11.
- AA. Augmented Nondestructive Examination Form, dated January 10, 2001 (B39 010111 001). Referenced in Attachment 10.
- BB. Augmented Nondestructive Examination Form, dated January 10, 2001 (B39 010111 002). Referenced in Attachment 11.
- CC. Augmented Nondestructive Examination Form, dated February 28, 2001 (B39 010228 001). Referenced in Attachment 10.
- DD. Augmented Nondestructive Examination Form, dated February 28, 2001 (B39 010228 002). Referenced in Attachment 11.
- EE. N/A
- FF. N/A
- GG. N/A
- HH. N/A
- II. N/A
- JJ. Telephone Call and Visit Report, Subject -Clarification of Nozzle Exam Area for Unit 1, dated January 26, 1994, (S57 020401 800). Referenced in Attachment 10.
- KK. N/A
- LL. N/A
- MM. N/A
- NN. Memorandum from Jeff Goulart to Gary N. Buchanan dated October 16, 2001 (S57 011016 800). Referenced in section 8.0 of Attachment 10 and section 11.0 of Attachment 11.
- OO. Augmented Nondestructive Examination Form, dated November 26, 2002 (S57 021126 800). Referenced in section 13.0 of Attachments 10 and 11.
- PP. N/A
- QQ. N/A
- RR. N/A
- SS. N/A
- TT. N/A
- UU. N/A
- VV. N/A

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## 2.7 REFERENCE DOCUMENTS (continued)

- WW. Memorandum from Civil Engineering to Component Engineering, "SQN U1: Cancel Augmented Examination of Steam Generator Class 2 Upper Support", dated July 8, 2003, (B39 030708 001). Referenced in Attachment 10.
- XX. Memorandum from Civil Engineering to Component Engineering, "SQN U1 and U2: Cancel Augmented Examination of Reactor Coolant Pump Supports", dated July 10, 2003, (B39 030710 001). Referenced in Attachments 10 and 11.
- YY. NRC internal letter to Cynthia D. Pederson, from Ledyard B. Marsh, dated May 27, 2003 (NRC database ADAMS Accession No. ML030310355). Referenced in section 7.4.2 and 7.4.2E.
- ZZ. N/A
- AAA. N/A
- BBB. N/A
- CCC. N/A
- DDD. N/A
- EEE. Augmented Nondestructive Examination Form, dated March 18, 2004 (B38 040318 808). Referenced in Attachments 10 and 11.
- FFF. Augmented Nondestructive Examination Form, dated March 22, 2004 (B38 040322 801). Referenced in Attachments 10 and 11.
- GGG. N/A
- HHH. Augmented Nondestructive Examination Form, dated July 19, 2004 (B38 040719 800). Referenced in Attachments 10 and 11.
- III. N/A
- JJJ. Augmented Nondestructive Examination Form, dated December 6, 2004 (B38 041206 800). Referenced in Attachment 10.
- KKK. Augmented Nondestructive Examination Form, dated April 12, 2005 (B38 050412 800). Referenced in Attachment 11.
- LLL. N/A
- MMM. N/A
- NNN. Augmented Nondestructive Examination Form, dated December 9, 2005 (B38 051209 800). Referenced in Attachments 10 and 11.
- OOO. N/A
- PPP. N/A

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## **2.7 REFERENCE DOCUMENTS (continued)**

- QQQ. ASME Section XI, 2004 Edition through the 2005 Addenda (Reference Third Interval Relief Request G-RR-1). Referenced in Attachments 10 and 11.
- RRR. N/A
- SSS. N/A
- TTT. N/A
- UUU. N/A
- VVV. N/A
- WWW. TVA Letter to NRC, dated December 22, 2014, "Notification of Intent to Use Code Case N-716-1, L44 141222 003. Referenced in Section 7.13.4

## **2.8 CALCULATIONS**

- A. TVA Calculation SQN-SQTP-001 ASME Section XI Inservice Code Class Boundaries for Second 10 year Interval."

## **2.9 ABBREVIATIONS AND DEFINITIONS**

- ALARA - As Low As Reasonably Achievable
- ASNT - American Society for Nondestructive Testing
- ASME - American Society of Mechanical Engineers
- CFR - Code of Federal Regulations
- FRN - Federal Register Notice
- HSS - High Safety Significant
- IEP - Inspection and Examination Procedures
- ISI - Inservice Inspection
- LSS - Low Safety Significant
- N/A - Not Applicable
- NDE - Nondestructive Examination



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## **2.9 ABBREVIATIONS AND DEFINITIONS (continued)**

- NPS - Nominal Pipe Size
- NRC - Nuclear Regulatory Commission
- OAR - Owners Activity Report (Code Case N-532-5)
- OD - Outside Diameter
- PDI - Performance Demonstration Initiative
- PRA - Probabilistic Risk Assessment
- RADCON - Radiological Control
- RFA - Request for Alternative
- RFR - Request for Relief
- RI-ISI - Risk Informed - Inservice Inspection
- RWP - Radiation Work Permit
- SI - Surveillance Instruction
- SPP - Standard Programs and Processes
- WR/WO - Work Request/Work Order
- Components - Denotes items in a nuclear power plant such as a vessel, pump, valve, or piping system.
- Normal Plant Operation - The conditions of startup, hot standby, operation within the normal power range, and cooldown and shutdown of the plant.
- Normal Operating Conditions - The operating conditions during reactor startup, operation at power, hot standby, and reactor cooldown to cold shutdown conditions. Test conditions are excluded.
- Pressure Retaining Material - Applies to items such as vessel heads, nozzles, pipes, tubes, fitting, valve bodies, bonnets, disks, pump casings, covers, and bolting which join pressure-retaining items.
- Welded Attachment - Attachment on the outside surface of the pressure retaining component, provides component support as defined in NF-1100, and the attachment weld joins the attachment either directly to the surface of the component or to the integrally cast or forged attachment to the component.

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### **3.0 PREREQUISITES AND PRECAUTIONS**

#### **3.1 PREREQUISITES**

- A. When craft support of minor or similar maintenance (examples: scaffolding, insulation removal, buffing of welds, and cleaning bolts) is required to facilitate performance of this SI, a WR/WO may be used. This WR/WO shall be processed in accordance with NPG-SPP-06.1 Reference 2.5E.8.

Additional WRs are required to remove fire barrier insulation foam in sleeves, piping support clamps, steam generator insulation support rings, reactor coolant pump flywheel access covers and plugs, etc.

- B. Contact RADCON for radiation work permit (RWP)/ALARA preplanning requirements.
- C. Controlled copies of American Society of Mechanical Engineers (ASME) Section XI Code Classification Drawings and ISI Drawings are available in BSL.

#### **3.2 PRECAUTIONS**

- A. Read and observe all applicable precautions as indicated in SQN Surveillance Instruction 0-PI-OPS-000-011.0 "Containment Access Control During Modes 1-4," and NPG-SPP-06.5 "Foreign Material Control." References 2.5G.2 and 2.5E.10, respectively.
- B. Standard Safety Practice as outlined in the TVA Health and Safety Manual shall be followed.

### **4.0 SPECIAL TOOLS AND EQUIPMENT**

Equipment shall be specified by individual NDE Procedures.

### **5.0 ACCEPTANCE STANDARDS**

All acceptance standards for ASME Code Class 1, 2, and 3 equivalent components and their supports shall be in accordance with IWA-3000, IWB-3000, IWC-3000, IWD-3000, IWF-3000 of ASME Section XI; or Code Case N-716-1 for RI-ISI; and the Inspection Services Organization Programs Manuals.

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## 5.0 ACCEPTANCE STANDARDS (continued)

Evaluations of examinations in accordance with IWB-3132.3, IWB- 3142.4, IWC-3122.3, IWC-3132.3, or IWF-3122.3 shall be submitted to the regulatory authority having jurisdiction at the plant site as part of the Owners Activity Report (OAR) reporting requirements of Code Case N-532-5 and the results of any IWB-3600, IWC-3600, or IWD-3600 evaluations that have been completed and/or reviewed by the regulatory authority having jurisdiction at the plant site. See the NOTE below.

### NOTE

Evaluations of examinations performed in accordance with this plan contained in IWB-3600, IWC-3600, or IWD-3600 shall as required by Section XI be submitted to the regulatory authority having jurisdiction at the plant site (review or approval is not required). These submittals should be made as soon as possible when the evaluations are completed as they may affect startup during a refueling outage.

ACCEPTANCE STANDARDS		
Examination Category	Components and Parts Examined	Acceptance Standards
B-A	Welds in Reactor Vessel	IWB-3510
B-B	Welds in other Vessels	IWB-3510
B-D	Nozzle welds in vessels	IWB-3512
B-F	Rx vessel dissimilar metal welds	IWB-3514 or See Exam Cat. R-A, or Code Case N-770-1
B-G-1	Class 1 Bolting >2"	IWB-3515, IWB-3517
B-G-2	Class 1 Bolting ≤ 2"	IWB-3517
B-J	Welds in piping	IWB-3514 or See Exam Cat. R-A
B-K	Welded Attachments	IWB-3516
B-L-2	Pump Casings	IWB-3519
B-M-2	Valve Bodies	IWB-3519
B-N-1	Reactor Vessel Interior	IWB-3520.2

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## 5.0 ACCEPTANCE STANDARDS (continued)

ACCEPTANCE STANDARDS		
Examination Category	Components and Parts Examined	Acceptance Standards
B-N-2	Reactor Vessel Interior attachments within the beltline region and interior attachments beyond the beltline region	IWB-3520.1 and IWB-3520.2, respectively
B-N-3	Reactor Vessel removeable core support structures	IWB-3520.2
B-O	Welds in CRD housings	IWB-3523
B-P	Pressure Retaining Components	IWB-3522
C-A	Welds in pressure vessels	IWC-3510
C-B	Nozzle welds in vessels	IWC-3511
C-C	Welded attachments for Class 2 Pressure Vessels, Piping, Pumps, and Valves	IWC-3512
C-D	Class 2 Bolting >2" Diameter	IWC-3513
C-F-1	Welds in austenitic stainless steel or high alloy piping	IWC-3514 (IWB-3514) or See Exam Cat. R-A
C-F-2	Welds in carbon or low alloy steel piping	IWC-3514 (IWB-3514) or See Exam Cat. R-A
C-H	Pressure Retaining Components	IWC-3516 (IWB-3522)
D-A	Welded Attachments for Vessels Piping, Pumps, and Valves	IWD-3000 (IWC-3512)
D-B	All Pressure Retaining Components	IWD-3000 (IWC-3516)
R-A	Risk Informed Piping Examinations Code Case N-716-1 (Attachments 4 and 5)	IWB-3514

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## 6.0 QUALIFICATIONS OF NDE PERSONNEL

Personnel performing NDE operations shall be qualified and certified in accordance with IEP-200 and IEP-300 as applicable. Contract personnel performing NDE operations shall be qualified and certified either to IEP-200 or IEP-300, as applicable, or to the contractor's written practice with approval by TVA.

NDE personnel performing ultrasonic examinations of bolting and piping, Reactor Pressure Vessel welds, weld overlays, Reactor Pressure Vessel nozzles, and dissimilar metal welds are certified and qualified in accordance with the Performance Demonstrative Initiative (PDI) program.

## 7.0 IMPLEMENTATION AND RESPONSIBILITIES

Any revisions to this program initiated by other groups shall be submitted to Engineering Programs for approval prior to incorporating the revisions into this program.

Responsibilities shall be in accordance with NPG-SPP-09.1, Part A.

### 7.1 NDE EXAMINATIONS

- A. NDE methods shall be in accordance with IWA-2200 of ASME Section XI and this program as scheduled in Attachment 4 for Unit 1 and Attachment 5 for Unit 2.
- B. NDE shall be performed in accordance with Inspection Services Organization Programs Manuals or approved contractor/vendor procedures.
- C. In accordance with IWA-2600, 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 in accordance with applicable NDE procedures.
- D. When less than the required code examination volume or area is examined, the percentage examined shall be documented on the examination data sheet.

The cause of the limitation shall be clearly specified as a part of the data sheet documentation. The examination with less than the required ASME Section XI Code examination volume or area shall be handled as a request for relief in accordance with NPG-SPP-09.1, Part A.

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## 7.2 COMPONENTS SUBJECT TO EXAMINATION

### A. ASME CLASS 1 EQUIVALENT COMPONENTS SUBJECT TO EXAMINATION (IWB)

1. ASME Class 1 equivalent systems (including the components contained therein, but excluding supports) subject to examination per Unit are:

Chemical and Volume Control System

Reactor Coolant System

Reactor Coolant System Main Loop

Reactor Coolant Pumps (4)

Reactor Vessel

Pressurizer

Steam Generators (4)

Residual Heat Removal System

Safety Injection System

RI-ISI program identifies as HSS portions of the following systems: Chemical and Volume Control System, Feedwater System, High Pressure Fire Protection System, Raw Cooling Water System, Reactor Coolant System, Residual Heat Removal System, and Safety Injection System

2. Components are scheduled for examination in accordance with ASME Section XI, Table IWB-2500-1. Piping welds are scheduled for examination in accordance with N-716-1. The specific components subject to examination are described in Attachment 1 and identified on drawings listed in Attachment 7, Listing of Drawings. The number of components within each system, the number selected for examination during the inspection interval and the number selected for examination by period are provided in Tables A and E of Attachment 4 for Unit 1 and in Tables A and E of Attachment 5 for Unit 2. Tables E is for the RI-ISI Program using Code Case N-716-1. ASME Class 1 valves are further defined in Attachment 6 for Units 1 and 2.
3. Exemptions using the rules of IWB-1220.

The rules of IWB-1220 (a), (b), (c) and (d) have been used to exempt components and piping from examination and establish the numbers in Table A, of Attachment 4 for Unit 1 and Table A of Attachment 5 for Unit 2. Components and piping exempted from examination include:

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## 7.2 COMPONENTS SUBJECT TO EXAMINATION (continued)

- (1) Components that are connected to the reactor coolant system and part of the reactor coolant pressure boundary, and that are of such a size and shape so that upon postulated rupture the resulting flow of coolant from the reactor coolant system under normal plant operating conditions is within the capacity of makeup systems that are operable from on-site emergency power. The emergency core cooling systems are excluded from the calculation of makeup capacity. The reactor coolant normal makeup system has adequate capacity to makeup for RCS liquid leaks through a single 3/8" diameter orifice or RCS steam leaks through a single 3/4" diameter orifice.
  - (2) Components and piping segments of NPS 1 and smaller, except for steam generator tubing.
  - (3) Components and piping segments which have one inlet and one outlet, both of which are NPS 1 and smaller.
  - (4) Components and piping segments which have multiple inlets or multiple outlets whose cumulative pipe cross sectional area does not exceed the cross sectional area defined by the OD of NPS 1 pipe.
  - (5) Reactor vessel head connections and associated piping, NPS 2 and smaller, made inaccessible by control rod drive penetrations;
  - (6) Welds or portions of welds that are inaccessible due to being encased in concrete, buried underground, located inside a penetration, or encapsulated by guard pipe.
4. Examination Category B-A, B-B, B-D, B-G-1, B-G-2, B-K, B-L-2, B-M-2, B-N-1, B-N-2, B-N-3 and B-O components shall be selected for examination in accordance with 2007 Edition with the 2008 Addenda of ASME Section XI.
  5. Examination Categories B-F and B-J for the Fourth 10 Year ISI Interval, shall be in accordance with the RI-ISI examination requirements outlined in section 7.13 of this Program.
  6. The entire length of each weld selected shall be examined, unless otherwise noted or if a physical limitation exists.
  7. ASME Class 1 equivalent component supports shall be selected for examination in accordance with ASME Section XI Subsection IWF. See section 7.2D.

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## **7.2 COMPONENTS SUBJECT TO EXAMINATION (continued)**

8. Welded attachment examination is also 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.

### **B. ASME CLASS 2 EQUIVALENT COMPONENTS SUBJECT TO EXAMINATION (IWC)**

1. ASME Class 2 equivalent systems (including the components contained therein, but excluding supports) subject to examination per Unit are:

Containment Spray System

Containment Spray Heat Exchangers (2)

Containment Spray Pumps (2)

Feedwater System

High Pressure Safety Injection System (includes Safety Injection Residual Heat Removal, Containment Spray, and Chemical Volume Control)

Centrifugal Charging Pump (CCP) Tank [Boron Injection Tank (BIT)](1)

CVCS Centrifugal Charging Pumps (2)

Safety Injection Pumps (2)

Seal Water Filter

Seal Water Heat Exchanger

Seal Water Injection Filters (2)

Main Steam System

Residual Heat Removal System

RHR Heat Exchangers (2)

RHR Pumps (2)

Safety Injection System

Steam Generators Secondary Side (4)



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## 7.2 COMPONENTS SUBJECT TO EXAMINATION (continued)

2. Components and piping, except exam categories C-C and C-H, are scheduled for examination in accordance with Code Case N-716-1 outlined in section 7.13. The specific components subject to examination are described in Attachment 2 and identified on drawings listed in Attachment 7, Listing of Drawings. The number of components within each system, the number selected for examination during the inspection interval and the number selected for examination by period are provided in Tables B and E of Attachment 4 for Unit 1 and in Tables B and E of Attachment 5 Unit 2.
3. Examination Category C-C and C-H components shall be selected for examination in accordance with Table IWC-2500-1.
4. ASME Class 2 equivalent component supports shall be selected for examination in accordance with ASME Section XI Subsection IWF. See section 7.2D.
5. Welded attachments examination is also 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.
6. Where examinations specify a percentage of the total length of weld to be examined, the areas(s) examined shall be documented in the examination report. Where a percentage of weld length is **NOT** referenced, the entire weld length shall be examined.
7. IWC-1221 and IWC-1223 describe the class 2 components in RHR, ECC, and Containment Heat Removal systems exempt from volumetric and surface examinations. Applicable exemptions are as follows.
  - a. For RHR, ECC, and Containment Heat Removal systems, except High Pressure Safety Injection, components and piping segments NPS 4 and smaller;
  - b. Components and piping segments which have one inlet and one outlet, both of which are NPS 4 and smaller; and
  - c. Components and piping segments which have multiple inlets or multiple outlets, whose cumulative pipe cross-sectional area does not exceed the cross-sectional area defined by the OD of NPS 4 pipe.
  - d. For the High Pressure Safety Injection system, components and piping segments NPS 1<sup>1</sup>/<sub>2</sub> and smaller,
  - e. Components and piping segments which have one inlet and one outlet, both of which are NPS 1<sup>1</sup>/<sub>2</sub> and smaller; and

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## 7.2 COMPONENTS SUBJECT TO EXAMINATION (continued)

- f. Components and piping segments which have multiple inlets or multiple outlets, whose cumulative pipe cross-sectional area does not exceed the cross-sectional area defined by the OD of NPS 1<sup>1</sup>/<sub>2</sub> pipe.
  - g. Vessels, piping, pumps, valves, other components, and piping connections of any size in statically pressurized, passive (i.e., no pumps) safety injection systems.
  - h. Piping and other components beyond the last shutoff valve in open ended portions of systems that do not contain water during normal operating conditions.
  - i. Welds or portions of welds that are inaccessible due to being encased in concrete, buried underground, located inside a penetration, or encapsulated by a guard pipe.
8. IWC-1222 and IWC-1223 describe the class 2 components in systems other than RHR, ECC, and Containment Heat Removal systems exempt from volumetric and surface examinations, as follows.
- a. For systems except Auxiliary Feedwater, components and piping segments NPS 4 and smaller;
  - b. Components and piping segments which have one inlet and one outlet, both of which are NPS 4 and smaller, and
  - c. Components and piping segments which have multiple inlets or multiple outlets, whose cumulative pipe cross sectional area does not exceed the cross sectional area defined by the OD of NPS 4 pipe.
  - d. For Auxiliary Feedwater, components and piping segments NPS 1<sup>1</sup>/<sub>2</sub> and less;
  - e. Components and piping segments which have one inlet and one outlet, both of which are NPS 1<sup>1</sup>/<sub>2</sub> and smaller; and
  - f. Components and piping segments which have multiple inlets or multiple outlets, whose cumulative pipe cross-sectional area does not exceed the cross sectional area defined by the OD of NPS 1<sup>1</sup>/<sub>2</sub> pipe.
  - g. Vessels, piping, pumps, valves, other components, and their piping connections of any size in systems or portions of systems that operate (when the 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.

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## 7.2 COMPONENTS SUBJECT TO EXAMINATION (continued)

- h. 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 operating conditions.
- i. Welds or portions of welds that are inaccessible due to being encased in concrete, buried underground, located inside a penetration, or encapsulated by a guard pipe.

### C. ASME CLASS 3 EQUIVALENT COMPONENTS SUBJECT TO EXAMINATION (IWD)

1. ASME Class 3 equivalent systems (including the components contained therein, but excluding supports) subject to examination per Unit are:

Auxiliary Feedwater System

Turbine Driven Auxiliary Feedwater Pump (1) Support -TDAFP (AFW)

Motor Driven Auxiliary Feedwater Pump (2) Support -MDAFP (AFW)

Component Cooling System

Component Cooling Surge Tank (1) Support - CCST (CCS)

Component Cooling System Water Pumps Unit 1(3), Unit 2(2) Support -CCSWP (CCS)

Component Cooling Heat Exchanger (2) Support - CCHX (CCS)

Nonregenerative Letdown Heat Exchanger (1) Support -NRLHX (CCS)

RHR Heat Exchanger Secondary Side (2) Supports -RHRHSXH (CCS)

Essential Raw Cooling Water System

Essential Raw Cooling Water System Strainer (2) Support - ERCWS (ERCW)

Essential Raw Cooling Water System Pump Station Pump Supports (included in Unit 1 only)

Essential Raw cooling Water Screen Wash Pump Support (included in Unit 1 only)

Old ERCW Pumping Station Strainer

Containment Spray Heat Exchanger (2) Support - CSH (ERCW)

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## **7.2 COMPONENTS SUBJECT TO EXAMINATION (continued)**

Fuel Pool Cooling System (included in Unit 1 only)

Fuel Pool Cooling And Cleaning System - Spent Fuel Pit Pump Support  
(included in Unit 1 only)

Fuel Pool Cooling And Cleaning System - Spent Fuel Pit Heat Exchanger  
Support (included in Unit 1 only)

Air Conditioning Chilled Water System - (ACCW)

Shutdown Board Room Water Chiller

Chilled Water Circulation Pump

Chilled Water Air Separator

2. The specific welded attachments subject to examination are described in Attachment 3 and identified on drawings listed in Attachment 7, Listing of Drawings. The number of welded support attachments within each system, the number selected for examination during the inspection interval and the number selected for examination by period are provided in Table C of Attachment 4 for Unit 1 and in Table C of Attachment 5 for Unit 2.
3. Welded attachment examination is also 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.
4. Examination category D-A components shall be selected for examination in accordance with Table IWD-2500-1.
5. ASME Class 3 equivalent component supports shall be selected for examination in accordance with ASME Section XI Subsection IWF. See section 7.2D.
6. IWD-1220 describes the class 3 components exempt from visual examination requirements. Applicable exemptions are as follows.
  - a. Components and piping segments NPS 4 and smaller.
  - b. Components and piping segments which have one inlet and one outlet, both of which are NPS 4 and smaller.
  - c. Components and piping segments which have multiple inlets or multiple outlets, whose cumulative pipe cross-sectional area does not exceed the cross-sectional area defined by the OD of NPS 4 pipe.

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## 7.2 COMPONENTS SUBJECT TO EXAMINATION (continued)

- d. Components that operate at a pressure of 275 psig or less and at a temperature of 200°F or less in systems (or portions of systems) whose function is not required in support of reactor RHR, Containment Heat Removal, and ECC.
- e. Welds or portions of welds that are inaccessible due to being encased in concrete, buried underground, located inside a penetration, or encapsulated by a guard pipe.

### D. COMPONENT SUPPORTS SUBJECT TO EXAMINATION (IWF)

ASME Class 1, 2, and 3 equivalent systems including the components supports subject to examination per unit:

1. ASME Class 1 equivalent supports subject to examination per Unit are:

Chemical and Volume Control System

Reactor Coolant System

Reactor Coolant System Main Loop

Reactor Coolant Pumps (4)

Reactor Vessel

Pressurizer

Steam Generators (4)

Residual Heat Removal System

Safety Injection System

2. ASME Class 2 equivalent supports subject to examination per Unit are:

Containment Spray System

Containment Spray Heat Exchangers (2)

Containment Spray Pumps (2)

Feedwater System

High Pressure Safety Injection System (includes Safety Injection, Residual Heat Removal, Containment Spray, and Chemical Volume Control)

Centrifugal Charging Pump (CCP) Tank/(Boron Injection Tank (BIT)) (One)

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## **7.2 COMPONENTS SUBJECT TO EXAMINATION (continued)**

CVCS Centrifugal Charging Pumps (2)

Safety Injection Pumps (2)

Seal Water Filter

Seal Water Heat Exchanger

Seal Water Injection Filters (2)

Main Steam System

Residual Heat Removal System

RHR Heat Exchangers (2)

RHR Pumps (2)

Safety Injection System

Steam Generators (4)

### **3. ASME Class 3 equivalent supports subject to examination are:**

Auxiliary Feedwater System

Turbine Driven Auxiliary Feedwater Pump (1) Support -TDAFP (AFW)

Motor Driven Auxiliary Feedwater Pump (2) Support -MDAFP (AFW)

Chemical and Volume Control System

Component Cooling System

Component Cooling Surge Tank (1) Support - CCST (CCS)

Component Cooling System Water Pumps Unit 1(3), Unit 2(2) Support  
-CCSWP (CCS)

Component Cooling Heat Exchanger (2) Support - CCHX (CCS)

Gas Stripper and Boric Acid Evaporator

GSBAE Evaporator Condenser (1) Support -EC

GSBAE Distillate Cooler (1) Support - DC (CCS)

GSBAE Support Frame (1) - SF (CCS)

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## 7.2 COMPONENTS SUBJECT TO EXAMINATION (continued)

Nonregenerative Letdown Heat Exchanger (1) Support -NRLHX (CCS)

RHR Heat Exchanger Secondary Side (2) Supports -RHRHSXH (CCS)

Essential Raw Cooling Water System

Essential Raw Cooling Water System Strainer (2) Support  
-ERCWS (ERCW)

Essential Raw Cooling Water System Pump Station Pump Supports  
(included in Unit 1 only)

Essential Raw cooling Water Screen Wash Pump Support (included in  
Unit 1 only)

Old ERCW Pumping Intake Station Strainer

Containment Spray Heat Exchanger (2) Support - CSH (ERCW)

Fuel Pool Cooling System (included in Unit 1 only)

Fuel Pool Cooling And Cleaning System - Spent Fuel Pit Pumps (included  
in Unit 1 only)

Fuel Pool Cooling And Cleaning System - Spent Fuel Pit Heat Exchanger  
(included in Unit 1 only)

Air Conditioning Chilled Water System - (ACCW)

Shutdown Board Room Water Chiller

Chilled Water Circulation Pump

Chilled Water Air Separator

4. Supports exempt from the examination requirements of IWF-2000 are those connected to piping or other items exempted from volumetric, surface or VT-1 or VT-3 visual examination by IWB-1220, IWC-1220, and IWD-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 IWF-2000.
5. Supports not exempted by IWF-1230 shall be examined in accordance with Table IWF-2500-1. Supports to be examined shall be the supports of components **NOT** exempted in accordance with Section 7.2D.4.

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## **7.2 COMPONENTS SUBJECT TO EXAMINATION (continued)**

These component and piping supports are within the systems identified in Sections 7.2D.1, 7.2D.2, and 7.2D.3. The specific supports subject to examination are identified on ISI Drawings listed in Attachment 7 and described in Attachments 1, 2, and 3.

6. Supports depicted as snubbers on the support drawings are subject to examination up to and including the snubber pins in accordance with IWF-1300(f). The snubber is outside the Section XI examination boundary. The examination/testing of snubbers are covered by the Snubber Inservice Testing Program.
7. The number of supports subject to an examination sample plan, the number selected for examination during the inspection interval and the number selected for examination by period are provided in Table D of Attachment 4 for Unit 1, and in Table D of Attachment 5 for Unit 2.
8. Support examination boundaries shall be in accordance with IWF-1300. When determining equipment support boundaries, consideration is to be given to include miscellaneous steel for each equipment support. Acceptance range for support settings shall be calculated in accordance with Inspection Services Organization Programs Manuals (Refer to Nondestructive Examination Procedure N-GP-7).
9. Component supports that have been adjusted in accordance with IWF-3000 or corrected by repair or replacement shall be preservice examined prior to return of the system to service per the applicable examinations listed in Table IWF-2500-1.

Also for systems that operate above 200 F during normal operation, an additional preservice examination shall be performed on the affected component supports during or following the subsequent system heat-up and cool-down cycle unless determined unnecessary by evaluation. This examination shall be performed during operation or at the next refueling outage. Component supports requiring an additional preservice examination shall be scheduled for examination (see Attachment 8 for Unit 1 and Attachment 9 for Unit 2).

### **10. Component Support Functions**

Piping support function is determined by using the latest analysis drawing with change paper for piping. If the piping doesn't have an associated analysis drawing, the latest support drawing with change paper will be used to determine support function.

- a. Support Function A - Supports such as one-directional restraints.
- b. Support Function B - Supports such as multidirectional restraints.



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## 7.2 COMPONENTS SUBJECT TO EXAMINATION (continued)

- c. Support Function C - Supports that allow thermal movement, such as variable and constant force springs.
- d. Support Function D - Supports where a load is transmitted through a hydraulic fluid or mechanical components (i.e., hydraulic or mechanical snubbers).

Equipment support function is determined by type of equipment (i.e., pump, heat exchanger, vessel, filter, valve, tank, cooler). The following is a listing of equipment support functions:

E1- heat exchanger multidirectional support

E2- heat exchanger variable support

E3- pump multidirectional support

E4- reactor vessel one direction support

E5- pressurizer multidirectional support

E6- filter/strainer multidirectional support

E7- cooler/chiller/evaporator/separator multidirectional support

E8- tank multidirectional support

E9- valve variable support

## 7.3 NOTIFICATION OF INDICATION

Whenever an unacceptable inservice examination indication is discovered during the performance of scheduled ISI examinations, a Notification of Indication (NOI) shall be initiated in accordance with NPG-SPP-09.1, Part A. The NOI is to be used to:

- A. Notify Plant Management of unacceptable indications found during the performance of scheduled ASME Section XI inservice examinations that will require evaluation and a disposition.
- B. Notify Engineering Programs Representative of indications that exceed the acceptance criteria of Article IWX-3000 of the ASME Section XI Code and that the indications have been documented on an examination report form contained within the NDE procedure used for examination.
- C. Provide Inspection Services Organization (ISO) and Engineering Programs Representative with a method to track examination reports that require reexamination or a documented disposition for closure.

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### **7.3 NOTIFICATION OF INDICATION (continued)**

- D. As a final product, with the disposition provided in accordance with plant procedures added to Part II of the NOI Form; to provide the Engineering Programs Representative a method of determining if additional and/or successive examinations are required in accordance with the Code.

### **7.4 ADDITIONAL EXAMINATIONS AND SUCCESSIVE EXAMINATIONS FOR ASME CODE CLASS 1, 2 AND 3**

Additional examinations and successive examinations for ASME Code Class 1, 2 and 3 are determined in accordance with the following.

#### **NOTE**

Code Case N-586-1 may be used as an alternative to additional examination requirements of ASME Section XI, provided the engineering evaluations addressed under Item (a) of the Code Case and the additional examinations addressed under Item (b) of the Code Case shall be performed during the current outage. If the additional examinations performed under item (b) of the Code Case reveal indications exceeding the applicable acceptance criteria of Section XI, the engineering evaluations and the examinations shall be further extended to include additional evaluations and examinations at this outage.

#### **7.4.1 Additional Examinations For ASME Code Class 1, 2, And 3**

After an NOI has been dispositioned and returned to the Engineering Programs Representative, the NOI shall be evaluated to determine if additional examinations shall be required in accordance with ASME Section XI IWB-2430, IWC-2430, IWD-2430 or IWF-2430 or Code Case N-716-1. If it is determined that additional examinations are required, these examinations shall be performed during the same outage as the initial examinations.

##### **A. Additional Examinations for Class 1 Equivalent Components (IWB)**

Additional examinations for Class 1 equivalent components (IWB) except component supports and RI-ISI components shall be in accordance with the requirements of IWB-2430.

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#### **7.4.1 Additional Examinations For ASME Code Class 1, 2, And 3 (continued)**

##### **NOTE**

Class 1 Piping Welds for the Fourth Inspection Interval shall be in accordance with the RI-ISI additional examination requirements as outlined in section 7.13.

The initial sample is the sample scheduled for examination at a particular outage for ASME Section XI credit.

1. Examinations performed in accordance with Table IWB-2500-1, except for Examination Category B-P, of the initial sample that reveal flaws or relevant conditions exceeding the acceptance standards of Table IWB-3410-1 shall be extended to include additional examinations except for volumetric and surface examinations where IWB-3112(b) is applicable. (Such as, flaws detected by volumetric or surface examinations that meet the nondestructive examination standards of NB-2500 and NB-5300, as documented in QA records, shall be acceptable).
2. The first additional examination sample 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 item that were scheduled to be performed during the present inspection period. The additional examinations shall be selected from welds, areas, or parts of similar material and service. This additional selection may require inclusion of piping systems other than the one containing the flaws or relevant conditions.

##### **NOTES**

- 1) Welds, areas, or parts are those described or intended in a particular inspection item of Table IWB-2500-1.
- 2) An inspection item, as listed in Table IWB-2500-1, may comprise a number of welds, areas, or parts of a component required to be examined in accordance with the inspection plan and schedule (IWA-2420).

3. If the first additional examinations of section 7.4.1A.2 reveal flaws or relevant conditions exceeding the acceptance standards of Table IWB-3410-1, except where IWB-3112(b) is applicable, the examinations shall be further extended to include additional examinations during the current outage. The second additional examination sample shall include the remaining number of welds, areas, or parts of similar material and service subject to the same type of flaws or relevant conditions.

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#### **7.4.1 Additional Examinations For ASME Code Class 1, 2, And 3 (continued)**

4. If examinations performed in the second additional examination sample reveal indications exceeding the acceptance standards of Table IWB-3410-1, the indications shall be evaluated for further action, if needed.
5. For the inspection period following the period in which the examinations of IWB-2430(a) or (b) were completed, the examinations shall be performed as originally scheduled in accordance with IWB-2400.
6. If welded attachments are examined as a result of identified component support deformation and the results of these examinations exceed the acceptance standards of Table IWB-3410-1, additional examinations shall be performed, if determined necessary, based on an evaluation by Engineering.

#### **B. Additional Examinations for Class 2 Equivalent Components (IWC)**

Additional examinations for Class 2 equivalent components (IWC) except component supports and RI-ISI components shall be in accordance with IWC-2430.

#### **NOTE**

Class 2 piping welds for the Fourth Inspection Interval shall be in accordance with the RI-ISI additional examination requirements as outlined in section 7.13.

The initial sample is the sample scheduled for examination at a particular outage for ASME Section XI credit.

1. Examinations performed in accordance with table IWC-2500-1, except for Examination category C-H, of the initial sample that reveal flaws or relevant conditions exceeding the acceptance standards of Table IWC-3410-1 shall be extended to include additional examinations except for volumetric and surface examinations where IWC-3112(b) is applicable. (Such as, flaws detected by volumetric or surface examinations that meet the nondestructive examination standards of NC-2500 and NC-5300, as documented in QA records, shall be acceptable).
2. The first additional examination sample shall include an additional number of welds, areas, or parts included in the inspection item equal to 20% of the number of welds, areas, or parts included in the inspection item that are scheduled to be performed during the inspection interval. The additional examination sample shall be selected from welds, areas, or parts of similar material and service. This additional selection may require inclusion of piping systems other than the one containing the flaws or relevant conditions.

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#### **7.4.1 Additional Examinations For ASME Code Class 1, 2, And 3 (continued)**

<b>NOTES</b>
<ol style="list-style-type: none"> <li>1) Welds, areas, or parts for those described or intended in a particular inspection item of Table IWC-2500-1.</li> <li>2) An inspection item, as listed in Table IWC-2500-1, may comprise a number of welds, areas, or parts of a component required to be examined in accordance with the inspection plan and schedule (IWA-2420).</li> </ol>

3. If the first additional examinations sample of section 7.4.1B.2 reveal flaws or relevant conditions exceeding the acceptance standards of Table IWC-3410-1, the examinations shall be further extended to include additional examinations during the current outage. The second additional examination sample shall include the remaining number of welds, areas, or parts of similar material and service subject to the same type of flaws or relevant conditions. If no items remain in the inspection interval sample, a notification of the first additional sample results shall be provided, in accordance with section 7.4.1, to evaluate the indications for further action, if needed.
4. For the inspection period following the period in which the examinations of IWC-2430(a) or (b) were completed, the examinations shall be performed as originally scheduled in accordance with IWC-2400.
5. If welded attachments are examined as a result of identified component support deformation and the results of these examinations exceed the acceptance standards of Table IWC-3410-1, additional examinations shall be performed, if determined necessary, based on an evaluation by Engineering.

#### **C. Additional Examinations for Class 3 Equivalent Components (IWD)**

Additional examinations for Class 3 equivalent component supports (IWD) except component supports and RI-ISI components shall be in accordance with IWD-2430.

The initial sample is the sample scheduled for examination at a particular outage for ASME Section XI credit.

1. Examinations performed in accordance with Table IWD-2500-1, except for Examination Category D-B, of the initial sample that reveal flaws or relevant conditions exceeding the acceptance standards of Table IWD-3000 shall be extended to include additional examinations during the current outage.

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#### **7.4.1 Additional Examinations For ASME Code Class 1, 2, And 3 (continued)**

2. The first additional examination sample shall include an additional number of welds, areas, or parts included in the inspection item equal to 20% of the number of welds, areas, or parts included in the inspection item that are scheduled to be performed during the inspection interval. The additional examination sample shall be selected from welds, areas, or parts of similar material and service. This additional selection may require inclusion of piping systems other than the one containing the flaws or relevant conditions.

#### **NOTES**

- 1) Welds, areas, or parts for those described or intended in a particular inspection item of Table IWD-2500-1.
- 2) An inspection item, as listed in Table IWD-2500-1, may comprise a number of welds, areas, or parts of a component required to be examined in accordance with the inspection plan and schedule (IWA-2420).

3. If the first additional examinations sample of section 7.4.1C.2 reveal flaws or relevant conditions exceeding the standards of Table IWD-3000, the examinations shall be further extended to include additional examinations during the current outage. The extent of the additional examinations shall be determined by engineering based upon an engineering evaluation of the root cause of the flaws or relevant conditions. The corrective actions shall be documented in accordance with IWA-6000.
  4. For the inspection period following the period in which the examinations of IWD-2430(a) or (b) were completed, the examinations shall be performed as originally scheduled in accordance with IWD-2400.
  5. If welded attachments are examined as a result of identified component support deformation and the results of these examinations exceed the acceptance standards of Table IWD-3000, additional examinations shall be performed, if determined necessary, based on an evaluation by Engineering.
- D. Additional Examinations for Class 1, 2 and 3 equivalent Component Supports (IWF)

Additional examinations for component supports (IWF) shall be in accordance with IWF-2430.

The initial sample is the sample scheduled for examination at a particular outage for ASME Section XI credit.

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#### **7.4.1 Additional Examinations For ASME Code Class 1, 2, And 3** **(continued)**

1. Examinations performed in accordance with IWF-2500 of the initial sample that reveal flaws or relevant conditions exceeding the acceptance standards of IWF-3400 and that require corrective action shall be extended to include the component supports immediately adjacent to those for which corrective action is required. The first additional examination sample shall also 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.
2. When the first additional examination sample of section 7.4.1D.1 reveal flaws or relevant conditions exceeding the acceptance standards of IWF-3400 and that require corrective action, the examinations shall be further extended to include additional examination during the current outage. The second additional examination sample shall include the remaining component supports within the system of the same type and function as in section 7.4.1D.1.
3. When the second additional examination sample of section 7.4.1D.2 reveal flaws or relevant conditions exceeding the acceptance standards of IWF-3400 and that require corrective action, examinations shall be extended to include a third additional examination sample of all nonexempt supports potentially subject to the same failure modes that required corrective actions in accordance with sections 7.4.1D.1 and 7.4.1D.2. Also, these additional examinations shall include nonexempt component supports in other systems when support failures requiring corrective actions indicate non-system related failure modes.

At the request of the Engineering Programs Representative, Site Engineering shall make the determination of failure mode applicability and select a third additional sample. The request shall be in accordance with section 7.4.1F.

4. When the third additional examination sample of section 7.4.1D.3 reveal flaws or relevant conditions exceeding the acceptance standards of IWF-3400 and that require corrective action, examinations shall be extended to those exempt component supports that could be affected by the same observed failure modes and could affect nonexempt components.

At the request of the Engineering Programs Representative, Site Engineering shall make the determination of failure mode applicability and select the fourth additional sample which shall be made of all component supports on exempt components which could affect nonexempt components. The request shall be in accordance with section 7.4.1F.

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#### 7.4.1 Additional Examinations For ASME Code Class 1, 2, And 3 (continued)

##### E. Additional Examinations for RI-ISI Piping and Components.

1. Additional examinations shall be performed during the current outage when RI-ISI welds reveal flaws or relevant conditions exceeding acceptance standards.
  - a. The first sample of additional examinations shall include HSS inspection items with the same postulated degradation mechanism in systems whose materials and service conditions are similar to the element that exceeded the acceptance standards.
  - b. The number of examinations required is the number of HSS inspection items with the same postulated degradation mechanism scheduled for the current inspection period. If there are not enough HSS inspection items to equal this number, the remaining HSS inspection items and LSS inspection items within the Class 1, 2, and 3 systems subject to examination in accordance with Section XI, up to and including this number that are subject to the same degradation mechanism shall be included.
2. If the additional sample required by 7.4.1E.1 reveal flaws or relevant conditions exceeding the acceptance standards, the examinations shall be extended to include a second sample of additional examinations during the current outage.
  - a. The second sample shall include all remaining HSS inspection items subject to the same degradation mechanism.
3. LSS inspection items with the same postulated degradation mechanism with the Class 1, 2, and 3 systems subject to examination in accordance with Section XI shall be examined.

##### F. Notification of Additional Sample Results, Evaluation Request and Failure Mode Applicability

The notification should include a summary of the indications found, number of examinations, number of indications in each sample, type of examinations performed, examination category, item number, copies of the NOIs, and any other pertinent information. The above information shall be included when requesting Site Engineering to perform evaluations for additional samples, or failure mode applicability.



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#### 7.4.2 Successive Examinations

##### NOTE

The sample expansion and additional examination requirements of IWX-2430 apply when conducting successive inspections in accordance with IWX-2420(b). The purpose of successive inspections is to ensure that assumptions made in the analyses which allow leaving a flaw in service remain valid. However, if new flaws are found while conducting the successive examinations, then those flaws must be appropriately dispositioned because (1) they may or may **NOT** be related to the original flaw left in service, and (2) the provisions of IWX-2430 must be followed.

See Attachment 8 for Unit 1 and Attachment 9 for Unit 2 for scheduled successive examinations.

#### A. Successive Examinations - Class 1 Equivalent Components and Class 1 RI-ISI Piping Welds (except component supports)

1. Component with areas containing flaws or relevant conditions evaluated in accordance with IWB-3132.3 or IWB 3142.4 and NPG-SPP-22.3 that qualify for continued service shall be re-examined during the next three inspection periods listed in the inspection schedules.

Alternatively, acoustic emission may be used to monitor growth of existing flaws in accordance with IWA-2234, except for RI-ISI piping welds.

If the re-examinations reveal that the flaw or relevant conditions remain essentially unchanged for three successive inspections periods, then the component examination schedule may revert to the original schedule. Components requiring successive examinations shall be scheduled for examination (see Attachment 8 for Unit 1 and Attachment 9 for Unit 2). Refer to Code Case N-526 for vessel examinations volumes containing subsurface flaws.

2. When welded attachments are examined as a result of identified component support deformation and the results of these examinations exceed the acceptance standards of Table IWB-3410-1 successive examinations shall be performed when determined necessary based on an Site Engineering evaluation. This evaluation may be documented in accordance with Section 7.4.1F.

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#### 7.4.2 Successive Examinations (continued)

##### B. Successive Examinations - Class 2 Equivalent Components

1. Class 2 Equivalent Components (except for Component welds in RI-ISI Program and component supports)

Components with areas containing flaws or relevant conditions evaluated in accordance with IWC-3122.3 or IWC-3132.3 and NPG-SPP-22.3 that qualify for continued service shall be re-examined during the next three inspection periods listed in the inspection schedule.

Alternatively, acoustic emission may be used to monitor growth of existing flaws in accordance with IWA-2234.

If the re-examination reveals that the flaw or relevant conditions remain essentially unchanged, the component examination schedule may revert to the original schedule. Components requiring successive examinations shall be scheduled for examination (see Attachment 8 for Unit 1 and Attachment 9 for Unit 2). Refer to Code Case N-526 for vessel examinations volumes containing subsurface flaws.

2. Class 2 Equivalent RI-ISI components

Piping welds with areas containing flaws or relevant conditions evaluated in accordance with IWC-3122.3 or IWC-3132.3 and NPG-SPP-22.3 that qualify for continued service shall be re-examined during the next inspection period listed in the inspection schedule.

If the re-examination reveals that the flaws or relevant conditions remain essentially unchanged, the successive inspection periods, the piping weld examination schedule may revert to the original schedule. Piping welds requiring successive examinations shall be scheduled for examination (see Attachment 8 for Unit 1 and Attachment 9 for Unit 2).

3. When welded attachments are examined as a result of identified component support deformation and the results of these examinations exceed the acceptance standards of Table IWC-3410-1 successive examinations shall be performed when determined necessary based on an Site Engineering evaluation. This evaluation may be documented in accordance with Section 7.4.1F.

##### C. Successive Examinations for Class 3 Equivalent components (except component supports)

1. Successive examinations for Class 3 Equivalent Components (except component supports)

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#### 7.4.2 Successive Examinations (continued)

Components with areas containing flaws or relevant conditions evaluated in accordance with IWD-3000 and NPG-SPP-22.3 that qualify for continued service shall be re-examined during the next inspection period listed in the inspection schedule.

If the re-examination reveals that the flaws or relevant conditions remain essentially unchanged for the next inspection period, the component examination schedule may revert to the original schedule. Components requiring successive examinations shall be scheduled for examination (see Attachment 8 for Unit 1 and Attachment 9 for Unit 2).

2. When welded attachments are examined as a result of identified component support deformation and the results of these examinations exceed the acceptance standards of IWD-3000, successive examinations shall be performed when determined necessary based on a Site Engineering evaluation. This evaluation may be documented in accordance with Section 7.4.1F.
3. For Raw Water Systems identified as susceptible to localized corrosion excluding crevice corrosion successive exams and additional exams may be determined in accordance with Section 3.6.7.1 or 3.6.7.2 of EPRI TR-112657 Revision B-A.

#### D. Successive Examinations for Class 1, 2 and 3 Equivalent Component Supports (IWF)

#### **NOTE**

See section 7.2D.9 for component supports requiring an additional preservice examination.

1. When a component support is accepted for continued service in accordance with IWF-3112.2 or IWF-3122.2 the component support shall be re-examined during the next inspection period listed in the inspection schedule. Component supports requiring successive examinations shall be scheduled for examination (see Attachment 8 for Unit 1 and Attachment 9 for Unit 2).
2. When the examinations required by section 7.4.2D.1 do **NOT** require additional corrective measures, the inspection schedule may revert to the original schedule.

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#### **7.4.2 Successive Examinations (continued)**

##### **E. Applicability of IWX-2430 to Successive Examinations**

The sample expansion and additional examination requirements of IWX-2430 apply when conducting successive inspections in accordance with IWX-2420(b). The purpose of successive inspections is to ensure that assumptions made in the analyses which allow leaving a flaw in service remain valid. However, if new flaws are found while conducting the successive examinations, then those flaws must be appropriately dispositioned because (1) they may or may **NOT** be related to the original flaw left in service, and (2) the provisions of IWX-2430 must be followed.

#### **7.5 CONFIGURATION CHANGES**

The Engineering Programs Representative shall be responsible for reviewing the proposed change, revising and issuing the ISI examination drawings as necessary in accordance with NPG-SPP-09.1, Part A.

#### **7.6 CALIBRATION STANDARDS**

Calibration standards shall be in accordance with NPG-SPP-09.1, Part A and IEP-203.

#### **7.7 REPORTS**

##### **A. ISI Summary Report for Class 1, 2, 3 and MC Components**

An ISI summary report in accordance with NPG-SPP-09.1 shall be prepared and submitted to Site Licensing and other review organizations on a schedule that permits submittal to the NRC within 90 days after turbine generator synchronization following a refueling outage. The report shall be prepared in accordance with the requirements of ASME Code Case N-532-5. Any Augmented Examination results contained in Attachments 10 and 11 that specifically require submittal to the NRC in the ISI Summary Report will have to be added as a supplement to the Owner's Activity Report (OAR) as Code Case N-532-5 does **NOT** cover Augmented Examinations.

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## **7.7 REPORTS (continued)**

### **B. Site Final Report**

1. A Site Final report of all examinations conducted in accordance with 0-SI-DXI-000-114.4 shall be prepared. The Site Final Report shall be submitted to Management Services for retention as a quality assurance record. The Site Final Report should contain, but NOT be limited to, the following information:
  - a. A title page stating "ASME Section XI Inservice Inspection Site Final Report Sequoyah Nuclear Plant, Unit, and Refueling Outage."
  - b. Table of Contents
  - c. Part I - Introduction and Overall Summary
  - d. Part II - The ISI Summary Report with appendices as prepared in section 7.7.A.
  - e. Part III - Summary of ISI Examinations ASME Class 1,2, 3 and MC Components, Augmented Examinations (regulatory and self imposed), Preservice Examinations, Voluntary Examinations, Successive Examinations and Additional Samples
  - f. Part IV - Scan Plans and Scan Plan Revision Logs (if applicable)
  - g. Part V - Summary of personnel information such as: Contract Approvals, ISI/NDE Personnel, Summary of Certifications, Signature Log, Reading List, NDE Equipment and Materials
  - h. Part VI - Calibration and Examination Data Sheets, and Notification of Indication Log and Reports
2. All procedures and equipment shall be identified sufficiently to permit duplication of the examination at a later date.
3. The Site Final Report shall be reviewed and submitted in accordance with NPG-SPP-06.9.2, Surveillance Program, for retention as a quality assurance record in accordance with NPG-SPP-31.2, Records Management. Records and reports shall be in accordance with NPG-SPP-09.1, Part A.



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## **7.10 CORRECTIVE ACTION PROGRAM**

Any corrective action required as a result of ISI examinations shall be handled in accordance with NPG-SPP-22.3.

## **7.11 INTERVAL SCHEDULE AND SCAN PLANS**

For each inspection interval, a detailed implementation schedule shall be prepared for each inspection plan. The schedule shall include the following, in accordance with IWA-2420(b):

- A. Identification of the components selected for examination and test, including successive exams from prior periods;
- B. The Code requirements by examination category and item number for each component and the examination or test to be performed and the extent of the examination or test;
- C. Identification of drawings showing items that require examination;
- D. List of examination procedures;
- E. Description of alternative examinations and identification of components to be examined using alternative methods;
- F. Identification of calibration blocks used for ultrasonic examination of components.

### **NOTE**

The detailed implementation schedule for the IWA-2420(b) requirements above being met and is provided by separate document.

The ISI Database will be utilized for status and Section XI credit of completed ISI examinations and those augmented examinations which have been integrated with the ASME Section XI ISI/NDE Program. The database is utilized to provide a scan plan. A scan plan is the primary scheduling document for each fuel cycle, listing components requiring examination during a specific refueling outage. A scan plan may also be utilized to provide a listing of components to be examined for nonoutage activities.

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## 7.11 INTERVAL SCHEDULE AND SCAN PLANS (continued)

Prior to performing exams, the scan plan shall be approved by Programs Engineering Group. As part of the approval process, the scan plan shall be reviewed by the ISI/NDE supervisor, NDE Level III examiner, ISI Program Owner, Engineering Programs Manager, the Authorized Nuclear Inservice Inspector (ANII), and independently verified. The independent verification shall verify all required exams (ISI and Augmented) are contained in the scan plan. All reviews and verifications shall be documented by signature on the scan plan coversheet [752377-003].

During implementation phases (usually outage periods), it may become necessary to revise the scan plan. Scan plan revisions can be initiated by Engineering Programs Representative, ISO, or by other personnel involved with the implementation of the scan plan. All revisions shall be independently verified by the ASME Section XI Program owner and a qualified NDE Level III examiner, as documented in the scan plan revision log. Once the revisions are incorporated into the final scan plan, additional approval by the Programs Engineering Manager shall be documented on the revised scan plan cover sheet. Revisions shall be coordinated, as needed, with the appropriate plant planning and scheduling personnel for facilitating the use of supporting craft personnel. Revisions to the scan plan shall be controlled in the same manner as the original. However, interim working copies may be hand written to allow examinations to be performed before a formal revision is issued. The approving individuals shall initial and date interim revisions on the scan plan. The ANII shall be notified of revisions to the scan plan prior to completing the exam(s) to permit him an opportunity for an inspection.

### NOTE

When inservice examinations are performed as a result of instructions other than this program (e.g., maintenance instructions, work plans, etc.), copies of the examination data sheet shall be submitted to Engineering Programs by the performing organization for assignment of a report number and incorporation into the scan plan.

## 7.12 AUGMENTED EXAMINATIONS

Augmented examinations are performed in addition, or as an alternative, to ASME Section XI code requirements. The augmented examinations may be required by the NRC or be self-imposed by TVA. Typical sources include generic letters, IE bulletins, technical specifications, vendor recommendations, and industry experience. NPG-SPP-09.1, Part A provides requirements for requesting augmented examinations. Attachment 10 for Unit 1 and in Attachment 11 for Unit 2 provides a description and examination summary for augmented examinations.



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## **7.13 RISK-INFORMED INSERVICE INSPECTION (RI-ISI)**

### **7.13.1 Introduction**

The objective of the RI-ISI program is to provide an alternative method for selecting and categorizing piping and components into HSS and LSS groups for the purpose of developing a RI-ISI program as alternative to the ASME Section XI requirements for Examination Categories B-F, B-J, C-A, C-B, C-D, C-F-1, and C-F-2

The current RI-ISI Program follows the alternative classification and examination requirements guidance in Code Case N-716-1.

### **7.13.2 Purpose**

The RI-ISI program outlines an acceptable alternative approach to the existing Section XI requirements for the scope and frequency of piping examination.

### **7.13.3 Scope**

Code Case N-716-1 provides alternative requirements to IWB-2420, IWB-2430, Table IWB-2500-1 Examination Categories B-F and B-J, IWC-2420, IWC-2430, and Table IWC-2500-1 (excluding Examination Categories C-C and C-H), for inservice inspection of Class 1 piping welds or Class 2 components, IWB-2200 and IWC-2200 for preservice inspection of Class 1 piping welds or Class 2 components, or as additional requirements for Class 3 or Non-Class components.

### **7.13.4 Frequency**

The inspection periods and inspection interval are defined in section 1.4. The piping segments and inspection strategy (i.e., frequency, number of examinations, and examination methods) are defined in Table E of Attachment 4 for Unit 1 and Unit 2, respectively.

During the Fourth 10-Year ISI Interval SQN Unit 1 and Unit 2 will implement 100% of the inspection locations selected for examination per Code Case N-716-1. (See Reference WWW, L44 141222 003). Examinations shall be performed such that the period percentage requirements of ASME Section XI are met.

All Category C-A and C-B welds are considered LSS and do not require examination except for Steam Generator welds. In lieu of the percentage requirements of Table IWC-2411-1 the Steam Generator exams may be performed in any one period in accordance with IWC-2411(a).

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#### **7.13.5 Periodic Updates**

The RI-ISI program is a living program requiring feedback of new relevant information to ensure the appropriate identification of HSS piping locations. As a minimum, risk ranking of piping segments will be reviewed and adjusted on an ASME period basis (See section 1.4). Areas to be considered are plant design feature changes, plant procedure changes that affect system operating parameters, equipment performance changes, RI-ISI examination results, plant and industry failure information, corrective action program results, and Probabilistic Risk Assessment (PRA) changes. Expedited program updates should be performed to address significant PRA changes or the occurrence of significant plant events. Significant plant events may include such events as pipe ruptures, earthquakes, or severe operational transients.

#### **7.13.6 Corrective Action Program**

Any corrective action required as the result of RI-ISI examinations shall be handled in accordance with section 7.10.

#### **7.13.7 Inspection Program**

The examinations shall be completed during each ten-year inspection interval with the following exceptions.

1. If, during the inspection interval, a reevaluation using the RI-ISI process is conducted and scheduled items are no longer required to be examined, these items may be eliminated.
2. If, during the inspection interval, a reevaluation using the RI-ISI process is conducted and items are required to be added to the examination program, those items shall be added in accordance IWB-2411(b) or IWC-2411(b).

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#### **7.13.8 Preservice Inspections**

For the RI Program using Code Case N-716-1, the PSI requirements apply only to HSS (High Safety Significant) components affected by a repair/replacement activity.

HSS Vessels, pumps, valves, and pressure-retaining bolting require preservice inspection at least once prior to initial service. The examination volumes, areas, techniques, and procedures shall be in accordance with the applicable requirements of Section XI.

Piping weld examinations, with the exception of VT-2 visual examinations listed in Code Case N-716-1, Table 1, shall be performed in accordance with the requirements defined in N-716-1, Table 1, at least once prior to initial service. Examinations shall include all piping welds, with the exception of VT-2 visual examinations listed in Code Case N-716-1, Table 1, classified as HSS in accordance with the case.

#### **7.13.9 Successive Inspections**

Successive examinations shall be in accordance with section 7.4.2.

#### **7.13.10 Additional Examinations**

Additional Examination shall be in accordance with section 7.4.1.

#### **7.13.11 Examination Coverage**

Code Case N-716-1 provides additional requirements for examination coverage within the Notes of Table 1. If none of these Notes apply to a specific examination listed in Table 1, then examination coverage will be in accordance with Section XI.

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#### **7.13.12 Non Class Exams Required for RI-ISI**

Any piping or component whose contributions to core damage frequency is greater than 1E-06, or whose contribution to large early release frequency is greater than 1E-07, based upon a plant specific probabilistic risk assessment of pressure boundary failures is considered High Safety Significant by Code Case N-716-1. Attachment 4, Table F describes the piping and components. Piping is common to both Units.

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## 7.14 OWNER STATEMENT

Owner:	Tennessee Valley Authority
Address of Corporate Office:	Chattanooga Office Complex 1101 Market Street Chattanooga, Tennessee 37402-2801
Name and Address of Nuclear Power Plant	Sequoyah Nuclear Plant P.O. Box 2000 Soddy Daisy, Tennessee 37384-2000
Applicable Nuclear Power Units:	Sequoyah Nuclear Plant, Unit 1 and Unit 2
Commercial Operation Dates:	July 1, 1981 - Unit 1 June 1, 1982 - Unit 2
First 10 Year ISI Inspection Interval:	July 1, 1981 thru December 15, 1995 Unit 1 June 1, 1982 thru December 15, 1995 Unit 2
Second 10 Year ISI Inspection Interval:	December 16, 1995 thru May 31, 2006 Unit 1 December 16, 1995 thru May 31, 2006 Unit 2
Third 10 Year ISI Inspection Interval:	June 1, 2006, thru April 30, 2016 - Unit 1 June 1, 2006, thru April 30, 2016 - Unit 2
Fourth 10 Year ISI Inspection Interval, Start Date	May 1, 2016, Unit 1 May 1, 2016, Unit 2

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**Attachment 1**  
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**ASME Class 1 Equivalent Components Subject to Examination**  
**(Unit 1 and Unit 2)**

The ASME Code Class 1 (equivalent) components to be examined during the inspection interval are outlined below. The entire length of each weld described shall be examined for the Fourth 10-year ISI Interval unless otherwise noted. When a portion of a weld length is to be examined during an inspection period, the areas examined each inspection period shall be documented on the examination data sheets.

Table A, Table D (Component Supports), and Table E (RI-ISI) of Attachment 4 for Unit 1 and Attachment 5 for Unit 2 shall be used for items selected for examination. These tables provide the examination schedule for the interval and additional information such as reference ISI drawing numbers and ASME Section XI, Table IWB-2500-1, and RI-ISI examination categories.

**NOTE**

Additional material specifications for piping and equipment is stated on the ISI drawings.

**1.0 REACTOR VESSEL**

**1.1 Reactor Vessel Seam Welds (B-A)**

A. Circumferential Shell Welds (Item Number B1.11)

There are four circumferential shell welds on the Reactor Vessel. Three of the circumferential shell welds are located behind the thermal shield. The entire length of each of these four welds shall be ultrasonically examined U1R26 and U2R26 (See RFR 13-ISI-1 and 13-ISI-2) using remote inspection devices from the vessel inside diameter with the core internals removed.

B. Longitudinal Shell Welds (Item Number B1.12)

There are no longitudinal shell welds associated with the reactor vessel.

C. Closure Head Circumferential Weld (Item Number B1.21)

The entire length of the closure head cap weld shall be manually ultrasonically examined from the head outside diameter. The entire length of the weld shall be ultrasonically examined during U1R26 and U2R26 (See RFR 13-ISI-1 and 13-ISI-2).

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**Attachment 1**  
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**ASME Class 1 Equivalent Components Subject to Examination**  
**(Unit 1 and Unit 2)**

**1.1 Reactor Vessel Seam Welds (B-A) (continued)**

**D. Lower-Head Circumferential Weld (Item Number B1.21)**

The entire length of the lower head circumferential weld shall be ultrasonically examined during U1R26 and U2R26 (See RFR 13-ISI-1 and 13-ISI-2) using remote inspection devices from the vessel inside diameter with the core internals removed.

**E. Closure Head Meridional Weld (Item Number B1.22)**

The closure head does not include any meridional welds.

**F. Lower-Head Meridional Welds (Item Number B1.22)**

There are six meridional welds located in the lower head. The entire length of each of these welds shall be ultrasonically examined during U1R26 and U2R26 (See RFR 13-ISI-1 and 13-ISI-2) using remote inspection devices from the vessel inside diameter with the core internals removed.

**G. Shell-to-Flange Weld (Item Number B1.30)**

The vessel shell-to-flange weld is 39 inches for Unit 1 and 41.9 inches for Unit 2 below the flange face. The entire length of the vessel shell-to-flange weld will be ultrasonically examined during U1R26 and U2R26 (See RFR 13-ISI-1 and 13-ISI-2) using remote inspection devices from the vessel inside diameter with the core internals removed.

**H. Closure Head-to-Flange Weld (Item Number B1.40)**

The entire length of the closure head-to-flange weld shall be surface examined and ultrasonically examined from the head outside diameter during U1R26 and U2R26 (See RFR 13-ISI-1 and 13-ISI-2).

**I. Repair Welds (Item Numbers B1.50 and B1.51)**

There are no base metal repair welds in the beltline region of the Unit 1 or Unit 2 reactor vessel.

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**Attachment 1  
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**ASME Class 1 Equivalent Components Subject to Examination  
(Unit 1 and Unit 2)**

**1.2 Reactor Vessel Nozzle-to-Vessel Welds (B-D) (Item Number B3.90)**

There are four inlet nozzles and four outlet nozzles. The eight nozzle-to-vessel welds shall be ultrasonically examined from the nozzle bore and from the vessel inside wall. These examinations will be performed during U1R26 and U2R26 (See RFR 13-ISI-1 and 13-ISI-2) when the core barrel has been removed.

**1.3 Reactor Vessel Nozzle Inside Radius Section (B-D) (Item Number B3.100)**

The eight nozzle inside radius sections shall be examined in accordance with visual examination method VT-1 per Code Case N-648-1 and conditions in Regulatory Guide 1.147 at the same time as the examination of the nozzle-to-vessel welds during U1R26 and U2R26 (See RFR 13-ISI-1 and 13-ISI-2) when the core barrel has been removed.

**1.4 Reactor Vessel Partial Penetration Welds**

The vessel includes 4 Upper Head Injection (UHI) nozzles (capped in Unit 1 and Unit 2 Cycle 4 UHI removal), 1 vent pipe nozzle, 78 control rod drive nozzles, and 58 instrumentation nozzles with partial penetration welds. These partial penetration welds are not required to be examined by ASME Section XI 2007 Edition with the 2008 Addenda.

**1.5 Reactor Vessel Nozzle-to-Safe End Welds (B-F)(Item Number B5.10)**

**NOTE**

This examination is to include the pipe to safe end weld.

Each nozzle safe end weld is a stainless steel type 304 weld build up (buttering).

The inlet and outlet nozzle-to-safe end welds are included in Examination category R-A Risk Informed Piping Examination. Refer to section 9.0 of this attachment. These welds shall be ultrasonically examined from the inside diameter using remote inspection devices. The ultrasonic examination, when required, shall be performed at the same time as the examination of the nozzle-to-vessel welds conducted from the nozzle bore during U1R26 and U2R26 (See RFR 13-ISI-1 and 13-ISI-2) when the core barrel has been removed. See Section 1.2 of this attachment.



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**Attachment 1  
(Page 4 of 21)**

**ASME Class 1 Equivalent Components Subject to Examination  
(Unit 1 and Unit 2)**

**1.6 Reactor Vessel Pressure Retaining Bolting Larger Than Two Inches In Diameter (B-G-1) (Item Numbers B6.10, B6.20, B6.40, B6.50)**

During each refueling outage all closure studs, nuts, and washers are removed.

The closure studs shall be ultrasonically or magnetic particle examined when removed. The threads in flange shall be ultrasonically examined. The closure nuts and closure washers shall be examined in accordance with visual examination method VT-1.

The bolting may be examined either (a) in place under tension, (b) when the connection is disassembled, or (c) when the bolting is removed.

These examinations will be performed during the third period.

Provisions for this examination are in accordance with 0-MI-MRR-068-005.0 and the applicable NDE procedure.

**1.7 Reactor Vessel Pressure Retaining Bolting Two Inches And Smaller In Diameter (B-G-2) (Item Number B7.10)**

There is no pressure retaining bolting two inches or smaller in diameter.

**1.8 Reactor Vessel Interior (B-N-1)(Item Number B13.10)**

The vessel interior shall be examined in accordance with visual examination method VT-3. This examination shall include the space above and below the reactor core that is made accessible for examination by removal of components during normal refueling outages. This examination shall be performed each inspection period.

Reactor Vessel License Renewal Application (LRA) Commitment [115609649] requires VT-3 examination of Unit's six lower radial support guides and welds, including the clevis insert, clevis insert bolts, dowel pins and tack welds.

**1.9 Reactor Vessel Interior Attachments Within Beltline Region (B-N-2)(Item Number B13.50)**

There are no interior attachments within the Reactor Vessel beltline region.

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**Attachment 1**  
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**ASME Class 1 Equivalent Components Subject to Examination**  
**(Unit 1 and Unit 2)**

**1.10 Reactor Vessel Interior Attachments Beyond Beltline Region**  
**(B-N-2)(Item Number B13.60)**

There are 6 interior attachments (core support pads) beyond the beltline region all 6 core support pads shall be examined in accordance with visual examination method VT-3. This examination may be deferred to the third inspection period.

**1.11 Reactor Vessel Removable Core Support Structures (B-N-3)(Item**  
**Number B13.70)**

The accessible attachment welds and accessible surfaces of the core support structure shall be examined in accordance with visual examination method VT-3. This examination may be deferred to the third inspection period. The core support structure shall be removed from the reactor vessel for examination.

**1.12 Reactor Vessel Control Rod Drive Housings (B-O)(Item Numbers**  
**B14.20 and B14.21)**

Item No. B14.20: There are 78 control rod drive housings penetrating the closure head. Each housing includes a pressure retaining dissimilar metal butt weld.

There are 17 peripheral control rod drive housings. Two (10 percent) of the peripheral housing butt welds shall be ultrasonically examined during the inspection interval.

It is impractical due to radiation exposure, access, and time on the head to examine these welds in different periods as done in the first inspection interval. Since the examinations may be deferred the welds shall be examined in the third inspection period.

Item No. B14.21: There are no Welds in In Core Instrumentation Nozzle (ICI) Housings > NPS 2 for Unit 1 and Unit 2.

**1.13 Reactor Vessel Pressure Retaining Welds Fabricated with**  
**Alloy 600/82/182 Materials**

This section addresses the requirements of Code Case N-722-1 as amended by 10CFR50.55a. These ASME Code required examinations are tracked in the SQN Augmented ISI program. See Attachments 10 and 11 for schedule and details.

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**1.14 Reactor Vessel Upper Head Nozzles with Pressure Retaining Partial Penetration Welds**

This section addresses the requirements of Code Case N-729-1 as amended by 10CFR50.55a. These ASME Code required examinations are tracked in the SQN Augmented ISI program. See Attachments 10 and 11 for schedule and details. These welds have been previously examined in accordance with NRC Order EA-03-009.

**2.0 PRESSURIZER**

**2.1 Pressurizer Circumferential Shell-to-Head Welds (B-B)(Item Number B2.11)**

There are two circumferential shell-to-head welds to be ultrasonically examined during the inspection interval.

**2.2 Pressurizer Longitudinal Shell-to-Head Welds (B-B)(Item Number B2.12)**

There is one longitudinal weld intersecting each circumferential shell-to-head weld. One foot of the longitudinal weld per head shall be ultrasonically examined during the inspection interval.

The one foot of weld examined during each examination shall include the length of weld as measured from the point of intersection of the longitudinal weld with the circumferential head-to-shell weld.

**2.3 Pressurizer Head Circumferential and Meridional Welds (B-B)(Item Numbers B2.21 and B2.22)**

There are no pressurizer circumferential or meridional head welds.

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**2.4 Pressurizer Nozzle-to-Vessel Welds and Nozzle Inside Radius  
Section (B-D)(Item Numbers B3.110 and B3.120) and  
10CFR50.55a(b)(2)(xxi)(A)**

**NOTE**

Per 10CFR50.55a(b)(2)(xxi)(A) item number B3.120 in the 1998 Edition must be applied when using the 1999 Addenda through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of 10 CFR 50.55a. A visual examination with magnification that has a resolution sensitivity to detect a 1-mil width wire or crack, utilizing the allowable flaw length criteria in Table IWB-3512-1, 1997 Addenda through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of 10 CFR 50.55a, with a limiting assumption on the flaw aspect ratio (i.e.,  $a/l=0.5$ ), may be performed instead of an ultrasonic examination.

The pressurizer includes three 6-inch safety valve nozzles, one 6-inch relief valve nozzle, one 4-inch spray nozzle, and one 14-inch surge nozzle. All of the nozzle-to-vessel welds, shall be ultrasonically examined during the inspection interval. The nozzle inside radius sections on each nozzle shall be ultrasonically or visually examined. Examinations shall be distributed among the inspection periods.

**2.5 Pressurizer Heater Penetration Welds**

There are 78 heater penetration welds located in the pressurizer lower head. These welds are not required to be examined by ASME Section XI 2007 Edition with the 2008 Addenda.

**2.6 Pressurizer Nozzle-to-Safe End Welds (B-F)(Item Number B5.40)**

Each of the six nozzles identified in Section 2.4 of this attachment includes a welded forging safe end. These pressurizer nozzle to safe end welds have been overlaid for PWSCC mitigation. The new overlay welds are inspected in accordance with the SQN Augmented ISI Schedule in Attachment 10 and 11.

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**2.7 Pressurizer Pressure Retaining Bolting Greater Than Two Inches In Diameter (B-G-1)(Item Number B6.60, B7.70 and B6.80)**

There is no pressure retaining bolting larger than 2 inches in diameter.

**2.8 Pressurizer Pressure Retaining Bolting Two Inches And Smaller In Diameter (B-G-2)(Item Number B7.20)**

The pressurizer manway bolts shall be examined in accordance with visual examination method VT-1 during the inspection interval only when the connection is disassembled or the bolting is removed.

Removal of the manway cover is performed in accordance with 0-MI-MXX-068-004.0 and provides for examination of bolting.

The pressurizer manway includes 16 bolts at 1.88 inches in diameter.

**3.0 STEAM GENERATORS (4)**

**NOTE**

All four steam generators on Unit 1 were replaced during U1R12 refueling outage in the third period of the second inspection interval. All four steam generators on Unit 2 were replaced during U2R18 refueling outage in the third period of the third inspection interval.

**3.1 Steam Generator Primary Side Head Circumferential And Meridional Welds (B-B)(Item Numbers B2.31 and B2.32)**

There are no steam generator primary side circumferential or meridional head welds.

**3.2 Steam Generator Primary Tubesheet-to-Head Weld (B-B)(Item Number B2.40)**

Each steam generator includes a tubesheet-to-head weld. The entire length of one tubesheet-to-head weld shall be ultrasonically examined during inspection interval.

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**3.3 Steam Generator Primary Nozzle-to-Vessel Welds (B-D)(Item Number B3.130)**

The U2 Replacement Steam Generators (RSG) primary nozzles are welded to the generator vessel. Each steam generator contains two Class 1 welded nozzles. The primary nozzle-to-vessel welds of all nozzles shall be volumetrically examined during the inspection interval. Examinations shall be distributed among the inspection periods.

**NOTE**

The U1 RSG primary nozzles are an integral part of the vessel. Each U1 steam generator contains two integrally forged nozzles.

**3.4 Steam Generator Primary Nozzle Inside Radius Section (B-D)(Item Number B3.140)**

**NOTE**

Per 10CFR50.55a(b)(2)(xxi)(A) item number B3.140 in the 1998 Edition must be applied when using the 1999 Addenda through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of 10 CFR 50.55a. A visual examination with magnification that has a resolution sensitivity to detect a 1-mil width wire or crack, utilizing the allowable flaw length criteria in Table IWB-3512-1, 1997 Addenda through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of 10 CFR 50.55a, with a limiting assumption on the flaw aspect ratio (i.e,  $a/l = 0.5$ ), may be performed in place of an ultrasonic examination.

The U1 RSG primary nozzles are an integral part of the vessel. Each steam generator consists of two integrally cast/forged nozzles. The Unit 1 RSGs have forged nozzles. The U1 RSG primary nozzle inside radius section of all nozzles shall be ultrasonically or visually examined during the inspection interval. Examinations shall be distributed among the inspection periods.

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**3.4 Steam Generator Primary Nozzle Inside Radius**  
**Section (B-D)(Item Number B3.140) (continued)**

The U2 RSG primary nozzles are **NOT** an integral part of the vessel and are addressed in Section 3.3. The U2 RSG primary nozzle inside radius section of all nozzles shall be ultrasonically or visually examined during the inspection interval. Examinations shall be distributed among the inspection periods.

**3.5 Steam Generator Primary Nozzle-to-Safe End Welds (B-F)(Item**  
**Number B5.70)**

Each Unit 2 steam generator includes two nozzles with buttered safe ends, and each Unit 1 steam generator includes two nozzles with separate safe end welds due to replacement steam generators.

These steam generator nozzle to safe end welds are included in the Risk Informed Piping Welds Examination Category (R-A). Refer to Section 9.0 of this Attachment.

**3.6 Steam Generator Primary Pressure Retaining Bolting Larger**  
**Than Two Inches In Diameter (B-G-1)(Item Number B6.90, B6.100**  
**and B6.110)**

There is no pressure retaining bolting larger than two inches in diameter.

**3.7 Steam Generator Primary Pressure Retaining Bolting Two Inches**  
**And Less In Diameter (B-G-2)(Item Number B7.30)**

Each steam generator includes two manways. Each manway includes 16 bolts at 1.88 inches in diameter. The bolting of two manways (all bolts, studs, and nuts) from one steam generator shall be visually examined in accordance with visual examination method VT-1 during the inspection interval when the connection is disassembled or the bolting is removed.

Removal of bolting is performed in accordance with 1-MI-MXX-068-003.0 and 2-MI-MXX-068-003.0 and provides for examination of bolting.

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**4.0 PIPING**

All ASME Code Class 1 (equivalent) piping systems to be examined are fabricated of stainless steel. The reactor coolant main loop piping straight lengths are centrifugal cast and the elbows are static cast. The reactor vessel auxiliary head adapters include a pressure retaining dissimilar metal weld in each and are include in the reactor coolant system. Specific material specifications for each piping system are included on the weld drawings.

The following ASME Code Class 1 (equivalent) piping systems are subject to examination:

Chemical and Volume Control (CVC)

Reactor Coolant Main Loop (RX)

Reactor Coolant System (RC)

Residual Heat Removal (RHR)

Safety Injection (SI)

RI-ISI program includes the Chemical and Volume Control System, Reactor Coolant System Main Loop, Reactor Coolant System, Residual Heat Removal System, Safety Injection System, and Sampling and Water Quality System.

**NOTE**

For the Fourth inspection interval, Class 1 Piping Welds (B-J) shall be in accordance with the RI-ISI examination requirements. See section 9.0 of this Attachment.

**4.1 Piping Pressure Retaining Bolting Larger Than 2 Inches In Diameter (B-G-1)(Item Number B6.150, B6.160, and B6.170)**

There is no piping pressure retaining bolting larger than 2 inches in diameter.



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**4.2 Piping Pressure Retaining Bolting 2 Inches and Less in Diameter**  
**(B-G-2)(Item number B7.50)**

The following systems contain bolted piping flange connections. The examination of flange bolting in piping systems may be limited to one bolted connection among a group of bolted connection that are similar in design, size, function, and service. Examination is required only when a flange connection is disassembled. Examination of a bolted connection is required only once during the inspection interval in accordance with visual examination method VT-1.

**A. Reactor Coolant System Piping Bolting**

The Reactor Coolant System piping includes bolted flange connections.

**B. Chemical and Volume Control System Piping Bolting**

The Chemical and Volume Control System (seal water injection) piping includes bolted flange connections.

**C. RHR System Piping Bolting**

The RHR System piping does **NOT** include any bolted connections.

**D. Safety Injection System Piping Bolting**

The Safety Injection System piping includes bolted flange connections.

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**4.3 Pressure retaining welds in Piping (B-J)**

**NOTE**

For the Fourth Inspection Interval, Class 1 Piping Welds (B-J) shall be in accordance with the RI-ISI examination requirements. Refer to section 9.0 of this Attachment.

**5.0 REACTOR COOLANT PUMPS (4) - RCP**

**5.1 RCP Pressure Retaining Bolting Larger Than Two Inches In Diameter (B-G-1)(Item Numbers B6.180, B6.190 and B6.200)**

The main flange on Unit 1 pumps #3 and #4 and Unit 2 pump #2 includes 24 bolts of 4-1/2 inches in diameter and 30-1/2 inches in length.

The main flange on Unit 1 pump #1 and #2 and Unit 2 pump #1, #3, and # 4 includes 24 studs of 4-1/2 inches in diameter and 30.6 inches in length, and 24 hydraulic nuts. The bolts were replaced per DCN E21858.

All of the main flange bolts or studs from one pump shall be ultrasonically examined once during the inspection interval or, if the connection is disassembled, all of the bolts or studs from one pump shall be ultrasonically examined once during the inspection interval. The hydraulic nuts shall be visually examined (VT-1) from one pump once during the inspection interval if the (B-L-2) pump interior surface examination is performed at any time during the inspection interval.

The flange surface (one inch annular surfaces) surrounding each stud shall be visually examined (VT-1) from one pump once during the inspection interval if the connection is disassembled at any time during the inspection interval.

Provisions for this examination are included in MI-2.8

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**5.2 RCP Pressure Retaining Bolting 2 Inches and Smaller in Diameter (B-G-2)(Item Number B7.60)**

Each RCP includes two sets of pressure retaining bolting 2 inches and less in diameter. The bolting sets include the number 1 seal housing and cartridge seal assembly bolting. The Number 1 seal housing assembly bolting includes 12 HEX head cap screws at 2 inches in diameter. The cartridge seal assembly bolting includes 8 socket head cap screws at 1.5 inches in diameter. The number 1 seal assembly bolting and cartridge seal assembly bolting from one pump shall be visually examined in accordance with visual examination method VT-1. Examination of bolting is only required when a connection is disassembled or bolting is removed.

Removal of bolting is performed in accordance with MI-10.2.3 and provides for examination of bolting.

**5.3 RCP Casing (B-L-2)(Item Number B12.20)**

If a pump is disassembled for maintenance or repair during the inspection interval, the internal pressure boundary surfaces shall be visually examined in accordance with visual examination method VT-3. The examination is limited to one pump.

Examination of the internal pressure boundary shall include the internal pressure retaining surfaces made accessible for examination by disassembly. If a partial examination is performed and a subsequent disassembly of that pump allows a more extensive examination, an examination shall be performed during the subsequent disassembly. A complete examination is required only once during the interval.

**6.0 VALVES**

A tabulation of valves is contained in Attachment 6 for Unit 1 and Unit 2.

**6.1 Valve Pressure Retaining Bolting Larger Than 2 Inches in Diameter (B-G-1)(Item Numbers B6.210, B6.220 and B6.230)**

There are no valves with pressure retaining bolting larger than 2 inches in diameter.

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**6.2 Valve Pressure Retaining Bolting 2 Inches and Less in Diameter**  
**(B-G-2)(Item Number B7.70)**

All of the bolts or studs and nuts in each connection of one valve within each group of valves shall be visually examined during the inspection interval in accordance with visual examination method VT-1, if the (Examination Category B-M-2) valve interior surface examination is performed.

Valve disassembly is performed in accordance with 0-MI-MVV-000-008.0 and provides for examination of bolting.

The following systems contain valves exceeding 4 inches NPS with bolted bonnet connections:

Reactor Coolant System Valve Bolting

Residual Heat Removal System Valve Bolting

Safety Injection System Valve Bolting

**6.3 Valve Bodies (B-M-2)(Item Number B12.50)**

If a valve exceeding 4-inch NPS is disassembled for maintenance or repair during the inspection interval, the internal pressure boundary surface of the valve body shall be visually examined in accordance with visual examination method VT-3. Examinations are limited to one valve within each group of valves that are of the same constructional design (i.e., globe, gate, or check valve), manufacturing method, and that are performing similar functions in the system.

Examination of the internal pressure boundary shall include the internal pressure retaining surfaces made accessible for examination by disassembly. If a partial examination is performed and a subsequent disassembly of the valve allows a more extensive examination, an examination shall be performed during the subsequent disassembly. A complete examination is required only once during the interval.

The following systems contain valves exceeding 4-inches NPS:

Reactor Coolant System

Residual Heat Removal System

Safety Injection System

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**6.3 Valve Bodies (B-M-2)(Item Number B12.50) (continued)**

A tabulation of valves by groupings is presented in Attachment 6 for Unit 1 and Unit 2. Disassembly of valves is performed in accordance with 0-MI-MVV-000.008.0 and provides for examination of valve internal pressure boundary surfaces.

Listings of valve examinations are identified on the Valve Interior Examination Drawing (See Attachment 7 for drawing number.).

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**7.0 WELDED SUPPORT ATTACHMENT**

**NOTE**

Examination is required whenever component support member deformation, e.g., broken, bent, or pulled out parts, is identified during operation, refueling, maintenance, examination, or testing.

**7.1 Reactor Vessel Welded Support Attachments (B-K)(Item Number B10.10)**

There are no welded vessel supports.

**7.2 Pressurizer Welded Support Attachments (B-K)(Item Number B10.10)**

**A. Pressurizer Support Skirt Welded Support Attachment (Item Number B10.10)**

The entire length of the pressurizer support skirt-to-vessel weld shall be surface examined from one side during the inspection interval.

**B. Pressurizer Seismic Lugs (Item Number B10.10)**

There are four (4) welded seismic lugs on the pressurizer. Only one welded attachment shall be selected for examination. The welded attachment selected is the pressurizer support skirt. Therefore, examination of the seismic lugs is not required based on examining the pressurizer support skirt-to-vessel weld.

**7.3 Steam Generator Primary Welded Support Attachments (B-K)(Item Number B10.10)**

For Unit 1, there are no welded support attachments on the steam generator primary side. The four (4) main support pads are secured to the steam generator support system by high strength bolts.

For Unit 2, the four main support pads are welded to the steam generator primary side. The four (4) pads are welded attachments. One welded attachment on one steam generator shall be surface examined during the inspection interval.

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**7.4 Piping Welded Support Attachments (B-K)(Item Number B10.20)**

Welded support attachments include the support attachments of piping required to be examined by Examination Category B-J. Included are those supports which have attachment welds to piping pressure retaining boundary. The entire length of each support attachment weld selected for examination shall be surface examined.

The examinations performed during the inspection interval should include 10 percent of the welded attachments. As a minimum 10 percent of the welded attachments associated with the component supports selected for examination under IWF-2510 shall be examined. The examinations shall be distributed during the inspection interval.

The following systems include welded support attachments:

Chemical and Volume Control System

Reactor Coolant System

Residual Heat Removal System

Safety Injection System

**7.5 RCP Welded Support Attachments (B-K)(Item Number B10.30)**

There are no welded support attachments associated with the Unit 1 RCP.

There are three Unit 2 reactor coolant pumps, serial numbers 566 (RCP-1 casing), 704 (RCP-3 casing), and 709 (RCP-4 casing), with welded support attachments. RCP-2 casing does not have any welded support attachments. Pumps 1, 3, and 4 each have three welded pump feet. The welded pump feet from one RCP shall be surface examined during the inspection interval. The examination shall cover 100 percent of the required area of each support attachment.

**7.6 Valves Welded Support Attachments (B-K)(Item Number B10.40)**

There are no welded valve support attachments.

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**7.7 All Pressure Retaining Components (B-P) (Item Numbers B15.10 and B15.20)**

All System Pressure Test requirements and examinations for the item are in accordance with 0-TI-SPT-000-301.0. Reference 2.5A.2.

**7.8 Steam Generator Tubing (B-Q) (Item Numbers B16.10 and B16.20)**

Steam Generator Tube examinations for this Item are in accordance with 0-SI-SXI-68-114.4. Reference 2.5B.1.

**8.0 COMPONENT SUPPORTS**

**8.1 Reactor Vessel Component Support (F-A)(Item Number F1.40)**

The Reactor Vessel is supported by one reactor vessel support at alternative nozzles (outlet). The component support shall be examined during the inspection interval in accordance with visual examination method VT-3. The component support extends from the nozzles up to and including the attachment to the supporting structure.

**8.2 Pressurizer Component Supports (F-A)(Item Number F1.40)**

**A. Pressurizer Support Skirt**

The Pressurizer support skirt shall be examined during the inspection interval in accordance with visual examination method VT-3. The component support extends from the Pressurizer support skirt up to and including the attachment to the supporting structure.

**B. Pressurizer Seismic Lugs**

The Pressurizer seismic lugs support shall be examined during the inspection interval in accordance with visual examination method VT-3. The component support extends from the Pressurizer seismic lugs support up to and including the attachment to the supporting structure.

**8.3 Steam Generator Component Supports (F-A)(Item Number F1.40)**

There is one component support associated with each Steam Generator.



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**8.3 Steam Generator Component Supports (F-A)(Item Number F1.40)  
(continued)**

The component support from one Steam Generator shall be examined during the inspection interval in accordance with visual examination method VT-3. The component support extends from the Steam generator support up to and including the attachment to the supporting structure.

**8.4 Piping Component Supports (F-A)(Item Number F1.10)**

Twenty-five percent of the class 1 piping component supports on piping not exempted from volumetric, surface, or VT-1 or VT-3 visual examination by IWB-1220 shall be visually examined during the inspection interval in accordance with visual examination method VT-3. In addition, portions of supports that are inaccessible by being encased in concrete, buried underground, or encapsulated by guard pipe are also exempt from examination requirements of IWF-2000. This examination includes integrally welded and non-integrally welded component supports. Component supports extend from the piping up to and including the attachment to the supporting structure.

The settings of variable and spring-type hangers shall be verified in accordance with the applicable NDE procedure with the acceptance criteria identified in the Scan Plan (see PRISIM data base) or the applicable work instruction.

The following systems include component supports:

Chemical and Volume Control System Piping Component Supports

Reactor Coolant System Piping Component Supports

Reactor Coolant System Main Loop Piping Component Supports

Residual Heat Removal System Piping Component Supports

Safety Injection System Piping Component Supports

**8.5 RCP Component Supports (F-A)(Item Number F1.40)**

There is one component support associated with each RCP. The component support from one RCP shall be visually examined during the inspection interval in accordance with visual examination method VT-3. The component support extends from the RCP up to and including the attachment to the supporting structure.

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**8.6 Valve Component Supports (F-A)(Item number F1.40)**

There are no class 1 valves with component supports.

**9.0 EXAMINATION CATEGORY R-A RISK INFORMED PIPING EXAMINATIONS**

Refer to Table E of Attachment 4 for Unit 1 and Table E of Attachment 5 for Unit 2 for examination schedule under the RI-ISI program. Table E in Attachment 4 and Attachment 5 have the examination method requirements for each degradation mechanism and corresponding RI Item number.

The RI-ISI program identifies as HSS piping portions of the following systems: Chemical and Volume Control System, Feedwater System, High Pressure Fire Protection System, Raw Cooling Water System, Reactor Coolant System, Residual Heat Removal System, and Safety Injection System.

The Reactor Coolant Pressure Boundary is required to be HSS in accordance with Code Case N-716-1. All non-exempt Class 1 piping weld locations are assigned HSS as they represent the Reactor Coolant Pressure Boundary.

Shutdown Cooling piping flow paths inside containment are High Safety Significant. This includes the suction path from RCS hot leg loop 4 to containment penetration X-107 (RCS Class 1 and RHR Class 1 and 2). It also includes the two return lines from the containment penetrations X-20A and X-20B to the RCS cold legs (RCS Class 1 and Safety Injection Class 1 and 2).

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**ASME Class 2 Equivalent Components Subject to Examination**  
**(Unit 1 and Unit 2)**

The ASME Code Class 2 (equivalent) components to be examined during the inspection interval are outlined below.

The entire length of each weld described shall be examined for the Fourth 10-year ISI interval unless otherwise noted. When a portion of a weld length is to be examined during an inspection period, the areas examined each inspection period shall be documented on the examination data sheets.

Material specifications for piping and equipment are stated on the ISI drawings.

Table B, Table D (Component Supports) and Table E (RI-ISI elements/segments) of Attachment 4 for Unit 1 and Attachment 5 for Unit 2 shall be used for items selected for examination. These tables provide the examination schedule for the interval and additional information such as reference ISI drawing numbers and ASME Section XI Table-IWC-2500-1 and RI-ISI examination categories.

**1.0 STEAM GENERATORS (4) (HSS per N-716-1)**

**NOTE**

All four steam generators on Unit 1 were replaced during U1R12 refueling outage in the third period of the second inspection interval. All four steam generators on Unit 2 were replaced during U2R18 refueling outage in the third period of the third inspection interval.

**1.1 Steam Generator Secondary Side Circumferential Shell Welds**  
**(C-A)(Item Number C1.10)**

**A. Steam Generator Secondary Side Circumferential Shell Welds (Unit 2 only)**

There is one circumferential shell weld at gross structural discontinuities on each unit 2 steam generator. The entire length of this shell weld from one steam generator shall be ultrasonically examined during the inspection interval.

**B. Steam Generator Secondary Side circumferential Shell Welds (Unit 1 only)**

There are no circumferential shell welds at gross structural discontinuities on the replacement steam generators.

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**ASME Class 2 Equivalent Components Subject to Examination**  
**(Unit 1 and Unit 2)**

**1.2 Steam Generator Secondary Side Circumferential Head Welds**  
**(C-A)(Item Number C1.20)**

Each steam generator includes a circumferential head-to-shell weld. The entire length of one head-to-shell weld from one Steam Generator shall be ultrasonically examined during the inspection interval.

**1.3 Steam Generator Secondary Side Tubesheet-to-Shell Weld**  
**(C-A)(Item Number C1.30)**

Each steam generator includes a tubesheet-to-shell weld. The entire length of one tubesheet-to-shell weld from one Steam Generator shall be ultrasonically examined during the inspection interval.

**1.4 Steam Generator Secondary Side Nozzle-to-Vessel Welds**  
**(C-B)(Item Number C2.21)**

A. Steam Generator Secondary Side Nozzle-to-Vessel Welds (Unit 2 only)

Each unit 2 steam generator is greater than 1/2 inch nominal thickness and includes one feedwater nozzle and one main steam nozzle. A total of two nozzle-to-vessel welds from one Steam Generator shall be ultrasonically and magnetic particle examined during the inspection interval.

B. Steam Generator Secondary Side Nozzle-to-Vessel Welds (Unit 1 only)

Each unit 1 steam generator is greater than 1/2 inch nominal thickness and includes one feedwater nozzle-to-vessel weld. The main steam nozzle is **NOT** welded (forged with the head). One feedwater nozzle-to-vessel weld from one steam generator shall be ultrasonically and magnetic particle examined during the inspection interval.

**1.5 Steam Generator Secondary Side Nozzle Inside Radius Section**  
**(C-B)(Item Number C2.22)**

The nozzle inside radius sections on each nozzle from one Steam Generator shall be ultrasonically examined during the inspection interval.

A. Steam Generator Secondary Side Nozzle Inside Radius Section (C-B)(Item Number C2.22)

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**ASME Class 2 Equivalent Components Subject to Examination**  
**(Unit 1 and Unit 2)**

**1.5 Steam Generator Secondary Side Nozzle Inside Radius Section**  
**(C-B)(Item Number C2.22) (continued)**

On both units, each steam generator includes one feedwater nozzle inside radius section. The main steam nozzle is forged with the head and does not have an inside radius section. One nozzle inside radius sections from one steam generator shall be ultrasonically examined during the inspection interval.

**1.6 Steam Generator Secondary Side Pressure Retaining Bolting**  
**Exceeding 2 Inches in Diameter (C-D)(Item Number C4.10)**

There is no steam generator secondary side bolting exceeding 2 inches in diameter.

**2.0 RESIDUAL HEAT REMOVAL HEAT EXCHANGERS (2) - RHRHX**  
**(LSS per N-716-1)**

**2.1 RHRHX Shell Circumferential Weld (C-A)(Item Number C1.10)**

There is one circumferential shell weld located at a gross structural discontinuity on each RHRHX. This weld is LSS and Code Case N-716-1 does not require examination of LSS welds. Prior to N-716-1 the entire length of the circumferential shell welds on both RHRHXs were visually examined in accordance with Code Case N-706-1 each period during the inspection interval.

**2.2 RHRHX Head Circumferential Weld (C-A)(Item Number C1.20)**

There is one circumferential head-to-shell weld per RHRHX. This weld is LSS and Code Case N-716-1 does not require examination of LSS welds. Prior to N-716-1 the entire length of the head-to-shell welds on both RHRHXs were visually examined in accordance with Code Case N-706-1 each period during the inspection interval.

**2.3 RHRHX Tubesheet to Shell Weld (C-A)(Item Number C1.30)**

There are no RHRHX tubesheet-to-shell welds.

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**ASME Class 2 Equivalent Components Subject to Examination**  
**(Unit 1 and Unit 2)**

**2.4 RHRHX Nozzle-to-Vessel Welds (without reinforcing plate)**  
**(C-B)(Item Number C2.21)**

The channel cylinder section of each RHRHX is over 1/2 inch nominal thickness and includes one inlet nozzle (14-inches NPS) and one outlet nozzle (14-inches NPS). These welds are LSS and Code Case N-716-1 does not require examination of LSS welds. Prior to N-716-1 both nozzle-to-vessel welds on both RHRHXs were visually examined in accordance with Code Case N-706-1 each period during the inspection interval.

**2.5 RHRHX Nozzle Inside Radius Section (C-B)(Item Number C2.22)**

This weld is LSS and Code Case N-716-1 does not require examination of LSS welds. Prior to N-716-1 both nozzle inside radius sections from both RHRHXs were visually examined in accordance with Code Case N-706-1 each period during the inspection interval.

**2.6 RHRHX Pressure Retaining Bolting Exceeding 2 Inches in Diameter (C-D)(Item Number C4.10)**

There is no RHRHX bolting exceeding 2 inches in diameter.

**3.0 CONTAINMENT SPRAY HEAT EXCHANGERS (2) - CSHX (LSS per N-716-1)**

**3.1 CSHX 1A (Unit 1)**

**A. CSHX 1A Shell Circumferential Weld (C-A)(Item Number C1.10)**

There is one circumferential shell weld (flange-to-shell) on the CSHX. This weld is LSS and Code Case N-716-1 does not require examination of LSS welds. Prior to N-716-1 the entire length of this shell weld was ultrasonically examined during the inspection interval.

**B. CSHX 1A Head Circumferential Weld (C-A)(Item Number C1.20)**

There are no CSHX circumferential head-to-shell welds

**C. CSHX 1A Tubesheet-to-Shell Weld (C-A)(Item Number C1.30)**

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**ASME Class 2 Equivalent Components Subject to Examination  
(Unit 1 and Unit 2)**

**3.1 CSHX 1A (Unit 1) (continued)**

There is one tubesheet-to-shell weld on the CSHX. This weld is LSS and Code Case N-716-1 does not require examination of LSS welds. Prior to N-716-1 the entire length of this tubesheet-to-shell weld was ultrasonically examined during the inspection interval.

- D. CSHX 1A Nozzle-to-Vessel Welds (without reinforcing plate) (C-B)(Item Number C2.21)

The channel cylinder section of the CSHX is over 1/2 inch nominal thickness and includes one inlet nozzle (12-inches NPS) and one outlet nozzle (12-inches NPS). This weld is LSS and Code Case N-716-1 does not require examination of LSS welds. Prior to N-716-1 the two nozzle-to-vessel welds were ultrasonically and magnetic particle examined during the inspection interval.

- E. CSHX 1A Nozzle-to-Vessel Inside Radius Section (C-B)(Item Number C2.22)

There are no CSHX nozzles greater than 12 inches NPS.

- F. CSHX 1A Pressure Retaining Bolting Exceeding 2 Inches in Diameter (C-D)(Item Number C4.10)

There is no CSHX bolting exceeding 2 inches in diameter.

**3.2 CSHX 1B (Unit 1)**

The CSHX 1B was replaced in U1C9 of the second interval.

- A. CSHX 1B Shell Circumferential Weld (C-A)(Item Number C1.10)

There are two circumferential shell welds (one flange-to-shell and one flange-to-head) on the CSHX. This weld is LSS and Code Case N-716-1 does not require examination of LSS welds. Prior to N-716-1 the entire length of these shell welds were ultrasonically examined during the inspection interval.

- B. CSHX 1B Head Circumferential Weld (C-A)(Item Number C1.20)

There are no CSHX circumferential head-to-shell welds

- C. CSHX 1B Tubesheet-to-Shell Weld (C-A)(Item Number C1.30)

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**ASME Class 2 Equivalent Components Subject to Examination  
(Unit 1 and Unit 2)**

**3.2 CSHX 1B (Unit 1) (continued)**

There is one tubesheet-to-shell weld on the CSHX. This weld is LSS and Code Case N-716-1 does not require examination of LSS welds. Prior to N-716-1 the entire length of the tubesheet-to-shell weld was ultrasonically examined during the inspection interval.

- D. CSHX 1B Nozzle-to-Vessel Welds (without reinforcing plate) (C-B)(Item Number C2.21)

The channel cylinder section of each CSHX is over 1/2 inch nominal thickness and includes one inlet nozzle (12-inches NPS) and one outlet nozzle (12-inches NPS). The nozzles are set on the shell and are 3/8 inch nominal thickness. This weld is LSS and Code Case N-716-1 does not require examination of LSS welds. Prior to N-716-1 the two nozzle-to-vessel welds were ultrasonically and liquid penetrant examined during the inspection interval.

- E. CSHX 1B Nozzle-to-Vessel Inside Radius Section (C-B)(Item Number C2.22)

There are no CSHX nozzles greater than 12 inches NPS.

- F. CSHX 1B Pressure Retaining Bolting Exceeding 2 Inches in Diameter (C-D)(Item Number C4.10)

There is no CSHX bolting exceeding 2 inches in diameter.

**3.3 CSHX 2A and 2B (Unit 2)**

- A. CSHX 2A and 2B Shell Circumferential Weld (C-A)(Item Number C1.10)

There is one circumferential shell weld (flange-to-shell) on each CSHX. This weld is LSS and Code Case N-716-1 does not require examination of LSS welds. Prior to N-716-1 the entire length of this shell weld from one CSHX was ultrasonically examined during the inspection interval.

- B. CSHX 2A and 2B Head Circumferential Weld (C-A)(Item Number C1.20)

There are no CSHX circumferential head-to-shell welds

- C. CSHX 2A and 2B Tubesheet-to-Shell Weld (C-A)(Item Number C1.30)



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**ASME Class 2 Equivalent Components Subject to Examination**  
**(Unit 1 and Unit 2)**

**3.3 CSHX 2A and 2B (Unit 2) (continued)**

There is one tubesheet-to-shell weld on each CSHX. This weld is LSS and Code Case N-716-1 does not require examination of LSS welds. Prior to N-716-1 the entire length of one tubesheet-to-shell weld from one CSHX was ultrasonically examined during the inspection interval.

- D. CSHX 2A and 2B Nozzle-to-Vessel Welds (without reinforcing plate) (C-B)(Item Number C2.21)

The channel cylinder section of each CSHX is over 1/2 inch nominal thickness and includes one inlet nozzle (12-inches NPS) and one outlet nozzle (12-inches NPS). This weld is LSS and Code Case N-716-1 does not require examination of LSS welds. Prior to N-716-1 a total of two nozzle-to-vessel welds from one CSHX were ultrasonically and magnetic particle examined during the inspection interval.

- E. CSHX 2A and 2B Nozzle-to-Vessel Inside Radius Section (C-B)(Item Number C2.22)

There are no CSHX nozzles greater than 12 inches NPS.

- F. CSHX 2A and 2B Pressure Retaining Bolting Exceeding 2 Inches in Diameter (C-D)(Item Number C4.10)

There is no CSHX bolting exceeding 2 inches in diameter.

**4.0 SEAL WATER HEAT EXCHANGER (1) (SWHX) (LSS per N-716-1)**

**4.1 SWHX Shell Circumferential Weld (C-A)(Item Number C1.10)**

There is one circumferential shell weld located at a gross structural discontinuity on the SWHX. The SWHX nominal wall thickness is less than 0.20 inches. This weld is LSS and Code Case N-716-1 does not require examination of LSS welds. Prior to N-716-1 the entire length of this shell weld from the SWHX was surface examined during the inspection interval.

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**ASME Class 2 Equivalent Components Subject to Examination**  
**(Unit 1 and Unit 2)**

**4.2 SWHX Head Circumferential Weld (C-A)(Item Number C1.20)**

There is one circumferential head-to-shell weld on the SWHX. The SWHX nominal wall thickness is less than 0.20 inches. This weld is LSS and Code Case N-716-1 does not require examination of LSS welds. Prior to N-716-1 the entire length of one head-to-shell weld from the SWHX was surface examined during the inspection interval.

**4.3 SWHX Tubesheet to Shell Weld (C-A)(Item Number C1.30)**

There are no SWHX tubesheet-to-shell welds.

**4.4 SWHX Nozzle-to-Vessel Welds (C-B)(Item Number C2.11)**

The SWHX nominal wall thickness is less than 0.20 inches.

There are no SWHX nozzles greater than 4 inches NPS.

**4.5 SWHX Pressure Retaining Bolting Exceeding 2 Inches in Diameter (C-D)(Item Number C4.10)**

There is no SWHX bolting exceeding 2 inches in diameter.

**5.0 SEAL WATER FILTER(1)- SWF (LSS per N-716-1)**

**5.1 SWF Shell Circumferential Weld (C-A)(Item Number C1.10)**

There is one circumferential shell weld located at a gross structural discontinuity on the SWF. The SWF nominal wall thickness is less than 0.20 inches. This weld is LSS and Code Case N-716-1 does not require examination of LSS welds. Prior to N-716-1 the entire length of this shell weld was surface examined during the inspection interval.

**5.2 SWF Head Circumferential Weld (C-A)(Item Number C1.20)**

There is one circumferential head-to-shell weld on the SWF. The SWF nominal wall thickness is less than 0.20 inches. This weld is LSS and Code Case N-716-1 does not require examination of LSS welds. Prior to N-716-1 the entire length of this head-to-shell weld from the SWF shall be surface examined during the inspection interval.

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**ASME Class 2 Equivalent Components Subject to Examination  
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**5.3 SWF Tubesheet to Shell Weld (C-A)(Item Number C1.30)**

There are no SWF tubesheet-to-shell welds.

**5.4 SWF Nozzle-to-Vessel Welds (C-B)(Item Number C2.11)**

The SWF nominal wall thickness is less than 0.20 inches.

There are no SWF nozzles greater than 4 inches NPS.

**5.5 SWF Pressure Retaining Bolting Exceeding 2 Inches in Diameter (C-D)(Item Number C4.10)**

There is no SWF bolting exceeding 2 inches in diameter.

**6.0 SEAL WATER INJECTION FILTER (2) - SWIF (LSS per N-716-1)**

**6.1 SWIF Circumferential Weld (C-A)(Item Number C1.10)**

There is one circumferential shell weld located at a gross structural discontinuity on each SWIF. The SWIF nominal wall thickness is 0.875 inches. This weld is LSS and Code Case N-716-1 does not require examination of LSS welds. Prior to N-716-1 the entire length of this shell weld from one SWIF was ultrasonically examined during the inspection interval.

**6.2 SWIF Head Circumferential Weld (C-A)(Item Number C1.20)**

There is one circumferential head-to-shell weld on each SWIF. The SWIF nominal wall thickness is greater than 0.20 inches. This weld is Low Safety Significant (LSS) and Code Case N-716-1 does not require examination of LSS welds. Prior to N-716-1 the entire length of this head-to-shell weld from one SWIF was ultrasonically examined during the inspection interval.

**6.3 SWIF Tubesheet to Shell Weld (C-A)(Item Number C1.30)**

There are no SWIF tubesheet-to-shell welds.

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**ASME Class 2 Equivalent Components Subject to Examination**  
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**6.4 SWIF Nozzle-to-Vessel Welds (without reinforcing plate)**  
**(C-B)(Item Number C2.21)**

There are no SWIF nozzles greater than 4 inches NPS.

**6.5 SWIF Nozzle-to-Vessel inside Radius Section (C-B)(Item Number C2.22)**

There are no SWIF nozzles greater than 12 inches NPS.

**6.6 SWIF Pressure Retaining Bolting Exceeding 2 Inches in Diameter**  
**(C-D)(Item Number C4.10)**

There is no SWIF bolting exceeding 2 inches in diameter.

**7.0 CENTRIFUGAL CHARGING PUMP (CCP) TANK (BORON INJECTION TANK (BIT)) (1) (LSS per N-716-1)**

**NOTE**

The CCP tank was formerly identified as the BIT tank. This change occurred in Unit 1 Cycle 4 and Unit 2 Cycle 4 refueling outages. As a transition, both IDs are being retained for traceability.

**7.1 CCP Tank (BIT) Circumferential Shell Welds (C-A) (Item Number C1.10)**

There are no CCP tank circumferential shell welds.

**7.2 CCP Tank (BIT) Circumferential Head Welds (C-A)(Item Number C1.20)**

There are two circumferential head-to-shell welds located at structural discontinuities on the CCP Tank. CCP Tank nominal wall thickness is greater than 0.20 inch. This weld is LSS and Code Case N-716-1 does not require examination of LSS welds. Prior to N-716-1 these welds were ultrasonically examined during the inspection interval.

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**ASME Class 2 Equivalent Components Subject to Examination**  
**(Unit 1 and Unit 2)**

**7.3 CCP Tank (BIT) Nozzle-to-Head Welds (without reinforcing plate)**  
**(C-B)(Item Number C2.21)**

The CCP Tank is over 1/2 inch nominal thickness and includes two nozzles. One nozzle is located on each head with a 6-inch NPS. This weld is LSS and Code Case N-716-1 does not require examination of LSS welds. Prior to N-716-1 a total of two nozzle-to-vessel welds were ultrasonically and surface examined during the inspection interval.

**7.4 CCP Tank (BIT) Nozzle-to-Head inside Radius Section (C-B)(Item Number C2.22)**

There are no CCP Tank nozzles greater than 12 inches NPS.

**7.5 CCP Tank (BIT) Pressure Retaining Bolting Exceeding Two Inches in Diameter (C-D)(Item Number C4.10) (LSS per N-716-1)**

There are 16 manway cover studs at 2-1/2 inches in diameter. This bolting is LSS and Code Case N-716-1 does not require examination of LSS welds. Prior to N-716-1 all 16 studs were ultrasonically examined during the inspection interval.

**8.0 PIPING**

Material specifications for each piping system are stated on the weld isometrics. The following Class 2 piping systems are subject to examination:

High Pressure Safety Injection (includes parts of CVC, CS, RHR and SI)

Residual Heat Removal (RHR)

Safety Injection (SI)

Main Steam (MS)

Feedwater (FW)

Containment Spray (CS)

Auxiliary Feedwater

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**ASME Class 2 Equivalent Components Subject to Examination**  
**(Unit 1 and Unit 2)**

**8.0 PIPING (continued)**

RI-ISI program identifies as HSS piping portions of the following systems: Chemical and Volume Control System, Feedwater System, High Pressure Fire Protection System, Raw Cooling Water System, Reactor Coolant System, Residual Heat Removal System, and Safety Injection System.

**8.1 Piping Pressure-Retaining Bolting Greater Than 2 Inches In Diameter (C-D)(Item Number C4.20)**

There is no Class 2 Pressure-Retaining Bolting larger than two inches in diameter.

**8.2 Pressure Retaining Welds in Piping (C-F-1 and C-F-2)**

**NOTE**

For the Fourth 10-Year ISI Interval, Class 2 Piping Welds (C-F-1 and C-F-2) shall be in accordance with the RI-ISI examination requirements. **Refer to** Section 13.0 of this Attachment.

**9.0 PUMPS**

**9.1 RHR Pumps (2) - RHRP**

- A. RHRP Pressure Retaining Bolting Greater Than 2 Inches in Diameter (C-D)(Item Number C4.30)

There is no pressure retaining bolting greater than 2 inches in diameter on the RHRP.

The stuffing box extension to pump casing connection bolting is not greater than two inches in diameter.

The connection includes 24 studs at 1-1/4 inches in diameter with nuts and washers.

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**9.2 CVCS Centrifugal Charging Pumps (2) - CCP**

- A. CCP Pressure Retaining Bolting Greater Than 2 Inches In Diameter (C-D)(Item Number C4.30)

There is no pressure retaining bolting greater than 2 inches in diameter on the CCP.

**9.3 Safety Injection Pumps (2) - SIP**

- A. SIP Pressure Retaining Bolting Greater Than 2 Inches in Diameter (C-D)(Item Number C4.30)

There is no pressure retaining bolting greater than 2 inches in diameter on the SIP.

**9.4 Containment Spray Pumps (2) - CSP**

- A. CSP Pressure Retaining Bolting Greater Than 2 Inches In Diameter (C-D)(Item Number C4.30)

There is no pressure retaining bolting greater than 2 inches in diameter on the CSP.

**10.0 VALVES**

Systems including ASME Code Class 2 valves subject to examination are identified in Section 8.0. A tabulation of valves is presented in Attachment 6 for Unit 1 and Unit 2.

**10.1 Valve Pressure-Retaining Bolting Greater Than 2 Inches in Diameter (C-D)(Item Number C4.40)**

There is no Class 2 pressure-retaining bolting greater than 2 inches in diameter.

**11.0 WELDED SUPPORT ATTACHMENTS (C-C)**

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**ASME Class 2 Equivalent Components Subject to Examination  
(Unit 1 and Unit 2)**

**NOTE**

Examination is required whenever component support member deformation, e.g., broken, bent, or pulled out parts, is identified during operation, refueling, maintenance, examination, or testing.

**11.1 Steam Generator Secondary Side Welded Support Attachments  
(C-C)(Item Number C3.10)**

There are no vessel welded support attachments.

**11.2 RHRHX Welded Support Attachments (C-C)(Item Number C3.10)**

There are two welded support attachments on each RHRHX. One welded support attachment on one RHRHX shall be surface examined during the inspection interval.

**11.3 CSHX Welded Support Attachments (C-C)**

**A. CSHX 1A Welded Support Attachments Unit 1 (C-C)(Item Number C3.10)**

There are four welded support attachments on the Unit 1A CSHX. One welded support attachment on the Unit 1A CSHX shall be surface examined during the inspection interval.

**B. CSHX 1B Welded Support Attachments Unit 1(C-C)(Item Number C3.10)**

The Unit 1 containment spray heat exchanger 1B was replaced in U1C9 during the second interval.

There are four welded support attachments on the Unit 1B CSHX. One welded support attachment on the Unit 1B CSHX shall be surface examined during the inspection interval.

**C. CSHX 2A and 2B Welded Support Attachments Unit 2 (C-C)(Item Number C3.10)**

There are four welded support attachments on each Unit 2 CSHX. One welded support attachment on one Unit 2 CSHX shall be surface examined during the inspection interval.



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**ASME Class 2 Equivalent Components Subject to Examination**  
**(Unit 1 and Unit 2)**

**11.4 SWHX Welded Support Attachments (C-C)(Item Number C3.10)**

There are two welded support attachments on the SWHX. One welded support attachment on the SWHX shall be surface examined during the inspection interval.

**11.5 SWF Welded Support Attachments (C-C)(Item Number C3.10)**

There are four welded support attachments on the SWF. One welded support attachment on the SWF shall be surface examined during the inspection interval.

**11.6 SWIF Welded Support Attachments (C-C)(Item Number C3.10)**

There are three welded support attachments on each SWIF. One welded support attachment on one SWIF shall be surface examined during the inspection interval.

**11.7 CCP Tank (BIT) Welded Supports (C-C)(Item Number C3.10)**

There are four welded support attachment pads welded to the shell. One welded support attachment on the CCP tank shall be surface examined during the inspection interval.

**11.8 Piping Welded Support Attachments (C-C)(Item Number C3.20)**

Welded support attachments include the support attachments of piping required to be examined by Examination Category C-F-1 and C-F-2. Included are those supports which have attachment welds to piping pressure retaining boundary. The entire length of each welded support attachment weld selected for examination shall be surface examined during the inspection interval.

The examinations performed during the inspection interval should include 10 percent of the welded support attachments. As a minimum 10 percent of the welded attachments associated with the component supports selected for examination under IWF-2510 shall be examined. The examinations shall be distributed during the inspection interval.

The following piping systems include welded support attachments:

Chemical Volume Control

Containment Spray

Feedwater

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**11.8 Piping Welded Support Attachments (C-C)(Item Number C3.20)**  
**(continued)**

High Pressure Safety Injection (which includes Chemical Volume Control, Containment Spray, Residual Heat Removal, and Safety Injection Systems)

The High Pressure Safety Injection welded support attachments selected for examination are included in the Chemical Volume Control, Containment Spray, Residual Heat Removal, or Safety Injection Systems.

Main Steam

Residual Heat Removal

Safety Injection

Auxiliary Feedwater

**11.9 CCP Welded Support Attachments (C-C)(Item Number C3.30)**

There are four welded support attachments on each CCP. A total of four welded support attachments from one CCP shall be liquid penetrant examined during the inspection interval.

**11.10 CSP Welded Support Attachments (C-C)(Item Number C3.30)**

There are no welded support attachments associated with the CSP.

**11.11 RHRP Welded Supports Attachments (C-C)(Item Number C3.30)**

There are no welded support attachments associated with the RHRP.

**11.12 SIP Welded Support Attachments (C-C)(Item Number C3.30)**

There are no welded support attachments associated with the SIP.

**11.13 Valves Welded Support Attachments (C-C)(Item Number C3.40)**

There are no welded valve support attachments.

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**ASME Class 2 Equivalent Components Subject to Examination**  
**(Unit 1 and Unit 2)**

**12.0 COMPONENT SUPPORTS (F-A)**

**12.1 Steam Generator Secondary Side Component Supports (F-A)(Item Number F1.40)**

There is one component support on each steam generator. The component support from one steam generator shall be visually examined during the inspection interval in accordance with visual examination method VT-3. The component support extends from steam generator up to and including the attachment to the supporting structure.

**12.2 RHRHX Component Supports (F-A)(Item Number F1.40)**

There is one component support on each RHRHX. The component support from one heat exchanger shall be visually examined during the inspection interval in accordance with visual examination method VT-3. The component support extends from the heat exchanger up to and including the attachment to the supporting structure.

**12.3 CSHX Component Supports (F-A)(Item Number F1.40)**

**A. CSHX 1A Component Supports Unit 1 (F-A)(Item Number F1.40)**

There is one component support on the CSHX. The component support shall be examined during the inspection interval in accordance with visual examination method VT-3. The component support extends from the heat exchanger up to and including the attachment to the supporting structure.

**B. CSHX 1B Component Supports Unit 1 (F-A)(Item Number F1.40)**

The containment spray heat exchanger 1B was replaced in U1C9 in the second interval.

There is one component support on the CSHX. The component support from shall be examined during the inspection interval in accordance with visual examination method VT-3. The component support extends from the heat exchanger up to and including the attachment to the supporting structure.

**C. CSHX 2A and 2B Component Supports Unit 2 (F-A)(Item Number F1.40)**

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**(Unit 1 and Unit 2)**

**12.3 CSHX Component Supports (F-A)(Item Number F1.40)**  
**(continued)**

There is one component support on each CSHX. The component support from one heat exchanger shall be examined during the inspection interval in accordance with visual examination method VT-3. The component support extends from the heat exchanger up to and including the attachment to the supporting structure.

**12.4 SWHX Component Supports (F-A)(Item Number F1.40)**

There is one component support on the SWHX. The component support from the heat exchanger shall be examined during the inspection interval in accordance with visual examination method VT-3. The component support extends from the heat exchanger up to and including the attachment to the supporting structure.

**12.5 SWF Component Supports (F-A)(Item Number F1.40)**

There is one component support on the SWF. The component support from the SWF shall be examined during the inspection interval in accordance with visual examination method VT-3. The component support extends from the SWF up to and including the attachment to the supporting structure.

**12.6 SWIF Component Supports (F-A)(Item Number F1.40)**

There is one component support on each SWIF. The component support from one SWIF shall be visually examined during the inspection interval in accordance with visual examination method VT-3. The component support extends from the SWIF up to and including the attachment to the supporting structure.

**12.7 CCP Tank (BIT) Component Supports (F-A)(Item Number F1.40)**

There is one component support associated with the CCP tank. The component support shall be examined VT-3 during the inspection interval. The component support extends from the CCP Tank up to and including the attachment to the support structure.

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**(Unit 1 and Unit 2)**

**12.8 Piping Component Supports (F-A)(Item Number F1.20)**

Fifteen percent of the class 2 piping component supports on piping not exempt from volumetric, surface, or VT-1 or VT-3 visual examination by IWC-1220 shall be examined during the inspection interval in accordance with visual examination method VT-3. 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 IWF-2000. This examination includes integrally welded and non-integrally welded component supports. Component supports extend from the piping up to and including the attachment to the supporting structure.

The setting of variable and spring-type hangers shall be verified in accordance with the applicable NDE procedure with the acceptance criteria shown in the Scan Plan (see PRISIM data base) or the applicable work instruction.

The following piping systems include component supports:

Chemical Volume Control

Containment Spray

Feedwater

High Pressure Safety Injection (which includes Chemical Volume Control, Containment Spray, Residual Heat Removal, and Safety Injection Systems) component supports selected for examination are included in the Chemical Volume Control, Containment Spray, Residual Heat Removal, or Safety Injection Systems.

Main Steam

Residual Heat Removal

Safety Injection

Auxiliary Feedwater

<b>SQN</b> <b>Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM</b> <b>UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4</b> <b>Rev. 0000</b> <b>Page 107 of 359</b>
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**(Unit 1 and Unit 2)**

**12.9 RHRP Component Supports (F-A)(Item Number F1.40)**

Each RHRP includes one component support bolted to the pump feet which are integrally forged with the pump. The component support from one pump shall be visually examined during the inspection interval in accordance with visual examination method VT-3. The component support extends from the RHRP up to and including the attachment to the supporting structure.

**12.10 CCP Component Supports (F-A)(Item Number F1.40)**

Each CCP includes one component support bolted to the pump feet which are integrally welded to the pump. The component support from one pump shall be visually examined during the inspection interval in accordance with visual examination method VT-3. The component support extends from the CCP up to and including the attachment to the supporting structure.

**12.11 SIP Component Supports (F-A)(Item Number F1.40)**

Each SIP includes one component support bolted to the pump feet which are integrally forged with the pump. The component support from one pump shall be visually examined during the inspection interval in accordance with visual examination method VT-3. The component support extends from the SIP up to and including the attachment to the supporting structure.

**12.12 CSP Component Supports (F-A)(Item Number F1.40)**

Each CSP includes one component support bolted to the pump feet which are integrally forged with the pump. The component support from one pump shall be visually examined during the inspection interval in accordance with visual examination method VT-3. The component support extends from the CSP up to and including the attachment to the supporting structure.

**12.13 Valve Component Supports (F-A)(Item Number F1.40)**

There are two valves with one support each in the Residual Heat Removal system. The component support from one valve shall be examined during the inspection interval in accordance with visual examination method VT-3. The component support extends from the valve up to and including the attachment to the supporting structure.

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**ASME Class 2 Equivalent Components Subject to Examination**  
**(Unit 1 and Unit 2)**

**12.13 Valve Component Supports (F-A)(Item Number F1.40)**  
**(continued)**

There is one valve with one support in the Auxiliary Feedwater system. The component support from the one valve shall be examined during the inspection interval in accordance with the visual examination method VT-3. The component support extends from the valve up to and including the attachment to the supporting structure.

The settings of variable and spring-type hangers shall be verified in accordance with the applicable NDE procedure with the acceptance criteria shown in the Scan Plan (see PRISIM database) or the applicable work instruction.

**13.0 EXAMINATION CATEGORY R-A RISK INFORMED PIPING**  
**EXAMINATIONS**

Refer to Table E of Attachment 4 for Unit 1 and Table E of Attachment 5 for Unit 2 for examination schedule for examination under the RI-ISI program. Table E in Attachment 4 and Attachment 5 have the examination method requirements for each degradation mechanism and corresponding RI Item number.

Shutdown Cooling piping flow paths inside containment are HSS. This includes the suction path from RCS hot leg loop 4 to containment penetration X-107 (RCS Class 1 and RHR Class 1 and 2). It also includes the two return lines from the containment penetrations X-20A and X-20B to the RCS cold legs (RCS Class 1 and SI Class 1 and 2).

Feedwater piping > 4NPS from the steam generators to the outer containment isolation valve outside containment (FCV 3-33, 3-47, 3-87, and 3-100) are HSS.

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**ASME Class 3 Equivalent Components Subject to Examination  
(Unit 1 and Unit 2)**

The ASME Code Class 3 (equivalent) components to be examined during the inspection interval are outlined below.

Table C for integrally welded support attachments and Table D for component supports of Attachment 4 for Unit 1 and Attachment 5 for Unit 2 shall be used for items selected for examination which provide examination schedule for the interval and additional information such as reference ISI drawings numbers, and ASME Section XI Examination Categories.

## **1.0 WELDED SUPPORT ATTACHMENTS**

**NOTE**

Examination is required whenever component support member deformation, e.g., broken, bent, or pulled out parts, is identified during operation, refueling, maintenance, examination, or testing.

### **1.1 Piping Welded Support Attachments (D-A)(Item Number D1.20)**

The entire length of each piping welded support attachments shall be VT-1 examined.

The examination performed during the inspection interval shall include 10 percent of the welded attachments. The examinations shall be distributed during the inspection interval.

The following piping system contains welded support attachments:

Air Conditioning Chilled Water

Auxiliary Feedwater

Component Cooling

Essential Raw Cooling Water

Fuel Pool Cooling (Unit 1 only)



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**ASME Class 3 Equivalent Components Subject to Examination**  
**(Unit 1 and Unit 2)**

**1.1 Piping Welded Support Attachments (D-A)(Item Number D1.20)**  
**(continued)**

The Chemical and Volume Control System piping has no ASME Code Class 3 (equivalent) components welded support attachments required to be examined. Rules of IWD-1220(c) have been used to exempt the components.

**1.2 Equipment Welded Support Attachments (D-A)(Item Number D1.10)**

The equipment welded support attachments shall be VT-1 examined.

**1.3 Containment Spray Heat Exchanger Secondary Side(2) - Welded Support Attachments - CSH (ERCW)**

**A. CSHX 1A Welded Support Attachments Unit 1 (D-A)(Item Number D1.10)**

There are four welded support attachments on the Unit 1 CSH. Four welded support attachments from the CSH shall be examined during the inspection interval.

**B. CSHX 1B Welded Support Attachments Unit 1 (D-A)(Item Number D1.10)**

The CSHX 1B was replaced in U1C9 of the second interval.

There are four welded support attachments on the Unit 1 CSH. Four welded support attachments from the CSH shall be examined during the inspection interval.

**C. CSHX 2A and 2B Welded Support Attachments Unit 2 (D-A)(Item Number D1.10)**

There are four welded support attachments on each Unit 2 CSH. Four welded support attachments from one CSH shall be examined during the inspection interval.

**1.4 Nonregenerative Letdown Heat Exchanger (1) - Welded Support Attachments - NRLHX (CCS) (D-A)(Item Number D1.10)**

There is one welded support attachment on the NRLHX. The welded support attachment on the NRLHX shall be examined during the inspection interval.

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**ASME Class 3 Equivalent Components Subject to Examination**  
**(Unit 1 and Unit 2)**

**1.5 Gas Stripper and Boric Acid Evaporator (1) - Welded Support Attachments - GSBAE (CCS) (D-A)(Item Number D1.10)**

The Gas Stripper and Boric Acid Evaporator were functionally abandoned, but remain in the procedure for historical purposes.

**1.6 Component Cooling Surge Tank (1) - Welded Support Attachments - CCST (CCS) (D-A)(Item Number D1.10)**

There is one welded support attachment on the CCST. The welded support attachment on the CCST shall be examined during the inspection interval.

**1.7 Essential Raw Cooling Water System Strainer (2) - Welded Support Attachments- ERCWS (ERCW) (D-A)(Item Number D1.10)**

There are 16 welded support attachments on strainer A2A-A and 17 welded support attachments on strainer B2B-B. All welded support attachments on one ERCWS shall be examined during the inspection interval.

**1.8 Air Conditioning Chilled Water System Shutdown Board Room Water Chiller (1) - Welded Support Attachments- SDBRWC (D-A)(Item Number D1.10)**

There are 2 welded support attachments on the SDBRWC. The welded attachments on the SDBRWC shall be examined during the inspection interval.

**1.9 Air conditioning Chilled Water System Chilled Water Air Separator (1)- Welded Support Attachments- CWAS (D-A)(Item Number D1.10)**

There are 4 welded support attachments on the CWAS. The welded attachments on the CWAS shall be examined during the inspection interval.

**1.10 Component Cooling Heat Exchanger (2) - Welded Support Attachment CCHX (CCS) (D-A)(Item Number D1.10)**

There are no welded support attachments on the CCHX.

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**ASME Class 3 Equivalent Components Subject to Examination**  
**(Unit 1 and Unit 2)**

**1.11 Fuel Pool Cooling And Cleaning System - Spent Fuel Pit Heat Exchanger (2) - Welded Support Attachments- SFPHX (FPC) Unit 1 only (D-A)(Item Number D1.10)**

These welded attachments are included in Unit 1. There are two welded support attachments on each SFPHX. Two welded attachments on one SFPHX shall be examined during the inspection interval.

**1.12 RHR Heat Exchanger Secondary Side (2) - Welded Support Attachments- RHRHSXH (CCS) (D-A)(Item Number D1.10)**

There are two welded support attachments on each RHRHSXH. Two welded attachments on one RHRHSXH shall be examined during the inspection interval.

**1.13 ERCW Old Intake Pumping Station Strainer (2) - Welded Support Attachments- ERCW-STR) (D-A)(Item Number D1.10)**

There are two welded support attachments on each ERCW-STR. Two welded attachments from one ERCW-STR shall be examined during the inspection interval.

**1.14 Turbine Driven Auxiliary Feedwater Pump (1) - Welded Support Attachment TDAFP (AFW) (D-A)(Item Number D1.30)**

There are no welded support attachments on the TDAFP.

**1.15 Motor Driven Auxiliary Feedwater Pump (2) - Welded Support Attachment MDAFP (AFW) (D-A)(Item Number D1.30)**

There are no welded support attachments on the MDAFP.

**1.16 Component Cooling System Water Pumps (3) - Welded Support Attachment CCSWP (CCS) (D-A)(Item Number D1.30)**

There are no welded support attachments on the CCSWP.

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**(Unit 1 and Unit 2)**

**1.17 Essential Raw Cooling Water System Pump Station Pump (8) - Welded Support Attachments ERCWP (ERCW) Unit 1 only (D-A)(Item Number D1.30)**

These welded support attachments are included in Unit 1. There is one welded support attachment on each ERCWP. One welded support attachment on one ERCWP shall be examined during the inspection interval.

**1.18 Fuel Pool Cooling And Cleaning System - Spent Fuel Pit Pumps (3) - Welded Support Attachment SFPP (FPC) Unit 1 only (D-A)(Item Number D1.30)**

There are no welded support attachments on the SFPP.

**1.19 Air Conditioning Chilled Water System Chill Water Circulation Pump (1) - Welded Support Attachments- CWCP (D-A)(Item Number D1.30)**

There are no welded support attachments on the CWCP.

**1.20 ERCW Screen Wash Pump Support (4) supports - Welded Support Attachments- ERCWSWPH (ERCW) Unit 1 only (D-A)(Item Number D1.30)**

These welded support attachments are included in Unit 1. There is one welded support attachment on each ERCWSWPH. One welded support attachment on one ERCWSWPH shall be examined during the inspection interval.

**2.0 PIPING COMPONENT SUPPORTS (F-A)(ITEM NUMBER F1.30)**

Ten percent of the class 3 piping component supports associated with Examination Category D-A piping shall be visually examined during each inspection interval in accordance with visual examination methods VT-3 (Note: Piping supports to be examined shall be the supports of piping **NOT** exempted under IWD-1220). This examination includes integrally welded and non-integrally welded component supports. Component supports extend from the piping up to and including the attachment to the supporting structure.

The setting of variable and spring-type hangers shall be verified in accordance with the applicable NDE procedure with the acceptance criteria shown in the Scan Plan (see PRISIM database) or the applicable work instruction.

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**ASME Class 3 Equivalent Components Subject to Examination**  
**(Unit 1 and Unit 2)**

**2.0 PIPING COMPONENT SUPPORTS (F-A)(ITEM NUMBER F1.30)**  
**(continued)**

The following piping system contains component supports:

Air Conditioning Chilled Water

Auxiliary Feedwater

Component Cooling

Essential Raw Cooling Water

Fuel Pool Cooling (Unit 1 only)

The Chemical and Volume Control System piping has no ASME Code Class 3 (equivalent) components supports required to be examined. Rules of IWD-1220(c) have been used to exempt the components.

**3.0 EQUIPMENT COMPONENT SUPPORTS (F-A)(ITEM NUMBER F1.40)**

The equipment component supports shall be VT-3 examined.

**3.1 Containment Spray Heat Exchanger Secondary Side**  
**(2)-Component Support - CSH (ERCW) (F-A)(Item Number F1.40)**

**A. CSHX 1A Component Support Unit 1 (F-A)(Item Number F1.40)**

There is one component support on the Unit 1 CSH. The component support shall be examined during the inspection interval.

**B. CSHX 1B Component Support Unit 1 (F-A)(Item Number F1.40)**

The CSHX 1B was replaced in U1C9 of the second interval.

There is one component support on the Unit 1 CSH. The component support shall be examined during the inspection interval.

**C. CSHX 2A and 2B Component Support Unit 2 (F-A)(Item Number F1.40)**

There is one component support on each Unit 2 CSH. The component support from one CSH shall be examined during the inspection interval.

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**(Unit 1 and Unit 2)**

**3.2 Nonregenerative Letdown Heat Exchanger (1)-Component Support - NRLHX (CCS) (F-A)(Item Number F1.40)**

There is one component support on the NRLHX. The component support on the NRLHX shall be examined during the inspection interval.

**3.3 Gas Stripper and Boric Acid Evaporator (1) - GSBAE (CCS) (F-A)(Item Number F1.40)**

The Gas Stripper and Boric Acid Evaporator were functionally abandoned, but remain in the procedure for historical purposes.

**3.4 Component Cooling Surge Tank (1)-Component Support - CCST (CCS) (F-A)(Item Number F1.40)**

There is one component support on the CCST. The component support on the CCST shall be examined during the inspection interval.

**3.5 Turbine Driven Auxiliary Feedwater Pump (1)-Component Support - TDAFP (AFW) (F-A)(Item Number F1.40)**

There is one component support on the TDAFP. The component support on the TDAFP shall be examined during the inspection interval.

**3.6 Motor Driven Auxiliary Feedwater Pumps (2)-Component Support - MDAFP (AFW) (F-A)(Item Number F1.40)**

There is one component support on each MDAFP. The component support on one MDAFP shall be examined during the inspection interval.

**3.7 Component Cooling System Water Pumps (3)-Component Support - CCSWP (CCS) (F-A)(Item Number F1.40)**

There is one component support on each CCSWP. One component support on one CCSWP shall be examined during the inspection interval.

**3.8 Component Cooling Heat Exchanger (2)-Component Support - CCHX (CCS) (F-A)(Item Number F1.40)**

There is one component support on each CCHX. One component support on one CCHX shall be examined during the inspection interval.

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**ASME Class 3 Equivalent Components Subject to Examination**  
**(Unit 1 and Unit 2)**

**3.9 Essential Raw Cooling Water System Strainer (2)-Component Support - ERCWS (ERCW) (F-A)(Item Number F1.40)**

There is one component support on each ERCWS. One component support from one ERCWS shall be examined during the inspection interval.

**3.10 Essential Raw Cooling Water System Pump Station Pump(8)-Component Supports ERCWP (ERCW) Unit 1 only (F-A)(Item Number F1.40)**

These supports are included in Unit 1. There is one component support on each ERCWP. One component support on one ERCWP shall be examined during the inspection interval.

**3.11 Fuel Pool Cooling And Cleaning System - Spent Fuel Pit Pumps (3)-Component Supports SFPP (FPC) Unit 1 only (F-A)(Item Number F1.40)**

These supports are included in Unit 1. There is one component support on each SFPP. One component support on one SFPP shall be examined during the inspection interval.

**3.12 Air Conditioning Chilled Water System Shutdown Board Room Water Chiller (1)-Component Supports SDBRWC (F-A)(Item Number F1.40)**

There is one component support on the SDBRCW. The component support on the SDBRWC shall be examined during the inspection interval.

**3.13 Air Conditioning Chilled Water System Chill Water Circulation Pump (1)-Component Support CWCP (F-A)(Item Number F1.40)**

There is one component support on the CWCP. The component support on the CWCP shall be examined during the inspection interval.

**3.14 Air conditioning Chilled Water System Chill Water Air Separator (1)-Component Support - CWAS (F-A)(Item Number F1.40)**

There is one component support on the CWAS. The component support on the CWAS shall be examined during the inspection interval.

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**ASME Class 3 Equivalent Components Subject to Examination**  
**(Unit 1 and Unit 2)**

**3.15 Fuel Pool Cooling And Cleaning System - Spent Fuel Pit Heat Exchanger (2)-Component Supports - SFPHX (FPC) Unit 1 only (F-A)(Item Number F1.40)**

These supports are included in Unit 1. There are two component supports on each SFPHX. Two component supports on one SFPHX shall be examined during the inspection interval.

**3.16 RHR Heat Exchanger Secondary Side (2)-Component Support - RHRHSXH (CCS) (F-A)(Item Number F1.40)**

There is one component support on each RHRHSXH. The component support on one RHRHSXH shall be examined during the inspection interval.

**3.17 ERCW Screen Wash Pump Support (4)-Component Supports - ERCWSWPH (ERCW) Unit 1 only (F-A)(Item Number F1.40)**

These component supports are included in Unit 1. There is one component support on each ERCWSWPH. One component support on one ERCWSWPH shall be examined during the inspection interval.

**3.18 ERCW Old ERCW Intake Pumping Station Strainer (2)-Component Support ERCW-STR (F-A)(Item Number F1.40)**

There is one component support on each ERCW-STR. One component support on one ERCW-STR shall be examined during the inspection interval.

**3.19 Valve Component Supports (F-A)(Item Number F1.40)**

There are no valves with component supports.



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B-A		<b>Pressure Retaining Welds In Reactor Vessel</b>									
B-A	B1.10	Reactor Vessel Shell Welds	Volumetric								
B-A	B1.11	Reactor Vessel Shell Welds, Circumferential	UT	4	100%	4 See Note 8	Deferral Permissible	0	0	4 See Note 8	ISI-0504-C
B-A	B1.12	Reactor Vessel Shell Welds, Longitudinal	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-A	B1.20	Reactor Vessel Head Welds See Note 8	Volumetric								
B-A	B1.21	Reactor Vessel Head Welds, Circumferential See note 7	UT	2 (closure and lower)	100% of accessible length	2 See Note 8	Deferral Permissible	0	1 See Note 8	1 See Note 8	ISI-0504-C
B-A	B1.22	Reactor Vessel Head Welds, Meridional	UT	6	100% of accessible length	6 See Note 8	Deferral Permissible	0	0	6 See Note 8	ISI-0504-C
B-A	B1.30	Reactor Vessel Shell-to-Flange Weld	UT	1	100%	1 See Note 8	Deferral Permissible	0	0	1 See Note 8	ISI-0504-C

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B-A	B1.40	Reactor Vessel Head-to-Flange Weld	MT & UT	1	100%	1 Note 8	Deferral Permissible	0	1	0	ISI-0504-C
B-A	B1.50	Reactor Vessel Weld Repair Areas > 10% Wall	Volumetric								
B-A	B1.51	Reactor Vessel Repair Welds Beltline Region	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Category Total				14		14		0	2	12	
CUMULATIVE INTERVAL PERCENTAGE								N/A	N/A	N/A	
<b>B-B</b>		<b>Pressure Retaining Welds in Vessels Other than Reactor Vessels</b>									
B-B	B2.10	Pressurizer Shell-to-Head Welds	Volumetric								
B-B	B2.11	Pressurizer Circumferential Shell-to-Head Welds	UT	2	100%	2	Deferral <b>NOT</b> Permissible	0	1	1	ISI-0394-C
B-B	B2.12	Pressurize Shell to Head Intersecting Longitudinal Welds	UT	2	100% (1 foot of each intersecting longitudinal weld)	2 (1 foot each)	Deferral <b>NOT</b> Permissible	0	1	1	ISI-0394-C

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B-B	B2.20	Pressurizer Head Welds	Volumetric								
B-B	B2.21	Pressurizer Head Welds Circumferential	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-B	B2.22	Pressurizer Head Welds Meridional	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-B	B2.30	Steam Generator Primary Side Head Welds	Volumetric								
B-B	B2.31	Steam Generator Primary Side Head Welds Circumferential see note 1	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-B	B2.32	Steam Generator Primary Side Head Welds Meridional see note 1	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-B	B2.40	Steam Generator Tubesheet-to-Head Weld see note 1	UT	4 (4 Steam Generators/ 1 weld each)	One weld	1	Deferral <b>NOT</b> Permissible	1	0	0	ISI-0399-C

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B-B	B2.50	Heat Exchangers (Primary Side), Head Welds	Volumetric								
B-B	B2.51	Heat Exchangers (Primary Side), Head Welds, Circumferential	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-B	B2.52	Heat Exchangers (Primary Side), Head Welds, Meridional	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-B	B2.60	Heat Exchangers (Primary Side) -Shell, Tubesheet -to-Head Welds	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-B	B2.70	Heat Exchangers (Primary Side) -Shell, Longitudinal Welds	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-B	B2.80	Heat Exchangers (Primary Side) -Shell Tubesheet-to-Shell Welds	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Category Total				8		5		1	2	2	
CUMULATIVE INTERVAL PERCENTAGE								20%	60%	100%	

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<b>B-D</b>		<b>Full Penetration Welds of Nozzles in Vessels</b>									
B-D	B3.100	Reactor Vessel Nozzle Inside Radius Section	VT-1 Code Case N-648-1 See Note 3	8	100%	8 See Note 8	Deferral Permissible	0	0	8 See Note 8	ISI-0504-C
B-D	B3.110	Pressurizer Nozzle-to-Vessel Welds	UT	6	100%	6	Deferral <b>NOT</b> Permissible	2	2	2	ISI-0394-C
B-D	B3.120	Pressurizer Nozzle Inside Radius Section See 10CFR50.55a(b)(2)(xxi)(A)	UT Note 11	6	100%	6	Deferral <b>NOT</b> Permissible	2	2	2	ISI-0394-C
B-D	B3.130	Steam Generator Primary Side Nozzle-to-Vessel Welds See Note 1	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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B-D	B3.140	Steam Generator Primary Side Nozzle Inside Radius Section See 10CFR50.55a(b)(2)(xxi)(A) See Note 1	UT Note 11	8	100%	8	Deferral <b>NOT</b> Permissible	2	2	4	ISI-0399-C
B-D	B3.150	Heat Exchanger Primary Side Nozzle-to-Vessel Welds	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-D	B3.160	Heat Exchanger Primary Side Nozzle Inside Radius Section	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-D	B3.90	Reactor Vessel Nozzle-to-Vessel Welds	UT	8	100%	8 See Note 9	Deferral Permissible	0	0	8 See Notes:2 & 8	ISI-0504-C
Category Total				36		36(20)		6	6	24(8)	
CUMULATIVE INTERVAL PERCENTAGE						Percentage based on 20 items that cannot be deferred.		30%	60%	100%	

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B-F		Pressure Retaining Dissimilar Metal Welds See Note 4									
B-G-1		Pressure Retaining Bolting, Greater Than 2" in Diameter									
B-G-1	B6.10	Reactor Vessel Closure Head Nuts > 2" in diameter	Visual VT-1	54	100%	54	Deferral Permissible	0	0	54	ISI-0504-C
B-G-1	B6.20	Reactor Vessel Closure Studs > 2" diameter	UT (or MT when removed)	54	100%	54	Deferral Permissible	0	0	54	ISI-0504-C
B-G-1	B6.40	Reactor Vessel Threads in Flange	UT	54	100%	54	Deferral Permissible	0	0	54	ISI-0504-C
B-G-1	B6.50	Reactor Vessel Closure Washers, Bushings Note: Reactor Vessel does <b>NOT</b> have bushings only washers	VT-1	54	100%	54	Deferral Permissible	0	0	54	ISI-0504-C
B-G-1	B6.60	Pressurizer Bolts and Studs >2" diameter	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-G-1	B6.70	Pressurizer Flange Surfaces When Connection Disassembled	Visual	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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B-G-1	B6.80	Pressurizer Nuts, Bushings, and Washers	Visual	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-G-1	B6.90	Steam Generator Bolts and Studs >2" diameter	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-G-1	B6.100	Steam Generator Flange Surfaces When Connection Disassembled	Visual	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-G-1	B6.110	Steam Generator Nuts, Bushings, and Washers	Visual	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-G-1	B6.120	Heat Exchanger Bolts and Studs	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-G-1	B6.130	Heat Exchanger Flange Surfaces When Connection Disassembled	Visual	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-G-1	B6.140	Heat Exchanger Nuts, Bushings, and Washers	Visual	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-G-1	B6.150	Piping Bolts and Studs > 2" diameter	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A



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B-G-1	B6.160	Piping Flange Surfaces When Connection Disassembled	Visual	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-G-1	B6.170	Piping Nuts, Bushings, and Washers	Visual	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-G-1	B6.180	Reactor Coolant Pump Bolts & Studs > 2" diameter	UT	4 Pumps/ 24 bolts/studs per pump	One pump/ 24 bolts	24 bolts	Deferral Permissible	0	0	24	ISI-0325-C
B-G-1	B6.190	Reactor Coolant Pump Flange Surface, when connection is disassembled See Note: 5	VT-1 See Note: 5	4 Pumps	One pump if selected for examination under Category B-L-2	One pump	Deferral Permissible	only if Category B-L-2 examination is performed	only if Category B-L-2 examination is performed	only if Category B-L-2 examination is performed	ISI-0325-C
B-G-1	B6.200	Reactor Coolant Pump Nuts, Bushings, and Washers	VT-1	4 (24 nuts on RCP#1)	One pump if selected for examination under Category B-L-2	1	Deferral Permissible	Only if Category B-L-2 exam is performed	Only if Category B-L-2 exam is performed	Only if Category B-L-2 exam is performed	ISI-0325-C
B-G-1	B6.210	Valve Bolts & Studs > 2" diameter	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-G-1	B6.220	Valve Flange Surface, when connection is disassembled	Visual	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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B-G-1	B6.230	Valve Nuts, Bushings, and Washers	Visual	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Category Total				412		240		0	0	240	
CUMULATIVE INTERVAL PERCENTAGE								N/A	N/A	N/A	
<b>B-G-2</b>		<b>Pressure Retaining Bolting, 2" and Less in Diameter</b>									
B-G-2	B7.10	Reactor Vessel Bolts, Studs, and Nuts <= 2" diameter	Visual	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-G-2	B7.20	Pressurizer Bolts, Studs, and Nuts <= 2" diameter	VT-1	16 (One Manway / 16 Bolts)	100%	16 (1 Manway) when disassembled	Deferral <b>NOT</b> Permissible	when disassembled	when disassembled	when disassembled	ISI-0394-C
B-G-2	B7.30	Steam Generator Bolts, Studs, and Nuts <= 2" diameter  See Note 1	VT-1	128 (4 Generators / 2 Manways / 16 Bolts each)	100% of bolted connections on one Steam Generator selected for exam under Category B-B	32 (2 Manways on one generator/ 16 Bolts each)	Deferral <b>NOT</b> Permissible	when disassembled	when disassembled	when disassembled	ISI-0399-C
B-G-2	B7.40	Heat Exchanger Bolts, Studs, and Nuts <= 2" diameter	Visual	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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B-G-2	B7.50	Piping Bolts, Studs, and Nuts <= 2" diameter	Visual								
B-G-2	B7.50	CVC	VT-1	4 (one group/ 4 bolted connections)	One bolted connection in system similar in design, size, function and service	1 connection when disassembled	Deferral <b>NOT</b> Permissible	only when disassembled	only when disassembled	only when disassembled	CHM-2338-C ISI-0509-C
B-G-2	B7.50	RCS	VT-1	5 (two groups/ 5 bolted connections)	One bolted connection in system similar in design, size, function and service	1 connection within each group when disassembled	Deferral <b>NOT</b> Permissible	only when disassembled	only when disassembled	only when disassembled	ISI-0369-C ISI-0509-C
B-G-2	B7.50	RHR	VT-1	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-G-2	B7.50	SIS	VT-1	4 (one group/ 4 bolted connections)	One bolted connection in system similar in design, size, function and service	1 connection when disassembled	Deferral <b>NOT</b> Permissible	only when disassembled	only when disassembled	only when disassembled	CHM-2333-C ISI-0509-C
B-G-2	B7.60	Pumps Bolts, Studs, and Nuts <= 2" diameter	VT-1	8 (4 Pumps/ 2 Sets/ one set 12 bolts, the other set 8 bolts)	One pump if selected for examination under Category B-L-2	2 (One pump/ 2 Sets ) only if Category B-L-2 examination is performed	Deferral <b>NOT</b> Permissible	when disassembled	when disassembled	when disassembled	ISI-0325-C

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EXAM CAT.	ITEM NO.	DESCRIPTION	EXAM METHOD	NUMBER OF COMPONENTS IN ITEM NUMBER	TO BE EXAMINED DURING INTERVAL	NUMBER TO BE EXAMINED IN THE INTERVAL	DEFERRAL OF INSPECTION TO END OF INTERVAL	NUMBER TO BE EXAMINED IN THE FIRST PERIOD	NUMBER TO BE EXAMINED IN THE SECOND PERIOD	NUMBER TO BE EXAMINED IN THE THIRD PERIOD	ISI DRAWING NUMBER
B-G-2	B7.70	Valves Bolts, Studs, and Nuts <= 2" diameter	Visual								
B-G-2	B7.70	CVC	VT-1	None	N/A	N/A	N/A	N/A	N/A	N/A	CHM-2338-C
B-G-2	B7.70	RCS	VT-1	3 (One Group / 3 Valves)	One valve if selected for examination under Category B-M-2	One Group / one valve per group	Deferral <b>NOT</b> Permissible	Only if Category B-M-2 examination is done	Only if Category B-M-2 examination is done	Only if Category B-M-2 examination is done	ISI-0369-C ISI-0402-C
B-G-2	B7.70	RHR	VT-1	6 (Three Groups/ 6 Valves)	One valve if selected for examination under Category B-M-2	Three Groups/ one valve per group	Deferral <b>NOT</b> Permissible	Only if Category B-M-2 examination is done	Only if Category B-M-2 examination is done	Only Category B-M-2 examination is done	CHM-2336-C ISI-0402-C
B-G-2	B7.70	SIS	VT-1	14 (Two Groups/ 14 Valves)	One valve if selected for examination under Category B-M-2	Two Groups/ one valve per group	Deferral <b>NOT</b> Permissible	Only if Category B-M-2 examination is done	Only if Category B-M-2 examination is done	Only if Category B-M-2 examination is done	CHM-2333-C ISI-0402-C
Category Total				36 connections		14 connections		0	0	0	
CUMULATIVE INTERVAL PERCENTAGE								N/A	N/A	N/A	

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**TABLE A  
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EXAM CAT.	ITEM NO.	DESCRIPTION	EXAM METHOD	NUMBER OF COMPONENTS IN ITEM NUMBER	TO BE EXAMINED DURING INTERVAL	NUMBER TO BE EXAMINED IN THE INTERVAL	DEFERRAL OF INSPECTION TO END OF INTERVAL	NUMBER TO BE EXAMINED IN THE FIRST PERIOD	NUMBER TO BE EXAMINED IN THE SECOND PERIOD	NUMBER TO BE EXAMINED IN THE THIRD PERIOD	ISI DRAWING NUMBER
B-K	B10.20	CVC	PT	10	100% of required areas of each welded attachment on 10% of the welded attachments and whenever component support member deformation is identified  See Note 6 & 10	1	Deferral <b>NOT</b> Permissible	0	0	1	CHM-2433-C CHM-2434-C
B-K	B10.20	RCS	PT	7	100% of required areas of each welded attachment on 10% of the welded attachments and whenever component support member deformation is identified  See Note 6 and 10	1	Deferral <b>NOT</b> Permissible	1	0	0	ISI-0370-C
B-K	B10.20	RCS MAIN	PT	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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**TABLE A  
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EXAM CAT.	ITEM NO.	DESCRIPTION	EXAM METHOD	NUMBER OF COMPONENTS IN ITEM NUMBER	TO BE EXAMINED DURING INTERVAL	NUMBER TO BE EXAMINED IN THE INTERVAL	DEFERRAL OF INSPECTION TO END OF INTERVAL	NUMBER TO BE EXAMINED IN THE FIRST PERIOD	NUMBER TO BE EXAMINED IN THE SECOND PERIOD	NUMBER TO BE EXAMINED IN THE THIRD PERIOD	ISI DRAWING NUMBER
B-K	B10.20	RHR	PT	3	100% of required areas of each welded attachment on 10% of the welded attachments and whenever component support member deformation is identified  See Note 6 & 10	1	Deferral <b>NOT</b> Permissible	1	0	0	CHM-2435-C
B-K	B10.20	SIS	PT	14	100% of required areas of each welded attachment on 10% of the welded attachments and whenever component support member deformation is identified  See Note 6 & 10	2	Deferral <b>NOT</b> Permissible	0	0	2	CHM-2436-C
B-K	B10.30	Pump Welded Attachments	Surface	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-K	B10.40	Valve Welded Attachments	Surface	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Category Total				36		6		2	1	3	

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EXAM CAT.	ITEM NO.	DESCRIPTION	EXAM METHOD	NUMBER OF COMPONENTS IN ITEM NUMBER	TO BE EXAMINED DURING INTERVAL	NUMBER TO BE EXAMINED IN THE INTERVAL	DEFERRAL OF INSPECTION TO END OF INTERVAL	NUMBER TO BE EXAMINED IN THE FIRST PERIOD	NUMBER TO BE EXAMINED IN THE SECOND PERIOD	NUMBER TO BE EXAMINED IN THE THIRD PERIOD	ISI DRAWING NUMBER
CUMULATIVE INTERVAL PERCENTAGE								33%	50%	100%	
<b>B-L-2</b>		<b>Pump Casings</b>									
B-L-2	B12.20	Pump Casing Internal Surfaces	VT-3	4 Pumps	At least one pump in each group of pumps when disassembled	One Pump	N/A	Only if disassembled	Only if disassembled	Only if disassembled	ISI-0325-C
Category Total				4		1		0	0	0	
CUMULATIVE INTERVAL PERCENTAGE								N/A	N/A	N/A	
<b>B-M-2</b>		<b>Valve bodies</b>									
B-M-2	B12.50	Valves (greater than NPS 4") Body Internal Surfaces	Visual								
B-M-2	B12.50	RCS	VT-3	3 (One Group)	At least one valve in each group of valves when disassembled	1 (One Group / one valve per group)	N/A	Only if disassembled	Only if disassembled	Only if disassembled	Attachment 6 ISI-0402-C
B-M-2	B12.50	RHR	VT-3	6 (Three Groups)	At least one valve in each group of valves when disassembled	3 (Three Groups/ one valve per group)	N/A	Only if disassembled	Only if disassembled	Only if disassembled	Attachment 6 ISI-0402-C



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EXAM CAT.	ITEM NO.	DESCRIPTION	EXAM METHOD	NUMBER OF COMPONENTS IN ITEM NUMBER	TO BE EXAMINED DURING INTERVAL	NUMBER TO BE EXAMINED IN THE INTERVAL	DEFERRAL OF INSPECTION TO END OF INTERVAL	NUMBER TO BE EXAMINED IN THE FIRST PERIOD	NUMBER TO BE EXAMINED IN THE SECOND PERIOD	NUMBER TO BE EXAMINED IN THE THIRD PERIOD	ISI DRAWING NUMBER
B-M-2	B12.50	SIS	VT-3	14 (Two Groups)	At least one valve in each group of valves when disassembled	2 (Two Groups / one valve per group)	N/A	Only if disassembled	Only if disassembled	Only if disassembled	Attachment 6 ISI-0402-C
Category Total				23		6		0	0	0	
CUMULATIVE INTERVAL PERCENTAGE								N/A	N/A	N/A	
<b>B-N-1</b>		<b>Interior of Reactor Vessel</b>									
B-N-1	B13.10	Reactor Vessel Interior Accessible areas Note 9	VT-3	1	300% (Each Inspection Period)	3	Deferral <b>NOT</b> Permissible	1	1	1	ISI-0504-C
Category Total				1		3		1	1	1	
CUMULATIVE INTERVAL PERCENTAGE								N/A	N/A	N/A	
<b>B-N-2</b>		<b>Welded Core Support Structure and Interior Attachments to Reactor Vessels</b>									
B-N-2	B13.50	Reactor Vessel Interior Attachments Within Beltline Region	Visual	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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B-N-2	B13.60	Reactor Vessel Interior Attachments Beyond Beltline Region	VT-3	6	Accessible welds	6	Deferral Permissible	0	0	6 See Note 9	ISI-0504-C
Category Total				6		6		0	0	6	
CUMULATIVE INTERVAL PERCENTAGE								N/A	N/A	N/A	
<b>B-N-3</b>		<b>Removal Core Support Structures</b>									
B-N-3	B13.70	Reactor Vessel Core Support Structure	VT-3	1	Accessible surfaces	1	Deferral Permissible	0	0	1	ISI-0504-C
Category Total				1		5		0	0	1	
CUMULATIVE INTERVAL PERCENTAGE								N/A	N/A	N/A	
<b>B-O</b>		<b>Pressure Retaining Welds in Control Rod and Instrument Nozzle Housings</b>									
B-O	B14.20	Reactor Vessel Welds in CRD Housings	UT or Surface UT is being performed	78 CRD Housings (17 Peripheral Housings)	10% of Peripheral Housings	2	Deferral Permissible	0	0	2	ISI-0504-C
B-O	B14.21	Welds in In-Core Instrumentation Nozzle (ICI) housings >NPS 2	Volumetric or Surface	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A



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**NOTES**

- 1) All four steam generators were replaced during U1C12 of the second interval.
- 2) From Code Case N-613-1, the following may be used. Table A, Examination Category B-D, item number B3.90, reactor vessel nozzle-to-vessel welds, the examination volume may be reduced to 1/2 inch from each side of the weld crown, in lieu of the 1/2 through-wall thickness from each side of the weld required by figures IWB-2500-7(a) and (b).
- 3) Code case N-648-1 is being used for examination of the reactor vessel nozzle inside radius section, Examination Category B-D, item number B3.100, to perform a VT-1 examination with the conditions in Regulatory Guide 1.147.
- 4) An alternative Risk-Informed Inservice Inspection Program per Code Case N-716-1 is being implemented in the Fourth 10-Year ISI Interval. Categories B-F and B-J examinations are summarized and credited under the RI-ISI Program, Table E.
- 5) Table A, Examination Category B-G-1, item number B6.190, this includes the one inch annular surface of flange surrounding each stud, only when the connection is disassembled.
- 6) As a minimum 10 percent of the welded attachments associated with the component supports selected for examination under IWF-2510 shall be examined.
- 7) This exam should be scheduled when the head shroud is lifted.
- 8) Third 10-Year ISI Interval Alternative Request 13-ISI-1, (NRC SER, TAC NOS. MF2900 and MF2901, Dated 08/01/2014), [ADAMS Accession No. ML14188B920] extended the ISI Interval for examinations of the reactor pressure vessel welds (Category B-A) as well as nozzle to vessel welds and inner radius sections (Category B-D) from 10 to 20 years and the examinations listed in this Table are 20 year examinations.
- 9) Reactor Vessel License Renewal Application (LRA) Commitment see Source Notes **[C.2]**, requires VT-3 examination of Unit's six lower radial support guides and welds, including the clevis insert, clevis insert bolts, dowel pins and tack welds.
- 10) Examination is required whenever component support member deformation, e.g., broken, bent, or pulled out parts, is identified during operation, refueling, maintenance, examination, or testing.

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**NOTES**

11) 10 CFR 50.55a(b)(2)(xxi)(A) allows a visual examination lieu of UT. However, the nozzle inner radius is not accessible.

**TABLE B  
SQN UNIT 1 - CLASS 2 SCHEDULE PLANNING DOCUMENT**

EXAM CAT.	ITEM NO.	DESCRIPTION	EXAM METHOD	NUMBER OF COMPONENTS IN ITEM NUMBER	TO BE EXAMINED DURING INTERVAL	NUMBER TO BE EXAMINED IN THE INTERVAL	FREQUENCY OF EXAMINATION	NUMBER TO BE EXAMINED IN THE FIRST PERIOD	NUMBER TO BE EXAMINED IN THE SECOND PERIOD	NUMBER TO BE EXAMINED IN THE THIRD PERIOD	ISI DRAWING NUMBER
<b>C-A</b>		<b>Pressure Retaining Welds in Pressure Vessels</b>									
C-A	C1.10	Pressure Retaining Shell Circumferential Welds	Volumetric or Surface								
C-A	C1.10	Steam Generator See Note 1	UT	None Nee Note 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C-A	C1.10	Residual Heat Removal Heat Exchanger	UT	2 (2 RHRHX/ 1 weld per RHRHX)	All Shell Circumferential Welds	0 Note 6	Each Inspection Period	0	0	0	ISI-0290-C
C-A	C1.10	Containment Spray Heat Exchanger 1A	UT	1 (1 CSHX/ 1 weld)	All in one or distributed among vessels at structural discontinuity	0 Note 6	Each Inspection Interval	0	0	0	ISI-0462-C

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EXAM CAT.	ITEM NO.	DESCRIPTION	EXAM METHOD	NUMBER OF COMPONENTS IN ITEM NUMBER	TO BE EXAMINED DURING INTERVAL	NUMBER TO BE EXAMINED IN THE INTERVAL	FREQUENCY OF EXAMINATION	NUMBER TO BE EXAMINED IN THE FIRST PERIOD	NUMBER TO BE EXAMINED IN THE SECOND PERIOD	NUMBER TO BE EXAMINED IN THE THIRD PERIOD	ISI DRAWING NUMBER
C-A	C1.10	Containment Spray Heat Exchanger 1B	UT	2 (1 CSHX/ 2 welds)	All in one or distributed among vessels at structural discontinuity	0 Note 6	Each Inspection Interval	0	0	0	ISI-0462-C
C-A	C1.10	Seal Water Heat Exchanger (CVCS)	PT vessel wall thickness less than 0.20 inches	1 (1 SWHX/ 1 weld)	All in one or distributed among vessels at structural discontinuity	0 Note 6	Each Inspection Interval	0	0	0	ISI-0460-C
C-A	C1.10	Seal Water Filter (CVCS)	PT vessel wall thickness less than 0.20 inches	1 (1 SWF/ 1 weld)	All in one or distributed among vessels at structural discontinuity	0 Note 6	Each Inspection Interval	0	0	0	ISI-0458-C
C-A	C1.10	Seal Water Injection Filter (CVCS)	UT	2 (2 SWIF/ 1 weld per SWIF)	All in one or distributed among vessels at structural discontinuity	0 Note 6	Each Inspection Interval	0	0	0	ISI-0456-C
C-A	C1.10	Centrifugal Charging Pump Tank	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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EXAM CAT.	ITEM NO.	DESCRIPTION	EXAM METHOD	NUMBER OF COMPONENTS IN ITEM NUMBER	TO BE EXAMINED DURING INTERVAL	NUMBER TO BE EXAMINED IN THE INTERVAL	FREQUENCY OF EXAMINATION	NUMBER TO BE EXAMINED IN THE FIRST PERIOD	NUMBER TO BE EXAMINED IN THE SECOND PERIOD	NUMBER TO BE EXAMINED IN THE THIRD PERIOD	ISI DRAWING NUMBER
C-A	C1.20	Pressure Retaining Head Circumferential Welds	Volumetric or Surface								
C-A	C1.20	Steam Generator See Note 1	UT	4 (4 Steam Generators/ 1 weld per Steam Generator)	Head-to-Shell Welds, in one vessel	1	Each Inspection Interval	0	1	0	ISI-0399-C
C-A	C1.20	Residual Heat Removal Heat Exchanger	UT	2 (2 RHRHX/ 1 weld per RHRHX)	All Head-to-Shell Welds	0 Note 6	Each Inspection Period	0	0	0	ISI-0290-C
C-A	C1.20	Containment Spray Heat Exchanger 1A	UT	None	Head-to-Shell Welds, in one vessel	N/A	Each Inspection Interval	N/A	N/A	N/A	ISI-0462-C
C-A	C1.20	Containment Spray Heat Exchanger 1B	UT	None	Head-to-Shell Welds, in one vessel	N/A	Each Inspection Interval	N/A	N/A	N/A	ISI-0462-C
C-A	C1.20	Seal Water Heat Exchanger (CVCS)	PT vessel wall thickness less than 0.20 inches	1 SWHX/ 1 weld	Head-to-Shell Welds, in one vessel	0 Note 6	Each Inspection Interval	0	0	0	ISI-0460-C

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**TABLE B  
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C-A	C1.20	Seal Water Filter (CVCS)	PT vessel wall thickness less than 0.20 inches	1 SWF/ 1 weld	Head-to-Shell Welds, in one vessel	0 Note 6	Each Inspection Interval	0	0	0	ISI-0458-C
C-A	C1.20	Seal Water Injection Filter (CVCS)	UT	2 (2 SWIF / 1 weld per SWIF)	Head-to-Shell Welds, in one vessel	0 Note 6	Each Inspection Interval	0	0	0	ISI-0456-C
C-A	C1.20	Centrifugal Charging Pump Tank (SIS)	UT	2 (1 CCP Tank/ 2 welds)	Head-to-Shell Welds, in one vessel	0 Note 6	Each Inspection Interval	0	0	0	ISI-0069-C
C-A	C1.30	Tubesheet-to-Shell Weld	Volumetric or Surface								
C-A	C1.30	Steam Generator See Note 1	UT	4 (4 Steam Generators/ 1 weld per Steam Generator)	Tubesheet-to-Shell Welds, in one vessel	1	Each Inspection Interval	1	0	0	ISI-0399-C
C-A	C1.30	Residual Heat Removal Heat Exchanger	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C-A	C1.30	Containment Spray Heat Exchanger 1A	UT	1 CSHX/ 1 weld	Tubesheet-to-Shell Welds, in one vessel	0 Note 6	Each Inspection Interval	0	0	0	ISI-0462-C



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EXAM CAT.	ITEM NO.	DESCRIPTION	EXAM METHOD	NUMBER OF COMPONENTS IN ITEM NUMBER	TO BE EXAMINED DURING INTERVAL	NUMBER TO BE EXAMINED IN THE INTERVAL	FREQUENCY OF EXAMINATION	NUMBER TO BE EXAMINED IN THE FIRST PERIOD	NUMBER TO BE EXAMINED IN THE SECOND PERIOD	NUMBER TO BE EXAMINED IN THE THIRD PERIOD	ISI DRAWING NUMBER
C-A	C1.30	Containment Spray Heat Exchanger 1B	UT	1 CSHX/ 1 weld	Tubesheet-to-Shell Welds, in one vessel	0 Note 6	Each Inspection Interval	0	0	0	ISI-0462-C
C-A	C1.30	Seal Water Heat Exchanger	Surface	None	N/A	N/A	N/A	N/A	N/A	N/A	ISI-0460-C
C-A	C1.30	Seal Water Filter	Surface	None	N/A	N/A	N/A	N/A	N/A	N/A	ISI-0458-C
C-A	C1.30	Seal Water Injection Filter	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	ISI-0456-C
Category Total				27		2		1	1	0	
CUMULATIVE INTERVAL PERCENTAGE								50%	100%	100%	
<b>C-B</b>		<b>Pressure Retaining Nozzle Welds in Vessels</b>									
C-B	C2.10	Nozzles in vessels <= 1/2" nominal thickness									
C-B	C2.11	Nozzle-to-Shell (or Head) Weld in Vessels <= 1/2" thick, and nozzles greater than 4 inches NPS	Surface	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C-B	C2.11	Seal Water Heat Exchanger	PT	None	N/A	N/A	N/A	N/A	N/A	N/A	ISI-0460-C
C-B	C2.11	Seal Water Filter	PT	None	N/A	N/A	N/A	N/A	N/A	N/A	ISI-0458-C

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C-B	C2.11	Seal Water Injection Filter	PT	None	N/A	N/A	N/A	N/A	N/A	N/A	ISI-0456-C
C-B	C2.20	Nozzles without reinforcing plate in vessels >1/2" nominal thickness									
C-B	C2.21	Nozzle to Shell (or Head) in Vessels > 1/2" thick	Surface and Volumetric								
C-B	C2.21	Steam Generator See Notes 1 and 2	MT & UT	4 (4 Steam Generators/ 1 FW nozzle each) See Note 2	All nozzles at terminal ends of piping runs in one vessel	1 (FW )	Each Inspection Interval	0	1 (FW)	0	ISI-0399-C
C-B	C2.21	Residual Heat Removal Heat Exchanger	PT & MT	4 (2 RHRHX/ 2 nozzles each)	All nozzles	0 Note 6	Each Inspection Period	0	0	0	ISI-0290-C
C-B	C2.21	Containment Spray Heat Exchanger 1A	MT & UT	2 (1 CSHX/ 2 nozzles each)	All nozzles at terminal ends of piping runs in one vessel	0 Note 6	Each Inspection Interval	0	0	0	ISI-0462-C
C-B	C2.21	Containment Spray Heat Exchanger 1B	PT & UT	2 (1 CSHX/ 2 nozzles each)	All nozzles at terminal ends of piping runs in one vessel	0 Note 6	Each Inspection Interval	0	0	0	ISI-0462-C



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**TABLE B  
SQN UNIT 1 - CLASS 2 SCHEDULE PLANNING DOCUMENT**

EXAM CAT.	ITEM NO.	DESCRIPTION	EXAM METHOD	NUMBER OF COMPONENTS IN ITEM NUMBER	TO BE EXAMINED DURING INTERVAL	NUMBER TO BE EXAMINED IN THE INTERVAL	FREQUENCY OF EXAMINATION	NUMBER TO BE EXAMINED IN THE FIRST PERIOD	NUMBER TO BE EXAMINED IN THE SECOND PERIOD	NUMBER TO BE EXAMINED IN THE THIRD PERIOD	ISI DRAWING NUMBER
C-B	C2.31	Nozzles with Reinforcing Plate in Vessels > 1/2" thick. Reinforcing Plate Welds to Vessel & Nozzle	Surface	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C-B	C2.32	Nozzle-to-Shell (or head) Weld when inside of Vessel is accessible	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C-B	C2.33	Nozzle-to-Shell (or head) Weld when inside of Vessel is inaccessible	Visual	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Category Total				22		2		1	1	0	
CUMULATIVE INTERVAL PERCENTAGE								50%	100%	100%	
<b>C-C</b>		<b>Welded Attachments for Class 2 Vessels, Piping, Pumps, and Valves</b>									
C-C	C3.10	Pressure Vessel Welded Attachments	Surface								
C-C	C3.10	Steam Generator	Surface	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 146 of 359</b>
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<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
C-C	C3.10	Residual Heat Removal Heat Exchanger	PT	4 (2 RHRHX / 2 IAs each)	100% of required areas of one welded attachment on one vessel and whenever component support member deformation is identified	1 (1 IA on 1 RHRHX) See Code Case N-700	Each Identified Occurrence and Each Inspection Interval	0	1	0	ISI-0290-C
C-C	C3.10	Containment Spray Heat Exchanger 1A	PT	4 (1 CSHX/ 4 IA's)	100% of required areas of one welded attachment on one vessel and whenever component support member deformation is identified	1 (1 IA on CSHX 1A)	Each Identified Occurrence and Each Inspection Interval	0	0	1	ISI-0462-C

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<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
C-C	C3.10	Containment Spray Heat Exchanger 1B	PT	4 (1 CSHX/ 4 IA's)	100% of required areas of one welded attachment on one vessel and whenever component support member deformation is identified	1 (1 IA on CSHX 1B)	Each Identified Occurrence and Each Inspection Interval	0	0	1	ISI-0462-C
C-C	C3.10	Seal Water Heat Exchanger (CVCS)	PT	2 (1 Heat exchanger / 2 IAs)	100% of required areas of one welded attachment on one vessel and whenever component support member deformation is identified	1 (1 IA on SWHX)	Each Identified Occurrence and Each Inspection Interval	0	1	0	ISI-0460-C

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<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
C-C	C3.10	Seal Water Filter (CVCS)	PT	4 (1 Filter / 4 IAs)	100% of required areas of one welded attachment on one vessel and whenever component support member deformation is identified	1 (1 IA on SWF)	Each Identified Occurrence and Each Inspection Interval	0	0	1	ISI-0458-C
C-C	C3.10	Seal Water Injection Filter (CVCS)	PT	6 (2 SWIF/ 3 IAs each)	100% of required areas of one welded attachment on one vessel and whenever component support member deformation is identified	1 (1 IA on 1 SWIF)	Each Identified Occurrence and Each Inspection Interval	0	0	1	ISI-0456-C

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<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
C-C	C3.10	Centrifugal Charging Pump Tank (SIS)	MT	4 (1 Tank / 4 IA's)	100% of required areas of one welded attachment on one vessel and whenever component support member deformation is identified	1 (1 IA on tank)	Each Identified Occurrence and Each Inspection Interval	0	0	1	ISI-0069-C
C-C	C3.20	Piping Welded Attachments	Surface								
C-C	C3.20	AFW	MT	18	100% of required areas of each welded attachment on 10% of the welded attachments and whenever component support member deformation is identified  See Note 5	2	Each Identified Occurrence and Each Inspection Interval	1	1	0	ISI-0113-C



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<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
C-C	C3.20	CS	PT	12	100% of required areas of each welded attachment on 10% of the welded attachments and whenever component support member deformation is identified  See Note 5	2	Each Identified Occurrence and Each Inspection Interval	0	1	1	ISI-0448-C CHM-2440-C
C-C	C3.20	CVC	PT	63	100% of required areas of each welded attachment on 10% of the welded attachments and whenever component support member deformation is identified  See Note 5	7	Each Identified Occurrence and Each Inspection Interval	2	2	3	ISI-0448-C

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<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
C-C	C3.20	FW	MT	8	100% of required areas of each welded attachment on 10% of the welded attachments and whenever component support member deformation is identified  See Note 5	1	Each Identified Occurrence and Each Inspection Interval	0	1	0	CHM-2439-C
C-C	C3.20	MS	MT	11	100% of required areas of each welded attachment on 10% of the welded attachments and whenever component support member deformation is identified  See Note 5	2	Each Identified Occurrence and Each Inspection Interval	0	1	1	CHM-2438-C

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<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
C-C	C3.20	RHR	PT	31	100% of required areas of each welded attachment on 10% of the welded attachments and whenever component support member deformation is identified  See Note 5	4	Each Identified Occurrence and Each Inspection Interval	1	1	2	ISI-0448-C CHM-2435-C
C-C	C3.20	SIS	PT	67	100% of required areas of each welded attachment on 10% of the welded attachments and whenever component support member deformation is identified  See Note 5	7	Each Identified Occurrence and Each Inspection Interval	2	2	3	ISI-0448-C CHM-2436-C

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**TABLE B  
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EXAM CAT.	ITEM NO.	DESCRIPTION	EXAM METHOD	NUMBER OF COMPONENTS IN ITEM NUMBER	TO BE EXAMINED DURING INTERVAL	NUMBER TO BE EXAMINED IN THE INTERVAL	FREQUENCY OF EXAMINATION	NUMBER TO BE EXAMINED IN THE FIRST PERIOD	NUMBER TO BE EXAMINED IN THE SECOND PERIOD	NUMBER TO BE EXAMINED IN THE THIRD PERIOD	ISI DRAWING NUMBER
C-C	C3.30	Pump Welded Attachments	Surface								
C-C	C3.30	Centrifugal Charging Pump (CVCS)	PT	2 (2 CCP / 4 IA's on each)	100% of required areas of each welded attachment on 10% of the welded attachments associated with the component supports selected for examination and whenever component support member deformation is identified  See Note 5	1 pump	Each Identified Occurrence and Each Inspection Interval	1	0	0	ISI-0466-C
C-C	C3.30	Containment Spray Pump	Surface	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C-C	C3.30	Residual Heat Removal Pump	Surface	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C-C	C3.30	Safety Injection Pump	Surface	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 154 of 359</b>
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**TABLE B  
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EXAM CAT.	ITEM NO.	DESCRIPTION	EXAM METHOD	NUMBER OF COMPONENTS IN ITEM NUMBER	TO BE EXAMINED DURING INTERVAL	NUMBER TO BE EXAMINED IN THE INTERVAL	FREQUENCY OF EXAMINATION	NUMBER TO BE EXAMINED IN THE FIRST PERIOD	NUMBER TO BE EXAMINED IN THE SECOND PERIOD	NUMBER TO BE EXAMINED IN THE THIRD PERIOD	ISI DRAWING NUMBER
C-C	C3.40	Valve Welded Attachments	Surface	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Category Total				246		33		7	11	15	
CUMULATIVE INTERVAL PERCENTAGE								21.2%	54.5%	100%	
<b>C-D</b>		<b>Pressure Retaining Bolting Greater Than 2 Inches in Diameter</b>									
C-D	C4.10	Pressure Vessels Bolts & Studs > 2" diameter	Volumetric								
C-D	C4.10	Steam Generator	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C-D	C4.10	Residual Heat Removal Heat Exchanger	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C-D	C4.10	Containment Spray Heat Exchanger 1A	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C-D	C4.10	Containment Spray Heat Exchanger 1B	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C-D	C4.10	Seal Water Heat Exchanger	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C-D	C4.10	Seal Water Filter	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C-D	C4.10	Seal Water Injection Filter	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A



<p align="center"><b>SQN</b> <b>Unit 1 &amp; 2</b></p>	<p align="center"><b>ASME SECTION XI ISI/NDE PROGRAM</b> <b>UNIT 1 AND UNIT 2</b></p>	<p align="center"><b>0-SI-DXI-000-114.4</b> <b>Rev. 0000</b> <b>Page 156 of 359</b></p>
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**NOTES**

- 1) All four steam generators were replaced during U1C12 of the second interval
- 2) The main steam nozzles are forged with the head and do **NOT** have an inside radius section on the new steam generators.
- 3) An alternative Risk-Informed Inservice Inspection Program is being implemented in the Fourth 10-Year ISI Interval per Code Case N-716-1. For categories C-F-1 and C-F-2 the examinations are credited under the RI-ISI program, Table E.
- 4) The new steam generators do **NOT** have shell circumferential welds subject to examination.
- 5) As a minimum 10 percent of the welded attachments associated with the component supports selected for examination under IWF-2510 shall be examined.
- 6) Code Case N-716-1 will be used for the Fourth 10-Year ISI Interval. LSS components in Categories C-A, C-B, C-D and C-G are exempt from volumetric, surface, VT-1 and VT-3 exams.

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**TABLE C  
SQN UNIT 1 - CLASS 3 SCHEDULE PLANNING DOCUMENT**

EXAM CAT.	ITEM NO.	DESCRIPTION	EXAM METHOD	NUMBER OF COMPONENTS IN ITEM NUMBER	% TO BE EXAMINED DURING INTERVAL	NUMBER TO BE EXAMINED IN THE INTERVAL	FREQUENCY OF EXAMINATION	NUMBER TO BE EXAMINED IN THE FIRST PERIOD	NUMBER TO BE EXAMINED IN THE SECOND PERIOD	NUMBER TO BE EXAMINED IN THE THIRD PERIOD	ISI DRAWING NUMBER
D-A		<b>Welded Attachments for Class 3 Vessels, Piping, Pumps, and Valves</b>									
D-A	D1.10	Pressure Vessel Welded Attachments	Visual								
D-A	D1.10	Containment Spray Heat Exchanger 1A	VT-1	1 (1 CSHX / 4 IA's)	All, 100% of required areas of each welded attachment and whenever component support member deformation is identified	1 (CSHX 1A / 4 IAs)	Each Identified Occurrence and Each Inspection Interval	0	0	1	ISI-0462-C
D-A	D1.10	Containment Spray Heat Exchanger 1B	VT-1	1 (1 CSHX / 4 IA's)	All, 100% of required areas of each welded attachment and whenever component support member deformation is identified	1 (CSHX 1B / 4 IAs)	Each Identified Occurrence and Each Inspection Interval	0	0	1	ISI-0462-C



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**TABLE C  
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<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>% TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
D-A	D1.10	Nonregenerative Letdown Heat Exchanger (CCS)	VT-1	1 (Heat Exchanger/ 1 IA)	All, 100% of required areas of each welded attachment and whenever component support member deformation is identified	1 (Heat Exchanger /1 IA)	Each Identified Occurrence and Each Inspection Interval	0	1	0	ISI-0216-A
D-A	D1.10	Gas Stripper and Boric Acid Evaporator Condenser	Visual	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
D-A	D1.10	Gas Stripper and Boric Acid Evaporator Distillate Cooler	Visual	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
D-A	D1.10	Gas Stripper and Boric Acid Evaporator Support Frame	Visual	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
D-A	D1.10	Component Cooling Surge Tank	VT-1	1 (Tank / 1 IA)	All, 100% of required areas of each welded attachment and whenever component support member deformation is identified	1 (Tank / 1 IA)	Each Identified Occurrence and Each Inspection Interval	0	1	0	ISI-0227-B

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**TABLE C  
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<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>% TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
D-A	D1.10	Essential Raw Cooling Water System Strainer	VT-1	2 (2 ERCWS/ 17 IA's on A and 17 IA's on B)	One Strainer, 100% of required areas of each welded attachment and whenever component support member deformation is identified	1 (One strainer / 17 IAs)	Each Identified Occurrence and Each Inspection Interval	1	0	0	ISI-0285-C
D-A	D1.10	Air Conditioning /Chilled Water System Shut Down Board Room Water Chiller	VT-1	1 (Chiller / 2 IA's)	All, 100% of required areas of each welded attachment and whenever component support member deformation is identified	1 Chiller (2 IAs)	Each Identified Occurrence and Each Inspection Interval	1	0	0	ISI-0454-C
D-A	D1.10	Air Conditioning/ Chilled Water System Chill Water Air Separator	VT-1	1 (Separator / 4 IA's)	All, 100% of required areas of each welded attachment and whenever component support member deformation is identified	1 Separator (4 IAs)	Each Identified Occurrence and Each Inspection Interval	1	0	0	ISI-0478-C

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**TABLE C  
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<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>% TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
D-A	D1.10	Component Cooling Heat Exchanger	VT-1	None	N/A	N/A	N/A	N/A	N/A	N/A	ISI-0284-B
D-A	D1.10	Fuel Pool Cooling and Cleaning System Spent Fuel Pit Heat Exchanger	VT-1	2 (2 FPCCHX / 2 IA's each)	One Heat Exchanger, 100% of required areas of each welded attachment and whenever component support member deformation is identified	1 (One heat exchanger / 2 IAs)	Each Identified Occurrence and Each Inspection Interval	0	0	1	ISI-0287-C
D-A	D1.10	RHR Heat Exchanger Secondary Side	VT-1	2 (2 RHRHSXH / 2 IA's each)	One Heat Exchanger, 100% of required areas of each welded attachment and whenever component support member deformation is identified	1 heat exchanger (2 IAs)	Each Identified Occurrence and Each Inspection Interval	0	0	1	ISI-0290-C

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**TABLE C  
SQN UNIT 1 - CLASS 3 SCHEDULE PLANNING DOCUMENT**

<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>% TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
D-A	D1.10	ERCW Old ERCW Intake Pumping Station Strainer	VT-1	2 (2 ERCW-STR / 2 IA's each)	One Strainer, 100% of required areas of each welded attachment and whenever component support member deformation is identified	1 strainer (2 IAs)	Each Identified Occurrence and Each Inspection Interval	0	1	0	ISI-0480-C
D-A	D1.20	Piping Welded Attachments	Visual								
D-A	D1.20	AFW	VT-1	14	100% of required areas of each welded attachment on 10% of the welded attachments associated with the nonexempt component supports and whenever component support member deformation is identified	2	Each Identified Occurrence and Each Inspection Interval	1	0	1	ISI-0113-C

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**TABLE C  
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<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>% TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
D-A	D1.20	CC	VT-1	71	100% of required areas of each welded attachment on 10% of the welded attachments associated with the nonexempt component supports and whenever component support member deformation is identified	8	Each Identified Occurrence and Each Inspection Interval	2	3	3	ISI-0126-C

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**TABLE C  
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<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>% TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
D-A	D1.20	ERCW	VT-1	88 see note 1	100% of required areas of each welded attachment on 10% of the welded attachments associated with the nonexempt component supports and whenever component support member deformation is identified	9	Each Identified Occurrence and Each Inspection Interval	3	3	3	ISI-0123-C

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**TABLE C  
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<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>% TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
D-A	D1.20	FPCS	VT-1	4	100% of required areas of each welded attachment on 10% of the welded attachments associated with the nonexempt component supports and whenever component support member deformation is identified	1	Each Identified Occurrence and Each Inspection Interval	0	0	1	ISI-0127-C
D-A	D1.20	ACCW	VT-1	None	N/A	N/A	N/A	N/A	N/A	N/A	ISI-0450-C
D-A	D1.30	Pump Welded Attachments	Visual								
D-A	D1.30	Turbine Driven Auxiliary Feedwater Pump	Visual	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
D-A	D1.30	Motor Driven Auxiliary Feedwater Pump	Visual	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
D-A	D1.30	Component Cooling System Water Pumps	Visual	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 165 of 359</b>
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**TABLE C  
SQN UNIT 1 - CLASS 3 SCHEDULE PLANNING DOCUMENT**

<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>% TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
D-A	D1.30	Essential Raw Cooling Water System Pump Station Pump	Visual	8	100% of required areas of each welded attachment on 10% of the welded attachments associated with the nonexempt component supports and whenever component support member deformation is identified	1	Each Identified Occurrence and Each Inspection Interval	0	1	0	ISI-0286-B
D-A	D1.30	Fuel Pool Cooling and Cleaning System Spent Fuel Pit Pumps	Visual	None	N/A	N/A	N/A	N/A	N/A	N/A	ISI-0288-B
D-A	D1.30	Air Conditioning/Chilled Water System Chill Water Circulation Pump	Visual	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A



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**NOTES**

- 1) **For History Only**-Table C, item number D1.20, ERCW, total number in the item number changed from 90 to 89 per DCN D21560. DCN was implemented at the end of the second interval third period. ERCWH-105-IA abandoned in place (Ref. DCA 21894-277, inactive 1/28/11) item number changed from 89 to 88.

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<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
<b>F-A</b>		<b>Supports</b>									
F-A	F1.10A	Class 1 Piping One-directional Restraints Function A	Visual								
F-A	F1.10A	CVC	VT-3	26	25%	7	Each inspection interval	2	3	2	CHM-2433-C CHM-2434-C
F-A	F1.10A	RCS	VT-3	12	25%	3	Each inspection interval	1	1	1	ISI-0370-C
F-A	F1.10A	RCS MAIN	VT-3	None	N/A	N/A	N/A	N/A	N/A	N/A	ISI-0303-C
F-A	F1.10A	RHR	VT-3	8	25%	2	Each inspection interval	1	1	0	CHM-2435-C
F-A	F1.10A	SIS	VT-3	22	25%	6	Each inspection interval	1	2	3	CHM-2436-C
F-A	F1.10B	Class 1 Piping Multidirectional Restraints Function B	Visual								
<b>F-A</b>	F1.10B	CVC	VT-3	87	25%	22	Each inspection interval	7	7	8	CHM-2433-C CHM-2434-C



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<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
F-A	F1.10D	CVC	VT-3	8	25%	2	Each inspection interval	1	1	0	CHM-2433-C CHM-2434-C
F-A	F1.10D	RCS	VT-3	18	25%	5	Each inspection interval	2	2	1	ISI-0370-C
F-A	F1.10D	RCS MAIN	VT-3	None	N/A	N/A	N/A	N/A	N/A	N/A	ISI-0303-C ISI-0369-C
F-A	F1.10D	RHR	VT-3	2	25%	1	Each inspection interval	0	0	1	CHM-2435-C
F-A	F1.10D	SIS	VT-3	3	25%	1	Each inspection interval	0	1	0	CHM-2436-C
F-A	F1.10	Total Class 1 Piping Supports	VT-3	264		71		21	27	23	
F-A	F1.20A	Class 2 Piping One-directional Restraints Function A	Visual								
F-A	F1.20A	AFW	VT-3	40	15%	6	Each inspection interval	2	2	2	ISI-0113-C
F-A	F1.20A	CS	VT-3	23	15%	4	Each inspection interval	1	1	2	ISI-0448-C CHM-2440-C
F-A	F1.20A	CVC	VT-3	78	15%	12	Each inspection interval	4	4	4	ISI-0448-C
F-A	F1.20A	FW	VT-3	17	15%	3	Each inspection interval	1	1	1	CHM-2439-C

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<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
F-A	F1.20A	MS	VT-3	8	15%	2	Each inspection interval	0	1	1	CHM-2438-C
F-A	F1.20A	RHR	VT-3	54	15%	9	Each inspection interval	3	2	4	ISI-0448-C CHM-2435-C
F-A	F1.20A	SIS	VT-3	67	15%	11	Each inspection interval	3	4	4	ISI-0448-C CHM-2436-C
F-A	F1.20B	Class 2 Piping Multidirectional Restraints Function B	Visual								
F-A	F1.20B	AFW	VT-3	18	15%	3	Each inspection interval	1	1	1	ISI-0113-C
F-A	F1.20B	CS	VT-3	25	15%	4	Each inspection interval	1	1	2	ISI-0448-C CHM-2440-C
F-A	F1.20B	CVC	VT-3	42	15%	7	Each inspection interval	2	2	3	ISI-0448-C
F-A	F1.20B	FW	VT-3	1	15%	1	Each inspection interval	0	1	0	CHM-2439-C
F-A	F1.20B	MS	VT-3	8	15%	2	Each inspection interval	1	0	1	CHM-2438-C
F-A	F1.20B	RHR	VT-3	28	15%	5	Each inspection interval	1	2	2	ISI-0448-C CHM-2435-C
F-A	F1.20B	SIS	VT-3	147	15%	23	Each inspection interval	7	8	8	ISI-0448-C CHM-2436-C



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<b>TABLE D SQN UNIT 1 - CLASS 1, 2, AND 3 SUPPORTS SCHEDULE PLANNING DOCUMENT</b>											
<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
F-A	F1.20D	AFW See Note 4	VT-3	7	15%	2	Each inspection interval	0	1	1	ISI-0113-C
F-A	F1.20D	CS	VT-3	None	N/A	N/A	N/A	N/A	N/A	N/A	ISI-0448-C CHM-2440-C
F-A	F1.20D	CVC	VT-3	9	15%	2	Each inspection interval	1	1	0	ISI-0448-C
F-A	F1.20D	FW	VT-3	5	15%	1	Each inspection interval	1	0	0	CHM-2439-C
F-A	F1.20D	MS	VT-3	18	15%	3	Each inspection interval	1	1	1	CHM-2438-C
F-A	F1.20D	RHR	VT-3	14	15%	3	Each inspection interval	1	1	1	ISI-0448-C CHM-2435-C
F-A	F1.20D	SIS	VT-3	5	15%	1	Each inspection interval	0	0	1	ISI-0448-C CHM-2436-C
F-A	F1.20	Total Class 2 Piping Supports	VT-3	701		121		36	41	44	
F-A	F1.30A	Class 3 Piping One-directional Restraints Function A	Visual								
F-A	F1.30A	ACCW	VT-3	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F-A	F1.30A	AFW	VT-3	22	10%	3	Each inspection interval	1	1	1	ISI-0113-C



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<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
F-A	F1.30A	CC	VT-3	132	10%	14	Each inspection interval	4	5	5	ISI-0126-C
F-A	F1.30A	CVC	VT-3	None	N/A	N/A	N/A	N/A	N/A	N/A	ISI-0448-C
F-A	F1.30A	ERCW	VT-3	134 See Note 2	10%	14 See Note 2	Each inspection interval	4 See Note 2	5	5	ISI-0123-C
F-A	F1.30A	FPCS	VT-3	34	10%	4	Each inspection interval	1	1	2	ISI-0127-C
F-A	F1.30B	Class 3 Piping Multidirectional Restraints Function B	Visual								
F-A	F1.30B	ACCW	VT-3	14	10%	2	Each inspection interval	0	1	1	ISI-0450-C
F-A	F1.30B	AFW	VT-3	18	10%	2	Each inspection interval	1	0	1	ISI-0113-C
F-A	F1.30B	CC	VT-3	121	10%	13	Each inspection interval	4	4	5	ISI-0126-C
F-A	F1.30B	CVC	VT-3	None	N/A	N/A	N/A	N/A	N/A	N/A	ISI-0448-C
F-A	F1.30B	ERCW	VT-3	217 See Note 3	10%	22 See Note 3	Each inspection interval	7	8 See Note 3	7	ISI-0123-C
F-A	F1.30B	FPCS	VT-3	8	10%	1	Each inspection interval	0	1	0	ISI-0127-C

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<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
F-A	F1.30C	Class 3 Piping Variable Supports (Springs and Constant Force) Function C	Visual								
F-A	F1.30C	ACCW	VT-3	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F-A	F1.30C	AFW	VT-3	13	10%	2	Each inspection interval	1	0	1	ISI-0113-C
F-A	F1.30C	CC	VT-3	21	10%	3	Each inspection interval	1	1	1	ISI-0126-C
F-A	F1.30C	CVC	VT-3	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F-A	F1.30C	ERCW	VT-3	7	10%	1	Each inspection interval	0	1	0	ISI-0123-C
F-A	F1.30C	FPCS	VT-3	4	10%	1	Each inspection interval	1	0	0	ISI-0127-C
F-A	F1.30D	Class 3 Piping Variable Supports (Snubbers) Function D	Visual								
F-A	F1.30D	ACCW	VT-3	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F-A	F1.30D	AFW	VT-3	3	10%	1	Each inspection interval	0	1	0	ISI-0113-C
F-A	F1.30D	CC	VT-3	10	10%	1	Each inspection interval	1	0	0	ISI-0126-C

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 176 of 359</b>
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<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
F-A	F1.30D	CVC	VT-3	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F-A	F1.30D	ERCW	VT-3	7	10%	1	Each inspection interval	0	0	1	ISI-0123-C
F-A	F1.10D	SIS	VT-3	3	25%	1	Each inspection interval	0	1	0	CHM-2436-C
F-A	F1.30	Total Class 3 Piping Supports	VT-3	766		86		26	30	30	
F-A	F1.40 Note 1	Class 1, 2, or 3 Supports Other Than Piping Supports	Visual VT-3		100% of the components or if multiple components only one of the multiple components		Each inspection interval				
F-A	F1.40B	Class 1 CRDM Support	VT-3	1	All	1	Each inspection interval	0	0	1	ISI-0504-C
<b>Class 1 Equipment</b>											
F-A	F1.40E4	Class 1 Reactor Vessel	VT-3	1 (1 Reactor Vessel / 4 supports)	All	1 (Reactor Vessel / 4 supports)	Each inspection interval	0	0	4	ISI-0504-C
F-A	F1.40E5	Class 1 Pressurizer	VT-3	2 (1 Pressurizer / 2 supports)	All	2 (Pressurizer / 2 supports)	Each inspection interval	0	2	0	ISI-0394-C
F-A	F1.40E1	Class 1 Steam Generator	VT-3	4 (4 Steam Generators / 1 support each)	One Steam Generator	1 (One Steam Generator / 1 support)	Each inspection interval	0	0	1	ISI-0399-C

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 177 of 359</b>
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<b>TABLE D SQN UNIT 1 - CLASS 1, 2, AND 3 SUPPORTS SCHEDULE PLANNING DOCUMENT</b>											
<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
F-A	F1.40E3	Class 1 Reactor Coolant Pump	VT-3	4 (4 Reactor Coolant Pumps /1 support each)	One Pump	1 (One Reactor Coolant Pump / 1 support)	Each inspection interval	1	0	0	ISI-0325-C
F-A	F1.40E9	Class 1 Valves	VT-3	None	N/A	N/A	N/A	N/A	N/A	N/A	
<b>Class 2 Equipment</b>											
F-A	F1.40E2	Class 2 Steam Generator	VT-3	4 (4 Steam Generators / 1 support each)	One steam Generator	1 (One Steam Generator)	Each inspection interval	1	0	0	ISI-0399-C
F-A	F1.40E1	Class 2 Residual Heat Removal Heat Exchanger	VT-3	2 (2 RHRHX/ 1 support on each)	One Heat Exchanger	1 (One Heat Exchanger)	Each inspection interval	0	1	0	ISI-0290-C
F-A	F1.40E1	Class 2 Containment Spray Heat Exchanger 1A	VT-3	1 CSHX / 1 support	All	1 (CSHX 1A )	Each inspection interval	0	0	1	ISI-0462-C
F-A	F1.40E1	Class 2 Containment Spray Heat Exchanger 1B	VT-3	1 CSHX / 1 support	All	1 (CSHX 1B )	Each inspection interval	0	0	1	ISI-0462-C
F-A	F1.40E1	Class 2 Seal Water Heat Exchanger	VT-3	1 Seal Water Heat Exchanger / 1 support	All	1 (Seal Water Heat Exchanger)	Each inspection interval	0	1	0	ISI-0460-C

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 178 of 359</b>
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<b>TABLE D SQN UNIT 1 - CLASS 1, 2, AND 3 SUPPORTS SCHEDULE PLANNING DOCUMENT</b>											
<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
F-A	F1.40E6	Class 2 Seal Water Filter	VT-3	1 Seal Water Filter / 1 support	All	1 (Seal Water Filter)	Each inspection interval	0	1	0	ISI-0458-C
F-A	F1.40E6	Class 2 Seal Water Injection Filter	VT-3	2 (2 SWIF / 1 support each)	One filter	1 (One SWIF)	Each inspection interval	0	0	1	ISI-0456-C
F-A	F1.40E8	Class 2 Centrifugal Charging Pump Tank	VT-3	1 (Centrifugal Charging Pump Tank / 1 support)	All	1 Centrifugal Charging Pump Tank	Each inspection interval	0	0	1	ISI-0069-C
F-A	F1.40E3	Class 2 Residual Heat Removal Pump	VT-3	2 (2 RHRP / 1 support each)	One Pump	One RHRP	Each inspection interval	0	1	0	ISI-0353-C
F-A	F1.40E3	Class 2 Centrifugal Charging Pump	VT-3	2 (2 CCP / 1 support each)	One Pump	One CCP	Each inspection interval	1	0	0	ISI-0466-C
F-A	F1.40E3	Class 2 Safety Injection Pump	VT-3	2 (2 SIP / 1 support each)	One Pump	One SIP	Each inspection interval	0	1	0	ISI-0470-C
F-A	F1.40E3	Class 2 Containment Spray Pump	VT-3	2 (2 CSP/ 1 support each)	One Pump	One CSP	Each inspection interval	0	0	1	ISI-0464-C
F-A	F1.40E9	Class 2 Valves AFW	VT-3	1 (1 Valve with one support)	100% of the valves or if multiple valves only one of multiple valves	1	Each inspection interval	0	1	0	ISI-0113-C

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 179 of 359</b>
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<b>TABLE D SQN UNIT 1 - CLASS 1, 2, AND 3 SUPPORTS SCHEDULE PLANNING DOCUMENT</b>											
<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
F-A	F1.40E9	Class 2 Valves RHR	VT-3	2 (2 Valves with one support each)	100% of the valves or if multiple valves only one of multiple valves	1	Each inspection interval	0	0	1	CHM-2435-C
<b>Class 3 Equipment</b>											
F-A	F1.40E1	Class 3 Containment Spray Heat Exchanger 1A	VT-3	1 CSHX / 1 support	All	1 (CSHX 1A)	Each inspection interval	0	0	1	ISI-0462-C
F-A	F1.40E1	Class 3 Containment Spray Heat Exchanger 1B	VT-3	1 CSHX / 1 support	All	1 (CSHX 1B)	Each inspection interval	0	0	1	ISI-0462-C
F-A	F1.40E1	Class 3 Nonregenerative Letdown Heat Exchanger (CCS)	VT-3	1 (Heat Exchanger / 1 support)	All	1 Heat Exchanger	Each inspection interval	0	1	0	ISI-0216-A
F-A	F1.40E8	Class 3 Component Cooling Surge Tank	VT-3	1 (Tank / 1 support)	All	1 Tank	Each inspection interval	0	1	0	ISI-0227-B
F-A	F1.40E3	Class 3 Turbine Driven Auxiliary Feedwater Pump	VT-3	1 (Pump / 1 support)	All	1 Pump	Each inspection interval	0	0	1	ISI-0474-C
F-A	F1.40E3	Class 3 Motor Driven Auxiliary Feedwater Pump	VT-3	2 (2 MDAFWP/ 1 support each)	One pump	1 (One MDAFWP / 1 support)	Each inspection interval	0	0	1	ISI-0476-C

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 180 of 359</b>
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<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
F-A	F1.40E3	Class 3 CCS Water Pumps	VT-3	3 (3 CCSWP / 1 support each)	One pump	1 CCSWP	Each inspection interval	0	1	0	ISI-0281-C
F-A	F1.40E1	Class 3 CCS Heat Exchanger	VT-3	4 (4 CCHX / 1 support each)	One heat exchanger	1 CCHX	Each inspection interval	0	1	0	ISI-0284-B
F-A	F1.40E6	Class 3 ERCW Strainer	VT-3	2 (2 ERCWS / 1 support each)	One Strainer	1 ERCWS	Each inspection interval	1	0	0	ISI-0285-C
F-A	F1.40E3	Class 3 ERCW Pump Station Pump	VT-3	8 (8 ERCW Pumps / 1 support each)	One Pump	One Pump	Each inspection interval	0	0	1	ISI-0286-B
F-A	F1.40E3	Class 3 FPCC Spent Fuel Pit Pumps	VT-3	3 (3 FPCC Pumps / 1 support each)	One Pump	One Pump	Each inspection interval	0	1	0	ISI-0288-B
F-A	F1.40E7	Class 3 ACCW Shut Down Board Room Water Chiller	VT-3	1 (Chiller / 1 support)	All	1 Chiller	Each inspection interval	1	0	0	ISI-0454-C
F-A	F1.40E3	Class 3 ACCW Chill Water Circulation Pump	VT-3	1 (Pump / 1 support)	All	1 Pump	Each inspection interval	1	0	0	ISI-0472-C
F-A	F1.40E7	Class 3 ACCW Chill Water Air Separator	VT-3	1 (Separator / 1 support)	All	1 Separator	Each inspection interval	1	0	0	ISI-0478-C
F-A	F1.40E1	Class 3 FPCC Spent Fuel Pit Heat Exchanger	VT-3	2 (2 FPCCHX / 1 support each)	One heat exchanger	1 Heat Exchanger	Each inspection interval	1	0	0	ISI-0287-C

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<b>TABLE D SQN UNIT 1 - CLASS 1, 2, AND 3 SUPPORTS SCHEDULE PLANNING DOCUMENT</b>											
<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
F-A	F1.40E1	Class 3 RHR Heat Exchanger Secondary Side	VT-3	2 (2 RHRHSXH / 1 support each)	One heat exchanger	1 RHRHSXH	Each inspection interval	0	0	1	ISI-0290-C
F-A	F1.40E3	Class 3 ERCW Screen Wash Pump Support	VT-3	4 (4 ERCWSW Pumps / 1 support each)	One Pump	1 Pump	Each inspection interval	0	1	0	ISI-0296-C
F-A	F1.40E6	Class 3 ERCW Intake Pumping Station Strainer	VT-3	2 (2 ERCW-STR / 1 support each)	One strainer	1 ERCW-STR	Each inspection interval	0	1	0	ISI-0480-C
F-A	F1.40E9	Class 3 Valves	VT-3	None	N/A	N/A	N/A	N/A	N/A	N/A	
F-A	F1.30	Total Class 1,2, and 3 component supports	VT-3	80		41		8	15	18	
Category Total				1811		319		91	113	115	
CUMULATIVE INTERVAL PERCENTAGE								28.5%	63.9%	100%	



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**NOTES**

- 1) Table D, Refer to Section 7.2.D.10 of this SI for description of support functions.
- 2) **For History Only**-Table D, Item Number F1.30A, ERCW, the number of components in the item number changed from 135 to 134 per DCN D21894. The number of supports required to be examined did not change.
- 3) **For History Only**-Table D, Item Number F1.30B, ERCW, the number of components in the item number changed from 215 to 217 per DCN D21996. The number of supports required to be examined did not change.
- 4) **For History Only**-Table D, Item Number F1.20A, F1.20B, F1.20C, and F1.20D for AFW, the number of components in the item number changed due to modifications made by DCN 22546. The number of supports required to be examined did not change.

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<b>TABLE E</b> <b>SQN UNIT 1 - ASME CLASS 1 AND 2 RI-ISI SCHEDULE PLANNING DOCUMENT (Code Case N-716-1)</b>										
<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF ELEMENTS/SEGMENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>DEFERRAL OF INSPECTION TO END OF INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
R-A	R1.10	HSS Piping Welds								
R-A	R1.11	Welds Subject to Thermal Fatigue	UT	CVCF-163A, CVCF-167, CSCF-168, CVCS-285, CVCF-246A, CVCF-246B, CVCS-414, CVCS-297, CVCS-298, CVCS-299, CVCF-244A, FDF-131, FDSW-03B, FDF-011, FDF-022,  FDSW-01B, FDSW-04B, RCF-23A-OL, RCS-049, RC-35A-OL, RC-33-S2	21	Not Permissible	6	4	11	CHM-2335-C CHM-2339-C ISI-0369-C ISI-0389-C ISI-0482-C ISI-0504-C ISI-0510-C

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 184 of 359</b>
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<b>TABLE E SQN UNIT 1 - ASME CLASS 1 AND 2 RI-ISI SCHEDULE PLANNING DOCUMENT (Code Case N-716-1)</b>										
<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF ELEMENTS/SEGMENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>DEFERRAL OF INSPECTION TO END OF INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
R-A	R1.11s	Welds Subject to Thermal Fatigue, socket welds of any size and branch connection welds NPS 2 or smaller	Visual VT-2 of fitting and Volumetric (UT) of base metal within 1/2 inch of the toe of the weld	SI-1606, SI-1607, SI-1697, SI-1698, SI-1699, SI-1700	6	Not Permissible	2	2	2	CHM-2333-C-01
R-A	R1.12	Not Used								
R-A	R1.13	Welds Subject to Erosion-Cavitation	UT	There are no elements/segments subject to Erosion-Cavitation	N/A	N/A	N/A	N/A	N/A	
R-A	R1.14	Welds Subject to Crevice Corrosion Cracking	UT	There are no elements/segments subject to Crevice Corrosion Cracking	N/A	N/A	N/A	N/A	N/A	
R-A	R1.15	Welds Subject to Primary Water Stress Corrosion Cracking (PWSCC)	UT	There are no elements/segments subject to Primary Water Stress Corrosion Cracking (PWSCC)	N/A	N/A	N/A	N/A	N/A	

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<b>TABLE E SQN UNIT 1 - ASME CLASS 1 AND 2 RI-ISI SCHEDULE PLANNING DOCUMENT (Code Case N-716-1)</b>										
<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF ELEMENTS/SEGMENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>DEFERRAL OF INSPECTION TO END OF INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
R-A	R1.16	Welds Subject to Intergranular or Transgranular Stress Corrosion Cracking (IGSCC or TGSCC)	UT	RHRF-107A, SIS-242, SIS-320	3	Not Permissible	1	1	1	CHM-2338-C-08, CHM-2333-C-09, CHM-2333-C-07
R-A	R1.16s See Note 1 and 2	Welds Subject to Intergranular or Transgranular Stress Corrosion Cracking	VT-2	SI-1772, SI-1772A, SI-1773, SIS-320A, SI-1700	5	Not Permissible	2	1	1	CHM-2333-C-07, CHM-2333-C-01
R-A	R1.17	Welds Subject to Localized Corrosion [Microbiologically-Influenced Corrosion (MIC) or Pitting]	VT-3 or UT	There are no elements/segments subject to Localized Corrosion [Microbiologically Influenced Corrosion (MIC) or Pitting]	N/A	N/A	N/A	N/A	N/A	
R-A	R1.18	Elements subject to Flow Accelerated Corrosion (FAC)	UT thickness	There are no elements/segments subject to Flow Accelerated Corrosion (FAC)	N/A	N/A	N/A	N/A	N/A	

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<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF ELEMENTS/SEGMENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>DEFERRAL OF INSPECTION TO END OF INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
R-A	R1.19	Welds Subject to External Chloride Stress Corrosion Cracking (ECSCC)	PT	There are not elements/segments subject to External Chloride Stress Corrosion Cracking (ECSCC)	N/A	N/A	N/A	N/A	N/A	
R-A	R1.20	Welds Not Subject to a Degradation Mechanism	UT	FDS-17, FDS-18, RCF-24A, RCS-051, RCS-069, RCS-089, RCS-090, RCS-101, RCF-84, RCS-031, RCS-032, RCS-035, RCS-040, RCS-041, RHRF-109A, RHRS- 189, RHRS-166, RHRS-167, RHRS-168, SIF-170A, SIS-279, SIS-291, SIF-147A, SIF-147B, SIS-240, SIS-244, SIF-194A, SIF-194B, SIF-194C	29	Not Permissible	10	10	9	CHM-2339-C- 02, ISI-0389-C- 03, ISI-0369-C- 03, ISI-0369-C- 02, CHM-2336- C-06, CHM- 2336-C-01, CHM-2333-C- 10, CHM-2333- C-09, CHM- 2333-C-07,

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<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF ELEMENTS/SEGMENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>DEFERRAL OF INSPECTION TO END OF INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
R-A	R1.20s See Note 1 and 2	Welds Not Subject to a Degradation Mechanism	VT-2	SWI-2158, SWI-2159, SWI-2160, SWI-2161, SWI-2162, SWI-2163, SWI-2164, SWI-2165, SWI-2166, SWI-2090, SWI-2091, SWI-2092, SWI-2093, SWI-2097, SWI-2032, SWI-2038, SWI-2039, SWI-2040, SWI-1964, SWI-1967, SWI-1968, RC-1391, RC-1392, RC-1412, RC-1413, RC-1429, RC-1430, RC-1439, RC-1440, RHRS-205B, SI-1953, SI-1954, SI-1614, SI-1615, SI-1616, SI-1617, SI-1618, SI-1683, SI-1684A, SI-1684B, SI-1685, SI-1685A, SI-1590, SI-1591, SI-1592, SI-1592A, SI-1592B, SI-1701, SI-1702, SI-1703, SI-1704, SI-1705, SI-1706	159	Not Permissible	53	53	53	CHM-2338-C-04, CHM-2338-C-02, CHM-2338-C-01, ISI-0369-C-01, CHM-2336-C-06, CHM-2333-C-02, CHM-2333-C-01
R-A	LERF	High Pressure Fire Protection (6.9kV Shutdown Board Room A) Note 3	UT	0-26-A-G100 0-26-A-G101	2	Not Permissible	1	1	0	1-47W491-4

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 188 of 359</b>
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(Unit 1)**

<b>TABLE E SQN UNIT 1 - ASME CLASS 1 AND 2 RI-ISI SCHEDULE PLANNING DOCUMENT (Code Case N-716-1)</b>										
<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF ELEMENTS/SEGMENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>DEFERRAL OF INSPECTION TO END OF INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
R-A	LERF	High Pressure Fire Protection (125V Vital Battery Board Room I) Note 3	UT	0-26-A-G102	1	Not Permissible	0	0	1	1,2-47W491-4-2
R-A	LERF	High Pressure Fire Protection (480V Shutdown Board Room 2A2) Note 3	UT	0-26-A-G103 0-26-A-G104	2	Not Permissible	0	1	1	2-47W491-4
R-A	LERF	High Pressure Fire Protection (125V Vital Battery Board Room IV) Note 3	UT	0-26-A-G105 0-26-A-G106	2	Not Permissible	1	1	0	1,2-47W200-3
R-A	LERF	High Pressure Fire Protection (6.9kV Shutdown Board Room B) Note 3	UT	0-26-A-G107 0-26-A-G108 0-26-A-G109	3	Not Permissible	1	1	1	2-47W491-4

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 189 of 359</b>
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**Attachment 4  
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Examination Schedule  
(Unit 1)**

<b>TABLE E SQN UNIT 1 - ASME CLASS 1 AND 2 RI-ISI SCHEDULE PLANNING DOCUMENT (Code Case N-716-1)</b>										
<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF ELEMENTS/SEGMENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>DEFERRAL OF INSPECTION TO END OF INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
R-A	LERF	High Pressure Fire Protection (480V Board Room 1A) Note 3	UT	0-26-A-G110	1	Not Permissible	0	1	0	1,2-47W200-2
R-A	LERF	Raw Cooling Water (5th Vital Battery and Board Room 2A2) Note 3	UT	0-26-A-G111	1	Not Permissible	0	1	0	1, 2-47W200-2
R-A	LERF	Raw Cooling Water (HEPA Filter Plenum Room) Note 3	UT	0-26-A-G112 0-26-A-G113	2	Not Permissible	1	1	0	1,2-47W200-2
R-A	LERF	High Pressure Fire Protection (480VBoard Room 2A) Note 3	UT	0-26-A-G114	1	Not Permissible	0	0	1	1-47W491-4



<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 190 of 359</b>
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(Unit 1)**

**NOTES**

- 1) Item numbers with an s, such as R1.20s, indicate socket weld or branch connection NPS 2 or less.
- 2) VT-2 exams will be performed with 1-SI-SXI-068-201.0 or 1-SI-SXI-068-202.0 as applicable.
- 3) None Code Class Piping exceeding CDF or LERF. Section 7.13.12 (Code Case N-716-1).
- 4) An alternative Risk-Informed Program is being implemented in the fourth inspection interval per Code Case N-716-1.
- 5) PWSCC examinations are performed under the pressure test program in accordance with Categories B-P, C-H, or D-B as applicable.
- 6) The IDDEAL database makes use of two place holder Item Numbers. Item No. R0.00 is used for LSS piping welds. Item No. R0.99 is used for new or removed piping welds requiring evaluation in the next periodic update for N-716-1.

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 191 of 359</b>
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**Examination Schedule  
(Unit 2)**

**TABLE A  
SQN UNIT 2 - CLASS 1 SCHEDULE PLANNING DOCUMENT**

EXAM CAT.	ITEM NO.	DESCRIPTION	EXAM METHOD	NUMBER OF COMPONENTS IN ITEM NUMBER	TO BE EXAMINED DURING INTERVAL	NUMBER TO BE EXAMINED IN THE INTERVAL	DEFERRAL OF INSPECTION TO END OF INTERVAL	NUMBER TO BE EXAMINED IN THE FIRST PERIOD	NUMBER TO BE EXAMINED IN THE SECOND PERIOD	NUMBER TO BE EXAMINED IN THE THIRD PERIOD	ISI DRAWING NUMBER
B-A		<b>Pressure Retaining Welds In Reactor Vessel</b>									
B-A	B1.10	Reactor Vessel Shell Welds	Volumetric								
B-A	B1.11	Reactor Vessel Shell Welds, Circumferential	UT	4	100%	4 See Note 8	Deferral Permissible	0	0	4 Note 8	ISI-0298-C
B-A	B1.12	Reactor Vessel Shell Welds, Longitudinal	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-A	B1.20	Reactor Vessel Head Welds	Volumetric								
B-A	B1.21	Reactor Vessel Head Welds, Circumferential	UT	2 (closure and lower)	100% of accessible length	2 See Note 8	Deferral Permissible	0	0	2 See Note 8	ISI-0298-C ISI-0301-C
B-A	B1.22	Reactor Vessel Head Welds, Meridional	UT	6	100% of accessible length	6 See Note 8	Deferral Permissible	0	0	6 See Note 8	ISI-0298-C
B-A	B1.30	Reactor Vessel Shell-to-Flange Weld	UT	1	100%	1 See Note 8	Deferral Permissible	0	0	1 See Note 8	ISI-0298-C

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 192 of 359</b>
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(Unit 2)**

**TABLE A  
SQN UNIT 2 - CLASS 1 SCHEDULE PLANNING DOCUMENT**

EXAM CAT.	ITEM NO.	DESCRIPTION	EXAM METHOD	NUMBER OF COMPONENTS IN ITEM NUMBER	TO BE EXAMINED DURING INTERVAL	NUMBER TO BE EXAMINED IN THE INTERVAL	DEFERRAL OF INSPECTION TO END OF INTERVAL	NUMBER TO BE EXAMINED IN THE FIRST PERIOD	NUMBER TO BE EXAMINED IN THE SECOND PERIOD	NUMBER TO BE EXAMINED IN THE THIRD PERIOD	ISI DRAWING NUMBER
B-A	B1.40	Reactor Vessel Head-to-Flange Weld	MT & UT	1	100%	1 See Note 8	Deferral Permissible	0	0	1 See Note 8	ISI-0301-C
B-A	B1.50	Reactor Vessel Weld Repair Areas > 10% Wall	Volumetric								
B-A	B1.51	Reactor Vessel Repair Welds Beltline Region	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Category Total				14		14		0	0	14	
CUMULATIVE INTERVAL PERCENTAGE								N/A	N/A	N/A	
<b>B-B</b>		<b>Pressure Retaining Welds in Vessels Other than Reactor Vessels</b>									
B-B	B2.10	Pressurizer Shell-to-Head Welds	Volumetric								
B-B	B2.11	Pressurizer Circumferential Shell-to-Head Welds	UT	2	100%	2	Deferral <b>Not</b> Permissible	0	1	1	ISI-0396-C
B-B	B2.12	Pressurizer Shell to Head Intersecting Longitudinal Welds	UT	2	100% (1 foot of each intersecting longitudinal weld)	2 (1 foot each)	Deferral <b>Not</b> Permissible	1	1	0	ISI-0396-C





<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 195 of 359</b>
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**Examination Schedule  
(Unit 2)**

**TABLE A  
SQN UNIT 2 - CLASS 1 SCHEDULE PLANNING DOCUMENT**

EXAM CAT.	ITEM NO.	DESCRIPTION	EXAM METHOD	NUMBER OF COMPONENTS IN ITEM NUMBER	TO BE EXAMINED DURING INTERVAL	NUMBER TO BE EXAMINED IN THE INTERVAL	DEFERRAL OF INSPECTION TO END OF INTERVAL	NUMBER TO BE EXAMINED IN THE FIRST PERIOD	NUMBER TO BE EXAMINED IN THE SECOND PERIOD	NUMBER TO BE EXAMINED IN THE THIRD PERIOD	ISI DRAWING NUMBER
B-D	B3.90	Reactor Vessel Nozzle-to-Vessel Welds	UT	8	100%	8 See Note 8	Deferral Permissible	0	0	8 See Note: 1, 8	ISI-0298-C ISI-0297-C ISI-0392-C
B-D	B3.100	Reactor Vessel Nozzle Inside Radius Section	VT-1 Code Case N-648-1 See Note 2	8	100%	8 See Note 8	Deferral Permissible	0	0	8 See Note 8	ISI-0008-C ISI-0297-C ISI-0298-C ISI-0392-C
B-D	B3.110	Pressurizer Nozzle-to-Vessel Welds	UT	6	100%	6	Deferral <b>Not</b> Permissible	1	3	2	ISI-0396-C
B-D	B3.120	Pressurizer Nozzle Inside Radius Section See 10 CFR 50.55a(b)(2)(xxi)(A)	UT Note 10	6	100%	6	Deferral <b>Not</b> Permissible	1	3	2	ISI-0396-C
B-D	B3.130	Steam Generator Primary Side Nozzle-to-Vessel Welds	UT Note 10	8	100% see note 7 for current interval	8	Deferral <b>Not</b> Permissible	4	2	2	ISI-0401-C

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**TABLE A  
SQN UNIT 2 - CLASS 1 SCHEDULE PLANNING DOCUMENT**

EXAM CAT.	ITEM NO.	DESCRIPTION	EXAM METHOD	NUMBER OF COMPONENTS IN ITEM NUMBER	TO BE EXAMINED DURING INTERVAL	NUMBER TO BE EXAMINED IN THE INTERVAL	DEFERRAL OF INSPECTION TO END OF INTERVAL	NUMBER TO BE EXAMINED IN THE FIRST PERIOD	NUMBER TO BE EXAMINED IN THE SECOND PERIOD	NUMBER TO BE EXAMINED IN THE THIRD PERIOD	ISI DRAWING NUMBER
B-D	B3.140	Steam Generator Primary Side Nozzle Inside Radius Section  See 10 CFR 50.55a(b)(2)(xxi)(A)	UT	8	100% See Note 7 for current interval	8	Deferral <b>Not</b> Permissible	4	0	4	ISI-0401-C
B-D	B3.150	Heat Exchanger Primary Side Nozzle-to-Vessel Welds	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-D	B3.160	Heat Exchanger Primary Side Nozzle Inside Radius Section	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Category Total				44		44(28)		10	8	24(10)	
CUMULATIVE INTERVAL PERCENTAGE								N/A	N/A	N/A	
<b>B-F</b>		<b>Pressure Retaining Dissimilar Metal Welds See Note 3</b>									
<b>B-G-1</b>		<b>Pressure Retaining Bolting, Greater Than 2" in Diameter</b>									
B-G-1	B6.10	Reactor Vessel Closure Head Nuts > 2" in diameter	Visual VT-1	54	100%	54	Deferral Permissible	0	0	54	ISI-0304-C

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 197 of 359</b>
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**TABLE A  
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EXAM CAT.	ITEM NO.	DESCRIPTION	EXAM METHOD	NUMBER OF COMPONENTS IN ITEM NUMBER	TO BE EXAMINED DURING INTERVAL	NUMBER TO BE EXAMINED IN THE INTERVAL	DEFERRAL OF INSPECTION TO END OF INTERVAL	NUMBER TO BE EXAMINED IN THE FIRST PERIOD	NUMBER TO BE EXAMINED IN THE SECOND PERIOD	NUMBER TO BE EXAMINED IN THE THIRD PERIOD	ISI DRAWING NUMBER
B-G-1	B6.20	Reactor Vessel Closure Studs > 2" diameter	UT (or MT when removed)	54	100%	54	Deferral Permissible	0	0	54	ISI-0304-C
B-G-1	B6.40	Reactor Vessel Threads in Flange	UT	54	100%	54	Deferral Permissible	0	0	54	ISI-0304-C
B-G-1	B6.50	Reactor Vessel Closure Washers, Bushings Note: Reactor Vessel does <b>Not</b> have bushings only washers	VT-1	54	100%	54	Deferral Permissible	0	0	54	ISI-0304-C
B-G-1	B6.60	Pressurizer Bolts and Studs >2" diameter	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-G-1	B6.70	Pressurizer Flange Surfaces When Connection Disassembled	Visual	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-G-1	B6.80	Pressurizer Nuts, Bushings, and Washers	Visual	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-G-1	B6.90	Steam Generator Bolts and Studs >2" diameter	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A



<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 198 of 359</b>
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**TABLE A  
SQN UNIT 2 - CLASS 1 SCHEDULE PLANNING DOCUMENT**

<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>DEFERRAL OF INSPECTION TO END OF INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
B-G-1	B6.100	Steam Generator Flange Surfaces When Connection Disassembled	Visual	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-G-1	B6.110	Steam Generator Nuts, Bushings, and Washers	Visual	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-G-1	B6.120	Heat Exchanger Bolts and Studs	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-G-1	B6.130	Heat Exchanger Flange Surfaces When Connection Disassembled	Visual	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-G-1	B6.140	Heat Exchanger Nuts, Bushings, and Washers	Visual	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-G-1	B6.150	Piping Bolts and Studs > 2" diameter	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-G-1	B6.160	Piping Flange Surfaces When Connection Disassembled	Visual	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-G-1	B6.170	Piping Nuts, Bushings, and Washers	Visual	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 199 of 359</b>
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**TABLE A  
SQN UNIT 2 - CLASS 1 SCHEDULE PLANNING DOCUMENT**

EXAM CAT.	ITEM NO.	DESCRIPTION	EXAM METHOD	NUMBER OF COMPONENTS IN ITEM NUMBER	TO BE EXAMINED DURING INTERVAL	NUMBER TO BE EXAMINED IN THE INTERVAL	DEFERRAL OF INSPECTION TO END OF INTERVAL	NUMBER TO BE EXAMINED IN THE FIRST PERIOD	NUMBER TO BE EXAMINED IN THE SECOND PERIOD	NUMBER TO BE EXAMINED IN THE THIRD PERIOD	ISI DRAWING NUMBER
B-G-1	B6.180	Reactor Coolant Pump Bolts & Studs > 2" diameter	UT	96 (4 Pumps/24 bolts/studs per pump) see note: 4	One pump/ 24 bolts	24 bolts/studs see note: 4	Deferral Permissible	0	0	24	ISI-0307-C
B-G-1	B6.190	Reactor Coolant Pump Flange Surface when connection is disassembled  See Note: 5	VT-1 See Note: 5	4 Pumps See Note: 5	One pump if selected for examination under Category B-L-2	One pump	Deferral Permissible	only if Category B- L-2 examination is performed	only if Category B-L-2 examination is performed	only if Category B-L-2 examination is performed	ISI-0307-C
B-G-1	B6.200	Reactor Coolant Pump Nuts, Bushings, and Washers	VT-1	4 Pumps (24 nuts per pump)	One pump if selected for examination under Category B-L-2	One pump (24 Nuts)	Deferral Permissible	only if Cat. B-L-2 exam is performed	only if Cat. B-L-2 exam is performed	only if Cat. B-L-2 exam is performed	ISI-0307-C
B-G-1	B6.210	Valve Bolts & Studs > 2" diameter	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-G-1	B6.220	Valve Flange Surface when connection is disassembled	Visual	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-G-1	B6.230	Valve Nuts, Bushings, and Washers	Visual	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Category Total				412		240		0	0	240	
CUMULATIVE INTERVAL PERCENTAGE								N/A	N/A	N/A	





<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 202 of 359</b>
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**TABLE A  
SQN UNIT 2 - CLASS 1 SCHEDULE PLANNING DOCUMENT**

EXAM CAT.	ITEM NO.	DESCRIPTION	EXAM METHOD	NUMBER OF COMPONENTS IN ITEM NUMBER	TO BE EXAMINED DURING INTERVAL	NUMBER TO BE EXAMINED IN THE INTERVAL	DEFERRAL OF INSPECTION TO END OF INTERVAL	NUMBER TO BE EXAMINED IN THE FIRST PERIOD	NUMBER TO BE EXAMINED IN THE SECOND PERIOD	NUMBER TO BE EXAMINED IN THE THIRD PERIOD	ISI DRAWING NUMBER
B-K	B10.10	Pressure Vessels Welded Attachments	Surface or Volumetric								
B-K	B10.10	Reactor Vessel	Surface	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-K	B10.10	Pressurizer Support Skirt	MT	1 (Pressurizer/ 1 support skirt)	100% of required areas of each welded attachment on one vessel and whenever component support member deformation is identified	1 (Pressurizer/ 1 support skirt)	Deferral <b>Not</b> Permissible	0	1	0	ISI-0396-C
B-K	B10.10	Pressurizer Seismic Lugs	MT	1 (Pressurizer/ 4 seismic lugs)	Exam not required based on examination of Pressurizer Support Skirt N-700	0	Deferral <b>Not</b> Permissible	0	0	0	ISI-0396-C

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 204 of 359</b>
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**TABLE A  
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EXAM CAT.	ITEM NO.	DESCRIPTION	EXAM METHOD	NUMBER OF COMPONENTS IN ITEM NUMBER	TO BE EXAMINED DURING INTERVAL	NUMBER TO BE EXAMINED IN THE INTERVAL	DEFERRAL OF INSPECTION TO END OF INTERVAL	NUMBER TO BE EXAMINED IN THE FIRST PERIOD	NUMBER TO BE EXAMINED IN THE SECOND PERIOD	NUMBER TO BE EXAMINED IN THE THIRD PERIOD	ISI DRAWING NUMBER
B-K	B10.10	Steam Generator Support Pads	MT	16 (4 Steam Generators/ 4 support pads per SG)	Exam not required during 3rd interval  See Note 7	1 (See Note 7)	Deferral <b>Not</b> Permissible	0	0	1	ISI-0401-C
B-K	B10.20	Piping Welded Attachments	Surface								
B-K	B10.20	CVC	PT	10	100% of required areas of each welded attachment on 10% of the welded attachments and whenever component support member deformation is identified  See Note 6 & 10	1	Deferral <b>Not</b> Permissible	0	0	1	MSG-0012-C MSG-0015-C

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 205 of 359</b>
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**TABLE A  
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EXAM CAT.	ITEM NO.	DESCRIPTION	EXAM METHOD	NUMBER OF COMPONENTS IN ITEM NUMBER	TO BE EXAMINED DURING INTERVAL	NUMBER TO BE EXAMINED IN THE INTERVAL	DEFERRAL OF INSPECTION TO END OF INTERVAL	NUMBER TO BE EXAMINED IN THE FIRST PERIOD	NUMBER TO BE EXAMINED IN THE SECOND PERIOD	NUMBER TO BE EXAMINED IN THE THIRD PERIOD	ISI DRAWING NUMBER
B-K	B10.20	RCS	PT	6	100% of required areas of each welded attachment on 10% of the welded attachments and whenever component support member deformation is identified  See Note 6 & 10	1	Deferral <b>Not</b> Permissible	1	0	0	MSG-0013-C
B-K	B10.20	RCS MAIN	PT	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A



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**TABLE A  
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EXAM CAT.	ITEM NO.	DESCRIPTION	EXAM METHOD	NUMBER OF COMPONENTS IN ITEM NUMBER	TO BE EXAMINED DURING INTERVAL	NUMBER TO BE EXAMINED IN THE INTERVAL	DEFERRAL OF INSPECTION TO END OF INTERVAL	NUMBER TO BE EXAMINED IN THE FIRST PERIOD	NUMBER TO BE EXAMINED IN THE SECOND PERIOD	NUMBER TO BE EXAMINED IN THE THIRD PERIOD	ISI DRAWING NUMBER
B-K	B10.20	RHR	PT	3	100% of required areas of each welded attachment on 10% of the welded attachments and whenever component support member deformation is identified  See Note 6 & 10	1	Deferral <b>Not</b> Permissible	0	1	0	MSG-0010-C
B-K	B10.20	SIS	PT	13	100% of required areas of each welded attachment on 10% of the welded attachments and whenever component support member deformation is identified  See Note 6 & 10	2	Deferral <b>Not</b> Permissible	0	0	2	MSG-0009-C

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EXAM CAT.	ITEM NO.	DESCRIPTION	EXAM METHOD	NUMBER OF COMPONENTS IN ITEM NUMBER	TO BE EXAMINED DURING INTERVAL	NUMBER TO BE EXAMINED IN THE INTERVAL	DEFERRAL OF INSPECTION TO END OF INTERVAL	NUMBER TO BE EXAMINED IN THE FIRST PERIOD	NUMBER TO BE EXAMINED IN THE SECOND PERIOD	NUMBER TO BE EXAMINED IN THE THIRD PERIOD	ISI DRAWING NUMBER
B-K	B10.30	Pump Welded Attachments	PT	3 (3 Reactor Coolant Pumps with 3 IA's on each pump) (Pumps 1, 3 and 4)	100% of required areas of each welded attachment on 10% of the welded attachments associated with the component supports selected for examination and whenever component support member deformation is identified  see note 6	1 (1 pump, 3 IAs)	Deferral <b>Not</b> Permissible	1	0	0	ISI-0326-C
B-K	B10.40	Valve Welded Attachments	Surface	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Category Total				56		8		2	2	4	

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EXAM CAT.	ITEM NO.	DESCRIPTION	EXAM METHOD	NUMBER OF COMPONENTS IN ITEM NUMBER	TO BE EXAMINED DURING INTERVAL	NUMBER TO BE EXAMINED IN THE INTERVAL	DEFERRAL OF INSPECTION TO END OF INTERVAL	NUMBER TO BE EXAMINED IN THE FIRST PERIOD	NUMBER TO BE EXAMINED IN THE SECOND PERIOD	NUMBER TO BE EXAMINED IN THE THIRD PERIOD	ISI DRAWING NUMBER
CUMULATIVE INTERVAL PERCENTAGE								25%	50%	100%	
<b>B-L-2</b>		<b>Pump Casings</b>									
B-L-2	B12.20	Pump Casing Internal Surfaces	VT-3	4 Pumps	At least one pump in each group of pumps when disassembled	One Pump	N/A	Only if disassembled	Only if disassembled	Only if disassembled	ISI-0307-C
Category Total				4		1		0	0	0	
CUMULATIVE INTERVAL PERCENTAGE								N/A	N/A	N/A	
<b>B-M-2</b>		<b>Valve bodies</b>									
B-M-2	B12.50	Valves (greater than NPS 4") Body Internal Surfaces	Visual								
B-M-2	B12.50	RCS	VT-3	3 (One Group)	At least one valve in each group of valves when disassembled	1 (One Group / one valve per group)	N/A	Only if disassembled	Only if disassembled	Only if disassembled	Attachment 6 ISI-0452-C
B-M-2	B12.50	RHR	VT-3	6 (Three Groups)	At least one valve in each group of valves when disassembled	3 (Three Groups / one valve per group)	N/A	Only if disassembled	Only if disassembled	Only if disassembled	Attachment 6 ISI-0452-C

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B-M-2	B12.50	SIS	VT-3	14 (Two Groups)	At least one valve in each group of valves when disassembled	2 (Two Groups / one valve per group)	N/A	Only if disassembled	Only if disassembled	Only if disassembled	Attachment 6 ISI-0452-C
<b>B-N-1</b>		<b>Interior of Reactor Vessel</b>									
B-N-1	B13.10	Reactor Vessel Interior Accessible areas Note 9	VT-3	1	100% (Each Inspection Period)	3	Deferral <b>Not</b> Permissible	1	1	1	ISI-0298-C
Category Total				1		3		1	1	1	
CUMULATIVE INTERVAL PERCENTAGE								N/A	N/A	N/A	
<b>B-N-2</b>		<b>Welded Core Support Structure and Interior Attachments to Reactor Vessels</b>									
B-N-2	B13.50	Reactor Vessel Interior Attachments Within Beltline Region	Visual	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B-N-2	B13.60	Reactor Vessel Interior Attachments Beyond Beltline Region	VT-3	6	Accessible welds	6	Deferral Permissible	0	0	6 See Note 9	ISI-0298-C
Category Total				6		6		0	0	6	

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EXAM CAT.	ITEM NO.	DESCRIPTION	EXAM METHOD	NUMBER OF COMPONENTS IN ITEM NUMBER	TO BE EXAMINED DURING INTERVAL	NUMBER TO BE EXAMINED IN THE INTERVAL	DEFERRAL OF INSPECTION TO END OF INTERVAL	NUMBER TO BE EXAMINED IN THE FIRST PERIOD	NUMBER TO BE EXAMINED IN THE SECOND PERIOD	NUMBER TO BE EXAMINED IN THE THIRD PERIOD	ISI DRAWING NUMBER
CUMULATIVE INTERVAL PERCENTAGE								N/A	N/A	N/A	
<b>B-N-3</b>		<b>Removal Core Support Structures</b>									
B-N-3	B13.70	Reactor Vessel Core Support Structure	VT-3	1	Accessible surfaces	1	Deferral Permissible	0	0	1	ISI-0298-C
Category Total				6		6		0	0	6	
CUMULATIVE INTERVAL PERCENTAGE								N/A	N/A	N/A	
<b>B-O</b>		<b>Pressure Retaining Welds in Control Rod Housing</b>									
B-O	B14.20	Reactor Vessel Welds in CRD Housings	UT or surface UT is being performed	78 CRD Housings (17 Peripheral Housings)	10% of Peripheral Housings	2	Deferral Permissible	0	0	2	ISI-0097-C ISI-0300-C
B-O	B14.21	Welds In-Core Instrumentation Nozzle (ICI) Housings >NPS 2	Volumetric or Surface	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Category Total				17		2		0	0	2	
CUMULATIVE INTERVAL PERCENTAGE								N/A	N/A	N/A	



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**NOTES**

- 1) From Code Case N-613-1, the following may be used. Table A, Examination Category B-D, item number B3.90, reactor vessel nozzle-to-vessel welds, the examination volume may be reduced to 1/2 inch from each side of the weld crown, in lieu of the 1/2 through-wall thickness from each side of the weld required by figures IWB-2500-7(a) and (b).
- 2) Code case N-648-1 is being used for examination of the reactor vessel nozzle inside radius section, Examination Category B-D, item number B3.100, to perform a VT-1 examination with the conditions in Regulatory Guide 1.147.
- 3) An alternative Risk-Informed Inservice Inspection Program per Code Case N-716-1 is being implemented in the Fourth 10-Year ISI Interval. Categories B-F and B-J examinations are credited under the RI-ISI program, Table E.
- 4) During U2C13 of the second interval reactor coolant pump number 4 main flange bolts were replaced with studs and hydraulic nuts per DCN E21858.
- 5) Table A, examination category B-G-1, item number B6.190 includes the one inch annular surface of flange surrounding each stud, only when the connection is disassembled.
- 6) A minimum 10 percent of the welded attachments associated with the component supports selected for examination under IWF-2510 shall be examined.
- 7) These components were added as part of the Steam Generator Replacement in U2R18. With respect to examinations required during the Fourth 10-Year ISI Interval, IWB-2411(b)(3) states examinations shall be scheduled in accordance with IWB-2411(a) for successive intervals.
- 8) Third 10-Year ISI Interval Alternative Request 13-ISI-2, (NRC SER, TAC NOS. MF2900 and MF2901, Dated 08/01/2014), [ADAMS Accession No. ML14188B920] extended the ISI Interval for the examinations of the reactor pressure vessel welds (Category B-A) as well as nozzle-to-vessel welds and inner radius sections (Category B-D) from 10 to 20 years and the examinations listed in this Table are 20 year examinations.
- 9) Reactor Vessel License Renewal Application (LRA) Commitment see Source Notes **[C.2]**, requires VT-3 examination of Unit's six lower radial support guides and welds, including the clevis insert, clevis insert bolts, dowel pins and tack welds.
- 10) 10 CFR 50.55a(b)(2)(xxi)(A) allows a visual examination lieu of UT. However, the nozzle inner radius is not accessible.

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EXAM CAT.	ITEM NO.	DESCRIPTION	EXAM METHOD	NUMBER OF COMPONENTS IN ITEM NUMBER	TO BE EXAMINED DURING INTERVAL	NUMBER TO BE EXAMINED IN THE INTERVAL	FREQUENCY OF EXAMINATION	NUMBER TO BE EXAMINED IN THE FIRST PERIOD	NUMBER TO BE EXAMINED IN THE SECOND PERIOD	NUMBER TO BE EXAMINED IN THE THIRD PERIOD	ISI DRAWING NUMBER
C-A		<b>Pressure Retaining Welds in Pressure Vessels</b>									
C-A	C1.10	Pressure Retaining Shell Circumferential Welds	Volumetric or Surface								
C-A	C1.10	Steam Generator	UT	4 (4 Steam Generators/ 1 weld per Steam Generator)	All in one or distributed among the vessels at structural discontinuity	1	Each Inspection Interval	1	0	0	ISI-0401-C
C-A	C1.10	Residual Heat Removal Heat Exchanger	UT	2 (2 RHRHX/ 1 weld per RHRHX)	All Shell Circumferential Welds	0 Note 4	Each Inspection Period	0	0	0	ISI-0289-C
C-A	C1.10	Containment Spray Heat Exchanger	UT	2 (2 CSHX/ 1 weld per CSHX)	All in one or distributed among the vessels at structural discontinuity	0 Note 4	Each Inspection Interval	0	0	0	ISI-0463-C
C-A	C1.10	Seal Water Heat Exchanger (CVCS)	PT  vessel wall thickness less than 0.20 inches	1 (1 SWHX/ 1 weld)	All in one or distributed among the vessels at structural discontinuity	0 Note 4	Each Inspection Interval	0	0	0	ISI-0461-C



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NOTES											
C-A	C1.10	Seal Water Filter (CVCS)	PT vessel wall thickness less than 0.20 inches	1 (1 SWF/ 1 weld)	All in one or distributed among the vessels at structural discontinuity	0 Note 4	Each Inspection Interval	0	0	0	ISI-0459-C
C-A	C1.10	Seal Water Injection Filter (CVCS)	UT	2 (2 SWIF/ 1 weld per SWIF)	All in one or distributed among the vessels at structural discontinuity	0 Note 4	Each Inspection Interval	0	0	0	ISI-0457-C
C-A	C1.10	Centrifugal Charging Pump Tank	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C-A	C1.20	Pressure Retaining Head Circumferential Welds	Volumetric or Surface								
C-A	C1.20	Steam Generator	UT	4 (4 Steam Generators/ 1 weld per Steam Generator)	Head-to-Shell Welds, in one vessel	1	Each Inspection Interval	0	1	0	ISI-0401-C
C-A	C1.20	Residual Heat Removal Heat Exchanger	UT	2 (2 RHRHX/ 1 weld per RHRHX)	All Head-to-Shell Welds	0 Note 4	Each Inspection Period	0	0	0	ISI-0289-C
C-A	C1.20	Containment Spray Heat Exchanger	UT	None	Head-to-Shell Welds, in one vessel	N/A	Each Inspection Interval	N/A	N/A	N/A	ISI-0463-C
C-A	C1.20	Seal Water Heat Exchanger (CVCS)	PT vessel wall thickness less than 0.20 inches	1 SWHX/ 1 weld	Head-to-Shell Welds, in one vessel	0 Note 4	Each Inspection Interval	0	0	0	ISI-0461-C

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NOTES											
C-A	C1.20	Seal Water Filter (CVCS)	PT vessel wall thickness less than 0.20 inches	1 SWF/ 1 weld	Head-to-Shell Welds, in one vessel	0 Note 4	Each Inspection Interval	0	0	0	ISI-0459-C
C-A	C1.20	Seal Water Injection Filter (CVCS)	UT	2 (2 SWIF / 1 weld per SWIF)	Head-to-Shell Welds, in one vessel	0 Note 4	Each Inspection Interval	0	0	0	ISI-0457-C
C-A	C1.20	Centrifugal Charging Pump Tank (SI)	UT	2 (1 CCP Tank/ 2 welds)	Head-to-Shell Welds, in one vessel	0 Note 4	Each Inspection Interval	0	0	0	ISI-0074-C
C-A	C1.30	Tubesheet-to-Shell Weld	Volumetric or Surface								
C-A	C1.30	Steam Generator	UT	4 (4 Steam Generators/ 1 weld per Steam Generator)	Tubesheet-to-Shell Welds, in one vessel	1	Each Inspection Interval	0	0	1	ISI-0401-C
C-A	C1.30	Residual Heat Removal Heat Exchanger	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C-A	C1.30	Containment Spray Heat Exchanger	UT	2 (2 CSHX/ 1 weld per CSHX)	Tubesheet-to-Shell Welds, in one vessel	0 Note 4	Each Inspection Interval	0	0	0	ISI-0463-C
C-A	C1.30	Seal Water Heat Exchanger	Surface	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C-A	C1.30	Seal Water Filter	Surface	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C-A	C1.30	Seal Water Injection Filter	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Category Total				30		3		1	1	1	

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NOTES											
CUMULATIVE INTERVAL PERCENTAGE									33%	66%	100%
<b>C-B</b>		<b>Pressure Retaining Nozzle Welds in Vessels</b>									
C-B	C2.10	Nozzles in vessels ≤ 1/2" nominal thickness									
C-B	C2.11	Nozzle-to-Shell (or Head) Weld in Vessels ≤ 1/2" thick, and Nozzles Greater than 4" NPS	Surface	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C-B	C2.11	Seal Water Heat Exchanger	PT	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C-B	C2.11	Seal Water Filter	PT	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C-B	C2.11	Seal Water Injection Filter	PT	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C-B	C2.20	Nozzles without reinforcing plate in vessels > 1/2" nominal thickness									
C-B	C2.21	Nozzles without Reinforcing Plate in Vessels > 1/2" thick	Surface and Volumetric								
C-B	C2.21	Steam Generator See Notes 5 and 6	MT & UT	4 (4 Steam Generators/ 1 FW nozzle each) See Note 6	All nozzles at terminal ends of piping runs in one vessel	1 (FW)	Each Inspection Interval	1 (FW)	0	0	ISI-0401-C



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NOTES											
C-B	C2.31	Nozzles with Reinforcing Plate in Vessels > 1/2" thick Reinforcing Plate Welds to Vessel & Nozzle	Surface	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C-B	C2.32	Nozzle-to-Shell (or head) Weld when inside of Vessel is accessible	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C-B	C2.33	Nozzle-to-Shell (or head) Weld when inside of Vessel is inaccessible	Visual	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Category Total				22		2		2	0	0	
CUMULATIVE INTERVAL PERCENTAGE								100%	100%	100%	
<b>C-C</b>		<b>Welded Attachments for Class 2 Vessels, Piping, Pumps, and Valves</b>									
C-C	C3.10	Pressure Vessel Welded Attachments	Surface								
C-C	C3.10	Steam Generator	Surface	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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NOTES											
C-C	C3.10	Residual Heat Removal Heat Exchanger	PT	4 (2 RHRHX/ 2 IAs each)	100% of required areas of one welded attachment on one vessel and whenever component support member deformation is identified	1 (1 IA on 1 RHRHX)	Each Identified Occurrence and Each Inspection Interval	0	1	0	ISI-0289-C
C-C	C3.10	Containment Spray Heat Exchanger	MT	8 (2 CSHX/ 4 IAs each)	100% of required areas of one welded attachment on one vessel and whenever component support member deformation is identified	1 (1 IA on 1 CSHX)	Each Identified Occurrence and Each Inspection Interval	0	0	1	ISI-0463-C
C-C	C3.10	Seal Water Heat Exchanger (CVCS)	PT	2 (1 Heat exchanger / 2 IAs)	100% of required areas of one welded attachment on one vessel and whenever component support member deformation is identified	1 (1 IA on 1 SWHX)	Each Identified Occurrence and Each Inspection Interval	0	1	0	ISI-0461-C



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<b>NOTES</b>											
C-C	C3.20	AFW	MT	16	100% of required areas of each welded attachment on 10% of the welded attachments and whenever component support member deformation is identified  See Note 2	2	Each Identified Occurrence and Each Inspection Interval	1	1	0	ISI-0146-C
C-C	C3.20	CS	PT	16	100% of required areas of each welded attachment on 10% of the welded attachments and whenever component support member deformation is identified  See Note 2	2	Each Identified Occurrence and Each Inspection Interval	0	1	1	ISI-0449-C MSG-0011-C



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<b>NOTES</b>											
C-C	C3.20	CVC	PT	63	100% of required areas of each welded attachment on 10% of the welded attachments and whenever component support member deformation is identified  See Note 2	7	Each Identified Occurrence and Each Inspection Interval	2	2	3	ISI-0449-C
C-C	C3.20	FW	MT	5	100% of required areas of each welded attachment on 10% of the welded attachments and whenever component support member deformation is identified  See Note 2	1	Each Identified Occurrence and Each Inspection Interval	0	1	0	MSG-0016-C

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<b>NOTES</b>											
C-C	C3.20	MS	MT	9	100% of required areas of each welded attachment on 10% of the welded attachments and whenever component support member deformation is identified  See Note 2	1	Each Identified Occurrence and Each Inspection Interval	0	1	0	MSG-0017-C
C-C	C3.20	RHR	PT	31	100% of required areas of each welded attachment on 10% of the welded attachments and whenever component support member deformation is identified  See Note 2	4	Each Identified Occurrence and Each Inspection Interval	1	1	2	ISI-0449-C MSG-0010-C

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NOTES											
C-C	C3.20	SIS	PT	69	100% of required areas of each welded attachment on 10% of the welded attachments and whenever component support member deformation is identified  See Note 2	7	Each Identified Occurrence and Each Inspection Interval	2	2	3	ISI-0449-C MSG-0009-C
C-C	C3.30	Pump Welded Attachments	Surface								
C-C	C3.30	Centrifugal Charging Pump	PT	2 (2 CCP / 4 IA's on each)	100% of required areas of each welded attachment on 10% of the welded attachments associated with the component supports selected for examination and whenever component support member deformation is identified  See Note 2	1 pump	Each Identified Occurrence and Each Inspection Interval	1	0	0	ISI-0467-C
C-C	C3.30	Containment Spray Pump	Surface	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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NOTES											
C-C	C3.30	Residual Heat Removal Pump	Surface	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C-C	C3.30	Safety Injection Pump	Surface	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C-C	C3.40	Valve Welded Attachments	Surface	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Category Total				245		31		7	12	12	
CUMULATIVE INTERVAL PERCENTAGE								22.5%	61.3%	100%	
<b>C-D</b>		<b>Pressure Retaining Bolting Greater Than 2 Inches in Diameter</b>									
C-D	C4.10	Pressure Vessels Bolts & Studs > 2" diameter	Volumetric								
C-D	C4.10	Steam Generator	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C-D	C4.10	Residual Heat Removal Heat Exchanger	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C-D	C4.10	Containment Spray Heat Exchanger	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C-D	C4.10	Seal Water Heat Exchanger	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C-D	C4.10	Seal Water Filter	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C-D	C4.10	Seal Water Injection Filter	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C-D	C4.10	Centrifugal Charging Pump Tank	UT	16 (1 CCP/ 16 bolts)	100% of one component	0 bolts Note 4	Each Inspection Interval	0	0	0	ISI-0074-C
C-D	C4.20	Piping Bolts & Studs > 2" diameter	Volumetric	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A



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**NOTES**

- 1) An alternative Risk-Informed Inservice Inspection Program is being implemented in the Fourth 10-Year ISI Interval per Code Case N-716-1. For Categories C-F-1 and C-F-2 the examinations are credited under the RI-ISI program, Table E.
- 2) As a minimum 10 percent of the welded attachments associated with the components supports selected for examination under IWF-2510 shall be examination.
- 3) These components were added/replaced/deleted as part of the Steam Generator Replacement in U2R18. With respect to examinations required during the Fourth 10-Year ISI Interval, IWC-2411(b)(3) states examinations shall be scheduled in accordance with IWC-2411(a) for successive intervals.
- 4) Code Case N-716-1 will be used for the Fourth 10-Year ISI Interval. LSS components in Categories C-A, C-B, C-D, and C-G are exempt from volumetric, surface, VT-1 and VT-3 exams.
- 5) All four Steam Generators were replaced during U2R18.
- 6) The main steam nozzles are forged with the head and do not have an inside radius section on the new steam generators.

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**TABLE C  
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EXAM CAT.	ITEM NO.	DESCRIPTION	EXAM METHOD	NUMBER OF COMPONENTS IN ITEM NUMBER	% TO BE EXAMINED DURING INTERVAL	NUMBER TO BE EXAMINED IN THE INTERVAL	FREQUENCY OF EXAMINATION	NUMBER TO BE EXAMINED IN THE FIRST PERIOD	NUMBER TO BE EXAMINED IN THE SECOND PERIOD	NUMBER TO BE EXAMINED IN THE THIRD PERIOD	ISI DRAWING NUMBER
D-A		<b>Welded Attachments for Class 3 Vessels, Piping, Pumps, and Valves</b>									
D-A	D1.10	Pressure Vessel Welded Attachments	Visual								
D-A	D1.10	Containment Spray Heat Exchanger	VT-1	2 (2 CSHX / 4 IA's each)	One Heat Exchanger, 100% of required areas of each welded attachment and whenever component support member deformation is identified	1 (heat exchanger /4 IAs)	Each Identified Occurrence and Each Inspection Interval	0	0	1	ISI-0463-C
D-A	D1.10	Nonregenerative Letdown Heat Exchanger	VT-1	1 (Heat Exchanger/ 1 IA)	All, 100% of required areas of each welded attachment and whenever component support member deformation is identified	1 (Heat Exchanger / 1 IA)	Each Identified Occurrence and Each Inspection Interval	0	1	0	ISI-0257-A

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<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>% TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
D-A	D1.10	Gas Stripper and Boric Acid Evaporator Condenser	Visual	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
D-A	D1.10	Gas Stripper and Boric Acid Evaporator Distillate Cooler	Visual	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
D-A	D1.10	Gas Stripper and Boric Acid Evaporator Support Frame	Visual	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
D-A	D1.10	Component Cooling Surge Tank	VT-1	1 (Tank / 1 IA)	All, 100% of required areas of each welded attachment and whenever component support member deformation is identified	1 (Tank / 1 IA)	Each Identified Occurrence and Each Inspection Interval	0	1	0	ISI-0227-B
D-A	D1.10	Essential Raw Cooling Water System Strainer	VT-1	2 (2 ERCWS/ 16 IA's on A and 17 IAs on B)	One Strainer, 100% of required areas of each welded attachment and whenever component support member deformation is identified	1 strainer (1 IA)	Each Identified Occurrence and Each Inspection Interval	0	1	0	ISI-0268-C



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<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>% TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
D-A	D1.10	Air Conditioning / Chilled Water System Shut Down Board Room Water Chiller	VT-1	1 (Chiller / 2 IAs)	All, 100% of required areas of each welded attachment and whenever component support member deformation is identified	1 Chiller (1 IA)	Each Identified Occurrence and Each Inspection Interval	1	0	0	ISI-0455-C
D-A	D1.10	Air Conditioning / Chilled Water System Chill Water Air Separator	VT-1	1 (Separator / 4 IAs)	All, 100% of required areas of each welded attachment and whenever component support member deformation is identified	1 Separator (1 IA)	Each Identified Occurrence and Each Inspection Interval	1	0	0	ISI-0479-C
D-A	D1.10	Component Cooling Heat Exchanger	VT-1	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
D-A	D1.10	Fuel Pool Cooling and Cleaning System Spent Fuel Pit Heat Exchanger	VT-1	None (Unit 1 only)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>% TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
D-A	D1.10	RHR Heat Exchanger Secondary Side	VT-1	2 (2 RHRHSXH / 2 IA's each)	One Heat Exchanger, 100% of required areas of each welded attachment and whenever component support member deformation is identified	1 heat exchanger (1 IA)	Each Identified Occurrence and Each Inspection Interval	0	0	1	ISI-0291-C
D-A	D1.10	Old ERCW Intake Pumping Station Strainer	VT-1	2 (2 ERCW-STR / 2 IA's each)	One Strainer, 100% of required areas of each welded attachment and whenever component support member deformation is identified	1 strainer (1 IA)	Each Identified Occurrence and Each Inspection Interval	0	1	0	ISI-0481-C

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<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>% TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
D-A	D1.20	Piping Welded Attachments	Visual								
D-A	D1.20	AFW	VT-1	14	100% of required areas of each welded attachment on 10% of the welded attachments associated with the nonexempt component supports and whenever component support member deformation is identified	2	Each Identified Occurrence and Each Inspection Interval	1	0	1	ISI-0146-C

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<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>% TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
D-A	D1.20	CC	VT-1	38	100% of required areas of each welded attachment on 10% of the welded attachments associated with the nonexempt component supports and whenever component support member deformation is identified	4	Each Identified Occurrence and Each Inspection Interval	1	1	2	ISI-0154-C

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**TABLE C  
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EXAM CAT.	ITEM NO.	DESCRIPTION	EXAM METHOD	NUMBER OF COMPONENTS IN ITEM NUMBER	% TO BE EXAMINED DURING INTERVAL	NUMBER TO BE EXAMINED IN THE INTERVAL	FREQUENCY OF EXAMINATION	NUMBER TO BE EXAMINED IN THE FIRST PERIOD	NUMBER TO BE EXAMINED IN THE SECOND PERIOD	NUMBER TO BE EXAMINED IN THE THIRD PERIOD	ISI DRAWING NUMBER
D-A	D1.20	ERCW	VT-1	62	100% of required areas of each welded attachment on 10% of the welded attachments associated with the nonexempt component supports and whenever component support member deformation is identified	7	Each Identified Occurrence and Each Inspection Interval	2	2	3	ISI-0158-C
D-A	D1.20	FPCS	VT-1	None (Unit 1 only)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
D-A	D1.20	ACCW	VT-1	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
D-A	D1.30	Pump Welded Attachments	Visual								
D-A	D1.30	Turbine Driven Auxiliary Feedwater Pump	Visual	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
D-A	D1.30	Motor Driven Auxiliary Feedwater Pump	Visual	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
D-A	D1.30	Component Cooling System Water Pumps	Visual	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A



<p align="center"><b>SQN</b> <b>Unit 1 &amp; 2</b></p>	<p align="center"><b>ASME SECTION XI ISI/NDE PROGRAM</b> <b>UNIT 1 AND UNIT 2</b></p>	<p align="center"><b>0-SI-DXI-000-114.4</b> <b>Rev. 0000</b> <b>Page 236 of 359</b></p>
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<b>NOTES</b>	
1)	None.





<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 238 of 359</b>
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<b>TABLE D SQN UNIT 2 - CLASS 1, 2, AND 3 SUPPORTS SCHEDULE PLANNING DOCUMENT</b>											
<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
F-A	F1.10B	CVC	VT-3	89	25%	23	Each inspection interval	8	7	8	MSG-0012-C MSG-0015-C
F-A	F1.10B	RCS	VT-3	6	25%	2	Each inspection interval	1	0	1	MSG-0013-C
F-A	F1.10B	RCS MAIN	VT-3	4	25%	1	Each inspection interval	1	0	0	ISI-0302-C ISI-0321-C
F-A	F1.10B	RHR	VT-3	4	25%	1	Each inspection interval	0	0	1	MSG-0010-C
F-A	F1.10B	SIS	VT-3	52	25%	13	Each inspection interval	4	5	4	MSG-0009-C
F-A	F1.10C	Class 1 Piping Variable Supports (Springs and Constant Force) Function C	Visual								
F-A	F1.10C	CVC	VT-3	2	25%	1	Each inspection interval	0	1	0	MSG-0012-C MSG-0015-C
F-A	F1.10C	RCS	VT-3	13	25%	4	Each inspection interval	1	1	2	MSG-0013-C

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 239 of 359</b>
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<b>TABLE D SQN UNIT 2 - CLASS 1, 2, AND 3 SUPPORTS SCHEDULE PLANNING DOCUMENT</b>											
<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
F-A	F1.10C	RCS MAIN	VT-3	1	25%	1	Each inspection interval	0	0	1	ISI-0302-C ISI-0321-C
F-A	F1.10C	RHR	VT-3	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F-A	F1.10C	SIS	VT-3	4	25%	1	Each inspection interval	0	1	0	MSG-0009-C
F-A	F1.10D	Class 1 Piping Variable Supports (Snubbers) Function D	Visual								
F-A	F1.10D	CVC	VT-3	8	25%	2	Each inspection interval	1	1	0	MSG-0012-C MSG-0015-C
F-A	F1.10D	RCS	VT-3	15	25%	4	Each inspection interval	1	1	2	MSG-0013-C
F-A	F1.10D	RCS MAIN	VT-3	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F-A	F1.10D	RHR	VT-3	1	25%	1	Each inspection interval	0	0	1	MSG-0010-C
F-A	F1.10D	SIS	VT-3	9	25%	3	Each inspection interval	1	1	1	MSG-0009-C

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<b>TABLE D SQN UNIT 2 - CLASS 1, 2, AND 3 SUPPORTS SCHEDULE PLANNING DOCUMENT</b>											
<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
F-A	F1.10	Total Class 1 Piping Supports		275		75		22	24	29	
F-A	F1.20A	Class 2 Piping One-directional Restraints Function A	Visual								
F-A	F1.20A	AFW	VT-3	32	15%	5	Each inspection interval	1	2	2	ISI-0146-C
F-A	F1.20A	CS	VT-3	23	15%	4	Each inspection interval	1	1	2	ISI-0449-C MSG-0011-C
F-A	F1.20A	CVC	VT-3	77	15%	12	Each inspection interval	3	5	4	ISI-0449-C
F-A	F1.20A	FW	VT-3	14	15%	3	Each inspection interval	1	1	1	MSG-0016-C
F-A	F1.20A	MS	VT-3	8	15%	2	Each inspection interval	0	1	1	MSG-0017-C
F-A	F1.20A	RHR	VT-3	57	15%	9	Each inspection interval	3	3	3	ISI-0449-C MSG-0010-C
F-A	F1.20A	SIS	VT-3	73	15%	11	Each inspection interval	3	3	5	ISI-0449-C MSG-0009-C

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<b>TABLE D SQN UNIT 2 - CLASS 1, 2, AND 3 SUPPORTS SCHEDULE PLANNING DOCUMENT</b>											
<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
F-A	F1.20B	Class 2 Piping Multidirectional Restraints Function B	Visual								
F-A	F1.20B	AFW	VT-3	25	15%	4	Each inspection interval	1	1	2	ISI-0146-C
F-A	F1.20B	CS	VT-3	25	15%	4	Each inspection interval	1	1	2	ISI-0449-C MSG-0011-C
F-A	F1.20B	CVC	VT-3	44	15%	7	Each inspection interval	2	2	3	ISI-0449-C
F-A	F1.20B	FW	VT-3	3	15%	1	Each inspection interval	0	1	0	MSG-0016-C
F-A	F1.20B	MS	VT-3	8	15%	2	Each inspection interval	1	0	1	MSG-0017-C
F-A	F1.20B	RHR	VT-3	29	15%	5	Each inspection interval	1	2	2	ISI-0449-C MSG-0010-C
F-A	F1.20B	SIS	VT-3	150	15%	23	Each inspection interval	7	8	8	ISI-0449-C MSG-0009-C

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<b>TABLE D SQN UNIT 2 - CLASS 1, 2, AND 3 SUPPORTS SCHEDULE PLANNING DOCUMENT</b>											
<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
F-A	F1.20C	Class 2 Piping Variable Supports (Springs and Constant Force) Function C	Visual								
F-A	F1.20C	AFW	VT-3	13	15%	2	Each inspection interval	1	0	1	ISI-0146-C
F-A	F1.20C	CS	VT-3	8	15%	2	Each inspection interval	1	1	0	ISI-0449-C MSG-0011-C
F-A	F1.20C	CVC	VT-3	11	15%	2	Each inspection interval	0	1	1	ISI-0449-C
F-A	F1.20C	FW	VT-3	8	15%	2	Each inspection interval	0	1	1	MSG-0016-C
F-A	F1.20C	MS	VT-3	16	15%	3	Each inspection interval	1	1	1	MSG-0017-C
F-A	F1.20C	RHR	VT-3	19	15%	3	Each inspection interval	1	1	1	ISI-0449-C MSG-0010-C
F-A	F1.20C	SIS	VT-3	12	15%	2	Each inspection interval	1	1	0	ISI-0449-C MSG-0009-C

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<b>TABLE D SQN UNIT 2 - CLASS 1, 2, AND 3 SUPPORTS SCHEDULE PLANNING DOCUMENT</b>											
<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
F-A	F1.20D	Class 2 Piping Variable Supports (Snubbers) Function D	Visual								
F-A	F1.20D	AFW	VT-3	8	15%	2	Each inspection interval	0	1	1	ISI-0146-C
F-A	F1.20D	CS	VT-3	None	N/A	N/A	N/A	N/A	N/A	N/A	ISI-0449-C MSG-0011-C
F-A	F1.20D	CVC	VT-3	10	15%	2	Each inspection interval	1	1	0	ISI-0449-C
F-A	F1.20D	FW	VT-3	5	15%	1	Each inspection interval	1	0	0	MSG-0016-C
F-A	F1.20D	MS	VT-3	18	15%	3	Each inspection interval	1	1	1	MSG-0017-C
F-A	F1.20D	RHR	VT-3	7	15%	2	Each inspection interval	1	1	0	ISI-0449-C MSG-0010-C
F-A	F1.20D	SIS	VT-3	13	15%	2	Each inspection interval	0	1	1	ISI-0449-C MSG-0009-C
F-A	F1.20	Total Class 2 Piping Supports		716		120		34	42	44	

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<b>TABLE D SQN UNIT 2 - CLASS 1, 2, AND 3 SUPPORTS SCHEDULE PLANNING DOCUMENT</b>											
<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
F-A	F1.30A	Class 3 Piping One-directional Restraints Function A	Visual								
F-A	F1.30A	ACCW	VT-3	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F-A	F1.30A	AFW	VT-3	20	10%	2	Each inspection interval	1	0	1	ISI-0146-C
F-A	F1.30A	CC	VT-3	89	10%	9	Each inspection interval	3	3	3	ISI-0154-C
F-A	F1.30A	CVC	VT-3	None	N/A	N/A	N/A	N/A	N/A	N/A	ISI-0449-C
F-A	F1.30A	ERCW	VT-3	133 See Note 2	10%	14	Each inspection interval	4	5	5	ISI-0158-C
F-A	F1.30A	FPCS	VT-3	None (Unit 1 only)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F-A	F1.30B	Class 3 Piping Multidirectional Restraints Function B	Visual								
F-A	F1.30B	ACCW	VT-3	12	10%	2	Each inspection interval	0	1	1	ISI-0451-C

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 245 of 359</b>
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<b>TABLE D SQN UNIT 2 - CLASS 1, 2, AND 3 SUPPORTS SCHEDULE PLANNING DOCUMENT</b>											
<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
F-A	F1.30B	AFW	VT-3	18	10%	2	Each inspection interval	1	0	1	ISI-0146-C
F-A	F1.30B	CC	VT-3	90	10%	9	Each inspection interval	3	3	3	ISI-0154-C
F-A	F1.30B	CVC	VT-3	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F-A	F1.30B	ERCW	VT-3	160	10%	17	Each inspection interval	5	6	6	ISI-0158-C
F-A	F1.30B	FPCS	VT-3	None (Unit 1 only)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F-A	F1.30C	Class 3 Piping Variable Supports (Springs and Constant Force) Function C	Visual								
F-A	F1.30C	ACCW	VT-3	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F-A	F1.30C	AFW	VT-3	17	10%	2	Each inspection interval	0	1	1	ISI-0146-C
F-A	F1.30C	CC	VT-3	13	10%	2	Each inspection interval	1	1	0	ISI-0154-C
F-A	F1.30C	CVC	VT-3	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A



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<b>TABLE D SQN UNIT 2 - CLASS 1, 2, AND 3 SUPPORTS SCHEDULE PLANNING DOCUMENT</b>											
<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
F-A	F1.30C	ERCW	VT-3	5	10%	1	Each inspection interval	0	1	0	ISI-0158-C
F-A	F1.30C	FPCS	VT-3	None (Unit 1 only)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F-A	F1.30D	Class 3 Piping Variable Supports (Snubbers) Function D	Visual								
F-A	F1.30D	ACCW	VT-3	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F-A	F1.30D	AFW	VT-3	3	10%	1	Each inspection interval	0	1	0	ISI-0146-C
F-A	F1.30D	CC	VT-3	11	10%	2	Each inspection interval	1	0	1	ISI-0154-C
F-A	F1.30D	CVC	VT-3	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F-A	F1.30D	ERCW	VT-3	4	10%	1	Each inspection interval	0	0	1	ISI-0158-C
F-A	F1.30D	FPCS	VT-3	None (Unit 1 only)	10%	N/A	Each inspection interval	N/A	N/A	N/A	N/A
F-A	F1.10	Total Class 3 Piping Supports		575		64		19	22	23	

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 247 of 359</b>
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<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 248 of 359</b>
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**TABLE D  
SQN UNIT 2 - CLASS 1, 2, AND 3 SUPPORTS SCHEDULE PLANNING DOCUMENT**

<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
F-A	F1.40E2	Class 2 Steam Generator	VT-3	4 (4 Steam Generators / 1 support each)	One steam Generator	1 (One Steam Generator)	Each inspection interval	1	0	0	ISI-0401-C
F-A	F1.40E1	Class 2 Residual Heat Removal Heat Exchanger	VT-3	2 (2 RHRHX/ 1 support on each)	One Heat Exchanger	1 (One Heat Exchanger)	Each inspection interval	0	1	0	ISI-0289-C
F-A	F1.40E1	Class 2 Containment Spray Heat Exchanger	VT-3	2 (2 CSHX / 1 support on each)	One Heat Exchanger	1 (One Heat Exchanger)	Each inspection interval	0	0	1	ISI-0463-C
F-A	F1.40E1	Class 2 Seal Water Heat Exchanger	VT-3	1 Seal Water Heat Exchanger / 1 support	All	1 (Seal Water Heat Exchanger)	Each inspection interval	0	1	0	ISI-0461-C
F-A	F1.40E6	Class 2 Seal Water Filter	VT-3	1 Seal Water Filter / 1 support	All	1 (Seal Water Filter)	Each inspection interval	0	1	0	ISI-0459-C
F-A	F1.40E6	Class 2 Seal Water Injection Filter	VT-3	2 (2 SWIF / 1 support each)	One filter	1 (One SWIF)	Each inspection interval	0	0	1	ISI-0457-C
F-A	F1.40E8	Class 2 Centrifugal Charging Pump Tank	VT-3	1 Centrifugal Charging Pump Tank / 1 support	All	1 Centrifugal Charging Pump Tank	Each inspection interval	0	0	1	ISI-0074-C

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 249 of 359</b>
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<b>TABLE D SQN UNIT 2 - CLASS 1, 2, AND 3 SUPPORTS SCHEDULE PLANNING DOCUMENT</b>											
<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
F-A	F1.40E3	Class 2 Residual Heat Removal Pump	VT-3	2 (2 RHRP / 1 support each)	One Pump	One RHRP	Each inspection interval	0	1	0	ISI-0352-C
F-A	F1.40E3	Class 2 Centrifugal Charging Pump	VT-3	2 (2 CCP / 1 support each)	One Pump	One CCP	Each inspection interval	1	0	0	ISI-0467-C
F-A	F1.40E3	Class 2 Safety Injection Pump	VT-3	2 (2 SIP / 1 support each)	One Pump	One SIP	Each inspection interval	0	1	0	ISI-0471-C
F-A	F1.40E3	Class 2 Containment Spray Pump	VT-3	2 (2 CSP/ 1 support each)	One Pump	One CSP	Each inspection interval	0	0	1	ISI-0465-C
F-A	F1.40E9	Class 2 Valves	Visual								
F-A	F1.40E9	Class 2 Valves AFW	VT-3	1 (1 Valve with one support)	100% of the valves or if multiple valves only one of the multiple valves	1	Each inspection interval	0	1	0	ISI-0146-C
F-A	F1.40E9	Class 2 Valves RHR	VT-3	2 (2 Valves with one support each)	100% of the valves or if multiple valves only one of the multiple valves	1	Each inspection interval	0	0	1	MSG-0010-C

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 250 of 359</b>
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**TABLE D  
SQN UNIT 2 - CLASS 1, 2, AND 3 SUPPORTS SCHEDULE PLANNING DOCUMENT**

EXAM CAT.	ITEM NO.	DESCRIPTION	EXAM METHOD	NUMBER OF COMPONENTS IN ITEM NUMBER	TO BE EXAMINED DURING INTERVAL	NUMBER TO BE EXAMINED IN THE INTERVAL	FREQUENCY OF EXAMINATION	NUMBER TO BE EXAMINED IN THE FIRST PERIOD	NUMBER TO BE EXAMINED IN THE SECOND PERIOD	NUMBER TO BE EXAMINED IN THE THIRD PERIOD	ISI DRAWING NUMBER
<b>Class 3 Equipment</b>											
F-A	F1.40E1	Class 3 Containment Spray Heat Exchanger	VT-3	2 (2 CSHX / 1 support each)	One Heat Exchanger	1 CSHX	Each inspection interval	0	0	1	ISI-0463-C
F-A	F1.40E1	Class 3 Nonregenerative Letdown Heat Exchanger	VT-3	1 Heat Exchanger / 1 support	All	1 Heat Exchanger	Each inspection interval	0	1	0	ISI-0257-A
F-A	F1.40E8	Class 3 Component Cooling Surge Tank	VT-3	1 Tank / 1 support	All	1 Tank	Each inspection interval	0	1	0	ISI-0227-B
F-A	F1.40E3	Class 3 Turbine Driven Auxiliary Feedwater Pump	VT-3	1 Pump / 1 support	All	1 Pump	Each inspection interval	0	0	1	ISI-0475-C
F-A	F1.40E3	Class 3 Motor Driven Auxiliary Feedwater Pump	VT-3	2 (2 MDAFWP/ 1 support each)	One pump	1 MDAFWP	Each inspection interval	0	0	1	ISI-0477-C
F-A	F1.40E3	Class 3 CCS Water Pumps	VT-3	2 (2 CCSWP / 1 support each)	One pump	1 CCSWP	Each inspection interval	0	1	0	ISI-0260-C
F-A	F1.40E1	Class 3 CCS Heat Exchanger	VT-3	2 (2 CCHX / 1 support each)	One heat exchanger	1 CCHX	Each inspection interval	0	1	0	ISI-0261-B

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 251 of 359</b>
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<b>TABLE D SQN UNIT 2 - CLASS 1, 2, AND 3 SUPPORTS SCHEDULE PLANNING DOCUMENT</b>											
<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
F-A	F1.40E6	Class 3 ERCW Strainer	VT-3	2 (2 ERCWS / 1 support each)	One Strainer	1 ERCWS	Each inspection interval	1	0	0	ISI-0268-C
F-A	F1.40E3	Class 3 ERCW Pump Station Pump	VT-3	None (Unit 1 only)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F-A	F1.40E3	Class 3 FPCC Spent Fuel Pit Pumps	VT-3	None (Unit 1 only)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F-A	F1.40E7	Class 3 ACCW Shut Down Board Room Water Chiller	VT-3	1 Chiller / 1 support	All	1 Chiller	Each inspection interval	1	0	0	ISI-0455-C
F-A	F1.40E3	Class 3 ACCW Chill Water Circulation Pump	VT-3	1 Pump / 1 support	All	1 Pump	Each inspection interval	1	0	0	ISI-0473-C
F-A	F1.40E7	Class 3 ACCW Chill Water Air Separator	VT-3	1 Separator / 1 support	All	1 Separator	Each inspection interval	1	0	0	ISI-0479-C
F-A	F1.40E1	Class 3 FPCC Spent Fuel Pit Heat Exchanger	VT-3	None (Unit 1 only)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F-A	F1.40E1	Class 3 RHR Heat Exchanger Secondary Side	VT-3	2 (2 RHRHSXH / 1 support each)	One heat exchanger	1 RHRHSXH	Each inspection interval	0	0	1	ISI-0291-C

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 252 of 359</b>
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<b>TABLE D SQN UNIT 2 - CLASS 1, 2, AND 3 SUPPORTS SCHEDULE PLANNING DOCUMENT</b>											
<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF COMPONENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE INTERVAL</b>	<b>FREQUENCY OF EXAMINATION</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
F-A	F1.40E3	Class 3 ERCW Screen Wash Pump Support	VT-3	None (Unit 1 only)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F-A	F1.40E6	Class 3 ERCW Intake Pumping Station Strainer	VT-3	2 (2 ERCW- STR / 1 support each)	One strainer	1 ERCW-STR	Each inspection interval	0	1	0	ISI-0481-C
F-A	F1.40E9	Class 3 Valves	VT-3	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F-A	F1.40	Total Class 1,2, and 3 Component Supports	VT-3	59		35		7	12	16	ISI-0481-C
Category Total				1625		294		82	100	112	
CUMULATIVE INTERVAL PERCENTAGE								27.9%	61.9%	100%	

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 253 of 359</b>
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**NOTES**

- 1) Table D, Refer to Section 7.2.D.10 of this SI for description of support functions.
- 2) **For History Only** -Table D, item number F1.30A, ERCW, the number of components changed from 134 to 133 and F1.30C changed from 4 to 5 per DCN D21894. The number of supports required to be examined did not change.



<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 254 of 359</b>
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<b>TABLE E SQN UNIT 2 - ASME CLASS 1 AND 2 RI-ISI SCHEDULE PLANNING DOCUMENT (Code Case N-716-1)</b>										
<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF ELEMENTS/SEGMENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>DEFERRAL OF INSPECTION TO END OF INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
R-A	R1.10	High Safety Significant Piping Welds (HSS)								
R-A	R1.11	Welds Subject to Thermal Fatigue	UT	RC-35C-OL, RCS-049, RCF-23A-OL, FDF-011B, FDSW-03B, FDF-010C, FDSW-04B, FDF-131A, FDF-011A, CVCS-285, CVCF-168, CVCS-290, CVCF-246A, CVCF-244G, CVCF-167, CVCS-296, CVCS-294, CVCF-171, CVCF-244C, CVCS-297, SI-1125, SI-1126, SI-1124, SI-1901, SI-1900, SI-1899, RC-33-S1	27	Not Permissible	8	9	10	CHM-2403-C ISI-0009-C ISI-0002-C ISI-0013-C ISI-0008-C

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 255 of 359</b>
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**Examination Schedule  
(Unit 2)**

<b>TABLE E</b> <b>SQN UNIT 2 - ASME CLASS 1 AND 2 RI-ISI SCHEDULE PLANNING DOCUMENT (Code Case N-716-1)</b>										
<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF ELEMENTS/SEGMENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>DEFERRAL OF INSPECTION TO END OF INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
R-A	R1.11s See Note 1 and 2	Welds Subject to Thermal Fatigue	Visual VT-2 of fitting and Volumetric (UT) of base metal within 1/2 inch of the toe of the weld	SI-1127	1	Not Permissible	0	0	1	ISI-0009-C ISI-0002-C ISI-0013-C
R-A	R1.12	Not Used								
R-A	R1.13	Welds Subject to Erosion-Cavitation	UT	There are no elements/segments subject to Erosion-Cavitation	N/A	N/A	N/A	N/A	N/A	
R-A	R1.14	Welds Subject to Crevice Corrosion Cracking	UT	There are no elements/segments subject to Crevice Corrosion Cracking	N/A	N/A	N/A	N/A	N/A	
R-A	R1.15	Welds Subject to Primary Water Stress Corrosion Cracking (PWSCC)	UT	There are no elements/segments subject to Primary Water Stress Corrosion Cracking (PWSCC)	N/A	N/A	N/A	N/A	N/A	

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 256 of 359</b>
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Examination Schedule  
(Unit 2)**

<b>TABLE E SQN UNIT 2 - ASME CLASS 1 AND 2 RI-ISI SCHEDULE PLANNING DOCUMENT (Code Case N-716-1)</b>										
<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF ELEMENTS/SEGMENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>DEFERRAL OF INSPECTION TO END OF INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
R-A	R1.16	Welds Subject to Intergranular or Transgranular Stress Corrosion Cracking (IGSCC or TGSCC)	UT	RHRS-187, SIF-198D, SIS-277, SIS-247, SIS-246, SIS-242, SIS-289	7	Not Permissible	1	3	3	ISI-0002-C ISI-0003-C
R-A	R1.16s See Note 1 and 2	Welds Subject to Intergranular or Transgranular Stress Corrosion Cracking	VT-2	SI-1127	1	Not Permissible	0	0	1	ISI-0002-C
R-A	R1.17	Welds Subject to Localized Corrosion [Microbiologically-Influenced Corrosion (MIC) or Pitting]	VT-3 or UT	There are no elements/segments subject to Localized Corrosion [Microbiologically Influenced Corrosion (MIC) or Pitting]	N/A	N/A	N/A	N/A	N/A	
R-A	R1.18	Elements subject to Flow Accelerated Corrosion (FAC)	UT thickness	There are no elements/segments subject to Flow Accelerated Corrosion (FAC)	As scheduled in the FAC program	N/A	N/A	N/A	N/A	
R-A	R1.19	Welds Subject to External Chloride Stress Corrosion Cracking (ECSCC)	PT	There are not elements/segments subject to External Chloride Stress Corrosion Cracking (ECSCC)	N/A	N/A	N/A	N/A	N/A	

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 257 of 359</b>
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Examination Schedule  
(Unit 2)**

<b>TABLE E SQN UNIT 2 - ASME CLASS 1 AND 2 RI-ISI SCHEDULE PLANNING DOCUMENT (Code Case N-716-1)</b>										
<b>EXAM CAT.</b>	<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>EXAM METHOD</b>	<b>NUMBER OF ELEMENTS/SEGMENTS IN ITEM NUMBER</b>	<b>TO BE EXAMINED DURING INTERVAL</b>	<b>DEFERRAL OF INSPECTION TO END OF INTERVAL</b>	<b>NUMBER TO BE EXAMINED IN THE FIRST PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE SECOND PERIOD</b>	<b>NUMBER TO BE EXAMINED IN THE THIRD PERIOD</b>	<b>ISI DRAWING NUMBER</b>
R-A	R1.20	Welds Not Subject to a Degradation Mechanism	UT	SIS-301, SIS-244, SIS-240, SIS-291, FDS-18, FDS-17, RHRS-167, RHRS-191, RHRS-190, RHRS-189, RHRS-188, RHRS-168, RHRS-166, SIF-194B, SIF-194A, RCS-101, RCS-090, RCS-070, RCS-069, RCS-051, RCS-089, RCF-24A, RCS-031, RCS-040, RCS-032, RCF-84, RCF-16A	27	Not Permissible	10	6	11	CHM-2403-C CISI-0401-C ISI-0318-C ISI-0298-C ISI-0013-C ISI-0009-C ISI-0008-C ISI-0003-C ISI-0002-C MSG-0008-C
R-A	R1.20s See Note 1 and 2	Welds Not Subject to a Degradation Mechanism	VT-2	SI-1906, SI-1905, SI-1904, SI-1889, SI-1984, SI-1984A, SI-1892, SI-1983, SI-1984B, SI-1890, SI-1823, SI-1822, SI-1821, SI-1820, SI-1891, SI-1131, SI-1130, SI-1129, SI-1128, CVC-1157, CVC-1240, CVCW-1169B, CVC-1168, CVC-1167, CVC-1166, CVC-1165, CVC-1158, CVC-1154, CVC-1246, CVC-1245A, CVC-1245, CVC-1244, CVC-1243, CVC-1242, CVC-1164, CVCW-1057B, CVC-1056, CVC-1239, CVCW-1091B, CVC-1241, CVC-1238, CVC-1237A, SI-2190B, RC-1644, RC-1643, RC-1622, RC-1621, RC-1668, RC-1656, RC-1655, RC-1667	153	Not Permissible	51	51	51	ISI-0013-C ISI-0009-C ISI-0008-C ISI-0003-C ISI-0002-C MSG-0008-C

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 258 of 359</b>
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**Attachment 5  
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Examination Schedule  
(Unit 2)**

**NOTES**

- 1) Item numbers with an s, such as R1.20s, indicate socket weld or branch connection NPS 2 or less.
- 2) VT-2 exams will be performed with 2-SI-SXI-068-201.0 or 2-SI-SXI-068-202.0 as applicable.
- 3) An Alternative Risk-Informed Inservice Inspection Program is being implemented in the fourth inspection interval per Code Case N-716-1
- 4) PWSCC examinations are in accordance with the Owner's existing programs as applicable (N-770-1 and N-722-1).
- 5) VT-2 examinations are performed under the pressure test program in accordance with Categories B-P, C-H- or D-B as applicable.
- 6) The IDDEAL database makes use of two place holder Item Numbers. Item No. R0.00 is used for LSS piping welds. Item No. R0.99 is used for new or removed piping welds requiring evaluation in the next periodic update for N-716-1.

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 259 of 359</b>
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**Attachment 6  
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**ASME Class 1 and 2 Valves  
(Unit 1 and Unit 2)**

Class 1 Valves											
UNIT	SYSTEM	CLASS	VALVE	ISI DRAWING UNIT 1	ISI DRAWING UNIT 2	SIZE	TYPE	GROUP	B-G-2 VALVE BOLTING	B-G-2 PIPING BOLTING	B-M-2 VALVE BODY
1 & 2	CVC	1	62-560	CHM-2338-C SH1	MSG-0008-C SH1	2	CKV	N/A	NONE	NONE	NONE
1 & 2	CVC	1	62-561	CHM-2338-C SH2	MSG-0008-C SH2	2	CKV	N/A	NONE	NONE	NONE
1 & 2	CVC	1	62-562	CHM-2338-C SH4	MSG-0008-C SH5	2	CKV	N/A	NONE	NONE	NONE
1 & 2	CVC	1	62-563	CHM-2338-C SH3	MSG-0008-C SH3	2	CKV	N/A	NONE	NONE	NONE
1 & 2	CVC	1	62-564	CHM-2338-C SH1	MSG-0008-C SH1	2	GATE	N/A	NONE	NONE	NONE
1 & 2	CVC	1	62-565	CHM-2338-C SH2	MSG-0008-C SH2	2	GATE	N/A	NONE	NONE	NONE
1 & 2	CVC	1	62-566	CHM-2338-C SH4	MSG-0008-C SH5	2	GATE	N/A	NONE	NONE	NONE
1 & 2	CVC	1	62-567	CHM-2338-C SH3	MSG-0008-C SH3	2	GATE	N/A	NONE	NONE	NONE
1 & 2	CVC	1	62-576	CHM-2338-C SH1	MSG-0008-C SH1	2	CKV	N/A	NONE	NONE	NONE
1 & 2	CVC	1	62-577	CHM-2338-C SH2	MSG-0008-C SH2	2	CKV	N/A	NONE	NONE	NONE
1 & 2	CVC	1	62-578	CHM-2338-C SH3	MSG-0008-C SH4	2	CKV	N/A	NONE	NONE	NONE
1 & 2	CVC	1	62-579	CHM-2338-C SH4	MSG-0008-C SH5	2	CKV	N/A	NONE	NONE	NONE
1 & 2	CVC	1	62-659	CHM-2335-C SH1	ISI-0009-C SH2	3	CKV	N/A	YES (1)	NONE	NONE
1 & 2	CVC	1	62-660	CHM-2335-C SH1	ISI-0009-C SH2	3	CKV	N/A	YES (1)	NONE	NONE
1 & 2	CVC	1	62-661	CHM-2335-C SH1	ISI-0009-C SH2	2	CKV	N/A	NONE	NONE	NONE
1 & 2	CVC	1	62-716	CHM-2335-C SH1	ISI-0009-C SH2	3	CKV	N/A	YES (1)	NONE	NONE
1 & 2	CVC	1	62-717	CHM-2335-C SH1	ISI-0009-C SH2	3	CKV	N/A	YES (1)	NONE	NONE
1 & 2	CVC	1	68-580	CHM-2335-C SH2	ISI-0009-C SH1	3	GATE	N/A	NONE	NONE	NONE
1 & 2	CVC	1	FCV-62-69	CHM-2335-C SH2	ISI-0009-C SH1	3	GATE	N/A	YES (1)	NONE	NONE
1 & 2	CVC	1	FCV-62-70	CHM-2335-C SH2	ISI-0009-C SH1	3	GATE	N/A	YES (1)	NONE	NONE
1 & 2	CVC	1	FCV-62-84	CHM-2335-C SH2	ISI-0009-C SH2	2	GATE	N/A	YES (1)	NONE	NONE
1 & 2	RCS	1	68-549	ISI-0369-C SH1	ISI-0013-C SH2	2	GATE	N/A	NONE	NONE	NONE
1 & 2	RCS	1	68-550	ISI-0369-C SH1	ISI-0013-C SH2	2	GATE	N/A	NONE	NONE	NONE
1 & 2	RCS	1	68-553	ISI-0369-C SH1	ISI-0013-C SH2	2	GATE	N/A	NONE	NONE	NONE
1 & 2	RCS	1	68-554	ISI-0369-C SH1	ISI-0013-C SH2	2	GATE	N/A	NONE	NONE	NONE
1 & 2	RCS	1	68-557	ISI-0369-C SH1	ISI-0013-C SH4	2	GATE	N/A	NONE	NONE	NONE

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 260 of 359</b>
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**ASME Class 1 and 2 Valves  
(Unit 1 and Unit 2)**

Class 1 Valves											
UNIT	SYSTEM	CLASS	VALVE	ISI DRAWING UNIT 1	ISI DRAWING UNIT 2	SIZE	TYPE	GROUP	B-G-2 VALVE BOLTING	B-G-2 PIPING BOLTING	B-M-2 VALVE BODY
1 & 2	RCS	1	68-558	ISI-0369-C SH1	ISI-0013-C SH4	2	GATE	N/A	NONE	NONE	NONE
1 & 2	RCS	1	68-563	ISI-0369-C SH3	ISI-0013-C SH3	6	RELIEF	4	YES	YES	YES
1 & 2	RCS	1	68-564	ISI-0369-C SH3	ISI-0013-C SH3	6	RELIEF	4	YES	YES	YES
1 & 2	RCS	1	68-565	ISI-0369-C SH3	ISI-0013-C SH3	6	RELIEF	4	YES	YES	YES
1 & 2	RCS	1	68-581	ISI-0369-C SH1	ISI-0013-C SH4	2	GATE	N/A	NONE	NONE	NONE
1 & 2	RCS	1	68-582	ISI-0369-C SH1	ISI-0013-C SH4	2	GATE	N/A	NONE	NONE	NONE
1 & 2	RCS	1	FCV-68-332	ISI-0369-C SH3	ISI-0013-C SH3	3	GATE	N/A	YES (1)	NONE	NONE
1 & 2	RCS	1	FCV-68-333	ISI-0369-C SH3	ISI-0013-C SH3	3	GATE	N/A	YES (1)	NONE	NONE
1 & 2	RCS	1	PCV-68-334	ISI-0369-C SH3	ISI-0013-C SH3	3	GLOBE	7	NONE	YES	NONE
1 & 2	RCS	1	PCV-68-340A	ISI-0369-C SH3	ISI-0013-C SH3	3	GLOBE	7	NONE	YES	NONE
1 & 2	RCS	1	PCV-68-340B	ISI-0369-C SH2	ISI-0013-C SH1	4	BALL	N/A	YES (1)	NONE	NONE
1 & 2	RCS	1	PCV-68-340D	ISI-0369-C SH2	ISI-0013-C SH1	4	BALL	N/A	YES (1)	NONE	NONE
1 & 2	RHR	1	63-643	CHM-2336-C SH6	ISI-0003-C SH6	8	CKV	5	YES	NONE	YES
1 & 2	RHR	1	63-640	CHM-2336-C SH6	ISI-0003-C SH5	8	CKV	5	YES	NONE	YES
1 & 2	RHR	1	63-641	CHM-2336-C SH6	ISI-0003-C SH5	6	CKV	6	YES	NONE	YES
1 & 2	RHR	1	63-543	CHM-2336-C SH6	ISI-0003-C SH8	2	CKV	N/A	NONE	NONE	NONE
1 & 2	RHR	1	63-545	CHM-2336-C SH6	ISI-0003-C SH8	2	CKV	N/A	NONE	NONE	NONE
1 & 2	RHR	1	63-644	CHM-2336-C SH6	ISI-0003-C SH6	6	CKV	6	YES	NONE	YES
1 & 2	RHR	1	FCV-74-1	CHM-2336-C SH1	ISI-0003-C SH7	14	GATE	1	YES	NONE	YES
1 & 2	RHR	1	FCV-74-2	CHM-2336-C SH1	ISI-0003-C SH7	14	GATE	1	YES	NONE	YES
1 & 2	SIS	1	63-547	CHM-2333-C SH7	ISI-0002-C SH12	2	CKV	N/A	NONE	NONE	NONE
1 & 2	SIS	1	63-549	CHM-2333-C SH7	ISI-0002-C SH12	2	CKV	N/A	NONE	NONE	NONE
1 & 2	SIS	1	63-551	CHM-2333-C SH9	ISI-0002-C SH5	2	CKV	N/A	NONE	NONE	NONE
1 & 2	SIS	1	63-553	CHM-2333-C SH10	ISI-0002-C SH6	2	CKV	N/A	NONE	NONE	NONE
1 & 2	SIS	1	63-555	CHM-2333-C SH10	ISI-0002-C SH6	2	CKV	N/A	NONE	NONE	NONE

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 261 of 359</b>
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**ASME Class 1 and 2 Valves  
(Unit 1 and Unit 2)**

Class 1 Valves											
UNIT	SYSTEM	CLASS	VALVE	ISI DRAWING UNIT 1	ISI DRAWING UNIT 2	SIZE	TYPE	GROUP	B-G-2 VALVE BOLTING	B-G-2 PIPING BOLTING	B-M-2 VALVE BODY
1 & 2	SIS	1	63-557	CHM-2333-C SH9	ISI-0002-C SH4	2	CKV	N/A	NONE	NONE	NONE
1 & 2	SIS	1	63-558	CHM-2333-C SH7	ISI-0002-C SH7	6	CKV	3	YES	NONE	YES
1 & 2	SIS	1	63-559	CHM-2333-C SH7	ISI-0002-C SH7	6	CKV	3	YES	NONE	YES
1 & 2	SIS	1	63-560	CHM-2333-C SH9	ISI-0002-C SH5	10	CKV	2	YES	NONE	YES
1 & 2	SIS	1	63-561	CHM-2333-C SH10	ISI-0002-C SH6	10	CKV	2	YES	NONE	YES
1 & 2	SIS	1	63-562	CHM-2333-C SH10	ISI-0002-C SH6	10	CKV	2	YES	NONE	YES
1 & 2	SIS	1	63-563	CHM-2333-C SH9	ISI-0002-C SH4	10	CKV	2	YES	NONE	YES
1 & 2	SIS	1	63-581	CHM-2333-C SH1	ISI-0002-C SH7	3	CKV	N/A	YES (1)	NONE	NONE
1 & 2	SIS	1	63-582	CHM-2333-C SH1	ISI-0002-C SH8	1 1/2	GATE	N/A	NONE	NONE	NONE
1 & 2	SIS	1	63-583	CHM-2333-C SH2	ISI-0002-C SH9	1 1/2	GATE	N/A	NONE	NONE	NONE
1 & 2	SIS	1	63-584	CHM-2333-C SH2	ISI-0002-C SH10	1 1/2	GATE	N/A	NONE	NONE	NONE
1 & 2	SIS	1	63-585	CHM-2333-C SH1	ISI-0002-C SH11	1 1/2	GATE	N/A	NONE	NONE	NONE
1 & 2	SIS	1	63-586	CHM-2333-C SH1	ISI-0002-C SH8	1 1/2	CKV	N/A	NONE	NONE	NONE
1 & 2	SIS	1	63-587	CHM-2333-C SH2	ISI-0002-C SH9	1 1/2	CKV	N/A	NONE	NONE	NONE
1 & 2	SIS	1	63-588	CHM-2333-C SH2	ISI-0002-C SH10	1 1/2	CKV	N/A	NONE	NONE	NONE
1 & 2	SIS	1	63-589	CHM-2333-C SH1	ISI-0002-C SH11	1 1/2	CKV	N/A	NONE	NONE	NONE
1 & 2	SIS	1	63-622	CHM-2333-C SH9	ISI-0002-C SH5	10	CKV	2	YES	NONE	YES
1 & 2	SIS	1	63-623	CHM-2333-C SH10	ISI-0002-C SH6	10	CKV	2	YES	NONE	YES
1 & 2	SIS	1	63-624	CHM-2333-C SH10	ISI-0002-C SH6	10	CKV	2	YES	NONE	YES
1 & 2	SIS	1	63-625	CHM-2333-C SH9	ISI-0002-C SH4	10	CKV	2	YES	NONE	YES
1 & 2	SIS	1	63-632	CHM-2333-C SH10	ISI-0002-C SH6	6	CKV	3	YES	NONE	YES
1 & 2	SIS	1	63-633	CHM-2333-C SH9	ISI-0002-C SH5	6	CKV	3	YES	NONE	YES
1 & 2	SIS	1	63-634	CHM-2333-C SH10	ISI-0002-C SH6	6	CKV	3	YES	NONE	YES
1 & 2	SIS	1	63-635	CHM-2333-C SH9	ISI-0002-C SH4	6	CKV	3	YES	NONE	YES



<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 262 of 359</b>
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**Attachment 6  
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**ASME Class 1 and 2 Valves  
(Unit 1 and Unit 2)**

**NOTES**

- 1) No examination required due to valve size.
- 2) There are no Category B-G-1 (>2") valve bolting or piping flanges in the SQN ISI Program.
- 3) There are no Category B-K valve welded attachments in the SQN ISI Program.
- 4) There are no Category B-M-1 valve body welds in the SQN ISI Program.

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 263 of 359</b>
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**Attachment 6  
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**ASME Class 1 and 2 Valves  
(Unit 1 and Unit 2)**

<b>Class 2 Valves</b>											
<b>UNIT</b>	<b>SYSTEM</b>	<b>CLASS</b>	<b>VALVE</b>	<b>ISI DRAWING UNIT 1</b>	<b>ISI DRAWING UNIT 2</b>	<b>SIZE</b>	<b>TYPE</b>	<b>GROUP</b>	<b>C-C WELDED ATTCH.</b>	<b>C-D VALVE BOLTING</b>	<b>C-G VALVE WELDS</b>
1 & 2	CS	2	72-503	CHM-2422-C SH3	ISI-0007-C SH4	8	GATE	N/A	NONE	NONE	NONE
1 & 2	CS	2	72-504	CHM-2422-C SH4	ISI-0007-C SH4	8	GATE	N/A	NONE	NONE	NONE
1 & 2	CS	2	72-506	CHM-2422-C SH1	ISI-0007-C SH1	12	CKV	N/A	NONE	NONE	NONE
1 & 2	CS	2	72-507	CHM-2422-C SH2	ISI-0007-C SH2	12	CKV	N/A	NONE	NONE	NONE
1 & 2	CS	2	72-528	CHM-2422-C SH3	ISI-0007-C SH3	12	CKV	N/A	NONE	NONE	NONE
1 & 2	CS	2	72-529	CHM-2422-C SH5	ISI-0007-C SH5	12	CKV	N/A	NONE	NONE	NONE
1 & 2	CS	2	72-533	CHM-2422-C SH3	ISI-0007-C SH3	12	GATE	N/A	NONE	NONE	NONE
1 & 2	CS	2	72-534	CHM-2422-C SH5	ISI-0007-C SH5	12	GATE	N/A	NONE	NONE	NONE
1 & 2	CS	2	FCV-72-2	CHM-2422-CSH4	ISI-0007-C SH4	12	GATE	N/A	NONE	NONE	NONE
1 & 2	CS	2	FCV-72-21	CHM-2422-C SH2	ISI-0007-C SH2	12	GATE	N/A	NONE	NONE	NONE
1 & 2	CS	2	FCV-72-22	CHM-2422-C SH1	ISI-0007-C SH1	12	GATE	N/A	NONE	NONE	NONE
1 & 2	CS	2	FCV-72-39	CHM-2422-CSH4	ISI-0007-C SH4	12	GATE	N/A	NONE	NONE	NONE
1 & 2	CS	2	FCV-72-20	CHM-2422-C SH1	ISI-0007-C SH2	12	GATE	N/A	NONE	NONE	NONE
1 & 2	CS	2	FCV-72-23	CHM-2422-C SH1	ISI-0007-C SH1	12	GATE	N/A	NONE	NONE	NONE
1 & 2	CS/HPSI	2	62-938	ISI-0430-C SH36	ISI-0431-C SH36	2	DIAPHRAM	N/A	NONE	NONE	NONE
1 & 2	CS/HPSI	2	72-501	ISI-0430-C SH36	ISI-0431-C SH36	2	GLOBE	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	62-500	ISI-0430-C SH15	ISI-0431-C SH15	4	GATE	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	62-508	ISI-0430-C SH14	ISI-0431-C SH14	4	BONNET	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	62-519	ISI-0430-C SH32	ISI-0431-C SH32	3	CKV	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	62-520	ISI-0430-C SH32	ISI-0431-C SH32	3	GLOBE	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	62-523	ISI-0430-C SH18	ISI-0431-C SH18	2	CKV	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	62-524	ISI-0430-C SH18	ISI-0431-C SH18	2	CKV	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	62-525	ISI-0430-C SH17	ISI-0431-C SH17	4	CKV	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	62-526	ISI-0430-C SH17	ISI-0431-C SH17	3	GLOBE	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	62-527	ISI-0430-C SH17	ISI-0431-C SH17	4	GATE	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	62-530	ISI-0430-C SH18	ISI-0431-C SH18	2	CKV	N/A	NONE	NONE	NONE

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 264 of 359</b>
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**ASME Class 1 and 2 Valves  
(Unit 1 and Unit 2)**

<b>Class 2 Valves</b>											
<b>UNIT</b>	<b>SYSTEM</b>	<b>CLASS</b>	<b>VALVE</b>	<b>ISI DRAWING UNIT 1</b>	<b>ISI DRAWING UNIT 2</b>	<b>SIZE</b>	<b>TYPE</b>	<b>GROUP</b>	<b>C-C WELDED ATTCH.</b>	<b>C-D VALVE BOLTING</b>	<b>C-G VALVE WELDS</b>
1 & 2	CVC/HPSI	2	62-531	ISI-0430-C SH18	ISI-0431-C SH18	2	CKV	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	62-532	ISI-0430-C SH17	ISI-0431-C SH17	4	CKV	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	62-533	ISI-0430-C SH17	ISI-0431-C SH17	4	GATE	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	62-534	ISI-0430-C SH17	ISI-0431-C SH17	3	GLOBE	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	62-535	ISI-0430-C SH17	ISI-0431-C SH17	3	GATE	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	62-536	ISI-0430-C SH32	ISI-0431-C SH32	3	GATE	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	62-537	ISI-0430-C SH33	ISI-0431-C SH33	3	GATE	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	62-538	ISI-0430-C SH33	ISI-0431-C SH33	3	GLOBE	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	62-539	ISI-0430-C SH33	ISI-0431-C SH33	3	GATE	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	62-546	ISI-0430-C SH29	ISI-0431-C SH29	3	GLOBE	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	62-547	ISI-0430-C SH30	ISI-0431-C SH30	2	GATE	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	62-548	ISI-0430-C SH30	ISI-0431-C SH30	2	GATE	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	62-549	ISI-0430-C SH30	ISI-0431-C SH30	2	GATE	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	62-550	ISI-0430-C SH30	ISI-0431-C SH30	2	GATE	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	62-642	ISI-0430-C SH24	ISI-0431-C SH24	4	BONNET	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	62-643	ISI-0430-C SH25	ISI-0431-C SH25	4	BONNET	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	62-644	ISI-0430-C SH25	ISI-0431-C SH25	4	BONNET	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	62-647	ISI-0430-C SH25	ISI-0431-C SH25	4	BONNET	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	62-648	ISI-0430-C SH25	ISI-0431-C SH25	4	BONNET	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	62-649	ISI-0430-C SH25	ISI-0431-C SH25	2	RELIEF	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	62-650	ISI-0430-C SH25	ISI-0431-C SH25	4	BONNET	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	62-652	ISI-0430-C SH25	ISI-0431-C SH25	4	BONNET	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	62-653	ISI-0430-C SH26	ISI-0431-C SH26	4	BONNET	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	62-697	ISI-0430-C SH26	ISI-0431-C SH26	4	CKV	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	62-752	ISI-0430-C SH14	ISI-0431-C SH14	2	CKV	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	62-753	ISI-0430-C SH14	ISI-0431-C SH14	4	DIAPHRAM	N/A	NONE	NONE	NONE

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 265 of 359</b>
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**ASME Class 1 and 2 Valves  
(Unit 1 and Unit 2)**

<b>Class 2 Valves</b>											
<b>UNIT</b>	<b>SYSTEM</b>	<b>CLASS</b>	<b>VALVE</b>	<b>ISI DRAWING UNIT 1</b>	<b>ISI DRAWING UNIT 2</b>	<b>SIZE</b>	<b>TYPE</b>	<b>GROUP</b>	<b>C-C WELDED ATTCH.</b>	<b>C-D VALVE BOLTING</b>	<b>C-G VALVE WELDS</b>
1 & 2	CVC/HPSI	2	62-755	ISI-0430-C SH15	ISI-0431-C SH15	4	DIAPHRAM	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	62-930	ISI-0430-C SH15	ISI-0431-C SH15	3	CKV	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	62-931	ISI-0430-C SH15	ISI-0431-C SH15	2	CKV	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	FCV-62-61	ISI-0430-C SH24	ISI-0431-C SH24	4	GATE	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	FCV-62-63	ISI-0430-C SH24	ISI-0431-C SH24	4	GATE	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	FCV-62-89	ISI-0430-C SH33	ISI-0431-C SH33	3	GLOBE	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	FCV-62-90	ISI-0430-C SH34	ISI-0431-C SH34	3	GATE	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	FCV-62-91	ISI-0430-C SH34	ISI-0431-C SH34	3	GATE	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	FCV-62-93	ISI-0430-C SH17	ISI-0431-C SH17	3	GLOBE	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	FCV-62-98	ISI-0430-C SH18	ISI-0431-C SH18	2	GLOBE	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	FCV-62-99	ISI-0430-C SH18	ISI-0431-C SH18	2	GLOBE	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	LCV-62-132	ISI-0430-C SH26	ISI-0431-C SH26	4	GATE	N/A	NONE	NONE	NONE
1 & 2	CVC/HPSI	2	LCV-62-133	ISI-0430-C SH26	ISI-0431-C SH26	4	GATE	N/A	NONE	NONE	NONE
1 & 2	FW	2	3-508	CHM-2339-C SH2	CHM-2403-C SH2	16	CKV	N/A	NONE	NONE	NONE
1 & 2	FW	2	3-509	CHM-2339-C SH2	CHM-2403-C SH2	16	CKV	N/A	NONE	NONE	NONE
1 & 2	FW	2	3-510	CHM-2339-C SH1	CHM-2403-C SH1	16	CKV	N/A	NONE	NONE	NONE
1 & 2	FW	2	3-511	CHM-2339-C SH1	CHM-2403-C SH1	16	CKV	N/A	NONE	NONE	NONE
1 & 2	FW	2	FCV-3-100	CHM-2339-C SH1	CHM-2403-C SH1	18	GATE	N/A	NONE	NONE	NONE
1 & 2	FW	2	FCV-3-33	CHM-2339-C SH1	CHM-2403-C SH1	18	GATE	N/A	NONE	NONE	NONE
1 & 2	FW	2	FCV-3-47	CHM-2339-C SH2	CHM-2403-C SH2	18	GATE	N/A	NONE	NONE	NONE
1 & 2	FW	2	FCV-3-87	CHM-2339-C SH2	CHM-2403-C SH2	18	GATE	N/A	NONE	NONE	NONE
1 & 2	MS	2	1-623	CHM-2340-C SH1	ISI-0015-C SH1	32	CKV	N/A	NONE	NONE	NONE
1 & 2	MS	2	1-624	CHM-2340-C SH2	ISI-0015-C SH2	32	CKV	N/A	NONE	NONE	NONE
1 & 2	MS	2	1-625	CHM-2340-C SH2	ISI-0015-C SH2	32	CKV	N/A	NONE	NONE	NONE
1 & 2	MS	2	1-626	CHM-2340-C SH1	ISI-0015-C SH1	32	CKV	N/A	NONE	NONE	NONE
1 & 2	MS	2	1-512	CHM-2340-C SH2	ISI-0015-C SH2	6	SAF	N/A	NONE	NONE	NONE

<b>SQN</b> <b>Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM</b> <b>UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4</b> <b>Rev. 0000</b> <b>Page 266 of 359</b>
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**ASME Class 1 and 2 Valves**  
**(Unit 1 and Unit 2)**

<b>Class 2 Valves</b>											
<b>UNIT</b>	<b>SYSTEM</b>	<b>CLASS</b>	<b>VALVE</b>	<b>ISI DRAWING UNIT 1</b>	<b>ISI DRAWING UNIT 2</b>	<b>SIZE</b>	<b>TYPE</b>	<b>GROUP</b>	<b>C-C WELDED ATTCH.</b>	<b>C-D VALVE BOLTING</b>	<b>C-G VALVE WELDS</b>
1 & 2	MS	2	1-513	CHM-2340-C SH2	ISI-0015-C SH2	6	SAF	N/A	NONE	NONE	NONE
1 & 2	MS	2	1-514	CHM-2340-C SH2	ISI-0015-C SH2	6	SAF	N/A	NONE	NONE	NONE
1 & 2	MS	2	1-515	CHM-2340-C SH2	ISI-0015-C SH2	6	SAF	N/A	NONE	NONE	NONE
1 & 2	MS	2	1-516	CHM-2340-C SH2	ISI-0015-C SH2	6	SAF	N/A	NONE	NONE	NONE
1 & 2	MS	2	1-517	CHM-2340-C SH2	ISI-0015-C SH2	6	SAF	N/A	NONE	NONE	NONE
1 & 2	MS	2	1-518	CHM-2340-C SH2	ISI-0015-C SH2	6	SAF	N/A	NONE	NONE	NONE
1 & 2	MS	2	1-519	CHM-2340-C SH2	ISI-0015-C SH2	6	SAF	N/A	NONE	NONE	NONE
1 & 2	MS	2	1-520	CHM-2340-C SH2	ISI-0015-C SH2	6	SAF	N/A	NONE	NONE	NONE
1 & 2	MS	2	1-521	CHM-2340-C SH2	ISI-0015-C SH2	6	SAF	N/A	NONE	NONE	NONE
1 & 2	MS	2	1-522	CHM-2340-C SH1	ISI-0015-C SH1	6	SAF	N/A	NONE	NONE	NONE
1 & 2	MS	2	1-523	CHM-2340-C SH1	ISI-0015-C SH1	6	SAF	N/A	NONE	NONE	NONE
1 & 2	MS	2	1-524	CHM-2340-C SH1	ISI-0015-C SH1	6	SAF	N/A	NONE	NONE	NONE
1 & 2	MS	2	1-525	CHM-2340-C SH1	ISI-0015-C SH1	6	SAF	N/A	NONE	NONE	NONE
1 & 2	MS	2	1-526	CHM-2340-C SH1	ISI-0015-C SH1	6	SAF	N/A	NONE	NONE	NONE
1 & 2	MS	2	1-527	CHM-2340-C SH1	ISI-0015-C SH1	6	SAF	N/A	NONE	NONE	NONE
1 & 2	MS	2	1-528	CHM-2340-C SH1	ISI-0015-C SH1	6	SAF	N/A	NONE	NONE	NONE
1 & 2	MS	2	1-529	CHM-2340-C SH1	ISI-0015-C SH1	6	SAF	N/A	NONE	NONE	NONE
1 & 2	MS	2	1-530	CHM-2340-C SH1	ISI-0015-C SH1	6	SAF	N/A	NONE	NONE	NONE
1 & 2	MS	2	1-531	CHM-2340-C SH1	ISI-0015-C SH1	6	SAF	N/A	NONE	NONE	NONE
1 & 2	MS	2	1-619	CHM-2340-C SH1	ISI-0015-C SH1	6	GATE	N/A	NONE	NONE	NONE
1 & 2	MS	2	1-620	CHM-2340-C SH2	ISI-0015-C SH2	6	GATE	N/A	NONE	NONE	NONE
1 & 2	MS	2	1-621	CHM-2340-C SH2	ISI-0015-C SH2	6	GATE	N/A	NONE	NONE	NONE
1 & 2	MS	2	1-622	CHM-2340-C SH1	ISI-0015-C SH1	6	GATE	N/A	NONE	NONE	NONE
1 & 2	MS	2	FCV-1-11	CHM-2340-C SH2	ISI-0015-C SH2	32	GATE	N/A	NONE	NONE	NONE
1 & 2	MS	2	FCV-1-22	CHM-2340-C SH2	ISI-0015-C SH2	32	GATE	N/A	NONE	NONE	NONE
1 & 2	MS	2	FCV-1-29	CHM-2340-C SH1	ISI-0015-C SH1	32	GATE	N/A	NONE	NONE	NONE

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 267 of 359</b>
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**ASME Class 1 and 2 Valves  
(Unit 1 and Unit 2)**

<b>Class 2 Valves</b>											
<b>UNIT</b>	<b>SYSTEM</b>	<b>CLASS</b>	<b>VALVE</b>	<b>ISI DRAWING UNIT 1</b>	<b>ISI DRAWING UNIT 2</b>	<b>SIZE</b>	<b>TYPE</b>	<b>GROUP</b>	<b>C-C WELDED ATTCH.</b>	<b>C-D VALVE BOLTING</b>	<b>C-G VALVE WELDS</b>
1 & 2	MS	2	FCV-1-4	CHM-2340-C SH1	ISI-0015-C SH1	32	GATE	N/A	NONE	NONE	NONE
1 & 2	MS	2	PCV-1-12	CHM-2340-C SH2	ISI-0015-C SH2	6	GATE	N/A	NONE	NONE	NONE
1 & 2	MS	2	PCV-1-23	CHM-2340-C SH2	ISI-0015-C SH2	6	GATE	N/A	NONE	NONE	NONE
1 & 2	MS	2	PCV-1-30	CHM-2340-C SH1	ISI-0015-C SH1	6	GATE	N/A	NONE	NONE	NONE
1 & 2	MS	2	PCV-1-5	CHM-2340-C SH1	ISI-0015-C SH1	6	GATE	N/A	NONE	NONE	NONE
1 & 2	RHR	2	74-514	CHM-2336-C SH3	ISI-0003-C SH2	8	CKV	N/A	NONE	NONE	NONE
1 & 2	RHR	2	74-515	CHM-2336-C SH3	ISI-0003-C SH3	8	CKV	N/A	NONE	NONE	NONE
1 & 2	RHR	2	74-520	CHM-2336-C SH3	ISI-0003-C SH2	8	GATE	N/A	NONE	NONE	NONE
1 & 2	RHR	2	74-521	CHM-2336-C SH3	ISI-0003-C SH3	8	GATE	N/A	NONE	NONE	NONE
1 & 2	RHR	2	74-524	CHM-2336-C SH3	ISI-0003-C SH2	8	GATE	N/A	NONE	NONE	NONE
1 & 2	RHR	2	74-525	CHM-2336-C SH3	ISI-0003-C SH3	8	GATE	N/A	NONE	NONE	NONE
1 & 2	RHR	2	FCV-63-172	CHM-2336-C SH4	ISI-0003-C SH5	12	GATE	N/A	NONE	NONE	NONE
1 & 2	RHR	2	FCV-63-72	CHM-2336-C SH2	ISI-0003-C SH1	18	GATE	N/A	NONE	NONE	NONE
1 & 2	RHR	2	FCV-63-73	CHM-2336-C SH2	ISI-0003-C SH1	18	GATE	N/A	NONE	NONE	NONE
1 & 2	RHR	2	FCV-74-16	CHM-2336-C SH3	ISI-0003-C SH2	8	BUTF	N/A	NONE	NONE	NONE
1 & 2	RHR	2	FCV-74-21	CHM-2336-C SH5	ISI-0003-C SH4	14	GATE	N/A	NONE	NONE	NONE
1 & 2	RHR	2	FCV-74-28	CHM-2336-C SH3	ISI-0003-C SH3	8	BUTF	N/A	NONE	NONE	NONE
1 & 2	RHR	2	FCV-74-3	CHM-2336-C SH5	ISI-0003-C SH4	14	GATE	N/A	NONE	NONE	NONE
1 & 2	RHR	2	FCV-74-32	CHM-2336-C SH3	ISI-0003-C SH2	8	BUTF	N/A	NONE	NONE	NONE
1 & 2	RHR	2	FCV-74-33	CHM-2336-C SH3	ISI-0003-C SH2	8	GATE	N/A	NONE	NONE	NONE
1 & 2	RHR	2	FCV-74-35	CHM-2336-C SH3	ISI-0003-C SH3	8	GATE	N/A	NONE	NONE	NONE
1 & 2	RHR	2	HCV-74-34	CHM-2336-C SH3	ISI-0003-C SH3	8	GATE	N/A	NONE	NONE	NONE
1 & 2	RHR	2	HCV-74-36	CHM-2336-C SH3	ISI-0003-C SH2	8	GATE	N/A	NONE	NONE	NONE
1 & 2	RHR	2	HCV-74-37	CHM-2336-C SH3	ISI-0003-C SH3	8	GATE	N/A	NONE	NONE	NONE
1 & 2	RHR/HPSI	2	74-530	ISI-0430-C SH35	ISI-0431-C SH35	2	GATE	N/A	NONE	NONE	NONE
1 & 2	RHR/HPSI	2	74-531	ISI-0430-C SH35	ISI-0431-C SH35	2	GATE	N/A	NONE	NONE	NONE

<b>SQN</b> <b>Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM</b> <b>UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4</b> <b>Rev. 0000</b> <b>Page 268 of 359</b>
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**ASME Class 1 and 2 Valves**  
**(Unit 1 and Unit 2)**

<b>Class 2 Valves</b>											
<b>UNIT</b>	<b>SYSTEM</b>	<b>CLASS</b>	<b>VALVE</b>	<b>ISI DRAWING UNIT 1</b>	<b>ISI DRAWING UNIT 2</b>	<b>SIZE</b>	<b>TYPE</b>	<b>GROUP</b>	<b>C-C WELDED ATTCH.</b>	<b>C-D VALVE BOLTING</b>	<b>C-G VALVE WELDS</b>
1 & 2	RHR/HPSI	2	FCV-74-12	ISI-0430-C SH35	ISI-0431-C SH35	2	GLOBE	N/A	NONE	NONE	NONE
1 & 2	RHR/HPSI	2	FCV-74-24	ISI-0430-C SH35	ISI-0431-C SH35	2	GLOBE	N/A	NONE	NONE	NONE
1 & 2	SIS	2	63-502	CHM-2333-C SH6	ISI-0002-C SH1	12	CKV	N/A	NONE	NONE	NONE
1 & 2	SIS	2	FCV-63-1	CHM-2333-C SH6	ISI-0002-C SH1	12	GATE	N/A	NONE	NONE	NONE
1 & 2	SIS	2	FCV-63-11	CHM-2333-C SH6	ISI-0002-C SH3	8	GATE	N/A	NONE	NONE	NONE
1 & 2	SIS	2	FCV-63-118	EXEMPT	EXEMPT	10	GATE	N/A	NONE	NONE	NONE
1 & 2	SIS	2	FCV-63-67	EXEMPT	EXEMPT	10	GATE	N/A	NONE	NONE	NONE
1 & 2	SIS	2	FCV-63-8	CHM-2333-C SH6	ISI-0002-C SH3	8	GATE	N/A	NONE	NONE	NONE
1 & 2	SIS	2	FCV-63-80	EXEMPT	EXEMPT	10	GATE	N/A	NONE	NONE	NONE
1 & 2	SIS	2	FCV-63-93	CHM-2333-C SH3	ISI-0002-C SH1	8	GATE	N/A	NONE	NONE	NONE
1 & 2	SIS	2	FCV-63-94	CHM-2333-C SH3	ISI-0002-C SH2	8	GATE	N/A	NONE	NONE	NONE
1 & 2	SIS	2	FCV-63-98	EXEMPT	EXEMPT	10	GATE	N/A	NONE	NONE	NONE
1 & 2	SIS	2	FCV-72-40	CHM-2333-C SH6	ISI-0002-C SH3	8	GATE	N/A	NONE	NONE	NONE
1 & 2	SIS	2	FCV-72-41	CHM-2333-C SH6	ISI-0002-C SH3	8	GATE	N/A	NONE	NONE	NONE
1 & 2	SIS/HPSI	2	63-524	ISI-0430-C SH2	ISI-0431-C SH2	4	GATE	N/A	NONE	NONE	NONE
1 & 2	SIS/HPSI	2	63-525	ISI-0430-C SH2	ISI-0431-C SH2	4	GATE	N/A	NONE	NONE	NONE
1 & 2	SIS/HPSI	2	63-526	ISI-0430-C SH3	ISI-0431-C SH3	4	CKV	N/A	NONE	NONE	NONE
1 & 2	SIS/HPSI	2	63-527	ISI-0430-C SH3	ISI-0431-C SH3	4	GATE	N/A	NONE	NONE	NONE
1 & 2	SIS/HPSI	2	63-531	ISI-0430-C SH23	ISI-0431-C SH22	4	BONNET	N/A	NONE	NONE	NONE
1 & 2	SIS/HPSI	2	63-542	ISI-0430-C SH19	ISI-0431-C SH19	2	GATE	N/A	NONE	NONE	NONE
1 & 2	SIS/HPSI	2	63-544	ISI-0430-C SH7	ISI-0431-C SH7	2	GATE	N/A	NONE	NONE	NONE
1 & 2	SIS/HPSI	2	63-546	ISI-0430-C SH22	ISI-0431-C SH22	2	GATE	N/A	NONE	NONE	NONE
1 & 2	SIS/HPSI	2	63-548	ISI-0430-C SH5	ISI-0431-C SH5	2	GATE	N/A	NONE	NONE	NONE
1 & 2	SIS/HPSI	2	63-550	ISI-0430-C SH11	ISI-0431-C SH11	2	GATE	N/A	NONE	NONE	NONE
1 & 2	SIS/HPSI	2	63-552	ISI-0430-C SH9	ISI-0431-C SH9	2	GATE	N/A	NONE	NONE	NONE
1 & 2	SIS/HPSI	2	63-554	ISI-0430-C SH8	ISI-0431-C SH8	2	GATE	N/A	NONE	NONE	NONE

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 269 of 359</b>
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**Attachment 6  
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**ASME Class 1 and 2 Valves  
(Unit 1 and Unit 2)**

<b>Class 2 Valves</b>											
<b>UNIT</b>	<b>SYSTEM</b>	<b>CLASS</b>	<b>VALVE</b>	<b>ISI DRAWING UNIT 1</b>	<b>ISI DRAWING UNIT 2</b>	<b>SIZE</b>	<b>TYPE</b>	<b>GROUP</b>	<b>C-C WELDED ATTCH.</b>	<b>C-D VALVE BOLTING</b>	<b>C-G VALVE WELDS</b>
1 & 2	SIS/HPSI	2	63-556	ISI-0430-C SH1	ISI-0431-C SH1	2	GATE	N/A	NONE	NONE	NONE
1 & 2	SIS/HPSI	2	72-500	ISI-0430-C SH12	ISI-0431-C SH12	3	GATE	N/A	NONE	NONE	NONE
1 & 2	SIS/HPSI	2	FCV-63-152	ISI-0430-C SH2	ISI-0431-C SH2	4	GATE	N/A	NONE	NONE	NONE
1 & 2	SIS/HPSI	2	FCV-63-153	ISI-0430-C SH2	ISI-0431-C SH2	4	GATE	N/A	NONE	NONE	NONE
1 & 2	SIS/HPSI	2	FCV-63-156	ISI-0430-C SH2	ISI-0431-C SH2	4	GATE	N/A	NONE	NONE	NONE
1 & 2	SIS/HPSI	2	FCV-63-157	ISI-0430-C SH3	ISI-0431-C SH3	4	GATE	N/A	NONE	NONE	NONE
1 & 2	SIS/HPSI	2	FCV-63-175	ISI-0430-C SH27	ISI-0431-C SH27	2	GLOBE	N/A	NONE	NONE	NONE
1 & 2	SIS/HPSI	2	FCV-63-22	ISI-0430-C SH2	ISI-0431-C SH2	4	GATE	N/A	NONE	NONE	NONE
1 & 2	SIS/HPSI	2	FCV-63-25	ISI-0430-C SH16	ISI-0431-C SH16	4	GATE	N/A	NONE	NONE	NONE
1 & 2	SIS/HPSI	2	FCV-63-26	ISI-0430-C SH16	ISI-0431-C SH16	4	GATE	N/A	NONE	NONE	NONE
1 & 2	SIS/HPSI	2	FCV-63-3	ISI-0430-C SH27	ISI-0431-C SH27	2	GLOBE	N/A	NONE	NONE	NONE
1 & 2	SIS/HPSI	2	FCV-63-39	ISI-0430-C SH16	ISI-0431-C SH16	4	GATE	N/A	NONE	NONE	NONE
1 & 2	SIS/HPSI	2	FCV-63-4	ISI-0430-C SH27	ISI-0431-C SH27	2	GLOBE	N/A	NONE	NONE	NONE
1 & 2	SIS/HPSI	2	FCV-63-40	ISI-0430-C SH16	ISI-0431-C SH16	4	GATE	N/A	NONE	NONE	NONE
1 & 2	SIS/HPSI	2	FCV-63-6	ISI-0430-C SH23	ISI-0431-C SH23	4	GATE	N/A	NONE	NONE	NONE
1 & 2	SIS/HPSI	2	FCV-63-7	ISI-0430-C SH23	ISI-0431-C SH22	4	GATE	N/A	NONE	NONE	NONE
1 & 2	AFW	2	3-830	ISI-0113-C SH13	ISI-0146-C SH13	4	CHK	N/A	NONE	NONE	NONE
1 & 2	AFW	2	3-831	ISI-0113-C SH15	ISI-0146-C SH15	4	CHK	N/A	NONE	NONE	NONE
1 & 2	AFW	2	3-832	ISI-0113-C SH16	ISI-0146-C SH16	4	CHK	N/A	NONE	NONE	NONE
1 & 2	AFW	2	3-833	ISI-0113-C SH17	ISI-0146-C SH17	4	CHK	N/A	NONE	NONE	NONE
1 & 2	AFW	2	3-834	ISI-0113-C SH13	ISI-0146-C SH13	4	GATE	N/A	NONE	NONE	NONE
1 & 2	AFW	2	3-835	ISI-0113-C SH15	ISI-0146-C SH15	4	GATE	N/A	NONE	NONE	NONE
1 & 2	AFW	2	3-836	ISI-0113-C SH16	ISI-0146-C SH16	4	GATE	N/A	NONE	NONE	NONE
1 & 2	AFW	2	3-837	ISI-0113-C SH17	ISI-0146-C SH17	4	GATE	N/A	NONE	NONE	NONE
1 & 2	AFW	2	3-861	ISI-0113-C SH12	ISI-0146-C SH12	4	CHK	N/A	NONE	NONE	NONE



<b>SQN</b> <b>Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM</b> <b>UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4</b> <b>Rev. 0000</b> <b>Page 270 of 359</b>
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**ASME Class 1 and 2 Valves**  
**(Unit 1 and Unit 2)**

<b>Class 2 Valves</b>											
<b>UNIT</b>	<b>SYSTEM</b>	<b>CLASS</b>	<b>VALVE</b>	<b>ISI DRAWING UNIT 1</b>	<b>ISI DRAWING UNIT 2</b>	<b>SIZE</b>	<b>TYPE</b>	<b>GROUP</b>	<b>C-C WELDED ATTCH.</b>	<b>C-D VALVE BOLTING</b>	<b>C-G VALVE WELDS</b>
1 & 2	AFW	2	3-862	ISI-0113-C SH14	ISI-0146-C SH14	4	CHK	N/A	NONE	NONE	NONE
1 & 2	AFW	2	3-871	ISI-0113-C SH13	ISI-0146-C SH13	4	CHK	N/A	NONE	NONE	NONE
1 & 2	AFW	2	3-872	ISI-0113-C SH15	ISI-0146-C SH15	4	CHK	N/A	NONE	NONE	NONE
1 & 2	AFW	2	3-873	ISI-0113-C SH16	ISI-0146-C SH16	4	CHK	N/A	NONE	NONE	NONE
1 & 2	AFW	2	3-874	ISI-0113-C SH17	ISI-0146-C SH17	4	CHK	N/A	NONE	NONE	NONE
1 & 2	AFW	2	3-875	ISI-0113-C SH13	ISI-0146-C SH13	4	GATE	N/A	NONE	NONE	NONE
1 & 2	AFW	2	3-876	ISI-0113-C SH15	ISI-0146-C SH15	4	GATE	N/A	NONE	NONE	NONE
1 & 2	AFW	2	3-877	ISI-0113-C SH16	ISI-0146-C SH16	4	GATE	N/A	NONE	NONE	NONE
1 & 2	AFW	2	3-878	ISI-0113-C SH17	ISI-0146-C SH17	4	GATE	N/A	NONE	NONE	NONE
1 & 2	AFW	2	3-891	ISI-0113-C SH18	ISI-0146-C SH18	4	CHK	N/A	NONE	NONE	NONE
1 & 2	AFW	2	3-892	ISI-0113-C SH18	ISI-0146-C SH18	4	CHK	N/A	NONE	NONE	NONE
1 & 2	AFW	2	3-921	ISI-0113-C SH12	ISI-0146-C SH12	4	CHK	N/A	NONE	NONE	NONE
1 & 2	AFW	2	3-922	ISI-0113-C SH14	ISI-0146-C SH14	4	CHK	N/A	NONE	NONE	NONE
1 & 2	AFW	2	FCV-1-15	ISI-0113-C SH18	ISI-0146-C SH18	4	GATE	N/A	NONE	NONE	NONE
1 & 2	AFW	2	FCV-1-16	ISI-0113-C SH18	ISI-0146-C SH18	4	GATE	N/A	NONE	NONE	NONE
1 & 2	AFW	2	FCV-1-18	ISI-0113-C SH18	ISI-0146-C SH18	4	GATE	N/A	NONE	NONE	NONE

**NOTES**

- 1) No examination required due to valve size.

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 271 of 359</b>
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**Attachment 7  
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**Listing of Drawings  
(Unit 1 and Unit 2)**

**LIST OF DRAWINGS - UNIT 1 and 2**

The drawings listed below are for the performance of ISI examinations. These drawings are issued through BSL. Individual copies may be obtained from BSL.

<b>Drawing Number Unit 1</b>	<b>Drawing Number Unit 2</b>	<b>Reactor Vessel</b>
ISI-0504-C	ISI-0304-C	Reactor Vessel Stud Locations and Details
ISI-0504-C	ISI-0298-C	Reactor Vessel General Arrangement, Seam Welds, and Support
ISI-0504-C	ISI-0301-C	Reactor Vessel Closure Head
ISI-0504-C	ISI-0300-C	Control Rod Drive Housing
ISI-0504-C	ISI-0392-C	Reactor Vessel Inlet Nozzles
ISI-0504-C	ISI-0297-C	Reactor Vessel Outlet Nozzles
ISI-0504-C	ISI-0097-C	Closure Head Penetrations
ISI-0504-C	ISI-0318-C	Auxiliary Head Adapter/UHI Cap Welds
ISI-0504-C	ISI-0319-C	Reactor Vessel Bottom Head Penetrations

<b>Drawing Number Unit 1</b>	<b>Drawing Number Unit 2</b>	<b>Pressurizer</b>
ISI-0394-C	ISI-0396-C	Pressurizer
ISI-0394-C	ISI-0396-C	Pressurizer Manway Bolting
ISI-0394-C	ISI-0309-A	Pressurizer Heater Penetrations

<b>Drawing Number Unit 1</b>	<b>Drawing Number Unit 2</b>	<b>Steam Generators</b>
ISI-0397-C	ISI-0398-C	Steam Generators Tube Sheet Arrangement
ISI-0399-C	ISI-0401-C	Steam Generator
ISI-0399-C	ISI-0401-C	Steam Generator Manway Bolting
MSG-0005-A	ISI-0350-C	Steam Generator/Feedwater Transition Spool Piece
ISI-0357-A	ISI-0358-A	Steam Generator Feedwater Ring Header

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 272 of 359</b>
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**Listing of Drawings  
(Unit 1 and Unit 2)**

<b>Drawing Number Unit 1</b>	<b>Drawing Number Unit 2</b>	<b>Heat Exchangers</b>
ISI-0290-C	ISI-0289-C	Residual Heat Removal Heat Exchanger
ISI-0226-C	ISI-0226-C	Gas Stripper and Boric Acid Evaporator Package Support
ISI-0216-A	ISI-0257-A	Non-Regenerative Letdown Heat Exchanger Support
ISI-0284-B	ISI-0261-B	Component Cooling Heat Exchanger
ISI-0285-C	ISI-0268-C	Essential Raw Cooling Water Strainer Support
ISI-0290-C	ISI-0291-C	RHR Heat Exchanger Secondary Side Support
ISI-0287-C	UNIT 1 ONLY	Spent Fuel Pit Heat Exchanger
ISI-0462-C	ISI-0463-C	Containment Spray Heat Exchanger
ISI-0458-C	ISI-0459-C	Seal Water Filter
ISI-0456-C	ISI-0457-C	Seal Water Injection Filter
ISI-0460-C	ISI-0461-C	Seal Water Heat Exchanger

<b>Drawing Number Unit 1</b>	<b>Drawing Number Unit 2</b>	<b>Piping and Valve Weld Isometrics</b>
ISI-0482-C	ISI-0008-C	Reactor Coolant Piping (Main Loops)
CHM-2333-C	ISI-0002-C	Safety Injection System
ISI-0369-C	ISI-0013-C	Reactor Coolant System
CHM-2335-C	ISI-0009-C	Chemical and Volume Control System
CHM-2336-C	ISI-0003-C	Residual Heat Removal System
CHM-2338-C	MSG-0008-C	Seal Water Injection (Chemical and Volume Control System)
CHM-2339-C	CHM-2403-C	Feedwater System
CHM-2340-C	ISI-0015-C	Main Steam System
CHM-2422-C	ISI-0007-C	Containment Spray System

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 273 of 359</b>
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**Listing of Drawings  
(Unit 1 and Unit 2)**

ISI-0430-C	ISI-0431-C	High Pressure Safety Injection System (CS, CVC, RHR, and SI)
ISI-0434-C	ISI-0435-C	High Pressure Safety Injection System (CS, CVC, RHR, and SI)(Excluded Piping)

<b>Drawing Number Unit 1</b>	<b>Drawing Number Unit 2</b>	<b>Class 1 and 2 Piping and Valve Support Drawings</b>
ISI-0370-C	MSG-0013-C	Reactor Coolant System
CHM-2433-C	MSG-0012-C	Chemical and Volume Control System
CHM-2434-C	MSG-0015-C	Seal Water Injection (Chemical and Volume Control)
CHM-2435-C	MSG-0010-C	Residual Heat Removal System
CHM-2436-C	MSG-0009-C	Safety Injection System
CHM-2438-C	MSG-0017-C	Main Steam System
CHM-2439-C	MSG-0016-C	Feedwater System
CHM-2440-C	MSG-0011-C	Containment Spray System
ISI-0303-C	ISI-0302-C ISI-0321-C	Reactor Coolant System (Main Loop)
ISI-0448-C	ISI-0449-C	High Pressure Safety Injection System (CS, CVC, RHR, and SI)
ISI-0113-C	ISI-0146-C	Auxiliary Feedwater System

<b>Drawing Number Unit 1</b>	<b>Drawing Number Unit 2</b>	<b>Class 3 Piping and Valve Support Drawings</b>
ISI-0113-C	ISI-0146-C	Auxiliary Feedwater System
ISI-0123-C	ISI-0158-C	Essential Raw Cooling Water System
ISI-0126-C	ISI-0154-C	Component Cooling Water System
ISI-0127-C	UNIT 1 ONLY	Fuel Pool Cooling System

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 274 of 359</b>
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**Listing of Drawings  
(Unit 1 and Unit 2)**

ISI-0450-C	ISI-0451-C	Air Conditioning Chilled Water System
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<b>Drawing Number Unit 1</b>	<b>Drawing Number Unit 2</b>	<b>Pumps</b>
ISI-0325-C	ISI-0307-C	Reactor Coolant Pump Main Flange and Number 1 Seal House Bolt Pattern
ISI-0325-C	ISI-0326-C	Reactor Coolant Pump Support
ISI-0305-B	ISI-0306-B	Reactor Coolant Pump Motor Flywheel Examination
ISI-0353-C	ISI-0352-C	RHR Pump Support Locations
ISI-0474-C	ISI-0475-C	Turbine Driven Auxiliary Feedwater Pump Support
ISI-0476-C	ISI-0477-C	Motor Driven Auxiliary Feedwater Pump Support
ISI-0281-C	ISI-0260-C	Component Cooling Water Pumps Support
ISI-0286-B	UNIT 1 ONLY	ERCW Pumps Support Locations
ISI-0288-B	UNIT 1 ONLY	Spent Fuel Pump Support
ISI-0296-C	UNIT 1 ONLY	ERCW Screen Wash Pump Support
ISI-0325-C	UNIT 1 ONLY	Reactor Coolant Pump Casing Weld
ISI-0470-C	ISI-0471-C	Safety Injection Pumps
ISI-0466-C	ISI-0467-C	Centrifugal Charging Pumps
ISI-0464-C	ISI-0465-C	Containment Spray Pumps
ISI-0472-C	ISI-0473-C	Chill Water Circulation Pump

<b>Drawing Number Unit 1</b>	<b>Drawing Number Unit 2</b>	<b>Tanks</b>
ISI-0069-C	ISI-0074-C	Centrifugal Charging Pump Tank (Formerly BIT Tank)
ISI-0227-B	ISI-0227-B	Component Cooling Surge Tank

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 275 of 359</b>
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**Listing of Drawings  
(Unit 1 and Unit 2)**

<b>Drawing Number Unit 1</b>	<b>Drawing Number Unit 2</b>	<b>Miscellaneous</b>
ISI-0403-C	ISI-0403-C	Reactor Coolant Pump Flywheel Examinations
ISI-0404-A	ISI-0405-A	Support Acceptance Ranges
ISI-0402-C	ISI-0452-C	Valve Examinations
ISI-0436-C	ISI-0436-C	Unit 1 and Unit 2 Piping Support Examination Boundaries
ISI-0480-C	ISI-0481-C	Old ERCW Pumping Station Strainer
ISI-0454-C	ISI-0455-C	Shutdown Board Room Water Chiller
ISI-0478-C	ISI-0479-C	Chilled Water System Air Separator
ISI-0509-C	ISI-0509-C	Flange Bolted Connections

**ASME Section XI Boundary Classification Drawings List**

**Drawing No. ASME Section XI Boundary Classification Drawings**

**NOTE**

Refer to TVA Calculation SQN-SQTP-001, "ASME Section XI Inservice Code Class Boundaries For The Second 10 Year Interval", for drawing boundary classifications. This is to be revised for the third interval.

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 276 of 359</b>
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**Attachment 8  
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**Successive Examinations  
(Unit 1)**

<b>COMPONENT</b>	<b>Program Reference Section</b>	<b>Exam Method</b>	<b>Exam Cat.</b>	<b>Initially Detected Unit /Cycle</b>	<b>Next Refueling Outage</b>	<b>First Period Unit /Cycle</b>	<b>Second Period Unit /Cycle</b>	<b>Third Period Unit /Cycle</b>	<b>Reference Drawings</b>
<b>1-FDH-282</b>	<b>Note 1</b>	<b>VT-3</b>	<b>F-A</b>	<b>U1R19</b>	<b>Note 1</b>	<b>Note 1</b>	<b>Note 1</b>	<b>Note 1</b>	<b>CHM-2439-C-02</b>

**NOTES**

- 1) Supports requiring a successive examination per IWF-2420(b) during 4th Interval, 1st Period.

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 277 of 359</b>
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**Successive Examinations  
(Unit 2)**

**SUCCESSIVE EXAMINATIONS UNIT 2**

<b>COMPONENT</b>	<b>Program Reference Section</b>	<b>Exam Method</b>	<b>Exam Cat.</b>	<b>Initially Detected Unit /Cycle</b>	<b>Next Refueling Outage</b>	<b>First Period Unit /Cycle</b>	<b>Second Period Unit /Cycle</b>	<b>Third Period Unit /Cycle</b>	<b>Reference Drawings</b>
<b>2-FDH-282</b>	<b>Note 1</b>	<b>VT-3</b>	<b>F-A</b>	<b>U2R19</b>	<b>Note 1</b>	<b>Note 1</b>	<b>Note 1</b>	<b>Note 1</b>	<b>MSG-0016-C- 02</b>

**NOTES**

- 1) Support requiring a successive examination per IWF-2420(b) during 4th Interval, 1st Period.



<b>SQN</b> <b>Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM</b> <b>UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4</b> <b>Rev. 0000</b> <b>Page 278 of 359</b>
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**Attachment 10**  
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**AUGMENTED EXAMINATIONS**  
**(UNIT 1)**

**AUGMENTED EXAMINATIONS**

Augmented examinations are performed in addition to ASME Section XI code requirements. The augmented examinations may be required by the NRC or be self-imposed by TVA. Typical sources include generic letters, IE Bulletins, technical specifications, vendor recommendations, and industry experience. Table A of this attachment provides a schedule for augmented examinations. Responsible organizations requesting inclusion of augmented examinations in this section shall submit a written request to the Engineering Programs representative (see 0-SI-DXI-000-114.4, Section 7.12).

When augmented examinations of welds do not interrogate greater than 90% of the examination volume, the basis and/or requirements for performing the exam shall be reviewed to determine if the limited exam requires a UFSAR change, 50.59 screening review, or request for relief to ensure acceptability.

When examination of components fall into the scheduled examination requirements of Inservice Inspection (ISI) and also satisfy augmented requirements, then credit for both requirements may be taken by one examination; (i.e., duplicate examinations are not required).

For additional information on Historical Augmented Examination Third Interval requirements refer to 0-SI-DXI-000-114.3.

**1.0 FEEDWATER NOZZLE-TO-PIPE WELDS AND ADJACENT  
PIPE/FITTINGS AND NOZZLE AREAS/AUXILIARY  
FEEDWATER(HISTORICAL)**

Responsible Organization: Engineering Programs

**1.1 FEEDWATER NOZZLE TRANSITION PIECE**

Inspection of the transition pieces, nozzle-to-transition piece welds, transition piece-to-elbow welds, and the associated base metal were scheduled for inspection at each consecutive refueling outage unless otherwise revised or waived by Engineering Programs. All four loops have been replaced with the feedwater thermal liner. **The information below has been left for historical purposes.** All examinations are now part of the regular ISI program.

<b>SQN</b> <b>Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM</b> <b>UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4</b> <b>Rev. 0000</b> <b>Page 279 of 359</b>
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**Attachment 10**  
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**AUGMENTED EXAMINATIONS**  
**(UNIT 1)**

**1.2 AUXILIARY FEEDWATER WELDS**

Due to the safety-related ramifications and the assessments concluded in Incident Investigation (II) No. II-S-92-027 of the steam generator nozzle transition section cracking problem and potential for cracking in adjacent components within the feedwater piping system, TVA performs augmented examinations as determined by Engineering Programs. The augmented examination includes 100 percent volume of the 4 inch feedwater/auxiliary feedwater tee to pipe welds, and base metal adjacent to each weld for a distance of two wall thicknesses. These welds are volumetrically examined by the ultrasonic method and supplemented with radiographic examination when specified by Engineering Programs.

The results of the examination are submitted to Engineering Programs for evaluation and trending of flaw sizes and growth rates. The results of this examination are included in the ISI Site Final Report discussed in 0-SI-DXI-000-114.4.

**1.2.1 AUGMENTED REQUIREMENTS SUMMARY:**

- A. Source Document: Incident Investigation (II) No. II-S-92-027
- B. Associated Document: NRC Bulletin 79-13: Revision 1, Cracking in Feedwater System Piping.
- C. Frequency: Inspection of the 4 inch feedwater/auxiliary feedwater reducer-to-pipe welds and the associated base metal are to the following schedule unless otherwise revised or waived by Engineering Programs.
  - 1. Loops 2 and 4 are to be inspected each even numbered outage. Initial inspection performed during Cycle 6 Refueling Outage.
  - 2. Loops 1 and 3 are to be inspected each odd numbered outage. Initial inspection performed during Cycle 7 Refueling Outage.
- D. Purpose: To identify potential thermal fatigue cracking in pipe to nozzle butt welds or adjoining piping material.
- E. Scope: The 4 inch feedwater/auxiliary feedwater reducer to pipe welds and the associated base metal for a distance of two wall thicknesses unless otherwise revised or waived by Engineering Programs.
- F. Method: Volumetrically examined by the ultrasonic method and supplemented with radiographic examination when specified by Engineering Programs.

<b>SQN</b> <b>Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM</b> <b>UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4</b> <b>Rev. 0000</b> <b>Page 280 of 359</b>
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**1.2.1 AUGMENTED REQUIREMENTS SUMMARY: (continued)**

- G. Industry Code or Standard: ASME Section XI, 2007 Edition with the 2008 Addenda, IWC-3514, for Class 2 welds.
- H. Acceptance Criteria or Standard: No evidence of cracks detected in the examined welds or base material.
- I. Reporting Requirements: The results of the examination are submitted to Engineering Programs for evaluation and trending of flaw sizes and growth rates. The results of this examination are included in the ISI Site Final Report discussed in 0-SI-DXI-000-114.4.
- J. Regulatory Basis: Based upon issues identified in NRC Bulletin 79-13: Revision 1, Cracking in Feedwater System Piping.

**2.0 REACTOR COOLANT PUMP FLYWHEEL**

Responsible Organization: Engineering Programs

In lieu of Regulatory Guide 1.14 Position C.4.b(1) and C.4.b(2), a qualified in-place ultrasonic examination over the volume from the inner bore of the flywheel to the circle one-half of the outer radius or a surface examination (magnetic particle and/or liquid penetrant) of exposed surfaces of the removed flywheels may be conducted at approximately 20-year intervals coinciding with the Inservice Inspection, ISI, schedule as required by ASME Section XI per Technical Specification Change TS-01-13. The original 10-year interval was changed to 20-year intervals per Technical Specification Change TS-04-02. This examination is performed in accordance with and satisfies SQN Technical Specification 5.5.5.

The flywheel consists of 2 plates, approximately 5 inches and 8 inches thick, bolted together. Each plate is fabricated from vacuum degassed A-533, GR. B, Class 1, steel.

For the 20-year exam, the IDs shall be:

RCP Motor S/N - SUR (i.e., 4S-81P352 - SUR)

**2.1.1 AUGMENTED REQUIREMENTS SUMMARY**

- A. Source Document: Technical Specification Section 5.5.5, FSAR Subsection 5.2.6

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**2.1.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

- B. Associated Document:
  - 1. Regulatory Guide 1.14, Revision 1, August 1975
  - 2. TSTF-421, "Revision to RCP Flywheel Inspection Program (WCAP-15666)"
- C. Frequency: 20-Year Intervals
- D. Purpose: Identification of cracks in the base material especially cracks emanating from structural discontinuities. Cracking causes a concern about high-energy missiles inside containment that could potentially damage, and cause the simultaneous failure of multiple trains of redundant safety-related systems.
- E. Scope: Inner bore of the flywheel to the circle one-half of the outer radius OR exposed surfaces of the removed flywheel.
- F. Method: Qualified in-place ultrasonic examination over the volume from the inner bore of the flywheel to the circle one-half of the outer radius: OR, surface examination (magnetic particle and/or liquid penetrant) of exposed surfaces of the removed flywheel.
- G. Industry Code or Standard: ASME B&PV Code Section XI, Subarticle IWA-2200 (RG 1.14, para.4.b(3))
- H. Acceptance Criteria or Standard:
  - 1. Ultrasonic Examination - Equivalent to ASME B&PV Code Section III, Class 1 Vessels
  - 2. Surface Examination – No identification of cracks.
- I. Reporting Requirements: This augmented examination does not require a special report unless the examination reveals a flaw. If the examination and evaluation indicate an increase in flaw size or growth rate greater than predicted for the service life of the flywheel, the results of the examination and evaluation should be submitted to Engineering Mechanical Design Engineering and the NRC for evaluation. Refer to Regulatory Guide 1.14 for information to be included. The examination results shall be included in the ISI Site Final Report discussed in 0-SI-DXI-000-114.4.
- J. Regulatory Basis: None

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**3.0 RPV NOZZLE CLADDING**

Responsible Organization: Engineering Programs

By memorandum from David E. Labarge NRC to O.D. Kingsley, TVA dated March 15, 1994 (L44 940322 006) Sequoyah Nuclear Plant, Units 1 and 2 Technical Specifications Requirement 4.4.10.b were amended to remove Surveillance Requirement 4.4.10.b. **[C.1]** The amendments remove the surveillance requirement to perform reactor vessel nozzle inspections at the end of each 20-year inspection interval subject to the commitments to perform the augmented ISI examination as stated below.

The Unit 1 augmented RPV nozzle cladding examinations cannot be deleted from the ISI Program unless the NRC is notified. TVA plans to submit a request to NRC to de-commit from those requirements prior to the next scheduled examination.

History:

A special preservice examination of the reactor vessel nozzles was conducted to evaluate the extent of underclad cracking. The examination utilized a 70° angle beam and 0° beam manual contact technique. All indications found were demonstrated to be acceptable in accordance with ASME Code Section XI criteria. (Reference FSAR Section 5.4.4.1)

TVA performed a second examination of the Unit 1 reactor vessel nozzle cladding near the end of SQN second 10-year ISI interval during U1C14. The examination was performed over the same cladged nozzle area equivalent to the area examined during the Unit 1 Cycle 6 refueling outage. References S57 020401 800 and L18 051005 000.

TVA submitted request for alternative 13-ISI-1 and 13-ISI-2 to the NRC to extend the inspection frequency for the reactor vessel nozzle cladding examination to 20 years to coincide with the Category B-A and B-D Exam frequency described in 13-ISI-1 and 13-ISI-2.

**3.1 AUGMENTED REQUIREMENTS SUMMARY**

- A. Source Document: Amendment No. 177 to Unit 1 Technical Specifications (reference TVA's commitments made by letter dated February 22, 1994.)
- B. Associated Documents:
  - 1. NPG-SPP-03.3

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**3.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

2. L44 940322 006
3. S57 020401 800
4. L18 051005 000
5. FSAR Section 5.4.4.1
6. Relief Request 13-ISI-1

C. Frequency: The augmented exams are:

1. The examinations will be at a 20-year frequency in conjunction with the reactor vessel examinations. The examinations will be performed near the end of the 10-year ISI Interval.
2. The above commitments shall NOT be removed from the Unit 1, ISI Program without notifying NRC.

D. Purpose: Identification and assessment of underclad cracking in reactor vessel nozzles.

E. Scope: The augmented exams are:

1. The volumetric examinations of the reactor pressure vessel nozzles will be performed over the same cladded nozzle areas required by ASME Section XI.
2. All of the detected flaws will be sized regardless of the percent of Distance Amplitude Correction Curve (DAC).

F. Method: TVA has committed to the following requirements:

1. The ultrasonic technique for future examinations shall be at least as sensitive as that used to conduct the examinations during the Unit 1 Cycle 6 refueling outage. [C.1]
2. The volumetric examinations of the reactor pressure vessel nozzles will be performed over the same cladded nozzle areas required by ASME Section XI.

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**3.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

- 3. The examinations performed during the Unit 1 Cycle 6 refueling outage shall serve as the baseline for future examinations. [C.1]
- 4. The examinations will be performed near the end of the 10-year ISI Interval. [C.1]
- 5. All of the detected flaws will be sized regardless of the percent of Distance Amplitude Correction Curve (DAC). [C.1]
- G. Industry Code or Standard: ASME B&PV Section XI, 2007 Edition with the 2008 Addenda Code.
- H. Acceptance Criteria or Standard: ASME Section XI, 2007 Edition with the 2008 Addenda.
- I. Reporting Requirement: The results of the examination shall be submitted to NRC via the ISI Summary Report discussed in 0-SI-DXI-000-114.4.
- J. Regulatory Basis: March 15, 1994 letter from David E. Labarge NRC to O.D. Kingsley, TVA (L44 940322 006, ML013330167), implementing Amendment No. 177 to Unit 1 Technical Specifications in favor of the subject augmented examinations (reference TVA's commitments made February 22, 1994.)

**4.0 CONTROL ROD GUIDE TUBE FLEXURES (Historical Information Only)**

Responsible Organization: Engineering Programs

No augmented examinations are being performed on the control rod guide tube flexures in the third interval. This examination is no longer required. **This section is being maintained for history only.**

**5.0 THIMBLE TUBE GUIDE**

Responsible Organization: Systems Engineering - Instrument/Controls and Electrical (ICE)

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**5.0 THIMBLE TUBE GUIDE (continued)**

Due to the potential thinning of thimble tube guides as reported on NRC Bulletin 88-09 and Information Notice No. 87-44 supplement 1, TVA performed an augmented examination of the thimble tubes using Eddy Current Examination (ET) during the Unit 1 Cycle 4 refueling outage. Background information documents(R. W. Fortenberry's July 21, 1988 memorandum to S. J. Smith (S57 880721 821), J. F. Murdock's June 3, 1988 memorandum to J. B. Hosmer (L29 880531 914), P.G. Trudel's February 27, 1989 memorandum to M. J. Burzynski (B25 890227 002) and Design Change Notice Drawing Deviation F-07706 (B85 911197 124), P.G. Trudel April 20, 1998 memorandum to M.J. Burzynski (B25 900420 008).

During U1R17, 15 thimble tube guides were replaced with Chrome-hardened tube guides for increased wear resistance.

All thimble tubes shall be examined each refueling outage, unless otherwise revised or waived by ICE.

Organization performing examinations shall provide results to Engineering Programs to be included in the ISI Site Final Report discussed in 0-SI-DXI-000-114.3.

**5.1 AUGMENTED REQUIREMENTS SUMMARY**

A. Source Document:

1. NRC Bulletin 88-09
2. Information Notice No. 87-44

B. Associated Document:

1. S57 960208 934
2. B38 040322 801
3. L29 880531 914
4. B25 890227 002
5. B85 911107 124
6. B25 900420 008



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**5.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

7. CEB-GEN-88PR01 Rev.1

- C. Frequency: Each Refueling Outage
- D. Purpose: Identification of potential thinning of thimble tube guides
- E. Scope: All thimble tubes
- F. Method:Eddy Current
- G. Industry Code or Standard: IE Bulletin 88-09
- H. Acceptance Criteria or Standard: Greater than or equal to 80%-plug or replace, less that 80% but greater than or equal to 60%-Reposition thimble tube at least 2 inched into an area where wall loss is less than 30%, Less than 60%-Acceptable for next fuel cycle operation. Obstructed tubes which cannot be cleared so as to allow Eddy Current wall loss measurement shall be plugged or replaced prior to return to operation.
- I. Reporting Requirements: A report of results shall be provided to ICE and Engineering Programs to be included in the ISI Site Final Report discussed in 0-SI-DXI-000-114.4.
- J. Regulatory Basis:
  - 1. NRC Bulletin 88-09
  - 2. Information Notice No. 87-44

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**6.0 EXAMINATION OF PIPING CONNECTED TO THE REACTOR  
COOLANT SYSTEM DUE TO THERMAL STRESSES**

Responsible Organization: Engineering Programs/Civil Design

In response to NRC Bulletins 88-08 and 88-08 Supplement 1 TVA performs examinations of piping segments of unisolable piping attached to the RCS suspected of being susceptible to cracking due to the potential thermal stresses; (i.e., thermal fatigue cracking). TVA will perform augmented examinations of the areas noted during the intervals as listed below, unless otherwise revised or waived by Engineering Programs. Additional welds and/or examination techniques may be added by Engineering Programs where further evaluations indicate a potential for thermal stratification. (see memorandum B25 931129 001)

History:

In response to NRC Bulletin due to the potential thermal stresses on unisolable piping attached to the RCS (see NRC Bulletin 88-08), TVA examined the following areas:

- the four 1.5-inch high head injection lines,
- the 2-inch pressurizer spray line from the charging path,
- the 3-inch alternate charging path, and
- the 3-inch normal charging path.

During Cycle 3 shutdown period all of the welds up to the first valve were PT examined, and the 3-inch line was UT examined. The SQN Project Engineer prepared a report to Licensing, who in turn prepared a report to the NRC. (See memorandums B29 880906 008, S08 880830 843, L44 880824 802, and B25 880819 014.)

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**6.0 EXAMINATION OF PIPING CONNECTED TO THE REACTOR**  
**COOLANT SYSTEM DUE TO THERMAL STRESSES (continued)**

Due to the assessments concluded in Incident Investigation (II) No. II-S-92-027 of the steam generator nozzle transition section cracking problem and NRC Bulletin 88-08, similar conditions were evaluated for the Chemical and Volume Control System (CVCS), Safety Injection System (SIS) and Reactor Coolant System (RCS). Potential for cracking in these systems, in particular the Alternate Charging Line, are the cases that resulted in the cracking of welds at Farley (NRC Bulletin 88-08) and the elbow at Tihange (NRC Bulletin 88-08, Supplement 1). The thermal cycling stresses can be quite severe at these locations with leakage across the closed FCVs, and it is possible for a crack to initiate and grow substantially in a single fuel cycle.

As some of the fatigue crack mechanisms are much more likely than others to occur and result in crack development, a graded approach regarding examination frequency has been recommended by Engineering Programs. This graded approach couples the likelihood of occurrence with the severity of the postulated event. Some of these welds and adjacent base metal were baseline examined during the Unit 1 forced outage due to the feedwater transition piece cracking problem.

Following U2C7, this augmented section was revised on March 17, 1997 to remove the supplemental PT examinations, replaced the PT examinations with a UT examination, and removed the socket welded fitting elbows 1-SI-1606/1607 ELBOW, 1-SI-1610/1611 ELBOW, 1-SI-1693/1694 ELBOW, 1-SI-1697/1698 ELBOW and 1-CVC-2599/2600 ELBOW from the augmented section for examination.

**6.1 AUGMENTED REQUIREMENTS SUMMARY**

**A. Source Document:**

1. NRC Bulletin 88-08 (Farley) and NRC Bulletin 88-08 Supplement 1 (Tihange) - Thermal Stresses in Piping Connected to Reactor Cooling Systems
2. NRC Bulletin 88-11 - Pressurizer Surge Line Thermal Stratification

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**6.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

3. MRP-146 - Materials Reliability Program: Management of Thermal Fatigue in Normally Stagnant Non-Isolable Reactor Coolant System Branch Lines.  
(MRP-146 augments TVA's evaluation of NRC Bulletin 88-08. TVA Calculation SCG-2M-0030 has been revised to address MRP-146 requirements).
4. MRP-192, "Assessment of RHR Mixing Tee Thermal Fatigue in PWR Plants", Revision 1.

**B. Associated Document:**

1. Incident Investigation (II) No. II-S-92-027
2. B29 880906 008
3. S08 880830 843
4. L44 880824 802
5. B25 880819 014
6. B25 931129 001
7. ASME Section XI, 2007 Edition with the 2008 Addenda
8. B85081112001, 002, 003, and 004, PER 131277
9. Calculation SCG-2M-0030

**C. Frequency:** See Section 6.2 through 6.6

**D. Purpose:** Detection of cracking resulting from thermal fatigue.

**E. Scope:** TVA will perform augmented examinations of the areas noted during the intervals as listed in Section 6.2 through 6.6, unless otherwise revised or waived by Engineering Programs. Additional welds and/or examination techniques may be added by Engineering Programs where further evaluations indicate a potential for thermal stratification. (See memorandum B25 931129 001).

**F. Method:** Examinations will be performed to the methods and requirements of the associated MRP guidance document.

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**6.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

G. Industry Code or Standard:

1. ASME Section XI, 2007 Edition with the 2008 Addenda
2. MRP-146 - Materials Reliability Program for Management of Thermal Fatigue in Normally Stagnant Non-Isolable Reactor Coolant System Branch Lines, Revision 1.
3. MRP-146S - Management of Thermal Fatigue in Normally Stagnant Non-Isolable Reactor Coolant System Branch Lines - Supplemental Guidance
4. MRP-192, "Assessment of RHR Mixing Tee Thermal Fatigue in PWR Plants", Revision 1.

H. Acceptance Criteria or Standard:

1. Circumferential Butt Welds and Fittings - ASME Section XI 2007 Edition with the 2008 Addenda, IWB-3514 and IWC-3514, for Class 1 and 2 welds, respectively.
2. Socket Welds – SQN Engineering Programs shall determine the acceptability of any crack-like indications.

I. Reporting Requirements: The results of examinations shall be submitted to SQN Engineering Programs for evaluation and trending. The results of this examination shall be included in the ISI Site Final Report discussed in 0-SI-DXI-000-114.4.

J. Regulatory Basis:

1. NRC Bulletin 88-08 (Farley) and NRC Bulletin 88-08 Supplement 1 (Tihange) - Thermal Stresses in Piping Connected to Reactor Cooling Systems.
2. NRC Bulletin 88-011 - Pressurizer Surge Line Thermal Stratification.

**6.2 NORMAL AND ALTERNATE CHARGING**

During the Fourth Interval, examination of Cold Leg Loop 1 and Cold Leg Loop 4 CVC (circumferential butt) welds and fittings shall be performed during the inspection interval as noted below.

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**6.2      NORMAL AND ALTERNATE CHARGING (continued)**

- A. Normal charging, Cold Leg loop 4 - Welds 1-CVCF-246 and 1-CVCS-414, and fitting 1-CVCF-246/CVCS-414 EL: Between U1C6 and U1C14, these welds were examined each even numbered RFO. Starting with U1C14, the examination frequency is every sixth refueling outage (RFO) i.e., C14, C20, C26, etc.
- B. Alternate Charging, Cold Leg Loop 1 - Welds 1-CVCF-213 and 1-CVCF-214, and fitting 1-CVCF-213/214 EL: Starting with U1C16, the examinations shall be performed every outage. (Between U1C7 and U1C16, these welds were examined each odd numbered RFO.)

**6.3      PRESSURIZER SURGE LINE**

Examination of pressurizer surge line (circumferential butt welds), welds RC-33 and RC-35 shall be performed during the inspection interval as noted below: (Reference NRC Bulletin 88-11.)

- A. Pressurizer surge line, Weld RC-33, shall be inspected every sixth refueling outage beginning with U1R18 of the Third interval. Prior to U1R18 the pressurizer surge line, Weld RC-33, was inspected every fourth refueling outage beginning U1R10 of the second interval. Previous examinations of Weld RC-33 have achieved less than 90% coverage due to the weld configuration (pipe-to-nozzle). The examinations were performed in U1R10, U1R14, U1R15, and U1R18.
- B. Pressurizer surge line, Weld RC-35 shall be inspected at least every sixth refueling outage beginning with U1R17. RC-35 was previously inspected every fourth refueling outage beginning with U1R12, but was overlaid during the U1R15 as part of the Alloy 600 mitigation plan and is now RC-35A-OL. This weld may also be examined under Augmented Category 14.0. When scheduling, consider the potential of dual credit examinations.

**6.4      COLD LEG SAFETY INJECTION SOCKET WELDS**

Following U1R17, examination of these socket weld locations is no longer required. **This section is maintained for historical purposes only.** Previously, each Cold Leg Loop was examined every fourth RFO.

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**6.4 COLD LEG SAFETY INJECTION SOCKET WELDS (continued)**

- A. Cold Leg Loop 1 - SI-1605, SI-1606, and SI-1607
- B. Cold Leg Loop 2 - SI-1610, SI-1611, and SI-1612
- C. Cold Leg Loop 3 - SI-1692, SI-1693, and SI-1694
- D. Cold Leg Loop 4 - SI-1697, SI-1698, and SI-1699

**6.5 1.5 INCH SAFETY INJECTION LINE CONNECTIONS TO RCS**

Following June 1, 2016, a one time inspection of 1.5 inch safety injection line branch connections is required per MRP-146 for thermal fatigue management. This is for management of fatigue resulting from the interaction of thermally stratified fluids in reactor coolant system piping. Interim Guidance MRP 2015-019 provides examination requirements for susceptible welds SI-1608, SI-1609, SI-1695, SI-1696. These welds are on 1.5 inch safety injection piping that is in the Up Horizontal configuration. The examination volume shall include the pipe to nozzle butt weld and the vertical pipe base metal up to two pipe diameters above the weld.

**6.6 AUXILIARY SPRAY SOCKET WELDS**

Following U1R17, examination of these socket weld locations are no longer required. **This section is maintained for historical purposes only.** Between RFO6 and RFO15, examinations of the Auxiliary Spray line (CVC socket welds) CVC-2599, CVC-2600 and CVC-2601 were performed each refueling outage. After RFO15 the examinations were performed every fourth RFO.

**7.0 PRESSURIZER RELIEF LINE REPAIR WELDS AND ADJOINING AREAS**

Responsible Organization: Engineering Programs

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**7.0 PRESSURIZER RELIEF LINE REPAIR WELDS AND ADJOINING AREAS (continued)**

The augmented examination requirements of the pressurizer relief line (draw bead welds) are included in the ISI Program. The pressurizer relief line repair welds (RCF-24P and RCF-24H) and adjoining areas were examined in accordance with TVA procedures using improved ultrasonic detection and evaluation procedures prior to entering MODE 4 whenever the plant has been in cold shutdown for 72 hours or more if the examination had not been performed in the previous six months. When these 6-month period examinations found the piping free of unacceptable indications for 3 successive inspections, the inspection interval was extended to 36 months intervals (12 months to coincide with a schedule refueling outage). When these 36-month period examinations found the piping free of unacceptable indications for 3 successive inspections, the inspection interval was extended to 80-month periods. The procedures were qualified by demonstrating proficiency in detecting Intergranular Stress Corrosion Cracking (IGSCC). All future examinations of the pressurizer relief line repair welds will be performed using procedures with ultrasonic sensitivities equivalent to those required for detecting IGSCC. Examination boundary after U1C7 will be full volume at a distance on the pipe equal to 2 pipe wall thicknesses from the weld. The report shall be submitted with the ISI Site Final Report discussed in 0-SI-DXI-000-114.3. See examination history below.

**Examination Schedule**

10/20/1991 Start of first 80-month period

09/21/1995 (RFO 7 ~ 48 months) See Note 1

10/27/2001 (RFO11 ~ 73 months) See Note 1

10/28/2004 (RFO13 ~ 36 months) See Note 2

10/07/2010 (RFO17 ~ 72 months) See Note 3

09/15/2016 (RFO21 ~ 71 months)

1) RCF-24P and RCF-24H were examined in RFO 7 (9/21/95)(~ 48 months) and were examined in RFO 11 (10/27/01 ~ 73 months) to coincide with Unit 1 RFO in lieu of the 80 month examination (10/91 - 4/98) initial projected schedule.

2) RCF-24P and RCF-24H were examined in RFO 13 (10/28/04 ~ 36 months) in lieu of the 80 month examination (10/01 - 10/07) initial projected schedule.



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**7.0 PRESSURIZER RELIEF LINE REPAIR WELDS AND ADJOINING AREAS (continued)**

3) RCF-24P and RCF-24H were examined in RFO 17 (10/10/10 ~ 72 months) to coincide with Unit 1 RFO in lieu of the 80 month examination schedule.

**7.1 AUGMENTED REQUIREMENTS SUMMARY**

A. Source Document:

B. Associated Document:

C. Frequency:

1. The examinations are required prior to entering MODE 4 whenever the plant has been in COLD SHUTDOWN for 72 hours or more if the examination has not been performed in the previous 6 months.
2. In the event these 6-month period examinations find the piping free of unacceptable indications for 3 successive inspections, the inspection interval shall be extended to 36 month intervals ( $\pm$  12 months to coincide with a scheduled refueling outage).
3. In the event these 36-month period examinations find the piping free of unacceptable indications for 3 successive inspections, the inspection interval shall be extended to 80-month periods.
4. The next examination is scheduled for 09/15/2016 (RFO 21)

D. Purpose: Examination of the repair welds of the pressurizer relief line (draw bead welds) and adjoining areas of the pressurizer for evidence of IGSCC.

E. Scope: The pressurizer relief line repair welds (RCF-24P and RCF-24H) and adjoining areas of the pressurizer. Examination boundary after U1C7 will be full volume.

F. Method: All examinations of the pressurizer relief line repair welds will be performed using procedures with ultrasonic sensitivities equivalent to those required for detecting IGSCC.

G. Industry Code or Standard: See Method.

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**7.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

- H. Acceptance Criteria or Standard: No presence of IGSCC detected in the examination area.
- I. Reporting Requirements: The report shall be submitted with the ISI Site Final Report discussed in 0-SI-DXI-000-114.4.
- J. Regulatory Basis: None

**8.0 SAFETY INJECTION AND RHR WELDS AND ADJOINING AREAS, AND RI-ISI REGION 3 WELDS (Historical Information Only)**

Responsible Organization: Engineering Programs/Civil Design

All scheduled examinations have been completed with no indications detected. No further examinations are required. **This section is maintained for history only.**

**9.0 REACTOR COOLANT PUMP SUPPORT (Historical Information Only)**

Responsible Organization: Civil Design

This augmented examination is no longer required following U1C11. Refer to memorandum B39 030710 001. **The following information is being retained for history only.**

**10.0 STEAM GENERATOR CLASS 2 UPPER SUPPORT (Historical Information Only)**

Responsible Organization: Civil Design

This augmented examination is no longer required following the U1 Steam Generator replacement. Refer to memorandum B39 030708 001. **The following information is being retained for history only.**

**11.0 NUCLEAR EXPERIENCE REVIEW (NER) ITEM SER 00-001**

Responsible Organization: Civil Design

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**11.0 NUCLEAR EXPERIENCE REVIEW (NER) ITEM SER 00-001**  
**(continued)**

By augmented NDE request from Civil Design dated February 28, 2001, the NER Item SER 00-001 review requires examination of several Residual Heat Removal System piping circumferential and longitudinal welds. These examinations were performed during U1C11, U1C14, U1C17. Civil Design evaluated the need for future examinations in PER 541687 and determined these examinations need a minimum inspection period of 6 years with provisions for extending the duration to 10 years. The 10 year schedule requires a review of past operating history to provide anticipated future conditions. A subsequent evaluation determined the schedule could be extended to a 10 year frequency. Types of flaws anticipated are cracks initiating on the inside diameter due to thermal transient fatigue. The area most highly suspected to contain a flaw is the longitudinal and circumferential welds and heat affected area. There is a low probability of a flaw existing.

The RHR piping will be considered operable per the Technical Specifications during the augmented ISI examinations.

**11.1 AUGMENTED REQUIREMENTS SUMMARY**

- A. Source Document: NER SER 00-001
- B. Associated Document: B39 010228 001
- C. Frequency: Civil Design evaluated the need for future examinations in PER 541687 and determined these examinations need a minimum inspection period of 6 years with provisions for extending the duration to 10 years. The 10 year schedule requires a review of past operating history to provide anticipated future conditions. A subsequent evaluation determined the schedule could be extended to a 10-year frequency.
- D. Purpose: Assessment of subject welds for cracks initiating on the inside diameter due to thermal transient fatigue. The area most highly suspected to contain a flaw is the longitudinal and circumferential welds and heat affected area.
- E. Scope:
  - 1. Examine 100% of the circumferential and longitudinal welds (RHRF-041, RHRS-072, and RHRS-071-LS), on the reducing elbow downstream of valve 1-FCV-74-33, elevation 709'0".

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**11.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

2. Examine 100% of the circumferential and longitudinal welds.
3. (RHRS-073, RHRF-065, and RHRS-072-LS), on the 12"x12"x8" tee attached to the reducing elbow.
4. Examine the longitudinal weld (RHRS-072-LS) on the next connecting and adjacent 12"x12"x8" tee.
5. Examine 100% of the circumferential and longitudinal welds (SIF-007 and RHRS-100-LS) on the 8"x8"x8" tee at the Safety Injection tie in located at elevation 700'-0" downstream of RHR HX 1B and valve 1-FCV-74-28.
6. Examine 100% of the circumferential and longitudinal welds (SIF-001 and RHRS-065-LS) on the 8"x8"x8" tee at the Safety Injection tie in located at elevation 698'-5" downstream of RHR HX 1A and valve 1-FCV-74-16.
7. The support clamp for supports 1RHRH-438 and 1RHRH-439 covers the circumferential weld between the two tees and the longitudinal weld. Since the entire weld must be examined, the support clamp must be disabled and temporarily removed. Work Order (WO) instructions for installation of the temporary support will be provided by Civil Design. The instructions provided below must be followed in the order shown.
  - a. Remove the insulation in the area of the weld and the location of the temporary support.
  - b. Perform the NDE on all required exposed accessible welds with supports 1RHRH-438 and 1RHRH-439 in-tact and unaltered.
  - c. Install the temporary support per engineering instructions provided in WO.
  - d. Remove the support clamp for supports 1RHRH-438 and 1RHRH-439 in accordance with the WO.
  - e. Complete the NDE on the remaining welds.
  - f. Restore supports 1RHRH-438 and 1RHRH-439 in accordance with the WO.
  - g. Remove the temporary support from the piping in accordance with the WO.

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**11.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

- h. Restore piping insulation.
- F. Method: Ultrasonic (UT) examination method is to be used. The extent of examination shall be in accordance with ASME Section XI, 2007 Edition with the 2008 Addenda, Figure IWC-2500-7 where accessible. Component geometry may prevent full examination.
- G. Industry Code or Standard: ASME Section XI, 2007 Edition with the 2008 Addenda
- H. Acceptance Criteria or Standard: ASME Section XI, 2007 Edition with the 2008 Addenda, IWC-3514 for Class 2 welds
- I. Reporting Requirements: Results and any examination limitations shall be submitted to Civil Design for evaluation. Report any indication of thermal fatigue cracking to Civil Design immediately. The results of these examinations shall be included in the ISI Site Final Report discussed in 0-SI-DXI-000-114.4.
- J. Regulatory Basis: NER SER 00-001

**12.0 REACTOR PRESSURE VESSEL CLOSURE HEAD AND HEAD PENETRATIONS**

Responsible Organization: Engineering Programs

**12.1 ASME Code Case N-729-1**

In response to leaks and nozzle cracking in PWR plants, the NRC issued an Order on February 11, 2003 entitled, "Issuance of Order Establishing Interim Inspection Requirements for Reactor Pressure Vessel Heads at Pressurized Water Reactors." The NRC Order has since been superseded by ASME Code Case (CC) N-729-1 as conditioned by 10CFR 50.55a. The visual, surface, and volumetric examinations and examination frequencies are ASME Code requirements, in accordance with 10CFR 50.55a, and will be performed in accordance with Code Case N-729-1 as conditioned by 10 CFR 50.55a.

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**12.1.1 AUGMENTED REQUIREMENTS SUMMARY**

- A. Source Document: ASME CC N-729-1, "Alternative Examination Requirements for PWR Reactor Vessel Upper Heads With Nozzles Having Pressure-Retaining Partial-Penetration Welds, Section XI, Division 1" (Approval Date: March 28, 2006), with the conditions in 10 CFR 50.55a(g)(6)(ii)(D).
- B. Associated Document:
  - 1. 10 CFR 50.55a(g)(6)(ii)(D)
  - 2. B38080421801
  - 3. Drawing 541F980
  - 4. B88080421801
  - 5. PER 127129
- C. Frequency:
  - 1. The examinations listed in Table 1 of CC N-729-2 shall be performed completely, once, as a baseline examination. These examinations shall include all nozzles.
  - 2. Inservice examination frequencies are based on calculated RIY (Reinspection Years calculation compliant with paragraph 2410 of CC N-729-1) and the result of previous examinations. Per 10 CFR 50.55a(g)(6)(ii)(D)(5), if flaws attributed to PWSCC have been identified, whether acceptable or not for continued service under Paragraphs -3130 or -3140 of ASME CC N-729-1, the re-inspection interval must be each refueling outage.
  - 3. Note 9 of the CC shall not be implemented [10 CFR 50.55a(g)(6)(ii)(D)(2)]
- D. Purpose: Assess the present of PWSCC in reactor vessel upper heads with nozzles install with pressure-retaining partial penetration welds.
- E. Scope:
  - 1. Visual Examinations - Outer surface of the Upper Reactor Vessel Head defined by Figure 1 of CC N-729-1.

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**12.1.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

2. Volumetric/Surface Examinations - Partial penetration welds the Nozzles and the Upper Reactor Vessel Head.

**NOTE**

Appendix I, Analysis Procedure for Alternative Examination Area or Volume Definition, of ASME CC N-729-1 must not be implemented without prior NRC approval. [10 CFR 50.55a(g)(6)(ii)(D)(6)]

F. Method:

1. Visual examination areas defined by Figure 1 on CC N-729-1 of the outer surface of the Reactor Vessel Head. The visual examinations are as required by Note 4 of CC N-729-1; i.e., a VE (Enhanced Visual ) examination every third outage and a VT-2 examination, as specified by the requirements of Note 4, each of the two (2) intervening outage.
2. Volumetric and/or surface examinations of essentially 100 percent of the required volume or equivalent surface examination of essentially 100 percent of the subject J-groove welds. A demonstrated volumetric or surface leak path assessment through all J-groove welds shall be performed. If a surface examination is being substituted for a volumetric examination of a portion of a penetration nozzle that is below the toe of the J-groove weld, the surface examination shall be of the inside and outside wetted surface of the penetration nozzle not examined volumetrically. [10 CFR 50.55a(g)(6)(ii)(D)(3)]

- G. Industry Code or Standard: ASME Section XI, 2007 Edition with the 2008 Addenda as supplemented by 10 CFR 50.55a(g)(6)(ii)(D)(4) which restricts the use of Section XI, Appendix VIII requirements to ASME Section XI, 2004 Edition for the use of CC N-729-1. [10 CFR 50.55a(g)(6)(ii)(D)(4)]
- H. Acceptance Criteria or Standard: Acceptance shall be as specified by code case paragraph -3130 and -3140. Additionally, if flaws attributed to PWSCC have been identified, whether acceptable or not for continued service under Paragraphs -3130 or -3140 of ASME Code Case N-729-1, the re-inspection interval must be each refueling outage instead of the re-inspection intervals required by Table 1, Note (8), of ASME Code Case N-729-1. [50.55a(g)(6)(ii)(D)(5)]

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**12.1.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

- I. Reporting Requirements: The results of these examinations shall be included in the ISI Site Final Report discussed in 0-SI-DXI-000-114.4.
- J. Regulatory Basis:
  - 1. 10 CFR 50.55a(g)(6)(ii)(D) "Augmented ISI requirements: Reactor vessel head inspections
  - 2. Additionally, as part of the volumetric examination of the RPV head penetrations, the CRDM Head Penetration Adaptor areas where the thermal sleeve centering pads (guide pads) are located shall be examined to the extent possible for evidence of any thinning. Areas of thinning shall be identified and documented.

**12.2 Thermal Sleeve Examination for Evidence of Material Thinning**

In parallel with the volumetric examination or surface examination to be performed on the RPV head penetration nozzles, the thermal sleeve shall be examined for evidence of material thinning in accordance with Westinghouse Technical Bulletin TB 07-2. The exam should inspect the sleeved penetrations in the two outermost concentric rows of penetrations. Additionally, as part of the volumetric examination of the RPV head penetrations, the CRDM Head Penetration Adaptor areas where the thermal sleeve centering pads (guide pads) are located shall be examined to the extent possible for evidence of any thinning. Areas of thinning shall be identified and documented.

**12.2.1 AUGMENTED REQUIREMENTS SUMMARY**

- A. Source Document: Westinghouse Technical Bulletin 07-2, Revision 1
- B. Associated Document: None
- C. Frequency: Performed in parallel with the volumetric examination or surface examination performed on the RPV head penetration nozzles.



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**12.2.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

- D. Purpose: To determine the presence of wear in areas extending up to as much as 360° around the thermal sleeve where the thermal sleeve exits the bottom end of the control rod drive mechanism (CRDM) head adapter tube. The wear maybe presence on the inside diameter (ID) of the CRDM head adapter tube or on the outside diameter (OD) of the sleeve. Additionally, the CRDM Head Penetration Adaptor areas where the thermal sleeve centering pads (guide pads) are located shall be examined to the extent possible for evidence of any thinning.
- E. Scope: The exam should inspect the sleeved penetrations and centering pads in the two outermost concentric rows of penetrations.
- F. Method: Ultrasonic Examination
- G. Industry Code or Standard: None
- H. Acceptance Criteria or Standard: Evidence of wear shall be identified and documented.
- I. Reporting Requirements: The results of the examinations shall be reported to Programs Engineering.
- J. Regulatory Basis: None

**13.0 REACTOR COOLANT PUMP SHAFTS**

Responsible Organization: Component Maintenance Optimization

The RCP shaft augmented examination requirements are in accordance with an augmented examination request from Component Engineering dated November 26, 2002.

**History:**

The augmented examination was developed because of the two previous instances of RCP shaft cracking at SQN. The augmented RCP shaft examinations will be performed each refueling outage beginning with the U1C12 refueling outage. Beginning with C15, RCP shafts will only be examined when RCP seal maintenance is performed.

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**13.1 AUGMENTED REQUIREMENTS SUMMARY**

- A. Source Document: Request from Component Engineering dated November 26, 2002.
- B. Associated Document:
  - 1. S57021126800
  - 2. S57060307800
  - 3. B85080402002
- C. Frequency: RCP shafts will only be examined when RCP seal maintenance is performed.
- D. Purpose: Identification of anticipated shaft cracks due to high-cycle fatigue. The areas most highly suspected to contain the flaws are approximately 118 inches from the top of the shaft at the pin hole locations where the thermal sleeve is secured.
- E. Scope: The entire length of the pump shaft from the top surface of the shaft is to be examined.
- F. Method: Ultrasonic examinations will be performed in accordance with NDE procedure N-UT-80 and/or N-UT-83.
- G. Industry Code or Standard: None
- H. Acceptance Criteria or Standard: Absence of cracking
- I. Reporting Requirements: Examination results and any examination limitations shall be submitted to Component Engineering. Report any indication of cracking to Component Engineering immediately. A graphic illustration of the ultrasonic responses from the shaft at 90 degree increments shall be provided for information. The results of these examinations shall be included in the ISI Site Final Report discussed in 0-SI-DXI-000-114.4.
- J. Regulatory Basis: None

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**14.0 EXAMINATION OF ALLOY 82/182 WELD LOCATIONS IN**  
**PRIMARY COMPONENTS**

Responsible Organization: Engineering Programs

WCAP-15988-NP identified generic guidance in developing plant-specific Boric Acid Corrosion Control Programs (BACCP) and procedures. As part of the guidance, PWSCC susceptible Alloy 600 and Alloy 82/182 weld locations in borated systems were identified as a potential leakage path. 10 CFR 50.55a(g)(6)(ii)(F) requires licensees of existing, operating pressurized-water reactors as of July 21, 2011, to implement the requirements of ASME Code Case (CC) N-770-1, subject to the conditions specified in paragraphs (g)(6)(ii)(F)(2) through (10), by the first refueling outage after August 22, 2011. SQN is implementing the requirements of ASME CC N-770-1, subject to the conditions specified in paragraphs (g)(6)(ii)(F)(2) through (g)(6)(ii)(F)(10). This augmented inspection plan addresses Alloy 600 welds fabricated from Alloy 82/182 weld metal, as an alternative to the previously approved Risk-Informed inservice inspection plan.

**History:**

Starting in the first period of the third ISI interval, TVA performed augmented ultrasonic examinations of the Alloy 600/ Alloy 82/182 nozzle-to-safe end weld locations listed below, in accordance with MRP 2003-039 and NRC Bulletin 2004-01. During U1R15, SQN installed full structural weld overlays on all Alloy 600 pressurizer nozzle locations.

Sequoyah performed PDI UT examinations, to the maximum extent possible, on the six safe end-to-pipe welds prior to installation of the structural weld overlays. However, examinations of the Alloy 82/182 nozzle-to-safe end welds were not performed due to the nozzle configuration. Since the required coverage could not be obtained prior to installation of the overlay, the welds cannot be classified as "uncracked" per ASME Code Case N-770-1, and the new overlay welds must be inspected per ASME Code Case N-770-1 Item Number "F". The mitigated welds have been added to the ISI program as new welds in accordance with ASME Section XI, IWB-2412(b).

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**14.0 EXAMINATION OF ALLOY 82/182 WELD LOCATIONS IN**  
**PRIMARY COMPONENTS (continued)**

As required, pre-service examinations were performed during U1R15, as a baseline. These examinations were performed prior to issuance of Code Case N-770-1, but meet the requirements of Table 1 and Section XI, Appendix VIII, and are therefore credited for Code Case compliance. In addition, SQN committed to the NRC in Request for Relief G-RR-1 to perform volumetric examinations in accordance with ASME Section XI, 2004 Edition through the 2005 Addenda, Nonmandatory Appendix Q paragraphs, Q-4300(a) through (f) and Q-4310. Q-4300(a), and subsequently ASME Code Case N-770-1, require the overlays to be reexamined in the first or second refueling outage following the installation. These subsequent examinations of the pressurizer weld overlays were performed during the U1C17 RFO using PDI qualified procedures, with acceptance criteria in accordance with ASME Section XI, 2001 Edition through the 2003 Addenda, IWB-3514. No indication of crack growth or new cracking was identified. Based on this history, the overlay welds are now inspected on a sample basis, as required for ASME Code Case N-770-1 Item Number "F" welds, at a rate of 25% per interval.

**14.1 AUGMENTED REQUIREMENTS SUMMARY**

A. Source Document:

1. ASME CC N-770-1, "Additional Examinations for PWR Pressure Retaining Welds in Class 1 Components Fabricated with Alloy 600/82/182 Materials"
2. 10 CFR 50.55a(g)(6)(ii)(F) "Augmented ISI requirements: Examination requirements for Class 1 piping and nozzle dissimilar-metal butt welds"
3. Request for Relief G-RR-1

B. Associated Document:

1. B38 030623 801
2. B38 040318 808
3. B38 040719 800
4. WCAP-15988-NP
5. MRP 2003-039

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**14.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

6. NRC Bulletin 2004-01
  7. ASME Section XI 2007 Edition with the 2008 Addenda
  8. B38 051209 800
  9. L44 070131 007 and L44 061023 001
  10. Relief Request G-RR-1, L44 060616 001
  11. BP-257
  12. ASME Section XI, 2004 Edition with the 2005 Addenda
  13. CRP-ENG-08-002 (Focused Self-Assessment Alloy 600)
  14. PER 152348
  15. L29 070719 801
  16. ASME Code Case N-770-1
- C. Frequency: The overlay welds are inspected on a sample basis, as required for ASME CC N-770-1 Item Number "F" welds, at a rate of 25% per interval. Upper Head Injection welds are examined at a once per interval basis.
- D. Purpose: Detection or unacceptable growth of known PWSCC Cracking
- E. Scope: See the following Table. In addition to the welds in the table, four (4) associated with the Upper Head Injections components, UPIW-23, -24, -25, & -26 are also included in the examination scopes as Inspection Items B. The initial examinations of the welds were performed in U1R20.

Component Identifier	Alloy 600/82/182 Location	Method	PRZ Nozzle to Vessel Weld	PZR Nozzle to Safe-end Weld (OVERLAID)	PZR Safe-end to Pipe Weld (OVERLAID)
RCF-23A-OL	Spray nozzle to safe end weld	UT	RCW-15	RCW-24-SE	RCF-23
RCF-45B-OL	Spray nozzle to safe end weld	UT	RCW-16	RCW-25-SE	RCF-45

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**14.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

RCF-24Q-OL	Spray nozzle to safe end weld	UT	RCW-17	RCW-26-SE	RCF-24
RCF-36B-OL	Spray nozzle to safe end weld	UT	RCW-18	RCW-27-SE	RCF-36
RCF-42B-OL	Spray nozzle to safe end weld	UT	RCW-19	RCW-28-SE	RCF-42
RCF-35A-OL	Spray nozzle to safe end weld	UT	RCW-21	RCW-29-SE	RCF-35*

\*This weld is identified in the database as RC-35. Because of existing data reports identifying this weld as RC-35, the database remains unchanged.

Notes:

- 1) CC N-770-1 requires the 25% sample to consist of the same welds in the same sequence during successive intervals to the extent practical, provided the 25% sample contains the welds that experience the highest operating temperature in the Inspection Item. Since all subject weld locations are in the pressurizer heads, the operating temperatures will be approximately equal.
- 2) Those welds not included in the 25% sample shall be examined prior to the end of the mitigation evaluation period if the plant is to be operated beyond that time.
- 3) For each overlay in the 25% sample that has a design life of less than 10 yrs., at least one inservice examination shall be performed prior to exceeding the life of the overlay.
- 4) The six mitigated pressurizer nozzle-to-safe end welds were previously identified as Category B-J welds, therefore deferral is not permitted.
- 5) Scheduling of weld RC-35A-OL should consider Augmented Examination category 6.2 as this weld is included in both populations.

- F. Method: Ultrasonic Examination procedures and personnel qualification in accordance with Appendix VIII of ASME Section XI.
- G. Industry Code or Standard: ASME Section XI, 2007 Edition with the 2008 Addenda
- H. Acceptance Criteria or Standard: Code Case paragraphs -3130 and -3140. IWB-3514 of the ASME Section XI, 2007 Edition with the 2008 Addenda as supplemented by Nonmandatory Appendix Q, if applicable weld overlays are applied.
- I. Reporting Requirements:

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**14.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

1. Report of any indication of PWSCC flaws to Programs Engineering immediately. The results of these examinations shall be included in the ISI Site Final Report discussed in 0-SI-DXI-000-114.4.
  2. For any mitigated weld whose volumetric examination detects growth of existing flaws in the required examination volume that exceed the previous IWB-3600 flaw evaluations or new flaws, a report summarizing the evaluation, along with inputs, methodologies, assumptions, and causes of the new flaw or flaw growth is to be provided to the NRC prior to the weld being placed in service other than modes 5 or 6. [10 CFR 50.55a(g)(6)(ii)(F)(6)].
- J. Regulatory Basis: 10 CFR 50.55a(g)(6)(ii)(F) "Augmented ISI requirements: Examination requirements for Class 1 piping and nozzle dissimilar-metal butt welds"

**15.0 EXAMINATION OF REACTOR VESSEL HEAD VENT PIPE**  
**(Historical Information Only)**

Responsible Organization: Civil Engineering

All scheduled examinations have been completed with no indications detected. No further examinations are required. **This section is maintained for history only.**

**16.0 REACTOR PRESSURE VESSEL LOWER HEAD PENETRATIONS**

Responsible Organization: Engineering Programs

This section addresses the requirements of Code Case N-722-1 as amended by 10CFR50.55a(g)(6)(ii)(E). Of the items listed in Table 1 of Code Case N-722-1, only item B15.80, RPV bottom mounted instrument penetrations are applicable for examination.

The remaining Reactor Vessel pressure retaining welds listed in Code Case N-722-1 do not contain Alloy 600/82/182 materials. The items associated with the Steam Generators and piping do not contain Alloy 600/82/182 materials. For the Pressurizer, items B15.150, B15.160 and B15.170 have had a structural weld overlay installed and the Alloy 600/82/182 material is no longer relied upon for pressure boundary integrity. [10 CFR 50.55a(g)(6)(ii)(E)(1)]

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**AUGMENTED EXAMINATIONS**  
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**16.1 AUGMENTED REQUIREMENTS SUMMARY**

- A. Source Document: ASME CC N-722-1, "Additional Examinations for PWR Pressure Retaining Welds in Class 1 Components Fabricated with Alloy 600/82/182 Materials"
- B. Associated Document: 10 CFR 50.55a(g)(6)(ii)(E)
- C. Frequency: Every other refueling outage in accordance with CC N-722-1.
- D. Purpose: Identification of the presence of pressure boundary leakage.
- E. Scope: CC N-722-1, Item B15.80, RPV bottom mounted instrument penetrations
- F. Method:
  - 1. Direct VE of the bare metal surface, or alternatively,
  - 2. VE performed with the insulation in place using remote visual examination equipment that provides resolution of the component metal surface equivalent to a bare metal direct VE.
- G. Industry Code or Standard: ASME Section XI 2007 Edition with the 2008 Addenda
- H. Acceptance Criteria or Standard: IWB-3522, absence of evidence of pressure leakage.
- I. Reporting Requirements: Evidence of pressure leakage shall be reported immediately to Programs Engineering. The results of this examination are included in the ISI Site Final Report discussed in 0-SI-DXI-000-114.4.
- J. Regulatory Basis: 10 CFR 50.55a(g)(6)(ii)(E)

**17.0 RPV INTERNALS LIFT RIG AND HEAD LIFT RIG**

Responsible Organization: Engineering Programs



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**17.0 RPV INTERNALS LIFT RIG AND HEAD LIFT RIG (continued)**

This section addresses the requirements of NUREG 0612, Control of Heavy Loads at Nuclear Power Plants. In response to guidelines for inspection and testing set forth in NUREG 0612, SQN proposed to use acoustic emission examination. On October 1, 1991, the NRC approved the use of acoustic emission examination at SQN. (A02 911007 002)

History: For the third interval, this exam was performed in U1R18 on March 3, 2012.

**17.1 AUGMENTED REQUIREMENTS SUMMARY**

- A. Source Document: NUREG 0612, "Control of Heavy Loads at Nuclear Power Plants"
- B. Associated Document:
  - 1. 0-MI-MIN-000-001.0
  - 2. A27840727010
  - 3. A02911007002
  - 4. FSAR 3.12.4
- C. Frequency: Once every 10 years. The examinations of these components are performed by the Maintenance Department and are not tracked in Ideal Schedule Works®.
- D. Purpose: Assess the presence of cracking and more specifically, fatigue cracking.
- E. Scope:
  - 1. RPV Internals Lift Rig
  - 2. RPV Head Lift Rig
- F. Method: Acoustic Emission Testing
- G. Industry Code or Standard:
- H. Acceptance Criteria or Standard: Absence of any evidence of cracking.

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**17.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

- I. Reporting Requirements: Evidence of cracking shall be reported immediately to Programs Engineering. The results of this examination are included in the ISI Site Final Report discussed in 0-SI-DXI-000-114.4.
- J. Regulatory Basis:
  - 1. FSAR 3.12.4, Control of Heavy Loads Program
  - 2. NUREG-0612

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**17.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

Augmented Examinations Table A									
			First Period		Second Period		Third Period		
COMPONENT	Program Reference Section	Exam Method	Cycle 21	Cycle 22	Cycle 23	Cycle 24	Cycle 25	Cycle 26	REFERENCE DRAWING NUMBER
Feedwater/Aux Feedwater 4-inch Reducer-to-Pipe welds and the Associated Base Metal Loops 2 and 4 (AFWF-172 and AFWF-150)	1.0	UT		X		X		X	CHM-2339-C
Feedwater/Aux Feedwater 4-inch Reducer-to-Pipe welds and the Associated Base Metal Loops 1 and 3 (AFWF-148 and AFWF-188)	1.0	UT	X		X		X		CHM-2339-C
Reactor Coolant Pump Flywheel	2.0	UT, MT	See drawing ISI-0403-C-02 for examination schedule.						ISI-0305-B ISI-0403-C
RPV Nozzle Cladding	3.0	UT	Frequency is once every 20 years to coincide with Reactor Vessel examinations required by Category B-D.						ISI-0504-C
Control Rod Guide Tubes Flexures	4.0	VT-3	No longer required.						ISI-0504-C-10
Thimble Tube Guide	5.0	ET	X	X	X	X	X	X	ISI-0504-C-14
Examination of Circ. Welds, C/L loop 4: 1-CVCF-246, 1-CVCS-414, and fitting 1-CVCF-246/CVCS-414 EL	6.0	UT						X	CHM-2335-C-1
Examination of Circ. Welds, C/L loop 1 1-CVCF-213, 1-CVCF-214, and fitting 1-CVCF-213/214 EL	6.0	UT	X	X	X	X	X	X	CHM-2335-C-1

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**17.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

Augmented Examinations Table A									
			First Period		Second Period		Third Period		
COMPONENT	Program Reference Section	Exam Method	Cycle 21	Cycle 22	Cycle 23	Cycle 24	Cycle 25	Cycle 26	REFERENCE DRAWING NUMBER
Examination of Aux Spray Socket Welds 1-CVC-2599, 1-CVC-2600, and 1-CVC-2601	6.0	UT	No longer required						CHM-2335-C- 1
PRZ Relief line repair Welds and adjoining areas RCF-24P and RCF-24H	7.0	UT	x			x			ISI-0369-C-3
Safety Injection and RHR Welds and Adjoining Areas 1-RHRF-107, 1-SIF-146, 1-SIF-185, 1-SIF-196, and 1-SIF-198	8.0	N/A	No longer required						CHM-2333-C CHM-2336-C
Safety Injection and RHR Welds and Adjoining Areas RHRF-018, RHRF-022, SIF-002, SIF-005,	8.0	UT	No longer required						CHM-2333-C- 3 CHM-2333-C- 6 CHM-2336-C- 3 CHM-2336-C- 5 ISI-0434-C-5
RHRF-057, RHRF- 066, SIF-029, SIF-031, and SIF-088	8.0	UT	No longer required						
Reactor Coolant Pump Support RCP# 1, 2, 3 and 4	9.0	N/A	No longer required						ISI-0325-C-1
Steam Generator Class 2 Upper Support SG# 1, 2, 3 and 4	10.0	N/A	No longer required						ISI-0399-C-2

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**17.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

Augmented Examinations Table A									
			First Period		Second Period		Third Period		
COMPONENT	Program Reference Section	Exam Method	Cycle 21	Cycle 22	Cycle 23	Cycle 24	Cycle 25	Cycle 26	REFERENCE DRAWING NUMBER
Examination of circumferential and longitudinal welds due to SER 00-001  RHRF-041 RHRS-072 RHRS-071-LS RHRS-073 RHRF-065 RHRS-072-LS RHRS-073-LS SIF-007 RHRS-100-LS SIF-001 RHRS-065-LS	11.0	UT				X			CHM-2333-C-3 CHM-2336-C-3
Reactor Vessel Head	12.0	Visual, VE	X			X			ISI-0504-C-10
Reactor Vessel Head	12.0	Visual, VT-2		X	X		X	X	ISI-0504-C-10
Reactor Vessel Closure Head Penetrations	12.0 12.2	Volumetric Surface					X		ISI-0504-C-10
Reactor Coolant Pump Shafts	13.0	UT	See note 1						ISI-0325-C-3
RCW-24-SE RCW-25-SE RCW-26-SE RCW-27-SE RCW-28-SE RCW-29-SE	14.0	VT-2 Enhanced	No longer required following U1R15 weld overlay installation						ISI-0394-C-01

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**17.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

Augmented Examinations Table A									
			First Period		Second Period		Third Period		
COMPONENT	Program Reference Section	Exam Method	Cycle 21	Cycle 22	Cycle 23	Cycle 24	Cycle 25	Cycle 26	REFERENCE DRAWING NUMBER
PZR Nozzle Overlays RCF-23A-OL RC-35A-OL RCF-45B-OL RCF-24Q-OL RCF-36B-OL RCF-42B-OL	14.0	UT						X (Can be any two (2) of the six PZR nozzle overlay s)	ISI-0394-C-01 ISI-0369-C-02 ISI-0482-C-01 ISI-0369-C-03
Upper Head Injection Welds UPIW-23 UPIW-24 UPIW-25 UPIW-26	14.0	UT						X	ISI-0504-C-12
Reactor Vessel Head Vent Pipe VENT-1P	15.0	PT, UT or ECT	No longer required following U1R15 inspections						ISI-0504-C-11
Reactor Vessel Head Vent Pipe VENT-1P	15.0	VT-1	No longer required following U1R15 inspections						ISI-0504-C-11
Reactor Vessel Bottom Mounted Instrumentation Penetrations	16.0	Visual, VE		X		X		X	ISI-0504-C-14
RPV Internals Lift Rig and Head Lift Rig	17.0	Acoustic Emission					X		See 0-MI-MIN- 000-001.0

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**17.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

<b>NOTES</b>
1) RCP shafts will be examined when RCP seal maintenance is performed.



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**Augmented Examinations**  
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**AUGMENTED EXAMINATIONS**

Augmented examinations are performed in addition to ASME Section XI code requirements. The augmented examinations may be required by the NRC or be self-imposed by TVA. Typical sources include generic letters, IE Bulletins, technical specifications, vendor recommendations, and industry experience. Table A of this attachment provides a schedule for augmented examinations. Responsible organizations requesting inclusion of augmented examinations in this section shall submit a written request to the Engineering Programs representative (see 0-SI-DXI-000-114.4, Section 7.12).

When augmented examinations of welds do not interrogate greater than 90% of the examination volume, the basis and/or requirements for performing the exam shall be reviewed to determine if the limited exam requires a UFSAR change, 50.59 screening review, or request for relief to ensure acceptability.

When examination of components fall into the scheduled examination requirements of Inservice Inspection (ISI) and also satisfy augmented requirements, then credit for both requirements may be taken by one examination; ( i.e., duplicate examinations are not required).

For additional information on Historical Augmented Examination Third Interval requirements refer to 0-SI-DXI-000-114.3.

**1.0 FEEDWATER NOZZLE-TO-PIPE WELDS AND ADJACENT  
PIPE/FITTINGS AND NOZZLE AREAS/AUXILIARY FEEDWATER**

Responsible Organization: Engineering Programs

Due to the safety-related ramifications and the assessments concluded in Incident Investigation (II) No. II-S-92-027 of the steam generator nozzle transition section cracking problem and potential for cracking in adjacent components within the feedwater piping system, TVA performed augmented examinations as determined by Engineering Programs. This shall include the four feedwater nozzle transition pieces and associated piping components with inspections being performed during the intervals as listed below.

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**1.0 FEEDWATER NOZZLE-TO-PIPE WELDS AND ADJACENT PIPE/FITTINGS AND NOZZLE AREAS/AUXILIARY FEEDWATER (continued)**

The augmented examination of the Loop 1 steam generator nozzle transition and feedwater piping shall include 100 percent volume of the transition pieces, the nozzle-to-transition piece welds, transition piece-to-elbow welds, 4-inch feedwater/auxiliary feedwater tee-to-pipe welds, and base metal adjacent to each weld for a distance of two wall thicknesses. These welds are volumetrically examined by the ultrasonic method and supplemented with radiographic examination when specified by Engineering Programs.

**1.1 FEEDWATER NOZZLE TRANSITION PIECE -Loop 1**

Inspection of the transition pieces, nozzle-to-transition piece welds, transition piece-to-elbow welds, and the associated base metal shall be scheduled for inspection at each consecutive refueling outage unless otherwise revised or waived by Engineering Programs. Feedwater loops 2, 3, and 4 have been replaced with the feedwater thermal liner and will be examined to ASME Section XI requirements with no additional examination requirements or examination volume coverage. (See Section B Retired Augmented Examinations No. 1.1 for Loops 2, 3, and 4). Loop 1 will be examined in accordance with the requirements of this Augmented examination section.

**History:** The following is a summary of the examinations conducted during successive cycles.

The requirements of NRC IE Bulletin 79-13 were satisfied during the Unit 2 Cycle 1 outage.

<u>Cycle</u>	<u>Examination Areas</u>
1	IE Bulletin 79-13 completed
2	1 nozzle-to-pipe weld and adjacent pipe and nozzle area
3	All nozzle transition section pieces and welds
4	All nozzle transition section pieces and welds
5	All nozzle transition section pieces and welds
6	All nozzle transition section pieces and welds for loops 1 and 4. Loops 2 and 3 replaced in U2C6 with the feedwater thermal liner design.

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**Augmented Examinations  
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**1.1 FEEDWATER NOZZLE TRANSITION PIECE -Loop 1 (continued)**

- 7 - 18 All nozzle transition section pieces and welds for loops 1 and 4.
- 18 - 19 All nozzle transition section pieces and welds for loop 1 only.

**1.1.1 AUGMENTED REQUIREMENTS SUMMARY**

- A. Source Document: Incident Investigation (II) No. II-S-92-027
- B. Associated Document:
  - 1. NRC Bulletin 79-13: Revision 1, Cracking in Feedwater System Piping
  - 2. B38121126802
  - 3. PER 643412
- C. Frequency: Each refueling cycle
- D. Purpose: To identify potential thermal fatigue cracking in areas of interest.
- E. Scope: The Unit 2 steam generator nozzle transition and feedwater piping including 100 percent volume of the transition pieces, the nozzle-to-transition piece welds, transition piece-to-elbow welds, and base metal adjacent to each weld for a distance of two wall thicknesses, unless otherwise revised or waived by Engineering Programs.
- F. Method: Volumetrically examined by the ultrasonic method and supplemented with radiographic examination when specified by Engineering Programs.
- G. Industry Code or Standard: ASME Section XI 2007 Edition with the 2008 Addenda, IWC-3514, for Class 2 welds.
- H. Acceptance Criteria or Standard: No evidence of cracks detected in the examined welds or base material.
- I. Reporting Requirements: The results of the examination are submitted to Engineering Programs for evaluation and trending of flaw sizes and growth rates. The results of this examination are included in the ISI Site Final Report discussed in 0-SI-DXI-000-114.4.

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**Augmented Examinations  
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**1.1.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

- J. Regulatory Basis: Based upon issues identified in NRC Bulletin 79-13: Revision 1, Cracking in Feedwater System Piping.

**1.2 4-INCH FEEDWATER/AUXILIARY FEEDWATER TEE TO PIPE WELDS AND ADJACENT BASE METAL**

Also included is 100 percent volume of the transition pieces, the nozzle-to-transition piece welds, transition piece-to-elbow welds, both 4-inch feedwater/auxiliary feedwater tee-to-pipe welds, and base metal adjacent to each weld for a distance of two wall thicknesses.

**1.2.1 AUGMENTED REQUIREMENTS SUMMARY**

- A. Source Document: Incident Investigation (II) No. II-S-92-027
- B. Associated Document: NRC Bulletin 79-13: Revision 1, Cracking in Feedwater System Piping
- C. Frequency:
  - 1. Loop 2 is to be inspected each outage. Initial inspection performed during Cycle 6 refueling outage.
  - 2. Loop 4 is to be inspected each even numbered outage. Initial inspection performed during Cycle 6 Refueling Outage.
  - 3. Loops 1 and 3 are to be inspected each odd numbered outage. Initial inspection performed during Cycle 7 Refueling Outage.
- D. Purpose: To identify potential thermal fatigue cracking in pipe-to-nozzle butt welds or adjunct piping material.
- E. Scope: The 4-inch feedwater/auxiliary feedwater reducer-to-pipe welds and the associated base metal for a distance of two wall thicknesses unless otherwise revised or waived by Engineering Programs.
- F. Method: Volumetrically examined by the ultrasonic method and supplemented with radiographic examination when specified by Engineering Programs.
- G. Industry Code or Standard: ASME Section XI 2007 Edition with the 2008 Addenda, IWC-3514, for Class 2 welds.

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**Augmented Examinations**  
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**1.2.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

- H. Reporting Requirements: The results of the examination are submitted to Engineering Programs for evaluation and trending of flaw sizes and growth rates. The results of this examination are included in the ISI Site Final Report discussed in 0-SI-DXI-000-114.4.
- I. Regulatory Basis: Based upon issues identified in NRC Bulletin 79-13: Revision 1, Cracking in Feedwater System Piping.

**2.0 REACTOR COOLANT PUMP FLYWHEEL**

Responsible Organization: Engineering Programs

In lieu of Regulatory Guide 1.14 Position C.4.b(1) and C.4.b(2), a qualified in-place ultrasonic examination over the volume from the inner bore of the flywheel to the circle one-half of the outer radius or a surface examination (magnetic particle and/or liquid penetrant) of exposed surfaces of the removed flywheels may be conducted at 20-year intervals coinciding with the Inservice Inspection Interval schedule as required by ASME Section XI per Technical Specification Change TS-01-13. Starting with revision 21 of this procedure the 10-year interval was changed to a 20-year interval per Technical Specification Change TS-04-02. This examination is performed in accordance with and satisfies SQN Technical Specification 5.5.5. The flywheel consists of 2 plates, approximately 5 inches and 8 inches thick, bolted together. Each plate is fabricated from vacuum degassed A-533, GR. B, Class 1, steel.

For the 20-year exam, the IDs shall be:

RCP Motor S/N - SUR (i.e., 4S-81P352 - SUR)

**2.1 AUGMENTED REQUIREMENTS SUMMARY**

- A. Source Document:
- B. Associated Document:
  - 1. Regulatory Guide 1.14, Revision 1, August 1975
  - 2. TSTF-421, "Revision to RCP Flywheel Inspection Program (WCAP-15666)"

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**2.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

- C. Frequency: 20 year intervals with the examinations required by ASME Section XI, Category B-D (the provisions of SR 4.0.2 are not applicable). See Drawing ISI-0403-C-02.
- D. Purpose: Identification of cracks in the base material especially cracks emanating from such structural discontinuities. Cracking causes a concern about high-energy missiles inside containment that could potentially damage, and cause the simultaneous failure of multiple trains of redundant safety-related systems.
- E. Scope:
  - 1. Inner bore of the flywheel to the circle one-half of the outer radius, OR
  - 2. Exposed surfaces of the removed flywheel
- F. Method:
  - 1. Qualified in-place ultrasonic examination over the volume from the inner bore of the flywheel to the circle one-half of the outer radius, OR
  - 2. Surface examination (magnetic particle and/or liquid penetrant) of exposed surfaces of the removed flywheel.
- G. Industry Code or Standard: ASME B&PV Code Section XI, Subarticle IWA-2200 (RG 1.14, para.4.b(3))
- H. Acceptance Criteria or Standard:
  - 1. Ultrasonic Examination - Equivalent to ASME B&PV Code Section III, Class 1 Vessels (FSAR 5.2.6).
  - 2. Surface Examination – No identification of cracks.
- I. Reporting Requirements: This augmented examination does not require a special report unless the examination reveals a flaw. If the examination and evaluation indicate an increase in flaw size or growth rate greater than predicted for the service life of the flywheel, the results of the examination and evaluation should be submitted to Engineering Mechanical Design Engineering and the NRC for evaluation. Refer to Regulatory Guide 1.14 for information to be included. The examination results shall be included in the ISI Site Final Report discussed in 0-SI-DXI-000-114.4.

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**2.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

J. Regulatory Basis:

**3.0 RPV NOZZLE CLADDING**

Responsible Organization: Engineering Programs

By memorandum from David E. Labarge NRC to O.D. Kingsley, TVA dated March 15, 1994 (L44 940322 006) Sequoyah Nuclear Plant, Units 1 and 2 Technical Specifications Requirement 4.4.10.b were amended to remove Surveillance Requirement 4.4.10.b [C.1]. The amendments remove the surveillance requirement to perform reactor vessel nozzle inspections at the end of each 20-year inspection interval subject to the commitments to perform the augmented ISI examination as stated below.

The Unit 2 augmented RPV nozzle cladding examinations cannot be deleted from the ISI Program unless NRC is notified. TVA plans to submit a request to NRC to de-commit from these requirements prior to the next scheduled examination in U2C19.

History:

A special preservice examination of the reactor vessel nozzles was conducted to evaluate the extent of underclad cracking. The examination utilized a 70° angle beam and 0° beam manual contact technique. All indications found were demonstrated to be acceptable in accordance with ASME Section XI criteria. (Reference FSAR Section 5.4.4.1).

TVA performed a second examination of the Unit 2 reactor vessel nozzle cladding during U2C13 at the end of SQN second 10-year ISI Interval. The extent of examination was the length and depth sizing of all the flaws identified during the previous examination in U2C6 using a NDE procedure qualified in accordance with ASME Section XI, Appendix VIII, Supplement 4. (Refer To B38 050412 800)

**3.1 AUGMENTED REQUIREMENTS SUMMARY**

A. Source Document:

B. Associated Document:

1. NPG-SPP-03.3

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**3.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

2. L44 940322 006
3. S57 020401 800
4. Relief Request 13-ISI-2

C. Frequency:

1. The examinations will be at a 20-year frequency in conjunction with the reactor vessel examinations.
2. The examinations will be performed near the end of the 10-year ISI Interval.
3. The above commitments shall NOT be removed from the Unit 2, ISI Program without notifying NRC.

D. Purpose: Identification and Assessment of Underclad Cracking in Reactor Vessel Nozzles

E. Scope:

1. The volumetric examinations of the reactor pressure vessel nozzles will be performed over the same cladded nozzle areas required by ASME Section XI.
2. All of the detected flaws will be sized regardless of the percent of Distance Amplitude Correction Curve (DAC).

F. Method:

1. The ultrasonic technique for the Unit 2 Cycle 6 refueling outage examinations and future examinations will be at least as sensitive as that used to conduct the examinations during the Unit 1 Cycle 6 refueling outage.[C.1]
2. The volumetric examinations of the reactor pressure vessel nozzles will be performed over the same cladded nozzle areas required by ASME Section XI.
3. The examinations performed during the Unit 2 Cycle 6 refueling outage shall serve as the baseline for future examinations.[C.1]



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**3.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

- 4. The examinations will be performed near the end of the 10 year ISI Interval.[C.1]
- 5. All of the detected flaws will be sized regardless of the percent of Distance Amplitude Corrective Curve (DAC) [C.1]
- G. Industry Code or Standard: ASME Section XI. 2007 Edition with the 2008 Addenda
- H. Acceptance Criteria or Standard:ASME B&PV Section XI, 2007 Edition with the 2008 Addenda Code.
- I. Reporting Requirements:The results of the examination shall be submitted to NRC via the ISI Summary Report discussed in 0-SI-DXI-000-114.4.
- J. Regulatory Basis: March 15, 1994 letter from David E. Labarge NRC to O.D. Kingsley, TVA (L44 940322 006, ML013330167) implementing Amendment No. 168 to Unit 2 Technical Specifications in favor of the subject augmented examinations (reference TVA's commitments made February 22. 1994).

**4.0 CONTROL ROD GUIDE TUBE FLEXURES (Historical Information Only)**

Responsible Organization: Engineering Programs

No augmented examinations are being performed on the control rod guide tube flexures in the third interval. Due to the removal of the control rod guide tube flexures during the split pin replacement during the U2C11 (DCN D20920A), this augmented examination is no longer required. **This section is being maintained for history only.**

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**5.0 THIMBLE TUBE GUIDE**

Responsible Organization: Systems Engineering- Instrument/Controls and Electrical (ICE)

History:

Due to the potential thinning of thimble tube guides as reported on NRC Bulletin 88-09 and Information Notice No. 87-44 supplement 1, TVA performed an augmented examination of the thimble tubes using Eddy Current Examination (ET) during the Unit 2 Cycle 3 refueling outage. Background information documents (R. W. Fortenberry's July 21, 1988 memorandum to S. J. Smith (S57 880721 821) and J. F. Murdock's June 3, 1988 memorandum to J. B. Hosmer (L29 880531 914), P. G. Trudel's February 27, 1989 memorandum to M. J. Burzynski (B25 890227 002) and Design Change Notice Drawing Deviation F-07706-A (B85 911107 124).

During U2R17, 17 thimble tube guides were replaced with Chrome-hardened tube guides for increased wear resistance.

**5.1 AUGMENTED REQUIREMENTS SUMMARY**

A. Source Document:

1. NRC Bulletin 88-09
2. Information Notice No. 87-44

B. Associated Document:

1. S57 960208 934
2. B38 040322 801
3. S57 880721 821
4. L29 880531 914
5. B25 890227 002
6. B85 911107 124
7. CEB-GEN-88PR01 Rev.1

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**5.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

- C. Frequency: Each Refueling outage
- D. Purpose: Identification of potential thinning of thimble tube guides
- E. Scope: All thimble tubes
- F. Method: Eddy Current
- G. Industry Code or Standard: IE Bulletin 88-09
- H. Acceptance Criteria or Standard: (Reference Document: CEB-GEN-88PR01)
  - 1. Greater than or equal to 80% - plug or replace,
  - 2. less than 80% but greater than or equal to 60% - Reposition thimble tube at least 2 inches into an area where wall loss is less than 30%.
  - 3. Less than 60% - Acceptable for next fuel cycle operation.
  - 4. Obstructed tubes which cannot be cleared so as to allow Eddy Current wall loss measurement shall be plugged or replaced prior to return to operation.
- I. Reporting Requirements: A report of results shall be provided to ICE and Engineering Programs. Engineering Programs to include the results in the ISI Site Final Report discussed in 0-SI-DXI-000-. 114.4
- J. Regulatory Basis:
  - 1. NRC Bulletin 88-09
  - 2. Information Notice No. 87-44

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**6.0 EXAMINATION OF PIPING CONNECTED TO THE REACTOR COOLANT SYSTEM DUE TO THERMAL STRESSES**

Responsible Organization: Engineering Programs/Civil Design Engineering

In response to NRC Bulletins 88-08 and 88-08 Supplement 1 TVA performs examinations of piping segments of unisolable piping attached to the RCS suspected of being susceptible to cracking due to the potential thermal stresses; (i.e., thermal fatigue cracking). TVA will perform augmented examinations of the areas noted during the intervals as listed below, unless otherwise revised or waived by Engineering Programs. Additional welds and/or examination techniques may be added by Engineering Programs where further evaluations indicate a potential for thermal stratification. (see memorandum B25 931129 001)

History:

In response to NRC Bulletin due to the potential thermal stresses on unisolable piping attached to the RCS (see NRC Bulletin 88-08), TVA examined the following areas:

- the four 1.5-inch high head injection lines,
- the 2-inch pressurizer spray line from the charging path,
- the 3-inch alternate charging path, and
- the 3-inch normal charging path.

During Cycle 3 shutdown period all of the welds up to the first valve were PT examined, and the 3-inch line was UT examined. The SQN Project Engineer prepared a report to Licensing, who in turn prepared a report to the NRC. (See memorandums B29 880906 008, S08 880830 843, L44 880824 802, and B25 880819 014.)

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**6.0 EXAMINATION OF PIPING CONNECTED TO THE REACTOR**  
**COOLANT SYSTEM DUE TO THERMAL STRESSES (continued)**

Due to the assessments concluded in Incident Investigation (II) No. II-S-92-027 of the steam generator nozzle transition section cracking problem and NRC Bulletin 88-08, similar conditions were evaluated for the Chemical and Volume Control System (CVCS), Safety Injection System (SIS) and Reactor Coolant System (RCS). Potential for cracking in these systems, in particular the Alternate Charging Line, are the cases that resulted in the cracking of welds at Farley (NRC Bulletin 88-08) and the elbow at Tihange (NRC Bulletin 88-08, Supplement 1). The thermal cycling stresses can be quite severe at these locations with leakage across the closed FCVs, and it is possible for a crack to initiate and grow substantially in a single fuel cycle.

As some of the fatigue crack mechanisms are much more likely than others to occur and result in crack development, a graded approach regarding examination frequency has been recommended by Engineering Programs. This graded approach couples the likelihood of occurrence with the severity of the postulated event. Some of these welds and adjacent base metal were baseline examined during the Unit 2 Cycle 5 outage due to the Unit 1 feedwater transition piece cracking problem.

Following U2C7, this section was revised on 03/17/1997 in the second interval to remove the supplemental PT examinations, replaced the PT examinations with a UT examination, and removed the socket welded fitting elbows 2-SI-1124/1125 ELBOW, 2-SI-1816A/1817A ELBOW, 2-SI-1895/1896 ELBOW, 2-SI-1899/1900 ELBOW and 2-CVC-1745/1746 ELBOW from the augmented section for examination.

**6.1 AUGMENTED REQUIREMENTS SUMMARY**

**A. Source Document:**

1. NRC Bulletin 88-08 (Farley) and NRC Bulletin 88-08 Supplement 1 (Tihange) - Thermal Stresses in Piping Connected to Reactor Cooling Systems
2. NRC Bulletin 88-11 - Pressurizer Surge Line Thermal Stratification

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**6.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

3. MRP-146 - Materials Reliability Program: Management of Thermal Fatigue in Normally Stagnant Non-Isolable Reactor Coolant System Branch Lines.  
(MRP-146 augments TVA's evaluation of NRC Bulletin 88-08. TVA Calculation SCG-2M-0030 has been revised to address MRP-146 requirements).
4. MRP-192, "Assessment of RHR Mixing Tee Thermal Fatigue in PWR Plants", Revision 1.

**B. Associated Document:**

1. Incident Investigation (II) No. II-S-92-027
2. B29 880906 008
3. S08 880830 843
4. L44 880824 802
5. B25 880819 014
6. B25 931129 001
7. ASME Section XI, 2007 Edition with the 2008 Addenda
8. B85081112001, 002, 003, and 004, PER 131277
9. Calculation SCG-2M-0030

**C. Frequency: See Scope**

**D. Purpose: Detection of cracking resulting from thermal fatigue.**

**E. Scope: TVA will perform augmented examinations of the areas noted during the intervals as listed in Section 6.2 through 6.5, unless otherwise revised or waived by Engineering Programs. Additional welds and/or examination techniques may be added by Engineering Programs where further evaluations indicate a potential for thermal stratification. (See memorandum B25 931129 001).**

**F. Method: Examinations will be performed to the methods and requirements of the associated MRP guidance document**

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**6.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

G. Industry Code or Standard:

1. ASME Section XI, 2007 Edition with the 2008 Addenda
2. MRP-146 - Materials Reliability Program for Management of Thermal Fatigue in Normally Stagnant Non-Isolable Reactor Coolant System Branch Lines, Revision 1.
3. MRP-146S - Management of Thermal Fatigue in Normally Stagnant Non-Isolable Reactor Coolant System Branch Lines - Supplemental Guidance
4. MRP-192, "Assessment of RHR Mixing Tee Thermal Fatigue in PWR Plants", Revision 1.

H. Acceptance Criteria or Standard: Circumferential Butt Welds and Fittings - ASME Section XI 2007 Edition with the 2008 Addenda, IWB-3514 and IWC-3514, for Class 1 and 2 welds, respectively.

I. Reporting Requirements: The results of examinations shall be submitted to SQN Engineering Programs for evaluation and trending. The results of this examination shall be included in the ISI Site Final Report discussed in 0-SI-DXI-000-114.4.

J. Regulatory Basis:

1. NRC Bulletin 88-08 (Farley) and NRC Bulletin 88-08 Supplement 1 (Tihange) - Thermal Stresses in Piping Connected to Reactor Cooling Systems
2. NRC Bulletin 88-011 - Pressurizer Surge Line Thermal Stratification

**6.2 NORMAL AND ALTERNATE CHARGING**

During the second and continuing in the third interval, examination of cold leg Loop 1 and cold leg Loop 4 CVC (circumferential butt) welds and fittings shall be performed during the inspection interval as noted below.

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**6.2 NORMAL AND ALTERNATE CHARGING (continued)**

- A. Normal Charging, Cold Leg loop 4 - Welds CVCF-244E and CVCF-244F, and fitting CVCF-244E/244F EL: Prior to U2C14, these welds were examined each even numbered RFO beginning with RFO 8 of the second interval. The initial examination was performed during E/C forced outage during 1993. Starting with U2C14, the examination frequency is every sixth RFO (i.e., C14, C20, C26, etc.)
- B. Cold Leg Loop 1 - Welds CVCF-213 and CVCF-214, and fitting CVCF-213/214 EL: Starting with U2C16, the examinations shall be performed every outage. (Between RFO7 and RFO16, these welds were examined each odd numbered outage.)

**6.3 PRESSURIZER SURGE LINE**

Examination of pressurizer surge line (circumferential butt welds), welds RC-33 and RC-35C-OL shall be performed during the inspection interval as noted below:  
(Reference NRC Bulletin 88-11.)

- A. Pressurizer surge line, Weld RC-33, shall be examined every sixth refueling outage beginning with U2R18 of the third interval. Prior to U2R18 Pressurizer surge line, Weld RC-33, was examined every fourth refueling outage beginning with U2R10 of the second interval. Previous examinations of Weld RC-33 have achieved 50% coverage due to the weld configuration (pipe-to-tee). The examinations were performed in U2R10, U2R14, and U2R18.
- B. Pressurizer surge line, Weld RC-35C-OL was installed in U2R14. The weld shall be examined at least every sixth refueling outage beginning with U2R16 of the third interval. This weld may also be examined under Augmented Category 14.0. When scheduling, consider the potential of dual credit examinations.

**6.4 COLD LEG SAFETY INJECTION SOCKET WELDS**

Following U1R17, examination of these socket weld locations is no longer required. **This section is maintained for historical purposes only.** Previously, each Cold Leg Loop was examined every fourth RFO.

- A. Cold Leg Loop 1 - SI-1124, SI-1125, and SI-1126:



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**6.4 COLD LEG SAFETY INJECTION SOCKET WELDS (continued)**

- B. Cold Leg Loop 2 - SI-1816A, SI-1817A, and SI-1818A:
- C. Cold Leg Loop 3 - SI-1894, SI-1895, and SI-1896:
- D. Cold Leg Loop 4 - SI-1899, SI-1900, and SI-1901:

**6.5 1.5 INCH SAFETY INJECTION LINE CONNECTIONS TO RCS**

Following June 1, 2016, a one time inspection of 1.5 inch safety injection line branch connections is required per MRP-146 for thermal fatigue management. This is for management of fatigue resulting from the interaction of thermally stratified fluids in reactor coolant system piping. Interim Guidance MRP 2015-019 provides examination requirements for susceptible welds SI-1123, SI-1815, SI-1897, SI-1898. These welds are on 1.5 inch safety injection piping that is in the Up Horizontal configuration. The examination volume shall include the pipe to nozzle butt weld and the vertical pipe base metal up to two pipe diameters above the weld.

**6.6 AUXILIARY SPRAY SOCKET WELDS**

Following U1R17, examination of these socket weld locations is no longer required. **This section is maintained for historical purposes only.** Between RFO6 and RFO15, examinations of the Auxiliary Spray line (CVC socket welds) CVC-1745, CVC-1746, and CVC-1747 were performed each refueling outage. After U2C15 examination were performed every fourth RFO.

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**6.6 AUXILIARY SPRAY SOCKET WELDS (continued)**

References:

1. NRC Bulletin 88-08
2. NRC Bulletin 88-11
3. Incident Investigation (II) No. II-S-92-027
4. B29 880906 008 (Reel and Frame: R1360, 3208, 2)
5. S08 880830 843 (Reel and Frame: R1363, 239, 2)
6. L44 880824 802 (Reel and Frame: R1363, 2271, 8)
7. B25 880819 014 (Reel and Frame: R1343, 2547, 3)
8. B25 931129 001 (Reel and Frame: R4345, 4824, 11)
9. ASME Section XI 2001 Edition 2003 Addenda
10. B85081112001, 002, 003, and 004, PER 131277

**7.0 CENTRIFUGAL CHARGING PUMP INJECTION TANK (CCPIT)**  
**(2-TNK-63-7) WELD BIT-4**

Responsible Organization: Civil Design

By augmented NDE request from Civil Engineering dated July 2, 1996, the Centrifugal Charging Pump Injection Tank (former Boron Injection Tank) is required to be examined due to additional pressure cycles added per DCN S09712)

History:

In 1994, a planar flaw was detected in the bottom head to shell weld of the CCPIT. This flaw was evaluated by Westinghouse Energy Systems and found to be acceptable for the 40 year plant life based on design cyclic loading. Due to the increase in number of design pressure cycles, the flaw must be reevaluated to ensure that the anticipated increase in pressure cycles will NOT propagate the flaw beyond an acceptable depth. The ASME Section XI requirements to examine this component in the next interval could change therefore in order to ensure Design Basis Calculations (SCG-4M-01031 and SQN-DES1-5), these examination requirements are part of the Augmented Section.

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**7.0 CENTRIFUGAL CHARGING PUMP INJECTION TANK (CCPIT)  
(2-TNK-63-7) WELD BIT-4 (continued)**

TVA performed an augmented ultrasonic examination of weld BIT-4 during the first period for the second and third intervals. The examination volume and acceptance criteria were in accordance with the ASME Section XI Code 1989 Edition (Second Interval) and ASME Section XI Code 2001 Edition 2003 Addenda (Third Interval) for Examination Category C-A welds. The planar flaw dimension (length and depth) was compared to previous results by an NDE Level III.

**7.1 AUGMENTED REQUIREMENTS SUMMARY**

- A. Source Document: Augmented NDE request from Civil Engineering dated July 2, 1996.
- B. Associated Document: Design Basis Calculations (SCG-4M-01031 and SQN-DES1-5)
- C. Frequency: First period for the fourth inspection interval.
- D. Purpose: Ultrasonic examination of weld BIT-4 to detect and evaluate known existing flaw assessed initially in 1994.
- E. Scope: Area of interest in Weld BIT-4 of the Centrifugal Charging Pump Injection Tank containing subject planar flaw.
- F. Method: Ultrasonic Examination
- G. Industry Code or Standard: ASME Section XI Code of Record for the current Inspection Interval
- H. Acceptance Criteria or Standard: None. An assessment is made of the planar flaw dimension (length and depth) when compared to previous results.
- I. Reporting Requirements: Results shall be submitted to Civil Design for evaluation and trending. The results of this examination shall be included in the ISI Site Final Report discussed in 0-SI-DXI-000-114.4.
- J. Regulatory Basis: None. Initial assessment of the planar flaw (Westinghouse Energy System Report) found the planar flaw to be acceptable for 40 years. Due to the increase in number of design pressure cycles added per DCN S09712, the flaw must be reevaluated to ensure that the anticipated increase in pressure cycles will NOT propagate the flaw beyond an acceptable depth.

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**8.0 REACTOR COOLANT PUMP SUPPORT (Historical Information Only)**

Responsible Organization: Civil Design

No augmented examinations are being performed on the reactor coolant pump supports in the third interval. **This section is being maintained for history only.** Refer to memorandum B39 030710 001.

**9.0 STEAM GENERATOR CLASS 2 UPPER SUPPORT (Historical Information Only)**

Responsible Organization: Civil Design

This augmented examination is no longer required following the U2 Steam Generator replacement. Refer to PER 745338. **This section is being maintained for history only.**

**10.0 NUCLEAR EXPERIENCE REVIEW (NER) ITEM SER 00-001**

Responsible Organization: Civil Design

By augmented NDE request from Civil Design dated February 28, 2001, the NER SER 00-001 review requires examination of several Residual Heat Removal System piping circumferential and longitudinal welds. These examinations are to be performed during U2C11, U2C14, and U2C17. Civil Design evaluated the need for future examinations in PER 541687 and determined these examinations need a minimum inspection period of 6 years with provisions for extending the duration to 10 years. The 10 year schedule required a review of past operating history to provide anticipated future conditions. A subsequent evaluation determined the schedule could be extended to a 10-year frequency. Types of flaws anticipated are cracks initiating on the inside diameter due to thermal transient fatigue. The area most highly suspected to contain a flaw is the longitudinal and circumferential welds and heat affected area. There is a low probability of a flaw existing.

The RHR piping will be considered operable per the Technical Specifications during the augmented ISI examinations.

**10.1 AUGMENTED REQUIREMENTS SUMMARY**

A. Source Document: NER SER 00-001

<b>SQN</b> <b>Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM</b> <b>UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4</b> <b>Rev. 0000</b> <b>Page 338 of 359</b>
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**10.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

- B. Associated Document: B39 010228 002
- C. Frequency: Examinations are to be performed during U2C11, U2C14, and U2C17. Civil Design evaluated the need for future examinations in PER 541687 and determined these examinations need a minimum inspection period of 6 years with provisions for extending the duration to 10 years. The 10 year schedule required a review of past operating history to provide anticipated future conditions. A subsequent evaluation determined the schedule could be extended to a 10-year frequency.
- D. Purpose: Assessment of subject welds for cracks initiating on the inside diameter due to thermal transient fatigue. The area most highly suspected to contain a flaw is the longitudinal and circumferential welds and heat affected area.
- E. Scope:
  - 1. Examine 100% of the circumferential and longitudinal welds (RHRF-041, RHRS-072 and RHRS-071-LS), on the reducing elbow downstream of valve 2-FCV-74-33, elevation 709'0".
  - 2. Examine 100% of the circumferential and longitudinal welds (RHRS-073, RHRF-065 and RHRS-072-LS), on the 12"x12"x8" tee attached to the reducing elbow.
  - 3. Examine the longitudinal weld (RHRS-073-LS) on the next connecting and adjacent 12"x12"x8" tee.
  - 4. Examine 100% of the circumferential and longitudinal welds (SIF-007 and RHRS-100-LS) on the 8"x8"x8" tee at the Safety Injection tie-in located at elevation 700'-0" downstream of RHR HX 2B and valve 2-FCV-74-28.
  - 5. Examine 100% of the circumferential and longitudinal welds (SIF-001 and RHRS-065-LS) on the 8"x8"x8" tee at the Safety Injection tie-in located at elevation 698'-5" downstream of RHR HX 2A and valve 2-FCV-74-16.

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**10.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

6. The support clamp for supports 2RHRH-438 and 2RHRH-439 covers the circumferential weld between the two tees and the longitudinal weld. Since the entire weld must be examined, the support clamp must be disabled and temporarily removed. Work Order (WO) instructions for installation of the temporary support will be provided by Civil Design. The instructions provided below must be followed in the order shown.
  - a. Remove the insulation in the area of the weld and the location of the temporary support.
  - b. Perform the NDE on all required exposed accessible welds with supports 2RHRH-438 and 2RHRH-439 in-tact and unaltered.
  - c. Install the temporary support per engineering instructions provided in WO.
  - d. Remove the support clamp for supports 2RHRH-438 and 2RHRH-439 in accordance with the WO.
  - e. Complete the NDE on the remaining welds.
  - f. Restore supports 2RHRH-438 and 2RHRH-439 in accordance with the WO.
  - g. Remove the temporary support from the piping in accordance with the WO.
  - h. Restore piping insulation.
- F. Method: Ultrasonic (UT) examination method is to be used. The extent of examination shall be in accordance with ASME Section XI, 2007 Edition with the 2008 Addenda, Figure IWC-2500-7 where accessible. Component geometry may prevent full examination.
- G. Industry Code or Standard: ASME Section XI, 2007 Edition with the 2008 Addenda
- H. Acceptance Criteria or Standard: ASME Section XI, 2007 Edition with the 2008 Addenda, IWC-3514 for Class 2 welds

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**10.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

- I. Reporting Requirements: Results and any examination limitations shall be submitted to Civil Design for evaluation. Report any indication of thermal fatigue cracking to Civil Design immediately. The results of these examinations shall be included in the ISI Site Final Report discussed in 0-SI-DXI-000-114.4.
- J. Regulatory Basis: NER SER 00-001

**11.0 SAFETY INJECTION AND RHR WELDS AND ADJOINING AREAS, AND RI-ISI REGION 3 WELDS**

Responsible Organization: Engineering Programs/Civil Design

All scheduled examinations have been completed with no indications detected. No further examinations are required. **This section is maintained for history only.**

**12.0 REACTOR PRESSURE VESSEL CLOSURE HEAD PENETRATIONS**

Responsible Organization: Engineering Programs

**12.1 ASME Code Case N-729-1**

In response to leaks and nozzle cracking in PWR plants, the NRC issued an Order on February 11, 2003 entitled, "Issuance of Order Establishing Interim Inspection Requirements for Reactor Pressure Vessel Heads at Pressurized Water Reactors." The NRC Order has since been superseded by ASME Code Case (CC) N-729-1 as conditioned by 10CFR 50.55a. The visual, surface, and volumetric examinations and examination frequencies are ASME Code requirements, in accordance with 10CFR 50.55a, and will be performed in accordance with CC N-729-1 as conditioned by 10 CFR 50.55a.

**12.2 AUGMENTED REQUIREMENTS SUMMARY**

- A. Source Document: ASME CC N-729-1, "Alternative Examination Requirements for PWR Reactor Vessel Upper Heads With Nozzles Having Pressure-Retaining Partial-Penetration Welds, Section XI, Division 1" (Approval Date: March 28, 2006), with conditions in 10 CFR 50.55a(g)(6)(ii)(D).
- B. Associated Document:

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**12.2 AUGMENTED REQUIREMENTS SUMMARY (continued)**

1. 10 CFR 50.55a(g)(6)(ii)(D)
2. B38080421801
3. Drawing 541F980
4. B88080421801
5. PER 127129

**C. Frequency:**

1. The examinations listed in Table 1 of CC N-729-2 shall be performed completely, once, as a baseline examination. These examinations shall include all nozzles.
2. Inservice examination frequencies are based on calculated RIY (Reinspection Years calculation compliant with paragraph -2410 of CC N-729-1) and the result of previous examinations. Per 10 CFR 50.55a(g)(6)(ii)(D)(5), if flaws attributed to PWSCC have been identified, whether acceptable or not for continued service under Paragraphs –3130 or –3140 of ASME CC N–729–1, the re-inspection interval must be each refueling outage.
3. Note 9 of the CC shall not be implemented [10 CFR 50.55a(g)(6)(ii)(D)(2)]

**D. Purpose:** Assess the presence of PWSCC in reactor vessel upper heads with nozzles installed with pressure-retaining partial-penetration welds.

**E. Scope:**

1. Visual Examinations - Outer surface of the Upper Reactor Vessel Head defined by Figure 1 of CC N-729-1.
2. Volumetric/Surface Examinations - Partial penetration welds, the Nozzles and the Upper Reactor Vessel Head.
3. Appendix I, Analysis Procedure for Alternative Examination Area or Volume Definition, of ASME CC N–729–1 must not be implemented without prior NRC approval. [10 CFR 50.55a(g)(6)(ii)(D)(6)]

**F. Method:**



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**12.2 AUGMENTED REQUIREMENTS SUMMARY (continued)**

1. Visual examination areas defined by Figure 1 on CC N-729-1 of the outer surface of the Reactor Vessel Head. The visual examinations are as required by Note 4 of CC N-729-1; i.e., a VE (Enhanced Visual ) examination every third outage and a VT-2 examination, as specified by the requirements of Note 4, each of the two (2) intervening outage.
  2. Volumetric and/or surface examinations of essentially 100 percent of the required volume or equivalent surface examination of essentially 100 percent of the subject J-groove welds. A demonstrated volumetric or surface leak path assessment through all J-groove welds shall be performed. If a surface examination is being substituted for a volumetric examination of a portion of a penetration nozzle that is below the toe of the J-groove weld, the surface examination shall be of the inside and outside wetted surface of the penetration nozzle not examined volumetrically.  
(50.55a(g)(6)(ii)(D)(3))
- G. Industry Code or Standard: ASME Section XI 2007 Edition with the 2008 Addenda as supplemented by 10 CFR 50.55a(g)(6)(ii)(D)(4) which restricts the use of Section XI, Appendix VIII requirements to ASME Section XI, 2004 Edition for the use of CC N-729-1. [10 CFR 50.55a(g)(6)(ii)(D)(4)]
- H. Acceptance Criteria or Standard: Acceptance shall be as specified by code case paragraph -3130 and -3140. Additionally, if flaws attributed to PWSCC have been identified, whether acceptable or not for continued service under Paragraphs -3130 or -3140 of ASME Code Case N-729-1, the re-inspection interval must be each refueling outage instead of the re-inspection intervals required by Table 1, Note (8), of ASME Code Case N-729-1.  
[50.55a(g)(6)(ii)(D)(5)]
- I. Reporting Requirements: The results of these examinations shall be included in the ISI Site Final Report discussed in 0-SI-DXI-000-114.4.
- J. Regulatory Basis: 10 CFR 50.55a(g)(6)(ii)(D) "Augmented ISI requirements: Reactor vessel head inspections."

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**12.3 Thermal Sleeve Examination for Evidence of Material Thinning**

In parallel with the volumetric examination or surface examination to be performed on the RPV head penetration nozzles, the thermal sleeve shall be examined for evidence of material thinning in accordance with Westinghouse Technical Bulletin TB 07-2. The exam should inspect the sleeved penetrations in the two outermost concentric rows of penetrations. Additionally, as part of the volumetric examination of the RPV head penetrations, the CRDM Head Penetration Adaptor areas where the thermal sleeve centering pads (guide pads) are located shall be examined to the extent possible for evidence of any thinning. Areas of thinning shall be identified and documented.

**12.4 AUGMENTED REQUIREMENTS SUMMARY**

- A. Source Document: Westinghouse Technical Bulletin 07-2, Revision 1
- B. Associated Document: None
- C. Frequency: Performed in parallel with the volumetric examination or surface examination performed on the RPV head penetration nozzles.
- D. Purpose: To determine the presence of wear in areas extending up to as much as 360° around the thermal sleeve where the thermal sleeve exits the bottom end of the control rod drive mechanism (CRDM) head adapter tube. The wear maybe presence on the inside diameter (ID) of the CRDM head adapter tube or on the outside diameter (OD) of the sleeve. Additionally, the CRDM Head Penetration Adaptor areas where the thermal sleeve centering pads (guide pads) are located shall be examined to the extent possible for evidence of any thinning.
- E. Scope: The exam should inspect the sleeved penetrations in the two outermost concentric rows of penetrations.
- F. Method: Ultrasonic Examination
- G. Industry Code or Standard: None
- H. Acceptance Criteria or Standard: Evidence of wear shall be identified and documented.
- I. Reporting Requirements: The results of the examinations shall be reported to Programs Engineering.

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**12.4 AUGMENTED REQUIREMENTS SUMMARY (continued)**

J. Regulatory Basis: None

**13.0 REACTOR COOLANT PUMP SHAFTS**

Responsible Organization: Component Maintenance Optimization

The RCP shaft augmented examination requirements are in accordance with an augmented examination request from Engineering Programs dated November 26, 2002.

History:

The augmented examination was developed because of the two previous instances of RCP shaft cracking at SQN. The augmented RCP shaft examinations will be performed each refueling outage beginning with the U2C12 refueling outage in the second interval. Beginning with C15, RCP shafts will only be examined when RCP seal maintenance is performed.

**13.1 AUGMENTED REQUIREMENTS SUMMARY**

A. Source Documents: Request from Component Engineering dated November 26, 2002.

B. Associated Document:

1. S57021126800

2. S57060307800

3. B85080402002

C. Frequency: RCP shafts will only be examined when RCP seal maintenance is performed.

D. Purpose: Identification of anticipated shaft cracks due to high cycle fatigue. The areas most highly suspected to contain the flaws are approximately 118 inches from the top of the shaft at the pin hole locations where the thermal sleeve is secured.

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**13.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

- E. Scope: The entire length of the pump shaft from the top surface of the shaft is to be examined.
- F. Method: Ultrasonic examinations will be performed in accordance with NDE procedure N-UT-80 and/or N-UT-83.
- G. Industry Code or Standard: None
- H. Acceptance Criteria or Standard: Absence of cracking
- I. Reporting Requirements: Examination results and any examination limitations shall be submitted to Engineering Programs. Report any indication of cracking to Component Engineering immediately. A graphic illustration of the ultrasonic responses from the shaft at 90 degree increments shall be provided for information. The results of these examinations shall be included in the ISI Site Final Report discussed in 0-SI-DXI-000-114.4.
- J. Regulatory Basis: None

**14.0 EXAMINATION OF ALLOY 82/182 WELD LOCATIONS IN PRIMARY COMPONENTS**

Responsible Organization: Engineering Programs

WCAP-15988-NP identifies generic guidance in developing plant-specific Boric Acid Corrosion Control Programs (BACCP) and procedures. As part of the guidance, PWSCC susceptible Alloy 600 and Alloy 82/182 weld locations in borated systems were identified as a potential leakage path. 10 CFR 50.55a(g)(6)(ii)(D)(F) requires licensees of existing, operating pressurized-water reactors as of July 21, 2011, to implement the requirements of ASME Code Case (CC) N-770-1, subject to the conditions specified in paragraphs (g)(6)(ii)(F)(2) through (10), by the first refueling outage after August 22, 2011. Sequoyah is implementing the requirements of ASME CC N-770-1, subject to the conditions specified in paragraphs (g)(6)(ii)(F)(2) through (g)(6)(ii)(F)(10). This augmented inspection plan addresses Alloy 600 welds fabricated from Alloy 82/182 weld metal, as an alternative to the previously approved Risk-Informed inservice inspection plan.

**History:**

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**14.0 EXAMINATION OF ALLOY 82/182 WELD LOCATIONS IN  
PRIMARY COMPONENTS (continued)**

During U2R14, SQN installed full structural weld overlays on all Alloy 600 pressurizer nozzle locations. Sequoyah performed PDI UT examinations, to the maximum extent possible, on the six safe end-to-pipe welds prior to installation of the structural weld overlays. However, examinations of the Alloy 82/182 nozzle-to-safe end welds were not performed due to the nozzle configuration. Since the required coverage could not be obtained prior to installation of the overlay, the welds cannot be classified as “uncracked” per ASME CC N-770-1, and the new overlay welds must be inspected per ASME CC N-770-1 Item Number “F”. The mitigated welds have been added to the ISI program as new welds in accordance with ASME Section XI, IWB-2412(b).

As required, pre-service examinations were performed during U2R14, as a baseline. These examinations were performed prior to issuance of Code Case N-770-1, but meet the requirements of Table 1 and Section XI, Appendix VIII, and are therefore credited for Code Case compliance. In addition, SQN committed to the NRC in Request for Relief G-RR-1 to perform volumetric examinations in accordance with ASME Section XI, 2004 Edition through the 2005 Addenda, Nonmandatory Appendix Q paragraphs, Q-4300(a) through (f) and Q-4310. Q-4300(a), and subsequently ASME CC N-770-1, require the overlays to be reexamined in the first or second refueling outage following the installation. These subsequent examinations of the pressurizer weld overlays were performed during the U2C16 RFO using PDI qualified procedures, with acceptance criteria in accordance with ASME Section XI, 2001 Edition through the 2003 Addenda, IWB-3514. No indication of crack growth or new cracking was identified. Based on this history, the overlay welds are now inspected on a sample basis, as required for ASME Code Case N-770-1 Item Number “F” welds, at a rate of 25% per interval.

**14.1 AUGMENTED REQUIREMENTS SUMMARY**

**A. Source Document:**

1. ASME CC N-770-1, "Additional Examinations for PWR Pressure Retaining Welds in Class 1 Components Fabricated with Alloy 600/82/182 Materials"
2. 10 CFR 50.55a(g)(6)(ii)(F) "Augmented ISI requirements: Examination requirements for Class 1 piping and nozzle dissimilar-metal butt welds"
3. Request for Relief G-RR-1

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**14.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

**B. Associated Document:**

1. B38 030623 801
2. B38 040318 808
3. B38 040719 800
4. WCAP-15988-NP
5. MRP 2003-039, MRP-139
6. NRC Bulletin 2004-01
7. ASME Section XI 2007 Edition with the 2008 Addenda
8. B38 051209 800
9. L44 070131 007 and L44 061023 001
10. Relief Request G-RR-1, L44 060616 00111. BP-257
11. BP-257
12. DCN D22061
13. ASME Section XI 2004 Edition 2005 Addenda
14. PER 152348
15. L29 070719 801
16. ASME Code Case N-770-1

**C. Frequency:** The overlay welds are inspected on a sample basis, as required for ASME CC N-770-1 Item Number "F" welds, at a rate of 25% per interval. Upper Head Injection welds are examined at a once per interval basis.

**D. Purpose:** Detection or unacceptable growth of known PWSCC Cracking

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**14.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

- E. Scope: See the following Table. In addition to the above welds four (4) associated with the Upper Head Injections components, UPIW-23, -24, 25, & -26 are also included in the examination scopes as Inspection Items B. The initial examinations of the welds were performed in the 2015 outage.

Component Identified	Alloy 600/82/182 Location	Method	PRZ Nozzle to Vessel Weld	PZR Nozzle to Safe-end Weld (OVERLAID)	PZR Safe-end to Pipe Weld (OVERLAID)
RCF-23A-OL	Spray nozzle to safe end weld	UT	RCW-15	RCW-24-SE	RCF-23
RCF-42A-OL	Spray nozzle to safe end weld	UT	RCW-16	RCW-25-SE	RCF-42
RCF-36A-OL	Spray nozzle to safe end weld	UT	RCW-17	RCW-26-SE	RCF-36
RCF-24H-OL	Spray nozzle to safe end weld	UT	RCW-18	RCW-27-SE	RCF-24
RCF-45A-OL	Spray nozzle to safe end weld	UT	RCW-19	RCW-28-SE	RCF-45
RCF-35C-OL	Spray nozzle to safe end weld	UT	RCW-21	RCW-29-SE	RCF-35

**NOTES:**

- 1) Code Case N-770-1 requires the 25% sample to consist of the same welds in the same sequence during successive intervals to the extent practical, provided the 25% sample contains the welds that experience the highest operating temperature in the Inspection Item. Since all subject weld locations are in the pressurizer heads, the operating temperatures will be approximately equal.
- 2) Those welds not included in the 25% sample shall be examined prior to the end of the mitigation evaluation period if the plant is to be operated beyond that time.
- 3) For each overlay in the 25% sample that has a design life of less than 10 yr., at least one inservice examination shall be performed prior to exceeding the life of the overlay.
- 4) The six mitigated pressurizer nozzle-to-safe end welds were previously identified as Category B-J welds, therefore deferral is not permitted.

- F. Method: Ultrasonic Examination procedures and personnel qualification in accordance with Appendix VIII of ASME Section XI.
- G. Industry Code or Standard: ASME Section XI, 2007 Edition with the 2008 Addenda

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**14.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

- H. Acceptance Criteria or Standard: Code Case paragraphs -3130 and -3140. IWB-3514 of the ASME Section XI, 2007 Edition with the 2008 Addenda as supplemented by Nonmandatory Appendix Q, if applicable weld overlays are applied.
- I. Reporting Requirements:
  - 1. Report of any indication of PWSCC flaws to Programs Engineering immediately. The results of these examinations shall be included in the ISI Site Final Report discussed in 0-SI-DXI-000-114.4.
  - 2. For any mitigated weld whose volumetric examination detects growth of existing flaws in the required examination volume that exceed the previous IWB-3600 flaw evaluations or new flaws, a report summarizing the evaluation, along with inputs, methodologies, assumptions, and causes of the new flaw or flaw growth is to be provided to the NRC prior to the weld being placed in service other than modes 5 or 6. [10 CFR 50.55a(g)(6)(ii)(F)(6)]
- J. Regulatory Basis: 10 CFR 50.55a(g)(6)(ii)(F) "Augmented ISI requirements: Examination requirements for Class 1 piping and nozzle dissimilar-metal butt welds"

**15.0 EXAMINATION OF REACTOR VESSEL HEAD VENT PIPE**  
**(Historical Information Only)**

Responsible Organization: Civil Engineering

All scheduled examinations have been completed with no indications detected. No further examinations are required. **This section is maintained for history only.**

**16.0 REACTOR PRESSURE VESSEL LOWER HEAD PENETRATIONS**

Responsible Organization: Engineering Programs

This section addresses the requirements of Code Case N-722-1 as amended by 10CFR50.55a. Of the items listed in Table 1 of Code Case N-722-1, only item B15.80, RPV bottom mounted instrument penetrations are applicable for examination. These shall be visually examined every other refueling outage in accordance with the Code Case.



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**16.0 REACTOR PRESSURE VESSEL LOWER HEAD PENETRATIONS**  
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The remaining items for the Reactor Vessel do not contain Alloy 600/82/182 materials. The items associated with the Steam Generators and piping does not contain Alloy 600/82/182 materials. For the Pressurizer, items B15.150, B15.160 and B15.170 have had a structural weld overlay installed and the Alloy 600/82/182 material is no longer relied upon for structural integrity. [10 CFR 50.55a(g)(6)(ii)(E)(1)]

**16.1 AUGMENTED REQUIREMENTS SUMMARY**

- A. Source Document: ASME CC N-722-1, "Additional Examinations for PWR Pressure Retaining Welds in Class 1 Components Fabricated with Alloy 600/82/182 Materials"
- B. Associated Document: 10 CFR 50.55a(g)(6)(ii)(E)
- C. Frequency: Every other refueling outage in accordance with CC N-722-1.
- D. Purpose: Identification of the presence of pressure leakage.
- E. Scope: CC N-722-1, Item B15.80, RPV bottom mounted instrument penetrations
- F. Method:
  - 1. Direct VE of the bare metal surface, or alternatively,
  - 2. VE performed with the insulation in place using remote visual examination equipment that provides resolution of the component metal surface equivalent to a bare metal direct VE.
- G. Industry Code or Standard: ASME Section XI 2007 Edition with the 2008 Addenda
- H. Acceptance Criteria or Standard: IWB-3522, absence of evidence of pressure leakage.
- I. Reporting Requirements: Evidence of pressure leakage shall be reported immediately to Programs Engineering. The results of this examination are included in the ISI Site Final Report discussed in 0-SI-DXI-000-114.4.

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**16.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

J. Regulatory Basis: 10 CFR 50.55a(g)(6)(ii)(E)

**17.0 RPV INTERNALS LIFT RIG AND HEAD LIFT RIG**

Responsible Organization: Engineering Programs

This section addresses the requirements of NUREG 0612, Control of Heavy Loads at Nuclear Power Plants. In response to guidelines for inspection and testing set forth in NUREG 0612, SQN proposed to use acoustic emission examination. On October 1, 1991, the NRC approved the use of acoustic emission examination at SQN.

History: For the third interval, this exam was performed in U1R18 on March 3, 2012.

**17.1 AUGMENTED REQUIREMENTS SUMMARY**

A. Source Document: NUREG 0612, "Control of Heavy Loads at Nuclear Power Plants"

B. Associated Document:

1. 0-MI-MIN-000-001.0
2. A27840727010
3. A02911007002
4. FSAR 3.12.4

C. Frequency: Once every 10 years. The examinations of these components is performed by the Maintenance Department and is not tracked in Ideal Schedule Works®.

D. Purpose: Assess the presence of cracking and more specifically, fatigue cracking.

E. Scope:

1. RPV Internals Lift Rig
2. RPV Head Lift Rig

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**17.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

- F. Method: Acoustic Emission Testing
- G. Industry Code or Standard:
- H. Acceptance Criteria or Standard: Absence of any evidence of cracking.
- I. Reporting Requirement: Evidence of cracking shall be reported immediately to Programs Engineering The results of this examination are included in the ISI Site Final Report discussed in 0-SI-DXI-000-114.4.
- J. Regulatory Basis:
  - 1. NUREG-0612

Augmented Examinations Table A									
			First Period		Second Period		Third Period		
COMPONENT	Program Reference Section	Exam Method	Cycle 21	Cycle 22	Cycle 23	Cycle 24	Cycle 25	Cycle 26	REFERENCE DRAWING NUMBER
Feedwater/Auxiliary Feedwater 4 in. Reducer-to-Pipe Welds and the Associated Base Metal Loop 2 (AFWF-099)	1.0	UT	X	X	X	X	X	X	CHM-2403-C
Feedwater/Auxiliary Feedwater 4 in. Reducer-to-Pipe Welds and the Associated Base Metal Loop 4 (AFWF-078)	1.0	UT		x		x		x	CHM-2403-C
Feedwater/Auxiliary Feedwater 4 in. Reducer-to-Pipe Welds and the Associated Base Metal Loops 1 and 3 (AFWF-077 and AFWF-116)	1.0	UT	x		x		x		CHM-2403-C
Reactor Coolant Pump Flywheel	2.0	UT, MT	See drawing ISI-0403-C-02 for examination schedule.						ISI-0306-B ISI-0403-C

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**17.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

Augmented Examinations Table A									
			First Period		Second Period		Third Period		
COMPONENT	Program Reference Section	Exam Method	Cycle 21	Cycle 22	Cycle 23	Cycle 24	Cycle 25	Cycle 26	REFERENCE DRAWING NUMBER
RPV Nozzle Cladding	3.0	UT	Frequency is once every 20 years to coincide with Reactor Vessel examinations required by Category B-D.						ISI-0297-C ISI-0298-C ISI-0392-C
Control Rod Guide Tubes Flexures	4.0	VT-3	No longer required.						ISI-0097-C
Thimble Tube Guide	5.0	ET	X	X	X	X	X	X	ISI-0319-C
Examination of Circ. Welds, C/L loop 4: 2-CVCF-244E, 2-CVCF-244F, and fitting 2-CVCF-244E/244F EL	6.0	UT						x	ISI-0009-C-2
Examination of Circ. Welds, C/L loop 1: 2-CVCF-213, 2-CVCF-214, and fitting 2-CVCF-213/214 EL	6.0	UT	X	X	X	X	X	X	ISI-0009-C-2
Examination of Circ. Welds RC-33	6.0	UT				X			ISI-0008-C-1
Examination of Circ. Welds RC-35C-OL	6.0	UT				X			ISI-0008-C-1
Weld SI-1123, CL Loop 1	6.0	UT	x	X	X	X	X	X	ISI-0002-C-08
Weld SI-1898, CL Loop 4	6.0	UT	x	X	X	X	X	X	ISI-0002-C-11
Weld SI-1815, CL Loop2	6.0	UT	x	X	X	X	X	X	ISI-0002-C-09
Weld SI-1897, CL Loop3	6.0	UT	x	X	X	X	X	X	ISI-0002-C-10

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**Augmented Examinations  
(Unit 2)**

**17.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

Augmented Examinations Table A									
			First Period		Second Period		Third Period		
COMPONENT	Program Reference Section	Exam Method	Cycle 21	Cycle 22	Cycle 23	Cycle 24	Cycle 25	Cycle 26	REFERENCE DRAWING NUMBER
Examination of Socket Welds, C/L loop 1: 2-SI-1124, 2-SI-1125, and 2-SI-1126	6.0	UT	No longer required						ISI-0002-C-8
Examination of Socket Welds, C/L loop 2, 2-SI-1816A, 2-SI-1817A, and 2-SI-1818A	6.0	UT	No longer required						ISI-0002-C-9
Examination of Socket Welds, C/L loop 3, 2-SI-1894, 2-SI-1895, and 2-SI-1896	6.0	UT	No longer required						ISI-0002-C-10
Examination of Socket Welds, C/L loop 4, 2-SI-1899, 2-SI-1900, and 2-SI-1901	6.0	UT	No longer required						ISI-0002-C-11
Examination of Aux Spray Socket Welds: 2-CVC-1745, 2-CVC-1746, and 2-CVC-1747	6.0	UT	No longer required						ISI-0009-C-2
Examination of Weld BIT-4	7.0	UT		X					ISI-0074-C-1
Reactor Coolant Pump Support RCP# 1, 2, 3, and 4	8.0	N/A	No longer required						ISI-0326-C-1
Steam Generator Class 2 Upper Support SG# 1, 2, 3, and 4	9.0	VT-3	No longer required						ISI-0401-C-2

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**Augmented Examinations  
(Unit 2)**

**17.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

Augmented Examinations Table A									
			First Period		Second Period		Third Period		
COMPONENT	Program Reference Section	Exam Method	Cycle 21	Cycle 22	Cycle 23	Cycle 24	Cycle 25	Cycle 26	REFERENCE DRAWING NUMBER
Examination of circumferential and longitudinal welds due to SER 00-001  RHRF-041 RHRS-072 RHRF-041-LS RHRS-073 RHRF-065 RHRS-072-LS RHRS-073-LS SIF-007 RHRS-100-LS SIF-001 RHRS-065-LS	10.0	UT				X			ISI-0002-C-2 ISI-0003-C-2 ISI-0003-C-3 ISI-0002-C-1
Safety Injection and RHR Welds and Adjoining Areas, and RI-ISI Region 3 Welds  RHRF-034 RHRF-045 RHRF-046A SIF-038 SIF-062 SIF-131 SIF-142	11.0	UT	No longer required						ISI-0002-C-1 ISI-0002-C-4 ISI-0002-C-5 ISI-0003-C-2 ISI-0003-C-3 ISI-0431-C-3
Safety Injection and RHR Welds and Adjoining Areas, and RI-ISI Region 3 Welds  RHRF-105 SIF-150 SIF-162 SIF-165 SIF-170 SIF-189 SIF-219 SIF-226	11.0	UT	No longer required						ISI-0002-C-6 ISI-0003-C-6 ISI-0431-C-1 ISI-0431-C-5 ISI-0431-C-11
Reactor Vessel Head	12.0	Visual, VE			X			X	ISI-0097-C-1
Reactor Vessel Head	12.0	Visual, VT-2	X	X		X	X		ISI-0097-C-01
Reactor Vessel Closure Head Penetrations	12.0	Volumetric Surface				X			ISI-0097-C-01

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**Augmented Examinations  
(Unit 2)**

**17.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

Augmented Examinations Table A									
			First Period		Second Period		Third Period		
COMPONENT	Program Reference Section	Exam Method	Cycle 21	Cycle 22	Cycle 23	Cycle 24	Cycle 25	Cycle 26	REFERENCE DRAWING NUMBER
Reactor Coolant Pump Shafts	13.0	UT	See note 1						ISI-0307-C-2
RCW-24-SE RCW-25-SE RCW-26-SE RCW-27-SE RCW-28-SE RCW-29-SE	14.0	VT-2 Enhanced	No longer required following weld overlay installation						ISI-0396-C-01
PZR Nozzle Overlays RCF-23A-OL RC-35C-OL RCF-42A-OL RCF-36A-OL RCF-24H-OL RCF-45A-OL	14.0	UT						X (Can be any two (2) of the six PZR nozzle overlays)	ISI-0396-C-01 ISI-0013-C-1 ISI-0013-C-3
Upper Head Injection Welds UPIW-23 UPIW-24 UPIW-25 UPIW-26	14.0	UT						X	ISI-0504-C-12
Reactor Vessel Head Vent Pipe VENT-1P	15.0	PT, UT or ECT	No longer required following U2R14 inspections						ISI-0097-C-2
Reactor Vessel Head Vent Pipe VENT-1P	15.0	VT-1	No longer required following U2R14 inspections						ISI-0097-C-2

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**Augmented Examinations  
(Unit 2)**

**17.1 AUGMENTED REQUIREMENTS SUMMARY (continued)**

<b>Augmented Examinations Table A</b>									
			First Period		Second Period		Third Period		
COMPONENT	Program Reference Section	Exam Method	Cycle 21	Cycle 22	Cycle 23	Cycle 24	Cycle 25	Cycle 26	REFERENCE DRAWING NUMBER
Reactor Vessel Bottom Mounted Instrumentation Penetrations	16.0	Visual, VE		X		X		X	ISI-0319-C-01
RPV Internals Lift Rig and Head Lift Rig	17.0	Acoustic Emission				X			See 0-MI-MIN- 000-001.0

**NOTES**

- 1) RCP shafts will be examined when RCP seal maintenance is performed.



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**Source Notes  
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<b>Requirements Statement</b>	<b>Source Document</b>	<b>Implementing Statement</b>
All	NPG-SPP-09.1, Part A	All
All applicable articles	ASME Boiler and Pressure Vessel Code Section XI 2007 Edition, 2008 Addenda	All
All applicable articles as shown in procedure section 1.3.	ASME Boiler and Pressure Vessel Code Section XI 2001 Edition	All
All applicable articles as shown in procedure section 1.3.	ASME Boiler and Pressure Vessel Code Section XI 1998 Edition	All
All applicable articles as shown in procedure section 1.3.	ASME Boiler and Pressure Vessel Code Section XI 1995 Edition through the 1997 Addenda	All
All applicable articles as shown in procedure section 1.3.	ASME Boiler and Pressure Vessel Code Section XI 1995 Edition	All
All applicable articles	ASME Boiler and Pressure Vessel Code Section V	All
All applicable chapters	FSAR - SQN	All
10CFR50.55a	Code of Federal Regulations 10CFR50	All
As applicable	U.S.N.R.C. Regulatory Guides 1.14, 1.26, 1.147, and 1.150	All

<b>SQN Unit 1 &amp; 2</b>	<b>ASME SECTION XI ISI/NDE PROGRAM UNIT 1 AND UNIT 2</b>	<b>0-SI-DXI-000-114.4 Rev. 0000 Page 359 of 359</b>
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<b>Requirements Statement</b>	<b>Source Document</b>	<b>Implementing Statement</b>
Augmented Examination Reactor Pressure Vessel Nozzles	Memorandum from R.A. Fenech to NRC, dated February 22, 1994  (S64 940218 801) Memorandum from D.E. Labarge, NRC to O.D. Kingsley, Jr., dated March 15, 1994  (L44 940322 006) (NCO 930202 003, and NCO 930202 004)	<b>C.1</b>  Referenced in Attachments 10 and 11
Clevis bolts, dowel pins, and tack welds shall be examined in accordance with visual examination method VT-3.	ML14063A542, E-1 p4, B.1.34-8a  Commitment 115609649	<b>C.2</b>

## **ENCLOSURE 2**

### **Fourth Ten-Year Interval Inservice Testing Program Plan**



# Sequoyah Nuclear Plant

## Unit 0, 1, & 2

Technical Instruction

**0-TI-SXI-000-200.0**

### Inservice Testing Program

Revision 0001

Quality Related

Level of Use: Information Use

Effective Date: 11/14/16

Responsible Organization: PGM, Engineering Programs Group

Prepared By: Duke Dang

Approved By: Michael Henderson

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### Current Revision Description

Type of Change: Intent

Tracking Number: 001

PCRs: None

CRs: 1228823

#### Affected Pages:

Tied valves FCV-72-40 and FCV-72-41 to DTJ-20 which changed the test frequency to CSD instead of quarterly. The correct test frequency for these valves is CSD and not quarterly. An error was made during the initial issuance when the valves were not tied to DTJ-20.

Deleted DTJ-17 (left blank intentionally) for valves FCV-74-3 and FCV-74-21. These valves are tested quarterly and not CSD.

Changed the normal position from C to O/C for valves FCV-63-23, FCV-63-64, FCV-63-71, and FCV-63-84. Also, changed these valves from passive to active. Therefore, stroke time testing will remain quarterly.

This revision is exempt from the requirements of 10CFR50.59. It implements the requirements for Inservice Testing that are controlled by 10CFR50.55a.

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## **1. INTRODUCTION**

### **1.1 Purpose**

This procedure represents the Sequoyah Nuclear Plant (SQN) Inservice Testing (IST) Program developed to satisfy the requirements stipulated in the Code of Federal Regulations, Title 10, Part 50.55a (10CFR50.55a), paragraph (f), and Technical Specification 5.5.6. Scoping and testing is performed in accordance with the ASME Code approved for use by NRC or with NRC approved alternatives ensuring compliance with regulatory requirements.

### **1.2 Scope**

The IST Program establishes the testing and examination requirement to assess operational readiness of certain ASME Code Class 1, 2, and 3 components important to nuclear safety in accordance with regulatory documents 10CFR50.55a, Technical Specifications, ASME OM Code, and Reg Guide 1.26.

These requirements apply to Class 1, 2, and 3 components located in systems containing water, steam, or radioactive waste:

- A. Pumps and valves required to perform a specific function in shutting down the reactor to safe shutdown condition, in maintaining the safe shutdown condition, or in mitigating the consequences of an accident;
- B. Pressure relief devices that protect systems or portions of systems that perform one or more of these three functions;
- C. Dynamic restraints (snubbers) used in systems that perform one or more of these three functions, or to ensure the integrity of the reactor coolant pressure boundary.

Both SQN units are designed as Hot Standby (Mode 3) for the safe shutdown condition.

### **1.3 Applicability**

This procedure is applicable for components determined to meet the scoping requirements of 10CFR50.55a and ASME OM Code.

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#### 1.4 Owner Information and Interval Dates

Pertinent Owner information and dates are provided in the table below.

<b>Owner</b>	Tennessee Valley Authority	
<b>Address of Corporate Office</b>	Chattanooga Office Complex 1101 Market St. Chattanooga, TN 37402-2801	
<b>Name and Address of Power Plant</b>	Sequoyah Nuclear Plant P.O. Box 2000 Soddy Daisy, TN 37384-2000	
<b>Applicable Nuclear Power Units</b>	<b>SQN Unit 1</b>	<b>SQN Unit 2</b>
<b>Commercial Operation Date</b>	July 1, 1981	June 1, 1982
<b>First 10 year IST Interval</b>	7/1/1981 to 12/15/1995	6/1/1982 to 12/15/1995
<b>Second 10 year IST Interval</b>	12/16/1995 to 5/31/2006	12/16/1995 to 5/31/2006
<b>Third 10 year IST Interval</b>	6/1/2006 to 8/31/2016	6/1/2006 to 8/31/2016
<b>Fourth 10 year IST Interval</b>	9/1/2016 to 6/30/2026	9/1/2016 to 6/30/2026



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## **1.5 Regulatory Requirements and SQN Compliance**

### **1.5.1 Code of Record**

#### **IST Period (Unit 1 and Unit 2)**

Licensees of pressurized water reactors are required by 10CFR50.55a(f) and (g) to establish an IST Program for their initial 120 month (10 year) interval based on the requirements of the latest edition and addenda of the ASME OM Code incorporated by reference in paragraph 10CFR50.55a(a)(1)(iv) 12 months before issuance of an operating license. At the end of this initial interval, and each succeeding interval, they must revise their IST Program to comply with the requirements of the latest edition and addenda of the ASME OM Code incorporated by reference in paragraph 10CFR50.55a(a)(1)(iv) 12 months before the start of the 120 month interval, subject to the conditions listed 10CFR50.55a(b).

Each interval may be extended 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. NRC should be notified of the change up to a year. Extensions beyond a year require NRC approval by a relief request.

Units continuously out of service for six months or longer may have their interval, during which the outage occurred, extended by the equivalent duration.

The code of record for the interval is the ASME OM Code 2004 Edition through 2006 Addenda. The SQN IST Program presented in this procedure complies with the requirements of this code of record.

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### **1.5.2 Conditions Applicable to Code of Record**

The applicable conditions of 10CFR50.55a, paragraph (b)(3) are provided below with an explanation of SQN's method of addressing each condition.

#### **A. (b)(3)(i) Quality Assurance**

The quality assurance program implemented by SQN is the TVA Nuclear Quality Assurance Program Plan (TVA-NQA-PLN89-A). This program is in accordance with 10CFR50, Appendix B. SQN has elected not to use ASME NQA-1, "Quality Assurance Requirements for Nuclear Facilities," 1979 Addenda.

#### **B. (b)(3)(ii) Motor Operated Valves Testing**

Procedure SPP-09.26.14, Motor Operated Valve Program, describes the program used at SQN to ensure that motor operated valves continue to be capable of performing their design basis safety functions.

#### **C. (b)(3)(v) Subsection ISTD**

The conditions of paragraph (b)(3) and its subparagraphs (b)(3)(v)(A) and (b)(3)(v)(B) for snubbers are incorporated into the SQN inservice programs for snubbers contained in 0-TI-DXX-000-009.0.

### **1.5.3 Code Cases**

In accordance with 10CFR50.55a, paragraph (b)(6), code cases referenced in Regulatory Guide (RG) 1.192, "Operation and Maintenance Code Case Acceptability, ASME OM Code," may be used without prior NRC approval subject to the requirements of (b)(6)(i) through (b)(6)(iii). However, at this time, TVA has not elected to adopt any of the code cases approved for use in RG 1.192 for SQN 1 and 2.

### **1.5.4 Requests for Relief**

In accordance with 10CFR50.55a, paragraphs (f)(6)(i), (z)(1), and (z)(2), licensees may submit a request for relief from code requirements. SQN has submitted seven relief requests to the NRC for review and all have been approved. All seven relief requests are contained in Attachment 3, Pump Relief Requests, and Attachment 4, Valve Relief Requests.

### **1.5.5 NUREG-1482**

The NRC published NUREG-1482, "Guidelines for Inservice Testing at Nuclear Power Plants," to provide guidance and recommendations for developing and implementing IST Programs. Guidance provided was used in the development of the SQN IST Program where applicable.

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## 2. REFERENCES

- A. Code of Federal Regulations, Title 10, Part 50.55a
- B. ASME OM Code, Code for Operation and Maintenance of Nuclear Power Plants, 2004 Edition through 2006 Addenda
- C. NUREG-1482, Revision 2, Guidelines for Inservice Testing at Nuclear Power Plants
- D. Regulatory Guide 1.192, Operation and Maintenance Code Case Applicability, ASME OM Code
- E. Regulatory Guide 1.193, ASME Code Cases Not Approved For Use
- F. Regulatory Guide 1.26 Revision 4 dated March 1997, Guidelines for Establishing Quality Group Classification
- G. TVA-NQA-PLN89-A, TVA Nuclear Quality Assurance Program Plan
- H. NPG-SPP-09.1, ASME Code and Augmented Programs
- I. NPG-SPP-09.1.20, Inservice Testing Program Requirements
- J. NPG-SPP-09.1.21 Inservice Testing Program Evaluations and Reference Values
- K. NPG-SPP-09.1.22, Inservice Testing Program Trending Requirements
- L. NPG-SPP-09.1.23, Inservice Testing Program Preconditioning Guidelines
- M. NPG-SPP-09.1.24, Inservice Testing of Pressure Relief Devices
- N. NPG-SPP-09.1.25, IST Program Check Valve Condition Monitoring Requirements
- O. NPG-SPP-09.26.14, Motor Operated Valve Program
- P. SQN Technical Specifications Unit 1 and Unit 2
- Q. SQN Final Safety Analysis Report
- R. SQN-DC-V-3.0, Classification of Piping, Pumps, Valves and Vessels
- S. SQN-DC-V-2.16, Single Failure Criteria
- T. SQN-DC-V-3.2 Classification of HVAC Systems

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## 2. REFERENCES (Continued)

- U. 10CFR50 Appendix J Option B, Primary Reactor Containment Leakage Testing for Water Cooled Power Reactors
- V. NRC Generic Letter 89-04, Guidance on Developing Acceptable Inservice Testing Programs, April 3, 1989
- W. Summary of Public Workshops Held in NRC Regions on Inspection Procedure 73756 "Inservice Testing of Pumps and Valves" and Answers to Panel Questions on IST Issues, July 18, 1997
- X. 0-TI-SXI-000-200.0, Inservice Testing Program
- Y. 0-TI-SXI-000-100.0, Inservice Testing Program Bases Document
- Z. 0-TI-SXI-000-200.CV, Check Valve Condition Monitoring Program
- AA. 0-TI-SXI-000-100.0, Augmented Inservice Testing Program
- AB. 0-SI-SXV-000-264.0, Testing Setpoint of ASME Code Class 2 & 3 Safety and Relief Valves and Vacuum Breakers
- AC. 0-SI-SXV-001-859.0, Testing and Setting of Main Steam Safety Valves
- AD. ASME Section XI Color Coded Boundary Drawings
- AE. N2-88-400, Containment Isolation System Description
- AF. Sequoyah Nuclear Plant, Units 1 and 2 - Relief Requests RP-01, RP-02, RP-04, RP-06, and RV-01 Related to the Inservice Testing Program, Fourth 10-Year Interval (CAC NOS. MF7099 and MF7100).
- AG. Sequoyah Nuclear Plant, Units 1 and 2 - Request for Relief RP-07 for Alternative Inservice Pump Testing at Reference Values (CAC NOS. MF5585 and MF5586)
- AH. SQN Technical Requirements Manual

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### **3. PROGRAM DEVELOPMENT**

#### **3.1 Development of Program Scope**

The methodology used to develop the scope for the SQN IST Program is described below.

- A. TVA upper tier procedures NPG-SPP-09.1 and NPG-SPP-09.1.20 series were used in development of the SQN IST Program.
- B. In accordance with 10CFR50.55a, paragraph (f), the consideration for scope of the IST Program was limited to Code Class 1, 2, and 3 components. There are no Code Class MC pumps, valves, pressure relief devices, or snubbers at SQN.
- C. In accordance with RG 1.26, the scope of the IST program was limited to components providing water, steam, and radioactive waste.
- D. The scope of this instruction applies to the applicable pumps, valves, and snubbers within the ASME Section XI boundaries as defined by the SQN ASME Section XI Color Coded Boundary Drawings.
- E. The SQN drawings listed in Section 3.2 were used to identify the Code Class 1, 2, and 3 components.
- F. The Final Safety Analysis Report, Technical Specifications and Bases (Unit 1 and 2), Design Criteria and all System Description Documents (SDDs) were reviewed to determine the nuclear safety related functions credited at SQN.
- G. The function(s) of each component within the Code Class 1, 2, and 3 boundaries shown on the system drawings were reviewed. Based on this review, each component was determined to be "in scope" or "exempt from scope" of the Code of Record (ASME OM Code, 2004 Edition through 2006 Addenda). The component functions and scope determination are documented in 0-TI-SXI-000-100.0, Inservice Testing Program Bases Document.
- H. Pumps, valves, pressure relief devices, and snubbers in scope of the IST Program are shown in Attachment 1, Pump Test Plan; Attachment 2, Valve Test Plan; and Attachment 6, Snubber Test Plan. An explanation of the abbreviations used in these appendices is provided in Section 3.4, Section 3.5, and Section 3.6.

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### 3.2 Applicable Drawings and System Description

The table below provides a list of the systems in scope of the PST/IST Program along with the applicable drawings and DCs used in development of the program scope.

<b>System No</b>	<b>System Name</b>	<b>Applicable Design Criteria Document</b>	<b>Applicable Flow Diagram</b>
01	Main Steam	SQN-DC-V-4.1.1	0-47W801-1 0-47W801-1-ISI
03A	Main Feedwater	SQN-DC-V-4.2	0-47W803-1 0-47W803-1-ISI
03B	Auxiliary Feedwater	SQN-DC-V-13.9.8	0-47W803-2 0-47W803-3 0-47W803-2-ISI 0-47W803-3-ISI
15	Steam Generator Blowdown	SQN-DC-V-3.1.1	0-47W801-2 0-47W801-2-ISI
18	Diesel Fuel Oil	SQN-DC-V-11.8	0-47W840-1, 1A, 4, 5 2-47W840-1B
26	High Pressure Fire Protection	SQN-DC-V-43.0	0-47W832-1, 2 0-47W850-2 1 & 2-47W850-9
30	Ventilation	SQN-DC-V-3.2	0-47W866-1
31C	Chilled Water	SQN-DC-V-3.2	0-47W865-3, 6, 7, 8, 12 1 & 2-47W865-5
32	Aux Control Air	SQN-DC-V-32.0	0-47W848-1, 5, 10
43	Post Accident Sampling Facility and Sampling and Water Quality System	SQN-DC-V-9.3	47W881-5 47W881-5-1 47W881-5-ISI 1 & 2-47W881-6 1 & 2-47W881-6-ISI 47W881-8 47W881-9 47W881-9-ISI

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### 3.2 Applicable Drawings and System Descriptions (Continued)

<b>System No</b>	<b>System Name</b>	<b>Applicable Design Criteria Document</b>	<b>Applicable Flow Diagram</b>
59	Demineralized Water System	N/A	47W856-1 47W856-1-ISI
61	Ice Condenser System	SQN-DC-V-27.1	47W814-2 47W814-2-ISI
62	Chemical and Volume Control	SQN-DC-V-27.2	47W809-1, 2, 3, 4, 5, 7 47W809-1-ISI 47W809-2-ISI 47W809-3-ISI 47W809-4-ISI 47W809-5-ISI 47W809-7-ISI
63	Safety Injection	SQN-DC-V-27.3	47W811-1, 2 47W811-1-ISI 47W811-2-ISI
67	Essential Raw Cooling Water and Traveling Water Screens	SQN-DC-V-7.4 SQN-DC-V-1.4.6	47W845-1, 2, 5 47W845-3, 4 47W845-7 47W845-1-ISI 47W845-2-ISI 47W845-3-ISI 47W845-4-ISI 47W845-5-ISI 47W845-6-ISI
68	Reactor Coolant	SQN-DC-V-27.4	47W813-1 47W813-1-ISI
70	Component Cooling	SQN-DC-V-13.9.9	47W859-1, 2, 3, 4 47W859-1-ISI 47W859-2-ISI 47W859-3-ISI
72	Containment Spray	SQN-DC-V-27.5	47W812-1 47W812-1-ISI
74	Residual Heat Removal	SQN-DC-V-27.6	47W810-1 47W810-1-ISI
77	Liquid Waste Disposal	SQN-DC-V-22.1	47W830-1 47W851-1 47W830-1-ISI 47W851-1-ISI
78	Spent Fuel Pool Cooling and Cleaning	SQN-DC-V-33.0	47W855-1 47W855-1-ISI

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### 3.2 Applicable Drawings and System Descriptions (Continued)

<b>System No</b>	<b>System Name</b>	<b>Applicable Design Criteria Document</b>	<b>Applicable Flow Diagram</b>
81	Primary Makeup Water System	SQN-DC-V-27.2	47W819-1 47W819-1-ISI
82	Diesel Starting Air Diesel Lube Oil Diesel Cooling Water	SQN-DC-V-11.8	1-47W839-1, 1A 2-47W839-1B, 1C 1-47W880-1, 2 2-47W880-3, 4
84	Flood Mode Boration Makeup	SQN-DC-V-12.6	47W809-7 47W809-7-ISI
90	Radiation Monitoring System	SQN-DC-V-9.0	47W610-90-3

### 3.3 Development of Component Test Requirements

The methodology used to determine test requirements for components in scope of the SQN IST Program is described below.

- A. Each component in scope of the program was categorized in accordance with OM Code, ISTB-1300, ISTC-1300, ISTD-4220 (SPP-09.1.20), RG 1.26 and 10CFR50.55a.
- B. The test requirements for each pump were determined in accordance with OM Code, Table ISTB-3000-1, ISTB-3100 (SPP-09.1.20), ISTB-3200 (SPP-09.1.20), ISTB-3400 (SPP-09.1.20) as applicable for the pump group, RG 1.26 and 10CFR50.55a.
- C. The test requirements for each valve and pressure relief device were determined in accordance with OM Code, Table ISTC-3500-1, ISTC-3100 (SPP-09.1.20), ISTC-3200 (SPP-09.1.20), ISTC 3510 (SPP-09.1.20), RG 1.26 and 10CFR50.55a.
- D. The examination, test, and monitoring requirements for each snubber were determined in accordance with OM Code, ISTD-4000, ISTD-5000, and ISTD-6000 (SPP-09.1.20).
- E. In cases where it is not practicable to perform valve testing on a quarterly frequency, an alternative test frequency is selected in accordance with the OM Code for deferring valve test frequency.
- F. In cases where it is not practicable to perform testing in accordance with the OM Code, an alternative is used, or a request for relief from the code requirements is submitted to NRC for approval. A copy of the relief requests is provided in Attachment 3, Pump Relief Requests, and Attachment 4, Valve Relief Requests.



**3.3 Development of Component Test Requirements (continued)**

- G. The specific inservice test requirements (test type and frequency) for pumps, valves, pressure relief devices, and snubbers in scope of the IST Program are shown in Attachment 1, Pump Test Plan; Attachment 2, Valve Test Plan; and Attachment 6, Snubber Test Plan. An explanation of the abbreviations used in these appendices is provided in Section 3.4, Section 3.5, and Section 3.6.

Specific information regarding test frequency deferrals are provided in Attachment 5, Deferred Test Justifications. The Notes column of Attachment A, Pump Test Plan; and Attachment 2, Valve Test Plan, provides reference to the applicable relief request or deferred test justification.

**3.4 Description of Attachment 1, Pump Test Plan**

Attachment 1, Pump Test Plan, provides a complete list of all pumps in scope of the IST Program along with pertinent information such as the associated test requirements and test frequency.

A description of each column heading in Attachment 1, Pump Test Plan, along with the meaning of abbreviations used therein is provided below:

- A. Pump ID
 

The pump identification is a shortened version of the TVA UNID as shown in Maximo. Specifically, the pump identification is the TVA UNID with the plant designator (SQN) and leading zeros removed. Maximo is TVA's official master equipment list.
- B. Function
 

Function description of the component as shown in Maximo.
- C. Drawing
 

The applicable drawing where the pump is shown.
- D. Pump Group
 

Pump group as defined in OM Code, Subsection ISTB.

Abbreviation	Description
A	Pumps that are operated continuously or routinely during normal operation, cold shutdown, or refueling operations.
B	Pumps in standby systems that are not operated routinely except for testing.

### 3.4 Description of Attachment 1, Pump Test Plan (Continued)

#### E. Pump Class

Identifies the Code Class classification of the pump as shown on the applicable system flow drawings.

Abbreviation	Description
1	Code Class 1
2	Code Class 2
3	Code Class 3

#### F. Pump Type

Description
Centrifugal Horizontal - pump and driver are on a horizontal plane (i.e. C-H)
Centrifugal Vertical - pump and driver are on a vertical plane (i.e. C-V)
Vertical Line Shaft pump - a vertically suspended pump where the pump driver and pump element are connected by a line shaft within an enclosed column (i.e. VLS)

#### G. Fixed or Variable Speed Driver

Abbreviation	Description
Fixed	Pump speed is fixed
Var	Pump speed is variable

#### H. Actual Speed

Abbreviation	Description
GE600	Pump speed is greater than or equal to 600 rpm
LT600	Pump speed is less than 600 rpm

### 3.4 Description of Attachment 1, Pump Test Plan (Continued)

#### I. Test Requirements

Identifies specific pump test parameters required to be tested.

Abbreviation	Description
dP	Pump differential pressure
Q	Pump flow
S	Pump speed
V	Pump vibration. The actual number of vibration points varies from pump to pump depending on the pump design configuration. The actual pump vibration points and locations are identified in the procedures which test the pumps.

#### J. Frequency

Identifies the test frequency of the associated pump test.

Abbreviation	Description
2Y	2 Year - this frequency is used for the comprehensive pump test
Q	Quarterly - this frequency is used for the Group A or Group B pump test

#### K. Procedure

Identifies the procedure(s) used to perform the associated pump test. The procedures are currently listed in 0-SI-SXV-000-266.0 and will be migrated to this procedure over time. The listings are for information only and are subject to change.

#### L. Notes

Identifies additional pertinent information as applicable.

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### 3.5 Description of Attachment 2, Valve Test Plan

Attachment 2, Valve Test Plan, provides a complete list of all valves in scope of the IST Program along with pertinent information such as the associated test requirements and test frequency.

A description of each column in Attachment 2, Valve Test Plan, along with the meaning of abbreviations used therein is provided below:

#### A. Valve ID

The valve identification is a shortened version of the TVA UNID as shown in Maximo. Specifically, the valve identification is the TVA UNID with the plant designator (SQN) and leading zeros removed. Maximo is TVA's official master equipment list.

#### B. Valve Function

Function description of the component as shown in Maximo.

#### C. Valve Drawing / Coordinates

The applicable drawing and drawing coordinate where the valve is shown.

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### 3.5 Description of Attachment 2, Valve Test Plan (Continued)

#### D. Valve Category

Valve category as defined in OM Code, Subsection ISTC

<b>Abbreviation</b>	<b>Description</b>
A	Valves for which a design seat leakage is limited to a specific maximum amount in the closed position for fulfillment of their required function(s), as specified in ISTA-1100.
A/C	Valves which share the characteristics of both Category A and Category C valves.
B	Valves for which seat leakage in the closed position is inconsequential for fulfillment of the required function(s), as specified in ISTA-1100.
C	Valves that are self-actuating in response to some system characteristic, such as pressure (relief valves) or flow direction (check valves) for fulfillment of the required function(s), as specified in ISTA-1100.

#### E. Valve Classification (Active / Passive)

Designates whether the valve performs an active or passive safety function.

<b>Abbreviation</b>	<b>Description</b>
ACT	Valves that are required to change obturator position to accomplish a specific function in shutting down a reactor to the safe shutdown condition, maintaining the safe shutdown condition, or mitigating the consequences of an accident.
PASS	Valves that maintain obturator position and are not required to change obturator position to accomplish the required function(s) in shutting down a reactor to the safe shutdown condition, maintaining the safe shutdown condition, or mitigating the consequences of an accident.

**3.5 Description of Attachment 2, Valve Test Plan (Continued)**

F. Valve Class

Identifies the Code Class classification of the valve as shown on the applicable system flow drawings.

Abbreviation	Description
1	Code Class 1
2	Code Class 2
3	Code Class 3

G. Valve Size

Nominal valve size in inches.

H. Valve Design Type

Abbreviation	Description
ANG	Angle valve
BA	Ball valve
BF	Butterfly valve
CK	Check valve
CTV	Control Valve
GA	Gate valve
GL	Globe valve
PLG	Plug valve
RV	Relief valve
TRV	Thermal relief valve

**3.5 Description of Attachment 2, Valve Test Plan (Continued)**

I. Valve Actuator

Abbreviation	Description
AO	Air operator
HO	Hydraulic actuator
M	Manual actuator
MO	Motor operator
SA	Self actuated valve
SO	Solenoid actuator

J. Valve Position - Normal

Position(s) of the valve when performing its normal operating function.

Abbreviation	Description
C	Closed
LC	Locked closed
O	Open
O/C	Open / Closed
TH	Throttled

K. Valve Position - Safe

Position(s) of the valve when performing its safety related function.

Abbreviation	Description
C	Closed
O	Open
O/C	Open / Closed

L. Valve Position - Fail

Abbreviation	Description
O	Open
C	Closed
FAI	Fail as is
N/A	No fail position (valve does not have motive power to fail)

### 3.5 Description of Attachment 2, Valve Test Plan (Continued)

#### M. Valve Test Requirements

Identifies specific valve tests required to be performed.

Abbreviation	Description
BDC	Bi-Direction Close test. A close exercise test method for check valves that do not perform a safety function in the closed position.
BDO	Bi-Direction Open test. The open exercise test method for check valves that do not perform a safety function in the open position. This test only requires the valve to be exercised to the partially open position.
CM	Condition Monitoring test. This test type is shown for those check valves that are tested in accordance with the Check Valve Condition Monitoring Program as described and controlled in 0-TI-SXI-000-200.CV.
CVC	Check Valve Close exercise test. The close exercise test method for check valves that perform a safety function in the closed position. This test method verifies the obturator travels to the seat.
CVO	Check Valve Open exercise test. The open exercise test method for check valves that perform a safety function in the open position. This test method verifies the obturator travels to the full open position (e.g. disc on backstop) or position required to fulfill its safety function (e.g. passes maximum accident flow rate).
ET	Exercise Test. Test method where a valve is full stroke exercised open and closed but stroke timing is not performed.
FSC	Fail Safe Close test. Test method for valves that have an actuator that causes the valve to fail in the closed position. This test method verifies the valve travels to the closed position upon loss of valve actuating power.
FSO	Fail Safe Open test. Test method for valves that have an actuator that causes the valve to fail in the open position. This test method verifies the valve travels to the open position upon loss of valve actuating power.
LTJ	Seat leakage test in accordance with 10CFR50, App. J. This test type is shown for containment isolation valves that are leak tested in accordance with the requirements of SQN's 10CFR50, Appendix J, Containment Leak Rate Program. There are no specific IST related requirements for this test type. It is provided for reference purposes only.



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### 3.5 Description of Attachment 2, Valve Test Plan (Continued)

#### M. Valve Test Requirements (Continued)

<b>Abbreviation</b>	<b>Description</b>
LTP	Seat leakage test for reasons other than 10CFR50, App. J. Test method for those valves that have a specific leakage rate based on requirements other than 10CFR50, App. J. This test method verifies the leakage rate of the valves is within Owner specified limits.
MS	Manual Stroke test. Test method for manual valves. This test full stroke exercises the valve using the manual actuator.
NTR	No Test Required. This test designator is used for those valves in which no test is required. Typically, this test designator is applicable to Category B Passive valves which are not equipped with remote position indication.
RPI	Remote Position Indication test. Test method for valves that are equipped with remote position indication. This test verifies the indicating lights accurately reflect actual valve position. In most cases, this test is performed by local observation of valve travel as compared to indication lights. Other methods include verification of a change in flow, pressure, temperature, etc. relative to valve obturator position as compared to indicating lights.
RRA	Relief Request Activities. Special activities (e.g., maintenance activities) to be performed for compliance with an approved relief request.
RV	Relief Valve test. This test method verifies relief valves lift at their specified setpoint (within Owner specified criteria) and verifies other parameters as described and controlled in the Relief Valve Program.
STC	Stroke Time Close test. Test method for power operated valves which perform a safety function in the closed position. This test performs a full stroke exercise from open to closed and measures the stroke time closed.
STO	Stroke Time Open test. Test method for power operated valves which perform a safety function in the open position. This test performs a full stroke exercise from closed to open and measures the stroke time open.

### 3.5 Description of Attachment 2, Valve Test Plan (Continued)

#### N. Test Frequency

Identifies the test frequency of the associated valve test.

Abbreviation	Description
2Y	2 Year
10Y	10 Years
AppJ	Frequency determined and controlled by the 10CFR50, Appendix J, Containment Leak Rate Program.
CM	Frequency determined and controlled by the Check Valve Condition Monitoring Program.
CSD	Cold Shutdown
NTR	Frequency assigned to the NTR test type in which no testing is required.
Q	Quarterly
RO	Refueling Outage
RV	Frequency determined and controlled by the Relief Valve Program.

#### O. Valve Test Procedures

Identifies the procedure(s) used to perform the associated valve test. The procedures are currently listed in 0-SI-SXV-000-266.0 and will be migrated to this procedure over time. The listings are for information only and are subject to change.

#### P. Notes

Identifies pertinent information such as reference to the Deferred Test Justification (Attachment 5) associated with specific test.

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### 3.6 Description of Attachment 6, Snubber Test Plan

Attachment 6, Snubber Test Plan, provides a complete list of all snubbers in scope of the IST Program along with pertinent information such as the snubber identification, manufacturer, model, and size. Specific snubber test requirements are not listed in Attachment 6 because the requirements are identical for each component.

A description of each column heading in Attachment 6, Snubber Test Plan, along with the meaning of abbreviations used therein is provided below:

A. Snubber Component ID

The snubber identification is a shortened version of the TVA UNID as shown in Maximo. Specifically, the snubber identification is the TVA UNID with the plant designator (SQN) and leading zeros removed. Maximo is TVA's official master equipment list.

B. Pipe Support ID

Identification of the associated support / hanger. This information is provided to assist in location of the snubber and provide a link to the support portion which is in scope of the ISI Program.

C. Snubber Mark No

Same as Support ID.

D. Snubber Support ISO Dwg

Drawing showing the snubber in relation to the piping system it supports.

E. Support Drawing

Not used.

F. Piping Class

ASME Code Class of the piping the snubber is supporting.

G. Piping System

Three digit number designation of the piping system the snubber is supporting.

**3.6 Description of Attachment 6, Snubber Test Plan (Continued)**

H. Snubber Type

Mechanical
Hydraulic

I. Snubber Manufacturer

Manufacturer of the snubber

J. Snubber Model Number

Manufacturer's model number of the snubber

K. Defined Test Plan Group (DTPG)

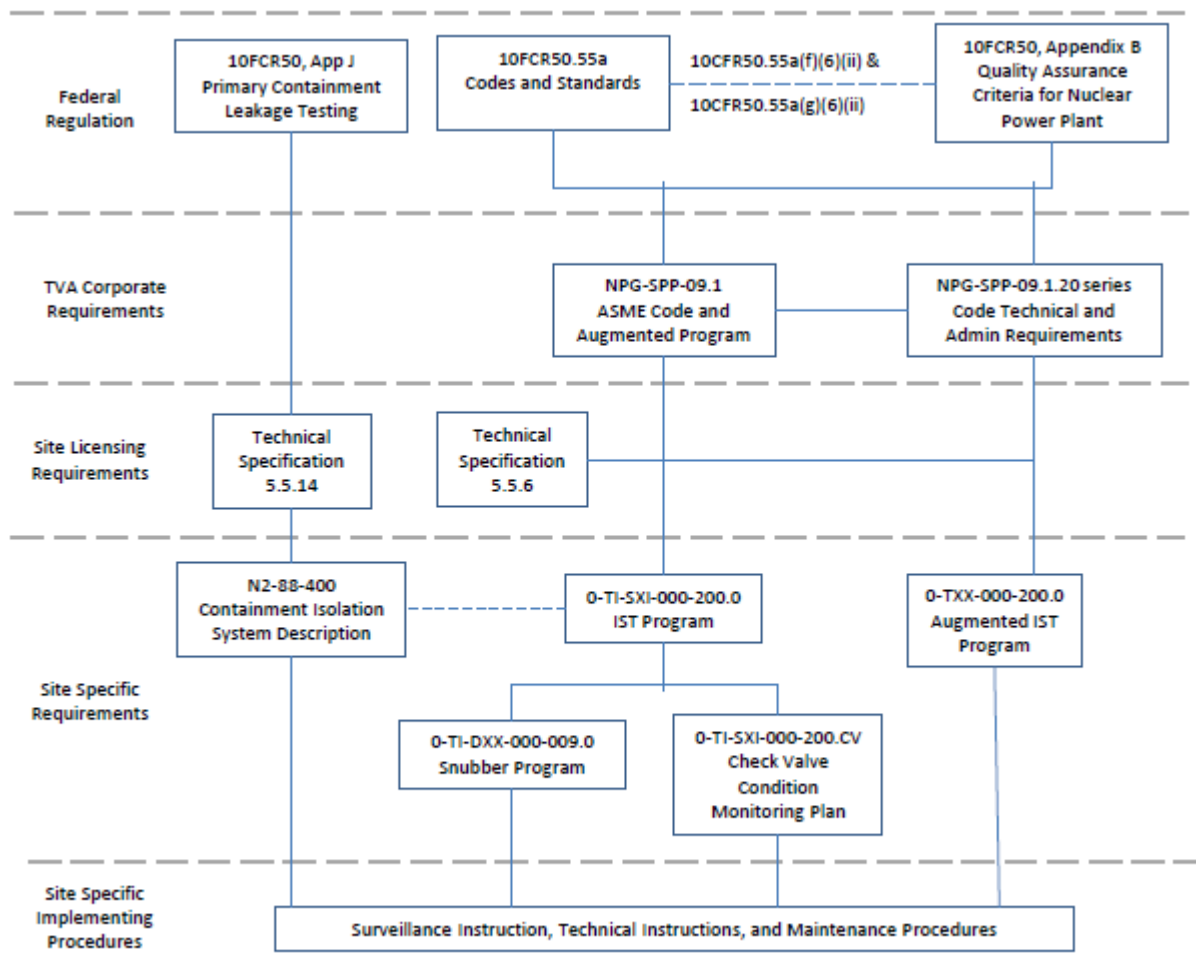
Defined Test Plan Group assigned to the snubber

L. Snubber Test Plan

Plan assigned to the snubber (Safety related or non-safety related).

#### 4. STRUCTURE OF PRESERVICE/INSERVICE TESTING PROGRAM REQUIREMENTS

The diagram below provides a graphic representation of the hierarchy and structure of various regulations and requirements related to the SQN PST/IST Program. The relationships depicted in this diagram are described in the following subsections.



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#### 4.1 Upper Tier Requirements for IST Program Scope and Content

10CFR50.55a requires each licensee of a pressurized water-cooled nuclear power plant to periodically update their IST Program to ensure pumps, valves, pressure relief devices, and snubbers which are classified as Code Class 1, 2, and 3 meet the test requirements of the ASME OM Code edition and addenda incorporated by reference. Section 1.5 of this procedure provides the necessary specific information. It is important to note that 10CFR50.55a restricts the scope of IST Program to include only those Class 1, 2, and 3 components in scope of the ASME OM Code.

TVA corporate fleet-wide procedure NPG-SPP-09.1 provides the TVA process for compliance with 10CFR50.55a.

The following TVA corporate fleet-wide procedures provide the TVA procedure equivalent of the OM Code applicable to the SQN IST Program. Content of the IST Program (e.g., test type, test frequency, pump and valve test plan tables, test deferral justifications, etc.) was developed in accordance with these procedures.

<b>Procedure</b>	<b>Description</b>
SPP-09.1.20	Procedure equivalent of OM Code, Subsections: ISTA - General Requirements ISTB - Pumps ISTC - Valves ISTD - Snubbers
SPP-09.1.21	This procedure addresses specific requirements in SPP-09.1.20 (OM Code Subsections ISTB and ISTC) related to reference values and acceptance criteria. It provides the technical and administrative process for performing component evaluations and establishing new reference values and associated acceptance criteria.
SPP-09.1.22	This procedure addresses specific requirements in SPP-09.1.20 (OM Code Subsections ISTB and ISTC) related to component trending. It provides the requirements for periodic performance trending.
SPP-09.1.23	Provides requirements for evaluation of potential preconditioning activities affecting IST required tests.
SPP-09.1.24	Procedure equivalent of OM Code, Appendix I - Pressure Relief Devices. This procedure also provides requirements for administration of the IST Pressure Relief Device Program as discussed in Section 4.2.1 below.
SPP-09.1.25	Procedure equivalent of OM Code, Appendix II - Check Valve Condition Monitoring Program. This procedure also provides requirements for administration of the IST Check Valve Condition Monitoring Program as discussed in Section 4.2.2 below.

These procedures should be used in lieu of direct reference to OM Code where possible because they represent TVA's official position for OM Code meaning and implementation requirements. These procedures have been developed to ensure consistent interpretation and implementation of the OM Code requirements at all TVA nuclear plants.

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## **4.2 Administration and Implementation of the IST Program**

TVA fleet-wide procedures SPP-09.1.20 through SPP-09.1.25 provide specific processes for administration of the IST Program. This includes day-to-day activities such as:

- A. Evaluation of components which have undergone maintenance and development of new reference values and acceptance criteria (SPP-09.1.21).
- B. Performing periodic trending of component performance (SPP-09.1.22).
- C. Performing periodic review of online and outage schedules for activities which could lead to unacceptable preconditioning (SPP-09.1.23).

Implementation of the SQN IST Program is accomplished by performance of site specific test procedures developed to satisfy the specific component tests identified in Attachment 1, 2, and 6 of this procedure. These implementing procedures are also listed in the attachments where possible. Scheduling of the implementing test procedures is controlled by procedure NPG-SPP-06.9.2. Exceptions to this implementation method are described below.

The SQN IST Program is supplemented by two sub-programs: a) Check Valve Condition Monitoring Program, and b) Snubber Program. This approach was taken because these components in these sub-programs have unique test types and test frequencies based on groups of similar components (e.g., design type, service conditions, performance history, etc) rather than an individual component's categorization. Accordingly, Attachment 2, Valve Test Plan, of this procedure identifies the test type and test frequency for valves included in the sub-programs in general terms such as CM for reference to the Check Valve Condition Monitoring Program and RV for reference to the IST Pressure Relief Device Program. Additional information regarding each of these sub-programs is provided in Sections 4.2.1 and 4.2.2. Attachment 6, Snubber Test Plan, provides the scope of snubbers in the plan and the associated test requirements are described in Section 3.6.

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### 4.3 Check Valve Condition Monitoring Program

Technical and administrative requirements for the Check Valve Condition Monitoring Program are delineated in SPP-09.1.25.

The Check Valve Condition Monitoring Program is described in procedure 0-TI-SXV-000-200.CV. This procedure provides a list of the valve groups, valves in each group, condition monitoring activities (e.g., tests, examinations) and frequency for each valve group, and reference to the evaluation prepared to substantiate the condition monitoring activities (Condition Monitoring Plan). As described in 0-TI-SXV-000-200.CV reviews of check valve testing activities associated with condition monitoring should be scheduled and performed.

Should a required change to check valve condition monitoring activities conflict with plant Technical Specifications (TS) a TS amendment must be approved in accordance with 10CFR50.55a(f)(5)(ii) prior to implementation.

#### 4.3.1 Snubber Program

Technical and administrative requirements for the Snubber Program is delineated in SPP-09.1.20. This procedure incorporates the requirements of OM Code, Subsection ISTD.

The Snubber Program is described in procedure 0-TI-DXX-000-009.0. The procedure provides a list of the snubber subgroups and snubbers in each subgroup.



**Attachment - Pump Test Plan**

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PUMP ID	FUNCTION	DRAWING/COOR	GROUP	CLASS	TYPE	FIXED OR VAR.	ACTUAL SPEED	TEST REQ	FREQ	PROCEDURE	NOTES
0-PMP-67-432	Essential Raw Cooling Water Pump J-A	47W845-5	A	3	Vertical Line Shaft	Fixed	GE600	dP Q V dP Q V	2Y 2Y 2Y Q Q Q		, RP-04, RP-07 , RP-08 , RP-08 , RP-04, RP-07, RP-08
0-PMP-67-436	Essential Raw Cooling Water Pump K-A	47W845-5	A	3	Vertical Line Shaft	Fixed	GE600	dP Q V dP Q V	2Y 2Y 2Y Q Q Q		, RP-04, RP-07 , RP-08 , RP-08 , RP-04, RP-07, RP-08
0-PMP-67-440	Essential Raw Cooling Water Pump L-B	47W845-5	A	3	Vertical Line Shaft	Fixed	GE600	dP Q V dP Q V	2Y 2Y 2Y Q Q Q		, RP-04, RP-07 , RP-08 , RP-08 , RP-04, RP-07, RP-08

**Attachment - Pump Test Plan**

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PUMP ID	FUNCTION	DRAWING/COOR	GROUP	CLASS	TYPE	FIXED OR VAR.	ACTUAL SPEED	TEST REQ	FREQ	PROCEDURE	NOTES
0-PMP-67-444	Essential Raw Cooling Water Pump M-B	47W845-5	A	3	Vertical Line Shaft	Fixed	GE600	dP Q V dP Q V	2Y 2Y 2Y Q Q Q		, RP-04, RP-07 , RP-08 , RP-08 , RP-04, RP-07, RP-08
0-PMP-67-452	Essential Raw Cooling Water Pump N-B	47W845-5	A	3	Vertical Line Shaft	Fixed	GE600	dP Q V dP Q V	2Y 2Y 2Y Q Q Q		, RP-04, RP-07 , RP-08 , RP-08 , RP-04, RP-07, RP-08
0-PMP-67-456	Essential Raw Cooling Water Pump P-B	47W845-5	A	3	Vertical Line Shaft	Fixed	GE600	dP Q V dP Q V	2Y 2Y 2Y Q Q Q		, RP-04, RP-07 , RP-08 , RP-08 , RP-04, RP-07, RP-08

**Attachment - Pump Test Plan**

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PUMP ID	FUNCTION	DRAWING/COOR	GROUP	CLASS	TYPE	FIXED OR VAR.	ACTUAL SPEED	TEST REQ	FREQ	PROCEDURE	NOTES
0-PMP-67-460	Essential Raw Cooling Water Pump Q-A	47W845-5	A	3	Vertical Line Shaft	Fixed	GE600	dP Q V dP Q V	2Y 2Y 2Y Q Q Q		, RP-04, RP-07 , RP-08 , RP-08 , RP-04, RP-07, RP-08
0-PMP-67-464	Essential Raw Cooling Water Pump R-A	47W845-5	A	3	Vertical Line Shaft	Fixed	GE600	dP Q V dP Q V	2Y 2Y 2Y Q Q Q		, RP-04, RP-07 , RP-08 , RP-08 , RP-04, RP-07, RP-08
0-PMP-67-470	ERCW Screen Wash Pump A-A	47W845-5	A	3	Vertical Line Shaft	Fixed	GE600	VT dP V VT dP Q V	2Y 2Y 2Y Q Q Q Q		RP-01  , RP-04 RP-01 , RP-08 RP-08 , RP-04, RP-08

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PUMP ID	FUNCTION	DRAWING/COOR	GROUP	CLASS	TYPE	FIXED OR VAR.	ACTUAL SPEED	TEST REQ	FREQ	PROCEDURE	NOTES
0-PMP-67-477	ERCW Screen Wash Pump B-B	47W845-5	A	3	Vertical Line Shaft	Fixed	GE600	VT dP V VT dP Q V	2Y 2Y 2Y Q Q Q Q		RP-01   RP-01 RP-08 RP-08 RP-04, RP-08
0-PMP-67-482	ERCW Screen Wash Pump C-B	47W845-5	A	3	Vertical Line Shaft	Fixed	GE600	VT dP V VT dP Q V	2Y 2Y 2Y Q Q Q Q		RP-01   RP-01 RP-08 RP-08 RP-04, RP-08
0-PMP-67-487	ERCW Screen Wash Pump D-A	47W845-5	A	3	Vertical Line Shaft	Fixed	GE600	VT dP V VT dP Q V	2Y 2Y 2Y Q Q Q Q		RP-01   RP-01 RP-08 RP-08 RP-04, RP-08

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PUMP ID	FUNCTION	DRAWING/COOR	GROUP	CLASS	TYPE	FIXED OR VAR.	ACTUAL SPEED	TEST REQ	FREQ	PROCEDURE	NOTES
0-PMP-70-51	CCS PUMP C-S	47W859-1	A	3	Centrifugal Horizontal	Fixed	GE600	V dP Q Q V	2Y Q Q Q		RP-04, RP-07 , RP-08 , RP-08 RP-04, RP-07, RP-08
0-PMP-313-303	SHTDN BD RM CW CIRC PMP A-A	47W865-8	A	3	Centrifugal Horizontal	Fixed	GE600	V dP Q Q V	2Y Q Q Q		RP-04, RP-07 , RP-08 , RP-08 RP-04, RP-07, RP-08
0-PMP-313-338	SHTDN BD RM CW CIRC PMP B-B	47W865-8	A	3	Centrifugal Horizontal	Fixed	GE600	V dP Q Q V	2Y Q Q Q		RP-04, RP-07 , RP-08 , RP-08 RP-04, RP-07, RP-08

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PUMP ID	FUNCTION	DRAWING/COOR	GROUP	CLASS	TYPE	FIXED OR VAR.	ACTUAL SPEED	TEST REQ	FREQ	PROCEDURE	NOTES
1-PMP-3-118	MOTOR DRIVEN AUXILIARY FEEDWATER PUMP 1A-A	47W803-2	A	3	Centrifugal Horizontal	Fixed	GE600	dP	2Y		RP-04, RP-07
								Q	2Y		
								V	2Y		
								dP	Q		
								Q	Q		
1-PMP-3-128	MOTOR DRIVEN AUX FEEDWATER PUMP 1B-B	47W803-2	A	3	Centrifugal Horizontal	Fixed	GE600	dP	2Y		RP-04, RP-07
								Q	2Y		
								V	2Y		
								dP	Q		
								Q	Q		
1-PMP-3-142	UNIT 1 TURBINE DRIVEN AFW PUMP 1A-S	47W803-2	B	3	Centrifugal Horizontal	Var	GE600	dP	2Y		, RP-04, RP-07
								N	2Y		
								Q	2Y		
								V	2Y		
								N	Q		
1-PMP-3-142	UNIT 1 TURBINE DRIVEN AFW PUMP 1A-S	47W803-2	B	3	Centrifugal Horizontal	Var	GE600	Q	Q		RP-04, RP-07
								V	Q		

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PUMP ID	FUNCTION	DRAWING/COOR	GROUP	CLASS	TYPE	FIXED OR VAR.	ACTUAL SPEED	TEST REQ	FREQ	PROCEDURE	NOTES
1-PMP-62-104	CENTRIFUGAL CHARGING PUMP 1B-B	47W810-1	A	2	Centrifugal Horizontal	Fixed	GE600	dP Q V  dP Q V	2Y 2Y 2Y  Q Q Q		RP-04, RP-07      RP-04, RP-07
1-PMP-62-108	CENTRIFUGAL CHARGING PUMP 1A-A	47W810-1	A	2	Centrifugal Horizontal	Fixed	GE600	dP Q V  dP Q V	2Y 2Y 2Y  Q Q Q		RP-04, RP-07      RP-04, RP-07
1-PMP-62-230	BORIC ACID TRANSFER PUMP 1A-A	47W809-5	A	3	Centrifugal Horizontal	Fixed	GE600	V  dP Q V	2Y  Q Q Q		RP-04, RP-07  , RP-08  , RP-08  RP-04, RP-07, RP-08

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PUMP ID	FUNCTION	DRAWING/COOR	GROUP	CLASS	TYPE	FIXED OR VAR.	ACTUAL SPEED	TEST REQ	FREQ	PROCEDURE	NOTES
1-PMP-62-232	BORIC ACID TRANSFER PUMP 1B-B	47W809-5	A	3	Centrifugal Horizontal	Fixed	GE600	V dP Q V	2Y Q Q Q		RP-04, RP-07  RP-08  RP-08  RP-04, RP-07, RP-08
1-PMP-63-10	SIS PUMP 1A-A	47W810-1	B	2	Centrifugal Horizontal	Fixed	GE600	dP Q V dP V	2Y 2Y 2Y Q Q		RP-04, RP-07  RP-04, RP-07
1-PMP-63-15	SIS PUMP 1B-B	47W810-1	B	2	Centrifugal Horizontal	Fixed	GE600	dP Q V dP V	2Y 2Y 2Y Q Q		RP-04, RP-07  RP-04, RP-07
1-PMP-70-38	CCS PUMP 1B-B	47W859-1	A	3	Centrifugal Horizontal	Fixed	GE600	V dP Q V	2Y Q Q Q		RP-04, RP-07 RP-08 RP-08 RP-04, RP-07, RP-08
1-PMP-70-46	CCS PUMP 1A-A	47W859-1	A	3	Centrifugal Horizontal	Fixed	GE600	V dP Q V	2Y Q Q Q		RP-04, RP-07 RP-08 RP-08 RP-04, RP-07, RP-08



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PUMP ID	FUNCTION	DRAWING/COOR	GROUP	CLASS	TYPE	FIXED OR VAR.	ACTUAL SPEED	TEST REQ	FREQ	PROCEDURE	NOTES
1-PMP-72-10	CNTMT SPRAY PUMP 1B	47W812-1	B	2	Centrifugal Vertical	Fixed	GE600	dP Q V Q dP V	2Y 2Y 2Y Q Q Q		, RP-04, RP-07 , RP-08 RP-08 RP-04, RP-07, RP-08
1-PMP-72-27	CNTMT SPRAY PUMP 1A	47W812-1	B	2	Centrifugal Vertical	Fixed	GE600	dP Q V Q dP V	2Y 2Y 2Y Q Q Q		, RP-04, RP-07 , RP-08 RP-08 RP-04, RP-07, RP-08
1-PMP-74-10	RESIDUAL HEAT REMOVAL PUMP 1A-A	47W810-1	A	2	Centrifugal Vertical	Fixed	GE600	dP Q V dP V	2Y 2Y 2Y Q Q		RP-04, RP-06, RP-07 , RP-02 RP-04, RP-06, RP-07

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PUMP ID	FUNCTION	DRAWING/COOR	GROUP	CLASS	TYPE	FIXED OR VAR.	ACTUAL SPEED	TEST REQ	FREQ	PROCEDURE	NOTES
1-PMP-74-20	RESIDUAL HEAT REMOVAL PUMP 1B-B	47W810-1	A	2	Centrifugal Vertical	Fixed	GE600	dP Q V  dP V	2Y 2Y 2Y  Q Q		RP-04, RP-06, RP-07   RP-02  RP-04, RP-06, RP-07

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PUMP ID	FUNCTION	DRAWING/COOR	GROUP	CLASS	TYPE	FIXED OR VAR.	ACTUAL SPEED	TEST REQ	FREQ	PROCEDURE	NOTES
2-PMP-3-118	MOTOR DRIVEN AUXILIARY FEEDWATER PUMP 2A-A	47W803-2	A	3	Centrifugal Horizontal	Fixed	GE600	dP	2Y		RP-04, RP-07
								Q	2Y		
								V	2Y		
								dP	Q		
								Q	Q		
								V	Q		RP-04, RP-07
2-PMP-3-128	MOTOR DRIVEN AUXILIARY FEEDWATER PUMP 2B-B	47W803-2	A	3	Centrifugal Horizontal	Fixed	GE600	dP	2Y		RP-04, RP-07
								Q	2Y		
								V	2Y		
								dP	Q		
								Q	Q		
								V	Q		RP-04, RP-07

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PUMP ID	FUNCTION	DRAWING/COOR	GROUP	CLASS	TYPE	FIXED OR VAR.	ACTUAL SPEED	TEST REQ	FREQ	PROCEDURE	NOTES
2-PMP-3-142	U-2 TURB DRIVEN AFW PMP 2A-S	47W803-2	B	3	Centrifugal Horizontal	Var	GE600	dP N Q V N Q V	2Y 2Y 2Y 2Y Q Q Q		, RP-04, RP-07  RP-04, RP-07
2-PMP-62-104	CENTRIFUGAL CHARGING PUMP 2B-B	47W810-1	A	2	Centrifugal Horizontal	Fixed	GE600	dP Q V dP Q V	2Y 2Y 2Y Q Q Q		RP-04, RP-07  RP-04, RP-07
2-PMP-62-108	CENTRIFUGAL CHARGING PUMP 2A-A	47W810-1	A	2	Centrifugal Horizontal	Fixed	GE600	dP Q V dP Q V	2Y 2Y 2Y Q Q Q		RP-04, RP-07  RP-04, RP-07

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PUMP ID	FUNCTION	DRAWING/COOR	GROUP	CLASS	TYPE	FIXED OR VAR.	ACTUAL SPEED	TEST REQ	FREQ	PROCEDURE	NOTES
2-PMP-62-230	BORIC ACID TRANSFER PUMP 2A-A	47W809-5	A	3	Centrifugal Horizontal	Fixed	GE600	V dP Q Q V	2Y Q Q Q		RP-04, RP-07  RP-08  RP-08  RP-04, RP-07, RP-08
2-PMP-62-232	BORIC ACID TRANSFER PUMP 2B-B	47W809-5	A	3	Centrifugal Horizontal	Fixed	GE600	V dP Q Q V	2Y Q Q Q		RP-04, RP-07  RP-08  RP-08  RP-04, RP-07, RP-08
2-PMP-63-10	SIS PUMP 2A-A	47W810-1	B	2	Centrifugal Horizontal	Fixed	GE600	dP Q V dP V	2Y 2Y 2Y Q Q		RP-04, RP-07  RP-04, RP-07
2-PMP-63-15	SIS PUMP 2B-B	47W810-1	B	2	Centrifugal Horizontal	Fixed	GE600	dP Q V dP V	2Y 2Y 2Y Q Q		RP-04, RP-07  RP-04, RP-07

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PUMP ID	FUNCTION	DRAWING/COOR	GROUP	CLASS	TYPE	FIXED OR VAR.	ACTUAL SPEED	TEST REQ	FREQ	PROCEDURE	NOTES
2-PMP-70-33	CCS PUMP 2B-B	47W859-1	A	3	Centrifugal Horizontal	Fixed	GE600	V dP Q Q V	2Y Q Q Q		RP-04, RP-07 , RP-08 , RP-08 RP-04, RP-07, RP-08
2-PMP-70-59	CCS PUMP 2A-A	47W859-1	A	3	Centrifugal Horizontal	Fixed	GE600	V dP Q Q V	2Y Q Q Q		RP-04, RP-07 , RP-08 , RP-08 RP-04, RP-07, RP-08
2-PMP-72-10	CNTMT SPRAY PUMP 2B	47W812-1	B	2	Centrifugal Vertical	Fixed	GE600	dP Q V Q dP V	2Y 2Y 2Y Q Q Q		, RP-04, RP-07 , RP-08 RP-08 RP-04, RP-07, RP-08
2-PMP-72-27	CNTMT SPRAY PUMP 2A	47W812-1	B	2	Centrifugal Vertical	Fixed	GE600	dP Q V Q dP V	2Y 2Y 2Y Q Q Q		, RP-04, RP-07 , RP-08 RP-08 RP-04, RP-07, RP-08

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PUMP ID	FUNCTION	DRAWING/COOR	GROUP	CLASS	TYPE	FIXED OR VAR.	ACTUAL SPEED	TEST REQ	FREQ	PROCEDURE	NOTES
2-PMP-74-10	RESIDUAL HEAT REMOVAL PUMP 2A-A	47W810-1	A	2	Centrifugal Vertical	Fixed	GE600	dP Q V  dP V	2Y 2Y 2Y  Q Q		RP-04, RP-06, RP-07  RP-02  RP-04, RP-06, RP-07
2-PMP-74-20	RESIDUAL HEAT REMOVAL PUMP 2B-B	47W810-1	A	2	Centrifugal Vertical	Fixed	GE600	dP Q V  dP V	2Y 2Y 2Y  Q Q		RP-04, RP-06, RP-07  RP-02  RP-04, RP-06, RP-07

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
0-SMV-43-715	INLET BORIC ACID TNKS SAMPLE VALVE	47W881-9 / B-2	B	PASS	3	0.375	NDL	M	C	C	N/A	NTR	NTR		
0-SMV-43-718	DWNSTR CCS HX OB1/OB2 SAMPLE VLV	47W881-9 / B-3	B	PASS	3	0.375	NDL	M	C	C	N/A	NTR	NTR		
0-SMV-43-719	ERCW DWNSTR CCS HX OB1/OB2 SAMPLE VLV	47W881-9 / B-3	B	PASS	3	0.375	NDL	M	C	C	N/A	NTR	NTR		
0-VLV-62-1030	BORIC ACID TK INLET	0-47W809-5 / B-4	B	PASS	3	1	GL	M	C	C	N/A	NTR	NTR		
0-VLV-62-1031	BORIC ACID TK INLET	0-47W809-5 / C-5	B	PASS	3	2	GL	M	C	C	N/A	NTR	NTR		
0-FCV-67-152	COMPONENT CLG HTX C DISCH VLV TO HDR B	47W845-2 / C-7	B	ACT	3	24	BF	MO	TH	O	FAI	RPI STO	2Y Q		
0-VLV-67-528A	ERCW RETURN HDR ISOL	47W485-2 / H-7	B	PASS	3	6	BF	M	C	C	N/A	NTR	NTR		
0-VLV-67-528B	ERCW RETURN HDR ISOL	47W485-2 / H-5	B	PASS	3	6	BF	M	C	C	N/A	NTR	NTR		
0-VLV-67-529	ERCW SUPPLY SFP HX	47W485-2 / B-6	B	PASS	3	16	BF	M	C	C	N/A	NTR	NTR		
0-VLV-67-532A	RCW TO ICE CONDENSER	47W485-2 / E-10	B	PASS	3	8	BF	M	C	C	N/A	NTR	NTR		
0-VLV-67-532B	RCW TO ICE CONDENSER	47W485-2 / E-10	B	PASS	3	8	BF	M	C	C	N/A	NTR	NTR		
0-VLV-67-556A	ERCW RET SFP HX ISOL	47W485-2 / G-7	B	PASS	3	36	BF	M	C	C	N/A	NTR	NTR		
0-VLV-67-556B	ERCW RET SFP HX ISOL	47W485-2 / H-7	B	PASS	3	20	BF	M	C	C	N/A	NTR	NTR		
0-VLV-67-702	RAW WATER CONNECTION ISOLATION	47W845-2 / G-7	B	PASS	3	2	GL	M	C	C	N/A	NTR	NTR		
0-VLV-67-719A	ERCW PUMP AIR RLSE CV	47W845-5 / D-3	C	ACT	3	2	CK	SA	O/C	O/C	N/A	CVC CVO	Q Q		
0-VLV-67-719B	ERCW PUMP AIR RLSE CV	47W845-5 / C-3	C	ACT	3	2	CK	SA	O/C	O/C	N/A	CVC CVO	Q Q		



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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
0-VLV-67-720A	ERCW PUMP AIR RLSE CV	47W845-5 / B-3	C	ACT	3	2	CK	SA	O/C	O/C	N/A	CVC CVO	Q Q		
0-VLV-67-720B	ERCW PUMP AIR RLSE CV	47W845-5 / D-3	C	ACT	3	2	CK	SA	O/C	O/C	N/A	CVC CVO	Q Q		
0-VLV-67-723A	ERCW PUMP DISCH CV	47W845-5 / B-4	C	ACT	3	24	CK	SA	O/C	O/C	N/A	CVC CVO	Q Q		
0-VLV-67-723B	ERCW PUMP DISCH CV	47W845-5 / C-4	C	ACT	3	24	CK	SA	O/C	O/C	N/A	CVC CVO	Q Q		
0-VLV-67-724A	ERCW PUMP DISCH CV	47W845-5 / B-4	C	ACT	3	24	CK	SA	O/C	O/C	N/A	CVC CVO	Q Q		
0-VLV-67-724B	ERCW PUMP DISCH CV	47W845-5 / D-4	C	ACT	3	24	CK	SA	O/C	O/C	N/A	CVC CVO	Q Q		
0-VLV-67-739A	ERCW PUMP AIR RLSE CV	47W845-5 / F-3	C	ACT	3	2	CK	SA	O/C	O/C	N/A	CVC CVO	Q Q		
0-VLV-67-739B	ERCW PUMP AIR RLSE CV	47W845-5 / D-3	C	ACT	3	2	CK	SA	O/C	O/C	N/A	CVC CVO	Q Q		
0-VLV-67-740A	ERCW PUMP AIR RLSE CV	47W845-5 / G-3	C	ACT	3	2	CK	SA	O/C	O/C	N/A	CVC CVO	Q Q		
0-VLV-67-740B	ERCW PUMP AIR RLSE CV	47W845-5 / E-3	C	ACT	3	2	CK	SA	O/C	O/C	N/A	CVC CVO	Q Q		
0-VLV-67-743A	ERCW PUMP DISCH CV	47W845-5 / F-4	C	ACT	3	24	CK	SA	O/C	O/C	N/A	CVC CVO	Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
0-VLV-67-743B	ERCW PUMP DISCH CV	47W845-5 / E-4	C	ACT	3	24	CK	SA	O/C	O/C	N/A	CVC CVO	Q Q		
0-VLV-67-744A	ERCW PUMP DISCH CV	47W845-5 / G-4	C	ACT	3	24	CK	SA	O/C	O/C	N/A	CVC CVO	Q Q		
0-VLV-67-744B	ERCW PUMP DISCH CV	47W845-5 / E-4	C	ACT	3	24	CK	SA	O/C	O/C	N/A	CVC CVO	Q Q		
0-VLV-67-1513	CCS HX OB1 RELIEF	47W845-2 / B-6	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
0-VLV-67-1514	CCS HX OB2 RELIEF	47W845-2 / B-6	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
0-FCV-70-193	SFPCS HTX SUP HDR VLV	47W859-1 / B-3	B	ACT	3	20	BF	MO	O/C	C	FAI	RPI STC	2Y Q		
0-FCV-70-194	VALVE, CONTROL, FLOW	47W859-1 / B-4	B	ACT	3	20	BF	MO	O/C	C	FAI	RPI STC	2Y Q		
0-FCV-70-197	SFPCS Htx Supply Hdr Valve	47W859-1 / B-5	B	ACT	3	20	BF	MO	O/C	C	FAI	RPI STC	2Y Q		
0-FCV-70-198	SFPCS HX SUP HDR VLV	47W859-1 / B-5	B	ACT	3	20	BF	MO	O/C	C	FAI	RPI STC	2Y Q		
0-VLV-70-504	CCS PMP C-S DISCH CK VLV	47W859-1 / D-8	C	ACT	3	16	CK	SA	O/C	O/C	N/A	CVC CVO	CSD CSD		DTJ-34 DTJ-34
0-VLV-70-782	CCS HX OB1 RELIEF	47W859-1 / D-4	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
0-VLV-70-783	CCS HX OB2 RELIEF	47W859-1 / D-4	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
0-VLV-70-833	CCS SPENT FUEL PIT HX "A" RELIEF VALVE	47W859-1 / G-4	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
0-VLV-70-834	CCS SPENT FUEL PIT HX "B" RELIEF VALVE	47W859-1 / G-6	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
0-VLV-31C-1003	WC A-A DWS BLOWOFF VLV	47W865-8 / D-10	C	ACT	3		RV	SA	C	O/C	N/A	RV	RV		
0-VLV-31C-1045	WC B-B DWS BLOWOFF VLV	47W865-8 / D-5	C	ACT	3		RV	SA	C	O/C	N/A	RV	RV		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FCV-1-4	SG 1 MAIN STM HDR ISOLATION VLV	47W801-1 / C-3	B	ACT	2	32	GL	AO	O	C	C	RPI FSC STC	2Y CSD CSD		DTJ-01 DTJ-01
1-PCV-1-5-A	SG-1 ATM RELIEF VALVE	47W801-1 / B-2	B	ACT	2	8	GL	AO	C	O/C	C	RPI FSC STC STO	2Y OC OC OC		CVTM-1 CVTM-1 CVTM-1
1-FCV-1-7	SG 1 BLOWDOWN FLOW CONTROL VLV	47W801-2 / C-2	B	ACT	2	2	GL	AO	O	C	C	RPI FSC STC	2Y Q Q		
1-FCV-1-11	SG 2 MAIN STM HDR ISOLATION VLV	47W801-1 / E-3	B	ACT	2	32	GL	AO	O	C	C	RPI FSC STC	2Y CSD CSD		DTJ-01 DTJ-01
1-PCV-1-12	SG-2 ATM RELIEF VALVE	47W801-1 / D-2	B	ACT	2	8	GL	AO	C	O/C	C	RPI FSC STC STO	2Y OC OC OC		CVTM-1 CVTM-1 CVTM-1
1-FCV-1-14	SG 2 BLOWDOWN HDR FLOW CONTROL VLV	47W801-2 / E-3	B	ACT	2	2	GL	AO	O	C	C	RPI FSC STC	2Y Q Q		
1-FCV-1-15	SG-1 STEAM SUPPLY TO TURB AFP	47W803-2 / C-3	B	ACT	2	4	GA	MO	O	O/C	FAI	RPI STC STO	2Y Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FCV-1-16	SG-4 STEAM SUPPLY TO TURB AFP	47W803-2 / A-3	B	ACT	2	4	GA	MO	C	O/C	FAI	RPI STC STO	2Y Q Q		
1-FCV-1-17	MAIN STEAM SUPPLY TO TURB AFP	47W803-2 / B-4	B	ACT	3	4	GA	MO	O	O/C	FAI	RPI STC STO	2Y CSD CSD		DTJ-02 DTJ-02
1-FCV-1-18	MAIN STEAM SUPPLY TO TURB AFP	47W803-2 / B-4	B	ACT	2	4	GA	MO	O	O/C	FAI	RPI STC STO	2Y CSD CSD		DTJ-02 DTJ-02
1-FCV-1-22	SG 3 MAIN STM HDR ISOLATION VLV	47W801-1 / G-3	B	ACT	2	32	GL	AO	O	C	C	RPI FSC STC	2Y CSD CSD		DTJ-01 DTJ-01
1-PCV-1-23	SG-3 ATM RELIEF VALVE	47W801-1 / F-2	B	ACT	2	8	GL	AO	C	O/C	C	RPI FSC STC STO	2Y OC OC OC		CVTM-1 CVTM-1 CVTM-1
1-FCV-1-25	SG 3 BLOWDOWN HDR FLOW CONTROL VLV	47W801-2 / F-3	B	ACT	2	2	GL	AO	O	C	C	RPI FSC STC	2Y Q Q		
1-FCV-1-29	SG 4 MAIN STM HDR ISOLATION VLV	47W801-1 / A-3	B	ACT	2	32	GL	AO	O	C	C	RPI FSC STC	2Y CSD CSD		DTJ-01 DTJ-01

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-PCV-1-30	SG-4 ATM RELIEF VALVE	47W801-1 / A-2	B	ACT	2	8	GL	AO	C	O/C	C	RPI FSC STC STO	2Y OC OC OC		CVTM-1 CVTM-1 CVTM-1
1-FCV-1-32	SG 4 BLOWDOWN HDR FLOW CONTROL VLV	47W801-2 / B-3	B	ACT	2	2	GL	AO	O	C	C	RPI FSC STC	2Y Q Q		
1-FCV-1-147	SG LOOP 1 WARMING VLV	47W801-1 / C-3	B	ACT	2	2	GL	AO	O/C	C	C	RPI FSC STC	2Y Q Q		
1-FCV-1-148	SG LOOP 2 WARMING VLV	47W801-1 / E-3	B	ACT	2	2	GL	AO	O/C	C	C	RPI FSC STC	2Y Q Q		
1-FCV-1-149	SG LOOP 3 WARMING VLV	47W801-1 / G-3	B	ACT	2	2	GL	AO	O/C	C	C	RPI FSC STC	2Y Q Q		
1-FCV-1-150	SG LOOP 4 WARMING VLV	47W801-1 / B-3	B	ACT	2	2	GL	AO	O/C	C	C	RPI FSC STC	2Y Q Q		
1-FCV-1-181	SG NO 1 BLOWDOWN ISOL VLV INSIDE CNTMT	47W801-2 / C-2	B	ACT	2	2	GL	AO	O	C	C	RPI FSC STC	2Y Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FCV-1-182	SG NO 2 BLOWDOWN ISOL VLV INSIDE CNTMT	47W801-2 / E-2	B	ACT	2	2	GL	AO	O	C	C	RPI FSC STC	2Y Q Q		
1-FCV-1-183	SG NO 3 BLOWDOWN ISOL VLV INSIDE CNTM	47W801-2 / F-2	B	ACT	2	2	GL	AO	O	C	C	RPI FSC STC	2Y Q Q		
1-FCV-1-184	SG NO 4 BLOWDOWN ISOL VLV INSIDE CNTMT	47W801-2 / B-2	B	ACT	2	2	GL	AO	O	C	C	RPI FSC STC	2Y Q Q		
1-VLV-1-512	MS SAFETY VALVE LP 3	47W801-1 / F-3	C	ACT	2	6	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-1-513	MS SAFETY VALVE LP 3	47W801-1 / F-2	C	ACT	2	6	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-1-514	MS SAFETY VALVE LP 3	47W801-1 / F-2	C	ACT	2	6	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-1-515	MS SAFETY VALVE LP 3	47W801-1 / F-2	C	ACT	2	6	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-1-516	MS SAFETY VALVE LP 3	47W801-1 / F-2	C	ACT	2	6	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-1-517	MS SAFETY VALVE LP 2	47W801-1 / D-3	C	ACT	2	6	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-1-518	MS SAFETY VALVE LP 2	47W801-1 / D-2	C	ACT	2	6	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-1-519	MS SAFETY VALVE LP 2	47W801-1 / D-2	C	ACT	2	6	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-1-520	MS SAFETY VALVE LP 2	47W801-1 / D-2	C	ACT	2	6	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-1-521	MS SAFETY VALVE LP 2	47W801-1 / D-2	C	ACT	2	6	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-1-522	MS SAFETY VALVE LP 1	47W801-1 / C-3	C	ACT	2	6	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-1-523	MS SAFETY VALVE LP 1	47W801-1 / C-3	C	ACT	2	6	RV	SA	C	O/C	N/A	RV	RV		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-VLV-1-524	MS SAFETY VALVE LP 1	47W801-1 / C-2	C	ACT	2	6	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-1-525	MS SAFETY VALVE LP 1	47W801-1 / C-2	C	ACT	2	6	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-1-526	MS SAFETY VALVE LP 1	47W801-1 / C-2	C	ACT	2	6	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-1-527	MS SAFETY VALVE LP 4	47W801-1 / A-3	C	ACT	2	6	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-1-528	MS SAFETY VALVE LP 4	47W801-1 / A-3	C	ACT	2	6	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-1-529	MS SAFETY VALVE LP 4	47W801-1 / A-2	C	ACT	2	6	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-1-530	MS SAFETY VALVE LP 4	47W801-1 / A-2	C	ACT	2	6	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-1-531	MS SAFETY VALVE LP 4	47W801-1 / A-2	C	ACT	2		RV	SA	C	O/C	N/A	RV	RV		
1-FCV-3-33	SG-1 FEEDWATER ISOL	47W803-1 / D-3	B	ACT	2	18	GA	MO	O	C	FAI	RPI STC	2Y CSD		DTJ-03
1-FCV-3-47	SG-2 FEEDWATER ISOL	47W803-1 / E-3	B	ACT	2	18	GA	MO	O	C	FAI	RPI STC	2Y CSD		DTJ-03
1-FCV-3-87	SG-3 FEEDWATER ISOL	47W803-1 / F-3	B	ACT	2	18	GA	MO	O	C	FAI	RPI STC	2Y CSD		DTJ-03
1-FCV-3-100	SG-4 FEEDWATER ISOL	47W803-1 / B-3	B	ACT	2	18	GA	MO	O	C	FAI	RPI STC	2Y CSD		DTJ-03
1-FCV-3-116A	ERCW HDR A AFW SUPPLY	47W803-2 / G-6	B	ACT	3	8	GA	MO	C	O	FAI	RPI STO	2Y Q		
1-FCV-3-116B	ERCW HDR A AFW SUPPLY	47W803-2 / F-6	B	ACT	3	8	GA	MO	C	O	FAI	RPI STO	2Y Q		



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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FCV-3-126A	ERCW HDR B AFW SUPPLY	47W803-2 / G-7	B	ACT	3	8	GA	MO	C	O	FAI	RPI STO	2Y Q		
1-FCV-3-126B	ERCW HDR B AFW SUPPLY	47W803-2 / F-7	B	ACT	3	8	GA	MO	C	O	FAI	RPI STO	2Y Q		
1-FCV-3-136A	ERCW HDR A AFW SUPPLY	47W803-2 / H-4	B	ACT	3	10	GA	MO	C	O/C	FAI	RPI STC STO	2Y Q Q		
1-FCV-3-136B	ERCW HDR A AFW SUP VLV	47W803-2 / H-4	B	ACT	3	10	GA	MO	C	O/C	FAI	RPI STC STO	2Y Q Q		
1-LCV-3-148	AFP 1B-B LCV TO SG-3	47W803-2 / G-8	B	ACT	3	4	GL	AO	C	O/C	O	RPI FSO STC STO	2Y Q Q Q		'''' '''' '''' ''''
1-LCV-3-148A	AFP 1B-B BYPASS LCV TO SG-3	47W803-2 / G-8	B	ACT	3	2	GL	AO	C	O/C	C	RPI FSC STC STO	2Y Q Q Q		
1-LCV-3-156	AFP 1A-A LCV TO SG-2	47W803-2 / E-8	B	ACT	3	4	GL	AO	C	O/C	O	RPI FSO STC STO	2Y Q Q Q		'''' '''' '''' ''''

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-LCV-3-156A	STM GEN #2 LVL BYPASS CONT VLV	47W803-2 / E-8	B	ACT	3	2	GL	AO	C	O/C	C	RPI FSC STC STO	2Y Q Q Q		
1-LCV-3-164	STM GEN #1	47W803-2 / D-8	B	ACT	3	4	GL	AO	C	O/C	O	RPI FSO STC STO	2Y Q Q Q		, , , , , , , , , , , ,
1-LCV-3-164A	STM GEN #1 LVL BYPASS CONT VLV	47W803-2 / D-8	B	ACT	3	2	GL	AO	C	O/C	C	RPI FSC STC STO	2Y Q Q Q		
1-LCV-3-171	AFP 1B-B LCV TO SG-4	47W803-2 / B-8	B	ACT	3	4	GL	AO	C	O/C	O	RPI FSO STC STO	2Y Q Q Q		, , , , , , , , , , , ,
1-LCV-3-171A	AFP 1B-B BYPASS LCV TO SG-4	47W803-2 / B-8	B	ACT	3	2	GL	AO	C	O/C	C	RPI FSC STC STO	2Y Q Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-LCV-3-172	SG 3 LEVEL CONTROL VLV	47W803-2 / F-8	B	ACT	3	3	GL	AO	C	O/C	O	RPI FSO STC STO	2Y Q Q Q		, , , , , , , , , , , ,
1-LCV-3-173	SG 2 LEVEL CONTROL VLV	47W803-2 / E-8	B	ACT	3	3	GL	AO	C	O/C	O	RPI FSO STC STO	2Y Q Q Q		, , , , , , , , , , , ,
1-LCV-3-174	SG 1 LEVEL CONTROL VLV	47W803-2 / C-8	B	ACT	3	3	GL	AO	C	O/C	O	RPI FSO STC STO	2Y Q Q Q		, , , , , , , , , , , ,
1-LCV-3-175	SG 4 LEVEL CONTROL VLV	47W803-2 / A-8	B	ACT	3	3	GL	AO	C	O/C	O	RPI FSO STC STO	2Y Q Q Q		, , , , , , , , , , , ,
1-FCV-3-179A	ERCW HDR B AFW SUPPLY	47W803-2 / H-5	B	ACT	3	10	GA	MO	C	O	FAI	RPI STO	2Y Q		
1-FCV-3-179B	ERCW HDR B AFW SUP VLV	47W803-2 / H-5	B	ACT	3	10	GA	MO	C	O	FAI	RPI STO	2Y Q		
1-FCV-3-400	MDAFW PUMP 1A-A RECIRC ISOLATION	47W803-2 / F-5	B	ACT	3	2	GL	AO	O/C	C	C	RPI FSC STC	2Y Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FCV-3-401	MDAFW PUMP 1B-B RECIRC ISOLATION	47W803-2 / F-6	B	ACT	3	2	GL	AO	O/C	C	C	RPI FSC STC	2Y Q Q		
1-VLV-3-508	FEEDWATER CHECK VA	47W803-1 / F-2	C	ACT	2	16	CK	SA	O	C	N/A	BDO CVC	RO RO		DTJ-38 DTJ-38
1-VLV-3-509	FEEDWATER CHECK VA	47W803-1 / E-2	C	ACT	2	16	CK	SA	O	C	N/A	BDO CVC	RO RO		DTJ-38 DTJ-38
1-VLV-3-510	FEEDWATER CHECK VA	47W803-1 / C-2	C	ACT	2	16	CK	SA	O	C	N/A	BDO CVC	RO RO		DTJ-38 DTJ-38
1-VLV-3-511	FEEDWATER CHECK VA	47W803-1 / B-2	C	ACT	2	16	CK	SA	O	C	N/A	BDO CVC	RO RO		DTJ-38 DTJ-38
1-VLV-3-805	MD AUX FW PUMP A SU CK	47W803-2 / F-5	C	ACT	3	8	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-04 DTJ-04
1-VLV-3-806	MD AUX FW PUMP B SU CK	47W803-2 / F-6	C	ACT	3	8	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-04 DTJ-04
1-VLV-3-810	TD AUX FW PUMP CK	47W803-2 / H-4	C	ACT	3	10	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-04 DTJ-04
1-VLV-3-814	MD AUX FW PUMP MIN CK	47W803-2 / G-5	C	ACT	3	1.5	CK	SA	C	O	N/A	BDC CVO	RO RO		DTJ-27 DTJ-27
1-VLV-3-815	MD AUX FW PUMP MIN CK	47W803-2 / G-6	C	ACT	3	1.5	CK	SA	C	O	N/A	BDC CVO	RO RO		DTJ-27 DTJ-27

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-VLV-3-818	TD AUX FW PUMP MIN CK	47W803-2 / G-7	C	ACT	3	1.5	CK	SA	C	O	N/A	BDC CVO	RO RO		DTJ-27 DTJ-27
1-VLV-3-820	MD AUX FW PUMP DISC CK	47W803-2 / F-5	C	ACT	3	6	CK	SA	C	O	N/A	BDC CVO	RO RO		DTJ-44 DTJ-44
1-VLV-3-821	MD AUX FW PUMP DISC CK	47W803-2 / F-6	C	ACT	3	6	CK	SA	C	O	N/A	BDC CVO	RO RO		DTJ-44 DTJ-44
1-VLV-3-830	MD AUX FW PUMP DISC CK	47W803-2 / G-8	C	ACT	2	4	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-43 DTJ-43
1-VLV-3-831	MD AUX FW PUMP DISC CK	47W803-2 / E-8	C	ACT	2	4	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-43 DTJ-43
1-VLV-3-832	MD AUX FW PUMP DISC CK	47W803-2 / D-8	C	ACT	2	4	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-43 DTJ-43
1-VLV-3-833	MD AUX FW PUMP DISC CK	47W803-2 / A-8	C	ACT	2	4	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-43 DTJ-43
1-VLV-3-861	MD AUX FW PMP DISCH CHKVLV	47W803-2 / G-10	C	ACT	2	4	CK	SA	C	O/C	N/A	CM	CM		
1-VLV-3-862	MD AUX FW PMP DISCH CHKVLV	47W803-2 / E-10	C	ACT	2	4	CK	SA	C	O/C	N/A	CM	CM		
1-VLV-3-864	TD AUX FW PUMP DISC CK	47W803-2 / H-6	C	ACT	3	6	CK	SA	C	O	N/A	BDC CVO	RO RO		DTJ-44 DTJ-44
1-VLV-3-871	TD AUX FW PMP DISCH CHKVLV	47W803-2 / F-8	C	ACT	2	4	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-43 DTJ-43
1-VLV-3-872	TD AUX FW PMP DISCH CHKVLV	47W803-2 / D-8	C	ACT	2	4	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-43 DTJ-43

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-VLV-3-873	TD AUX FW PMP DISCH CHKVLV	47W803-2 / C-8	C	ACT	2	4	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-43 DTJ-43
1-VLV-3-874	TD AUX FW PMP DISCH CHKVLV	47W803-2 / A-8	C	ACT	2	4	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-43 DTJ-43
1-VLV-3-891	MS SPLY FW TURB CK	47W803-2 / C-8	C	ACT	2	4	CK	SA	C	O/C	N/A	CM	CM		
1-VLV-3-892	MS SUP FW TURB CK VLV	47W803-2 / A-8	C	ACT	2	4	CK	SA	C	O/C	N/A	CM	CM		
1-VLV-3-921	MD AUX FW PMP DISCH CHKVLV	47W803-2 / G-10	C	ACT	2	4	CK	SA	C	O/C	N/A	CM	CM		
1-VLV-3-922	MD AUX FW PMP DISCH CHKVLV	47W803-2 / E-10	C	ACT	2	4	CK	SA	C	O/C	N/A	CM	CM		
1-FCV-26-240	CONTAINMENT Standpipe Isolation Vlv	47W850-10 / A-9	A	ACT	2	4	GA	MO	O	C	FAI	RPI LTJ STC	2Y AppJ Q		
1-FCV-26-243	Reactor Coolant Pump SPRAY Isolation Vlv	47W850-10 / B-3	A	ACT	2	4	GA	MO	O	C	FAI	RPI LTJ STC	2Y AppJ Q		
1-VLV-26-1260	ISOLATION CK VLV	47W850-10 / A-10	A/C	PASS	2	4	CK	SA	C	C	N/A	LTJ	AppJ		
1-VLV-26-1296	ISOLATION CK VLV	47W850-10 / B-3	A/C	PASS	2	4	CK	SA	C	C	N/A	LTJ	AppJ		
1-FCV-30-7	UPPER COMPT PURGE ISOL VALVE	1-47W866-1 / C-2	A	ACT	2	24	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FCV-30-8	UPPER COMPT PURGE ISOL VALVE	1-47W866-1 / C-2	A	ACT	2	24	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-30-9	UPPER COMPT PURGE ISOL VALVE	1-47W866-1 / C-2	A	ACT	2	24	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-30-10	UPPER COMPT PURGE ISOL VALVE	1-47W866-1 / C-2	A	ACT	2	24	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-30-14	LOWER COMPT PURGE ISOL VALVE	1-47W866-1 / E-2	A	ACT	2	24	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-30-15	LOWER COMPT PURG ISOL VALVE	1-47W866-1 / E-2	A	ACT	2	24	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FCV-30-16	LOWER COMPT PURGE ISOL VALVE	1-47W866-1 / F-2	A	ACT	2	24	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-30-17	LOWER COMPT PURGE ISOL VALVE	1-47W866-1 / F-2	A	ACT	2	24	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-30-19	INCORE INSTR RM PURGE ISOL VALVE	1-47W866-1 / G-2	A	ACT	2	12	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-30-20	INCORE INSTR RM PURGE ISOL VALVE	1-47W866-1 / G-2	A	ACT	2	12	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-30-37	LOWER COMPT PURGE CONTROL VALVE	1-47W866-1 / D-10	A	ACT	2	8	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		



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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FCV-30-40	LOWER COMPT PURGE CONTROL VALVE	1-47W866-1 / D-9	A	ACT	2	8	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-30-46	CNTMT VAC RELF ISOL VLV	1-47W866-1 / B-4	A	ACT	2	24	BF	AO	O	O/C	O	RPI LTJ FSO STC STO	2Y AppJ Q Q Q		
1-FCV-30-47	CNTMT VAC RELF ISOL VLV	1-47W866-1 / B-6	A	ACT	2	24	BF	AO	O	O/C	O	RPI LTJ FSO STC STO	2Y AppJ Q Q Q		
1-FCV-30-48	CNTMT VAC RELF ISOL VLV	1-47W866-1 / B-7	A	ACT	2	24	BF	AO	O	O/C	O	RPI LTJ FSO STC STO	2Y AppJ Q Q Q		
1-FCV-30-50	UPPER CNTMT EXH ISOL VALVE	1-47W866-1 / C-9	A	ACT	2	24	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FCV-30-51	UPPER CNTMT EXH ISOL VALVE	1-47W866-1 / C-10	A	ACT	2	24	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-30-52	UPPER CNTMT EXH ISOL VALVE	1-47W866-1 / C-9	A	ACT	2	24	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-30-53	UPPER CNTMT EXH ISOL VALVE	1-47W866-1 / C-10	A	ACT	2	24	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-30-56	LOWER CNTMT EXH ISOL VALVE	1-47W866-1 / E-9	A	ACT	2	24	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-30-57	LOWER CNTMT EXH ISOL VALVE	1-47W866-1 / E-10	A	ACT	2	24	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FCV-30-58	INCORE INSTR RM EXH ISOL VALVE	1-47W866-1 / G-9	A	ACT	2	12	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-30-59	INCORE INSTR RM EXH ISOL VALVE	1-47W866-1 / G-10	A	ACT	2	12	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FSV-30-134	CONTAINMENT-ANNULUS DP ISOLATION VALVE	1-47W866-1 / F-9	A	ACT	2	0.375	GL	SO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FSV-30-135	CNTMT-ANNULUS DP ISOLVALVE	1-47W866-1 / F-10	A	ACT	2	0.375	GL	SO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-VLV-30-571	VACUUM RELIEF	1-47W866-1 / B-4	A/C	ACT	2	24	CK	SA	C	O/C	N/A	RPI LTJ RV	2Y AppJ RV		CVTM-2
1-VLV-30-572	VACUUM RELIEF	1-47W866-1 / B-5	A/C	ACT	2	24	CK	SA	C	O/C	N/A	RPI LTJ RV	2Y AppJ RV		CVTM-2

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-VLV-30-573	VACUUM RELIEF	1-47W866-1 / B-7	A/C	ACT	2	24	CK	SA	C	O/C	N/A	RPI LTJ RV	2Y AppJ RV		CVTM-2
1-FCV-313-222	ANNULUS ISOL VLV	47W865-5 / A-7	A	ACT	2	2	PLG	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-313-223	INSTRUMENT RM ISOL VLV	47W865-5 / A-8	A	ACT	2	2	PLG	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-313-224	ANNULUS ISOL VLV	47W865-5 / C-7	A	ACT	2	2	PLG	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-313-225	INSTRUMENT RM ISOL VLV	47W865-5 / C-8	A	ACT	2	2	PLG	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-313-229	INSTRUMENT RM ISOL VLV	47W865-5 / D-7	A	ACT	2	2	PLG	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FCV-313-230	INSTRUMENT RM ISOL VLV	47W865-5 / D-8	A	ACT	2	2	PLG	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-313-231	ANNULUS ISOL VLV	47W865-5 / F-7	A	ACT	2	2	PLG	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-313-232	INSTRUMENT RM ISOL VLV	47W865-5 / F-8	A	ACT	2	2	PLG	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-VLV-313-697	ISOLATION B BYPASS	47W865-5 / F-8	A/C	ACT	2	0.5	SCK	SA	C	O/C	N/A	LTJ CM	AppJ CM		
1-VLV-313-715	ISOLATION B BYPASS CK	47W865-5 / E-8	A/C	ACT	2	0.5	SCK	SA	C	O/C	N/A	LTJ CM	AppJ CM		
1-VLV-313-734	ISOLATION A BYPASS CK	47W865-5 / C-8	A/C	ACT	2	0.5	SCK	SA	C	O/C	N/A	LTJ CM	AppJ CM		
1-VLV-313-752	ISOLATION A BYPASS CK	47W865-5 / B-8	A/C	ACT	2	0.5	SCK	SA	C	O/C	N/A	LTJ CM	AppJ CM		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FCV-32-80	ESSENT CONTROL AIR TR A CNTMT ISOL	47W848-1 / C-9	A	ACT	2	2	GL	AO	O	O/C	C	RPI LTJ FSC STC STO	2Y AppJ CSD CSD CSD		DTJ-08 DTJ-08 DTJ-08
1-FCV-32-102	ESSENT CONTROL AIR TR B CNTMT ISOL	47W848-1 / D-9	A	ACT	2	2	GL	AO	O	O/C	C	RPI LTJ FSC STC STO	2Y AppJ CSD CSD CSD		DTJ-08 DTJ-08 DTJ-08
1-FCV-32-110	CONTROL AIR CNTMT ISOL	47W848-1 / A-9	A	ACT	2	2	GL	AO	O	O/C	C	RPI LTJ FSC STC STO	2Y AppJ CSD CSD CSD		DTJ-08 DTJ-08 DTJ-08
1-VLV-32-285	BYPASS VLV FCV-32-80	47W848-1 / C-9	A	PASS	2	2	GA	M	LC	LC	N/A	LTJ	AppJ		
1-VLV-32-287	UNIT 1 TR-A CK VLV	47W848-1 / C-10	A/C	ACT	2	2	CK	SA	C	O/C	N/A	LTJ CM	AppJ CM		
1-VLV-32-295	BYPASS VLV FCV-32-102	47W848-1 / D-9	A	PASS	2	2	GA	M	LC	LC	N/A	LTJ	AppJ		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-VLV-32-297	UNIT 1 TR-B CK VLV	47W848-1 / D-10	A/C	ACT	2	2	CK	SA	C	O/C	N/A	LTJ CM	AppJ CM		
1-VLV-32-375	BYPASS VLV FCV-32-110	47W848-1 / B-9	A	PASS	2	2	GA	M	LC	LC	N/A	LTJ	AppJ		
1-VLV-32-377	UNIT 1 NONESST CK	47W848-1 / A-10	A/C	ACT	2	2	CK	SA	O	C	N/A	LTJ CM	AppJ CM		
1-FCV-43-1	PRESSURIZED GAS ISOL VLV	47W881-5 / E-5	A	PASS	2	0.375	GL	AO	C	C	C	RPI	2Y		
1-FSV-43-2	PRESSURIZED GAS CNTMT ISOL VLV	47W881-5 / E-4	A	ACT	2	0.375	GL	SO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FSV-43-3	PRESSURIZED GAS CNTMT ISOL VLV	47W881-5 / F-3	A	ACT	2	0.375	GL	SO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FSV-43-11	PRESSURIZER LIQ ISOL VLV	47W881-5 / E-4	A	ACT	2	0.375	GL	SO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FSV-43-12	PRESSURIZER LIQ CNTMT ISOL VLV	47W881-5 / F-2	A	ACT	2	0.375	GL	SO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FSV-43-22	RCS HOT LEGS HDR CNTMT ISOL VLV	47W881-5 / C-1	A	ACT	2	0.375	GL	SO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FSV-43-23	RCS HOT LEGS HDR CNTMT ISOL VLV A TRAIN	47W881-5 / E-1	A	ACT	2	0.375	GL	SO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-43-30	ACCUM TK NO 1 ISOL VLV	47W881-5 / C-6	B	PASS	2	0.375	GL	AO	C	C	C	RPI	2Y		
1-FCV-43-31	ACCUM TK NO 2 ISOL VLV	47W881-5 / C-6	B	PASS	2	0.375	GL	AO	C	C	C	RPI	2Y		
1-FCV-43-32	ACCUM TK NO 3 ISOL VLV	47W881-5 / C-6	B	PASS	2	0.375	GL	AO	C	C	C	RPI	2Y		
1-FCV-43-33	ACCUM TK NO 4 ISOL VLV	47W881-5 / C-6	B	PASS	2	0.375	GL	AO	C	C	C	RPI	2Y		
1-FSV-43-34	ACCUM TANK SAMPLE HDR ISOL	47W881-5 / D-6	A	ACT	2	0.375	GL	SO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FSV-43-35	ACCUM TANK SAMPLE HDR ISOL	47W881-5 / D-6	A	ACT	2	0.375	GL	SO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-HCV-43-42B	CVCS VOL CNTL TK HAND CNTL VLV-GAS ANAL	47W881-7 / F-1	B	PASS	2	0.375	GL	M	C	C	N/A	NTR	NTR		



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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-HCV-43-45B	CVCS HOLDUP TK HAND CNTL VLV-GAS ANAL	47W881-7 / F-4	B	PASS	3	0.375	GL	M	C	C	N/A	NTR	NTR		
1-FSV-43-55	STM GEN BLDN NO.1 SAMP ISOL VLV	47W881-5 / C-8	B	ACT	2	0.375	GL	SO	O	C	C	RPI FSC STC	2Y Q Q		
1-FSV-43-58	STM GEN BLDN NO.2 SAMP ISOL VLV	47W881-5 / C-8	B	ACT	2	0.375	GL	SO	O	C	C	RPI FSC STC	2Y Q Q		
1-FSV-43-61	STM GEN BLDN NO.3 SAMP ISOL VLV	47W881-5 / C-9	B	ACT	2	0.375	GL	SO	O	C	C	RPI FSC STC	2Y Q Q		
1-FSV-43-64	STM GEN BLDN NO.4 SAMP ISOL VLV	47W881-5 / C-8	B	ACT	2	0.375	GL	SO	O	C	C	RPI FSC STC	2Y Q Q		
1-FSV-43-201	LOCA H2 CNTMT MONITOR ISOLATION VLV	47W881-8 / D-2	A	PASS	2	0.375	GL	SO	C	C	C	RPI LTJ	2Y AppJ		
1-FSV-43-202	LOCA H2 CNTMT MONITOR ISOLATION SOL VLV	47W881-8 / A-1	A	PASS	2	0.375	GL	SO	C	C	C	RPI LTJ	2Y AppJ		
1-FSV-43-207	LOCA H2 CNTMT MONITOR ISOLATION SOL VLV	47W881-8 / D-7	A	PASS	2	0.375	GL	SO	C	C	C	RPI LTJ	2Y AppJ		
1-FSV-43-208	LOCA H2 CNTMT MONITOR ISOLATION SOL VLV	47W881-8 / A-6	A	PASS	2	0.375	GL	SO	C	C	C	RPI LTJ	2Y AppJ		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FSV-43-250	POST ACD SMPLE HOT LEG 1 ISLN VLV	47W881-6 / C-2	A	PASS	2	0.375	GL	SO	C	C	C	RPI LTJ	2Y AppJ		
1-FSV-43-251	POST ACD SMP LG HOT LEG 1 ISLN VLV	47W881-6 / B-2	A	PASS	2	0.375	GL	SO	C	C	C	RPI LTJ	2Y AppJ		
1-FSV-43-268	POST ACD SMP LG RHR EXCH 1A ISLN VLV	1-47W881-6 / B-3	B	PASS	2	0.375	GA	SO	C	C	C	RPI	2Y		
1-FSV-43-269	POST ACD SMP LG RHR EXCH 1B ISLN VLV	1-47W881-6 / B-4	B	PASS	2	0.375	GA	SO	C	C	C	RPI	2Y		
1-FSV-43-287	POST ACD SMP LG CNTMT AIR PNL ISLN VLV	47W881-6 / J-4	A	PASS	2	0.375	GA	SO	C	C	C	RPI LTJ	2Y AppJ		
1-FSV-43-288	POST ACD SMP LG CNTMT AIR PNL ISLN VLV	47W881-6 / J-5	A	PASS	2	0.375	GA	SO	C	C	C	RPI LTJ	2Y AppJ		
1-FSV-43-307	POST ACD SMP LG CNTMT AIR PNL ISLN VLV	47W881-6 / K-1	A	PASS	2	0.375	GA	SO	C	C	C	RPI LTJ	2Y AppJ		
1-FSV-43-309	POST ACD SMP LG HOT LEG 3 ISLN V	47W881-6 / C-3	A	PASS	2	0.375	GL	SO	C	C	C	RPI LTJ	2Y AppJ		
1-FSV-43-310	POST ACD SMP LG HOT LEG 3 ISLN V	47W881-6 / B-3	A	PASS	2	0.375	GL	SO	C	C	C	RPI LTJ	2Y AppJ		
1-FSV-43-317	PAS DR TO CNTMT SUMP ISLN VLV	47W881-6 / K-7	A	PASS	2	0.375	GL	SO	C	C	C	RPI LTJ	2Y AppJ		
1-FSV-43-318	POST ACD SMP LG CNTMT AIR PNL ISLN VLV	47W881-6 / K-4	A	PASS	2	0.375	GA	SO	C	C	C	RPI LTJ	2Y AppJ		
1-FSV-43-319	POST ACD SMP LG CNTMT AIR PNL ISLN VLV	47W881-6 / K-5	A	PASS	2	0.375	GA	SO	C	C	C	RPI LTJ	2Y AppJ		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FSV-43-325	POST ACD SMPLG CNTMT AIR PNL ISLN VLV	47W881-6 / K-1	A	PASS	2	0.375	GA	SO	C	C	C	RPI LTJ	2Y AppJ		
1-FSV-43-341	PAS DR TO CNTMT SUMP ISLN VLV	47W881-6 / K-7	A	PASS	2	0.375	GL	SO	C	C	C	RPI LTJ	2Y AppJ		
1-FSV-43-450	LOCA H2 CNTMT MONITOR ISOL VLV	47W881-8 / C-1	A	PASS	2	0.375	GA	SO	C	C	C	RPI LTJ	2Y AppJ		
1-FSV-43-451	LOCA H2 CNTMT MONITOR ISOLATION VLV	47W881-8 / C-1	A	PASS	2	0.375	GL	SO	C	C	C	RPI LTJ	2Y AppJ		
1-FSV-43-452	LOCA H2 CNTMT MONITOR ISOLATION VLV	47W881-8 / C-6	A	PASS	2	0.375	GA	SO	C	C	C	RPI LTJ	2Y AppJ		
1-FSV-43-453	CNTL AIR ISOL VLV TO PNL-L-568	47W881-8 / B-6	A	PASS	2	0.375	GA	SO	C	C	C	RPI LTJ	2Y AppJ		
1-CKV-43-460	CHECK VLV TO CNTMT AIR SAMP RETURN	47W881-6 / K-2	A/C	PASS	2	0.5	CK	SA	C	C	N/A	LTJ	AppJ		
1-CKV-43-461	CHECK VLV TO CNTMT SUMP	47W881-6 / K-8	A/C	PASS	2	0.5	CK	SA	C	C	N/A	LTJ	AppJ		
1-SMV-43-715	INLET BORIC ACID TNK SAMPLE VLV	47W881-9 / B-2	B	PASS	3	0.375	NDL	M	C	C	N/A	NTR	NTR		
1-SMV-43-718	DWNSTR CCS HX 1A1/1A2 SAMPLE VLV	47W881-9 / B-2	B	PASS	3	0.375	NDL	M	C	C	N/A	NTR	NTR		
1-SMV-43-719	ERCW DWNSTR CCS HX 1A1/1A2 SAMPLE VLV	47W881-9 / B-4	B	PASS	3	0.375	NDL	M	C	C	N/A	NTR	NTR		
1-VLV-59-522	RB ISOLATION	47W856-1 / F-3	A	PASS	2	2	GL	M	LC	LC	N/A	LTJ	AppJ		
1-VLV-59-529	DW ISOLATION	47W856-1 / F-3	A	PASS	2	0.75	GL	M	LC	LC	N/A	LTJ	AppJ		
1-VLV-59-633	CONT ISOLATION CHECK VLV	47W856-1 / F-3	A/C	PASS	2	2	CK	SA	C	C	N/A	LTJ	AppJ		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FCV-61-96	INLET ISOLATION VALVE AUX BLDG	47W814-2 / G-9	A	ACT	2	2	DIA	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-61-97	FLOOR COOLING SUPPLY INSIDE ISOL	47W814-2 / G-10	A	ACT	2	2	DIA	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-61-110	OUTLET ISOLATION VALVE AUX BUILDING	47W814-2 / H-10	A	ACT	2	2	DIA	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-61-122	OUTLET ISOLATION VALVE REACTOR BLDG	47W814-2 / H-9	A	ACT	2	2	DIA	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-61-191	GLYCOL SUPPLY ISOLATION VALVE	47W814-2 / A-5	A	ACT	2	4	DIA	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FCV-61-192	GLYCOL SUPPLY ISOLATION VALVE	47W814-2 / A-6	A	ACT	2	4	DIA	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-61-193	GLYCOL RETURN FROM AHU'S OUTSIDE ISOL	47W814-2 / B-5	A	ACT	2	4	DIA	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-61-194	GLYCOL RETURN ISOLATION VALVE	47W814-2 / B-6	A	ACT	2	4	DIA	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-VLV-61-533	GLYCOL EXP BYP CHK	47W809-2 / A-5	A/C	ACT	2	0.5	SCK	SA	O/C	C	N/A	LTJ CM	AppJ CM		
1-VLV-61-680	GLYCOL EXP BYP CHK	47W814-2 / B-5	A/C	ACT	2	0.5	SCK	SA	O/C	C	N/A	LTJ CM	AppJ CM		
1-VLV-61-692	GLYCOL EXP BYP CHK	47W814-2 / G-10	A/C	ACT	2	0.375	SCK	SA	O/C	C	N/A	LTJ CM	AppJ CM		
1-VLV-61-745	GLYCOL BYP CHK	47W814-2 / H-10	A/C	ACT	2	0.375	SCK	SA	O/C	C	N/A	LTJ CM	AppJ CM		
1-FCV-62-61	SEAL FLOW ISO VLV	47W809-1 / C-6	A	ACT	2	4	GA	MO	O	C	FAI	RPI LTJ STC	2Y AppJ RO		DTJ-35

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FCV-62-63	SEAL FLOW ISO VLV	47W809-1 / B-7	A	ACT	2	4	GA	MO	O	C	FAI	RPI LTJ STC	2Y AppJ RO		DTJ-35
1-FCV-62-69	RC LOOP 3 LETDOWN FLOW	47W809-1 / A-2	B	ACT	1	3	GL	AO	O	C	C	RPI FSC STC	2Y CSD CSD		DTJ-09 DTJ-09
1-FCV-62-70	RC LOOP 3 LETDOWN FLOW	47W809-1 / A-2	B	ACT	1	3	GL	AO	O	C	C	RPI FSC STC	2Y CSD CSD		DTJ-09 DTJ-09
1-FCV-62-72	REGEN HT EXCH LETDOWN ISOL VLV A	47W809-1 / A-4	A	ACT	2	2	GL	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ CSD CSD		DTJ-39 DTJ-39
1-FCV-62-73	REGEN HT EXCH LETDOWN ISO VLV B	47W809-1 / A-4	A	ACT	2	2	GL	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ CSD CSD		DTJ-39 DTJ-39
1-FCV-62-74	REGEN HT EXCH LETDOWN ISO VLV C	47W809-1 / A-4	A	ACT	2	2	GL	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ CSD CSD		DTJ-39 DTJ-39

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FCV-62-77	LETDOWN FLOW ISOL	47W809-1 / A-6	A	ACT	2	2	GL	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ CSD CSD		DTJ-39 DTJ-39
1-FCV-62-84	CHARGING FLOW TO RCS SPRAY	47W809-1 / B-2	B	PASS	2	2	GL	AO	C	C	C	RPI	2Y		
1-FCV-62-90	CHARGING FLOW ISO VLV	47W809-1 / D-7	B	ACT	2	3	GA	MO	O	C	FAI	RPI STC	2Y CSD		DTJ-40
1-FCV-62-91	CHARGING FLOW ISO VLV	47W809-1 / D-8	B	ACT	2	3	GA	MO	O	C	FAI	RPI STC	2Y CSD		DTJ-40
1-FCV-62-128	VOL CONT TANK BYPASS FLOW	47W809-2 / C-2	B	PASS	2	2	DIA	AO	C	C	C	NTR	NTR		
1-LCV-62-132	VCT OUTLET ISO VLV LEVEL CONTROL	47W809-1 / D-10	B	ACT	2	4	GA	MO	O	C	FAI	RPI STC	2Y CSD		DTJ-29
1-LCV-62-133	VCT OUTLET ISO VLV LEVEL CONTROL	47W809-1 / E-10	B	ACT	2	4	GA	MO	O	C	FAI	RPI STC	2Y CSD		DTJ-29
1-LCV-62-135	CHARGING PUMP FLOW RWST	47W809-1 / H-9	B	ACT	2	8	GA	MO	C	O/C	FAI	RPI STC STO	2Y CSD CSD		DTJ-41 DTJ-41
1-LCV-62-136	CHARGING PUMP FLOW RWST	47W809-1 / H-9	B	ACT	2	8	GA	MO	C	O/C	FAI	RPI STC STO	2Y CSD CSD		DTJ-41 DTJ-41

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FCV-62-138	EMERGENCY BORATION FLOW CONT VLV	47W809-2 / A-4	B	ACT	3	3	GA	MO	C	O/C	FAI	RPI STC STO	2Y Q Q		
1-FCV-62-144	MAKEUP INJECTION VLV FLOW CONT	47W809-2 / C-2	B	PASS	3	2	DIA	AO	C	C	C	NTR	NTR		
1-VLV-62-504	CHG PMPS SUCT CK VLV FROM RWST	47W809-1 / G-10	C	ACT	2	8	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-06 DTJ-06
1-VLV-62-505	CHRG PMP SUCT RELIEF	47W809-1 / G-10	C	ACT	2	0.75	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-62-523	CENT CHRG PMP MINI CK	47W809-1 / G-8	C	ACT	2	2	CK	SA	C	O/C	N/A	CVC CVO	Q Q		
1-VLV-62-525	CENT CHRG PMP DISC CK	47W809-1 / G-8	C	ACT	2	4	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-05 DTJ-05
1-VLV-62-530	CENT CHRG PMP MINI CK	47W809-1 / F-8	C	ACT	2	2	CK	SA	C	O/C	N/A	CVC CVO	Q Q		
1-VLV-62-532	CENT CHRG PMP DISC CK	47W809-1 / F-8	C	ACT	2	4	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-05 DTJ-05
1-VLV-62-543	NOR CHRG CHECK	47W809-1 / B-6	C	ACT	2	3	CK	SA	O	O/C	N/A	CM	CM		
1-VLV-62-546	SEAL WTR INJ FLTR BYP VLV	47W809-1 / F-7	B	PASS	2	2	GL	M	LC	C	N/A	NTR	NTR		
1-VLV-62-549	SEAL WTR INJ FLTR ISOL	47W809-1 / G-7	B	ACT	2	2	GL	M	O/C	C	N/A	MS	2Y		
1-VLV-62-550	SEAL WTR INJ FLTR ISOL	47W809-1 / H-7	B	ACT	2	2	GL	M	O/C	C	N/A	MS	2Y		
1-VLV-62-560	SEAL WTR INJ CHECK	47W809-1 / F-6	C	ACT	1	2	CK	SA	O	O/C	N/A	CM	CM		
1-VLV-62-561	SEAL WTR INJ CHECK	47W809-1 / F-6	C	ACT	1	2	CK	SA	O	O/C	N/A	CM	CM		



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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-VLV-62-562	SEAL WTR INJ CHECK	47W809-1 / H-5	C	ACT	1	2	CK	SA	O	O/C	N/A	CM	CM		
1-VLV-62-563	SEAL WTR INJ CHECK	47W809-1 / H-5	C	ACT	1	2	CK	SA	O	O/C	N/A	CM	CM		
1-VLV-62-576	SEAL WTR INJ CHECK	47W809-1 / E-3	C	ACT	1	2	CK	SA	O	O/C	N/A	CM	CM		
1-VLV-62-577	SEAL WTR INJ CHECK	47W809-1 / E-2	C	ACT	1	2	CK	SA	O	O/C	N/A	CM	CM		
1-VLV-62-578	SEAL WTR INJ CHECK	47W809-1 / G-2	C	ACT	1	2	CK	SA	O	O/C	N/A	CM	CM		
1-VLV-62-579	SEAL WTR INJ CHECK	47W809-1 / G-3	C	ACT	1	2	CK	SA	O	O/C	N/A	CM	CM		
1-VLV-62-636	SEAL WATER RELIEF	47W809-1 / C-5	C	ACT	2	2	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-62-639	SEAL WATER TEST CHECK	47W809-1 / C-6	A/C	ACT	2	0.75	CK	SA	C	O/C	N/A	LTJ CM	AppJ CM		
1-VLV-62-649	SEAL WTR HX RELIEF	47W809-1 / C-8	C	ACT	2	2	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-62-659	RC LOOP 1 CHG CHECK	47W809-1 / B-2	C	PASS	1	3	CK	SA	C	C	N/A	CM	CM		
1-VLV-62-660	RC LOOP 4 CHG CHECK	47W809-1 / B-2	C	ACT	1	3	CK	SA	O	C	N/A	CM	CM		
1-VLV-62-661	RCS SPRAY CHECK	47W809-1 / B-2	C	PASS	1	2	CK	SA	C	C	N/A	NTR	NTR		
1-VLV-62-662	LETDOWN RELIEF	47W809-1 / A-3	A/C	ACT	2	2	RV	SA	C	O/C	N/A	LTJ RV	AppJ RV		
1-VLV-62-675	LETDOWN RELIEF	47W809-1 / B-9	C	ACT	2	2	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-62-688	VCT RELIEF	47W809-1 / B-10	C	ACT	2	3	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-62-697	VCT OUTLET CHECK	47W809-1 / E-10	C	PASS	2	4	CK	SA	O	O	N/A	NTR	NTR		
1-VLV-62-716	RC LOOP 1 CHG CHECK	47W809-1 / B-2	C	PASS	1	3	CK	SA	C	C	N/A	CM	CM		
1-VLV-62-717	RC LOOP 4 CHG CHECK	47W809-1 / B-2	C	ACT	1	3	CK	SA	O	C	N/A	CM	CM		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-VLV-62-928	BA BLEND ACID SUPPLY	47W809-2 / A-3	C	ACT	3	2	CK	SA	C	O	N/A	BDC CVO	RO RO		DTJ-10 DTJ-10
1-VLV-62-930	B.A. CK VLV TO CHARGING PUMP SUCTION	47W809-2 / B-4	C	ACT	2	3	CK	SA	C	O	N/A	BDC CVO	RO RO		DTJ-10 DTJ-10
1-VLV-62-955	HOLDUP TANK RELIEF	47W809-3 / C-11	C	ACT	3	4	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-62-1030	CCPIT Return to Boric Acid Tank A	0-47W809-5 / B-7	B	PASS	3	1	GL	M	C	C	N/A	NTR	NTR		
1-VLV-62-1031	BORIC ACID TK A ISOL	0-47W809-5 / C-8	B	PASS	3	2	GL	M	C	C	N/A	NTR	NTR		
1-VLV-62-1052A	BORIC ACID PUMP CK VLV	47W809-5 / F-7	C	ACT	3	2	CK	SA	O/C	O	N/A	BDC CVO	Q Q		
1-VLV-62-1052B	BORIC ACID PUMP CK VLV	47W809-5 / F-6	C	ACT	3	2	CK	SA	O/C	O	N/A	BDC CVO	Q Q		
1-VLV-62-1081	HOLDUP TK VAC RELIEF	47W809-3 / C-12	C	ACT	3	4	RV	SA	C	O/C	N/A	RV	RV		
1-FCV-63-1	RWST TO RHR PMP FLOW CNTL VLV HW	1-47W811-1 / E-10	B	ACT	2	12	GA	MO	O	O/C	FAI	RPI STC STO	2Y CSD CSD		DTJ-11 DTJ-11
1-FCV-63-3	SIS PUMP DISCH TO RWST SHUTOFF VLV	1-47W811-1 / E-8	B	ACT	2	2	GL	MO	O	O/C	FAI	RPI STC STO	2Y CSD CSD		DTJ-12 DTJ-12

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FCV-63-4	SIS PUMP A-A DISCH TO RWST SHUTOFF VLV	1-47W811-1 / E-8	B	ACT	2	2	GL	MO	O	O/C	FAI	RPI STC STO	2Y Q Q		
1-FCV-63-5	RWST TO SIS PMP FLOW CONTROL VLV	1-47W811-1 / D-10	B	ACT	2	8	GA	MO	O	O/C	FAI	RPI STC STO	2Y CSD CSD		DTJ-13 DTJ-13
1-FCV-63-6	RHRP 1A-A DISC TO SISP 1A-A SUCTION	1-47W811-1 / F-10	B	ACT	2	4	GA	MO	C	O/C	FAI	RPI STC STO	2Y Q Q		
1-FCV-63-7	RHR Pump 1A-A Disch to SI Pump 1A-A Suct	1-47W811-1 / F-10	B	ACT	2	4	GA	MO	C	O/C	FAI	RPI STC STO	2Y Q Q		
1-FCV-63-8	RHR HTX A TO CVCS CHG PUMPS	1-47W811-1 / H-9	B	ACT	2	8	GA	MO	C	O/C	FAI	RPI STC STO	2Y CSD CSD		DTJ-15 DTJ-15
1-FCV-63-11	RHR HTX 1B-B TO SIS PUMPS	1-47W811-1 / F-9	B	ACT	2	8	GA	MO	C	O/C	FAI	RPI STC STO	2Y CSD CSD		DTJ-15 DTJ-15
1-FCV-63-21	SIS PUMP OUTLET TO SIS TEST LINE	1-47W811-1 / F-6	B	PASS	2	1	GL	AO	C	C	C	RPI	2Y		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FCV-63-22	SI PUMPS CL INJ	1-47W811-1 / E-6	B	ACT	2	4	GA	MO	O	O/C	FAI	RPI STC STO	2Y CSD CSD		DTJ-14 DTJ-14
1-FCV-63-23	SIS ACCUM FILL LINE ISOLATION VLV	1-47W811-1 / E-7	A	ACT	2	0.75	GL	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-63-24	SIS ACCUM FILL LINE ISOLATION VLV	1-47W811-1 / C-6	B	PASS	2	1	GL	AO	C	C	C	RPI	2Y		
1-FCV-63-25	SIS CCP INJ TANK SHUTOFF VLV	1-47W811-1 / B-7	B	ACT	2	4	GA	MO	C	O/C	FAI	RPI STC STO	2Y Q Q		
1-FSV-63-25	FCV-63-25 BONNET PRESSURE RELIEF	1-47W811-1 / B-7	B	ACT	2	0.75	GL	SO	C	O	C	RPI FSC STC STO	2Y Q Q Q		
1-FCV-63-26	SIS CCP INJ TANK SHUTOFF VLV	1-47W811-1 / B-7	B	ACT	2	4	GA	MO	C	O/C	FAI	RPI STC STO	2Y Q Q		
1-FSV-63-26	FCV-63-26 BONNET PRESSURE RELIEF	1-47W811-1 / C-7	B	ACT	2	0.75	GL	SO	C	O	C	RPI FSC STC STO	2Y Q Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FCV-63-39	SIS CCP INJ TANK INLET SHUTOFF VLV	1-47W811-1 / C-9	B	ACT	2	4	GA	MO	C	O/C	FAI	RPI STC STO	2Y Q Q		
1-FCV-63-40	SIS CCP INJ TANK INLET SHUTOFF VLV	1-47W811-1 / C-8	B	ACT	2	4	GA	MO	C	O/C	FAI	RPI STC STO	2Y Q Q		
1-FCV-63-47	SIS PUMP A-A INLET VLV	1-47W811-1 / F-10	B	ACT	2	6	GA	MO	O	O/C	FAI	RPI STC STO	2Y Q Q		
1-FCV-63-48	SIS PUMP 1B-B INLET VLV	1-47W811-1 / E-10	B	ACT	2	6	GA	MO	O	O/C	FAI	RPI STC STO	2Y Q Q		
1-FCV-63-63	SIS ACCUM TANK 4 N2 MAKEUP VLV	1-47W811-1 / A-5	B	PASS	2	1	GL	AO	C	C	C	RPI	2Y		
1-FCV-63-64	SIS ACCUM TANK N2 HDR INLET VLV	0-47W830-6 / B-6	A	ACT	2	1	GL	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-63-67	SIS ACCUM TK 4 FLOW ISOLATION VLV	1-47W811-1 / B-5	B	PASS	2	10	GA	MO	O	O	FAI	RPI	2Y		
1-FCV-63-68	SIS ACCUM TK 4 CHECK VLV LEAK TEST	1-47W811-1 / C-5	B	PASS	2	0.75	GL	AO	C	C	C	RPI	2Y		
1-FCV-63-69	SIS CL 4 CHECK VLV LEAK TEST	1-47W811-1 / H-2	B	PASS	2	0.75	GL	AO	C	C	C	RPI	2Y		
1-FCV-63-70	SIS ACCUM TK 4 FILL VLV	1-47W811-1 / B-6	B	PASS	2	1	GL	AO	C	C	C	RPI	2Y		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FCV-63-71	SIS CHECK VLV FLOW ISOL VLV	1-47W811-1 / C-6	A	ACT	2	0.75	GL	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-63-72	CNTMT SUMP FLOW ISOL VLV	1-47W811-1 / H-6	B	ACT	2	18	GA	MO	C	O/C	FAI	RPI STC STO	2Y CSD CSD		DTJ-15 DTJ-15
1-FCV-63-73	CNTMT SUMP FLOW ISOL VLV	1-47W811-1 / H-7	B	ACT	2	18	GA	MO	C	O/C	FAI	RPI STC STO	2Y CSD CSD		DTJ-15 DTJ-15
1-FCV-63-77	NO. 3 CL ACCUM WATER MAKEUP	1-47W811-1 / B-4	B	PASS	2	1	GL	AO	C	C	C	RPI	2Y		
1-FCV-63-78	SIS ACCUM TK 3 CHECK VLV ISO VLV	1-47W811-1 / C-4	B	PASS	2	0.75	GL	AO	C	C	C	RPI	2Y		
1-FCV-63-79	SIS CL 3 CHECK VLV LEAK TEST	1-47W811-1 / G-5	B	PASS	2	0.75	GL	AO	C	C	C	RPI	2Y		
1-FCV-63-80	SIS ACCUM TK 3 FLOW ISOL VLV	1-47W811-1 / B-4	B	PASS	2	10	GA	MO	O	O	FAI	RPI	2Y		
1-FCV-63-84	SIS CHK VLV ISOL HDR FLOW ISOLATION VLV	1-47W811-1 / D-6	A	ACT	2	0.75	GL	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-63-87	SIS ACCUM TK 3 N2 MAKEUP VLV	1-47W811-1 / A-4	B	PASS	2	1	GL	AO	C	C	C	RPI	2Y		
1-FCV-63-93	RHR CL INJ LOOPS 2&3	1-47W811-1 / G-7	B	ACT	2	8	GA	MO	O	O/C	FAI	RPI STC STO	2Y CSD CSD		DTJ-16 DTJ-16

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FCV-63-94	RHR PUMP 1B DISCH TO CL 1&4	1-47W811-1 / G-7	B	ACT	2	8	GA	MO	O	O/C	FAI	RPI STC STO	2Y CSD CSD		DTJ-16 DTJ-16
1-FCV-63-95	SIS ACCUM TK 2 FILL VLV	1-47W811-1 / B-3	B	PASS	2	1	GL	AO	C	C	C	RPI	2Y		
1-FCV-63-96	SIS ACCUM TK 2 CHECK VLV ISOL VLV	1-47W811-1 / C-2	B	PASS	2	0.75	GL	AO	C	C	C	RPI	2Y		
1-FCV-63-97	SIS CL 2 CHECK VLV LEAK TEST	1-47W811-1 / H-4	B	PASS	2	0.75	GL	AO	C	C	C	RPI	2Y		
1-FCV-63-98	SIS ACCUM TK 2 FLOW ISOL VLV	1-47W811-1 / B-2	B	PASS	2	10	GA	MO	O	O	FAI	RPI	2Y		
1-FCV-63-107	SIS ACCUM TK 2 N2 MAKEUP VLV	1-47W811-1 / A-2	B	PASS	2	1	GL	AO	C	C	C	RPI	2Y		
1-FCV-63-111	SIS CHK VLV LEAK TEST ISOLATION VLV	1-47W811-1 / H-6	B	PASS	2	0.75	GL	AO	C	C	C	RPI	2Y		
1-FCV-63-112	SIS CHK VLV LEAK TEST ISOLATION VLV	1-47W811-1 / H-6	B	PASS	2	0.75	GL	AO	C	C	C	RPI	2Y		
1-FCV-63-115	SIS ACCUM TK 1 FILL VLV	1-47W811-1 / B-2	B	PASS	2	1	GL	AO	C	C	C	RPI	2Y		
1-FCV-63-116	SIS ACCUM TK 1 CHECK VLV ISOL VLV	1-47W811-1 / C-1	B	PASS	2	0.75	GL	AO	C	C	C	RPI	2Y		
1-FCV-63-117	SIS CL 1 CHECK VLV LEAK TEST	1-47W811-1 / H-1	B	PASS	2	0.75	GL	AO	C	C	C	RPI	2Y		
1-FCV-63-118	NO. 1 CL ACCUM OUTLET ISOL	1-47W811-1 / B-1	B	PASS	2	10	GA	MO	O	O	FAI	RPI	2Y		
1-FCV-63-121	SI PUMP FLOW TO CL ACCUM CV LEAK TEST	1-47W811-1 / E-6	B	PASS	2	0.75	GL	AO	C	C	C	RPI	2Y		
1-FCV-63-127	SIS ACCUM TK 1 N2 MAKEUP VLV	1-47W811-1 / A-1	B	PASS	2	1	GL	AO	C	C	C	RPI	2Y		
1-FCV-63-152	SIS PMP A-A OUT FLOW CNTL VLV	1-47W811-1 / F-7	B	ACT	2	4	GA	MO	O	O/C	FAI	RPI STC STO	2Y Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FCV-63-153	SIS PMP B-B OUT FLOW CNTL VLV	1-47W811-1 / E-7	B	ACT	2	4	GA	MO	O	O/C	FAI	RPI STC STO	2Y Q Q		
1-FCV-63-156	SIS PUMP OUT RCS LP 1&3 H L	1-47W811-1 / F-6	B	ACT	2	4	GA	MO	C	O/C	FAI	RPI STC STO	2Y Q Q		
1-FCV-63-157	SIS PUMP OUT RCS LP 2&4 H L	1-47W811-1 / D-6	B	ACT	2	4	GA	MO	C	O/C	FAI	RPI STC STO	2Y Q Q		
1-FCV-63-158	RHR RETURN FROM SIS SAMPLE	1-47W811-1 / F-5	B	PASS	2	0.75	GL	AO	C	C	C	RPI	2Y		
1-FCV-63-163	RCS LP 1 H L FEED TEST LINE	1-47W811-1 / G-5	B	PASS	2	0.75	GL	AO	C	C	C	RPI	2Y		
1-FCV-63-164	RCS LP 3 H L FEED TEST LINE	1-47W811-1 / F-4	B	PASS	2	0.75	GL	AO	C	C	C	RPI	2Y		
1-FCV-63-165	RCS LP 2 H L FEED TEST LINE	1-47W811-1 / C-3	B	PASS	2	0.75	GL	AO	C	C	C	RPI	2Y		
1-FCV-63-166	RCS LP 4 H L FEED TEST LINE	1-47W811-1 / E-5	B	PASS	2	0.75	GL	AO	C	C	C	RPI	2Y		
1-FCV-63-167	SIS PUMP OUT TEST LINE	1-47W811-1 / D-6	B	PASS	2	0.75	GL	AO	C	C	C	RPI	2Y		
1-FCV-63-172	RHR HL INJ TO LOOPS 1 & 3	1-47W811-1 / G-6	B	ACT	2	12	GA	MO	C	O/C	FAI	RPI STC STO	2Y CSD CSD		DTJ-16 DTJ-16
1-FCV-63-174	SIS TEST LINE CHECK VLV TEST	1-47W811-1 / C-6	B	PASS	2	0.75	GL	AO	C	C	C	RPI	2Y		
1-FCV-63-175	SIS Pump 1B Recirc to RWST	1-47W811-1 / E-8	B	ACT	2	2	GL	MO	O	O/C	FAI	RPI STC STO	2Y Q Q		



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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-VLV-63-344B	CONT PRESS TEST VT DR	1-47W600-154 / D- 6	A	PASS	2	0.25	GA	M	LC	LC	N/A	LTJ	AppJ		
1-VLV-63-344D	CONT PRESS TEST VT DR	1-47W600-154 / F- 9	A	PASS	2	0.25	GA	M	LC	LC	N/A	LTJ	AppJ		
1-VLV-63-502	RHR PUMP SUCT CHECK	1-47W811-1 / F-10	C	ACT	2	12	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-07 DTJ-07
1-VLV-63-510	SIS PUMP SUCT CHECK	1-47W811-1 / D-10	C	ACT	2	8	CK	SA	C	O/C	N/A	CM	CM		
1-VLV-63-511	SIS PUMP SUCT REL VA	1-47W811-1 / D-10	C	ACT	2	0.75	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-63-524	SIS PUMP DISCH CHECK	1-47W811-1 / F-8	C	ACT	2	4	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-25 DTJ-25
1-VLV-63-526	SIS PUMP DISCH CHECK	1-47W811-1 / D-8	C	ACT	2	4	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-25 DTJ-25
1-VLV-63-528	SIS PUMP DISCH MINI CK	1-47W811-1 / F-8	C	ACT	2	0.75	CK	SA	C	O/C	N/A	CVC CVO	Q Q		
1-VLV-63-530	SIS PUMP DISCH MINI CK	1-47W811-1 / E-8	C	ACT	2	0.75	CK	SA	C	O/C	N/A	CVC CVO	Q Q		
1-VLV-63-534	SIS PUMP DISCH RELIEF VLV	1-47W811-1 / E-7	C	ACT	2	0.75	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-63-535	SIS PUMP DISCH RELIEF	1-47W811-1 / E-7	C	ACT	2	0.75	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-63-536	SIS PUMP DISCH RELIEF	1-47W811-1 / D-7	C	ACT	2	0.75	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-63-543	SIS L1 HL INJ CHECK	1-47W811-1 / F-3	A/C	ACT	1	2	CK	SA	C	O/C	N/A	LTP CM	2Y CM		
1-VLV-63-545	SIS L3 HL INJ CHECK	1-47W811-1 / E-3	A/C	ACT	1	2	CK	SA	C	O/C	N/A	LTP CM	2Y CM		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-VLV-63-547	SIS L2 HL INJ CHECK	1-47W811-1 / D-3	A/C	ACT	1	2	CK	SA	C	O/C	N/A	LTP CM	2Y CM		
1-VLV-63-549	SIS L4 HL INJ CHECK	1-47W811-1 / E-3	A/C	ACT	1	2	CK	SA	C	O/C	N/A	LTP CM	2Y CM		
1-VLV-63-551	SIS L1 CL INJ CHECK	1-47W811-1 / H-1	A/C	ACT	1	2	CK	SA	C	O/C	N/A	LTP CM	2Y CM		
1-VLV-63-553	SIS L2 CL INJ CHECK	1-47W811-1 / H-3	A/C	ACT	1	2	CK	SA	C	O/C	N/A	LTP CM	2Y CM		
1-VLV-63-555	SIS L3 CL INJ CHECK	1-47W811-1 / G-3	A/C	ACT	1	2	CK	SA	C	O/C	N/A	LTP CM	2Y CM		
1-VLV-63-557	SIS L4 CL INJ CHECK	1-47W811-1 / G-2	A/C	ACT	1	2	CK	SA	C	O/C	N/A	LTP CM	2Y CM		
1-VLV-63-558	SIS L4 HL INJ CHECK	1-47W811-1 / E-2	A/C	ACT	1	6	CK	SA	C	O/C	N/A	LTP CM	2Y CM		
1-VLV-63-559	SIS L2 HL INJ CHECK	1-47W811-1 / E-1	A/C	ACT	1	6	CK	SA	C	O/C	N/A	LTP CM	2Y CM		
1-VLV-63-560	SIS L1 CL INJ CHECK	1-47W811-1 / E-1	A/C	ACT	1	10	CK	SA	C	O/C	N/A	LTP CM	2Y CM		
1-VLV-63-561	SIS L2 CL INJ CHECK	1-47W811-1 / D-1	A/C	ACT	1	10	CK	SA	C	O/C	N/A	LTP CM	2Y CM		
1-VLV-63-562	SIS L3 CL INJ CHECK	1-47W811-1 / E-2	A/C	ACT	1	10	CK	SA	C	O/C	N/A	LTP CM	2Y CM		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-VLV-63-563	SIS L4 CL INJ CHECK	1-47W811-1 / F-2	A/C	ACT	1	10	CK	SA	C	O/C	N/A	LTP CM	2Y CM		
1-VLV-63-577	INJ TK OUT RELIEF	1-47W811-1 / A-7	C	ACT	2	0.75	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-63-581	INJ TK CHECK	1-47W811-1 / C-6	C	ACT	1	3	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-24 DTJ-24
1-VLV-63-586	INJ TK CHECK CL L1	1-47W811-1 / E-1	C	ACT	1	1.5	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-24 DTJ-24
1-VLV-63-587	INJ TK CHECK CL L2	1-47W811-1 / D-2	C	ACT	1	1.5	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-24 DTJ-24
1-VLV-63-588	INJ TK CHECK CL L3	1-47W811-1 / E-2	C	ACT	1	1.5	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-24 DTJ-24
1-VLV-63-589	INJ TK CHECK CL L4	1-47W811-1 / F-2	C	ACT	1	1.5	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-24 DTJ-24
1-VLV-63-602	ACCUM 1 RELIEF	1-47W811-1 / A-1	C	ACT	3	1	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-63-603	ACCUM 2 RELIEF	1-47W811-1 / A-3	C	ACT	3	1	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-63-604	ACCUM 3 RELIEF	1-47W811-1 / A-4	C	ACT	3	1	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-63-605	ACCUM 4 RELIEF	1-47W811-1 / A-6	C	ACT	3	1	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-63-618	ACC 1 WDS ISOL VLV	1-47W811-1 / B-1	B	PASS	2	1	GL	M	C	C	N/A	NTR	NTR		
1-VLV-63-619	ACC 2 WDS ISOL VLV	1-47W811-1 / B-2	B	PASS	2	1	GL	M	C	C	N/A	NTR	NTR		
1-VLV-63-620	ACC 3 WDS ISOL VLV	1-47W811-1 / B-4	B	PASS	2	1	GL	M	C	C	N/A	NTR	NTR		
1-VLV-63-621	ACC 4 WDS ISOL VLV	1-47W811-1 / B-5	B	PASS	2	1	GL	M	C	C	N/A	NTR	NTR		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-VLV-63-622	ACCUM 1 OUT CHECK	1-47W811-1 / D-1	A/C	ACT	1	10	CK	SA	C	O/C	N/A	LTP CM	2Y CM		
1-VLV-63-623	ACCUM 2 OUT CHECK	1-47W811-1 / D-2	A/C	ACT	1	10	CK	SA	C	O/C	N/A	LTP CM	2Y CM		
1-VLV-63-624	ACCUM 3 OUT CHECK	1-47W811-1 / D-3	A/C	ACT	1	10	CK	SA	C	O/C	N/A	LTP CM	2Y CM		
1-VLV-63-625	ACCUM 4 OUT CHECK	1-47W811-1 / D-3	A/C	ACT	1	10	CK	SA	C	O/C	N/A	LTP CM	2Y CM		
1-VLV-63-626	RHR PUMP DISC RELIEF	1-47W811-1 / G-7	C	ACT	2	2	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-63-627	RHR PUMP DISC RELIEF	1-47W811-1 / F-7	C	ACT	2	2	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-63-632	RHR PUMP DISC CHECK	1-47W811-1 / H-2	A/C	ACT	1	6	CK	SA	C	O/C	N/A	LTP CM	2Y CM		
1-VLV-63-633	RHR PUMP DISC CHECK	1-47W811-1 / G-1	A/C	ACT	1	6	CK	SA	C	O/C	N/A	LTP CM	2Y CM		
1-VLV-63-634	RHR PUMP DISC CHECK	1-47W811-1 / G-3	A/C	ACT	1	6	CK	SA	C	O/C	N/A	LTP CM	2Y CM		
1-VLV-63-635	RHR PUMP DISCH CHECK	1-47W811-1 / G-1	A/C	ACT	1	6	CK	SA	C	O/C	N/A	LTP CM	2Y CM		
1-VLV-63-637	RHR HX DISCH RELIEF	1-47W811-1 / F-6	C	ACT	2	0.75	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-63-640	RHR HX DISCH CHECK	1-47W811-1 / G-3	A/C	ACT	1	8	CK	SA	C	O/C	N/A	LTP CVC CVO	2Y RO RO		DTJ-33 DTJ-33

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-VLV-63-641	RHR HX DISCH CHECK	1-47W811-1 / F-1	A/C	ACT	1	6	CK	SA	C	O/C	N/A	LTP CVC CVO	2Y RO RO		DTJ-33 DTJ-33
1-VLV-63-643	RHR HX DISCH CHECK	1-47W811-1 / G-3	A/C	ACT	1	8	CK	SA	C	O/C	N/A	LTP CVC CVO	2Y RO RO		DTJ-33 DTJ-33
1-VLV-63-644	RHR HX DISCH CHECK	1-47W811-1 / D-2	A/C	ACT	1	6	CK	SA	C	O/C	N/A	LTP CVC CVO	2Y RO RO		DTJ-33 DTJ-33
1-FCV-67-66	ERCW HDR 1A SUP TO DG 1A-A HX A1 & A2	47W845-1 / B-12	B	ACT	3	6	BF	MO	C	O	FAI	RPI STO	2Y Q		
1-FCV-67-67	ERCW HDR 1B SUP TO DG 1B-B HX B1 & B2	47W845-1 / B-7	B	ACT	3	6	BF	MO	C	O	FAI	RPI STO	2Y Q		
1-FCV-67-83	LOWER CNTMT D COOLERS SUPPLY ISOL VLV	1-47W845-3 / D-7	A	ACT	2	6	BF	MO	O	O/C	FAI	RPI LTJ STC STO	2Y AppJ CSD CSD		DTJ-18 DTJ-18
1-TCV-67-84	LOWER CNTMT VENT CLR A SUPPLY CONTROL VLV	1-47W845-3 / H-4	B	ACT	3	4	GL	AO	O/C	O	O	RPI FSO STO	2Y Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FCV-67-87	LWR CNTMT A CLRS DISCH ISOL VLV INSIDE CNTMT	1-47W845-3 / G-6	A	ACT	2	6	BF	MO	O	O/C	FAI	RPI  LTJ  STC  STO	2Y  AppJ  CSD  CSD		DTJ-18   DTJ-18
1-FCV-67-88	LWR CNTMT A CLRS DISCH ISOL VLV OUTSIDE CNTMT	1-47W845-3 / G-7	A	ACT	2	6	BF	MO	O	O/C	FAI	RPI  LTJ  STC  STO	2Y  AppJ  CSD  CSD		DTJ-18   DTJ-18
1-FCV-67-89	LOWER CNTMT D COOLERS SUPPLY ISOL VLV	1-47W845-3 / D-5	A	ACT	2	6	BF	MO	O	O/C	FAI	RPI  LTJ  STC  STO	2Y  AppJ  CSD  CSD		DTJ-18   DTJ-18
1-FCV-67-90	LOWER CNTMT B COOLERS SUPPLY ISOL VLV	1-47W845-3 / F-5	A	ACT	2	6	BF	MO	O	O/C	FAI	RPI  LTJ  STC  STO	2Y  AppJ  CSD  CSD		DTJ-18   DTJ-18

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FCV-67-91	LWR CNTMT B COOLERS SUPPLY ISOL VLV	1-47W845-3 / F-7	A	ACT	2	6	BF	MO	O	O/C	FAI	RPI LTJ STC STO	2Y AppJ CSD CSD		DTJ-18  DTJ-18
1-TCV-67-92	LWR CNTMT VENT CLR C SUPPLY CONTROL VLV	1-47W845-3 / G-4	B	ACT	3	4	GL	AO	O/C	O	O	RPI FSO STO	2Y Q Q		
1-FCV-67-95	LWR CNTMT C CLRS DISCH ISOL VLV INSIDE CNTMT	1-47W845-3 / F-6	A	ACT	2	6	BF	MO	O	O/C	FAI	RPI LTJ STC STO	2Y AppJ CSD CSD		DTJ-18  DTJ-18
1-FCV-67-96	LWR CNTMT C CLRS DISCH ISOL VLV OUTSIDE CNTMT	1-47W845-3 / F-7	A	ACT	2	6	BF	MO	O	O/C	FAI	RPI LTJ STC STO	2Y AppJ CSD CSD		DTJ-18  DTJ-18

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FCV-67-99	LWR CNTMT C COOLERS SUPPLY ISOL VLV	1-47W845-3 / G-7	A	ACT	2	6	BF	MO	O	O/C	FAI	RPI LTJ STC STO	2Y AppJ CSD CSD		DTJ-18  DTJ-18
1-TCV-67-100	LWR CNTMT VENT CLR B SUPPLY CONTROL VLV	1-47W845-3 / E-4	B	ACT	3	4	GL	AO	O/C	O	O	RPI FSO STO	2Y Q Q		
1-FCV-67-103	LWR CNTMT B CLRS DISCH ISOL VLV INSIDE CNTMT	1-47W845-3 / E-6	A	ACT	2	6	BF	MO	O	O/C	FAI	RPI LTJ STC STO	2Y AppJ CSD CSD		DTJ-18  DTJ-18
1-FCV-67-104	LWR CNTMT B CLRS DISCH ISOL VLV OUTSIDE CNTMT	1-47W845-3 / E-7	A	ACT	2	6	BF	MO	O	O/C	FAI	RPI LTJ STC STO	2Y AppJ CSD CSD		DTJ-18  DTJ-18



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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FCV-67-105	LWR CNTMT C COOLERS SUPPLY ISOL VLV	1-47W845-3 / G-5	A	ACT	2	6	BF	MO	O	O/C	FAI	RPI LTJ STC STO	2Y AppJ CSD CSD		DTJ-18  DTJ-18
1-FCV-67-106	LOWER CNTMT A COOLERS SUPPLY ISOL VLV	1-47W845-3 / H-5	A	ACT	2	6	BF	MO	O	O/C	FAI	RPI LTJ STC STO	2Y AppJ CSD CSD		DTJ-18  DTJ-18
1-FCV-67-107	LWR CNTMT A COOLERS SUPPLY ISOL VLV	1-47W845-3 / H-7	A	ACT	2	6	BF	MO	O	O/C	FAI	RPI LTJ STC STO	2Y AppJ CSD CSD		DTJ-18  DTJ-18
1-TCV-67-108	LWR CNTMT VENT CLR D SUPPLY CONTROL VLV	1-47W845-3 / D-4	B	ACT	3	4	GL	AO	O/C	O	O	RPI FSO STO	2Y Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FCV-67-111	LWR CNTMT D CLRS DISCH ISOL VLV INSIDE CNTMT	1-47W845-3 / D-6	A	ACT	2	6	BF	MO	O	O/C	FAI	RPI  LTJ  STC  STO	2Y  AppJ  CSD  CSD		DTJ-18   DTJ-18
1-FCV-67-112	LWR CNTMT CLR 1D OUT ISOL-OUTSIDE	1-47W845-3 / D-7	A	ACT	2	6	BF	MO	O	O/C	FAI	RPI  LTJ  STC  STO	2Y  AppJ  CSD  CSD		DTJ-18   DTJ-18
1-FCV-67-123	CNTMT SPRAY HTX B SUPPLY CONTROL VLV	47W845-2 / C-9	B	ACT	3	18	BF	MO	C	O	FAI	RPI  STO	2Y  CSD		DTJ-26
1-FCV-67-124	CNTMT SPRAY HTX B DISCH VLV	47W845-2 / E-8	B	ACT	3	18	BF	MO	C	O	FAI	RPI  STO	2Y  CSD		DTJ-26
1-FCV-67-125	CNTMT SPRAY HTX A SUPPLY CONTROL VLV	47W845-2 / C-8	B	ACT	3	18	BF	MO	C	O	FAI	RPI  STO	2Y  CSD		DTJ-26
1-FCV-67-126	CNTMT SPRAY HTX A DISCH VLV	47W845-2 / D-7	B	ACT	3	18	BF	MO	C	O	FAI	RPI  STO	2Y  CSD		DTJ-26

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FCV-67-146	COMPONENT CLG HTX 1A1/1A2 DISCH CONTROL VLV	47W845-2 / C-7	B	ACT	3	24	BF	MO	TH	O/C	FAI	RPI  STC  STO	2Y  CSD  CSD		DTJ-19   DTJ-19
1-FCV-67-162	CCS & AFW PUMPS SPACE CLR A SUP CNTL VLV	47W845-6 / B-4	B	ACT	3	2	GL	AO	C	O	O	FSO  STO	Q  Q		
1-FCV-67-164	CCS & AFW PUMPS SPACE CLR B SUP CNTL VLV	47W845-6 / A-7	B	ACT	3	2	GL	AO	C	O	O	FSO  STO	Q  Q		
1-FCV-67-168	CNTFGL CHG PUMP RM CLR 30-183 SUP CNTL VLV	47W845-6 / D-4	B	PASS	3	1.5	GA	AO	O	O	O	NTR	NTR		
1-FCV-67-170	CNTFGL CHG PUMP RM CLR 30-182 SUP CNTL VLV	47W845-6 / C-7	B	PASS	3	1.5	GA	AO	O	O	O	NTR	NTR		
1-FCV-67-176	S.I. PUMP AND RM CLR- 30-180 SUPPLY	47W845-6 / D-4	B	ACT	3	1.5	GL	AO	C	O	O	FSO  STO	Q  Q		
1-FCV-67-182	S.I. PUMP AND RM CLR- 30-179 SUPPLY	47W845-6 / D-6	B	ACT	3	1.5	GL	AO	C	O	O	FSO  STO	Q  Q		
1-FCV-67-184	CS PUMP RM CLR-30-177 SUPPLY CONTROL VLV	47W845-6 / D-4	B	ACT	3	1.5	GL	AO	C	O	O	FSO  STO	Q  Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FCV-67-186	CS PUMP RM CLR-30-178 SUPPLY CONTROL VLV	47W845-6 / D-6	B	ACT	3	1.5	GL	AO	C	O	O	FSO  STO	Q  Q		
1-FCV-67-188	RHR PUMP RM CLR-30- 175 SUPPLY CONTROL VLV	47W845-6 / E-4	B	PASS	3	1	GA	AO	O	O	O	NTR	NTR		
1-FCV-67-190	RHR PUMP RM CLR-30- 176 SUPPLY CONTROL VLV	47W845-6 / E-7	B	PASS	3	1	GA	AO	O	O	O	NTR	NTR		
1-FCV-67-213	SPENT FUEL & TB BSTR PMP SPCE CLR A SUP VLV	47W845-6 / A-4	B	ACT	3	1.5	GL	AO	C	O	O	FSO  STO	Q  Q		
1-FCV-67-215	SPENT FUEL & TB BSTR. PMP SPCE CLR B SUP VLV	47W845-6 / A-7	B	ACT	3	1.5	GL	AO	C	O	O	FSO  STO	Q  Q		
1-FCV-67-342	PIPE CHASE CLR-30-201 SUPPLY CNTL VLV	47W845-6 / F-4	B	ACT	3	2	GL	AO	C	O	O	FSO  STO	Q  Q		
1-FCV-67-344	PIPE CHASE CLR-30-202 SUPPLY CONT VLV	47W845-6 / F-7	B	ACT	3	2	GL	AO	C	O	O	FSO  STO	Q  Q		
1-FCV-67-346	PEN RM CLR-30-186 SUPPLY CONTROL VLV	47W845-6 / E-4	B	ACT	3	1.5	GL	AO	C	O	O	FSO  STO	Q  Q		
1-FCV-67-348	PEN RM CLR-30-187 SUPPLY CONTROL VLV	47W845-6 / E-6	B	ACT	3	1.5	GL	AO	C	O	O	FSO  STO	Q  Q		
1-FCV-67-350	PEN RM CLR-30-196 SUPPLY CONTROL VLV	47W845-6 / E-4	B	ACT	3	1.5	GL	AO	C	O	O	FSO  STO	Q  Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FCV-67-352	PEN RM CLR-30-197 SUPPLY CONTROL VLV	47W845-6 / E-6	B	ACT	3	1.5	GL	AO	C	O	O	FSO STO	Q Q		
1-FCV-67-354	PEN RM CLR-30-194 SUPPLY CONTROL VLV	47W845-6 / F-4	B	ACT	3	1.5	GL	AO	C	O	O	FSO STO	Q Q		
1-FCV-67-356	PEN RM CLR-30-195 SUPPLY CONTROL VLV	47W845-6 / F-7	B	ACT	3	1.5	GL	AO	C	O	O	FSO STO	Q Q		
1-VLV-67-508A	ERCW DSL GEN SUP CK	47W845-1 / B-12	C	ACT	3	6	CK	SA	C	O	N/A	CM	CM		
1-VLV-67-508B	ERCW DSL GEN SUP CK	47W845-1 / B-8	C	ACT	3	6	CK	SA	C	O	N/A	CM	CM		
1-VLV-67-509A	ERCW DSL GEN PRES REL	47W845-1 / B-11	C	ACT	3	0.5	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-67-509B	ERCW DSL GEN PRES REL	47W845-1 / B-8	C	ACT	3	0.5	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-67-514A	ERCW DSL GEN PRES REL	47W845-1 / C-11	C	ACT	3	0.5	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-67-514B	ERCW DSL GEN PRES REL	47W845-1 / C-8	C	ACT	3	0.5	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-67-543A	ERCW SUP HDR SURGE TK	47W845-2 / C-10	B	ACT	3	3	GA	M	C	O/C	N/A	MS	2Y		
1-VLV-67-543B	ERCW SUP HDR SURGE TK	47W845-2 / C-10	B	ACT	3	3	GA	M	C	O/C	N/A	MS	2Y		
1-VLV-67-544	ERCW SUP HDR SURGE TK	47W845-2 / C-10	B	ACT	3	3	GA	M	C	O/C	N/A	MS	2Y		
1-VLV-67-573A	ERCW RET LCV CLR PR	1-47W845-3 / H-5	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-67-573B	ERCW RET LCV CLR PR	1-47W845-3 / F-5	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-67-573C	ERCW RET LCV CLR PR	1-47W845-3 / G-5	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-67-573D	ERCW RET LCV CLR PR	1-47W845-3 / D-5	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-VLV-67-575A	ERCW RET LCV CLR CK	1-47W845-3 / G-6	A/C	ACT	2	0.5	CK	SA	C	O/C	N/A	LTJ CM	AppJ CM		
1-VLV-67-575B	ERCW RET LCV CLR CK	1-47W845-3 / E-6	A/C	ACT	2	0.5	CK	SA	C	O/C	N/A	LTJ CM	AppJ CM		
1-VLV-67-575C	ERCW RET LCV CLR CK	1-47W845-3 / F-6	A/C	ACT	2	0.5	CK	SA	C	O/C	N/A	LTJ CM	AppJ CM		
1-VLV-67-575D	ERCW RET LCV CLR CK	1-47W845-3 / D-6	A/C	ACT	2	0.5	CK	SA	C	O/C	N/A	LTJ CM	AppJ CM		
1-VLV-67-687	ERCW SUPPLY TO CCS SAMPLE HXS ISOL VLV	47W485-2 / D-10	B	PASS	3	3	BF	M	C	C	N/A	NTR	NTR		
1-VLV-67-1070	ERCW STRAINER A1A-A BACKWASH VALVE	47W845-5 / E-5	B	ACT	3	4	BA	M	C	O/C	N/A	MS	2Y		
1-VLV-67-1073	ERCW STRAINER B1B-B BACKWASH VALVE	47W845-5 / D-5	B	ACT	3	4	BA	M	C	O/C	N/A	MS	2Y		
1-RFV-67-1513	CCS HX 1A1 PRESSURE RELIEF	47W845-2 / B-7	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
1-RFV-67-1514	CCS HX 1A2 PRESSURE RELIEF	47W845-2 / B-8	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-67-1521	AUX AIR CCOMPRESSOR A HX RELIEF	47W845-6 / A-4	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
1-CKV-67-1523A	CNTM ISOL BYP CHK	1-47W845-3 / H-5	A/C	ACT	2	0.5	CK	SA	C	O/C	N/A	LTJ CM	AppJ CM		
1-CKV-67-1523B	CNTM ISOL BYP CHK	1-47W845-3 / F-5	A/C	ACT	2	0.5	CK	SA	C	O/C	N/A	LTJ CM	AppJ CM		
1-CKV-67-1523C	CNTM ISOL BYP CHK	1-47W845-3 / G-5	A/C	ACT	2	0.5	CK	SA	C	O/C	N/A	LTJ CM	AppJ CM		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-CKV-67-1523D	CNTM ISOL BYP CHK	1-47W845-3 / E-5	A/C	ACT	2	0.5	CK	SA	C	O/C	N/A	LTJ CM	AppJ CM		
1-VLV-67-1590A	CNTMT SPRAY HX DISCH PRES REL	47W845-2 / D-7	C	ACT	3	0.5	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-67-1590B	CNTMT SPRAY HX DISCH PRESS REL	47W845-2 / D-8	C	ACT	3	0.5	RV	SA	C	O/C	N/A	RV	RV		
1-FCV-68-305	RCS FLOW CNTL VLV WDS N2 MAN TO PRT	47W830-6 / G-7	A	ACT	2	0.75	DIA	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-68-307	RCS FLOW CNTL VLV WDS GA TO PRT	47W813-1 / A-10	A	ACT	2	0.375	GL	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-68-308	RCS FLOW CNTL VLV WDS GA TO PRT	47W813-1 / A-9	A	ACT	2	0.375	GL	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-68-332	RCS PRZR REL FLOW CONTROL	47W813-1 / B-3	B	ACT	1	3	GA	MO	O	O/C	FAI	RPI STC STO	2Y Q Q		
1-FCV-68-333	RCS PRZR REL FLOW CONTROL	47W813-1 / B-3	B	ACT	1	3	GA	MO	O	O/C	FAI	RPI STC STO	2Y Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-PCV-68-334	RCS PRZR PWR RELIEF VALVE	47W813-1 / B-3	B	ACT	1	3	GL	SO	C	O/C	C	RPI FSC STC STO	2Y OC OC OC		CVTM-1 CVTM-1 CVTM-1
1-PCV-68-340A	RCS PRZR PWR RELIEF VALVE	47W813-1 / B-3	B	ACT	1	3	GL	SO	C	O/C	C	RPI FSC STC STO	2Y OC OC OC		CVTM-1 CVTM-1 CVTM-1
1-FSV-68-394	REACTOR VESSEL HEAD VENT ISLN VALVE	47W813-1 / C-7	B	ACT	2	1	GL	SO	C	O/C	C	RPI FSC STC STO	2Y CSD CSD CSD		DTJ-30 DTJ-30 DTJ-30
1-FSV-68-395	REACTOR VESSEL HEAD VENT ISLN VALVE	47W813-1 / C-7	B	ACT	2	1	GL	SO	C	O/C	C	RPI FSC STC STO	2Y CSD CSD CSD		DTJ-30 DTJ-30 DTJ-30
1-FSV-68-396	REACTOR VESSEL HEAD VENT THROTTLE VLV	47W813-1 / C-7	B	ACT	2	1	GL	SO	C	O/C	C	RRA	RO		RV-01
1-FSV-68-397	REACTOR VESSEL HEAD VENT THROTTLE VLV	47W813-1 / C-7	B	ACT	2	1	GL	SO	C	O/C	C	RRA	RO		RV-01
1-VLV-68-559	RV DISC CHECK	47W813-1 / B-9	C	ACT	1	4	CK	SA	C	O/C	N/A	CM	CM		



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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-VLV-68-563	PRESS RELIEF VALVE	47W813-1 / A-3	C	ACT	1	6	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-68-564	PRESS RELIEF VALVE	47W813-1 / A-4	C	ACT	1	6	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-68-565	PRESS RELIEF VALVE	47W813-1 / A-5	C	ACT	1	6	RV	SA	C	O/C	N/A	RV	RV		
1-LCV-70-63	SURG TANK DEMIN W INLET VLV	47W859-1 / G-2	B	ACT	3	3	GL	AO	C	O	C	RPI FSC STO	2Y Q Q		
1-FCV-70-66	CCS SURGE TNK VENT VLV	47W859-1 / F-3	B	ACT	3	2	GL	AO	O	C	C	RPI FSC STC	2Y Q Q		
1-FCV-70-85	EXS LTDN HTX OUTL CNTMT ISOL VLV	47W859-2/3 / D-10	A	ACT	2	6	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-70-87	RC PMP THRM BARR RET CONTMNT ISOL VLV	47W859-2/3 / H-10	A	ACT	2	3	GA	MO	O	C	FAI	RPI LTJ STC	2Y AppJ CSD		DTJ-36
1-FCV-70-89	RC PMP OIL CLR RET CNTMT ISOL VLV	47W859-2/3 / E-9	A	ACT	2	6	BF	MO	O	C	FAI	RPI LTJ STC	2Y AppJ CSD		DTJ-37
1-FCV-70-90	RCP THRMAL BARRIER RETURN ISOL	47W859-2/3 / E-10	A	ACT	2	3	GA	MO	O	C	FAI	RPI LTJ STC	2Y AppJ CSD		DTJ-36

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FCV-70-92	RC PMP OIL CLR RET CNTMT ISOL	47W859-2/3 / E-10	A	ACT	2	6	BF	MO	O	C	FAI	RPI LTJ STC	2Y AppJ CSD		DTJ-37
1-FCV-70-133	RC PMP THRM BAR CONT ISOL VLV	47W859-2/3 / H-2	B	ACT	3	3	GA	MO	O	C	FAI	RPI STC	2Y CSD		DTJ-36
1-FCV-70-134	RCP THRMAL BARRIER SUPPLY ISOL	47W859-2/3 / H-3	A	ACT	2	3	GA	MO	O	C	FAI	RPI LTJ STC	2Y AppJ CSD		DTJ-36
1-FCV-70-140	RC PMP OIL CLR HDR CNTMT ISOL	47W859-2/3 / G-3	A	ACT	2	6	BF	MO	O	C	FAI	RPI LTJ STC	2Y AppJ CSD		DTJ-37
1-FCV-70-141	RC PUMP OIL CLR HDR CNTMT ISOL	47W859-2/3 / G-4	A	ACT	2	6	BF	MO	O	C	FAI	RPI LTJ STC	2Y AppJ CSD		DTJ-37
1-FCV-70-143	EXCESS LETDOWN HTX SUPPLY CNTMT ISOL VLV	47W859-2/3 / E-3	A	ACT	2	6	BF	MO	O	C	FAI	RPI LTJ STC	2Y AppJ Q		
1-FCV-70-153	RHR HTX B OUTLET VLV	47W859-4 / F-3	B	ACT	3	18	BF	MO	C	O/C	FAI	RPI STC STO	2Y Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FCV-70-156	RHR HTX A OUTL VLV	47W859-4 / F-4	B	ACT	3	18	BF	MO	C	O/C	FAI	RPI STC STO	2Y Q Q		
1-FCV-70-215	U1 SAMPLE HEAT EXCHANGER CCS INLET ISO VALVE	1-47W859-2 / A-9	B	ACT	3	3	PLG	AO	O	C	C	RPI FSC STC	2Y Q Q		
1-FCV-70-216	U1 SAMPLE HEAT EXCHANGER CCS OUTLET ISO VALVE	1-47W859-2 / C-10	B	ACT	3	3	PLG	AO	O	C	C	RPI FSC STC	2Y Q Q		
1-VLV-70-504A	CCS PMP A DISCH CK VLV	47W859-1 / C-8	C	ACT	3	16	CK	SA	O/C	O/C	N/A	CVC CVO	Q Q		
1-VLV-70-504B	CCS PUMP B DISCH CK	47W859-1 / D-8	C	ACT	3	16	CK	SA	O/C	O/C	N/A	CVC CVO	Q Q		
1-VLV-70-531	CCS RET SFP HX HDR	47W859-1 / D-9	B	ACT	3	16	BF	M	O/C	O/C	N/A	MS	2Y		
1-VLV-70-535	CCS SEAL LEAK DISCH	47W859-1 / H-7	C	ACT	3	1.25	CK	SA	O/C	C	N/A	BDO CVC	Q Q		
1-VLV-70-538	CCS SURGE TK RELIEF	47W859-1 / F-3	C	ACT	3	3	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-70-539	CCS SURGE TK VAC REL	47W859-1 / F-3	C	ACT	3	3	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-70-541	CCS SURGE TK MAKEUP	47W859-1 / F-2	C	ACT	3	3	CK	SA	O/C	C	N/A	CM	CM		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-VLV-70-542	CCS Surge Tank Makeup	47W859-1 / G-2	B	ACT	3	3	GA	M	C	O/C	N/A	MS	2Y		
1-VLV-70-551A	CCS RET RHR HX A REL	47W859-4 / F-4	C	ACT	3	1	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-70-551B	CCS RET RHR HX B REL	47W859-4 / F-3	C	ACT	3	1	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-70-556A	CCS RET CCP CLRS REL	47W859-4 / B-4	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-70-556B	CCS RET CCP CLRS REL	47W859-4 / B-3	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-70-561A	CCS RET SIP CLR REL	47W859-4 / C-4	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-70-561B	CCS RET SISP 1B-B CLR REL	47W859-4 / C-3	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-70-565A	CCS RET RHR PUMP REL	47W859-4 / D-4	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-70-565B	CCS RET RHR PUMP REL	47W859-4 / D-3	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-70-570A	CCS RET CS PUMP REL	47W859-4 / D-4	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-70-570B	CCS RET CS PUMP REL	47W859-4 / D-3	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-70-679	CCS RCP TB SUP CK	47W859-2/3 / H-4	A/C	ACT	2	3	CK	SA	O	C	N/A	LTJ BDO CVC	AppJ Q Q		
1-VLV-70-681A	CCS RCP TB 1 SUP CK	47W859-2/3 / G-8	C	ACT	3	1.5	CK	SA	O	C	N/A	CM	CM		
1-VLV-70-681B	CCS RCP TB 2 SUP CK	47W859-2/3 / F-8	C	ACT	3	1.5	CK	SA	O	C	N/A	CM	CM		
1-VLV-70-681C	CCS RCP TB 3 SUP CK	47W859-2/3 / E-8	C	ACT	3	1.5	CK	SA	O	C	N/A	CM	CM		
1-VLV-70-681D	CCS RCP TB 4 SUP CK	47W859-2/3 / H-8	C	ACT	3	1.5	CK	SA	O	C	N/A	CM	CM		
1-VLV-70-682A	CCS RCP TB 1 SUP CK	47W859-2/3 / G-8	C	ACT	3	1.5	CK	SA	O	C	N/A	CM	CM		
1-VLV-70-682B	CCS RCP TB 2 SUP CK	47W859-2/3 / F-8	C	ACT	3	1.5	CK	SA	O	C	N/A	CM	CM		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-VLV-70-682C	CCS RCP TB 3 SUP CK	47W859-2/3 / E-8	C	ACT	3	1.5	CK	SA	O	C	N/A	CM	CM		
1-VLV-70-682D	CCS RCP TB 4 SUP CK	47W859-2/3 / H-8	C	ACT	3	1.5	CK	SA	O	C	N/A	CM	CM		
1-VLV-70-683A	CCS RCP TB 1 RET REL	47W859-2 / F-9	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-70-683B	CCS RCP TB 2 RET REL	47W859-2 / F-9	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-70-683C	CCS RCP TB 3 RET REL	47W859-2 / E-9	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-70-683D	CCS RCP TB 4 RET REL	47W859-2 / G-9	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-70-687	CCS RCP TB RET CK	47W859-2/3 / H-10	A/C	ACT	2	0.5	CK	SA	C	O/C	N/A	LTJ CM	AppJ CM		
1-VLV-70-694	CCS SUP RCP OC REL	47W859-3 / F-5	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-70-698	CCS RET RCP OC CK	47W859-2/3 / E-9	A/C	ACT	2	0.5	CK	SA	C	O/C	N/A	LTJ CM	AppJ CM		
1-VLV-70-703	CCS RET EX LD HX REL	47W859-2/3 / D-6	A/C	ACT	3	3	RV	SA	C	O/C	N/A	LTJ RV	AppJ RV		
1-VLV-70-782	CCS HX 1A1 PRESSURE RELIEF	47W859-1 / D-5	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-70-783	CCS HX 1A2 PRESSURE RELIEF	47W859-1 / D-5	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-70-791	BYPASS CCS SUPPLY RCP OIL COOLER	47W859-2/3 / G-4	A/C	ACT	2	0.5	CK	SA	C	O/C	N/A	LTJ CM	AppJ CM		
1-FCV-72-2	CNTMT SPRAY HDR 1B ISOL	1-47W812-1 / A-4	A	ACT	2	12	GA	MO	C	O/C	FAI	LTP RPI STC STO	2Y 2Y Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FCV-72-13	CONTAINMENT SPRAY PUMP 1B RECIRC	1-47W812-1 / B-7	B	ACT	2	2	GL	MO	C	O	FAI	RPI STO	2Y Q		
1-FCV-72-20	CONTAINMENT SPRAY PUMP 1B SUCT FROM CNTMT SUMP	1-47W812-1 / B-10	B	ACT	2	12	GA	MO	C	O/C	FAI	RPI STC STO	2Y Q Q		
1-FCV-72-21	CONTAINMENT SPRAY PUMP 1B SUCT FROM RWST	1-47W812-1 / B-10	B	ACT	2	12	GA	MO	O	O/C	FAI	RPI STC STO	2Y Q Q		
1-FCV-72-22	CONTAINMENT SPRAY PUMP 1A SUCT FROM RWST	1-47W812-1 / D-10	B	ACT	2	12	GA	MO	O	O/C	FAI	RPI STC STO	2Y Q Q		
1-FCV-72-23	CNTMT SPRAY PUMP 1A SUCT FROM CNTMT SUMP	1-47W812-1 / E-10	B	ACT	2	12	GA	MO	C	O/C	FAI	RPI STC STO	2Y Q Q		
1-FCV-72-34	CONTAINMENT SPRAY PUMP 1A RECIRC	1-47W812-1 / C-7	B	ACT	2	2	GL	MO	C	O	FAI	RPI STO	2Y Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FCV-72-39	CNTMT SPRAY HDR 1A ISOL	1-47W812-1 / D-4	A	ACT	2	12	GA	MO	C	O/C	FAI	LTP RPI STC STO	2Y 2Y Q Q		
1-FCV-72-40	RHR CNTMT SPRAY HDR 1A ISOL	1-47W812-1 / F-5	A	ACT	2	8	GA	MO	C	O/C	FAI	LTP RPI STC STO	2Y 2Y CSD CSD		DTJ-20 DTJ-20
1-RFV-72-40	RHR SPRAY HDR A FCV RELIEF VLV	1-47W812-1 / G-5	A/C	ACT	2	0.5	TRV	SA	C	O/C	N/A	LT RV	AppJ RV		
1-FCV-72-41	RHR CNTMT SPRAY HDR 1B ISOL	1-47W812-1 / G-5	A	ACT	2	8	GA	MO	C	O/C	FAI	LTP RPI STC STO	2Y 2Y CSD CSD		DTJ-20 DTJ-20
1-RFV-72-41	RHR SPRAY HDR B FCV RELIEF VLV	1-47W812-1 / J-5	A/C	ACT	2	0.5	TRV	SA	C	O/C	N/A	LT RV	AppJ RV		
1-VLV-72-506	PUMP SUCT CHECK	1-47W812-1 / D-10	C	ACT	2	12	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-28 DTJ-28
1-VLV-72-507	PUMP SUCT CHECK	1-47W812-1 / B-10	C	ACT	2	12	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-28 DTJ-28
1-VLV-72-512	PUMP SUCT RV	1-47W812-1 / D-9	C	ACT	2	0.75	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-72-513	PUMP SUCT RV	1-47W812-1 / A-9	C	ACT	2	0.75	RV	SA	C	O/C	N/A	RV	RV		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-VLV-72-528	PUMP DISC CHECK	1-47W812-1 / D-7	C	ACT	2	12	CK	SA	C	O	N/A	BDC CVO	RO RO		DTJ-42 DTJ-42
1-VLV-72-529	PUMP DISC CHECK	1-47W812-1 / A-7	C	ACT	2	12	CK	SA	C	O	N/A	BDC CVO	RO RO		DTJ-42 DTJ-42
1-VLV-72-547	CONT SPRAY CHECK	1-47W812-1 / D-3	C	ACT	2	12	CK	SA	C	O/C	N/A	CM	CM		
1-VLV-72-548	CONT SPRAY CHECK	1-47W812-1 / A-3	C	ACT	2	12	CK	SA	C	O/C	N/A	CM	CM		
1-VLV-72-555	RHR 1B SPRAY CHECK	1-47W812-1 / G-3	C	ACT	2	8	CK	SA	C	O/C	N/A	CM	CM		
1-VLV-72-556	RHR 1A SPRAY CHECK	1-47W812-1 / F-3	C	ACT	2	8	CK	SA	C	O/C	N/A	CM	CM		
1-FCV-74-1	RHR SUCTION FROM LOOP 4 HL HW	47W810-1 / F-3	A	ACT	1	14	GA	MO	C	O/C	FAI	LTP RPI STC STO	2Y 2Y CSD CSD		DTJ-21 DTJ-21
1-FCV-74-2	RHR SYSTEM ISOLATION VLV	47W810-1 / F-3	A	ACT	1	14	GA	MO	C	O/C	FAI	LTP RPI STC STO	2Y 2Y CSD CSD		DTJ-21 DTJ-21
1-FCV-74-3	RHR PUMP 1A SUCTION ISOL HW	47W810-1 / D-10	B	ACT	2	14	GA	MO	O	C	FAI	RPI STC	2Y Q		
1-FCV-74-12	RHR PUMP 1A MINI-FLOW	47W810-1 / F-7	B	ACT	2	2	GL	MO	C	O/C	FAI	RPI STC STO	2Y Q Q		



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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FCV-74-16	RHR HT EX A OUTLET FLOW CONTROL VLV	47W810-1 / E-5	B	PASS	2	8	BF	AO	O	O	O	STO FSO STC	Q Q Q		
1-FCV-74-21	RHR PUMP 1B SUCTION ISOL HW	47W810-1 / B-10	B	ACT	2	14	GA	MO	O	C	FAI	RPI STC	2Y Q		
1-FCV-74-24	RHR PUMP 1B MINI-FLOW	47W810-1 / A-7	B	ACT	2	2	GL	MO	C	O/C	FAI	RPI STC STO	2Y Q Q		
1-FCV-74-28	RHR HT EX B OUT FLOW CNTL VLV	47W810-1 / B-5	B	PASS	2	8	BF	AO	O	O	O	STO FSO STC	Q Q Q		
1-FCV-74-32	RHR HT EXCH A&B BPS FLOW CNTL VLV	47W810-1 / D-5	B	ACT	2	8	BF	AO	C	O/C	O	FSO STC STO	Q Q Q		
1-FCV-74-33	RHR HX CROSSTIE 1A ISOL	47W810-1 / D-5	B	ACT	2	8	GA	MO	O	O/C	FAI	RPI STC STO	2Y CSD CSD		DTJ-16 DTJ-16
1-HCV-74-34	REFUELING WATER RETURN	47W810-1 / C-5	B	PASS	2	8	GA	M	C	C	N/A	NTR	NTR		
1-FCV-74-35	RHR HX CROSSTIE 1B ISOL	47W810-1 / B-5	B	ACT	2	8	GA	MO	O	O/C	FAI	RPI STC STO	2Y CSD CSD		DTJ-16 DTJ-16
1-HCV-74-36	RHR HEAT EXCH 1A BYPASS	47W810-1 / D-7	B	PASS	2	8	GA	M	C	C	N/A	NTR	NTR		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-HCV-74-37	RHR HEAT EXCH 1B BYPASS	47W810-1 / C-7	B	PASS	2	8	GA	M	C	C	N/A	NTR	NTR		
1-VLV-74-505	RHR PUMP SUCT RELIEF	47W810-1 / G-4	C	ACT	2	3	RV	SA	C	O/C	N/A	RV	RV		
1-VLV-74-514	RHR PUMP DISC CHECK	47W810-1 / E-9	C	ACT	2	8	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-22 DTJ-22
1-VLV-74-515	RHR PUMP 1B DISCH CHECK VLV	47W810-1 / B-9	C	ACT	2	8	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-22 DTJ-22
1-VLV-74-530	RHR HX OUT FLSH ISOL	47W810-1 / D-6	B	PASS	2	2	GL	M	C	C	N/A	NTR	NTR		
1-VLV-74-531	RHR HX 1B LETDOWN ISOL	47W810-1 / B-6	B	PASS	2	2	GL	M	C	C	N/A	NTR	NTR		
1-VLV-74-554	RHR HX 1A DISCH CHECK VLV	47W810-1 / E-6	C	ACT	2	8	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-22 DTJ-22
1-VLV-74-555	RHR HX 1B DISCH CHECK VLV	47W810-1 / B-6	C	ACT	2	8	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-22 DTJ-22
1-FCV-77-9	REACT COOLANT DR TK FLOW CONTROL VALVE	47W830-1 / D-1	A	ACT	2	3	DIA	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-77-10	REACT COOLANT DR TK FLOW CONTROL VALVE	47W830-1 / E-1	A	ACT	2	3	DIA	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FCV-77-18	REACT COOLANT DR TK TO VENT HEADER	47W830-1 / B-5	A	ACT	2	1	DIA	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-77-19	REACT COOLANT DR TK TO VENT HEADER	47W830-1 / B-6	A	ACT	2	1	DIA	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-77-20	REACT COOLANT DR TK N2 SUPPLY FLOW CNTL	47W830-1 / C-6	A	ACT	2	1	DIA	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-77-127	Rx Bldg Sump Disch FCV (Inbd CVI)	47W851-1 / F-7	A	ACT	2	2	DIA	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-77-128	Rx Bldg Sump Disch FCV (Outbd CVI)	47W851-1 / F-7	A	ACT	2	2	DIA	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-VLV-77-849	N2 RB HDR CK	47W830-6 / G-7	A/C	PASS	2	0.75	CK	SA	C	C	N/A	LTJ	AppJ		
1-VLV-77-868	N2 HP ACCUM CK	47W830-6 / B-6	A/C	PASS	2	1	CK	SA	C	C	N/A	LTJ	AppJ		
1-VLV-78-557	REF CAVITY ISOL	47W855-1 / G-7	A	PASS	2	4	DIA	M	C	C	N/A	LTJ	AppJ		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-VLV-78-558	REF CAVITY ISOL	47W855-1 / G-8	A	PASS	2	4	DIA	M	C	C	N/A	LTJ	AppJ		
1-VLV-78-560	REF CAVITY ISOL	47W855-1 / G-8	A	PASS	2	6	GA	M	C	C	N/A	LTJ	AppJ		
1-VLV-78-561	REF CAVITY ISOL	47W855-1 / G-7	A	PASS	2	6	GA	M	C	C	N/A	LTJ	AppJ		
1-FCV-81-12	PW RCS PRESS RELF TNK & RCP STANDPIPES	47W819-1 / F-4	A	ACT	2	3	DIA	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-VLV-81-502	CK VA AT CONTAINMENT	47W819-1 / F-4	A/C	ACT	2	3	CK	SA	O	C	N/A	LTJ BDO CVC	AppJ CSD CSD		DTJ-23 DTJ-23
1-VLV-84-512	RCDT HEADER ISOLATION	47W809-7 / F-7	B	PASS	2	1	GL	M	LC	C	N/A	NTR	NTR		
1-FCV-90-107	CNTMT BLDG LWR COMPT MON-ISOL VLV	47W610-90-3 / B-9	A	ACT	2	1.5	GL	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-90-108	CNTMT BLDG LWR COMPT MON-ISOL VLV	47W610-90-3 / C-8	A	ACT	2	1.5	GL	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FCV-90-109	CNTMT BLDG LWR COMPT MON-ISOL VLV	47W610-90-3 / C-8	A	ACT	2	1.5	GL	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-90-110	CNTMT BLDG LWR COMPT MON-ISOL VLV	47W610-90-3 / C-8	A	ACT	2	1.5	GL	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-90-111	CNTMT BLDG LWR COMPT MON-ISOL VLV	47W610-90-3 / D-9	A	ACT	2	1.5	GL	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-90-113	CNTMT BLDG UP COMPT MON-ISOL VLV	47W610-90-3 / B-5	A	ACT	2	1.5	GL	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-90-114	CNTMT BLDG UP COMPT MON-ISOL VLV	47W610-90-3 / C-4	A	ACT	2	1.5	GL	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
1-FCV-90-115	CNTMT BLDG UP COMPT MON-ISOL VLV	47W610-90-3 / C-4	A	ACT	2	1.5	GL	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-90-116	CNTMT BLDG UP COMPT MON-ISOL VLV	47W610-90-3 / C-4	A	ACT	2	1.5	GL	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
1-FCV-90-117	CNTMT BLDG UP COMPT MON-ISOL VLV	47W610-90-3 / D-5	A	ACT	2	1.5	GL	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FCV-1-4	SG 1 MAIN STM HDR ISOLATION VLV	47W801-1 / C-3	B	ACT	2	32	GL	AO	O	C	C	RPI FSC STC	2Y CSD CSD		DTJ-01 DTJ-01
2-PCV-1-5-A	SG 1 ATM RELIEF VALVE	47W801-1 / B-2	B	ACT	2	8	GL	AO	C	O/C	C	RPI FSC STC STO	2Y OC OC OC		CVTM-1 CVTM-1 CVTM-1
2-FCV-1-7	SG 1 BLOWDOWN FLOW CONTROL VLV	47W801-2 / C-2	B	ACT	2	2	GL	AO	O	C	C	RPI FSC STC	2Y Q Q		
2-FCV-1-11	SG 2 MAIN STM HDR ISOLATION VLV	47W801-1 / E-3	B	ACT	2	32	GL	AO	O	C	C	RPI FSC STC	2Y CSD CSD		DTJ-01 DTJ-01
2-PCV-1-12-B	SG 2 ATM RELIEF VALVE	47W801-1 / D-2	B	ACT	2	8	GL	AO	C	O/C	C	RPI FSC STC STO	2Y OC OC OC		CVTM-1 CVTM-1 CVTM-1
2-FCV-1-14	SG 2 BLOWDOWN HDR FLOW CONTROL VLV	47W801-2 / E-3	B	ACT	2	2	GL	AO	O	C	C	RPI FSC STC	2Y Q Q		
2-FCV-1-15	AUX FW PMP TURB STM SUP FROM SG NO 1	47W801-3 / C-3	B	ACT	2	4	GA	MO	O	O/C	FAI	RPI STC STO	2Y Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FCV-1-16	AUX FW PMP TURB STM SUP FROM SG NO 4	47W801-3 / A-3	B	ACT	2	4	GA	MO	C	O/C	FAI	RPI STC STO	2Y Q Q		
2-FCV-1-17	STM FLOW TO AFPT ISOLATION	47W801-3 / B-4	B	ACT	3	4	GA	MO	O	O/C	FAI	RPI STC STO	2Y CSD CSD		DTJ-02 DTJ-02
2-FCV-1-18	STM FLOW TO AFPT ISOLATION	47W801-3 / B-4	B	ACT	2	4	GA	MO	O	O/C	FAI	RPI STC STO	2Y CSD CSD		DTJ-02 DTJ-02
2-FCV-1-22	SG 3 MAIN STM HDR ISOLATION VLV	47W801-1 / G-3	B	ACT	2	32	GL	AO	O	C	C	RPI FSC STC	2Y CSD CSD		DTJ-01 DTJ-01
2-PCV-1-23-A	SG 3 ATM RELIEF VALVE	47W801-1 / F-2	B	ACT	2	8	GL	AO	C	O/C	C	RPI FSC STC STO	2Y OC OC OC		CVTM-1 CVTM-1 CVTM-1
2-FCV-1-25	SG 3 BLOWDOWN HDR FLOW CONTROL VLV	47W801-2 / F-3	B	ACT	2	2	GL	AO	O	C	C	RPI FSC STC	2Y Q Q		
2-FCV-1-29	SG 4 MAIN STM HDR ISOLATION VLV	47W801-1 / A-3	B	ACT	2	32	GL	AO	O	C	C	RPI FSC STC	2Y CSD CSD		DTJ-01 DTJ-01



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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-PCV-1-30-B	SG 4 ATM RELIEF VALVE	47W801-1 / A-2	B	ACT	2	8	GL	AO	C	O/C	C	RPI FSC STC STO	2Y OC OC OC		CVTM-1 CVTM-1 CVTM-1
2-FCV-1-32	SG 4 BLOWDOWN HDR FLOW CONTROL VLV	47W801-2 / B-3	B	ACT	2	2	GL	AO	O	C	C	RPI FSC STC	2Y Q Q		
2-FCV-1-147	SG LOOP 1 WARMING VLV	47W801-1 / C-3	B	ACT	2	2	GL	AO	O/C	C	C	RPI FSC STC	2Y Q Q		
2-FCV-1-148	SG LOOP 2 WARMING VLV	47W801-1 / E-3	B	ACT	2	2	GL	AO	O/C	C	C	RPI FSC STC	2Y Q Q		
2-FCV-1-149	SG LOOP 3 WARMING VLV	47W801-1 / G-3	B	ACT	2	2	GL	AO	O/C	C	C	RPI FSC STC	2Y Q Q		
2-FCV-1-150	SG LOOP 4 WARMING VLV	47W801-1 / B-3	B	ACT	2	2	GL	AO	O/C	C	C	RPI FSC STC	2Y Q Q		
2-FCV-1-181	SG NO 1 BLOWDOWN ISOL VLV INSIDE CNTMT	47W801-2 / C-2	B	ACT	2	2	GL	AO	O	C	C	RPI FSC STC	2Y Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FCV-1-182	SG NO 2 BLOWDOWN ISOL VLV INSIDE CNTMT	47W801-2 / E-2	B	ACT	2	2	GL	AO	O	C	C	RPI FSC STC	2Y Q Q		
2-FCV-1-183	SG NO 3 BLOWDOWN ISOL VLV INSIDE CNTMT	47W801-2 / F-2	B	ACT	2	2	GL	AO	O	C	C	RPI FSC STC	2Y Q Q		
2-FCV-1-184	SG NO 4 BLOWDOWN ISOL VLV INSIDE CNTMT	47W801-2 / B-2	B	ACT	2	2	GL	AO	O	C	C	RPI FSC STC	2Y Q Q		
2-VLV-1-512	MS SAFETY VALVE LP 3	47W801-1 / F-3	C	ACT	2	6	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-1-513	MS SAFETY VALVE LP 3	47W801-1 / F-2	C	ACT	2	6	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-1-514	MS SAFETY VALVE LP 3	47W801-1 / F-2	C	ACT	2	6	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-1-515	MS SAFETY VALVE LP 3	47W801-1 / F-2	C	ACT	2	6	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-1-516	MS SAFETY VALVE LP 3	47W801-1 / F-2	C	ACT	2	6	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-1-517	MS SAFETY VALVE LP 2	47W801-1 / D-3	C	ACT	2	6	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-1-518	MS SAFETY VALVE LP 2	47W801-1 / D-2	C	ACT	2	6	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-1-519	MS SAFETY VALVE LP 2	47W801-1 / D-2	C	ACT	2	6	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-1-520	MS SAFETY VALVE LP 2	47W801-1 / D-2	C	ACT	2	6	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-1-521	MS SAFETY VALVE LP 2	47W801-1 / D-2	C	ACT	2	6	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-1-522	MS SAFETY VALVE LP 1	47W801-1 / C-3	C	ACT	2	6	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-1-523	MS SAFETY VALVE LP 1	47W801-1 / C-3	C	ACT	2	6	RV	SA	C	O/C	N/A	RV	RV		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-VLV-1-524	MS SAFETY VALVE LP 1	47W801-1 / C-2	C	ACT	2	6	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-1-525	MS SAFETY VALVE LP 1	47W801-1 / C-2	C	ACT	2	6	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-1-526	MS SAFETY VALVE LP 1	47W801-1 / C-2	C	ACT	2	6	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-1-527	MS SAFETY VALVE LP 4	47W801-1 / A-3	C	ACT	2	6	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-1-528	MS SAFETY VALVE LP 4	47W801-1 / A-3	C	ACT	2	6	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-1-529	MS SAFETY VALVE LP 4	47W801-1 / A-2	C	ACT	2	6	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-1-530	MS SAFETY VALVE LP 4	47W801-1 / A-2	C	ACT	2	6	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-1-531	MS SAFETY VALVE LP 4	47W801-1 / A-2	C	ACT	2	6	RV	SA	C	O/C	N/A	RV	RV		
2-FCV-3-33	SG #1 FW ISOL VLV	47W803-1 / D-3	B	ACT	2	18	GA	MO	O	C	FAI	RPI STC	2Y CSD		DTJ-03
2-FCV-3-47	STM GEN #2 ISOL VLV	47W803-1 / E-3	B	ACT	2	18	GA	MO	O	C	FAI	RPI STC	2Y CSD		DTJ-03
2-FCV-3-87	STM GEN #3 ISOL VLV	47W803-1 / F-3	B	ACT	2	18	GA	MO	O	C	FAI	RPI STC	2Y CSD		DTJ-03
2-FCV-3-100	STM GEN #4 FW ISOL VLV	47W803-1 / B-3	B	ACT	2	18	GA	MO	O	C	FAI	RPI STC	2Y CSD		DTJ-03
2-FCV-3-116A	ERCW HDR A ISOL VLV	47W803-2 / E-6	B	ACT	3	8	GA	MO	C	O	FAI	RPI STO	2Y Q		
2-FCV-3-116B	ERCW HDR A ISOL VLV	47W803-2 / E-6	B	ACT	3	8	GA	MO	C	O	FAI	RPI STO	2Y Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FCV-3-126A	ERCW HDR B ISOL VLV	47W803-2 / E-7	B	ACT	3	8	GA	MO	C	O	FAI	RPI STO	2Y Q		
2-FCV-3-126B	ERCW HDR B ISOL VLV	47W803-2 / E-7	B	ACT	3	8	GA	MO	C	O	FAI	RPI STO	2Y Q		
2-FCV-3-136A	ERCW HDR A ISOL VLV	47W803-2 / C-4	B	ACT	3	10	GA	MO	C	O/C	FAI	RPI STC STO	2Y Q Q		
2-FCV-3-136B	ERCW HDR A ISOL VLV	47W803-2 / C-4	B	ACT	3	10	GA	MO	C	O/C	FAI	RPI STC STO	2Y Q Q		
2-LCV-3-148	STM GEN #3 LEVEL VLV	47W803-2 / G-3	B	ACT	3	4	GL	AO	C	O/C	O	RPI FSO STC STO	2Y Q Q Q		,,, ,,, ,,, ,,,
2-LCV-3-148A	STM GEN #3 LVL BYPASS CONT VLV	47W803-2 / G-3	B	ACT	3	2	GL	AO	C	O/C	C	RPI FSC STC STO	2Y Q Q Q		
2-LCV-3-156	STM GEN #2 LVL CNT VLV	47W803-2 / E-3	B	ACT	3	4	GL	AO	C	O/C	O	RPI FSO STC STO	2Y Q Q Q		,,, ,,, ,,, ,,,

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-LCV-3-156A	STM GEN #2 LVL BYPASS CONT VLV	47W803-2 / E-3	B	ACT	3	2	GL	AO	C	O/C	C	RPI FSC STC STO	2Y Q Q Q		
2-LCV-3-164	STM GEN #1 LEVEL VLV	47W803-2 / D-3	B	ACT	3	4	GL	AO	C	O/C	O	RPI FSO STC STO	2Y Q Q Q		, , , , , , , , , , , ,
2-LCV-3-164A	STM GEN #1 LVL BYPASS CONT VLV	47W803-2 / D-3	B	ACT	3	2	GL	AO	C	O/C	C	RPI FSC STC STO	2Y Q Q Q		
2-LCV-3-171	STM GEN #4	47W803-2 / B-3	B	ACT	3	4	GL	AO	C	O/C	O	RPI FSO STC STO	2Y Q Q Q		, , , , , , , , , , , ,
2-LCV-3-171A	STM GEN #4 LVL BYPASS CONT VLV	47W803-2 / B-3	B	ACT	3	2	GL	AO	C	O/C	C	RPI FSC STC STO	2Y Q Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-LCV-3-172	SG 3 LEVEL CONTROL VLV	47W803-2 / F-3	B	ACT	3	3	GL	AO	C	O/C	O	RPI FSO STC STO	2Y Q Q Q		, , , , , , , , , , , ,
2-LCV-3-173	SG 2 LEVEL CONTROL VLV	47W803-2 / E-3	B	ACT	3	3	GL	AO	C	O/C	O	RPI FSO STC STO	2Y Q Q Q		, , , , , , , , , , , ,
2-LCV-3-174	SG 1 LEVEL CONTROL VLV	47W803-2 / C-3	B	ACT	3	3	GL	AO	C	O/C	O	RPI FSO STC STO	2Y Q Q Q		, , , , , , , , , , , ,
2-LCV-3-175	SG 4 LEVEL CONTROL VLV	47W803-2 / A-3	B	ACT	3	3	GL	AO	C	O/C	O	RPI FSO STC STO	2Y Q Q Q		, , , , , , , , , , , ,
2-FCV-3-179A	ERCW HDR B ISOL VLV	47W803-2 / C-5	B	ACT	3	10	GA	MO	C	O	FAI	RPI STO	2Y Q		
2-FCV-3-179B	ERCW HDR B ISOL VLV	47W803-2 / C-5	B	ACT	3	10	GA	MO	C	O	FAI	RPI STO	2Y Q		
2-FCV-3-400	MDAFW PUMP 2A-A RECIRC ISOLATION	47W803-2 / E-5	B	ACT	3	2	GL	AO	O/C	C	C	RPI FSC STC	2Y Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FCV-3-401	MDAFW PUMP 2B-B RECIRC ISOLATION	47W803-2 / D-6	B	ACT	3	2	GL	AO	O/C	C	C	RPI FSC STC	2Y Q Q		
2-VLV-3-508	FEEDWATER CHECK VA	47W803-1 / F-2	C	ACT	2	16	CK	SA	O	C	N/A	BDO CVC	RO RO		DTJ-38 DTJ-38
2-VLV-3-509	FEEDWATER CHECK VA	47W803-1 / E-2	C	ACT	2	16	CK	SA	O	C	N/A	BDO CVC	RO RO		DTJ-38 DTJ-38
2-VLV-3-510	FEEDWATER CHECK VA	47W803-1 / C-2	C	ACT	2	16	CK	SA	O	C	N/A	BDO CVC	RO RO		DTJ-38 DTJ-38
2-VLV-3-511	FEEDWATER CHECK VA	47W803-1 / B-2	C	ACT	2	16	CK	SA	O	C	N/A	BDO CVC	RO RO		DTJ-38 DTJ-38
2-VLV-3-805	MD AUX FW PMP A SU CK	47W803-2 / D-5	C	ACT	3	8	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-04 DTJ-04
2-VLV-3-806	MD AUX FW PMP B SU CK	47W803-2 / D-6	C	ACT	3	8	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-04 DTJ-04
2-VLV-3-810	TD AUX FW PMP CK	47W803-2 / C-4	C	ACT	3	10	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-04 DTJ-04
2-VLV-3-814	MD AUX FW PMP MIN CK	47W803-2 / E-5	C	ACT	3	1.5	CK	SA	C	O	N/A	BDC CVO	RO RO		DTJ-27 DTJ-27
2-VLV-3-815	MD AUX FW PMP MIN CK	47W803-2 / E-6	C	ACT	3	1.5	CK	SA	C	O	N/A	BDC CVO	RO RO		DTJ-27 DTJ-27

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-VLV-3-818	TD AUX FW PMP MIN CK	47W803-2 / C-6	C	ACT	3	1.5	CK	SA	C	O	N/A	BDC CVO	RO RO		DTJ-27 DTJ-27
2-VLV-3-820	MD AUX FW PUMP DISC CK	47W803-2 / E-5	C	ACT	3	6	CK	SA	C	O	N/A	BDC CVO	RO RO		DTJ-44 DTJ-44
2-VLV-3-821	MD AUX FW PUMP DISC CK	47W803-2 / E-6	C	ACT	3	6	CK	SA	C	O	N/A	BDC CVO	RO RO		DTJ-44 DTJ-44
2-VLV-3-830	MD AUX FW PUMP DISC CK	47W803-2 / G-3	C	ACT	2	4	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-43 DTJ-43
2-VLV-3-831	MD AUX FW PUMP DISC CK	47W803-2 / E-3	C	ACT	2	4	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-43 DTJ-43
2-VLV-3-832	MD AUX FW PUMP DISC CK	47W803-2 / D-3	C	ACT	2	4	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-43 DTJ-43
2-VLV-3-833	MD AUX FW PUMP DISC CK	47W803-2 / B-3	C	ACT	2	4	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-43 DTJ-43
2-VLV-3-861	MD AUX FW PMP DISCH CHKVLV	47W803-2 / G-1	C	ACT	2	4	CK	SA	O/C	O/C	N/A	CM	CM		
2-VLV-3-862	MD AUX FW PMP DISCH CHKVLV	47W803-2 / E-1	C	ACT	2	4	CK	SA	O/C	O/C	N/A	CM	CM		
2-VLV-3-864	TD AUX FW PMP DISC CK	47W803-2 / C-6	C	ACT	3	6	CK	SA	C	O	N/A	BDC CVO	RO RO		DTJ-44 DTJ-44
2-VLV-3-871	TD AUX FW PMP DISCH CHKVLV	47W803-2 / F-3	C	ACT	2	4	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-43 DTJ-43
2-VLV-3-872	TD AUX FW PMP DISCH CHKVLV	47W803-2 / E-3	C	ACT	2	4	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-43 DTJ-43



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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-VLV-3-873	TD AUX FW PMP DISCH CHKVLV	47W803-2 / C-3	C	ACT	2	4	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-43 DTJ-43
2-VLV-3-874	TD AUX FW PMP DISCH CHKVLV	47W803-2 / A-3	C	ACT	2	4	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-43 DTJ-43
2-VLV-3-891	MS SPLY FW TURB CK	47W803-2 / C-3	C	ACT	2	4	CK	SA	C	O/C	N/A	CM	CM		
2-VLV-3-892	MS SPLY FW TURB CK	47W803-2 / A-3	C	ACT	2	4	CK	SA	C	O/C	N/A	CM	CM		
2-VLV-3-921	MD AUX FW PMP DISCH CHKVLV	47W803-2 / G-1	C	ACT	2	4	CK	SA	C	O/C	N/A	CM	CM		
2-VLV-3-922	MD AUX FW PMP DISCH CHKVLV	47W803-2 / E-1	C	ACT	2	4	CK	SA	C	O/C	N/A	CM	CM		
2-FCV-26-240	CONTAINMENT STANDPIPE ISOLATION VALVE	47W850-10 / A-9	A	ACT	2	4	GA	MO	O	C	FAI	RPI LTJ STC	2Y AppJ Q		
2-FCV-26-243	REACTOR COOLANT PMP SPRAY ISOLATION VALVE	47W850-10 / B-3	A	ACT	2	4	GA	MO	O	C	FAI	RPI LTJ STC	2Y AppJ Q		
2-VLV-26-1260	ISOLATION CK VLV	47W850-10 / A-10	A/C	PASS	2	4	CK	SA	C	C	N/A	LTJ	AppJ		
2-VLV-26-1296	ISOLATION CK VLV	47W850-10 / B-3	A/C	PASS	2	4	CK	SA	C	C	N/A	LTJ	AppJ		
2-FCV-30-7	UPPER COMPT PURGE ISOL VALVE	2-47W866-1 / C-2	A	ACT	2	24	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FCV-30-8	UPPER COMPT PURGE ISOL VALVE	2-47W866-1 / C-2	A	ACT	2	24	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-30-9	UPPER COMPT PURGE ISOL VALVE	2-47W866-1 / C-2	A	ACT	2	24	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-30-10	UPPER COMPT PURGE ISOL VLV	2-47W866-1 / C-2	A	ACT	2	24	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-30-14	LWR COMPT PURGE ISOL VLV	2-47W866-1 / E-2	A	ACT	2	24	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-30-15	LOWER COMPT PURGE ISOL VALVE	2-47W866-1 / E-2	A	ACT	2	24	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FCV-30-16	LOWER COMPT PURGE ISOL VALVE	2-47W866-1 / F-2	A	ACT	2	24	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-30-17	LOWER COMPT PURGE ISOL VALVE	2-47W866-1 / F-2	A	ACT	2	24	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-30-19	INCORE INSTR RM PURGE ISOL VALVE	2-47W866-1 / G-2	A	ACT	2	12	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-30-20	INCORE INSTR RM PURGE ISOL VALVE	2-47W866-1 / G-2	A	ACT	2	12	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-30-37	LOWER COMPT PURGE CONTROL VALVE	2-47W866-1 / D-10	A	ACT	2	8	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FCV-30-40	LOWER COMPT PURGE CONTROL VALVE	2-47W866-1 / D-9	A	ACT	2	8	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-30-46	CNTMT VAC RELF ISOL VLV	2-47W866-1 / B-4	A	ACT	2	24	BF	AO	O	O/C	O	RPI LTJ FSO STC STO	2Y AppJ Q Q Q		
2-FCV-30-47	CNTMT VAC RELF ISOL VLV	2-47W866-1 / B-6	A	ACT	2	24	BF	AO	O	O/C	O	RPI LTJ FSO STC STO	2Y AppJ Q Q Q		
2-FCV-30-48	CNTMT VAC RELF ISOL VLV	2-47W866-1 / B-7	A	ACT	2	24	BF	AO	O	O/C	O	RPI LTJ FSO STC STO	2Y AppJ Q Q Q		
2-FCV-30-50	UPPER CNTMT EXH ISOL VALVE	2-47W866-1 / C-9	A	ACT	2	24	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FCV-30-51	UPPER CNTMT EXH ISOL VALVE	2-47W866-1 / C-10	A	ACT	2	24	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-30-52	UPPER CNTMT EXH ISOL VALVE	2-47W866-1 / C-9	A	ACT	2	24	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-30-53	UPPER CNTMT EXH ISOL VALVE	2-47W866-1 / C-10	A	ACT	2	24	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-30-56	LOWER CNTMT EXH ISOL VALVE	2-47W866-1 / E-9	A	ACT	2	24	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-30-57	LOWER CNTMT EXH ISOL VALVE	2-47W866-1 / E-10	A	ACT	2	24	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FCV-30-58	INCORE INSTR RM EXH ISOL VALVE	2-47W866-1 / G-9	A	ACT	2	12	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-30-59	INCORE INSTR RM EXH ISOL VALVE	2-47W866-1 / G-10	A	ACT	2	12	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FSV-30-134	CONTAINMENT-ANNULUS DP ISOLATION VALVE	2-47W866-1 / F-9	A	ACT	2	0.375	GL	SO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FSV-30-135	CONTAINMENT-ANNULUS DP ISOLATION VALVE	2-47W866-1 / F-10	A	ACT	2	0.375	GL	SO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-VLV-30-571	VACUUM RELIEF	2-47W866-1 / B-4	A/C	ACT	2	24	CK	SA	C	O/C	N/A	RPI LTJ RV	2Y AppJ RV		CVTM-2
2-VLV-30-572	VACUUM RELIEF	2-47W866-1 / B-5	A/C	ACT	2	24	CK	SA	C	O/C	N/A	RPI LTJ RV	2Y AppJ RV		CVTM-2

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-VLV-30-573	VACUUM RELIEF	2-47W866-1 / B-7	A/C	ACT	2	24	CK	SA	C	O/C	N/A	RPI LTJ RV	2Y AppJ RV		CVTM-2
2-FCV-313-222	ANNULUS ISOL VLV	47W865-5 / A-7	A	ACT	2	2	PLG	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-313-223	INSTRUMENT RM ISOL VLV	47W865-5 / A-8	A	ACT	2	2	PLG	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-313-224	ANNULUS ISOL VLV	47W865-5 / C-7	A	ACT	2	2	PLG	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-313-225	INSTRUMENT RM ISOL VLV	47W865-5 / C-8	A	ACT	2	2	PLG	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-313-229	INSTRUMENT RM ISOL VLV	47W865-5 / D-7	A	ACT	2	2	PLG	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FCV-313-230	INSTRUMENT RM ISOL VLV	47W865-5 / D-8	A	ACT	2	2	PLG	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-313-231	ANNULUS ISOL VLV	47W865-5 / F-7	A	ACT	2	2	PLG	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-313-232	INSTRUMENT RM ISOL VLV	47W865-5 / F-8	A	ACT	2	2	PLG	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-VLV-313-697	ISOLATION B BYPASS	47W865-5 / F-8	A/C	ACT	2	0.5	SCK	SA	C	O/C	N/A	LTJ CM	AppJ CM		
2-VLV-313-715	ISOLATION B BYPASS CK	47W865-5 / E-8	A/C	ACT	2	0.5	SCK	SA	C	O/C	N/A	LTJ CM	AppJ CM		
2-VLV-313-734	ISOLATION A BYPASS CK	47W865-5 / C-8	A/C	ACT	2	0.5	SCK	SA	C	O/C	N/A	LTJ CM	AppJ CM		
2-VLV-313-752	ISOLATION A BYPASS CK	47W865-5 / B-8	A/C	ACT	2	0.5	SCK	SA	C	O/C	N/A	LTJ CM	AppJ CM		



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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FCV-32-81	REACTOR BLDG UNIT 2 TRAIN A ISOL	47W848-1 / G-9	A	ACT	2	2	GL	AO	O	O/C	C	RPI LTJ FSC STC STO	2Y AppJ CSD CSD CSD		DTJ-08 DTJ-08 DTJ-08
2-FCV-32-103	REACTOR BLDG UNIT 2 TRAIN B ISOL	47W848-1 / F-9	A	ACT	2	2	GL	AO	O	O/C	C	RPI LTJ FSC STC STO	2Y AppJ CSD CSD CSD		DTJ-08 DTJ-08 DTJ-08
2-FCV-32-111	REACTOR BLDG UNIT 2 NONESNTL CNTL AIR ISOL	47W848-1 / H-9	A	ACT	2	2	GL	AO	O	O/C	C	RPI LTJ FSC STC STO	2Y AppJ CSD CSD CSD		DTJ-08 DTJ-08 DTJ-08
2-VLV-32-341	BYPASS VLV FCV-32-103	47W848-1 / F-9	A	PASS	2	2	GA	M	LC	LC	N/A	LTJ	AppJ		
2-VLV-32-348	UNIT 2 TR-B CHK VLV	47W848-1 / F-10	A/C	ACT	2	2	CK	SA	C	O/C	N/A	LTJ CM	AppJ CM		
2-VLV-32-353	BYPASS VLV FCV-32-81	47W848-1 / G-9	A	PASS	2	2	GA	M	LC	LC	N/A	LTJ	AppJ		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-VLV-32-358	UNIT 2 TR-A CHK VLV	47W848-1 / G-10	A/C	ACT	2	2	CK	SA	C	O/C	N/A	LTJ CM	AppJ CM		
2-VLV-32-385	BYPASS VLV FCV-32-111	47W848-1 / H-9	A	PASS	2	2	GA	M	LC	LC	N/A	LTJ	AppJ		
2-VLV-32-387	UNIT 2 NONESNT CK	47W848-1 / H-10	A/C	ACT	2	2	CK	SA	O	C	N/A	LTJ CM	AppJ CM		
2-FCV-43-1	PRESSURIZED GAS ISOL VLV	47W881-5 / E-5	A	PASS	2	0.375	GL	AO	C	C	C	RPI	2Y		
2-FSV-43-2	PRESSURIZER GAS CNTMT ISOL VLV	47W881-5 / E-4	A	ACT	2	0.375	GL	SO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-43-3	PRESSURIZER GAS CNTMT ISOL VLV	47W881-5 / F-3	A	ACT	2	0.375	GL	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FSV-43-11	PRZR LIQUID CNTMT ISOL VLV	47W881-5 / E-4	A	ACT	2	0.375	GL	SO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-43-12	PRESSURIZER LIQ CNTMT ISOL VLV	47W881-5 / F-2	A	ACT	2	0.375	GL	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FSV-43-22	RCS HOT LEGS HDR CNTMT ISOL VLV	47W881-5 / C-1	A	ACT	2	0.375	GL	SO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-43-23	RCS HOT LEGS HDR CNTMT ISOL VLV	47W881-5 / E-1	A	ACT	2	0.375	GL	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-43-30	ACCUM TK NO 1 ISOL VLV	47W881-5-1 / B-2	B	PASS	2	0.375	GL	AO	C	C	C	RPI	2Y		
2-FCV-43-31	ACCUM TK NO 2 ISOL VLV	47W881-5 / B-6	B	PASS	2	0.375	GL	AO	C	C	C	RPI	2Y		
2-FCV-43-32	ACCUM TK NO 3 ISOL VLV	47W881-5 / B-5	B	PASS	2	0.375	GL	AO	C	C	C	RPI	2Y		
2-FCV-43-33	ACCUM TK NO 4 ISOL VLV	47W881-5 / B-6	B	PASS	2	0.375	GL	AO	C	C	C	RPI	2Y		
2-FSV-43-34	ACCUM TANK HDR CNTMT ISOL VLV	47W881-5-1 / C-2	A	ACT	2	0.375	GL	SO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-43-35	ACCUM TK HDR CNTMT ISOL VLV	47W881-5 / D-6	A	ACT	2	0.375	GL	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-HCV-43-42B	CVCSVOL CNTL TK HAND CNTL VLV-GAS ANAL	47W881-7 / F-1	B	PASS	3	0.375	GL	M	C	C	N/A	NTR	NTR		
2-HCV-43-45B	CVCS HOLDUP TK B HAND CNTL VLV-GAS ANAL	47W881-7 / F-5	B	PASS	3	0.375	GL	M	C	C	N/A	NTR	NTR		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FSV-43-55	STM GEN BLDN NO.1 SAMP ISOL VLV	47W881-5-1 / B-4	B	ACT	2	0.375	GL	SO	O	C	C	RPI FSC STC	2Y Q Q		
2-FSV-43-58	STM GEN BLDN NO.2 SAMP ISOL VLV	47W881-5-1 / B-5	B	ACT	2	0.375	GL	SO	O	C	C	RPI FSC STC	2Y Q Q		
2-FSV-43-61	STM GEN BLDN NO.3 SAMP ISOL VLV	47W881-5-1 / B-5	B	ACT	2	0.375	GL	SO	O	C	C	RPI FSC STC	2Y Q Q		
2-FSV-43-64	STM GEN BLDN NO-4 SAMP ISOL VLV	47W881-5-1 / B-6	B	ACT	2	0.375	GL	SO	O	C	C	RPI FSC STC	2Y Q Q		
2-FSV-43-200A	LOCA H2 CNTMT MONITOR SPAN GAS FLOW VLV	47W881-8 / G-3	A	PASS	2	0.375	GA	SO	C	C	C	RPI LTJ	2Y AppJ		
2-FSV-43-200I	LOCA H2 CNTMT MONITOR CAL GAS FLOW VLV	47W881-8 / G-2	A	PASS	2	0.375	GA	SO	C	C	C	LTJ	AppJ		
2-FSV-43-201	LOCA H2 CNTMT MONITOR ISOLATION SOL VLV	47W881-8 / H-2	A	PASS	2	0.375	GL	SO	C	C	C	RPI LTJ	2Y AppJ		
2-FSV-43-202	LOCA H2 CNTMT MON ISOL SOL VLV	47W881-8 / E-1	A	PASS	2	0.375	GL	SO	C	C	C	RPI LTJ	2Y AppJ		
2-FSV-43-207	LOCA H2 CNTMT MONITOR ISOLATION SOL VLV	47W881-8 / D-7	A	PASS	2	0.375	GL	SO	C	C	C	RPI LTJ	2Y AppJ		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FSV-43-208	LOCA H2 CNTMT MONITOR ISOL VLV	47W881-8 / A-6	A	PASS	2	0.375	GL	SO	C	C	C	RPI LTJ	2Y AppJ		
2-FSV-43-210A	LOCA H2 CNTMT MONITOR CAL GAS FLOW VLV	47W881-8 / G-7	A	PASS	2	0.375	GL	SO	C	C	C	RPI LTJ	2Y AppJ		
2-FSV-43-210I	LOCA H2 CNTMT MONITOR CAL GAS FLOW VLV	47W881-8 / G-7	A	PASS	2	0.375	GA	SO	C	C	C	LTJ	AppJ		
2-FSV-43-250	POST ACD SMPLG HOT LEG 1 ISLN VLV	47W866-6 / B-2	A	PASS	2	0.375	GL	SO	C	C	C	RPI LTJ	2Y AppJ		
2-FSV-43-251	POST ACD SMPLG HOT LEG 1 & 3 CONT V	47W866-6 / B-2	A	PASS	2	0.375	GL	SO	C	C	C	RPI LTJ	2Y AppJ		
2-FSV-43-268	POST ACD SMPLG RHR EXCH 2A ISLN VLV	2-47W881-6 / B-3	B	PASS	2	0.375	GA	SO	C	C	C	RPI	2Y		
2-FSV-43-269	POST ACD SMPLG RHR EXCH 2B ISLN VLV	2-47W881-6 / B-4	B	PASS	2	0.375	GA	SO	C	C	C	RPI	2Y		
2-FSV-43-287	POST ACD SMPLG CNTMT AIR PNL ISLN VLV	2-47W881-6 / J-4	A	PASS	2	0.375	GA	SO	C	C	C	RPI LTJ	2Y AppJ		
2-FSV-43-288	POST ACD SMPLG CNTMT AIR PNL ISLN VLV	47W881-6 / J-5	A	PASS	2	0.375	GA	SO	C	C	C	RPI LTJ	2Y AppJ		
2-FSV-43-307	POST ACD SMPLG CNTMT AIR PNL ISLN VLV	47W881-6 / K-1	A	PASS	2	0.375	GA	SO	C	C	C	RPI LTJ	2Y AppJ		
2-FSV-43-309	POST ACD SMPLG HOT LEG 1 & 3 ISLN V	47W866-6 / B-3	A	PASS	2	0.375	GL	SO	C	C	C	RPI LTJ	2Y AppJ		
2-FSV-43-310	POST ACD SMPLG HOT LEG 3 ISLN VLV	47W866-6 / B-3	A	PASS	2	0.375	GL	SO	C	C	C	RPI LTJ	2Y AppJ		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FSV-43-317	POST ACD SMPLG DR TO CNTNT SUMP ISLN V	47W866-6 / K-7	A	PASS	2	0.375	GL	SO	C	C	C	RPI LTJ	2Y AppJ		
2-FSV-43-318	POST ACD SMPLG CNTMT AIR PNL ISLN VLV	47W881-6 / K-4	A	PASS	2	0.375	GA	SO	C	C	C	RPI LTJ	2Y AppJ		
2-FSV-43-319	POST ACD SMPLG CNTMT AIR PNL ISLN VLV	47W881-6 / K-5	A	PASS	2	0.375	GA	SO	C	C	C	RPI LTJ	2Y AppJ		
2-FSV-43-325	POST ACD SMPLG CNTMT AIR PNL ISLN VLV	47W881-6 / K-1	A	PASS	2	0.375	GA	SO	C	C	C	RPI LTJ	2Y AppJ		
2-FSV-43-341	POST ACD SMPLG DR TO CNTNT ISLV V	47W866-6 / K-7	A	PASS	2	0.375	GL	SO	C	C	C	RPI LTJ	2Y AppJ		
2-CKV-43-460	CHECK VLV TO CNTMT AIR SAMP RETURN	47W881-6 / K-2	A/C	PASS	2	0.5	CK	SA	C	C	N/A	LTJ	AppJ		
2-CKV-43-461	CHECK VLV TO CNTMT SUMP	47W881-6 / K-8	A/C	PASS	2	0.5	CK	SA	C	C	N/A	LTJ	AppJ		
2-SMV-43-715	INLET BORIC ACID TNK B SAMPLE VLV	47W881-9 / B-2	B	PASS	3	0.375	NDL	M	C	C	N/A	NTR	NTR		
2-SMV-43-718	DWNSTR CCS HX 2A1/2A2 SAMPLE VALVE	47W881-9 / B-3	B	PASS	3	0.375	NDL	M	C	C	N/A	NTR	NTR		
2-SMV-43-719	ERCW DWNSTR CCS HX 2A1/2A2 SAMPLE VLV	47W881-9 / B-5	B	PASS	3	0.375	NDL	M	C	C	N/A	NTR	NTR		
2-VLV-59-522	Demin Water Containment Isol	47W856-1 / F-3	A	PASS	2	2	GL	M	LC	LC	N/A	LTJ	AppJ		
2-VLV-59-529	Demin Water Isol	47W856-1 / F-3	A	PASS	2	0.75	GL	M	LC	LC	N/A	LTJ	AppJ		
2-VLV-59-633	CONT ISOLATION	47W856-1 / F-3	A/C	PASS	2	2	CK	SA	C	C	N/A	LTJ	AppJ		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FCV-61-96	INLET ISOLATION VALVE AUX BLDG	47W814-2 / G-9	A	ACT	2	2	DIA	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-61-97	INLET ISOLATION VALVE REACTOR BLDG	47W814-2 / G-10	A	ACT	2	2	DIA	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-61-110	OUTLET ISOLATION VALVE AUX BUILDING	47W814-2 / H-10	A	ACT	2	2	DIA	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-61-122	OUTLET ISOLATION VALVE REACTOR BUILDING	47W814-2 / H-9	A	ACT	2	2	DIA	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-61-191	GLYCOL SUPPLY ISOLATION VALVE	47W814-2 / A-5	A	ACT	2	4	DIA	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FCV-61-192	GLYCOL SUPPLY ISOLATION VALVE	47W814-2 / A-6	A	ACT	2	4	DIA	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-61-193	GLYCOL RETURN ISOLATION VALVE	47W814-2 / B-5	A	ACT	2	4	DIA	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-61-194	GLYCOL RETURN ISOLATION VALVE	47W814-2 / B-6	A	ACT	2	4	DIA	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-VLV-61-533	GLYCOL EXP BYP CHK	47W809-2 / A-5	A/C	ACT	2	0.5	SCK	SA	O/C	C	N/A	LTJ CM	AppJ CM		
2-VLV-61-680	GLYCOL EXP BYP CHK	47W814-2 / B-5	A/C	ACT	2	0.5	SCK	SA	O/C	C	N/A	LTJ CM	AppJ CM		
2-VLV-61-692	GLYCOL EXP BYP CHK	47W814-2 / G-10	A/C	ACT	2	0.375	SCK	SA	O/C	C	N/A	LTJ CM	AppJ CM		
2-VLV-61-745	GLYCOL BYP CHK	47W814-2 / H-10	A/C	ACT	2	0.375	SCK	SA	O/C	C	N/A	LTJ CM	AppJ CM		
2-FCV-62-61	SEAL FLOW ISO VLV	47W809-1 / C-6	A	ACT	2	4	GA	MO	O	C	FAI	RPI LTJ STC	2Y AppJ RO		DTJ-35



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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FCV-62-63	SEAL FLOW ISO VLV	47W809-1 / B-7	A	ACT	2	4	GA	MO	O	C	FAI	RPI LTJ STC	2Y AppJ RO		DTJ-35
2-FCV-62-69	RC LOOP 3 LETDOWN FLOW	47W809-1 / A-2	B	ACT	1	3	GL	AO	O	C	C	RPI FSC STC	2Y CSD CSD		DTJ-09 DTJ-09
2-FCV-62-70	RC LOOP 3 LETDOWN FLOW	47W809-1 / A-2	B	ACT	1	3	GL	AO	O	C	C	RPI FSC STC	2Y CSD CSD		DTJ-09 DTJ-09
2-FCV-62-72	REGEN HT EXCH LETDOWN ISO VLV A	47W809-1 / A-4	A	ACT	2	2	GL	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ CSD CSD		DTJ-39 DTJ-39
2-FCV-62-73	REGEN HT EXCH LETDOWN ISO VLV B	47W809-1 / A-4	A	ACT	2	2	GL	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ CSD CSD		DTJ-39 DTJ-39
2-FCV-62-74	REGEN HT EXCH LETDOWN ISO VLV C	47W809-1 / A-4	A	ACT	2	2	GL	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ CSD CSD		DTJ-39 DTJ-39

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FCV-62-77	LETDOWN LINE ISO VLV FLOW CONTROL	47W809-1 / A-6	A	ACT	2	2	GL	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ CSD CSD		DTJ-39 DTJ-39
2-FCV-62-84	CHARGING FLOW TO RCS SPRAY	47W809-1 / B-2	B	PASS	2	2	GL	AO	C	C	C	RPI	2Y		
2-FCV-62-90	CHARGING FLOW ISO VLV	47W809-1 / D-7	B	ACT	2	3	GA	MO	O	C	FAI	RPI STC	2Y CSD		DTJ-40
2-FCV-62-91	CHARGING FLOW ISO VLV	47W809-1 / D-8	B	ACT	2	3	GA	MO	O	C	FAI	RPI STC	2Y CSD		DTJ-40
2-FCV-62-128	VOL CONT TANK BYPASS FLOW	47W809-2 / C-2	B	PASS	2	2	DIA	AO	C	C	C	NTR	NTR		
2-LCV-62-132	VCT OUTLET ISO VLV TO CCP	47W809-1 / D-10	B	ACT	2	4	GA	MO	O	C	FAI	RPI STC	2Y CSD		DTJ-29
2-LCV-62-133	VCT OUTLET ISO VLV TO CCP	47W809-1 / E-10	B	ACT	2	4	GA	MO	O	C	FAI	RPI STC	2Y CSD		DTJ-29
2-LCV-62-135	RWST TO CCP	47W809-1 / H-9	B	ACT	2	8	GA	MO	C	O/C	FAI	RPI STC STO	2Y CSD CSD		DTJ-41 DTJ-41
2-LCV-62-136	RWST TO CCP	47W809-1 / H-9	B	ACT	2	8	GA	MO	C	O/C	FAI	RPI STC STO	2Y CSD CSD		DTJ-41 DTJ-41

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FCV-62-138	EMERGENCY BORATION FLOW CONT VLV & HANDWHEEL	47W809-2 / A-4	B	ACT	3	3	GA	MO	C	O/C	FAI	RPI	2Y		
												STC	Q		
												STO	Q		
2-FCV-62-144	MAKEUP INJECTION VLV FLOW CONT	47W809-2 / C-2	B	PASS	3	2	DIA	AO	C	C	C	NTR	NTR		
2-VLV-62-504	CHRG PMP SUCT CHECK	47W809-1 / G-10	C	ACT	2	8	CK	SA	C	O/C	N/A	CVC	RO		DTJ-06
												CVO	RO		DTJ-06
2-VLV-62-505	CHRG PMP SUCT RELIEF	47W809-1 / G-10	C	ACT	2	0.75	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-62-523	CENT CHRG PMP MINI CK	47W809-1 / G-8	C	ACT	2	2	CK	SA	C	O/C	N/A	CVC	Q		
												CVO	Q		
2-VLV-62-525	CENT CHRG PMP DISC CK	47W809-1 / G-8	C	ACT	2	4	CK	SA	C	O/C	N/A	CVC	RO		DTJ-05
												CVO	RO		DTJ-05
2-VLV-62-530	CENT CHRG PMP MINI CK	47W809-1 / F-8	C	ACT	2	2	CK	SA	C	O/C	N/A	CVC	Q		
												CVO	Q		
2-VLV-62-532	CENT CHRG PMP DISC CK	47W809-1 / F-8	C	ACT	2	4	CK	SA	C	O/C	N/A	CVC	RO		DTJ-05
												CVO	RO		DTJ-05
2-VLV-62-543	NOR CHRG CHECK	47W809-1 / B-6	C	ACT	2	3	CK	SA	O	O/C	N/A	CM	CM		
2-VLV-62-546	SEAL WTR INJ FLTR BYP VLV	47W809-1 / F-7	B	PASS	2	2	GL	M	LC	C	N/A	NTR	NTR		
2-VLV-62-549	SEAL WTR INJ FLTR ISO	47W809-1 / G-7	B	ACT	2	2	GL	M	O/C	C	N/A	MS	2Y		
2-VLV-62-550	SEAL WTR INJ FLTR ISO	47W809-1 / H-7	B	ACT	2	2	GL	M	O/C	C	N/A	MS	2Y		
2-VLV-62-560	SEAL WTR INJ CHECK	47W809-1 / F-6	C	ACT	1	2	CK	SA	O	O/C	N/A	CM	CM		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-VLV-62-561	SEAL WTR INJ CHECK	47W809-1 / F-6	C	ACT	1	2	CK	SA	O	O/C	N/A	CM	CM		
2-VLV-62-562	SEAL WTR INJ CHECK	47W809-1 / H-5	C	ACT	1	2	CK	SA	O	O/C	N/A	CM	CM		
2-VLV-62-563	SEAL WTR INJ CHECK	47W809-1 / H-5	C	ACT	1	2	CK	SA	O	O/C	N/A	CM	CM		
2-VLV-62-576	SEAL WTR INJ CHECK	47W809-1 / E-3	C	ACT	1	2	CK	SA	O	O/C	N/A	CM	CM		
2-VLV-62-577	SEAL WTR INJ CHECK	47W809-1 / E-2	C	ACT	1	2	CK	SA	O	O/C	N/A	CM	CM		
2-VLV-62-578	SEAL WTR INJ CHECK	47W809-1 / G-2	C	ACT	1	2	CK	SA	O	O/C	N/A	CM	CM		
2-VLV-62-579	SEAL WTR INJ CHECK	47W809-1 / G-3	C	ACT	1	2	CK	SA	O	O/C	N/A	CM	CM		
2-VLV-62-636	SEAL WATER RELIEF	47W809-1 / C-5	C	ACT	2	2	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-62-639	SEAL WATER TEST CHECK	47W809-1 / C-6	A/C	ACT	2	0.75	CK	SA	C	O/C	N/A	LTJ CM	AppJ CM		
2-VLV-62-649	SEAL WTR HX RELIEF	47W809-1 / C-8	C	ACT	2	2	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-62-659	RC LOOP 1 CHG CHECK	47W809-1 / B-2	C	PASS	1	3	CK	SA	C	C	N/A	CM	CM		
2-VLV-62-660	RC LOOP 4 CHG CHECK	47W809-1 / B-2	C	ACT	1	3	CK	SA	O	C	N/A	CM	CM		
2-VLV-62-661	RCS SPRAY CHECK	47W809-1 / B-2	C	PASS	1	2	CK	SA	C	C	N/A	NTR	NTR		
2-VLV-62-662	LETDOWN RELIEF	47W809-1 / A-3	A/C	ACT	2	2	RV	SA	C	O/C	N/A	LTJ RV	AppJ RV		
2-VLV-62-675	LETDOWN RELIEF VALVE	47W809-1 / B-9	C	ACT	2	2	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-62-688	VCT RELIEF	47W809-1 / B-10	C	ACT	2	3	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-62-697	VCT OUTLET CHECK	47W809-1 / E-10	C	PASS	2	4	CK	SA	O	O	N/A	NTR	NTR		
2-VLV-62-716	RC LOOP 1 CHG CHECK	47W809-1 / B-2	C	PASS	1	3	CK	SA	C	C	N/A	CM	CM		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-VLV-62-717	RC LOOP 4 CHG CHECK	47W809-1 / B-2	C	ACT	1	3	CK	SA	O	C	N/A	CM	CM		
2-VLV-62-928	BA BLEND ACID SUPPLY	47W809-2 / A-3	C	ACT	3	2	CK	SA	C	O	N/A	BDC CVO	RO RO		DTJ-10 DTJ-10
2-VLV-62-930	B.A. CK VLV TO CHARGING PUMP SUCTION	47W809-2 / B-4	C	ACT	2	3	CK	SA	C	O	N/A	BDC CVO	RO RO		DTJ-10 DTJ-10
2-VLV-62-955	HOLDUP TANK RELIEF	47W809-3 / C-7	C	ACT	3	4	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-62-1030	BORIC ACID TK INLET	0-47W809-5 / B-3	B	PASS	3	1	GL	M	C	C	N/A	NTR	NTR		
2-VLV-62-1031	BORIC ACID TK B ISOL	0-47W809-5 / C-3	B	PASS	3	2	GL	M	C	C	N/A	NTR	NTR		
2-VLV-62-1052A	BORIC ACID PUMP CK VLV	47W809-5 / F-4	C	ACT	3	2	CK	SA	O/C	O	N/A	BDC CVO	Q Q		
2-VLV-62-1052B	BORIC ACID PUMP CK VLV	47W809-5 / F-4	C	ACT	3	2	CK	SA	O/C	O	N/A	BDC CVO	Q Q		
2-VLV-62-1081	HOLDUP TK VAC RELIEF	47W809-3 / C-7	C	ACT	3	4	RV	SA	C	O/C	N/A	RV	RV		
2-FCV-63-1	RWST TO RHR PMP FLOW CNTL VLV	2-47W811-1 / E-10	B	ACT	2	12	GA	MO	O	O/C	FAI	RPI STC STO	2Y CSD CSD		DTJ-11 DTJ-11
2-FCV-63-3	SIS PUMP DISCH TO RWST SHUTOFF VLV	2-47W811-1 / E-8	B	ACT	2	2	GL	MO	O	O/C	FAI	RPI STC STO	2Y CSD CSD		DTJ-12 DTJ-12

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAI				
2-FCV-63-4	SIS PUMP A-A DISCH TO RWST SHUTOFF VLV	2-47W811-1 / E-8	B	ACT	2	2	GL	MO	O	O/C	FAI	RPI STC STO	2Y Q Q		
2-FCV-63-5	RWST TO SIS PMP FLOW CONTROL VLV	2-47W811-1 / D-10	B	ACT	2	8	GA	MO	O	O/C	FAI	RPI STC STO	2Y CSD CSD		DTJ-13 DTJ-13
2-FCV-63-6	SIS PUMP INLET TO CVCS CHG PMP	2-47W811-1 / F-10	B	ACT	2	4	GA	MO	C	O/C	FAI	RPI STC STO	2Y Q Q		
2-FCV-63-7	SIS PUMP INLET TO CVCS CHG PMP	2-47W811-1 / F-10	B	ACT	2	4	GA	MO	C	O/C	FAI	RPI STC STO	2Y Q Q		
2-FCV-63-8	RHR HTX 2A TO CVCS CHG PUMPS	2-47W811-1 / H-9	B	ACT	2	8	GA	MO	C	O/C	FAI	RPI STC STO	2Y CSD CSD		DTJ-15 DTJ-15
2-FCV-63-11	RHR PMP 2B TO SI PUMP	2-47W811-1 / F-9	B	ACT	2	8	GA	MO	C	O/C	FAI	RPI STC STO	2Y CSD CSD		DTJ-15 DTJ-15
2-FCV-63-21	SIS PUMP OUTLET TO SIS TEST LINE	2-47W811-1 / F-6	B	PASS	2	1	GL	AO	C	C	C	RPI	2Y		
2-FCV-63-22	SIS PUMPS CL INJ	2-47W811-1 / E-6	B	ACT	2	4	GA	MO	O	O/C	FAI	RPI STC STO	2Y CSD CSD		DTJ-14 DTJ-14

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FCV-63-23	SIS ACCUM FILL LINE ISOL	2-47W811-1 / E-7	A	ACT	2	0.75	GL	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-63-24	SIS ACCUM FILL LINE ISOLATION VLV	2-47W811-1 / C-6	B	PASS	2	1	GL	AO	C	C	C	RPI	2Y		
2-FCV-63-25	CIPIT OUTL ISOL	2-47W811-1 / B-7	B	ACT	2	4	GA	MO	C	O/C	FAI	RPI STC STO	2Y Q Q		
2-FSV-63-25	2-FCV-63-25 BONNET PRESSURE RELIEF	2-47W811-1 / B-7	B	ACT	2	0.75	GL	SO	C	O	C	RPI FSC STC STO	2Y Q Q Q		
2-FCV-63-26	CCPIT OUTLET ISOL	2-47W811-1 / B-7	B	ACT	2	4	GA	MO	C	O/C	FAI	RPI STC STO	2Y Q Q		
2-FSV-63-26	2-FCV-63-25 BONNET PRESSURE RELIEF	2-47W811-1 / C-7	B	ACT	2	0.75	GL	SO	C	O	C	RPI FSC STC STO	2Y Q Q Q		
2-FCV-63-39	SIS CCP INJ TANK INLET SHUTOFF VLV	2-47W811-1 / C-9	B	ACT	2	4	GA	MO	C	O/C	FAI	RPI STC STO	2Y Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FCV-63-40	SIS CCP INJ TANK INLET SHUTOFF VLV	2-47W811-1 / C-8	B	ACT	2	4	GA	MO	C	O/C	FAI	RPI STC STO	2Y Q Q		
2-FCV-63-47	SIS PUMP 2A-A INLET VLV	2-47W811-1 / F-10	B	ACT	2	6	GA	MO	O	O/C	FAI	RPI STC STO	2Y Q Q		
2-FCV-63-48	SIS PUMP 2B-B INLET VLV	2-47W811-1 / E-10	B	ACT	2	6	GA	MO	O	O/C	FAI	RPI STC STO	2Y Q Q		
2-FCV-63-63	SIS ACCUM TANK 4 N2 MAKEUP VLV	2-47W811-1 / A-5	B	PASS	2	1	GL	AO	C	C	C	RPI	2Y		
2-FCV-63-64	SIS ACCUM TANK N2 HDR INLET VLV	0-47W830-6 / B-6	A	ACT	2	1	GL	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-63-67	SIS ACCUM TK 4 FLOW ISOLATION VLV	2-47W811-1 / B-5	B	PASS	2	10	GA	MO	O	O	FAI	RPI	2Y		
2-FCV-63-68	SIS ACCUM TK 4 CHECK VLV LEAK TEST	2-47W811-1 / C-5	B	PASS	2	0.75	GL	AO	C	C	C	RPI	2Y		
2-FCV-63-69	SIS CL 4 CHECK VLV LEAK TEST	2-47W811-1 / H-2	B	PASS	2	0.75	GL	AO	C	C	C	RPI	2Y		
2-FCV-63-70	SIS ACCUM TK 4 FILL VLV	2-47W811-1 / B-6	B	PASS	2	1	GL	AO	C	C	C	RPI	2Y		
2-FCV-63-71	SIS CHECK VLV FLOW ISOL VLV	2-47W811-1 / C-6	A	ACT	2	0.75	GL	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		



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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FCV-63-72	CNTMT SUMP FLOW ISOL VLV	2-47W811-1 / H-6	B	ACT	2	18	GA	MO	C	O/C	FAI	RPI STC STO	2Y CSD CSD		DTJ-15 DTJ-15
2-FCV-63-73	CNTMT SUMP FLOW ISOL VLV	2-47W811-1 / H-7	B	ACT	2	18	GA	MO	C	O/C	FAI	RPI STC STO	2Y CSD CSD		DTJ-15 DTJ-15
2-FCV-63-77	SIS ACCUM TK 3 FILL VLV	2-47W811-1 / B-4	B	PASS	2	1	GL	AO	C	C	C	RPI	2Y		
2-FCV-63-78	SIS ACCUM TK 3 CHECK VLV ISO VLV	2-47W811-1 / C-4	B	PASS	2	0.75	GL	AO	C	C	C	RPI	2Y		
2-FCV-63-79	SIS CL 3 CHECK VLV LEAK TEST	2-47W811-1 / G-5	B	PASS	2	0.75	GL	AO	C	C	C	RPI	2Y		
2-FCV-63-80	SIS ACCUM TK 3 FLOW ISOL VLV	2-47W811-1 / B-4	B	PASS	2	10	GA	MO	O	O	FAI	RPI	2Y		
2-FCV-63-84	SIS CHK VLV ISOL HDR FLOW ISOLATION VLV	2-47W811-1 / D-6	A	ACT	2	0.75	GL	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-63-87	SIS ACCUM TK 3 N2 MAKEUP VLV	2-47W811-1 / A-4	B	PASS	2	1	GL	AO	C	C	C	RPI	2Y		
2-FCV-63-93	RHR CL INJ TO LOOPS 2&3	2-47W811-1 / G-7	B	ACT	2	8	GA	MO	O	O/C	FAI	RPI STC STO	2Y CSD CSD		DTJ-16 DTJ-16
2-FCV-63-94	RHR CL INJ TO LOOPS 1&4	2-47W811-1 / G-7	B	ACT	2	8	GA	MO	O	O/C	FAI	RPI STC STO	2Y CSD CSD		DTJ-16 DTJ-16
2-FCV-63-95	SIS ACCUM TK 2 FILL VLV	2-47W811-1 / B-3	B	PASS	2	1	GL	AO	C	C	C	RPI	2Y		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FCV-63-96	SIS ACCUM TK 2 CHECK VLV ISOL VLV	2-47W811-1 / C-2	B	PASS	2	0.75	GL	AO	C	C	C	RPI	2Y		
2-FCV-63-97	SIS CL 2 CHECK VLV LEAK TEST	2-47W811-1 / H-4	B	PASS	2	0.75	GL	AO	C	C	C	RPI	2Y		
2-FCV-63-98	SIS ACCUM TK 2 FLOW ISOL VLV	2-47W811-1 / B-2	B	PASS	2	10	GA	MO	O	O	FAI	RPI	2Y		
2-FCV-63-107	SIS ACCUM TK 2 N2 MAKEUP VLV	2-47W811-1 / A-2	B	PASS	2	1	GL	AO	C	C	C	RPI	2Y		
2-FCV-63-111	SIS CHK VLV LEAK TEST ISOLATION VALVE	2-47W811-1 / H-6	B	PASS	2	0.75	GL	AO	C	C	C	RPI	2Y		
2-FCV-63-112	SIS CHK VLV LEAK TEST ISOLATION VALVE	2-47W811-1 / H-6	B	PASS	2	0.75	GL	AO	C	C	C	RPI	2Y		
2-FCV-63-115	SIS ACCUM TK 1 FILL VLV	2-47W811-1 / B-2	B	PASS	2	1	GL	AO	C	C	C	RPI	2Y		
2-FCV-63-116	SIS ACCUM TK 1 CHECK VLV ISOL VLV	2-47W811-1 / C-1	B	PASS	2	0.75	GL	AO	C	C	C	RPI	2Y		
2-FCV-63-117	SIS CL 1 CHECK VLV LEAK TEST	2-47W811-1 / H-1	B	PASS	2	0.75	GL	AO	C	C	C	RPI	2Y		
2-FCV-63-118	SIS ACCUM TK 1 FLOW ISOLATION VLV	2-47W811-1 / B-1	B	PASS	2	10	GA	MO	O	O	FAI	RPI	2Y		
2-FCV-63-121	SIS FLOW TO CL CHECK VLV LEAK TEST	2-47W811-1 / E-6	B	PASS	2	0.75	GL	AO	C	C	C	RPI	2Y		
2-FCV-63-127	SIS ACCUM TK 1 N2 MAKEUP VLV	2-47W811-1 / A-1	B	PASS	2	1	GL	AO	C	C	C	RPI	2Y		
2-FCV-63-152	SIS PMP 2A-A OUT FLOW CNTL VLV	2-47W811-1 / F-7	B	ACT	2	4	GA	MO	O	O/C	FAI	RPI STC STO	2Y Q Q		
2-FCV-63-153	SI PMP 2B CL INJ ISOL LOOP 1,2,3,4	2-47W811-1 / E-7	B	ACT	2	4	GA	MO	O	O/C	FAI	RPI STC STO	2Y Q Q		
2-FCV-63-156	SI PUMP 2A HL INJ ISOL LOOP 1&3	2-47W811-1 / F-6	B	ACT	2	4	GA	MO	C	O/C	FAI	RPI STC STO	2Y Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FCV-63-157	SIS PUMP 2B-B OUTLET TO RCS LOOP 2&4 H L	2-47W811-1 / D-6	B	ACT	2	4	GA	MO	C	O/C	FAI	RPI  STC  STO	2Y  Q  Q		
2-FCV-63-158	RHR RETURN FROM SIS SAMPLE	2-47W811-1 / F-5	B	PASS	2	0.75	GL	AO	C	C	C	RPI	2Y		
2-FCV-63-163	RCS LP 1 H L FEED TEST LINE	2-47W811-1 / G-5	B	PASS	2	0.75	GL	AO	C	C	C	RPI	2Y		
2-FCV-63-164	RCS LP 3 H L FEED TEST LINE	2-47W811-1 / F-4	B	PASS	2	0.75	GL	AO	C	C	C	RPI	2Y		
2-FCV-63-165	RCS LP 2 H L FEED TEST LINE	2-47W811-1 / C-3	B	PASS	2	0.75	GL	AO	C	C	C	RPI	2Y		
2-FCV-63-166	RCS LP 4 H L FEED TEST LINE	2-47W811-1 / E-5	B	PASS	2	0.75	GL	AO	C	C	C	RPI	2Y		
2-FCV-63-167	SIS PUMP OUT TEST LINE	2-47W811-1 / D-6	B	PASS	2	0.75	GL	AO	C	C	C	RPI	2Y		
2-FCV-63-172	RHR INJECTION OR RECIRC AFTER LOCA	2-47W811-1 / G-6	B	ACT	2	12	GA	MO	C	O/C	FAI	RPI STC STO	2Y CSD CSD		DTJ-16  DTJ-16
2-FCV-63-174	SIS TEST LINE CHECK VLV TEST	2-47W811-1 / C-6	B	PASS	2	0.75	GL	AO	C	C	C	RPI	2Y		
2-FCV-63-175	SIS PUMP B-B DISCH TO RWST SHUTOFF VLV	2-47W811-1 / E-8	B	ACT	2	2	GL	MO	O	O/C	FAI	RPI STC STO	2Y Q Q		
2-VLV-63-344B	CONT PRESS TEST VT DR	47W600-154 / F-9	A	PASS	2	0.25	GA	M	LC	LC	N/A	LTJ	AppJ		
2-VLV-63-344D	DRAIN VALVE FOR PI-63- 74	47W600-154 / F-9	A	PASS	2	0.25	GA	M	LC	LC	N/A	LTJ	AppJ		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-VLV-63-502	RHR PUMP SUCT CHECK	2-47W811-1 / F-10	C	ACT	2	12	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-07 DTJ-07
2-VLV-63-510	SIS PUMP SUCT CHECK	2-47W811-1 / D-10	C	ACT	2	8	CK	SA	C	O/C	N/A	CM	CM		
2-VLV-63-511	SIS PUMP SUCT REL VA	2-47W811-1 / D-10	C	ACT	2	0.75	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-63-524	SIS PUMP DISCH CHECK	2-47W811-1 / F-8	C	ACT	2	4	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-25 DTJ-25
2-VLV-63-526	SIS PUMP DISCH CHECK	2-47W811-1 / D-8	C	ACT	2	4	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-25 DTJ-25
2-VLV-63-528	SIS PUMP DISCH MINI CK	2-47W811-1 / F-8	C	ACT	2	0.75	CK	SA	C	O/C	N/A	CVC CVO	Q Q		
2-VLV-63-530	SIS PUMP DISCH MINI CK	2-47W811-1 / E-8	C	ACT	2	0.75	CK	SA	C	O/C	N/A	CVC CVO	Q Q		
2-VLV-63-534	SIS PUMP DISCH RELIEF	2-47W811-1 / E-7	C	ACT	2	0.75	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-63-535	SIS PUMP DISCH RELIEF	2-47W811-1 / E-7	C	ACT	2	0.75	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-63-536	SIS PUMP DISCH RELIEF	2-47W811-1 / D-7	C	ACT	2	0.75	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-63-543	SIS L1 HL INJ CHECK	2-47W811-1 / F-3	A/C	ACT	1	2	CK	SA	C	O/C	N/A	LTP CM	2Y CM		
2-VLV-63-545	SIS L3 HL INJ CHECK	2-47W811-1 / E-3	A/C	ACT	1	2	CK	SA	C	O/C	N/A	LTP CM	2Y CM		
2-VLV-63-547	SIS L2 HL INJ CHECK	2-47W811-1 / D-3	A/C	ACT	1	2	CK	SA	C	O/C	N/A	LTP CM	2Y CM		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-VLV-63-549	SIS L4 HL INJ CHECK	2-47W811-1 / E-3	A/C	ACT	1	2	CK	SA	C	O/C	N/A	LTP CM	2Y CM		
2-VLV-63-551	SIS L1 CL INJ CHECK	2-47W811-1 / H-1	A/C	ACT	1	2	CK	SA	C	O/C	N/A	LTP CM	2Y CM		
2-VLV-63-553	SIS L2 CL INJ CHECK	2-47W811-1 / H-3	A/C	ACT	1	2	CK	SA	C	O/C	N/A	LTP CM	2Y CM		
2-VLV-63-555	SIS L3 CL INJ CHECK	2-47W811-1 / G-3	A/C	ACT	1	2	CK	SA	C	O/C	N/A	LTP CM	2Y CM		
2-VLV-63-557	SIS L4 CL INJ CHECK	2-47W811-1 / G-2	A/C	ACT	1	2	CK	SA	C	O/C	N/A	LTP CM	2Y CM		
2-VLV-63-558	SIS L4 HL INJ CHECK	2-47W811-1 / E-2	A/C	ACT	1	6	CK	SA	C	O/C	N/A	LTP CM	2Y CM		
2-VLV-63-559	SIS L2 HL INJ CHECK	2-47W811-1 / E-1	A/C	ACT	1	6	CK	SA	C	O/C	N/A	LTP CM	2Y CM		
2-VLV-63-560	SIS L1 CL INJ CHECK	2-47W811-1 / E-1	A/C	ACT	1	10	CK	SA	C	O/C	N/A	LTP CM	2Y CM		
2-VLV-63-561	SIS L2 CL INJ CHECK	2-47W811-1 / D-1	A/C	ACT	1	10	CK	SA	C	O/C	N/A	LTP CM	2Y CM		
2-VLV-63-562	SIS L3 CL INJ CHECK	2-47W811-1 / E-2	A/C	ACT	1	10	CK	SA	C	O/C	N/A	LTP CM	2Y CM		
2-VLV-63-563	SIS L4 CL INJ CHECK	2-47W811-1 / F-2	A/C	ACT	1	10	CK	SA	C	O/C	N/A	LTP CM	2Y CM		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-VLV-63-577	INJ TK OUT RELIEF	2-47W811-1 / A-7	C	ACT	2	0.75	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-63-581	INJ TK CHECK	2-47W811-1 / C-6	C	ACT	1	3	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-24 DTJ-24
2-VLV-63-586	INJ TK CHECK CL L1	2-47W811-1 / E-1	C	ACT	1	1.5	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-24 DTJ-24
2-VLV-63-587	INJ TK CHECK CL L2	2-47W811-1 / D-2	C	ACT	1	1.5	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-24 DTJ-24
2-VLV-63-588	INJ TK CHECK CL L3	47W811-1 / E-2	C	ACT	1	1.5	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-24 DTJ-24
2-VLV-63-589	INJ TK CHECK CL L4	2-47W811-1 / F-2	C	ACT	1	1.5	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-24 DTJ-24
2-VLV-63-602	ACCUM 1 RELIEF	2-47W811-1 / A-1	C	ACT	3	1	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-63-603	ACCUM 2 RELIEF	2-47W811-1 / A-3	C	ACT	3	1	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-63-604	ACCUM 3 RELIEF	2-47W811-1 / A-4	C	ACT	3	1	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-63-605	ACCUM 4 RELIEF	2-47W811-1 / A-6	C	ACT	3	1	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-63-618	ACC 1 WDS ISOL VLV	2-47W811-1 / B-1	B	PASS	2	1	GL	M	C	C	N/A	NTR	NTR		
2-VLV-63-619	ACC 2 WDS ISOL VLV	2-47W811-1 / B-2	B	PASS	2	1	GL	M	C	C	N/A	NTR	NTR		
2-VLV-63-620	ACC 3 WDS ISOL VLV	2-47W811-1 / B-4	B	PASS	2	1	GL	M	C	C	N/A	NTR	NTR		
2-VLV-63-621	ACC 4 WDS ISOL VLV	2-47W811-1 / B-5	B	PASS	2	1	GL	M	C	C	N/A	NTR	NTR		
2-VLV-63-622	ACCUM 1 OUT CHECK	2-47W811-1 / D-1	A/C	ACT	1	10	CK	SA	C	O/C	N/A	LTP CM	2Y CM		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-VLV-63-623	ACCUM 2 OUT CHECK	2-47W811-1 / D-2	A/C	ACT	1	10	CK	SA	C	O/C	N/A	LTP CM	2Y CM		
2-VLV-63-624	ACCUM 3 OUT CHECK	2-47W811-1 / D-3	A/C	ACT	1	10	CK	SA	C	O/C	N/A	LTP CM	2Y CM		
2-VLV-63-625	ACCUM 4 OUT CHECK	2-47W811-1 / D-3	A/C	ACT	1	10	CK	SA	C	O/C	N/A	LTP CM	2Y CM		
2-VLV-63-626	RHR PUMP DISC RELIEF	2-47W811-1 / G-7	C	ACT	2	2	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-63-627	RHR PUMP DISC RELIEF	2-47W811-1 / F-7	C	ACT	2	2	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-63-632	RHR PUMP DISC CHECK	2-47W811-1 / H-2	A/C	ACT	1	6	CK	SA	C	O/C	N/A	LTP CM	2Y CM		
2-VLV-63-633	RHR PUMP DISC CHECK	2-47W811-1 / G-1	A/C	ACT	1	6	CK	SA	C	O/C	N/A	LTP CM	2Y CM		
2-VLV-63-634	RHR PUMP DISC CHECK	2-47W811-1 / G-3	A/C	ACT	1	6	CK	SA	C	O/C	N/A	LTP CM	2Y CM		
2-VLV-63-635	RHR PUMP DISCH CHECK	2-47W811-1 / G-1	A/C	ACT	1	6	CK	SA	C	O/C	N/A	LTP CM	2Y CM		
2-VLV-63-637	RHR HX DISCH RELIEF	2-47W811-1 / F-6	C	ACT	2	0.75	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-63-640	RHR HX DISCH CHECK	2-47W811-1 / G-3	A/C	ACT	1	8	CK	SA	C	O/C	N/A	LTP CVC CVO	2Y RO RO		DTJ-33 DTJ-33

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-VLV-63-641	RHR HX DISCH CHECK	2-47W811-1 / F-1	A/C	ACT	1	6	CK	SA	C	O/C	N/A	LTP CVC CVO	2Y RO RO		DTJ-33 DTJ-33
2-VLV-63-643	RHR HX DISCH CHECK	2-47W811-1 / G-3	A/C	ACT	1	8	CK	SA	C	O/C	N/A	LTP CVC CVO	2Y RO RO		DTJ-33 DTJ-33
2-VLV-63-644	RHR HX DISCH CHECK	2-47W811-1 / D-2	A/C	ACT	1	6	CK	SA	C	O/C	N/A	LTP CVC CVO	2Y RO RO		DTJ-33 DTJ-33
2-FCV-67-66	ERCW HDR 1A SUP TO DG 2A-A HX A1 & A2	47W845-1 / B-10	B	ACT	3	6	BF	MO	C	O	FAI	RPI STO	2Y Q		
2-FCV-67-67	ERCW HDR 1B SUP TO DG 2B-B HX B1 & B2	47W845-1 / B-6	B	ACT	3	6	BF	MO	C	O	FAI	RPI STO	2Y Q		
2-FCV-67-83	LOWER CNTMT D COOLERS SUPPLY ISOL VLV	2-47W845-3 / D-7	A	ACT	2	6	BF	MO	O	O/C	FAI	RPI LTJ STC STO	2Y AppJ CSD CSD		DTJ-18 DTJ-18
2-TCV-67-84	LOWER CNTMT VENT CLR A SUPPLY CONTROL VLV	2-47W845-3 / H-4	B	ACT	3	4	GL	AO	O/C	O	O	RPI FSO STO	2Y Q Q		



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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FCV-67-87	LWR CNTMT A CLRS DISCH ISOL VLV INSIDE CNTMT	2-47W845-3 / G-6	A	ACT	2	6	BF	MO	O	O/C	FAI	RPI	2Y		DTJ-18  DTJ-18
												LTJ	AppJ		
												STC	CSD		
												STO	CSD		
2-FCV-67-88	LWR CNTMT A CLRS DISCH ISOL VLV OUTSIDE CNTMT	2-47W845-3 / G-7	A	ACT	2	6	BF	MO	O	O/C	FAI	RPI	2Y		DTJ-18  DTJ-18
												LTJ	AppJ		
												STC	CSD		
												STO	CSD		
2-FCV-67-89	VALVE, CONTROL, FLOW	2-47W845-3 / D-5	A	ACT	2	6	BF	MO	O	O/C	FAI	RPI	2Y		DTJ-18  DTJ-18
												LTJ	AppJ		
												STC	CSD		
												STO	CSD		
2-FCV-67-90	VALVE, CONTROL, FLOW	2-47W845-3 / F-5	A	ACT	2	6	BF	MO	O	O/C	FAI	RPI	2Y		DTJ-18  DTJ-18
												LTJ	AppJ		
												STC	CSD		
												STO	CSD		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FCV-67-91	LWR CNTMT B COOLERS SUPPLY ISOL VLV	2-47W845-3 / F-7	A	ACT	2	6	BF	MO	O	O/C	FAI	RPI LTJ STC STO	2Y AppJ CSD CSD		DTJ-18  DTJ-18
2-TCV-67-92	LWR CNTMT VENT CLR C SUPPLY CONTROL VLV	2-47W845-3 / G-4	B	ACT	3	4	GL	AO	O/C	O	O	RPI FSO STO	2Y Q Q		
2-FCV-67-95	LWR CNTMT C CLRS DISCH ISOL VLV INSIDE CNTMT	2-47W845-3 / F-6	A	ACT	2	6	BF	MO	O	O/C	FAI	RPI LTJ STC STO	2Y AppJ CSD CSD		DTJ-18  DTJ-18
2-FCV-67-96	LWR CNTMT C CLRS DISCH ISOL VLV OUTSIDE CNTMT	2-47W845-3 / F-7	A	ACT	2	6	BF	MO	O	O/C	FAI	RPI LTJ STC STO	2Y AppJ CSD CSD		DTJ-18  DTJ-18

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FCV-67-99	LWR CNTMT C COOLERS SUPPLY ISOL VLV	2-47W845-3 / G-7	A	ACT	2	6	BF	MO	O	O/C	FAI	RPI LTJ STC STO	2Y AppJ CSD CSD		DTJ-18  DTJ-18
2-TCV-67-100	LWR CNTMT VENT CLR B SUPPLY CONTROL VALVE	2-47W845-3 / E-4	B	ACT	3	4	GL	AO	O/C	O	O	RPI FSO STO	2Y Q Q		
2-FCV-67-103	LWR CNTMT B CLRS DISCH ISOL VLV INSIDE CNTMT	2-47W845-3 / E-6	A	ACT	2	6	BF	MO	O	O/C	FAI	RPI LTJ STC STO	2Y AppJ CSD CSD		DTJ-18  DTJ-18
2-FCV-67-104	LWR CNTMT B CLRS DISCH ISOL VLV OUTSIDE CNTMT	2-47W845-3 / E-7	A	ACT	2	6	BF	MO	O	O/C	FAI	RPI LTJ STC STO	2Y AppJ CSD CSD		DTJ-18  DTJ-18

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FCV-67-105	VALVE, CONTROL, FLOW	2-47W845-3 / G-5	A	ACT	2	6	BF	MO	O	O/C	FAI	RPI LTJ STC STO	2Y AppJ CSD CSD		DTJ-18 DTJ-18
2-FCV-67-106	VALVE, CONTROL, FLOW	2-47W845-3 / H-5	A	ACT	2	6	BF	MO	O	O/C	FAI	RPI LTJ STC STO	2Y AppJ CSD CSD		DTJ-18 DTJ-18
2-FCV-67-107	LWR CNTMT A COOLERS SUPPLY ISOL VLV	2-47W845-3 / H-7	A	ACT	2	6	BF	MO	O	O/C	FAI	RPI LTJ STC STO	2Y AppJ CSD CSD		DTJ-18 DTJ-18
2-TCV-67-108	LWR CNTMT VENT CLR D SUPPLY CONTROL VLV	2-47W845-3 / D-4	B	ACT	3	4	GL	AO	O/C	O	O	RPI FSO STO	2Y Q Q		
2-FCV-67-111	LWR CNTMT D CLRS DISCH ISOL VLV INSIDE CNTMT	2-47W845-3 / D-6	A	ACT	2	6	BF	MO	O	O/C	FAI	RPI LTJ STC STO	2Y AppJ CSD CSD		DTJ-18 DTJ-18

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FCV-67-112	LWR CNTMT D CLRS DISCH ISOL VLV OUTSIDE CNTMT	2-47W845-3 / D-7	A	ACT	2	6	BF	MO	O	O/C	FAI	RPI  LTJ  STC  STO	2Y  AppJ  CSD  CSD		DTJ-18   DTJ-18
2-FCV-67-123	CNTMT SPRAY HTX B SUPPLY CONTROL VLV	47W845-2 / D-2	B	ACT	3	18	BF	MO	C	O	FAI	RPI  STO	2Y  CSD		DTJ-26
2-FCV-67-124	CNTMT SPRAY HTX B DISCH VLV	47W845-2 / E-4	B	ACT	3	18	BF	MO	C	O	FAI	RPI  STO	2Y  CSD		DTJ-26
2-FCV-67-125	CNTMT SPRAY HTX A SUPPLY CONTROL VLV	47W845-2 / C-3	B	ACT	3	18	BF	MO	C	O	FAI	RPI  STO	2Y  CSD		DTJ-26
2-FCV-67-126	CNTMT SPRAY HTX A DISCH VLV	47W845-2 / D-5	B	ACT	3	18	BF	MO	C	O	FAI	RPI  STO	2Y  CSD		DTJ-26
2-FCV-67-130	UPPER CNTMT VENT CLR A SUPPLY ISOL VLV	2-47W845-3 / C-7	A	ACT	2	2	PLG	MO	O	C	FAI	RPI  LTJ  STC	2Y  AppJ  Q		
2-FCV-67-131	UPPER CNTMT VENT CLR A DISCH ISOL VLV	2-47W845-3 / C-7	A	ACT	2	2	PLG	MO	O	C	FAI	RPI  LTJ  STC	2Y  AppJ  Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FCV-67-133	UPPER CNTMT VENT CLR C SUPPLY ISOL VLV	2-47W845-3 / B-7	A	ACT	2	2	PLG	MO	O	C	FAI	RPI LTJ STC	2Y AppJ Q		
2-FCV-67-134	UPPER CNTMT VENT CLR C DISCH ISOL VLV	2-47W845-3 / B-4	A	ACT	2	2	PLG	MO	O	C	FAI	RPI LTJ STC	2Y AppJ Q		
2-FCV-67-138	UPPER CNTMT VENT CLR B SUPPLY ISOL VLV	2-47W845-3 / B-7	A	ACT	2	2	PLG	MO	O	C	FAI	RPI LTJ STC	2Y AppJ Q		
2-FCV-67-139	UPPER CNTMT VENT CLR B DISCH ISOL VLV	2-47W845-3 / B-7	A	ACT	2	2	PLG	MO	O	C	FAI	RPI LTJ STC	2Y AppJ Q		
2-FCV-67-141	UPPER CNTMT VENT CLR D SUPPLY ISOL VLV	2-47W845-3 / A-7	A	ACT	2	2	PLG	MO	O	C	FAI	RPI LTJ STC	2Y AppJ Q		
2-FCV-67-142	UPPER CNTMT VENT CLR D DISCH ISOL VLV	2-47W845-3 / A-7	A	ACT	2	2	PLG	MO	O	C	FAI	RPI LTJ STC	2Y AppJ Q		
2-FCV-67-146	COMPONENT CLG HTX 2A1/2A2 DISCH CONTROL VLV	47W845-2 / C-7	B	ACT	3	24	BF	MO	TH	O/C	FAI	RPI  STC  STO	2Y  CSD  CSD		DTJ-19  DTJ-19

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FCV-67-168	CNTFGL CHG PUMP RM CLR 30-183 SUP CNTL VLV	47W845-6 / C-4	B	PASS	3	1.5	GA	AO	O	O	O	NTR	NTR		
2-FCV-67-170	CNTFGL CHG PUMP RM CLR 30-182 SUP CNTL VLV	47W845-6 / C-7	B	PASS	3	1.5	GA	AO	O	O	O	NTR	NTR		
2-FCV-67-176	S.I. PUMP AND RM CLR- 30-180 SUPPLY	47W845-4 / D-5	B	ACT	3	1.5	GL	AO	C	O	O	FSO STO	Q Q		
2-FCV-67-182	S.I. PUMP AND RM CLR- 30-179 SUPPLY	47W845-4 / E-7	B	ACT	3	1.5	GL	AO	C	O	O	FSO STO	Q Q		
2-FCV-67-184	CS PUMP RM CLR-30-177 SUPPLY CONTROL VLV	47W845-4 / E-5	B	ACT	3	1.5	GL	AO	C	O	O	FSO STO	Q Q		
2-FCV-67-186	CS PUMP RM CLR-30-178 SUPPLY CONTROL VLV	47W845-4 / D-6	B	ACT	3	1.5	GL	AO	C	O	O	FSO STO	Q Q		
2-FCV-67-188	RHR PUMP RM CLR-30- 175 SUPPLY CONTROL VLV	47W845-6 / E-4	B	PASS	3	1	GA	AO	O	O	O	NTR	NTR		
2-FCV-67-190	RHR PUMP RM CLR-30- 176 SUPPLY CONTROL VLV	47W845-6 / F-6	B	PASS	3	1	GA	AO	O	O	O	NTR	NTR		
2-FCV-67-217	B.A. XFER & AUX FW PMPS SPACE CLR-30-184 SUP	47W845-4 / B-4	B	ACT	3	2	GL	AO	C	O	O	FSO STO	Q Q		
2-FCV-67-219	B.A. XFER & AUX FW PMPS SPACE CLR-30-185 SUP	47W845-4 / C-7	B	ACT	3	2	GL	AO	C	O	O	FSO STO	Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FCV-67-295	UPPER CNTMT VENT CLR A DISCH ISOL VLV	2-47W845-3 / C-6	A	ACT	2	2	PLG	MO	O	C	FAI	RPI LTJ STC	2Y AppJ Q		
2-FCV-67-296	UPPER CNTMT VENT CLR C DISCH ISOL VLV	2-47W845-3 / C-6	A	ACT	2	2	PLG	MO	O	C	FAI	RPI LTJ STC	2Y AppJ Q		
2-FCV-67-297	UPPER CNTMT VENT CLR B DISCH ISOL VLV	2-47W845-3 / B-6	A	ACT	2	2	PLG	MO	O	C	FAI	RPI LTJ STC	2Y AppJ Q		
2-FCV-67-298	UPPER CNTMT VENT CLR D DISCH ISOL VLV	2-47W845-3 / A-6	A	ACT	2	2	PLG	MO	O	C	FAI	RPI LTJ STC	2Y AppJ Q		
2-FCV-67-336	EMERG GAS TREATMENT ROOM CLR A	47W845-4 / A-5	B	ACT	3	1	GL	AO	C	O	O	FSO STO	Q Q		
2-FCV-67-338	EMERG GAS TREATMENT ROOM CLR B	47W845-4 / A-7	B	ACT	3	1	GL	AO	C	O	O	FSO STO	Q Q		
2-FCV-67-342	PIPE CHASE CLR-30-201 SUPPLY CNTL VLV	47W845-4 / G-5	B	ACT	3	2	GL	AO	C	O	O	FSO STO	Q Q		
2-FCV-67-344	PIPE CHASE CLR-30-202 SUPPLY CONT VLV	47W845-4 / G-7	B	ACT	3	2	GL	AO	C	O	O	FSO STO	Q Q		
2-FCV-67-346	PEN RM CLR-30-186 SUPPLY CONTROL VLV	47W845-4 / F-5	B	ACT	3	1.5	GL	AO	C	O	O	FSO STO	Q Q		



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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FCV-67-348	PEN RM CLR-30-187 SUPPLY CONTROL VLV	47W845-4 / F-6	B	ACT	3	1.5	GL	AO	C	O	O	FSO STO	Q Q		
2-FCV-67-350	PEN RM CLR-30-196 SUPPLY CONTROL VLV	47W845-4 / F-5	B	ACT	3	1.5	GL	AO	C	O	O	FSO STO	Q Q		
2-FCV-67-352	PEN RM CLR-30-197 SUPPLY CONTROL VLV	47W845-4 / F-6	B	ACT	3	1.5	GL	AO	C	O	O	FSO STO	Q Q		
2-FCV-67-354	PEN RM CLR-30-194 SUPPLY CONTROL VLV	47W845-4 / G-4	B	ACT	3	1.5	GL	AO	C	O	O	FSO STO	Q Q		
2-FCV-67-356	PEN RM CLR-30-195 SUPPLY CONTROL VLV	47W845-4 / G-7	B	ACT	3	1.5	GL	AO	C	O	O	FSO STO	Q Q		
2-VLV-67-508A	ERCW DSL GEN SUP CK	47W845-1 / B-10	C	ACT	3	6	CK	SA	C	O	N/A	CM	CM		
2-VLV-67-508B	ERCW DSL GEN SUP CK	47W845-1 / B-6	C	ACT	3	6	CK	SA	C	O	N/A	CM	CM		
2-VLV-67-509A	ERCW DSL GEN PRES REL	47W845-1 / B-10	C	ACT	2	0.5	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-67-509B	ERCW DSL GEN PRES REL	47W845-1 / B-6	C	ACT	2	0.5	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-67-514A	ERCW DSL GEN PRES REL	47W845-1 / C-10	C	ACT	2	0.5	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-67-514B	ERCW DSL GEN PRES REL	47W845-1 / C-6	C	ACT	2	0.5	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-67-543A	ERCW SUP HDR SURGE TK	47W845-2 / C-2	B	ACT	3	3	GA	M	C	O/C	N/A	MS	2Y		
2-VLV-67-543B	ERCW SUP HDR SURGE TK	47W845-2 / C-2	B	ACT	3	3	GA	M	C	O/C	N/A	MS	2Y		
2-VLV-67-544	ERCW SUP HDR SURGE TK	47W845-2 / C-1	B	ACT	3	3	GA	M	C	O/C	N/A	MS	2Y		
2-VLV-67-573A	ERCW RET LCV CLR PR	2-47W845-3 / H-5	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-67-573B	ERCW RET LCV CLR PR	2-47W845-3 / F-5	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-VLV-67-573C	ERCW RET LCV CLR PR	2-47W845-3 / G-5	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-67-573D	ERCW RET LCV CLR PR	2-47W845-3 / G-5	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-67-575A	ERCW RET LCV CLR CK	2-47W845-3 / G-6	A/C	ACT	2	0.5	CK	SA	C	O/C	N/A	LTJ CM	AppJ CM		
2-VLV-67-575B	ERCW RET LCV CLR CK	2-47W845-3 / E-6	A/C	ACT	2	0.5	CK	SA	C	O/C	N/A	LTJ CM	AppJ CM		
2-VLV-67-575C	ERCW RET LCV CLR CK	2-47W845-3 / F-6	A/C	ACT	2	0.5	CK	SA	C	O/C	N/A	LTJ CM	AppJ CM		
2-VLV-67-575D	ERCW RET LCV CLR CK	2-47W845-3 / D-6	A/C	ACT	2	0.5	CK	SA	C	O/C	N/A	LTJ CM	AppJ CM		
2-VLV-67-580A	ERCW SUP UCV CLR CK	2-47W845-3 / C-4	A/C	ACT	2	2	CK	SA	O/C	C	N/A	LTJ BDO CVC	AppJ RO RO		DTJ-31 DTJ-31
2-VLV-67-580B	ERCW SUP UCV CLR CK	2-47W845-3 / B-4	A/C	ACT	2	2	CK	SA	O/C	C	N/A	LTJ BDO CVC	AppJ RO RO		DTJ-31 DTJ-31
2-VLV-67-580C	ERCW SUP UCV CLR CK	2-47W845-3 / B-4	A/C	ACT	2	2	CK	SA	O/C	C	N/A	LTJ BDO CVC	AppJ RO RO		DTJ-31 DTJ-31
2-VLV-67-580D	ERCW SUP UCV CLR CK	2-47W845-3 / A-4	A/C	ACT	2	2	CK	SA	O/C	C	N/A	LTJ BDO CVC	AppJ RO RO		DTJ-31 DTJ-31

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-VLV-67-582A	ERCW SUP UCV CLR PR	2-47W845-3 / C-3	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-67-582B	ERCW SUP UCV CLR PR	2-47W845-3 / A-3	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-67-582C	ERCW SUP UCV CLR PR	2-47W845-3 / B-3	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-67-582D	ERCW SUP UCV CLR PR	2-47W845-3 / A-3	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-67-585A	ERCW RET UCV CLR CK	2-47W845-3 / C-6	A/C	ACT	2	0.5	CK	SA	C	O/C	N/A	LTJ CM	AppJ CM		
2-VLV-67-585B	ERCW RET UCV CLR CK	2-47W845-3 / B-6	A/C	ACT	2	0.5	CK	SA	C	O/C	N/A	LTJ CM	AppJ CM		
2-VLV-67-585C	ERCW RET UCV CLR CK	2-47W845-3 / C-6	A/C	ACT	2	0.5	CK	SA	C	O/C	N/A	LTJ CM	AppJ CM		
2-VLV-67-585D	ERCW RET UCV CLR CK	2-47W845-3 / A-6	A/C	ACT	2	0.5	CK	SA	C	O/C	N/A	LTJ CM	AppJ CM		
2-VLV-67-590A	UCV CLRS 2A & 2C DISCH ISOL VLV	47W485-2 / F-4	B	PASS	3	3	BF	M	O	O	N/A	NTR	NTR		
2-VLV-67-590B	UCV CLRS 2B & 2D DISCH ISOL VLV	47W485-2 / E-4	B	PASS	3	3	BF	M	O	O	N/A	NTR	NTR		
2-VLV-67-687	ERCW SUPPLY TO CCS SAMPLE HXS ISOL VLV	47W485-2 / D-1	B	PASS	3	3	BF	M	C	C	N/A	NTR	NTR		
2-VLV-67-1070	ERCW STRAINER A2A-A BACKWASH VALVE	47W845-5 / G-5	B	ACT	3	4	BA	M	C	O/C	N/A	MS	2Y		
2-VLV-67-1073	ERCW STRAINER B2B-B BACKWASH VALVE	47W845-5 / F-5	B	ACT	3	4	BA	M	C	O/C	N/A	MS	2Y		
2-VLV-67-1513	CCS HX 2A1 OUTLET PR RELIEF	47W845-2 / B-4	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-67-1514	CCS HX 2A2 OUTLET PR RELIEF	47W845-2 / B-5	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-67-1521	ACA HX RELIEF	47W845-4 / A-7	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-VLV-67-1523A	FCV-67-106 BYPASS VLV	2-47W845-3 / H-5	A/C	ACT	2	0.5	CK	SA	C	O/C	N/A	LTJ CM	AppJ CM		
2-VLV-67-1523B	FCV-67-90 BYPASS VLV	2-47W845-3 / F-5	A/C	ACT	2	0.5	CK	SA	C	O/C	N/A	LTJ CM	AppJ CM		
2-VLV-67-1523C	FCV-67-105 BYPASS VLV	2-47W845-3 / G-5	A/C	ACT	2	0.5	CK	SA	C	O/C	N/A	LTJ CM	AppJ CM		
2-VLV-67-1523D	FCV-67-89 BYPASS VLV	2-47W845-3 / E-5	A/C	ACT	2	0.5	CK	SA	C	O/C	N/A	LTJ CM	AppJ CM		
2-VLV-67-1590A	CNTMT SPRAY HX A DISCH PRES REL	47W845-2 / D-5	C	ACT	3	0.5	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-67-1590B	CNTMT SPRAY HX DISCH PRES REL	47W845-2 / D-4	C	ACT	3	0.5	RV	SA	C	O/C	N/A	RV	RV		
2-FCV-68-305	RCS FLOW CNTL VLV WDS N2 MAN TO PRT	47W830-6 / G-7	A	ACT	2	0.75	DIA	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-68-307	RCS FLOW CNTL VLV WDS GA TO PRT	47W813-1 / A-10	A	ACT	2	0.375	GL	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-68-308	RCS FLOW CNTL VLV WDS GA TO PRT	47W813-1 / A-9	A	ACT	2	0.375	GL	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FCV-68-332	RCS PRZR REL FLOW CONTROL	47W813-1 / B-3	B	ACT	1	3	GA	MO	O	O/C	FAI	RPI STC STO	2Y Q Q		
2-FCV-68-333	RCS PRZR REL FLOW CONTROL	47W813-1 / B-3	B	ACT	1	3	GA	MO	O	O/C	FAI	RPI STC STO	2Y Q Q		
2-PCV-68-334	RCS PRZR PWR RELIEF VALVE	47W813-1 / B-3	B	ACT	1	3	GL	SO	C	O/C	C	RPI FSC STC STO	2Y OC OC OC		CVTM-1 CVTM-1 CVTM-1
2-PCV-68-340A	RCS PRZR PWR RELIEF VALVE	47W813-1 / B-3	B	ACT	1	3	GL	SO	C	O/C	C	RPI FSC STC STO	2Y OC OC OC		CVTM-1 CVTM-1 CVTM-1
2-FSV-68-394	REACTOR VESSEL HEAD VENT ISLN VALVE	47W813-1 / C-7	B	ACT	2	1	GL	SO	C	O/C	C	RPI FSC STC STO	2Y CSD CSD CSD		DTJ-30 DTJ-30 DTJ-30

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FSV-68-395	REACTOR VESSEL HEAD VENT ISLN VALVE	47W813-1 / C-7	B	ACT	2	1	GL	SO	C	O/C	C	RPI FSC STC STO	2Y CSD CSD CSD		DTJ-30  DTJ-30  DTJ-30
2-FSV-68-396	REACTOR VESSEL HEAD VENT THROTTLE VLV	47W813-1 / C-7	B	ACT	2	1	GL	SO	C	O/C	C	RRA	RO		RV-01
2-FSV-68-397	REACTOR VESSEL HEAD VENT THROTTLE VLV	47W813-1 / C-7	B	ACT	2	1	GL	SO	C	O/C	C	RRA	RO		RV-01
2-VLV-68-559	RV DISC CHECK	47W813-1 / B-9	C	ACT	1	4	CK	SA	C	O/C	N/A	CM	CM		
2-VLV-68-563	PRESS RELIEF VALVE	47W813-1 / A-3	C	ACT	1	6	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-68-564	PRESS RELIEF VALVE	47W813-1 / A-4	C	ACT	1	6	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-68-565	PRESS RELIEF VALVE	47W813-1 / A-5	C	ACT	1	6	RV	SA	C	O/C	N/A	RV	RV		
2-LCV-70-63	SURGE TANK DEMIN W INLET VLV	47W859-1 / G-1	B	ACT	3	3	GL	AO	C	O	C	RPI FSC STO	2Y Q Q		
2-FCV-70-66	CCS SURGE TNK VENT VLV	47W859-1 / F-1	B	ACT	3	2	GL	AO	O	C	C	RPI FSC STC	2Y Q Q		
2-FCV-70-85	EXCESS LETDN HTX OUTLET VLV	47W859-2/3 / D-10	A	ACT	2	6	BF	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FCV-70-87	RC PMP THRM BARR RET CONTMNT ISOL VLV	47W859-3 / H-9	A	ACT	2	3	GA	MO	O	C	FAI	RPI LTJ STC	2Y AppJ CSD		DTJ-36
2-FCV-70-89	RC PMP OIL CLR RET CNTMT ISOL VLV	47W859-3 / E-9	A	ACT	2	6	BF	MO	O	C	FAI	RPI LTJ STC	2Y AppJ CSD		DTJ-37
2-FCV-70-90	RC PMP THRM BARR RET CONTMNT ISOL VLV	47W859-2/3 / E-10	A	ACT	2	3	GA	MO	O	C	FAI	RPI LTJ STC	2Y AppJ CSD		DTJ-36
2-FCV-70-92	RC PMP OIL CLR RET CNTMT ISOL VLV	47W859-2/3 / E-10	A	ACT	2	6	BF	MO	O	C	FAI	RPI LTJ STC	2Y AppJ CSD		DTJ-37
2-FCV-70-133	RC PMP THRM BAR CONT ISOL VLV	47W859-2/3 / H-2	B	ACT	3	3	GA	MO	O	C	FAI	RPI STC	2Y CSD		DTJ-36
2-FCV-70-134	RC PMP THRM BAR CONT ISOL VLV	47W859-2/3 / H-3	A	ACT	2	3	GA	MO	O	C	FAI	RPI LTJ STC	2Y AppJ CSD		DTJ-36
2-FCV-70-140	RC PMP OIL CLR HDR CONT ISOL VLV	47W859-2/3 / G-3	A	ACT	2	6	BF	MO	O	C	FAI	RPI LTJ STC	2Y AppJ CSD		DTJ-37

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FCV-70-141	RC PMP OIL CLR HDR CONT ISOL VLV	47W859-2/3 / G-4	A	ACT	2	6	BF	MO	O	C	FAI	RPI LTJ STC	2Y AppJ CSD		DTJ-37
2-FCV-70-143	EXCESS LTDN HTX CONT INLET ISOL VLV	47W859-2/3 / E-3	A	ACT	2	6	BF	MO	O	C	FAI	RPI LTJ STC	2Y AppJ Q		
2-FCV-70-153	RHR HTX B OUTLET VLV	47W859-4 / F-9	B	ACT	3	18	BF	MO	C	O/C	FAI	RPI STC STO	2Y Q Q		
2-FCV-70-156	RHR HTX A OUTL VLV	47W859-4 / F-10	B	ACT	3	18	BF	MO	C	O/C	FAI	RPI STC STO	2Y Q Q		
2-FCV-70-215	U2 SAMPLE HEAT EXCHANGER CCS INLET ISO VALVE	2-47W859-3 / A-7	B	ACT	3	3	PLG	AO	O	C	C	RPI FSC STC	2Y Q Q		
2-FCV-70-216	U2 SAMPLE HEAT EXCHANGER CCS OUTLET ISO VALVE	2-47W859-3 / C-9	B	ACT	3	3	PLG	AO	O	C	C	RPI FSC STC	2Y Q Q		
2-VLV-70-504A	CCS PMP 2A DISCH CK VLV	47W859-1 / F-8	C	ACT	3	16	CK	SA	O/C	O/C	N/A	CVC CVO	Q Q		



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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-VLV-70-504B	CCS PUMP B DISCH CK	47W859-1 / E-8	C	ACT	3	16	CK	SA	O/C	O/C	N/A	CVC CVO	Q Q		
2-VLV-70-531	CCS RET SFP HX HDR	47W859-1 / E-9	B	ACT	3	16	BF	M	O/C	O/C	N/A	MS	2Y		
2-VLV-70-535	CCS SEAL LEAK DISCH	47W859-1 / G-7	C	ACT	3	1.25	CK	SA	O/C	C	N/A	BDO CVC	Q Q		
2-VLV-70-538	CCS SURGE TK RELIEF VLV	47W859-1 / F-1	C	ACT	3	3	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-70-539	CCS SURGE TK VAC REL	47W859-1 / F-1	C	ACT	3	3	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-70-541	CCS SURGE TK MAKEUP CK VLV	47W859-1 / F-1	C	ACT	3	3	CK	SA	O/C	C	N/A	CM	CM		
2-VLV-70-542	CCS Surge Tank Makeup	47W859-1 / G-1	B	ACT	3	3	GA	M	C	O/C	N/A	MS	2Y		
2-VLV-70-551A	CCS RET RHR HX A REL	47W859-4 / F-10	C	ACT	3	1	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-70-551B	CCS RET RHR HX B REL	47W859-4 / E-8	C	ACT	3	1	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-70-556A	CCS RET CCP CLRS REL	47W859-4 / B-10	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-70-556B	CCS RET CCP CLRS REL	47W859-4 / B-9	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-70-561A	CCS RET SIP CLR REL	47W859-4 / C-10	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-70-561B	CCS RET SIP CLR REL	47W859-4 / C-8	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-70-565A	CCS RET RHR PUMP REL	47W859-4 / D-10	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-70-565B	CCS RET RHR PUMP 2B REL	47W859-4 / D-8	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-70-570A	CCS RET CS PUMP REL	47W859-4 / D-10	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-70-570B	CCS RET CS PUMP REL	47W859-4 / D-8	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-VLV-70-679	CCS RCP TB SUP CK	47W859-2/3 / H-4	A/C	ACT	2	3	CK	SA	O	C	N/A	LTJ BDO CVC	AppJ Q Q		
2-VLV-70-681A	CCS RCP TB 1 SUP CK	47W859-2/3 / G-8	C	ACT	3	1.5	CK	SA	O	O/C	N/A	CM	CM		
2-VLV-70-681B	CCS RCP TB2 SUP CK	47W859-2/3 / F-8	C	ACT	3	1.5	CK	SA	O	O/C	N/A	CM	CM		
2-VLV-70-681C	CCS RCP TB 3 SUP CK	47W859-2/3 / E-8	C	ACT	3	1.5	CK	SA	O	O/C	N/A	CM	CM		
2-VLV-70-681D	CCS RCP TB 4 SUP CK	47W859-2/3 / H-8	C	ACT	3	1.5	CK	SA	O	O/C	N/A	CM	CM		
2-VLV-70-682A	CCS RCP TB 1 SUP CK	47W859-2/3 / G-8	C	ACT	3	1.5	CK	SA	O	O/C	N/A	CM	CM		
2-VLV-70-682B	CCS RCP TB 2 SUP CK	47W859-2/3 / F-8	C	ACT	3	1.5	CK	SA	O	O/C	N/A	CM	CM		
2-VLV-70-682C	CCS RCP TB 3 SUP CK	47W859-2/3 / E-8	C	ACT	3	1.5	CK	SA	O	O/C	N/A	CM	CM		
2-VLV-70-682D	CCS RCP TB 4 SUP CK	47W859-2/3 / H-8	C	ACT	3	1.5	CK	SA	O	O/C	N/A	CM	CM		
2-VLV-70-683A	CCS RCP TB 1 RET REL	47W859-3 / G-8	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-70-683B	CCS RCP TB 2 RET REL	47W859-3 / F-8	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-70-683C	CCS RCP TB 3 RET REL	47W859-3 / E-8	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-70-683D	CCS RCP TB 4 RET REL	47W859-4 / G-8	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-70-687	CCS RCP TB RET CK	47W859-2/3 / H-10	A/C	ACT	2	0.5	CK	SA	C	O/C	N/A	LTJ CM	AppJ CM		
2-VLV-70-694	CCS SUP RCP OC REL	47W859-3 / F-5	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-70-698	CCS RET RCP OC CK	47W859-2/3 / E-9	A/C	ACT	2	0.5	CK	SA	C	O/C	N/A	LTJ CM	AppJ CM		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-VLV-70-703	CCS RET EX LD HX REL	47W859-2/3 / D-6	A/C	ACT	3	3	RV	SA	C	O/C	N/A	LTJ RV	AppJ RV		
2-VLV-70-782	CCS HX 2A1 PR	47W859-1 / D-3	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-70-783	CCS HX 2A2 PR	47W859-1 / D-3	C	ACT	3	0.75	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-70-791	CCS PEN RELIEF	47W859-2/3 / G-4	A/C	ACT	2	0.5	CK	SA	C	O/C	N/A	LTJ CM	AppJ CM		
2-FCV-72-2	CNTMT SPRAY HDR 2B ISOL	2-47W812-1 / A-4	A	ACT	2	12	GA	MO	C	O/C	FAI	LTP RPI STC STO	2Y 2Y Q Q		
2-FCV-72-13	CONTAINMENT SPRAY PUMP 2B RECIRC	2-47W812-1 / B-7	B	ACT	2	2	GL	MO	C	O	FAI	RPI STO	2Y Q		
2-FCV-72-20	CNTMT SPRAY PUMP 2B- B SUCT FROM CNTMT SUMP	2-47W812-1 / B-10	B	ACT	2	12	GA	MO	C	O/C	FAI	RPI STC STO	2Y Q Q		
2-FCV-72-21	CONTAINMENT SPRAY PUMP 2B SUCT FROM RWST	2-47W812-1 / B-10	B	ACT	2	12	GA	MO	O	O/C	FAI	RPI STC STO	2Y Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FCV-72-22	CONTAINMENT SPRAY PUMP 2A SUCT FROM RWST	2-47W812-1 / D-10	B	ACT	2	12	GA	MO	O	O/C	FAI	RPI  STC  STO	2Y  Q  Q		
2-FCV-72-23	CNTMT SUMP SPRAY HDR 2A FLOW CONTROL	2-47W812-1 / E-10	B	ACT	2	12	GA	MO	C	O/C	FAI	RPI  STC  STO	2Y  Q  Q		
2-FCV-72-34	CNTMT SPRAY PUMP 2A RECIRC	2-47W812-1 / C-7	B	ACT	2	2	GL	MO	C	O	FAI	RPI  STO	2Y  Q		
2-FCV-72-39	CNTMT SPRAY HDR 2A ISOL	2-47W812-1 / D-4	A	ACT	2	12	GA	MO	C	O/C	FAI	LTP  RPI  STC  STO	2Y  2Y  Q  Q		
2-FCV-72-40	RHR SPRAY HDR 2A ISOLATION	2-47W812-1 / F-5	A	ACT	2	8	GA	MO	C	O/C	FAI	LTP  RPI  STC  STO	2Y  2Y  CSD  CSD		DTJ-20  DTJ-20
2-RFV-72-40	RHR SPRAY HDR A FCV RELIEF VALVE	2-47W812-1 / G-5	A/C	ACT	2	0.5	TRV	SA	C	O/C	N/A	LT  RV	AppJ  RV		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FCV-72-41	RHR SPRAY HDR 2B ISOL VLV	2-47W812-1 / G-5	A	ACT	2	8	GA	MO	C	O/C	FAI	LTP RPI STC STO	2Y 2Y CSD CSD		DTJ-20 DTJ-20
2-RFV-72-41	RHR SPRAY HDR B FCV RELIEF VALVE	2-47W812-1 / J-5	A/C	ACT	2	0.5	TRV	SA	C	O/C	N/A	LT RV	AppJ RV		
2-VLV-72-506	PUMP SUCT CHECK	2-47W812-1 / D-10	C	ACT	2	12	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-28 DTJ-28
2-VLV-72-507	PUMP SUCT CHECK	2-47W812-1 / B-10	C	ACT	2	12	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-28 DTJ-28
2-VLV-72-512	PUMP SUCT RV	2-47W812-1 / D-9	C	ACT	2	0.75	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-72-513	PUMP SUCT RV	2-47W812-1 / A-9	C	ACT	2	0.75	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-72-528	PUMP DISC CHECK	2-47W812-1 / D-7	C	ACT	2	12	CK	SA	C	O	N/A	BDC CVO	RO RO		DTJ-42 DTJ-42
2-VLV-72-529	PUMP DISC CHECK	2-47W812-1 / A-7	C	ACT	2	12	CK	SA	C	O	N/A	BDC CVO	RO RO		DTJ-42 DTJ-42
2-VLV-72-547	2A-A CS HEADER CHECK VALVE	2-47W812-1 / D-3	C	ACT	2	12	CK	SA	C	O/C	N/A	CM	CM		
2-VLV-72-548	2B-B CS HEADER CHECK VALVE	2-47W812-1 / A-3	C	ACT	2	12	CK	SA	C	O/C	N/A	CM	CM		
2-VLV-72-555	RHR SPRAY CHECK	2-47W812-1 / G-3	C	ACT	2	8	CK	SA	C	O/C	N/A	CM	CM		
2-VLV-72-556	RHR SPRAY CHECK	2-47W812-1 / F-3	C	ACT	2	8	CK	SA	C	O/C	N/A	CM	CM		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FCV-74-1	RHR SUCTION FROM LOOP 4 HL	47W810-1 / F-3	A	ACT	1	14	GA	MO	C	O/C	FAI	LTP RPI STC STO	2Y 2Y CSD CSD		DTJ-21 DTJ-21
2-FCV-74-2	RHR SYSTEM ISOLATION VLV	47W810-1 / F-3	A	ACT	1	14	GA	MO	C	O/C	FAI	LTP RPI STC STO	2Y 2Y CSD CSD		DTJ-21 DTJ-21
2-FCV-74-3	RHR PUMP 2A SUCTION ISOL	47W810-1 / D-10	B	ACT	2	14	GA	MO	O	C	FAI	RPI STC	2Y Q		
2-FCV-74-12	RHR PUMP A-A MIN FLOW VLV	47W810-1 / F-7	B	ACT	2	2	GL	MO	C	O/C	FAI	RPI STC STO	2Y Q Q		
2-FCV-74-16	RHR HT EX A OUTLET FLOW CONTROL VLV	47W810-1 / E-5	B	PASS	2	8	BF	AO	O	O	O	STO FSO STC	Q Q Q		
2-FCV-74-21	RHR PUMP 2B SUCTION ISOL	47W810-1 / B-10	B	ACT	2	14	GA	MO	O	C	FAI	RPI STC	2Y Q		
2-FCV-74-24	RHR PUMP B-B MIN FLOW VLV	47W810-1 / A-7	B	ACT	2	2	GL	MO	C	O/C	FAI	RPI STC STO	2Y Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FCV-74-28	RHR HT EX B OUT FLOW CNTL VLV	47W810-1 / B-5	B	PASS	2	8	BF	AO	O	O	O	STO FSO STC	Q Q Q		
2-FCV-74-32	RHR HT EXCH A&B BPS FLOW CNTL VLV	47W810-1 / D-5	B	ACT	2	8	BF	AO	C	O/C	O	FSO STC STO	Q Q Q		
2-FCV-74-33	RHR HT EXCH 2A BYPASS	47W810-1 / D-5	B	ACT	2	8	GA	MO	O	O/C	FAI	RPI STC STO	2Y CSD CSD		DTJ-16 DTJ-16
2-HCV-74-34	REFUELING WATER RETURN	47W810-1 / C-5	B	PASS	2	8	GA	M	C	C	N/A	NTR	NTR		
2-FCV-74-35	RHR HT EXCH B BYPASS	47W810-1 / B-5	B	ACT	2	8	GA	MO	O	O/C	FAI	RPI STC STO	2Y CSD CSD		DTJ-16 DTJ-16
2-HCV-74-36	RHR HEAT EXCH 2A BYPASS	47W810-1 / D-7	B	PASS	2	8	GA	M	C	C	N/A	NTR	NTR		
2-HCV-74-37	RHR HEAT EXCH 2B BYPASS	47W810-1 / C-7	B	PASS	2	8	GA	M	C	C	N/A	NTR	NTR		
2-VLV-74-505	RHR PUMP SUCT RELIEF	47W810-1 / G-4	C	ACT	2	3	RV	SA	C	O/C	N/A	RV	RV		
2-VLV-74-514	RHR PUMP DISC CHECK	47W810-1 / E-9	C	ACT	2	8	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-22 DTJ-22
2-VLV-74-515	RHR PUMP 2B DISC CHECK	47W810-1 / B-9	C	ACT	2	8	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-22 DTJ-22
2-VLV-74-530	RHR HX OUT FLSH ISOL	47W810-1 / D-6	B	PASS	2	2	GL	M	C	C	N/A	NTR	NTR		
2-VLV-74-531	RHR HX OUT FLSH ISOL	47W810-1 / B-6	B	PASS	2	2	GL	M	C	C	N/A	NTR	NTR		

**Attachment 2 - Valve Test Plan**

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-VLV-74-554	RHR HX DISC CHECK	47W810-1 / E-6	C	ACT	2	8	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-22 DTJ-22
2-VLV-74-555	RHR HX DISC CHECK	47W810-1 / B-6	C	ACT	2	8	CK	SA	C	O/C	N/A	CVC CVO	RO RO		DTJ-22 DTJ-22
2-FCV-77-9	REACT COOLANT DR TK FLOW CONTROL VALVE	47W830-1 / D-1	A	ACT	2	3	DIA	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-77-10	REACT COOLANT DR TK FLOW CONTROL VALVE	47W830-1 / E-1	A	ACT	2	3	DIA	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-77-18	REACT COOLANT DR TK TO VENT HEADER	47W830-1 / B-5	A	ACT	2	1	DIA	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-77-19	REACT COOLANT DR TK TO VENT HEADER	47W830-1 / B-6	A	ACT	2	1	DIA	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		



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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FCV-77-20	REACT COOLANT DR TK N2 SUPPLY FLOW CNTL	47W830-1 / C-6	A	ACT	2	1	DIA	AO	O/C	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-77-127	REAC BLDG SUMP DISCH FLOW CONTROL	47W851-1 / F-7	A	ACT	2	2	DIA	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-77-128	REAC BLDG SUMP DISCH FLOW CONTROL	47W851-1 / F-7	A	ACT	2	2	DIA	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-VLV-77-849	N2 RB HDR CK	47W830-6 / G-7	A/C	PASS	2	0.75	CK	SA	C	C	N/A	LTJ	AppJ		
2-VLV-77-868	N2 HP ACCUM CK	47W830-6 / B-6	A/C	PASS	2	1	CK	SA	C	C	N/A	LTJ	AppJ		
2-VLV-78-557	REF CAVITY ISOL	47W855-1 / G-4	A	PASS	2	4	DIA	M	C	C	N/A	LTJ	AppJ		
2-VLV-78-558	REF CAVITY ISOL	47W855-1 / G-4	A	PASS	2	4	DIA	M	C	C	N/A	LTJ	AppJ		
2-VLV-78-560	REF CAVITY ISOL	47W855-1 / G-4	A	PASS	2	6	GA	M	C	C	N/A	LTJ	AppJ		
2-VLV-78-561	REF CAVITY ISOL	47W855-1 / G-4	A	PASS	2	6	GA	M	C	C	N/A	LTJ	AppJ		
2-FCV-81-12	PW RCS PRESS RELF TNK & RCP STANDPIPES	47W819-1 / C-4	A	ACT	2	3	DIA	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		

**Attachment 2 - Valve Test Plan**

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-VLV-81-502	CK VA AT CONTAINMENT	47W819-1 / C-4	A/C	ACT	2	3	CK	SA	O	C	N/A	LTJ BDO CVC	AppJ CSD CSD		DTJ-23 DTJ-23
2-VLV-84-512	RCDT HEADER ISOLATION	47W809-7 / F-4	B	PASS	2	1	GL	M	LC	C	N/A	NTR	NTR		
2-FCV-90-107	CNTMT BLDG LWR COMPT MON-ISOL VLV	47W610-90-3 / B-9	A	ACT	2	1.5	GL	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-90-108	CNTMT BLDG LWR COMPT MON ISOL VLV	47W610-90-3 / C-8	A	ACT	2	1.5	GL	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-90-109	CNTMT BLDG LWR COMPT MON-ISOL VLV	47W610-90-3 / C-8	A	ACT	2	1.5	GL	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-90-110	CNTMT BLDG LWR COMPT MON-ISOL VLV	47W610-90-3 / C-8	A	ACT	2	1.5	GL	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FCV-90-111	CNTMT BLDG LWR COMPT MON-ISOL VLV	47W610-90-3 / D-9	A	ACT	2	1.5	GL	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-90-113	CNTMT BLDG UP COMPT MON-ISOL VLV	47W610-90-3 / B-5	A	ACT	2	1.5	GL	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-90-114	CNTMT BLDG UP COMPT MON-ISOL VLV	47W610-90-3 / C-4	A	ACT	2	1.5	GL	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-90-115	CNTMT BLDG UP COMPT MON-ISOL VLV	47W610-90-3 / C-4	A	ACT	2	1.5	GL	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		
2-FCV-90-116	CNTMT BLDG UP COMPT MON-ISOL VLV	47W610-90-3 / C-4	A	ACT	2	1.5	GL	AO	O	C	C	RPI LTJ FSC STC	2Y AppJ Q Q		

Attachment 2 - Valve Test Plan

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VALVE ID	FUNCTION	DRAWING/COOR	CAT	ACT/ PASS	CLASS	SIZE	TYPE	ACT	POSITION			TEST REQ	FREQ	PROCEDURE	NOTES
									NORM	SAFE	FAIL				
2-FCV-90-117	CNTMT BLDG UP COMPT MON-ISOL VLV	47W610-90-3 / D-5	A	ACT	2	1.5	GL	AO	O	C	C	RPI	2Y		
												LTJ	AppJ		
												FSC	Q		
												STC	Q		

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### **Attachment 3 - Pump Relief Requests**

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**RP-01**

#### **Essential Raw Cooling Water (ERCW) Screen Wash Pump Flow Measurement**

*Compliance with the specified code requirements results in hardship or unusual difficulty without a compensating increase in the level of quality and safety and the proposed alternative provides an acceptable level of quality and safety in accordance with 10 CFR 50.55a(z)*

#### **ASME Operations and Maintenance (OM) Code Components Affected**

<b>Pump ID</b>	<b>Pump Description</b>	<b>Pump Type</b>	<b>Code Class</b>	<b>OM Group</b>
0-PMP-67-470	ERCW Screen Wash Pump A-A	Vertical Line Shaft	3	A
0-PMP-67-477	ERCW Screen Wash Pump B-B			
0-PMP-67-482	ERCW Screen Wash Pump C-B			
0-PMP-67-487	ERCW Screen Wash Pump D-A			

#### **ASME Code Edition and Addenda**

ASME OM Code 2004 Edition through 2006 Addenda

#### **Applicable Code Requirement**

##### **ISTB-5210 Preservice Testing**

- (a) In systems where resistance can be varied, flow rate and differential pressure shall be measured at a minimum of five points. If practicable, these points shall be from pump minimum flow to at least pump design flow. A pump curve shall be established based on the measured points. At least one point shall be designated as the reference point(s). Data taken at the reference point will be used to compare the results of inservice tests. A pump curve need not be established for pumps in systems where resistance cannot be varied.

##### **ISTB-5221 Group A Test Procedure**

- (b) The resistance of the system shall be varied until the flow rate equals the reference point. The differential pressure shall then be determined and compared to its reference value. Alternatively, the flow rate shall be varied until the differential pressure equals the reference point and the flow rate determined and compared to the reference flow rate value.

##### **ISTB-5223 Comprehensive Test Procedure**

- (b) The resistance of the system shall be varied until the flow rate equals the reference point. The differential pressure shall then be determined and compared to its reference value. Alternatively, the flow rate shall be varied until the differential pressure equals the reference point and the flow rate determined and compared to the reference flow rate value.

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### Attachment 3 - Pump Relief Requests

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RP-01

## Essential Raw Cooling Water (ERCW) Screen Wash Pump Flow Measurement

### Reason for Request

The configuration of the Essential Raw Cooling Water (ERCW) Screen Wash Pump discharge piping system does not provide straight lengths of piping that will support the installation of a permanent flow measuring device or the utilization of a portable flow measuring device capable of providing accurate flow rate measurements. The lack of permanent or temporary flow instrumentation makes it impractical to adjust pump flow to specific value(s) and measure the associated differential pressure as required for performance of Preservice, Group A, and comprehensive pump tests.

### Burden Caused by Compliance

Significant system modifications, such as piping rerouting and support redesign, would be required to obtain a configuration that would provide reliable flow readings. Refer to the Proposed Alternative and Basis of Use section for further details.

### Proposed Alternative and Basis for Use

#### *Proposed Alternative*

Testing will be performed by setting the system resistance to the same point for each test with the throttle valves full open. Flow will not be measured. The remaining variable that could affect system resistance is the condition of the spray nozzles. The condition of the spray nozzles will be inspected during each test performance with corrective action initiated as necessary, thus providing assurance that the condition of the spray nozzle will not affect flow rate. With system resistance maintained constant for each test, pump degradation would be identified through changes in differential pressure. Differential pressure is calculated using inlet (based on lake level or suction pressure) and discharge pressure. The pump will be trended for degradation based on differential pressure at this point. Vibration readings will also be taken at this reference point. The pump will be tested in this manner for the Preservice Test, the quarterly Group A, and biennial comprehensive inservice tests.

Instrument accuracy and acceptance criteria for pump differential pressure and vibration will meet the requirements of Table ISTB-3510-1 and Table ISTB-5221-1, respectively. Preservice test data for differential pressure and vibration data will be evaluated to verify it represents acceptable pump operation and will be used as reference values for subsequent quarterly Group A and comprehensive inservice tests.

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**RP-01**

**Essential Raw Cooling Water (ERCW) Screen Wash Pump Flow Measurement**

*Basis for Use*

The piping design does not provide permanent in-line instrumentation to measure flow. The pump design (vertical line shaft) and discharge piping do not allow the use of portable flow measuring equipment such as ultrasonic flow meters. These pumps take suction from the pump pit directly below the pump deck and are positioned on the deck adjacent to the traveling screens. The discharge piping for each pump is short and open ended, containing several elbows, reducers, and valves prior to entering the traveling screen enclosure. The configuration of this piping system does not provide straight lengths of piping that will support the installation of a permanent flow measuring device or the utilization of a portable flow measuring device capable of providing accurate flow rate measurements. Significant system modifications, such as piping rerouting and support redesign, would be required to obtain a configuration that would provide reliable flow readings.

Flow is not the critical parameter for these pumps. The nature of their operation is to ensure that sufficient pressure is maintained at the spray nozzles during flushing operations of the traveling water screens to ensure that sufficient force is exerted on the debris accumulated on the screen to remove it. This can be verified by visual observation verifying the effectiveness of the flushing operation.

A review of maintenance history determined that the spray nozzles are not susceptible to plugging. The spray nozzles are inspected by personnel during spray operation with corrective maintenance initiated as required.

Isometric drawings and photographs of the screen wash pump system were provided to show piping configuration in Enclosure 3 of the TVA letter to NRC, "Sequoyah Nuclear Plant (SQN), Response to Request for Additional Information (RAI) Associated With Inservice Test (IST) Program and Associated Relief Requests for Third 10-Year Interval," dated April 17, 2006 (ML061100186). A significant plant modification would be required to install flow instrumentation for this system. A plant modification would include rerouting 3-inch diameter piping and the associated piping supports and rerouting heat trace equipment for four pumps. The feasibility of installing temporary flow instrumentation was considered for utilizing portable ultrasonic flow instrumentation during testing. Accurate and repeatable flow measurement requires the ultrasonic flow sensor to be positioned on straight runs of piping (preferably horizontal). The current system piping configuration has no straight runs of piping that meets the requirements for adequate installation of the ultrasonic flow sensor. Based on the information provided above, compliance with the ASME OM Code requirements is impractical and the proposed alternative provides reasonable assurance of the operational readiness of the ERCW Screen Wash Pumps.

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**Attachment 3 - Pump Relief Requests**

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**RP-01**

**ERCW Screen Wash Pump Alternative Test Method**

**Duration of the Proposed Alternative**

This request is for the duration of the fourth IST ten-year Interval (begins June 1, 2016, and ends May 31, 2026).

**Precedents**

This relief request was previously approved for SQN's third ten-year interval by References 2 and 4 of the cover letter. A similar relief request (PV-02) was approved by the NRC for the Watts Bar Nuclear Plant Unit 1 second ten-year interval on March 9, 2007 (ML070090504)

**Status**

This relief request is approved. See reference 2.AF.



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**Attachment 3 - Pump Relief Requests**

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**RP-02**

**Residual Heat Removal (RHR) Pump Flow Measurement**

*Compliance with the Code requirements is considered  
impractical pursuant to 10 CFR 50.55a(f)(6)(i)*

**ASME OM Code Affected Components**

<b>Pump ID</b>	<b>Pump Description</b>	<b>Pump Type</b>	<b>Code Class</b>	<b>OM Group</b>
1-PMP-74-10	RHR Pump 1A-A	Cent.	2	A
1-PMP-74-20	RHR Pump 1B-B			
2-PMP-74-10	RHR Pump 2A-A			
2-PMP-74-20	RHR Pump 2B-B			

**ASME Code Edition and Addenda**

ASME OM Code 2004 Edition through 2006 Addenda

**Applicable Code Requirement**

Table ISTB-3000-1 Inservice Test Parameters

This table specifies the pump parameters to be measured during preservice, Group A, Group B, and comprehensive tests.

ISTB-5121 Group A Test Procedure

Group A tests shall be conducted with the pump operating at a specified reference point. The test parameters shown in Table ISTB-3000-1 shall be determined and recorded as required by this paragraph. The test shall be conducted as follows:

(b) The resistance of the system shall be varied until the flow rate equals the reference point.

The differential pressure shall then be determined and compared to its reference value.

Alternatively, the flow rate shall be varied until the differential pressure equals the reference point and the flow rate determined and compared to the reference flow rate value.

(e) All deviations from the reference values shall be compared with the ranges of

Table ISTB-5121-1 and corrective action taken as specified in ISTB-6200.

**Reason for Request**

Residual Heat Pump (RHR) pumps are tested using the minimum flow recirculation line provided for pump protection. No other flow path is available to meet the Group A quarterly testing of ISTB. The miniflow path is of fixed resistance, instrumented, and limits flow to the minimum required flow for pump protection. The nominal miniflow rate is 500 gpm for pump protection.

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RP-02

### Residual Heat Removal (RHR) Pump Flow Measurement

#### Proposed Alternative and Basis for Use

##### ***Proposed Alternative***

The RHR Pumps will be Group A tested quarterly using the minimum flow recirculation line where differential pressure and vibration will be measured and trended. The RHR Pumps will be subjected to a Comprehensive Pump test in accordance with ISTB requirements each refueling outage.

##### ***Basis for Use***

Test results during previous ten-year inspection intervals have shown variations of recorded flow readings which exceed ISTB allowable range requirements. The RHR pump miniflow rate is measured using an installed flow measuring device in the 14-inch pump discharge header while flowing through the 3-inch miniflow line which includes a 2-inch miniflow return valve. The flow measuring device meets ISTB range and accuracy requirements, however, small changes in the differential pressure across the flow element equate to relatively large changes in the flow. A differential pressure change of two inches of water at the flow element would equal a 44 gpm change in flow.

While operating through the miniflow recirculation line, the pump is operating in the flat portion of the pump curve near shutoff head conditions. In this region of the pump's hydraulic curve, very small changes in the developed head correspond to large changes in produced flow. For example, a change in developed head of 0.15 psig would result in a change of approximately 52 gpm. A change in flow in excess of 3000 gpm would be required for the differential pressure to exceed the ISTB acceptable range of 0.9 times the reference value.

With the configuration of the installed flow instrumentation and the resulting negligible effect that changes in the flow have on differential pressure while operating on minimum flow path, maintaining compliance to ISTB specified flow ranges is not practical. Additionally, TVA considered performing testing during cold shutdowns and determined it is not practical to perform testing during cold shutdown as the RHR system is typically inservice and relied upon for heat removal and safe operation of the plant. Flow adjustments for testing purposes could affect safe plant operation in maintaining the plant while in the cold shutdown state.

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**RP-02**

**Residual Heat Removal (RHR) Pump Flow Measurement**

***Basis for Use (Continued)***

This relief request meets the intent of Position 9 in Attachment 1 to Generic Letter 89-04. The RHR system is typically in service during cold shutdown conditions. Safe operation of the plant is affected by changes to system configurations and flow adjustments required for testing (see page 21 of Enclosure 2 of the TVA response to NRC RAIs regarding the SQN third ten-year interval (ML061100186)).

No other flow measurement means are available that will provide the repeatability necessary to meet ISTB ranges.

**Duration of the Proposed Alternative**

This request is for the duration of the fourth IST ten-year Interval (begins June 1, 2016, and ends May 31, 2026).

**Precedents**

This relief request was previously approved for SQN's third ten-year interval by Reference 2 of the cover letter.

**Status**

This relief request is approved. See reference 2.AF.

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**Attachment 3 - Pump Relief Requests**

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**RP-04**

**Pump Vibration Reference Values and Acceptance Criteria**

*Compliance with the specified code requirements results in hardship or unusual difficulty without a compensating increase in the level of quality and safety and the proposed alternative provides an acceptable level of quality and safety in accordance with 10 CFR 50.55a(z)(2)*

**ASME OM Code Affected Components**

<b>Pump ID</b>	<b>Pump Description</b>	<b>Pump Type</b>	<b>Code Class</b>	<b>OM Group</b>
0-PMP-67-432	Essential Raw Cooling Water Pumps	Vertical Line Shaft	3	A
0-PMP-67-436				
0-PMP-67-440				
0-PMP-67-444				
0-PMP-67-452				
0-PMP-67-456				
0-PMP-67-460				
0-PMP-67-464				
0-PMP-70-51	Component Cooling Water Pumps	Centrifugal	3	A
1-PMP-70-38				
1-PMP-70-46				
2-PMP-70-33				
2-PMP-70-59				
0-PMP-313-303	Shutdown Board Room Chilled Water Pumps	Centrifugal	3	A
0-PMP-313-338				
1-PMP-62-230	Boric Acid Transfer Pumps	Centrifugal	3	A
1-PMP-62-232				
2-PMP-62-230				
2-PMP-62-232				
1-PMP-63-10	Safety Injection Pumps	Centrifugal	2	B
1-PMP-63-15				
2-PMP-63-10				
2-PMP-63-15				
1-PMP-72-10	Containment Spray Pumps	Centrifugal	2	B
1-PMP-72-27				
2-PMP-72-10				
2-PMP-72-27				

**Attachment 3 - Pump Relief Requests**

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**RP-04**

**Pump Vibration Reference Values and Acceptance Criteria**

**ASME OM Code Affected Components (Continued)**

<b>Pump ID</b>	<b>Pump Description</b>	<b>Pump Type</b>	<b>Code Class</b>	<b>OM Group</b>
1-PMP-3-118	Auxiliary Feedwater (Motor) Pumps	Centrifugal	3	A
1-PMP-3-128				
2-PMP-3-118				
2-PMP-3-128				
0-PMP-67-470	ERCW Screen Wash Pumps	Vertical Line Shaft	3	A
0-PMP-67-477				
0-PMP-67-482				
0-PMP-67-487				
1-PMP-3-142	Auxiliary Feedwater (Steam) Pumps	Centrifugal	3	B
2-PMP-3-142				
1-PMP-62-104	Centrifugal Charging Pumps	Centrifugal	2	A
1-PMP-62-108				
2-PMP-62-104				
2-PMP-62-108				
1-PMP-74-10	RHR Pumps	Centrifugal	2	A
1-PMP-74-20				
2-PMP-74-10				
2-PMP-74-20				

**ASME Code Edition and Addenda**

ASME OM Code 2004 Edition through 2006 Addenda

**Applicable Code Requirement**

ISTB-3300 Reference Values

(a) Initial reference values shall be determined from the results of testing meeting the requirements of ISTB-3100, Preservice Testing, or from the results of the first inservice test.

Tables ISTB 5121-1 and ISTB-5221-1

The tables establish the ranges of acceptability of reference values. Specifically, the tables require the use of 2.5 and 6 times the reference values in determining acceptable ranges of vibration unless those calculated values exceed the absolute limits specified in the Tables.

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RP-04

### Pump Vibration Reference Values and Acceptance Criteria

#### Applicable Code Requirement (Continued)

ISTB-5121(e), ISTB-5123(e), ISTB-5221(e), and ISTB-5223(e)

All deviations from the reference values shall be compared with the ranges of Table ISTB-5121-1 (and Table ISTB-5221-1) and corrective action taken as specified in ISTB-6200. The vibration measurements shall be compared to both the relative and absolute criteria shown in the alert and required action ranges of Table ISTB-5121-1 (and Table ISTB-5221-1). For example, if vibration exceeds either  $6V_r$  or 0.7 in./sec (1.7 cm/sec), the pump is in the required action range.

ISTB-5122(d) and ISTB-5222(d)

All deviations from the reference values shall be compared with the ranges of Table ISTB-5121-1 (and Table ISTB-5221-1) and corrective action taken as specified in ISTB-6200.

#### Reason for Request

Relief is being requested for establishing a vibration reference value ( $V_r$ ) because the data collected during preservice or inservice testing for those vibration points that have unusually low levels of vibration (smooth running pumps). This request applies only to values for  $V_r$  associated with vibration testing. Small values for  $V_r$  result in small acceptable ranges for pump operation. The acceptable range defined in Table ISTB-5121-1 and Table ISTB-5221-1 is less than or equal to  $2.5V_r$ . Based on a small acceptable range, a smooth running pump could be subject to unnecessary corrective action caused by numerically small changes in vibration levels.

The list of affected components for his relief request, as approved by the NRC for the third ten-year interval, was expanded to include all pumps in the IST program. This will allow for application of this relief to those pumps with measured  $V_r$  less than or equal to 0.05 inches per second (ips).

#### Proposed Alternative and Basis for Use

##### *Proposed Alternative*

Pumps with a measured  $V_r$  less than or equal to 0.05 ips for a particular vibration measurement location will have subsequent test results for that location compared to an acceptable range based on 0.05 ips. In addition to the applicable ASME OM Code requirements, all pumps in the IST program will be included in and will remain in the Predictive Maintenance Program regardless of their smooth running status.

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### Pump Vibration Reference Values and Acceptance Criteria

#### *Proposed Alternative (Continued)*

When new reference values are established, the measured parameters will be evaluated for each location to determine if the provisions of this relief request still apply. If the measured  $V_r$  is greater than 0.05 ips, the requirement of ISTB-3300 will be applied. Conversely, if the measured  $V_r$  is less than or equal to 0.05 ips, a minimum value of 0.05 ips will be used in determining the acceptable, alert, and required action ranges of the OM code.

#### *Basis for Use*

For very small reference values, hydraulic noise and instrument error can be a significant portion of the vibration reading and affect the repeatability of subsequent measurements. Also, experience gathered from the Predictive Maintenance Program has shown that changes in vibration levels in the range of 0.05 ips do not normally indicate significant degradation in pump performance.

To avoid unnecessary corrective action, a minimum  $V_r$  of 0.05 ips is being established for velocity measurements. This minimum value will be applied to individual vibration locations for the pumps listed in the above table where the measured reference value is less than 0.05 ips. The Predictive Maintenance Program currently employs the following predictive monitoring techniques on an as applicable and as needed basis:

- A. Vibration monitoring and analysis beyond that required by ISTB,
- B. Oil sampling and analysis, and
- C. Thermographic Analysis.

Bearing temperature trending is available for a number of the components through the plant process computer system. If the measured parameters are discovered to be outside the normal operating range or to be trending toward an unacceptable degraded state, appropriate actions are taken that may include.

- A. Increased monitoring to establish rate of change,
- B. Review of component specific information to identify cause, and
- C. Removal of the pump from service to perform maintenance.

Periodic reports are generated from test data, both IST and Predictive Maintenance collected.

This alternative to the requirements of ISTB-3300 provides an acceptable level of quality and safety.

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RP-04

### Pump Vibration Reference Values and Acceptance Criteria

#### Duration of the Proposed Alternative

This request is for the duration of the fourth IST ten-year Interval (begins June 1, 2016, and ends May 31, 2026).

#### Precedents

This relief request was previously approved for SQN's third ten-year interval by Reference 2 of the cover letter. A similar relief request (PV-01) was approved by the NRC for the Watts Bar Nuclear Plant Unit 1 second ten-year interval on March 9, 2007 (ML070090504). Additional regulatory precedents are listed below:

- A similar relief request (PRR8) was approved by the NRC for the Beaver Valley Power Station Unit 2 on February 14, 2008 (ML080140299).
- A similar relief request (PRR-04) was approved by the NRC for the James A. FitzPatrick Nuclear Power Plant on November 27, 2007 (ML072910422).
- A similar relief request (P-1) was approved by the NRC for the North Anna Power Station Units 1 and 2 on January 28, 2002 (ML020280439).

#### Status

This relief request is approved. See reference 2.AF.



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**Attachment 3 - Pump Relief Requests**

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**RP-06**

**RHR Pump Vibration Measurements**

*Compliance with the specified code requirements results in hardship or unusual difficulty without a compensating increase in the level of quality and safety and the proposed alternative provides an acceptable level of quality and safety in accordance with 10 CFR 50.55a(z)(2)*

**ASME OM Code Affected Components**

<b>Pump ID</b>	<b>Pump Description</b>	<b>Pump Type</b>	<b>Code Class</b>	<b>OM Group</b>
1-PMP-74-10	RHR Pump 1A-A	Cent.	2	A
1-PMP-74-20	RHR Pump 1B-B			
2-PMP-74-10	RHR Pump 2A-A			
2-PMP-74-20	RHR Pump 2B-B			

**ASME Code Edition and Addenda**

ASME OM Code 2004 Edition through 2006 Addenda

**Applicable Code Requirement**

ISTB-3510, General

(e) *Frequency Response Range*: The frequency response range of the vibration-measuring transducers and their readout system shall be from one-third minimum pump shaft rotational speed to at least 1000 Hz.

ISTB-5121, Group A Test Procedure

(d) Vibration (displacement or velocity) shall be determined and compared with the reference value. Vibration measurements shall be broad band (unfiltered). If velocity measurements are used, they shall be peak. If displacement amplitudes are used, they shall be peak-to-peak.

**Reason for Request**

TVA proposes to exclude from the ISTB Group A pump test the vibration measurement in the range from one-third up to one-half pump shaft rotational speed. The exclusion of vibration measurements from one-third to one-half minimum pump shaft rotational speed will exclude the readings associated with the natural frequencies as described below. It has been shown that these frequencies do not affect pump performance. Excluding this range of vibration for test measurements would prevent placing the pumps in an "Increased Frequency" test status. Placing SQN's RHR pumps on an increased frequency test status provides no added value for monitoring pump performance. The dominant peak at one-third running speed masks data trending at the frequencies that represent actual pump/motor health.

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### RHR Pump Vibration Measurements

#### Burden Caused by Compliance

This results in an unnecessary burden because increasing the test frequency of the pumps would result in additional wear on the equipment and potential challenges to the plant. Pump degradation, due to real physical problems, will be evident with the pump test monitoring the representative pump/motor condition frequencies and without masking the unrelated structural resonant peak. This will ensure appropriate corrective actions are taken to address those levels of vibration that could result in pump degradation.

#### Proposed Alternative and Basis for Use

##### *Proposed Alternative*

Vibration measurements of the upper motor bearing of the RHR pumps will be taken during the ISTB Group A pump tests in a range from one-half minimum pump shaft rotational speed to at least 1000 Hz.

##### *Basis for Use*

Historical Data: Historical documents for pump performance indicate that a high vibration condition has existed on SQN's RHR pumps since original installation of these pumps. This condition also existed prior to the ASME conversion to the ISTB pump criteria that incorporated an expanded frequency range for measurement of pump vibration (one-third to one-half rotational speed). TVA has monitored this condition for SQN's RHR pumps and concludes there is no degradation of the pump/motor/foundation assembly from the inherent high vibration in this range.

Manufacturer Data: Westinghouse Electric Company (Westinghouse), provider of SQN's RHR pumps, issued Technical Bulletin NSID-TB-86-02 Revision 1, "Vibration Motor Resonant Vibration - Residual Heat Removal Pumps," dated September 23, 1986, that advised utilities of the potential for a high vibration condition in vertical pump/motor/foundation support assemblies. The bulletin references the condition that SQN is experiencing. Consultation with Westinghouse and the results of TVA's evaluation of this issue are provided below.

Attempts to Correct Vibration Issue: In accordance with the vendor recommendations from NSID-TB-86-02, TVA inspected SQN's RHR pumps and pump supports to verify there were no loose supporting connections contributing to the vibration condition. Plant modifications to lower vibration by installing additional supports was not a preferred option based on a concern for relocation of the vibration to other points in the pump/motor/foundation. Attempts to relocate the vibration were found to have limited success at other utilities and in some instances vibration levels were increased.

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### RHR Pump Vibration Measurements

Spectral Analysis: Analysis of the condition indicates that the vibration occurs in a low frequency range less than one-half rotational speed. Analysis indicates there are no problems with the bearings or rotating elements (i.e., imbalance or misalignment). TVA's request is restricted to those frequencies that exhibit the natural resonance vibration levels. The results and evaluation of TVA's spectral analysis were provided in the original relief request during the second ten year interval.

Pump/System Design: The RHR system pumps for SQN are the typical design for more recent Westinghouse four loop plants, which are centrifugal pumps with the motor in the vertical position. There is no typical bearing housing(s) associated with these pumps as there are with centrifugal pumps where the pump and the driver are in the horizontal position. The pump and motor utilize one continuous shaft. There is no coupling located along the shaft and all of the bearings for the pump/motor assembly are located in the motor. Although mounted vertically, these pumps are not vertical line shaft pumps. Two motor designs exists for this application with different bearing arrangements. In one design the bearing located in the upper motor housing acts as a thrust and upper radial bearing while the lower bearing is a radial bearing. In the other pump/motor design, the lower motor housing bearing acts as the thrust and lower radial bearing while the upper bearing is a radial bearing.

The pump support is designed to support the pump and the motor which rests on top of the pump. The motor is unrestrained and is in effect a large moment arm. The bearings for this pump are within the motor.

Compliance with ASME ISTB: The natural system frequency of 10 to 11 Hz exhibits sufficient force such that when measurements are taken during quarterly pump testing at the upper motor bearing, the vibration readings are outside of the OM Code acceptable range limits. When applying the OM Code criteria, the vibration limits will place the pump consistently in the "Alert Range" or the "Required Action Range."

TVA originally took a literal reading of OM Part 6 wording to determine if vibration testing is required for the RHR pumps. Because the bearings are part of the motor (i.e., pump driver), these vibration points were not included in SQN's IST program. TVA evaluates these measurements in accordance with ISTB acceptance criteria for pump vibration.

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**RHR Pump Vibration Measurements**

Plant Operation and Pump Vibration History: Prior to initial operation of either unit, a nonconformance report was written which identified a natural frequency of the RHR pumps of 10 to 11 Hz . At the time, the seismic qualification of the pump had been performed based upon no natural frequencies below 33 Hz . The safety implication was that the RHR pumps did not meet their design basis for seismic qualification. TVA performed design changes and reanalysis of the pump support structure and piping system to qualify the 10 to 11 Hz natural frequency condition. Westinghouse approved the changes.

Both units were shut down for approximately three years beginning in 1985. Both units remained on RHR at shut down cooling flow conditions (greater than 2,000 gallons per minute [gpm]) in order to maintain the RCS in accordance with the Technical Specifications. During this time, there were no problems with the RHR pumps. The pumps operated continuously with no adverse conditions identified.

Both units at SQN were again shut down in 1993 for approximately one year. During this time, both units remained on RHR with the pumps operating at full flow conditions. The pumps operated continuously with no adverse conditions identified.

Advanced Vibration Diagnostics: TVA has performed advanced vibration diagnostics to assess the condition on all four RHR pumps. The same 10 to 11 Hz natural frequency identified in the late 1970's was identified again.

Impact testing was performed on all four RHR pump/motor assemblies. The testing revealed the following data:

Pump ID	Natural Frequency of Motor Alone	Natural Frequency of Motor and Frame <sup>1</sup>
1A-A	14 to 16 Hz	120 to 350 Hz
1B-B	11 Hz	175 to 331 Hz
2A-A	10 Hz	287 to 356 Hz
2B-B	11 to 13 Hz	100 to 350 Hz
<sup>1</sup> Based on location on the frame.		

The testing performed on the 1A RHR pump motor revealed a 14 to 16 Hz response frequency range on the motor. The motor/support frame frequency response is between 120 and 350 Hz . The overall vibration levels on the 1A RHR pump are stable and below the alert range. However, the vibration occurring at the 14 Hz frequency is contributing to the overall levels.

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### RHR Pump Vibration Measurements

For the 1B and 2A RHR pump motors, this data confirms the previous evaluation that a resonant condition exists at 11 and 10 Hz, respectively. The testing revealed that the motor upper bearing exhibited natural frequencies at approximately 10 and 11 Hz, respectively, which is coincident with the maximum amplitude vibration measurement for the same point found during OM Code quarterly pump testing.

The testing performed on the 2B RHR pump motor revealed a 11 to 13 Hz response frequency range on the motor. The motor support/frame frequency response is between 100 and 350 Hz . The overall vibration levels on 2B RHR pump are stable and below alert range. However, the vibration occurring at the 11 Hz frequency is contributing to the overall levels.

ISTB Group A pump testing is performed with the pump operating on miniflow (the nominal miniflow rate is 500 gpm for pump protection). The pump operation flow characteristics create low frequency flow pulsations which tend to excite the structural resonant frequencies of the machine assembly. Spectra analysis of vibration data collected during pump testing activities indicates a dominant peak between 10 to 14 Hz for all RHR pump motors. To improve the vibration would require separating the low natural frequencies away from the operating frequency of 29.8 Hz. Physical modifications to drive the natural frequency up beyond 30 Hz (greater than 15 percent of operating frequency as a rule of thumb) can be unpredictable and difficult even when performed with detailed analysis. Efforts at other plants have been unsuccessful due to shifting the vibration to adjacent components, such as the pump or piping.

Full Flow Testing: Near full flow vibration data obtained during refueling outages shows that the vibration is greatly reduced at near full flow conditions. This indicates that the higher test measurements occur only during the quarterly tests, which are conducted with the RHR pumps on miniflow. The pumps are designed to run at full-flow conditions for normal plant operations and for accident conditions. Thus, the minimum flow test configuration causes the motor structure to be excited and a higher vibration to be present during the quarterly pump tests.

This testing supports the expected results identified by Westinghouse in Technical Bulletin NSID-TB-86-02.

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### RHR Pump Vibration Measurements

Civil/Structural Evaluations: TVA originally modeled the pump and its support as a rigid anchor. During the reanalysis discussed above, the pump and its support were modeled as a flexible member. The results of this analysis confirmed that the measured natural frequency of approximately 10 to 11 Hz was a system frequency ( i.e., pump, pump support, and piping). The reanalysis changed the nozzle loads on the pump and on local pipe supports to meet the new support loads. The pump support was also stiffened, incidental to the vibration issue described above.

An engineering review has been performed on the results of the advanced vibration diagnostics with respect to the vibration issue. The review determined that the new measurements reflect the vibration issue identified during initial system operation and is not a new vibration issue. Based upon this analysis, the pump and its structure continue to meet the design requirements for acceptable operation.

ISI Examinations of the Piping and Supports: A review of ISI examinations of pipe welds and pipe supports in the area surrounding the pumps was performed. All of the examinations in this area, which did not meet the acceptance criteria, were minor indications and are characterized as typical indications found during inservice examinations following the completion of construction activities. No failures were associated with any of these indications. None of the indications could be characterized as defects due to pump vibration.

No further indications have been identified. The issues found by in-service examination are indicative that the vibration issue is a natural frequency of the system and not a destructive vibration force.

### Duration of the Proposed Alternative

This request is for the duration of the fourth IST ten-year Interval (begins June 1, 2016, and ends May 31, 2026).

### Precedents

This relief request was previously approved for SQN's third ten-year interval by Reference 2 of the cover letter.

### Status

This relief request is approved. See reference 2.AF.

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**RP-07**

**Code Case OMN-21, Variance Of The Fixed Reference Value**

*Compliance with the specified code requirements results in hardship or unusual difficulty without a compensating increase in the level of quality and safety and the proposed alternative provides an acceptable level of quality and safety in accordance with 10 CFR 50.55a(z)(2)*

**ASME Code Components Affected**

<b>Pump ID</b>	<b>Pump Description</b>	<b>Pump Type</b>	<b>Code Class</b>	<b>OM Group</b>
0-PMP-67-432	Essential Raw Cooling Water Pumps	Vertical Line Shaft	3	A
0-PMP-67-436				
0-PMP-67-440				
0-PMP-67-444				
0-PMP-67-452				
0-PMP-67-456				
0-PMP-67-460				
0-PMP-67-464				
0-PMP-70-51	Component Cooling Water Pumps	Centrifugal	3	A
1-PMP-70-38				
1-PMP-70-46				
2-PMP-70-33				
2-PMP-70-59				
0-PMP-313-303	Shutdown Board Room Chilled Water Pumps	Centrifugal	3	A
0-PMP-313-338				
1-PMP-62-230	Boric Acid Transfer Pumps	Centrifugal	3	A
1-PMP-62-232				
2-PMP-62-230				
2-PMP-62-232				
1-PMP-63-10	Safety Injection Pumps	Centrifugal	2	B
1-PMP-63-15				
2-PMP-63-10				
2-PMP-63-15				
1-PMP-72-10	Containment Spray Pumps	Centrifugal	2	B
1-PMP-72-27				
2-PMP-72-10				
2-PMP-72-27				

<b>SQN - Unit 0, 1, &amp; 2 Inservice Testing Program</b>	<b>0-TI-SXI-000-200.0 0001 Page 205 of 344</b>
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**RP-07**

**Code Case OMN-21, Variance Of The Fixed Reference Value**

<b>Pump ID</b>	<b>Pump Description</b>	<b>Pump Type</b>	<b>Code Class</b>	<b>OM Group</b>
1-PMP-3-118	Auxiliary Feedwater (Motor) Pumps	Centrifugal	3	A
1-PMP-3-128				
2-PMP-3-118				
2-PMP-3-128				
1-PMP-3-142	Auxiliary Feedwater (Steam) Pumps	Centrifugal	3	B
2-PMP-3-142				
1-PMP-62-104	Centrifugal Charging Pumps	Centrifugal	2	A
1-PMP-62-108				
2-PMP-62-104				
2-PMP-62-108				
1-PMP-74-10	Residual Heat Removal Pumps	Centrifugal	2	A
1-PMP-74-20				
2-PMP-74-10				
2-PMP-74-20				

**ASME Code Edition and Addenda**

ASME OM Code 2004 Edition through 2006 Addenda

**Applicable Code Requirement**

ISTB-5121, "Group A Test Procedure": ISTB-5121 (b) states that "The resistance of the system shall be varied until the flow rate equals the reference point. The differential pressure shall then be determined and compared to its reference value. Alternatively, the flow rate shall be varied until the differential pressure equals the reference point and the flow rate determined and compared to the reference flow rate value".

ISTB-5122, "Group B Test Procedure": ISTB-5122(c) states that "System resistance may be varied as necessary to achieve the reference point".



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**Code Case OMN-21, Variance Of The Fixed Reference Value**

ISTB-5123, "Comprehensive Test Procedure": ISTB-5123(b) states that "For centrifugal and vertical line shaft pumps, the resistance of the system shall be varied until the flow rate equals the reference point. The differential pressure shall then be determined and compared to its reference value. Alternatively, the flow rate shall be varied until the differential pressure equals the reference point and the flow rate determined and compared to the reference flow rate value".

ISTB-5221, "Group A Test Procedure": ISTB-5221 (b) states that "The resistance of the system shall be varied until the flow rate equals the reference point. The differential pressure shall then be determined and compared to its reference value. Alternatively, the flow rate shall be varied until the differential pressure equals the reference point and the flow rate determined and compared to the reference flow rate value".

ISTB-5222, "Group B Test Procedure": ISTB-5222(c) states that "System resistance may be varied as necessary to achieve the reference point".

ISTB-5223, "Comprehensive Test Procedure": ISTB-5223(b) states that "For centrifugal and vertical line shaft pumps, the resistance of the system shall be varied until the flow rate equals the reference point. The differential pressure shall then be determined and compared to its reference value. Alternatively, the flow rate shall be varied until the differential pressure equals the reference point and the flow rate determined and compared to the reference flow rate value".

**Reason for Request**

Pursuant to 10 CFR 50.55a, "Codes and standards," paragraph (a)(3)(i), an alternative is proposed to the pump testing reference value requirements of the ASME OM Code. The basis of the request is that the proposed alternative would provide an acceptable level of quality and safety. Specifically, this alternative is requested for all inservice testing of IST Program pumps listed above.

For pump testing, there is difficulty adjusting system throttle valves with sufficient precision to achieve exact flow reference values during subsequent IST exams. Section ISTB of the ASME OM Code does not allow for variance from a fixed reference value for pump testing. However, NUREG-1482, Revision 2, Section 5.3, acknowledges that certain pump system designs do not allow for the licensee to set the flow at an exact value because of limitations in the instruments and controls for maintaining steady flow.

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### **Attachment 3 - Pump Relief Requests**

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**RP-07**

### **Code Case OMN-21, Variance Of The Fixed Reference Value**

#### **Reason for Request (Continued)**

ASME OM Code Case OMN-21 provides guidance for adjusting reference flow/?P to within a specified tolerance during Inservice Testing. The Code Case states, "It is the opinion of the Committee that when it is impractical to operate a pump at a specified reference point and adjust the resistance of the system to a specified reference point for either flow rate, differential pressure or discharge pressure, the pump may be operated as close as practical to the specified reference point with the following requirements. The Owner shall adjust the system resistance to as close as practical to the specified reference point where the variance from the reference point does not exceed +2% or -1% of the reference point when the reference point is flow rate, or +1% or -2% of the reference point when the reference point is differential pressure or discharge pressure.

#### **Proposed Alternative and Basis for Use**

Sequoyah seeks to perform future Inservice Pump testing in a manner consistent with the requirements as stated in ASME OM Code Case OMN-21. Specifically, testing of all pumps identified in the table above will be performed such that flow rate, or differential pressure, is adjusted as close as practical to the reference value and within proceduralized limits of +2% / -1% for flow rate, or +1% / -2% for differential pressure.

Using the provisions of this request as an alternative to the specific requirements of ISTB-5121, ISTB-5122, ISTB-5123, ISTB-5221, ISTB-5222 and ISTB-5223 as described above will provide adequate indication of pump performance and continue to provide an acceptable level of quality and safety.

#### **Duration of the Proposed Alternative**

The proposed alternative will be utilized for the remainder of the third 10-year interval, and for the entire fourth 10-year interval.

#### **Precedents**

Callaway Plant Unit 1 Relief Request PR-06 (ADAMS No. ML13267A183)

#### **Status**

This relief request is approved. See reference 2.AG.

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**Attachment 3 - Pump Relief Requests**

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**RP-08**

**IST Class 2 and 3 Pump Testing Requirements Using OMN-18**

*The alternatives proposed in the relief request provide an acceptable level of quality and safety pursuant to 10 CFR 50.55a(z)(1)*

**ASME OM Code Affected Components**

<b>Pump ID</b>	<b>Pump Description</b>	<b>Pump Type</b>	<b>Code Class</b>	<b>OM Group</b>
0-PMP-67-432	Essential Raw Cooling Water Pumps	Vertical Line Shaft	3	A
0-PMP-67-436				
0-PMP-67-440				
0-PMP-67-444				
0-PMP-67-452				
0-PMP-67-456				
0-PMP-67-460				
0-PMP-67-464				
0-PMP-70-51	Component Cooling Water Pumps	Centrifugal	3	A
1-PMP-70-38				
1-PMP-70-46				
2-PMP-70-33				
2-PMP-70-59				
0-PMP-313-303	Shutdown Board Room Chilled Water Pumps	Centrifugal	3	A
0-PMP-313-338				
1-PMP-62-230	Boric Acid Transfer Pumps	Centrifugal	3	A
1-PMP-62-232				
2-PMP-62-230				
2-PMP-62-232				
1-PMP-72-10	Containment Spray Pumps	Centrifugal	2	B
1-PMP-72-27				
2-PMP-72-10				
2-PMP-72-27				
0-PMP-67-470	ERCW Screen Wash Pumps	Vertical Line Shaft	3	A
0-PMP-67-477				
0-PMP-67-482				
0-PMP-67-487				

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**RP-08**

**IST Class 2 and 3 Pump Testing Requirements Using OMN-18**

**ASME Code Edition and Addenda**

ASME OM Code 2004 Edition through 2006 Addenda

**Applicable Code Requirement**

ISTB-3300 Reference Values

(e)(1) Reference values shall be established within  $\pm 20\%$  of pump design flow rate for the comprehensive test.

(e)(2) Reference values shall be established within  $\pm 20\%$  of pump design flow for the Group A and Group B tests, if practicable. If not practicable, the reference point flow rate shall be established at the highest practical flow rate.

ISTB-3400 Frequency of Inservice Tests

An inservice test shall be run on each pump as specified in Table ISTB-3400-1.

Table ISTB-3400-1 Inservice Test Frequency

This table requires Group A and Group B tests to be performed quarterly and Comprehensive test be performed biennially.

Table ISTB-3510-1 Required Instrument Accuracy

This table specifies instrument accuracies for Group A, Group B, Comprehensive and Preservice tests.

Table ISTB-5121-1 Centrifugal Pump Test Acceptance Criteria

This table specifies the required acceptance criteria for Group A, Group B, and Comprehensive Tests for centrifugal pumps.

Table ISTB-5221-1 Vertical Line Shaft and Centrifugal Pumps Test Acceptable Criteria

This table specifies the required acceptance criteria for Group A, Group B, and Comprehensive Tests for vertical line shaft centrifugal pumps.

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### Attachment 3 - Pump Relief Requests

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RP-08

### IST Class 2 and 3 Pump Testing Requirements Using OMN-18

#### Reason for Request

The ASME OM Code committee approved Code Case OMN-18, Alternate Testing Requirements for Pumps Tested Quarterly within  $\pm 20$  percent of Design Flow, which was incorporated into the 2009 edition of the ASME OM Code. This Code Case has not yet been endorsed by the NRC in Regulatory Guide 1.192, Rev 1, Operation and Maintenance Code Case Acceptability, ASME OM Code, August 2014. However, NRC has approved similar relief requests for this Code Case as noted in the Precedents section.

This Code Case allows the elimination of the requirement for the Comprehensive Pump Test (CPT) with its associated acceptance criteria, if the quarterly test is performed at  $\pm 20$  percent of design flow and the instrumentation meets the accuracy requirements of Table ISTB-3510-1 for the comprehensive and preservice tests. The basis for the testing strategy in this Code Case is that a quarterly Group A pump test, performed at the CPT flow rate with more accurate instrumentation, is more effective in assessing a pump's operational readiness than a standard Group A test in conjunction with a biennial CPT.

ISTB allows the categorization of pumps in the IST program. As such, a pump that otherwise meets the requirements of Group B, could be categorized as a Group A (or AB) pump, and test according to the provisions of Code Case OMN-18. In doing this, additional data (vibration and flow or differential pressure) would be obtained quarterly, rather than once every two years.

As a result of the increased requirements on the parameters imposed by the proposed alternative during applicable quarterly tests, there is no added value in performing the biennial comprehensive test on the affected pumps.

#### Proposed Alternative and Basis for Use

##### *Proposed Alternative*

TVA is proposing to utilize the provisions of Code Case OMN-18 and perform a modified Group A test in lieu of performing the code required comprehensive pump test. The modified Group A test will be performed at  $\pm 20$  percent of design flow. The instrumentation used will meet the accuracy requirements of Table ISTB-3510-1 for the comprehensive and preservice tests. Vibration tests will be performed with the same vibration acceptance criteria as the standard Group A pump test. Additionally, TVA will utilize an acceptable range high limit of 106 percent or lower for quarterly testing, which is also consistent with the planned code applicable to CPT.

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### Attachment 3 - Pump Relief Requests

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RP-08

### IST Class 2 and 3 Pump Testing Requirements Using OMN-18

#### *Basis for Use*

The use of more accurate pressure gauges and a more limiting acceptable range during every modified quarterly Group A test compensates for the elimination of the CPT. The CPT has a more limiting acceptable range upper bound for differential pressure of 103 percent. Regular testing with more accurate instrumentation and tighter acceptance criteria will provide for better trending of pump performance. Instead of performing seven tests with pressure instruments with  $\pm 2$  percent accuracy and then performing the eighth test with pressure instruments with a minimum of  $\pm 0.5$  percent accuracy, all eight tests will be performed with the same  $\pm 0.5$  percent accurate instruments or better. Due to the improved accuracy, consistent testing methodology, and the addition of quarterly vibration monitoring on Group AB pumps, deviations in actual pump performance indicative of impending degradation are more easily recognized during quarterly performance trending activities.

The provision of this request as an alternative to the requirements of ISTB-3400 and Tables ISTB-3400-1, ISTB-5121-1, and ISTB5221-1 provides a reasonable alternative to the code requirements based on the determination that the proposed alternative will provide adequate indication of pump performance, permit detection of component degradation, and continue to provide an acceptable level of quality and safety.

#### **Duration of the Proposed Alternative**

This request is for the duration of the fourth IST ten-year Interval (begins June 1, 2016, and ends May 31, 2026).

#### **Precedents**

- A similar relief request (PR-01) was approved by the NRC for the Oyster Creek Nuclear Generating Station on June 21, 2012 (ML120050329).
- A similar relief request (PR-9) was approved by the NRC for the St. Lucie, Units 1 and 2 on July 1, 2011 (ML11143A077).
- A similar relief request (PR-3) was approved by the NRC for the Perry Nuclear Power Plant, Unit 1, on October 8, 2009 (ML092640690).

#### **Status**

This relief request is approved. See reference 2.AF.

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**Attachment 4 - Valve Relief Request**  
**Page 1 of 5**  
**RV-01**  
**Reactor Head Vent Valve Stroke Timing**

*Compliance with the Code requirements is considered  
impractical pursuant to 10 CFR 50.55a(f)(6)(i)*

**ASME OM Code Affected Components**

<b>Valve ID</b>	<b>Description</b>	<b>Class</b>	<b>Cat.</b>	<b>Size</b>	<b>Type</b>	<b>Act.</b>
1-FSV-68-396	Reactor Vessel Head Vent	2	B-Act	1	GB	SO
1-FSV-68-397	Reactor Vessel Head Vent	2	B-Act	1	GB	SO
2-FSV-68-396	Reactor Vessel Head Vent	2	B-Act	1	GB	SO
2-FSV-68-397	Reactor Vessel Head Vent	2	B-Act	1	GB	SO

**ASME Code Edition and Addenda**

ASME OM Code 2004 Edition through 2006 Addenda

**Applicable Code Requirement**

**ISTC-3300 Reference Values**

Reference values shall be determined from the results of preservice testing or from the results of inservice testing. These tests shall be performed under conditions as near as practicable to those expected subsequent inservice testing...

**ISTC-3310 Effects of Valve Repair, Replacement, or Maintenance on Reference Values**

When a valve or its control system has been replaced, repaired, or has undergone maintenance that could affect the valve's performance, a new reference value shall be determined or the previous value reconfirmed by an inservice test run before the time it is returned to service or immediately if not removed from service...

**ISTC-3510 Exercising Test Frequency**

Active Category A, Category B, and Category C check valves shall be exercised nominally every three months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3570, ISTC-5221, and ISTC-5222...

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**Attachment 4 - Valve Relief Request**  
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**RV-01**  
**Reactor Head Vent Valve Stroke Timing**

**Applicable Code Requirement (Continued)**

**ISTC-5151 Valve Stroke Testing**

- (a) Active valves shall have their stroke times measured when exercised in accordance with ISTC-3500.
- (b) The limiting value(s) of full-stroke time of each valve shall be specified by the Owner.
- (c) Stroke time shall be measured to at least the nearest second.
- (d) Any abnormality or erratic action shall be recorded (see ISTC-9120), and an evaluation shall be made regarding need for corrective action.

**ISTC-5152 Stroke Time Acceptance Criteria**

Test results shall be compared to reference values established in accordance with ISTC-3300, ISTC-3310, or ISTC-3320.

- (a) Valves with reference stroke times of greater than 10 sec shall exhibit no more than  $\pm 25\%$  change in stroke time when compared to the reference value.
- (b) Valves with reference stroke times of less than or equal to 10 sec shall exhibit no more than  $\pm 50\%$  change in stroke time when compared to the reference value.
- (c) Valves that stroke in less than 2 sec may be exempted from ISTC-5152(b). In such cases the maximum limiting stroke time shall be 2 sec.

**ISTC-5153 Stroke Test Corrective Action**

- (a) If a valve fails to exhibit the required change of obturator position or exceeds the limiting values of full-stroke time [see ISTC-5151(b)], the valve shall be immediately declared inoperable.
- (b) Valves with measured stroke times that do not meet the acceptance criteria of ISTC-5152 shall be immediately retested or declared inoperable. If the valve is retested and the second set of data also does not meet the acceptance criteria, the data shall be analyzed within 96 hr to verify that the new stroke time represents acceptable valve operation, or the valve shall be declared inoperable. If the second set of data meets the acceptance criteria, the cause of the initial deviation shall be analyzed and the results documented in the record of tests (see ISTC-9120).



**Attachment 4 - Valve Relief Request**

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**RV-01**

**Reactor Head Vent Valve Stroke Timing**

**Reason for Request**

Relief is being requested from measuring stroke times, establishing reference values, comparing stroke times to acceptance criteria/limiting values, and taking corrective action related to stroke time acceptance criteria/limiting values for the reactor vessel head vent throttles valves.

These solenoid valves have no position indication and are totally enclosed which prevents visual confirmation of the valve position and therefore the inability to measure the time that it takes the valve to stroke. These valves are throttle valves with an operator which positions the valve at 0%, 25%, 50%, and 100%, which is set through the use of a thumbwheel. However, these valves are fast acting valves with a stroke time of less than two seconds and a stroke of approximately 1/4 inch.

**Burden Caused by Compliance**

Significant system modifications, such as alteration of the valve's control circuit to provide a separate handswitch to permit instantaneous valve operation, would be required to allow for the performance of valve stroke time testing.

**Proposed Alternative and Basis for Use**

*Proposed Alternative*

Verify the valve operates properly through the use of acoustic instrumentation every refueling outage.

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**Attachment 4 - Valve Relief Request**  
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**RV-01**  
**Reactor Head Vent Valve Stroke Timing**

*Basis for Use*

The acoustic instrumentation takes a signal of the system noise prior to opening the valve. The valve is opened by operating the thumbwheel and another acoustic signal is obtained at the full open position. The valve is then closed and another acoustic signal is obtained at full closed. The initial acoustic signal at full closed is compared to the second acoustic signal taken at the full closed position. Comparative values provides assurance that the valve is moving to the correct positions and that the valve is operating acceptably. However, the signals do not provide the means to measure the amount of time it takes to go from one position to the other. These valves are one-inch diameter Target Rock valves with a seal welded bonnet. They are the second of two one-inch diameter valves in parallel to each other and are normally closed.

An enhanced maintenance program of disassembly and inspection was considered. This method was not considered appropriate for the following reasons.

- This process can lead to assembly and operational problems due to distortion of the valve parts caused by the repetitive welding process to reinstall the seal weld every refueling outage. This is not considered acceptable for the purposes of testing and could lead to premature replacement of the valves.
- The repetitive removal of the seal weld between the body and the bonnet can cause another problem. When the seal weld is removed, a small amount of the base metal also has to be removed in order to find a separation point past the heat affected zone where the weld metal has not penetrated into the base metal so that the bonnet can be removed from the body. Every time this operation is performed, more of the base metal is removed until the required thickness no longer exists which makes the valve non-functional.
- Once the valve is opened and the internals of valve are examined, the condition of the internal parts do not typically give one any more indication of acceptable valve operation than the acoustic monitoring.

Considering that there is no known feasible method for measuring the stroke time and an enhanced maintenance program does not provide additional assurance of acceptable valve operation and can possibly be detrimental to acceptable valve operation, the method described above using acoustical instrumentation provides the only known method from which acceptable valve operation can be determined. A refueling outage is the only time the valves can be monitored and the only time maintenance can be performed because the valves are located inside containment.

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**Attachment 4 - Valve Relief Request  
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RV-01  
Reactor Head Vent Valve Stroke Timing**

**Duration of the Proposed Alternative**

This request is for the duration of the fourth IST ten-year Interval (begins June 1, 2016, and ends May 31, 2026).

**Precedents**

This relief request was previously approved for SQN's third ten-year interval by Reference 2 of the cover letter

**Status**

This relief request is approved. See reference 2.AF.

**Attachment 5 - Deferred Test Justifications**

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**Clarification of Valve Testing Method: CVTM-1**

Valve ID	Function	Drawing / Coor	Cat	Act/Pass	Class	Size	Type	Act
1-PCV-1-12	SG-2 ATM RELIEF VALVE	47W801-1 / D-2	B	Active	2	8	GL	AO
1-PCV-1-23	SG-3 ATM RELIEF VALVE	47W801-1 / F-2	B	Active	2	8	GL	AO
1-PCV-1-30	SG-4 ATM RELIEF VALVE	47W801-1 / A-2	B	Active	2	8	GL	AO
1-PCV-1-5-A	SG-1 ATM RELIEF VALVE	47W801-1 / B-2	B	Active	2	8	GL	AO
1-PCV-68-334	RCS PRZR PWR RELIEF VALVE	47W813-1 / B-3	B	Active	1	3	GL	SO
1-PCV-68-340A	RCS PRZR PWR RELIEF VALVE	47W813-1 / B-3	B	Active	1	3	GL	SO
2-PCV-1-12-B	SG 2 ATM RELIEF VALVE	47W801-1 / D-2	B	Active	2	8	GL	AO
2-PCV-1-23-A	SG 3 ATM RELIEF VALVE	47W801-1 / F-2	B	Active	2	8	GL	AO
2-PCV-1-30-B	SG 4 ATM RELIEF VALVE	47W801-1 / A-2	B	Active	2	8	GL	AO
2-PCV-1-5-A	SG 1 ATM RELIEF VALVE	47W801-1 / B-2	B	Active	2	8	GL	AO
2-PCV-68-334	RCS PRZR PWR RELIEF VALVE	47W813-1 / B-3	B	Active	1	3	GL	SO
2-PCV-68-340A	RCS PRZR PWR RELIEF VALVE	47W813-1 / B-3	B	Active	1	3	GL	SO

**Deferred Test Frequency:** Atmospheric Relief Valves are tested on a once per fuel cycle frequency in accordance with ISTC-3510.

**Justification for Deferred Test Frequency:** Atmospheric Relief Valves are tested on a once per fuel cycle frequency in accordance with ISTC-3510.

**Attachment 5 - Deferred Test Justifications**

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**Clarification of Valve Testing Method: CVTM-2**

<b>Valve ID</b>	<b>Function</b>	<b>Drawing / Coor</b>	<b>Cat</b>	<b>Act/Pass</b>	<b>Class</b>	<b>Size</b>	<b>Type</b>	<b>Act</b>
1-VLV-30-571	VACUUM RELIEF	1-47W866-1 / B-4	A/C	Active	2	24	CK	SA
1-VLV-30-572	VACUUM RELIEF	1-47W866-1 / B-5	A/C	Active	2	24	CK	SA
1-VLV-30-573	VACUUM RELIEF	1-47W866-1 / B-7	A/C	Active	2	24	CK	SA
2-VLV-30-571	VACUUM RELIEF	2-47W866-1 / B-4	A/C	Active	2	24	CK	SA
2-VLV-30-572	VACUUM RELIEF	2-47W866-1 / B-5	A/C	Active	2	24	CK	SA
2-VLV-30-573	VACUUM RELIEF	2-47W866-1 / B-7	A/C	Active	2	24	CK	SA

**Required Test Frequency:** These check valves must remain closed for containment isolation, and auto open for containment vacuum relief. They are capacity certified and tested in accordance with Appendix I.

**Attachment 5 - Deferred Test Justifications**

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**Deferred Test Justification: DTJ-01**

Valve ID	Function	Drawing / Coor	Cat	Act/Pass	Class	Size	Type	Act
1-FCV-1-11	SG 2 MAIN STM HDR ISOLATION VLV	47W801-1 / E-3	B	Active	2	32	GL	AO
1-FCV-1-22	SG 3 MAIN STM HDR ISOLATION VLV	47W801-1 / G-3	B	Active	2	32	GL	AO
1-FCV-1-29	SG 4 MAIN STM HDR ISOLATION VLV	47W801-1 / A-3	B	Active	2	32	GL	AO
1-FCV-1-4	SG 1 MAIN STM HDR ISOLATION VLV	47W801-1 / C-3	B	Active	2	32	GL	AO
2-FCV-1-11	SG 2 MAIN STM HDR ISOLATION VLV	47W801-1 / E-3	B	Active	2	32	GL	AO
2-FCV-1-22	SG 3 MAIN STM HDR ISOLATION VLV	47W801-1 / G-3	B	Active	2	32	GL	AO
2-FCV-1-29	SG 4 MAIN STM HDR ISOLATION VLV	47W801-1 / A-3	B	Active	2	32	GL	AO
2-FCV-1-4	SG 1 MAIN STM HDR ISOLATION VLV	47W801-1 / C-3	B	Active	2	32	GL	AO

**Required Test Frequency:** Close to isolate the Main Steam Line. Full Stroke and Part Stroke exercise quarterly.

**Deferred Test Frequency:** These valves will be full stroke exercised during cold shutdown but not more often than once every three months.

**Justification for Deferred Test Frequency:** Full stroke exercising of these valves during operation could cause SG level transients which could result in a plant trip. Part stroke exercising of these valves also can cause Steam Generator (SG) transients. Additionally, NUREG-1482 states that "MSIV's should not be tested at power since even a part stroke exercise increases the risk of a valve closure when the unit is generating power."

Attachment 5 - Deferred Test Justifications

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Deferred Test Justification: DTJ-02

Valve ID	Function	Drawing / Coor	Cat	Act/Pass	Class	Size	Type	Act
1-FCV-1-17	MAIN STEAM SUPPLY TO TURB AFP	47W803-2 / B-4	B	Active	3	4	GA	MO
1-FCV-1-18	MAIN STEAM SUPPLY TO TURB AFP	47W803-2 / B-4	B	Active	2	4	GA	MO
2-FCV-1-17	STM FLOW TO AFPT ISOLATION	47W801-3 / B-4	B	Active	3	4	GA	MO
2-FCV-1-18	STM FLOW TO AFPT ISOLATION	47W801-3 / B-4	B	Active	2	4	GA	MO

**Required Test Frequency:** Isolate on terry turbine steam line break via high temperature signal from TD AFW Pump Room. Full or partial stroke exercise quarterly.

**Deferred Test Frequency:** Full stroke exercise during cold shutdown, but not more often than once every three months.

**Justification for Deferred Test Frequency:** Closing either of these valves during power causes loss of steam to the steam driven auxiliary feedwater pump. Failure of either of these two normally open valves in the closed position will result in no heat sink for the loss of all AC power accident. The valve control circuit is not designed for partial stroke capability.

**Attachment 5 - Deferred Test Justifications**

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**Deferred Test Justification: DTJ-03**

Valve ID	Function	Drawing / Coor	Cat	Act/Pass	Class	Size	Type	Act
1-FCV-3-100	SG-4 FEEDWATER ISOL	47W803-1 / B-3	B	Active	2	18	GA	MO
1-FCV-3-33	SG-1 FEEDWATER ISOL	47W803-1 / D-3	B	Active	2	18	GA	MO
1-FCV-3-47	SG-2 FEEDWATER ISOL	47W803-1 / E-3	B	Active	2	18	GA	MO
1-FCV-3-87	SG-3 FEEDWATER ISOL	47W803-1 / F-3	B	Active	2	18	GA	MO
2-FCV-3-100	STM GEN #4 FW ISOL VLV	47W803-1 / B-3	B	Active	2	18	GA	MO
2-FCV-3-33	SG #1 FW ISOL VLV	47W803-1 / D-3	B	Active	2	18	GA	MO
2-FCV-3-47	STM GEN #2 ISOL VLV	47W803-1 / E-3	B	Active	2	18	GA	MO
2-FCV-3-87	STM GEN #3 ISOL VLV	47W803-1 / F-3	B	Active	2	18	GA	MO

**Required Test Frequency:** The FCVs must close for feedwater isolation, containment isolation and Steam Generator (SG) isolation.

**Deferred Test Frequency:** Full stroke the FCVs during cold shutdown but not more often than once every three months.

**Justification for Deferred Test Frequency:** Exercising these valves during power operation, full or partial, causes a loss of feedwater to the loop they supply. When feedwater flow is restored, the resulting SG level shrink could cause a reactor trip. The FCV valve control circuit is not designed for partial stroke capability.



**Attachment 5 - Deferred Test Justifications**

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**Deferred Test Justification: DTJ-04**

Valve ID	Function	Drawing / Coor	Cat	Act/Pass	Class	Size	Type	Act
1-VLV-3-805	MD AUX FW PUMP A SU CK	47W803-2 / F-5	C	Active	3	8	CK	SA
1-VLV-3-806	MD AUX FW PUMP B SU CK	47W803-2 / F-6	C	Active	3	8	CK	SA
1-VLV-3-810	TD AUX FW PUMP CK	47W803-2 / H-4	C	Active	3	10	CK	SA
2-VLV-3-805	MD AUX FW PMP A SU CK	47W803-2 / D-5	C	Active	3	8	CK	SA
2-VLV-3-806	MD AUX FW PMP B SU CK	47W803-2 / D-6	C	Active	3	8	CK	SA
2-VLV-3-810	TD AUX FW PMP CK	47W803-2 / C-4	C	Active	3	10	CK	SA

**Required Test Frequency:** Suction check valves 3-805, 3-806, and 3-810 open to admit auxiliary feedwater flow from the condensate storage tank to the auxiliary feedwater pump's suction; and close when the ERCW is aligned to auxiliary feedwater pump suction. Discharge check vales 3-820, 3-821, 3-864 open to provide flow to steam generator. Discharge check valves are bidirectional tested closed. Full stroke exercise quarterly.

**Deferred Test Frequency:** MDAFW pump check valves 3-805, 3-806, 3-820, and 3-821 will be full stroked open/closed during refueling outages. TDAFW pump check valves 3-810 and 3-864 will be full stroked open during hot shutdown or hot standby during RFO's and closed during refueling outages.

**Justification for Deferred Test Frequency:** Full stroke open exercising these valves during power operation could result in severe thermal shock to the auxiliary feedwater nozzles and cause SG level transients and a unit trip. TDAFW check valves 3-864 and 3-810 can only be tested to full open when adequate steam supply exists to the turbine in mode 3. Closure testing is performed at RFO intervals as the NRC has determined that the need to setup test equipment is adequate justification to defer backflow testing of a check valves until a refueling outage and testing requires isolating and draining AFW. ISTC 3522 states testing need only be performed at a frequency where it is practicable to perform testing in both directions. Partial opening tests are performed quarterly during pump testing.

**Attachment 5 - Deferred Test Justifications**

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**Deferred Test Justification: DTJ-05**

<b>Valve ID</b>	<b>Function</b>	<b>Drawing / Coor</b>	<b>Cat</b>	<b>Act/Pass</b>	<b>Class</b>	<b>Size</b>	<b>Type</b>	<b>Act</b>
1-VLV-62-525	CENT CHRG PMP DISC CK	47W809-1 / G-8	C	Active	2	4	CK	SA
1-VLV-62-532	CENT CHRG PMP DISC CK	47W809-1 / F-8	C	Active	2	4	CK	SA
2-VLV-62-525	CENT CHRG PMP DISC CK	47W809-1 / G-8	C	Active	2	4	CK	SA
2-VLV-62-532	CENT CHRG PMP DISC CK	47W809-1 / F-8	C	Active	2	4	CK	SA

**Required Test Frequency:** These check valves open to supply charging pump flow from RWST for safety injection. Exercise valve quarterly at full flow

**Deferred Test Frequency:** These valves will be fully exercised during refueling outages.

**Justification for Deferred Test Frequency:** Closure testing is performed quarterly in conjunction with pump testing. The Centrifugal Charging Pumps cannot be run at full flow during normal operation due to the resulting undesirable temperature transients and boron concentration changes. Operation of the CCPs during cold shutdown is undesirable due to the inability to letdown at full flow and the potential for cold over pressurization.

Attachment 5 - Deferred Test Justifications

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Deferred Test Justification: DTJ-06

Valve ID	Function	Drawing / Coor	Cat	Act/Pass	Class	Size	Type	Act
1-VLV-62-504	CHG PMPS SUCT CK VLV FROM RWST	47W809-1 / G-10	C	Active	2	8	CK	SA
2-VLV-62-504	CHRG PMP SUCT CHECK	47W809-1 / G-10	C	Active	2	8	CK	SA

**Required Test Frequency:** This check valve opens to admit flow from refueling water storage tank to the centrifugal charging pumps and closes to prevent back flow to RWST during recirculation mode of ECCS. Exercise quarterly at full flow.

**Deferred Test Frequency:** Exercise valve during refueling outages.

**Justification for Deferred Test Frequency:** Charging pumps cannot be run at full flow or reduced flow taking suction from the RWST without causing undesirable RCS temperature and/or boron concentration changes resulting in boration and power changes and could result in a plant trip. Full flow cannot be obtained during CSD with Reactor vessel head in place due to the inability to letdown full flow and the potential for cold over pressurization of the RCS. In addition, stroking of the check valve closed during power operation is not practical since performance of the closure test requires isolation of the normal charging path for a prolonged period of time and the installation of test equipment.

Attachment 5 - Deferred Test Justifications

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Deferred Test Justification: DTJ-07

Valve ID	Function	Drawing / Coor	Cat	Act/Pass	Class	Size	Type	Act
1-VLV-63-502	RHR PUMP SUCT CHECK	1-47W811-1 / F-10	C	Active	2	12	CK	SA
2-VLV-63-502	RHR PUMP SUCT CHECK	2-47W811-1 / F-10	C	Active	2	12	CK	SA

**Required Test Frequency:** This check valve opens to admit flow from RWST to the RHR pumps during safety injection and closes to prevent flow to RWST during recirculation mode of ECCS. Exercise quarterly at full flow.

**Deferred Test Frequency:** Exercise valve during refueling outages.

**Justification for Deferred Test Frequency:** The RHR pumps do not develop sufficient head to pump to the reactor at normal operating pressures. The refueling cavity dewatering line cannot be used because the valve alignment required results in degrading both trains of RHR. Capabilities of the CVCS letdown system preclude use during cold shutdowns. Exercising 63-502 closed during power operations would require closure of FCV-63-1 and inoperability of both trains of low head SIS.

**Attachment 5 - Deferred Test Justifications**

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**Deferred Test Justification: DTJ-08**

<b>Valve ID</b>	<b>Function</b>	<b>Drawing / Coord</b>	<b>Cat</b>	<b>Act/Pass</b>	<b>Class</b>	<b>Size</b>	<b>Type</b>	<b>Act</b>
1-FCV-32-102	ESSENT CONTROL AIR TR B CNTMT ISOL	47W848-1 / D-9	A	Active	2	2	GL	AO
1-FCV-32-110	CONTROL AIR CNTMT ISOL	47W848-1 / A-9	A	Active	2	2	GL	AO
1-FCV-32-80	ESSENT CONTROL AIR TR A CNTMT ISOL	47W848-1 / C-9	A	Active	2	2	GL	AO
2-FCV-32-103	REACTOR BLDG UNIT 2 TRAIN B ISOL	47W848-1 / F-9	A	Active	2	2	GL	AO
2-FCV-32-111	REACTOR BLDG UNIT 2 NONESNTL CNTL AIR ISOL	47W848-1 / H-9	A	Active	2	2	GL	AO
2-FCV-32-81	REACTOR BLDG UNIT 2 TRAIN A ISOL	47W848-1 / G-9	A	Active	2	2	GL	AO

**Required Test Frequency:** These valves close on a phase B containment isolation signal and open to supply control air to valves inside containment. Full or partial exercise quarterly.

**Deferred Test Frequency:** Full stroke exercise during cold shutdown, but not more often than once every three months.

**Justification for Deferred Test Frequency:** Exercising these valves during operations results in a loss of control air to control valves inside containment and could result in valves going to their failed position and resulting in a possible unit trip. The FCV valve control circuit is not designed for partial stroke capability.

Attachment 5 - Deferred Test Justifications

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Deferred Test Justification: DTJ-09

Valve ID	Function	Drawing / Coor	Cat	Act/Pass	Class	Size	Type	Act
1-FCV-62-69	RC LOOP 3 LETDOWN FLOW	47W809-1 / A-2	B	Active	1	3	GL	AO
1-FCV-62-70	RC LOOP 3 LETDOWN FLOW	47W809-1 / A-2	B	Active	1	3	GL	AO
2-FCV-62-69	RC LOOP 3 LETDOWN FLOW	47W809-1 / A-2	B	Active	1	3	GL	AO
2-FCV-62-70	RC LOOP 3 LETDOWN FLOW	47W809-1 / A-2	B	Active	1	3	GL	AO

**Required Test Frequency:** These valves allow for charging and letdown flow from the CVCS to/from the RCS. FCV-62-72, FCV-62-73, FCV-62-74, FCV-62-77 and FCV-62-90 must close or be capable of closing for containment isolation. FCV-62-69 and 70 must close for RCPB isolation. Full or partial stroke exercise quarterly.

**Deferred Test Frequency:** Full stroke during cold shutdown, but not more often than once every three months.

**Justification for Deferred Test Frequency:** Full or partial stroking of these valves causes thermal cyclic fatigue to the letdown heat exchanger, letdown and charging connections to the RCS. The FCV valve control circuit is not designed for partial stroke capability.

**Attachment 5 - Deferred Test Justifications**

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**Deferred Test Justification: DTJ-10**

Valve ID	Function	Drawing / Coor	Cat	Act/Pass	Class	Size	Type	Act
1-VLV-62-928	BA BLEND ACID SUPPLY	47W809-2 / A-3	C	Active	3	2	CK	SA
1-VLV-62-930	B.A. CK VLV TO CHARGING PUMP SUCTION	47W809-2 / B-4	C	Active	2	3	CK	SA
2-VLV-62-928	BA BLEND ACID SUPPLY	47W809-2 / A-3	C	Active	3	2	CK	SA
2-VLV-62-930	B.A. CK VLV TO CHARGING PUMP SUCTION	47W809-2 / B-4	C	Active	2	3	CK	SA

**Required Test Frequency:** These check valves open to allow boric acid flow to the centrifugal charging pumps suction. Full exercise quarterly.

**Deferred Test Frequency:** Full stroke exercise during refueling outages.

**Justification for Deferred Test Frequency:** Stroking these valves during power operation would cause unacceptable boron transients leading to RCS temperature and power transients which could result in unit trip. In addition, stroking of the check valve closed during power operation is not practical since performance of the closure test requires isolation of the normal charging path for a prolonged period of time and the installation of test equipment.

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**Deferred Test Justification: DTJ-11**

Valve ID	Function	Drawing / Coor	Cat	Act/Pass	Class	Size	Type	Act
1-FCV-63-1	RWST TO RHR PMP FLOW CNTL VLV HW	1-47W811-1 / E-10	B	Active	2	12	GA	MO
2-FCV-63-1	RWST TO RHR PMP FLOW CNTL VLV	2-47W811-1 / E-10	B	Active	2	12	GA	MO

**Required Test Frequency:** Allows flow from the RWST to both trains of RHR Pumps and closes during recirculation mode of ECCS. Full or partial stroke exercise quarterly.

**Deferred Test Frequency:** Full stroke exercise during cold shutdown, but not more often than once every three months.

**Justification for Deferred Test Frequency:** Exercising valve during operation results in losing suction from RWST to both trains of residual heat removal and placing the unit in a condition outside the design and licensing basis. The FCV valve control circuit is not designed for partial stroke capability.



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Deferred Test Justification: DTJ-12

Valve ID	Function	Drawing / Coor	Cat	Act/Pass	Class	Size	Type	Act
1-FCV-63-3	SIS PUMP DISCH TO RWST SHUTOFF VLV	1-47W811-1 / E-8	B	Active	2	2	GL	MO
2-FCV-63-3	SIS PUMP DISCH TO RWST SHUTOFF VLV	2-47W811-1 / E-8	B	Active	2	2	GL	MO

**Required Test Frequency:** This valve allows recirculation of both SIPs miniflow back to the RWST and closes during recirculation mode of ECCS. Full or partial stroke exercise quarterly.

**Deferred Test Frequency:** Full stroke exercise during cold shutdown, but not more often than once every three months.

**Justification for Deferred Test Frequency:** Exercising valve during operation results in losing the miniflow recirculation flow path for both trains of safety injection pumps and placing the unit in a condition outside the design and licensing basis. If the pumps started without recirculation, severe damage to both pumps could occur. The FCV valve control circuit is not designed for partial stroke capability.

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Deferred Test Justification: DTJ-13

Valve ID	Function	Drawing / Coor	Cat	Act/Pass	Class	Size	Type	Act
1-FCV-63-5	RWST TO SIS PMP FLOW CONTROL VLV	1-47W811-1 / D-10	B	Active	2	8	GA	MO
2-FCV-63-5	RWST TO SIS PMP FLOW CONTROL VLV	2-47W811-1 / D-10	B	Active	2	8	GA	MO

**Required Test Frequency:** This valve allows flow from the RWST to both trains of SIPs and closes during recirculation mode of ECCS. Full or partial stroke exercise quarterly.

**Deferred Test Frequency:** Full stroke exercise during cold shutdown, but not more often than once every three months.

**Justification for Deferred Test Frequency:** Exercising valve during operation results in losing suction from RWST to both trains of safety injection pumps and placing the unit in a condition outside the design and licensing basis. The FCV valve control circuit is not designed for partial stroke capability.

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Deferred Test Justification: DTJ-14

Valve ID	Function	Drawing / Coor	Cat	Act/Pass	Class	Size	Type	Act
1-FCV-63-22	SI PUMPS CL INJ	1-47W811-1 / E-6	B	Active	2	4	GA	MO
2-FCV-63-22	SIS PUMPS CL INJ	2-47W811-1 / E-6	B	Active	2	4	GA	MO

**Required Test Frequency:** This valve is normally open and its closure isolates both trains of safety injection from their normal flow path to the cold legs. Full or partial stroke exercise quarterly.

**Deferred Test Frequency:** Full stroke exercise during cold shutdown, but not more often than once every three months.

**Justification for Deferred Test Frequency:** Exercising valve quarterly isolates both trains of safety injection from their normal flow path to the cold legs and places the unit in a condition outside the design and licensing basis. The FCV valve control circuit is not designed for partial stroke capability.

**Attachment 5 - Deferred Test Justifications**

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**Deferred Test Justification: DTJ-15**

Valve ID	Function	Drawing / Coor	Cat	Act/Pass	Class	Size	Type	Act
1-FCV-63-11	RHR HTX 1B-B TO SIS PUMPS	1-47W811-1 / F-9	B	Active	2	8	GA	MO
1-FCV-63-72	CNTMT SUMP FLOW ISOL VLV	1-47W811-1 / H-6	B	Active	2	18	GA	MO
1-FCV-63-73	CNTMT SUMP FLOW ISOL VLV	1-47W811-1 / H-7	B	Active	2	18	GA	MO
1-FCV-63-8	RHR HTX A TO CVCS CHG PUMPS	1-47W811-1 / H-9	B	Active	2	8	GA	MO
2-FCV-63-11	RHR PMP 2B TO SI PUMP	2-47W811-1 / F-9	B	Active	2	8	GA	MO
2-FCV-63-72	CNTMT SUMP FLOW ISOL VLV	2-47W811-1 / H-6	B	Active	2	18	GA	MO
2-FCV-63-73	CNTMT SUMP FLOW ISOL VLV	2-47W811-1 / H-7	B	Active	2	18	GA	MO
2-FCV-63-8	RHR HTX 2A TO CVCS CHG PUMPS	2-47W811-1 / H-9	B	Active	2	8	GA	MO

**Required Test Frequency:** FCV-63-8 and 11 connect the discharge of the low head RHRPs to the suction of the higher head CCPs and SIPs during the recirculation mode of ECCS. FCV-63-72 and 73 are the containment ECCS sump isolation valves that open to provide the supply to the RHRP's suction during the recirculation mode of ECCS. Full or partial stroke exercise quarterly.

**Deferred Test Frequency:** Full stroke exercise during cold shutdown, but not more often than once every three months.

**Justification for Deferred Test Frequency:** These valves are associated with the containment sump and their operation during power operation could cause loss of the RWST inventory and flooding of lower containment which would result in inoperability of both trains of safety injection; placing the unit in a condition outside the design and licensing basis. FCV-63-8 and 11 are interlocked with FCV-63-72 and 73. The FCV valve control circuit is not designed for partial stroke capability.

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**Deferred Test Justification: DTJ-16**

Valve ID	Function	Drawing / Coor	Cat	Act/Pass	Class	Size	Type	Act
1-FCV-63-172	RHR HL INJ TO LOOPS 1 & 3	1-47W811-1 / G-6	B	Active	2	12	GA	MO
1-FCV-63-93	RHR CL INJ LOOPS 2&3	1-47W811-1 / G-7	B	Active	2	8	GA	MO
1-FCV-63-94	RHR PUMP 1B DISCH TO CL 1&4	1-47W811-1 / G-7	B	Active	2	8	GA	MO
1-FCV-74-33	RHR HX CROSSTIE 1A ISOL	47W810-1 / D-5	B	Active	2	8	GA	MO
1-FCV-74-35	RHR HX CROSSTIE 1B ISOL	47W810-1 / B-5	B	Active	2	8	GA	MO
2-FCV-63-172	RHR INJECTION OR RECIRC AFTER LOCA	2-47W811-1 / G-6	B	Active	2	12	GA	MO
2-FCV-63-93	RHR CL INJ TO LOOPS 2&3	2-47W811-1 / G-7	B	Active	2	8	GA	MO
2-FCV-63-94	RHR CL INJ TO LOOPS 1&4	2-47W811-1 / G-7	B	Active	2	8	GA	MO
2-FCV-74-33	RHR HT EXCH 2A BYPASS	47W810-1 / D-5	B	Active	2	8	GA	MO
2-FCV-74-35	RHR HT EXCH B BYPASS	47W810-1 / B-5	B	Active	2	8	GA	MO

**Required Test Frequency:** These valves are associated with the RHR flowpaths to the RCS hot and cold legs. Full or partial stroke exercise quarterly.

**Deferred Test Frequency:** Full stroke exercise during cold shutdown, but not more often than once every three months.

**Justification for Deferred Test Frequency:** Closing the normally open valves or opening the normally closed hot leg injection valve FCV-63-172 during operation results in less than the required RHR cold leg injection flow capability placing the unit in a condition outside the design and licensing basis. The FCV valve control circuit is not designed for partial stroke capability.

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**Deferred Test Justification: DTJ-18**

Valve ID	Function	Drawing / Coor	Cat	Act/Pass	Class	Size	Type	Act
1-FCV-67-103	LWR CNTMT B CLRS DISCH ISOL VLV INSIDE CNTMT	1-47W845-3 / E-6	A	Active	2	6	BF	MO
1-FCV-67-104	LWR CNTMT B CLRS DISCH ISOL VLV OUTSIDE CNTMT	1-47W845-3 / E-7	A	Active	2	6	BF	MO
1-FCV-67-105	LWR CNTMT C COOLERS SUPPLY ISOL VLV	1-47W845-3 / G-5	A	Active	2	6	BF	MO
1-FCV-67-106	LOWER CNTMT A COOLERS SUPPLY ISOL VLV	1-47W845-3 / H-5	A	Active	2	6	BF	MO
1-FCV-67-107	LWR CNTMT A COOLERS SUPPLY ISOL VLV	1-47W845-3 / H-7	A	Active	2	6	BF	MO
1-FCV-67-111	LWR CNTMT D CLRS DISCH ISOL VLV INSIDE CNTMT	1-47W845-3 / D-6	A	Active	2	6	BF	MO
1-FCV-67-112	LWR CNTMT CLR 1D OUT ISOL- OUTSIDE	1-47W845-3 / D-7	A	Active	2	6	BF	MO
1-FCV-67-83	LOWER CNTMT D COOLERS SUPPLY ISOL VLV	1-47W845-3 / D-7	A	Active	2	6	BF	MO
1-FCV-67-87	LWR CNTMT A CLRS DISCH ISOL VLV INSIDE CNTMT	1-47W845-3 / G-6	A	Active	2	6	BF	MO
1-FCV-67-88	LWR CNTMT A CLRS DISCH ISOL VLV OUTSIDE CNTMT	1-47W845-3 / G-7	A	Active	2	6	BF	MO
1-FCV-67-89	LOWER CNTMT D COOLERS SUPPLY ISOL VLV	1-47W845-3 / D-5	A	Active	2	6	BF	MO
1-FCV-67-90	LOWER CNTMT B COOLERS SUPPLY ISOL VLV	1-47W845-3 / F-5	A	Active	2	6	BF	MO
1-FCV-67-91	LWR CNTMT B COOLERS SUPPLY ISOL VLV	1-47W845-3 / F-7	A	Active	2	6	BF	MO
1-FCV-67-95	LWR CNTMT C CLRS DISCH ISOL VLV INSIDE CNTMT	1-47W845-3 / F-6	A	Active	2	6	BF	MO
1-FCV-67-96	LWR CNTMT C CLRS DISCH ISOL VLV OUTSIDE CNTMT	1-47W845-3 / F-7	A	Active	2	6	BF	MO
1-FCV-67-99	LWR CNTMT C COOLERS SUPPLY ISOL VLV	1-47W845-3 / G-7	A	Active	2	6	BF	MO
2-FCV-67-103	LWR CNTMT B CLRS DISCH ISOL VLV INSIDE CNTMT	2-47W845-3 / E-6	A	Active	2	6	BF	MO
2-FCV-67-104	LWR CNTMT B CLRS DISCH ISOL VLV OUTSIDE CNTMT	2-47W845-3 / E-7	A	Active	2	6	BF	MO
2-FCV-67-105	VALVE, CONTROL, FLOW	2-47W845-3 / G-5	A	Active	2	6	BF	MO
2-FCV-67-106	VALVE, CONTROL, FLOW	2-47W845-3 / H-5	A	Active	2	6	BF	MO
2-FCV-67-107	LWR CNTMT A COOLERS SUPPLY ISOL VLV	2-47W845-3 / H-7	A	Active	2	6	BF	MO
2-FCV-67-111	LWR CNTMT D CLRS DISCH ISOL VLV INSIDE CNTMT	2-47W845-3 / D-6	A	Active	2	6	BF	MO
2-FCV-67-112	LWR CNTMT D CLRS DISCH ISOL VLV OUTSIDE CNTMT	2-47W845-3 / D-7	A	Active	2	6	BF	MO
2-FCV-67-83	LOWER CNTMT D COOLERS SUPPLY ISOL VLV	2-47W845-3 / D-7	A	Active	2	6	BF	MO
2-FCV-67-87	LWR CNTMT A CLRS DISCH ISOL VLV INSIDE CNTMT	2-47W845-3 / G-6	A	Active	2	6	BF	MO
2-FCV-67-88	LWR CNTMT A CLRS DISCH ISOL VLV OUTSIDE CNTMT	2-47W845-3 / G-7	A	Active	2	6	BF	MO

**Attachment 5 - Deferred Test Justifications**

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**Deferred Test Justification: DTJ-18**

Valve ID	Function	Drawing / Coor	Cat	Act/Pass	Class	Size	Type	Act
2-FCV-67-89	VALVE, CONTROL, FLOW	2-47W845-3 / D-5	A	Active	2	6	BF	MO
2-FCV-67-90	VALVE, CONTROL, FLOW	2-47W845-3 / F-5	A	Active	2	6	BF	MO
2-FCV-67-91	LWR CNTMT B COOLERS SUPPLY ISOL VLV	2-47W845-3 / F-7	A	Active	2	6	BF	MO
2-FCV-67-95	LWR CNTMT C CLRS DISCH ISOL VLV INSIDE CNTMT	2-47W845-3 / F-6	A	Active	2	6	BF	MO
2-FCV-67-96	LWR CNTMT C CLRS DISCH ISOL VLV OUTSIDE CNTMT	2-47W845-3 / F-7	A	Active	2	6	BF	MO
2-FCV-67-99	LWR CNTMT C COOLERS SUPPLY ISOL VLV	2-47W845-3 / G-7	A	Active	2	6	BF	MO

**Required Test Frequency:** Full or partial stroke quarterly

**Deferred Test Frequency:** Full stroke during cold shutdown, but not more often than once every three months.

**Justification for Deferred Test Frequency:** Exercising valve quarterly causes a loss of flow to lower compartment coolers, control rod system drive coolers and reactor coolant pump motor coolers leading to undesirable temperature transients inside the various compartments of the Sequoyah ice condenser containment. The FCV valve control circuit is not designed for partial stroke capability.

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**Deferred Test Justification: DTJ-19**

Valve ID	Function	Drawing / Coor	Cat	Act/Pass	Class	Size	Type	Act
1-FCV-67-146	COMPONENT CLG HTX 1A1/1A2 DISCH CONTROL VLV	47W845-2 / C-7	B	Active	3	24	BF	MO
2-FCV-67-146	COMPONENT CLG HTX 2A1/2A2 DISCH CONTROL VLV	47W845-2 / C-7	B	Active	3	24	BF	MO

**Required Test Frequency:** This valve isolates and throttles the ERCW flow through the CCS plate heat exchangers for Train A and loads necessary for continued safe operation of the unit. Full or partial stroke quarterly.

**Deferred Test Frequency:** Full stroke during cold shutdown, but not more often than once every three months.

**Justification for Deferred Test Frequency:** Exercising valve quarterly causes a loss of cooling water flow to the CCS plate heat exchangers for Train A and all the loads necessary to support operation of the unit (e.g. RCP oil coolers, RCP thermal barriers, letdown and seal return heat exchangers, and various pump seal coolers. The FCV valve control circuit is not designed for partial stroke capability.



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**Deferred Test Justification: DTJ-20**

Valve ID	Function	Drawing / Coor	Cat	Act/Pass	Class	Size	Type	Act
1-FCV-72-40	RHR CNTMT SPRAY HDR 1A ISOL	1-47W812-1 / F-5	A	Active	2	8	GA	MO
1-FCV-72-41	RHR CNTMT SPRAY HDR 1B ISOL	1-47W812-1 / G-5	A	Active	2	8	GA	MO
2-FCV-72-40	RHR SPRAY HDR 2A ISOLATION	2-47W812-1 / F-5	A	Active	2	8	GA	MO
2-FCV-72-41	RHR SPRAY HDR 2B ISOL VLV	2-47W812-1 / G-5	A	Active	2	8	GA	MO

**Required Test Frequency:** These valves allow flow to the RHR spray headers inside upper containment. Full or partial stroke quarterly.

**Deferred Test Frequency:** Full stroke exercise during cold shutdown, but not more often than once every three months.

**Justification for Deferred Test Frequency:** These valves are interlocked with the containment sump valves. Exercising these valves during operation could result in flooding of lower containment or would result in inoperability of both trains of low head safety injection since operation results in less than the required RHR cold leg injection flow capability; placing the unit in a condition outside the design and licensing basis. The FCV valve control circuit is not designed for partial stroke capability.

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Deferred Test Justification: DTJ-21

Valve ID	Function	Drawing / Coor	Cat	Act/Pass	Class	Size	Type	Act
1-FCV-74-1	RHR SUCTION FROM LOOP 4 HL HW	47W810-1 / F-3	A	Active	1	14	GA	MO
1-FCV-74-2	RHR SYSTEM ISOLATION VLV	47W810-1 / F-3	A	Active	1	14	GA	MO
2-FCV-74-1	RHR SUCTION FROM LOOP 4 HL	47W810-1 / F-3	A	Active	1	14	GA	MO
2-FCV-74-2	RHR SYSTEM ISOLATION VLV	47W810-1 / F-3	A	Active	1	14	GA	MO

**Required Test Frequency:** These valves allow flow from the RCS to the RHR system for normal cooldown and during shutdown for removal of decay heat. They are opened to provide suction from the RCS for the Residual Heat Removal pumps when RCS pressure is below set point. They are maintained closed during operation to isolate the high pressure RCS from the low pressure RHR system. Full or partial stroke quarterly.

**Deferred Test Frequency:** These valves will be full stroke exercised (to the open position) while shutting down when going on RHR and starting up (to the closed position) when going off RHR if not exercised in the last three months or the projected outage duration would cause valves to require testing prior to startup. Testing may also be performed during core off load when RHR is not required.

**Justification for Deferred Test Frequency:** Valves have interlocks to prevent opening them when RCS is above the RHR design temperature and pressure. Exercising valve during operation results in over pressurizing RHR. Full stroking of RHR return valves during shutdown isolates decay heat removal capacity, mixing capacity needed to maintain uniform boron concentration within the RCS, and ability to produce gradual reactivity changes during boron concentration reductions in the RCS. It is generally not considered prudent to remove a valve from its safety related position to perform a periodic code test when that testing places the unit in an LCO and an overall degraded condition. With respect to these specific valves, it is deemed additionally ill advised in consideration of Unresolved Safety Issues (USI) A 31, "Residual Heat Removal Shutdown Requirements" and A 45, "Shutdown Decay Heat Removal Requirements" which addresses concerns regarding loss of residual heat removal capability leading to core damage. Reliability of performing heat removal functions is specifically identified as being dependent on the frequency of events that jeopardize decay heat removal operations. Alternative testing will provide an acceptable level of quality and safety and the increase in the level of safety by normal testing is not commensurate with the difficulties or risks involved. The FCV valve control circuit is not designed for partial stroke capability.

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**Deferred Test Justification: DTJ-22**

Valve ID	Function	Drawing / Coor	Cat	Act/Pass	Class	Size	Type	Act
1-VLV-74-514	RHR PUMP DISC CHECK	47W810-1 / E-9	C	Active	2	8	CK	SA
1-VLV-74-515	RHR PUMP 1B DISCH CHECK VLV	47W810-1 / B-9	C	Active	2	8	CK	SA
1-VLV-74-554	RHR HX 1A DISCH CHECK VLV	47W810-1 / E-6	C	Active	2	8	CK	SA
1-VLV-74-555	RHR HX 1B DISCH CHECK VLV	47W810-1 / B-6	C	Active	2	8	CK	SA
2-VLV-74-514	RHR PUMP DISC CHECK	47W810-1 / E-9	C	Active	2	8	CK	SA
2-VLV-74-515	RHR PUMP 2B DISC CHECK	47W810-1 / B-9	C	Active	2	8	CK	SA
2-VLV-74-554	RHR HX DISC CHECK	47W810-1 / E-6	C	Active	2	8	CK	SA
2-VLV-74-555	RHR HX DISC CHECK	47W810-1 / B-6	C	Active	2	8	CK	SA

**Required Test Frequency:** These check valves open to allow flow from the RHR Pumps and close to prevent reverse flow through an idle pump or miniflow competition (e.g. a stronger pump causing a parallel weaker pump to be deadheaded). Full stroke exercise quarterly.

**Deferred Test Frequency:** Check valves 74-514, 515, 554, and 555 will be exercised during refueling outages.

**Justification for Deferred Test Frequency:** These valves cannot be exercised open quarterly since the RHR pumps do not develop enough pressure to overcome normal RCS pressure. The refueling dewatering line cannot be used because opening HCV-74-34 would cause degradation of both trains of RHR and placing the unit outside the design and licensing basis. Valves 74-514 and 515 cannot be stoked closed since the opening of HCV-74 36 and 37 would also degrade both trains of RHR and would also allow water to bypass the RHR Heat Exchangers which removes the pump heat during miniflow operation. Since RHR is normally in service during cold shutdown, manipulation of flows to meet test conditions could adversely affect safe operation of the unit.

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Deferred Test Justification: DTJ-23

Valve ID	Function	Drawing / Coor	Cat	Act/Pass	Class	Size	Type	Act
1-VLV-81-502	CK VA AT CONTAINMENT	47W819-1 / F-4	A/C	Active	2	3	CK	SA
2-VLV-81-502	CK VA AT CONTAINMENT	47W819-1 / C-4	A/C	Active	2	3	CK	SA

**Required Test Frequency:** This check valve closes for containment isolation. Full stroke quarterly.

**Deferred Test Frequency:** This valve will be exercised closed at RFO intervals

**Justification for Deferred Test Frequency:** Exercising this valve results in loss of primary water to the RCP standpipes and PRT. Personnel radiation exposures and valve inaccessibility also prohibit exercising these valves quarterly. Testing requires draining system and attaching test equipment. The NRC has determined that the need to setup test equipment is adequate justification to defer backflow testing of a check valves until a refueling outage.

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**Deferred Test Justification: DTJ-24**

Valve ID	Function	Drawing / Coor	Cat	Act/Pass	Class	Size	Type	Act
1-VLV-63-581	INJ TK CHECK	1-47W811-1 / C-6	C	Active	1	3	CK	SA
1-VLV-63-586	INJ TK CHECK CL L1	1-47W811-1 / E-1	C	Active	1	1.5	CK	SA
1-VLV-63-587	INJ TK CHECK CL L2	1-47W811-1 / D-2	C	Active	1	1.5	CK	SA
1-VLV-63-588	INJ TK CHECK CL L3	1-47W811-1 / E-2	C	Active	1	1.5	CK	SA
1-VLV-63-589	INJ TK CHECK CL L4	1-47W811-1 / F-2	C	Active	1	1.5	CK	SA
2-VLV-63-581	INJ TK CHECK	2-47W811-1 / C-6	C	Active	1	3	CK	SA
2-VLV-63-586	INJ TK CHECK CL L1	2-47W811-1 / E-1	C	Active	1	1.5	CK	SA
2-VLV-63-587	INJ TK CHECK CL L2	2-47W811-1 / D-2	C	Active	1	1.5	CK	SA
2-VLV-63-588	INJ TK CHECK CL L3	47W811-1 / E-2	C	Active	1	1.5	CK	SA
2-VLV-63-589	INJ TK CHECK CL L4	2-47W811-1 / F-2	C	Active	1	1.5	CK	SA

**Required Test Frequency:** These check valves open to admit flow from centrifugal charging pump(s) to the RCS cold legs during safety injection and closes for RCPB isolation. Exercise valve on a quarterly basis at full flow.

**Deferred Test Frequency:** Exercise valve each refueling outage.

**Justification for Deferred Test Frequency:** RCS letdown capacity will not allow full flow injection with the reactor vessel head on. Valve cannot be part stroked without discharging cold, borated water into the reactor. This would cause an undesirable temperature and boron concentration transients which could result in a safety injection or unit trip. Cold water causes thermal stratification stresses at injection nozzles. The last four valves are in parallel and individual branch line flows are only measured during refueling testing since instrumentation is not available to measure the individual branch flows.

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**Deferred Test Justification: DTJ-25**

<b>Valve ID</b>	<b>Function</b>	<b>Drawing / Coor</b>	<b>Cat</b>	<b>Act/Pass</b>	<b>Class</b>	<b>Size</b>	<b>Type</b>	<b>Act</b>
1-VLV-63-524	SIS PUMP DISCH CHECK	1-47W811-1 / F-8	C	Active	2	4	CK	SA
1-VLV-63-526	SIS PUMP DISCH CHECK	1-47W811-1 / D-8	C	Active	2	4	CK	SA
2-VLV-63-524	SIS PUMP DISCH CHECK	2-47W811-1 / F-8	C	Active	2	4	CK	SA
2-VLV-63-526	SIS PUMP DISCH CHECK	2-47W811-1 / D-8	C	Active	2	4	CK	SA

**Required Test Frequency:** These check valves open to admit flow from SIS pumps to RCS during LOCA and close to prevent flow through idle pump. Exercise quarterly at full flow.

**Deferred Test Frequency:** Exercise valves open during refueling outage.

**Justification for Deferred Test Frequency:** SIS pumps do not develop sufficient head to pump to the RCS during normal operation. Closure testing is performed quarterly with pump testing.

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**Deferred Test Justification: DTJ-26**

Valve ID	Function	Drawing / Coor	Cat	Act/Pass	Class	Size	Type	Act
1-FCV-67-123	CNTMT SPRAY HTX B SUPPLY CONTROL VLV	47W845-2 / C-9	B	Active	3	18	BF	MO
1-FCV-67-124	CNTMT SPRAY HTX B DISCH VLV	47W845-2 / E-8	B	Active	3	18	BF	MO
1-FCV-67-125	CNTMT SPRAY HTX A SUPPLY CONTROL VLV	47W845-2 / C-8	B	Active	3	18	BF	MO
1-FCV-67-126	CNTMT SPRAY HTX A DISCH VLV	47W845-2 / D-7	B	Active	3	18	BF	MO
2-FCV-67-123	CNTMT SPRAY HTX B SUPPLY CONTROL VLV	47W845-2 / D-2	B	Active	3	18	BF	MO
2-FCV-67-124	CNTMT SPRAY HTX B DISCH VLV	47W845-2 / E-4	B	Active	3	18	BF	MO
2-FCV-67-125	CNTMT SPRAY HTX A SUPPLY CONTROL VLV	47W845-2 / C-3	B	Active	3	18	BF	MO
2-FCV-67-126	CNTMT SPRAY HTX A DISCH VLV	47W845-2 / D-5	B	Active	3	18	BF	MO

**Required Test Frequency:**

These valves open to provide ERCW cooling water flow to the containment spray heat exchanger shell side. Exercise valve on a quarterly basis, full or partial stroke.

**Deferred Test Frequency:**

Full stroke exercise these valves in conjunction with cold shutdowns, not to exceed once per quarter in the event of frequent cold shutdowns, when heat exchangers are maintained in wet layup.

**Justification for Deferred Test Frequency:**

The raw water of the ERCW system contains chlorides which can cause heat exchanger tube pitting, and organisms which can produce microbiologically induced corrosion in the heat exchanger piping and shell. To preserve their integrity, the heat exchangers are placed in wet lay up with demineralized water and corrosion inhibitors, and their chemistry is monitored. Whenever the chemistry specifications are exceeded, the heat exchangers are drained, flushed, and again placed in lay up status. During modes 1, 2, 3, and 4, Technical Specification 3.6.6 requires that the plant maintain two independent Containment Spray Subsystems operable or a Tech Spec will be applicable. When a containment spray heat exchanger is drained during the cleanup/lay up operation, that containment spray loop is declared inoperable making a Tech Spec applicable for the unit. Chemistry data demonstrates that the quarterly cycling of the inlet and outlet heat exchanger valves for testing increases the intrusion of raw water, thus forcing the plant to complete the Tech Spec more often to preserve the integrity of the heat exchangers.

**Attachment 5 - Deferred Test Justifications**

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**Deferred Test Justification: DTJ-27**

Valve ID	Function	Drawing / Coord	Cat	Act/Pass	Class	Size	Type	Act
1-VLV-3-814	MD AUX FW PUMP MIN CK	47W803-2 / G-5	C	Active	3	1.5	CK	SA
1-VLV-3-815	MD AUX FW PUMP MIN CK	47W803-2 / G-6	C	Active	3	1.5	CK	SA
1-VLV-3-818	TD AUX FW PUMP MIN CK	47W803-2 / G-7	C	Active	3	1.5	CK	SA
2-VLV-3-814	MD AUX FW PMP MIN CK	47W803-2 / E-5	C	Active	3	1.5	CK	SA
2-VLV-3-815	MD AUX FW PMP MIN CK	47W803-2 / E-6	C	Active	3	1.5	CK	SA
2-VLV-3-818	TD AUX FW PMP MIN CK	47W803-2 / C-6	C	Active	3	1.5	CK	SA

**Required Test Frequency:** These check valves open to provide the minflow path to protect the pumps. Bi directional close test quarterly.

**Deferred Test Frequency:** These valves will be exercised open once each refueling outage interval.

**Justification for Deferred Test Frequency:** Exercise testing these valves to the closed position during operation at power is not practical because there are no system provisions for verifying reverse flow closure. The only method of verifying closure during power operation would be to perform a leakage test with an outside pressure source. To perform closure testing during cold shutdowns would involve setting up test equipment and providing an alternate pressure source. The NRC has determined that the need to setup test equipment is adequate justification to defer backflow testing of a check valves until a refueling outage. Full flow open testing of suction and discharge check valves would cause undesirable transients on plant operation.



**Attachment 5 - Deferred Test Justifications**

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**Deferred Test Justification: DTJ-28**

Valve ID	Function	Drawing / Coor	Cat	Act/Pass	Class	Size	Type	Act
1-VLV-72-506	PUMP SUCTION CHECK	1-47W812-1 / D-10	C	Active	2	12	CK	SA
1-VLV-72-507	PUMP SUCTION CHECK	1-47W812-1 / B-10	C	Active	2	12	CK	SA
2-VLV-72-506	PUMP SUCTION CHECK	2-47W812-1 / D-10	C	Active	2	12	CK	SA
2-VLV-72-507	PUMP SUCTION CHECK	2-47W812-1 / B-10	C	Active	2	12	CK	SA

**Required Test Frequency:** These check valves open to provide containment spray flow. Bi directional close test quarterly.

**Deferred Test Frequency:** These valves will be exercised at refuel outage interval.

**Justification for Deferred Test Frequency:** Open testing is performed in conjunction with pump testing. Exercise testing these valves to the closed position during operation at power is not practical because there are no system provisions for verifying reverse flow closure. To perform closure testing online or during cold shutdowns would involve setting up test equipment to measure a DP across the valves.

**Attachment 5 - Deferred Test Justifications**

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**Deferred Test Justification: DTJ-29**

Valve ID	Function	Drawing / Coor	Cat	Act/Pass	Class	Size	Type	Act
1-LCV-62-132	VCT OUTLET ISO VLV LEVEL CONTROL	47W809-1 / D-10	B	Active	2	4	GA	MO
1-LCV-62-133	VCT OUTLET ISO VLV LEVEL CONTROL	47W809-1 / E-10	B	Active	2	4	GA	MO
2-LCV-62-132	VCT OUTLET ISO VLV TO CCP	47W809-1 / D-10	B	Active	2	4	GA	MO
2-LCV-62-133	VCT OUTLET ISO VLV TO CCP	47W809-1 / E-10	B	Active	2	4	GA	MO

**Required Test Frequency:** These valves operate to switch the centrifugal charging pumps suction from the VCT to the RWST on a safety injection or low VCT level signal. Full or partial stroke exercise quarterly.

**Deferred Test Frequency:** Full stroke exercise during cold shutdown, but not more often than once every three months.

**Justification for Deferred Test Frequency:** Stroking these valves during power operation would cause unacceptable boron transients leading to RCS temperature and power transients which could result in unit trip. The FCV valve control circuit is not designed for partial stroke capability.

**Attachment 5 - Deferred Test Justifications**

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**Deferred Test Justification: DTJ-30**

Valve ID	Function	Drawing / Coor	Cat	Act/Pass	Class	Size	Type	Act
1-FSV-68-394	REACTOR VESSEL HEAD VENT ISLN VALVE	47W813-1 / C-7	B	Active	2	1	GL	SO
1-FSV-68-395	REACTOR VESSEL HEAD VENT ISLN VALVE	47W813-1 / C-7	B	Active	2	1	GL	SO
2-FSV-68-394	REACTOR VESSEL HEAD VENT ISLN VALVE	47W813-1 / C-7	B	Active	2	1	GL	SO
2-FSV-68-395	REACTOR VESSEL HEAD VENT ISLN VALVE	47W813-1 / C-7	B	Active	2	1	GL	SO

**Required Test Frequency:** These valves open to allow for RCS venting and close for RCPB isolation. Full or partial stroke quarterly.

**Deferred Test Frequency:** Full stroke during cold shutdown, but not more often than once every three months.

**Justification for Deferred Test Frequency:** NRC has requested that Reactor Vessel Head Vents be tested during cold shutdown rather than during power operation. Stroking these valves at power could result in depressurization of the RCS and resulting unit trip and safety injection. Failure of these valves to close when stroked could result in a LOCA.

**Attachment 5 - Deferred Test Justifications**

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**Deferred Test Justification: DTJ-31**

Valve ID	Function	Drawing / Coor	Cat	Act/Pass	Class	Size	Type	Act
2-VLV-67-580A	ERCW SUP UCV CLR CK	2-47W845-3 / C-4	A/C	Active	2	2	CK	SA
2-VLV-67-580B	ERCW SUP UCV CLR CK	2-47W845-3 / B-4	A/C	Active	2	2	CK	SA
2-VLV-67-580C	ERCW SUP UCV CLR CK	2-47W845-3 / B-4	A/C	Active	2	2	CK	SA
2-VLV-67-580D	ERCW SUP UCV CLR CK	2-47W845-3 / A-4	A/C	Active	2	2	CK	SA

**Required Test Frequency:** These normally open check valves must close for containment isolation. Closure test quarterly.

**Deferred Test Frequency:** Full stroke closed at refueling outage interval.

**Justification for Deferred Test Frequency:** The upper compartment ventilation cooler containment isolation check valves are tested closed by using static head pressure to close the check valves. These valves are located in upper containment, requiring containment access, and require hooking up hoses to drain. The NRC has determined that the need to setup test equipment is adequate justification to defer backflow testing of a check valves until a refueling outage.

**Attachment 5 - Deferred Test Justifications**

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**Deferred Test Justification: DTJ-33**

Valve ID	Function	Drawing / Coor	Cat	Act/Pass	Class	Size	Type	Act
1-VLV-63-640	RHR HX DISCH CHECK	1-47W811-1 / G-3	A/C	Active	1	8	CK	SA
1-VLV-63-641	RHR HX DISCH CHECK	1-47W811-1 / F-1	A/C	Active	1	6	CK	SA
1-VLV-63-643	RHR HX DISCH CHECK	1-47W811-1 / G-3	A/C	Active	1	8	CK	SA
1-VLV-63-644	RHR HX DISCH CHECK	1-47W811-1 / D-2	A/C	Active	1	6	CK	SA
2-VLV-63-640	RHR HX DISCH CHECK	2-47W811-1 / G-3	A/C	Active	1	8	CK	SA
2-VLV-63-641	RHR HX DISCH CHECK	2-47W811-1 / F-1	A/C	Active	1	6	CK	SA
2-VLV-63-643	RHR HX DISCH CHECK	2-47W811-1 / G-3	A/C	Active	1	8	CK	SA
2-VLV-63-644	RHR HX DISCH CHECK	2-47W811-1 / D-2	A/C	Active	1	6	CK	SA

**Required Test Frequency:** These check valves open to allow flow from the RHR Pumps through Hot Leg Injection and close for RCS pressure boundary (PIV). Full stroke exercise quarterly.

**Deferred Test Frequency:** Check valves will be exercised open during refueling outages and closed (leak check) at the TS frequency for PIV's.

**Justification for Deferred Test Frequency:** These valves cannot be exercised open quarterly since the RHR pumps do not develop enough pressure to overcome normal RCS pressure and are inaccessible for closure testing. Open testing by using another system pump may create overpressure conditions with RHR. Injection during operating periods may cause unacceptable thermal transients on nozzles. Performance of opening test require the installation of temporary flow meters. The NRC has determined that the need to setup test equipment is adequate justification to defer testing of a check valve until a refueling outage.

## Attachment 5 - Deferred Test Justifications

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## Deferred Test Justification: DTJ-34

Valve ID	Function	Drawing / Coord	Cat	Act/Pass	Class	Size	Type	Act
0-VLV-70-504	CCS PMP C-S DISCH CK VLV	47W859-1 / D-8	C	Active	3	16	CK	SA

**Required Test Frequency:** This check valve opens to provide flow from the C-S pump to B-Train components in Unit 1 and Unit 2. It closes to prevent diversion of flow when C-S pump is stopped and either 1B-B or 2B-B pump is supplying flow to B-Train components. Full stroke closed quarterly.

**Deferred Test Frequency:** Full stroke exercise when either Unit 1 or Unit 2 enters cold shutdown.

**Justification for Deferred Test Frequency:** The system alignment necessary to exercise this valve to the closed position requires either the 1B-B or 2B-B CCS pump to be aligned to B-Train CCS header. To achieve this configuration, motor operated valves which are normally closed with power removed (as required by Appendix R) must have their power restored and opened with an operator stationed at the breaker to facilitate realignment in case of a fire. In addition, this configuration results in an increased vulnerability to single point failure because loss of the only remaining A-Train pump (1A-A or 2A-A) will impact RCP Oil Coolers for the associated unit. Loss of CCS flow to an RCP motor requires that the RCP be stopped within two (2) minutes. It is not likely the system could be realigned from the test configuration to normal configuration within the required time limit and result in an unnecessary unit shutdown.

**Attachment 5 - Deferred Test Justifications**

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**Deferred Test Justification: DTJ-35**

Valve ID	Function	Drawing / Coor	Cat	Act/Pass	Class	Size	Type	Act
1-FCV-62-61	SEAL FLOW ISO VLV	47W809-1 / C-6	A	Active	2	4	GA	MO
1-FCV-62-63	SEAL FLOW ISO VLV	47W809-1 / B-7	A	Active	2	4	GA	MO
2-FCV-62-61	SEAL FLOW ISO VLV	47W809-1 / C-6	A	Active	2	4	GA	MO
2-FCV-62-63	SEAL FLOW ISO VLV	47W809-1 / B-7	A	Active	2	4	GA	MO

**Required Test Frequency:** There valves are in the RCP seal water return path and isolate on a containment isolation signal. Full or partial stroke exercise quarterly during Reactor Coolant Pump operation.

**Deferred Test Frequency:** Full stroke exercise during cold shutdown when the RCPs are stopped, but not more often than once every three months.

**Justification for Deferred Test Frequency:** Exercising these valves during RCP operation challenges a seal water return relief valve and could cause loss of seal water return and probable damage to the reactor coolant pump seals. The FCV valve control circuit is not designed for partial stroke capability. Stopping the RCP's for testing would increase the wear and stress on the RCP's, increase the number of cycles on other plant equipment, and would extend the length of cold shutdown outages.

**Attachment 5 - Deferred Test Justifications**

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**Deferred Test Justification: DTJ-36**

Valve ID	Function	Drawing / Coor	Cat	Act/Pass	Class	Size	Type	Act
1-FCV-70-133	RC PMP THRM BAR CONT ISOL VLV	47W859-2/3 / H-2	B	Active	3	3	GA	MO
1-FCV-70-134	RCP THRMAL BARRIER SUPPLY ISOL	47W859-2/3 / H-3	A	Active	2	3	GA	MO
1-FCV-70-87	RC PMP THRM BARR RET CONTMNT ISOL VLV	47W859-2/3 / H-10	A	Active	2	3	GA	MO
1-FCV-70-90	RCP THRMAL BARRIER RETURN ISOL	47W859-2/3 / E-10	A	Active	2	3	GA	MO
2-FCV-70-133	RC PMP THRM BAR CONT ISOL VLV	47W859-2/3 / H-2	B	Active	3	3	GA	MO
2-FCV-70-134	RC PMP THRM BAR CONT ISOL VLV	47W859-2/3 / H-3	A	Active	2	3	GA	MO
2-FCV-70-87	RC PMP THRM BARR RET CONTMNT ISOL VLV	47W859-3 / H-9	A	Active	2	3	GA	MO
2-FCV-70-90	RC PMP THRM BARR RET CONTMNT ISOL VLV	47W859-2/3 / E-10	A	Active	2	3	GA	MO

**Required Test Frequency:** These valves allow flow to the RCP thermal barriers and close for containment isolation and to isolate a thermal barrier flow mismatch, except FCV 70 133 which closes to isolate a thermal barrier flow mismatch only. Full or partial stroke quarterly during RCP operation.

**Deferred Test Frequency:** Full stroke exercise during cold shutdown when the RCPs are stopped, but not more often than once every three months.

**Justification for Deferred Test Frequency:** Exercising these valves during operation of the RCP results in loss of cooling water flow to all four reactor coolant pump thermal barrier coolers introducing the possibility of thermal barrier failure. The FCV valve control circuit is not designed for partial stroke capability. Stopping the RCP's for testing would increase the wear and stress on the RCP's, increase the number of cycles on other plant equipment, and would extend the length of cold shutdown outages.



**Attachment 5 - Deferred Test Justifications**

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**Deferred Test Justification: DTJ-37**

Valve ID	Function	Drawing / Coor	Cat	Act/Pass	Class	Size	Type	Act
1-FCV-70-140	RC PMP OIL CLR HDR CNTMT ISOL	47W859-2/3 / G-3	A	Active	2	6	BF	MO
1-FCV-70-141	RC PUMP OIL CLR HDR CNTMT ISOL	47W859-2/3 / G-4	A	Active	2	6	BF	MO
1-FCV-70-89	RC PMP OIL CLR RET CNTMT ISOL VLV	47W859-2/3 / E-9	A	Active	2	6	BF	MO
1-FCV-70-92	RC PMP OIL CLR RET CNTMT ISOL	47W859-2/3 / E-10	A	Active	2	6	BF	MO
2-FCV-70-140	RC PMP OIL CLR HDR CONT ISOL VLV	47W859-2/3 / G-3	A	Active	2	6	BF	MO
2-FCV-70-141	RC PMP OIL CLR HDR CONT ISOL VLV	47W859-2/3 / G-4	A	Active	2	6	BF	MO
2-FCV-70-89	RC PMP OIL CLR RET CNTMT ISOL VLV	47W859-3 / E-9	A	Active	2	6	BF	MO
2-FCV-70-92	RC PMP OIL CLR RET CNTMT ISOL VLV	47W859-2/3 / E-10	A	Active	2	6	BF	MO

**Required Test Frequency:** These valves allow flow to the RCP oil coolers and close for containment isolation. Full or partial stroke quarterly during RCP operation.

**Deferred Test Frequency:** Full stroke exercise during cold shutdown when the RCPs are stopped, but not more often than once every three months.

**Justification for Deferred Test Frequency:** Exercising these valves during operation of the RCPs results in loss of cooling water flow to all eight reactor coolant pump oil coolers introducing the possibility of loss of a RCP and a LOCA or a unit trip. The FCV valve control circuit is not designed for partial stroke capability. Stopping the RCP's for testing would increase the wear and stress on the RCP's, increase the number of cycles on other plant equipment, and would extend the length of cold shutdown outages.

**Attachment 5 - Deferred Test Justifications**

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**Deferred Test Justification: DTJ-38**

Valve ID	Function	Drawing / Coor	Cat	Act/Pass	Class	Size	Type	Act
1-VLV-3-508	FEEDWATER CHECK VA	47W803-1 / F-2	C	Active	2	16	CK	SA
1-VLV-3-509	FEEDWATER CHECK VA	47W803-1 / E-2	C	Active	2	16	CK	SA
1-VLV-3-510	FEEDWATER CHECK VA	47W803-1 / C-2	C	Active	2	16	CK	SA
1-VLV-3-511	FEEDWATER CHECK VA	47W803-1 / B-2	C	Active	2	16	CK	SA
2-VLV-3-508	FEEDWATER CHECK VA	47W803-1 / F-2	C	Active	2	16	CK	SA
2-VLV-3-509	FEEDWATER CHECK VA	47W803-1 / E-2	C	Active	2	16	CK	SA
2-VLV-3-510	FEEDWATER CHECK VA	47W803-1 / C-2	C	Active	2	16	CK	SA
2-VLV-3-511	FEEDWATER CHECK VA	47W803-1 / B-2	C	Active	2	16	CK	SA

**Required Test Frequency:** Closes to interrupt main feedwater to prevent a rapid primary side cooldown in the event of a main steam line break and or to prevent loss of steam generator water inventory in the event of a break in the main feedwater line before the isolation valve.

**Deferred Test Frequency:** Verify check valves closed during refueling outage.

**Justification for Deferred Test Frequency:** Exercising these valves during power operation causes a loss of feedwater to the loop they supply. When feedwater flow is restored, the resulting SG level shrink which could cause a transient or reactor trip. Closure testing is performed at RFO intervals as the NRC has determined that the need to setup test equipment is adequate justification to defer backflow testing of check valves until a refueling outage and testing requires isolating AFW.

**Attachment 5 - Deferred Test Justifications**

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**Deferred Test Justification: DTJ-39**

Valve ID	Function	Drawing / Coor	Cat	Act/Pass	Class	Size	Type	Act
1-FCV-62-72	REGEN HT EXCH LETDOWN ISOL VLV A	47W809-1 / A-4	A	Active	2	2	GL	AO
1-FCV-62-73	REGEN HT EXCH LETDOWN ISO VLV B	47W809-1 / A-4	A	Active	2	2	GL	AO
1-FCV-62-74	REGEN HT EXCH LETDOWN ISO VLV C	47W809-1 / A-4	A	Active	2	2	GL	AO
1-FCV-62-77	LETDOWN FLOW ISOL	47W809-1 / A-6	A	Active	2	2	GL	AO
2-FCV-62-72	REGEN HT EXCH LETDOWN ISO VLV A	47W809-1 / A-4	A	Active	2	2	GL	AO
2-FCV-62-73	REGEN HT EXCH LETDOWN ISO VLV B	47W809-1 / A-4	A	Active	2	2	GL	AO
2-FCV-62-74	REGEN HT EXCH LETDOWN ISO VLV C	47W809-1 / A-4	A	Active	2	2	GL	AO
2-FCV-62-77	LETDOWN LINE ISO VLV FLOW CONTROL	47W809-1 / A-6	A	Active	2	2	GL	AO

**Required Test Frequency:** These valves allow for charging and letdown flow from the CVCS to/from the RCS. FCV-62-72, FCV-62-73, FCV-62-74, FCV-62-77 and FCV-62-90 must close or be capable of closing for containment isolation. FCV-62-69 and 70 must close for RCPB isolation. Full or partial stroke exercise quarterly.

**Deferred Test Frequency:** Full stroke during cold shutdown, but not more often than once every three months.

**Justification for Deferred Test Frequency:** Full or partial stroking of these valves causes thermal cyclic fatigue to the letdown heat exchanger, letdown and charging connections to the RCS. The FCV valve control circuit is not designed for partial stroke capability.

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Deferred Test Justification: DTJ-40

Valve ID	Function	Drawing / Coor	Cat	Act/Pass	Class	Size	Type	Act
1-FCV-62-90	CHARGING FLOW ISO VLV	47W809-1 / D-7	B	Active	2	3	GA	MO
1-FCV-62-91	CHARGING FLOW ISO VLV	47W809-1 / D-8	B	Active	2	3	GA	MO
2-FCV-62-90	CHARGING FLOW ISO VLV	47W809-1 / D-7	B	Active	2	3	GA	MO
2-FCV-62-91	CHARGING FLOW ISO VLV	47W809-1 / D-8	B	Active	2	3	GA	MO

**Required Test Frequency:** These valves allow for charging and letdown flow from the CVCS to/from the RCS. FCV-62-72, FCV-62-73, FCV-62-74, FCV-62-77 and FCV-62-90 must close or be capable of closing for containment isolation. FCV-62-69 and 70 must close for RCPB isolation. Full or partial stroke exercise quarterly.

**Deferred Test Frequency:** Full stroke during cold shutdown, but not more often than once every three months.

**Justification for Deferred Test Frequency:** Full or partial stroking of these valves causes thermal cyclic fatigue to the letdown heat exchanger, letdown and charging connections to the RCS. The FCV valve control circuit is not designed for partial stroke capability.

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Deferred Test Justification: DTJ-41

Valve ID	Function	Drawing / Coor	Cat	Act/Pass	Class	Size	Type	Act
1-LCV-62-135	CHARGING PUMP FLOW RWST	47W809-1 / H-9	B	Active	2	8	GA	MO
1-LCV-62-136	CHARGING PUMP FLOW RWST	47W809-1 / H-9	B	Active	2	8	GA	MO
2-LCV-62-135	RWST TO CCP	47W809-1 / H-9	B	Active	2	8	GA	MO
2-LCV-62-136	RWST TO CCP	47W809-1 / H-9	B	Active	2	8	GA	MO

**Required Test Frequency:** These valves operate to switch the centrifugal charging pumps suction from the VCT to the RWST on a safety injection or low VCT level signal. Full or partial stroke exercise quarterly.

**Deferred Test Frequency:** Full stroke exercise during cold shutdown, but not more often than once every three months.

**Justification for Deferred Test Frequency:** Stroking these valves during power operation would cause unacceptable boron transients leading to RCS temperature and power transients which could result in unit trip. The FCV valve control circuit is not designed for partial stroke capability.

**Attachment 5 - Deferred Test Justifications**

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**Deferred Test Justification: DTJ-42**

Valve ID	Function	Drawing / Coor	Cat	Act/Pass	Class	Size	Type	Act
1-VLV-72-528	PUMP DISC CHECK	1-47W812-1 / D-7	C	Active	2	12	CK	SA
1-VLV-72-529	PUMP DISC CHECK	1-47W812-1 / A-7	C	Active	2	12	CK	SA
2-VLV-72-528	PUMP DISC CHECK	2-47W812-1 / D-7	C	Active	2	12	CK	SA
2-VLV-72-529	PUMP DISC CHECK	2-47W812-1 / A-7	C	Active	2	12	CK	SA

**Required Test Frequency:** These check valves open to provide containment spray flow. Bi directional close test quarterly.

**Deferred Test Frequency:** These valves will be exercised closed at a refuel outage interval.

**Justification for Deferred Test Frequency:** Open testing is performed in conjunction with pump testing. Exercise testing these valves to the closed position during operation at power is not practical because there are no system provisions for verifying reverse flow closure. To perform closure testing online or during cold shutdowns would involve setting up test equipment to measure a DP across the valves.

**Attachment 5 - Deferred Test Justifications**

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**Deferred Test Justification: DTJ-43**

Valve ID	Function	Drawing / Coor	Cat	Act/Pass	Class	Size	Type	Act
1-VLV-3-830	MD AUX FW PUMP DISC CK	47W803-2 / G-8	C	Active	2	4	CK	SA
1-VLV-3-831	MD AUX FW PUMP DISC CK	47W803-2 / E-8	C	Active	2	4	CK	SA
1-VLV-3-832	MD AUX FW PUMP DISC CK	47W803-2 / D-8	C	Active	2	4	CK	SA
1-VLV-3-833	MD AUX FW PUMP DISC CK	47W803-2 / A-8	C	Active	2	4	CK	SA
1-VLV-3-871	TD AUX FW PMP DISCH CHKVLV	47W803-2 / F-8	C	Active	2	4	CK	SA
1-VLV-3-872	TD AUX FW PMP DISCH CHKVLV	47W803-2 / D-8	C	Active	2	4	CK	SA
1-VLV-3-873	TD AUX FW PMP DISCH CHKVLV	47W803-2 / C-8	C	Active	2	4	CK	SA
1-VLV-3-874	TD AUX FW PMP DISCH CHKVLV	47W803-2 / A-8	C	Active	2	4	CK	SA
2-VLV-3-830	MD AUX FW PUMP DISC CK	47W803-2 / G-3	C	Active	2	4	CK	SA
2-VLV-3-831	MD AUX FW PUMP DISC CK	47W803-2 / E-3	C	Active	2	4	CK	SA
2-VLV-3-832	MD AUX FW PUMP DISC CK	47W803-2 / D-3	C	Active	2	4	CK	SA
2-VLV-3-833	MD AUX FW PUMP DISC CK	47W803-2 / B-3	C	Active	2	4	CK	SA
2-VLV-3-871	TD AUX FW PMP DISCH CHKVLV	47W803-2 / F-3	C	Active	2	4	CK	SA
2-VLV-3-872	TD AUX FW PMP DISCH CHKVLV	47W803-2 / E-3	C	Active	2	4	CK	SA
2-VLV-3-873	TD AUX FW PMP DISCH CHKVLV	47W803-2 / C-3	C	Active	2	4	CK	SA
2-VLV-3-874	TD AUX FW PMP DISCH CHKVLV	47W803-2 / A-3	C	Active	2	4	CK	SA

**Required Test Frequency:** These check valves open to provide a flow path from the AFW pumps to the SGs. They close to prevent diversion of from the MDAFW and/or TDAFW pumps.

**Deferred Test Frequency:** These valves will be full stroked open/closed during refueling outages.

**Justification for Deferred Test Frequency:** Full stroke open exercising these valves during power operation could result in severe thermal shock to the auxiliary feedwater nozzles and cause SG level transients and a unit trip. Closure testing is also performed at RFO intervals.

**Attachment 5 - Deferred Test Justifications**

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**Deferred Test Justification: DTJ-44**

Valve ID	Function	Drawing / Coor	Cat	Act/Pass	Class	Size	Type	Act
1-VLV-3-820	MD AUX FW PUMP DISC CK	47W803-2 / F-5	C	Active	3	6	CK	SA
1-VLV-3-821	MD AUX FW PUMP DISC CK	47W803-2 / F-6	C	Active	3	6	CK	SA
1-VLV-3-864	TD AUX FW PUMP DISC CK	47W803-2 / H-6	C	Active	3	6	CK	SA
2-VLV-3-820	MD AUX FW PUMP DISC CK	47W803-2 / E-5	C	Active	3	6	CK	SA
2-VLV-3-821	MD AUX FW PUMP DISC CK	47W803-2 / E-6	C	Active	3	6	CK	SA
2-VLV-3-864	TD AUX FW PMP DISC CK	47W803-2 / C-6	C	Active	3	6	CK	SA

**Required Test Frequency:** Discharge check vales 3-820, 3-821, 3-864 open to provide flow to steam generators. Discharge check valves are bidirectional tested closed. Full stroke exercise quarterly.

**Deferred Test Frequency:** 3-820, 3-821, 3-864 will be full stroked open/closed during refueling outages.

**Justification for Deferred Test Frequency:** Full stroke open exercising these valves during power operation could result in severe thermal shock to the auxiliary feedwater nozzles and cause SG level transients and a unit trip. TDAFW check valves 3-864 and 3-810 can only be tested to full open when adequate steam supply exists to the turbine in mode 3. Closure testing is performed at RFO intervals as the NRC has determined that the need to setup test equipment is adequate justification to defer backflow testing of a check valves until a refueling outage and testing requires isolating and draining AFW. ISTC 3522 states testing need only be performed at a frequency where it is practicable to perform testing in both directions. Partial opening tests are performed quarterly during pump testing.



**Attachment 6 - Snubber Test Plan**  
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Component ID	Support ID	Mark No	ISO Dwg	Support Dwg	Class	Sys	Type	Mfg	Model	DTPG	Plan
1-SNUB-1-40016-22	47A400-16-22	47A400-16-22	47K400-52/66	47A400-16-22	2	001	M	PSA	PSA-1/4	4	10%
1-SNUB-1-40016-24	47A400-16-24	47A400-16-24	47K400-52/134	47A400-16-24	2	001	M	PSA	PSA-1/4	4	10%
1-SNUB-1-40016-37	47A400-16-37	47A400-16-37	47K400-50/150	47A400-16-37	2	001	M	PSA	PSA-1/4	4	10%
1-SNUB-1-40016-46	47A400-16-46	47A400-16-46	47K400-53/C06B	47A400-16-46	2	001	M	PSA	PSA-1/4	4	10%
1-SNUB-1-40016-47	47A400-16-47	47A400-16-47	47K400-53	47A400-16-47	2	001	M	PSA	PSA-1/4	4	10%
1-SNUB-1-40016-50	47A400-16-50	47A400-16-50	47K400-52/195	47A400-16-50	2	001	M	PSA	PSA-1/2	4	10%
1-SNUB-1-40016-56	47A400-16-56	47A400-16-56	47K400-51/OPER	47A400-16-56	2	001	M	PSA	PSA-1/4	4	10%
1-SNUB-1-40016-65	47A400-16-65	47A400-16-65	47K400-53	47A400-16-65	2	001	M	PSA	PSA-1/4	4	10%
1-SNUB-1-40016-66	47A400-16-66	47A400-16-66	47K400-51/OPER	47A400-16-66	2	001	M	PSA	PSA-1/4	4	10%
1-SNUB-1-40016-67	47A400-16-67	47A400-16-67	47K400-52/195	47A400-16-67	2	001	M	PSA	PSA-1/4	4	10%
1-SNUB-1-40016-68	47A400-16-68	47A400-16-68	47K400-50/150	47A400-16-68	2	001	M	PSA	PSA-1/2	4	10%
1-SNUB-15-SGBH107	1-SGBH-107	1-SGBH-107	47K400-82/49B	1-H47-107	2	015	M	PSA	PSA-3	3	10%
1-SNUB-15-SGBH109	1-SGBH-109	1-SGBH-109	47K400-78/57	1-H47-109	2	015	M	PSA	PSA-3	3	10%
1-SNUB-15-SGBH110	1-SGBH-110	1-SGBH-110	47K400-78/71	1-H47-110	2	015	M	PSA	PSA-1/2	4	10%
1-SNUB-15-SGBH125	1-SGBH-125	1-SGBH-125	0600102-07-04/76	1-H47-125	2	015	M	PSA	PSA-1	3	10%
1-SNUB-15-SGBH138	1-SGBH-138	1-SGBH-138	0600102-07-04/106	1-H47-138	2	015	M	PSA	PSA-1/2	4	10%
1-SNUB-15-SGBH59	1-SGBH-59	1-SGBH-59	47K400-66/44	1-H47-0059	2	015	M	PSA	PSA-1	3	10%
1-SNUB-15-SGBH76	1-SGBH-76	1-SGBH-76	2-47K400-81/32	1-H47-76	2	015	M	PSA	PSA-1	3	10%
1-SNUB-1-AMSH15	1-AMSH-15	1-AMSH-15	47K427-56/10	1-H2-15	3	003	M	PSA	PSA-1/4	4	10%
1-SNUB-1-AMSH17	1-AMSH-17	1-AMSH-17	47K427-56/65	1-H2-17	3	003	M	PSA	PSA-1	3	10%
1-SNUB-1-AMSH6	1-AMSH-6	1-AMSH-6	47K427-56/85	1-H2-6	3	003	H	BE	BE-1-1/2	2	10%
1-SNUB-1-AMSH8	1-AMSH-8	1-AMSH-8	47K427-56/107	1-H2-8	2	003	M	PSA	PSA-3	3	10%
1-SNUB-1-MSH300	1-MSH-300	1-MSH-300	47K400-70/5S	1-H01-300	2	001	M	PSA	PSA-100	6	10%
1-SNUB-1-MSH303E	1-MSH-303E	1-MSH-303E	47K400-70/6Y	1-H1-303	2	001	H	BE	BE-4	2	10%
1-SNUB-1-MSH303W	1-MSH-303W	1-MSH-303W	47K400-70/6Y	1-H1-303	2	001	H	BE	BE-4	2	10%
1-SNUB-1-MSH315	1-MSH-315	1-MSH-315	47K400-70/10X	1-H1-315	2	001	H	BE	BE-3-1/4	2	10%
1-SNUB-1-MSH322	1-MSH-322	1-MSH-322	47K400-70/47A	1-H1-322	2	001	M	PSA	PSA-1	5	10%
1-SNUB-1-MSH340	1-MSH-340	1-MSH-340	47K400-71/6	1-H1-340	2	001	M	PSA	PSA-35	6	10%

**Attachment 6 - Snubber Test Plan**  
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Component ID	Support ID	Mark No	ISO Dwg	Support Dwg	Class	Sys	Type	Mfg	Model	DTPG	Plan
1-SNUB-1-MSH343E	1-MSH-343E	1-MSH-343E	47K400-71/9	1-H1-343	2	001	M	PSA	PSA-35	6	10%
1-SNUB-1-MSH343W	1-MSH-343W	1-MSH-343W	47K400-71/9	1-H1-343	2	001	M	PSA	PSA-35	6	10%
1-SNUB-1-MSH353	1-MSH-353	1-MSH-353	47K400-71/29	1-H1-353	2	001	M	PSA	PSA-35	6	10%
1-SNUB-1-MSH357	1-MSH-357	1-MSH-357	47K400-71/76	1-H1-357	2	001	M	PSA	PSA-3	5	10%
1-SNUB-1-MSH380	1-MSH-380	1-MSH-380	47K400-72/5A	1-H1-380	2	001	M	PSA	PSA-35	6	10%
1-SNUB-1-MSH383E	1-MSH-383E	1-MSH-383E	47K400-72/8	1-H1-383	2	001	H	BE	BE-4	2	10%
1-SNUB-1-MSH383W	1-MSH-383W	1-MSH-383W	47K400-72/8	1-H1-383	2	001	H	BE	BE-4	2	10%
1-SNUB-1-MSH392	1-MSH-392	1-MSH-392	47K400-72/28	1-H1-392	2	001	M	PSA	PSA-35	6	10%
1-SNUB-1-MSH393	1-MSH-393	1-MSH-393	47K400-72/29	1-H1-393	2	001	M	PSA	PSA-35	6	10%
1-SNUB-1-MSH397	1-MSH-397	1-MSH-397	47K400-72/34	1-H1-397	2	001	M	PSA	PSA-1	5	10%
1-SNUB-1-MSH420	1-MSH-420	1-MSH-420	47K400-73/8SZ	1-H1-420	2	001	M	PSA	PSA-35	6	10%
1-SNUB-1-MSH423E	1-MSH-423E	1-MSH-423E	47K400-73/11	1-H1-423	2	001	M	PSA	PSA-35	6	10%
1-SNUB-1-MSH423W	1-MSH-423W	1-MSH-423W	47K400-73/11	1-H1-423	2	001	M	PSA	PSA-35	6	10%
1-SNUB-1-MSH432	1-MSH-432	1-MSH-432	47K400-73/39	1-H1-432	2	001	M	PSA	PSA-100	6	10%
1-SNUB-1-MSH433	1-MSH-433	1-MSH-433	47K400-73/41	1-H1-433	2	001	M	PSA	PSA-35	6	10%
1-SNUB-1-MSH440	1-MSH-440	1-MSH-440	47K400-73/A50	1-H1-440	2	001	M	PSA	PSA-1	5	10%
1-SNUB-31-9158-26L	47A915-8-26L	47A915-8-26L	47K915-51/54	47A915-8-26	2	031	M	PSA	PSA-1/4	4	10%
1-SNUB-31-9158-26U	47A915-8-26U	47A915-8-26U	47K915-51/54	47A915-8-26	2	031	M	PSA	PSA-1/4	4	10%
1-SNUB-31-915-8-27	47A915-8-27	47A915-8-27	47K915-50/9	47A915-8-27	2	031	M	PSA	PSA-1/2	4	10%
1-SNUB-31-915-8-33	47A915-8-33	47A915-8-33	47K915-52/9	47A915-8-33	2	031	M	PSA	PSA-1/2	4	10%
1-SNUB-33-492-2-35	47A492-2-35	47A492-2-35	47K492-100/S4	47A492-2-35	2	033	M	PSA	PSA-1/2	4	10%
1-SNUB-3-AFDH1	1-AFDH-1	1-AFDH-1	0600102-05-01/C02 B	1-H3-1	2	003	M	PSA	PSA-10	3	10%
1-SNUB-3-AFDH244	1-AFDH-244	1-AFDH-244	47K427-56/10	1-H3-248	3	003	M	PSA	PSA-3	3	10%
1-SNUB-3-AFDH245A	1-AFDH-245A	1-AFDH-245A	47K427-56/12	1-H3-249A	3	003	M	PSA	PSA-3	3	10%
1-SNUB-3-AFDH25	1-AFDH-25	1-AFDH-25	0600102-05-01/62A	1-H3-25	2	003	M	PSA	PSA-1/4	4	10%
1-SNUB-3-AFDH3	1-AFDH-3	1-AFDH-3	0600102-05-01/C04 A	1-H3-3	2	003	M	PSA	PSA-3	3	10%

**Attachment 6 - Snubber Test Plan**  
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Component ID	Support ID	Mark No	ISO Dwg	Support Dwg	Class	Sys	Type	Mfg	Model	DTPG	Plan
1-SNUB-3-AFDH40	1-AFDH-40	1-AFDH-40	0600102-05-02/5	1-H3-40	2	003	M	PSA	PSA-3	3	10%
1-SNUB-3-AFDH42	1-AFDH-42	1-AFDH-42	0600102-05-02/8	1-H3-42	2	003	M	PSA	PSA-3	3	10%
1-SNUB-3-AFDH502	1-AFDH-502	1-AFDH-502	47K427-56/62	1-H3-603	3	003	M	PSA	PSA-1	3	10%
1-SNUB-3-AFDH60	1-AFDH-60	1-AFDH-60	0600102-05-02/46A	1-H3-60	2	003	M	PSA	PSA-1/2	4	10%
1-SNUB-3-AFDH613	1-AFDH-613	1-AFDH-613	47K427-56/265	1-H3-713	3	003	M	PSA	PSA-1/4	4	10%
1-SNUB-3-FDH203	1-FDH-203	1-FDH-203	47K401-54/6	1-H4-203	2	003	M	PSA	PSA-10	3	10%
1-SNUB-3-FDH204N	1-FDH-204N	1-FDH-204N	47K401-54/7	1-H4-204	2	003	M	PSA	PSA-10	3	10%
1-SNUB-3-FDH204S	1-FDH-204S	1-FDH-204S	47K401-54/7	1-H4-204	2	003	M	PSA	PSA-10	3	10%
1-SNUB-3-FDH206	1-FDH-206	1-FDH-206	47K401-54/8A	1-H4-206	2	003	H	BE	BE-6	2	10%
1-SNUB-3-FDH243	1-FDH-243	1-FDH-243	47K401-55/16	1-H4-243	2	003	H	BE	BE-3-1/4	2	10%
1-SNUB-3-FDH244L	1-FDH-244L	1-FDH-244L	47K401-55/20X	1-H4-244	2	003	H	BE	BE-3-1/4	2	10%
1-SNUB-3-FDH244U	1-FDH-244U	1-FDH-244U	47K401-55/20X	1-H4-244	2	003	H	BE	BE-3-1/4	2	10%
1-SNUB-3-FDH283	1-FDH-283	1-FDH-283	47K401-56/13	1-H4-283	2	003	M	PSA	PSA-10	3	10%
1-SNUB-3-FDH285	1-FDH-285	1-FDH-285	47K401-56/17	1-H4-285	2	003	H	BE	BE-4	2	10%
1-SNUB-3-FDH323	1-FDH-323	1-FDH-323	47K401-57/8	1-H4-323	2	003	H	BE	BE-3-1/4	2	10%
1-SNUB-3-FDH324	1-FDH-324	1-FDH-324	47K401-57/9XY	1-H4-324	2	003	H	BE	BE-4	2	10%
1-SNUB-59-492-1-8	47A492-1-8	47A492-1-8	47K492-151/115	47A492-1-8	2	059	M	PSA	PSA-1/4	4	10%
1-SNUB-62-40652464	47B406-524-64	47B406-524-64	47K406-524-01/	47B406-524-64	2	062	M	PSA	PSA-1/4	4	10%
1-SNUB-62-CVCH108	1-CVCH-108	1-CVCH-108	47K406-158/14A	1-H34-108	1	062	M	PSA	PSA-1/2	4	10%
1-SNUB-62-CVCH142	1-CVCH-142	1-CVCH-142	47K406-139/48C	1-H34-142	2	062	M	PSA	PSA-1	3	10%
1-SNUB-62-CVCH203	1-CVCH-203	1-CVCH-203	47K406-154/24A	1-H34-203	2	062	M	PSA	PSA-3	3	10%
1-SNUB-62-CVCH303	1-CVCH-303	1-CVCH-303	47K406-146/A51	1-H34-303	1	062	M	PSA	PSA-3	3	10%
1-SNUB-62-CVCH347	1-CVCH-347	1-CVCH-347	47K406-142/41B	1-H34-347	1	062	M	PSA	PSA-3	3	10%
1-SNUB-62-CVCH349	1-CVCH-349	1-CVCH-349	47K406-142/VS	1-H34-349	1	062	M	PSA	PSA-3	3	10%
1-SNUB-62-CVCH363	1-CVCH-363	1-CVCH-363	47K406-141/75B	1-H34-363	1	062	M	PSA	PSA-3	3	10%
1-SNUB-62-CVCH364	1-CVCH-364	1-CVCH-364	47K406-141/75B	1-H34-364	1	062	M	PSA	PSA-10	3	10%
1-SNUB-62-CVCH400	1-CVCH-400	1-CVCH-400	1-47K406-50/525	1-H34-400	2	062	M	PSA	PSA-1	3	10%
1-SNUB-62-CVCH422	1-CVCH-422	1-CVCH-422	47K406-59/397A	1-H34-422	2	062	M	PSA	PSA-1/4	4	10%

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Component ID	Support ID	Mark No	ISO Dwg	Support Dwg	Class	Sys	Type	Mfg	Model	DTPG	Plan
1-SNUB-62-CVCH458	1-CVCH-458	1-CVCH-458	47K406-53/43	1-H34-458	2	062	H	BE	BE-1-1/2	2	10%
1-SNUB-62-CVCH480	1-CVCH-480	1-CVCH-480	47K406-56/209	1-H34-480	2	062	H	BE	BE-1-1/2	2	10%
1-SNUB-62-CVCH521	1-CVCH-521	1-CVCH-521	47K406-57-1/70	1-H34-521	2	062	H	BE	BE-1-1/2	2	10%
1-SNUB-62-CVCH528	1-CVCH-528	1-CVCH-528	47K406-57-1/184	1-H34-528	2	062	H	BE	BE-1-1/2	2	10%
1-SNUB-62-CVCH576	1-CVCH-576	1-CVCH-576	47K406-50/443	1-H34-576	2	062	M	PSA	PSA-1/2	4	10%
1-SNUB-62-CVCH588E	1-CVCH-588E	1-CVCH-588E	47K406-115/938	1-H34-588	2	062	M	PSA	PSA-1/2	4	10%
1-SNUB-62-CVCH588 W	1-CVCH-588W	1-CVCH-588W	47K406-115/938	1-H34-588	2	062	M	PSA	PSA-1/2	4	10%
1-SNUB-62-CVCH595	1-CVCH-595	1-CVCH-595	47K406-51/627	1-H34-595	2	062	M	PSA	PSA-1/2	4	10%
1-SNUB-62-CVCH609	1-CVCH-609	1-CVCH-609	47K406-50/460	1-H34-609	2	062	M	PSA	PSA-1/4	4	10%
1-SNUB-62-CVCH612E	1-CVCH-612E	1-CVCH-612E	47K406-50/472A	1-H34-612	2	062	M	PSA	PSA-1/4	4	10%
1-SNUB-62-CVCH612 W	1-CVCH-612W	1-CVCH-612W	47K406-50/472A	1-H34-612	2	062	M	PSA	PSA-1/4	4	10%
1-SNUB-62-CVCH825	1-CVCH-825	1-CVCH-825	47K406-140/81	1-H34-825	2	062	M	PSA	PSA-1/4	4	10%
1-SNUB-62-CVCH831	1-CVCH-831	1-CVCH-831	47K406-140/70	1-H34-831	2	062	M	PSA	PSA-1/4	4	10%
1-SNUB-62-CVCH866	1-CVCH-866	1-CVCH-866	1-47K406-149/10	1-H34-866	2	062	M	PSA	PSA-1	3	10%
1-SNUB-62-CVCH900	1-CVCH-900	1-CVCH-900	47K406-150/15	1-H34-900	2	062	M	PSA	PSA-1/2	4	10%
1-SNUB-62-CVCH91	1-CVCH-91	1-CVCH-91	47K406-134/14	1-H34-91	1	062	M	PSA	PSA-1/2	4	10%
1-SNUB-62-CVCH914	1-CVCH-914	1-CVCH-914	1-47K406-151/15A	1-H34-914	2	062	M	PSA	PSA-1/2	4	10%
1-SNUB-62-CVCH934	1-CVCH-934	1-CVCH-934	47K406-152/	1-H34-934	2	062	M	PSA	PSA-1/2	4	10%
1-SNUB-62-CVCH937	1-CVCH-937	1-CVCH-937	47K406-152/4A	1-H34-0937	2	062	M	PSA	PSA-1/4	4	10%
1-SNUB-62-CVCH991	1-CVCH-991	1-CVCH-991	47K406-134/J95N	1-H34-991	1	062	M	PSA	PSA-3	3	
1-SNUB-63-435-8-2	47A435-8-2	47A435-8-2	1-47K435-83-1/OP1	47A435-8-2	2	063	M	PSA	PSA-1/2	4	10%
1-SNUB-63-SIH106L	1-SIH-106L	1-SIH-106	47K435-82/20	1-H20-106	1	063	M	PSA	PSA-10	3	10%
1-SNUB-63-SIH106U	1-SIH-106U	1-SIH-106U	47K435-82/20	1-H20-106	1	063	M	PSA	PSA-10	3	10%
1-SNUB-63-SIH429	1-SIH-429	1-SIH-429	47K435-53/128	1-H20-438	2	063	M	PSA	PSA-10	3	10%
1-SNUB-63-SIH437	1-SIH-437	1-SIH-437	47K435-53/204	1-H20-451	2	063	M	PSA	PSA-3	3	10%
1-SNUB-63-SIH448	1-SIH-448	1-SIH-448	47K406-58/248	1-H20-465	2	063	H	BE	BE-2-1/2	2	10%

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Component ID	Support ID	Mark No	ISO Dwg	Support Dwg	Class	Sys	Type	Mfg	Model	DTPG	Plan
1-SNUB-63-SIH455	1-SIH-455	1-SIH-455	47K406-58/381	1-H20-475	2	063	M	PSA	PSA-3	3	10%
1-SNUB-63-SIH59	1-SIH-59	1-SIH-59	47K435-81/62	1-H20-59	2	063	M	PSA	PSA-10	3	10%
1-SNUB-63-SIH61NE	1-SIH-61NE	1-SIH-61NE	47K435-81/A60	1-H20-61	1	063	M	PSA	PSA-3	3	10%
1-SNUB-63-SIH61SW	1-SIH-61SW	1-SIH-61SW	47K435-81/60	1-H20-61	1	063	M	PSA	PSA-3	3	10%
1-SNUB-64-46213-13	47A462-13-13	47A462-13-13	47K462-50/211	47A462-13-13	2	064	M	PSA	PSA-1/2	5	10%
1-SNUB-64-46213-27	47A462-13-27	47A462-13-27	47K462-52/18	47A462-13-27	2	064	M	PSA	PSA-1/2	5	10%
1-SNUB-64-46213-35	47A462-13-35	47A462-13-35	47K462-50/211	47A462-13-35	2	064	M	PSA	PSA-1/2	5	10%
1-SNUB-67-45021200	47A450-21-200	47A450-21-200	47K450-200/13A	47A450-21-200	3	067	M	PSA	PSA-3	3	10%
1-SNUB-67-45021257	47A450-21-257	47A450-21-257	47K450-204/25	47A450-21-257	3	067	M	PSA	PSA-1	3	
1-SNUB-67-45021284	47A450-21-284	47A450-21-284	47K450-206/28A	47A450-21-284	3	067	M	PSA	PSA-3	3	10%
1-SNUB-67-45021427	47A450-21-427	47A450-21-427	47K450-206/24	47A450-21-427	2	067	M	PSA	PSA-3	3	10%
1-SNUB-67-45021428	47A450-21-428	47A450-21-428	47K450-205/50	47A450-21-428	3	067	M	PSA	PSA-3	3	10%
1-SNUB-67-45021434	47A450-21-434	47A450-21-434	47K450-200/9	47A450-21-434	2	067	M	PSA	PSA-3	3	10%
1-SNUB-67-45021437	47A450-21-437	47A450-21-437	47K450-207/50	47A450-21-437	3	067	M	PSA	PSA-3	3	10%
1-SNUB-67-45021439	47A450-21-439	47A450-21-439	47K450-201/21	47A450-21-439	3	067	M	PSA	PSA-3	3	10%
1-SNUB-67-5021228L	47A450-21-228L	47A450-21-228 L	47K450-202/19	47A450-21-228	3	067	M	PSA	PSA-3	3	10%
1-SNUB-67-5021228U	47A450-21-228U	47A450-21-228 U	47K450-202/19	47A450-21-228	3	067	M	PSA	PSA-3	3	10%
1-SNUB-67-5021256L	47A450-21-256L	47A450-21-256 L	47K450-204/15	47A450-21-256	3	067	M	PSA	PSA-3	3	10%
1-SNUB-67-5021256U	47A450-21-256U	47A450-21-256 U	47K450-204/15	47A450-21-256	3	067	M	PSA	PSA-10	3	10%
1-SNUB-68-465-1-1	47B465-1-1	47B465-1-1	47K465-53/13B	47B465-1-1	1	068	M	PSA	PSA-3	3	10%
1-SNUB-68-465-8-11	47A465-8-11	47A465-8-11	47K465-82/29	47A465-8-11	2	068	M	PSA	PSA-1/4	4	10%
1-SNUB-68-465-8-2	47A465-8-2	47A465-8-2	47K465-82/10A	47A465-8-2	2	068	M	PSA	PSA-1/4	4	10%
1-SNUB-68-465-8-3	47A465-8-3	47A465-8-3	47K465-82/14	47A465-8-3	2	068	M	PSA	PSA-1/4	4	10%
1-SNUB-68-465-8-9	47A465-8-9	47A465-8-9	47K465-82/22	47A465-8-9	2	068	M	PSA	PSA-1/4	4	10%
1-SNUB-68-5001B	1-SG1-B	1-SG1-B	TBD	48N424	2	068	H	PMH	PMH-14	1	10%

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Component ID	Support ID	Mark No	ISO Dwg	Support Dwg	Class	Sys	Type	Mfg	Model	DTPG	Plan
1-SNUB-68-5001C	1-SG1-C	1-SG1-C	TBD	48N424	2	068	H	PMH	PMH-14	1	10%
1-SNUB-68-5001D	1-SG1-D	1-SG1-D	TBD	48N424	2	068	H	PMH	PMH-14	1	10%
1-SNUB-68-5002B	1-SG2-B	1-SG2-B	TBD	48N424	2	068	H	PMH	PMH-14	1	10%
1-SNUB-68-5002C	1-SG2-C	1-SG2-C	TBD	48N424	2	068	H	PMH	PMH-14	1	10%
1-SNUB-68-5002D	1-SG2-D	1-SG2-D	TBD	48N424	2	068	H	PMH	PMH-14	1	10%
1-SNUB-68-5003B	1-SG3-B	1-SG3-B	TBD	48N424	2	068	H	PMH	PMH-14	1	10%
1-SNUB-68-5003C	1-SG3-C	1-SG3-C	TBD	48N424	2	068	H	PMH	PMH-14	1	10%
1-SNUB-68-5003D	1-SG3-D	1-SG3-D	TBD	48N424	2	068	H	PMH	PMH-14	1	10%
1-SNUB-68-5004B	1-SG4-B	1-SG4-B	TBD	48N424	2	068	H	PMH	PMH-14	1	10%
1-SNUB-68-5004C	1-SG4-C	1-SG4-C	TBD	48N424	2	068	H	PMH	PMH-14	1	10%
1-SNUB-68-5004D	1-SG4-D	1-SG4-D	TBD	48N424	2	068	H	PMH	PMH-14	1	10%
1-SNUB-68-RCH114L	1-RCH-114L	1-RCH-114L	47K465-61/59	1-H36-114	1	068	M	PSA	PSA-3	3	10%
1-SNUB-68-RCH114U	1-RCH-114U	1-RCH-114U	47K465-61/59	1-H36-114	1	068	M	PSA	PSA-3	3	10%
1-SNUB-68-RCH125E	1-RCH-125E	1-RCH-125E	47K465-62/34A	1-H36-125	1	068	M	PSA	PSA-3	3	10%
1-SNUB-68-RCH125W	1-RCH-125W	1-RCH-125W	47K465-62/34A	1-H36-125	1	068	M	PSA	PSA-3	3	10%
1-SNUB-68-RCH130N	1-RCH-130N	1-RCH-130N	47K465-61/78	1-H36-130	1	068	M	PSA	PSA-10	3	10%
1-SNUB-68-RCH130S	1-RCH-130S	1-RCH-130S	47K465-61/78	1-H36-130	1	068	M	PSA	PSA-10	3	10%
1-SNUB-68-RCH28	1-RCH-28	1-RCH-28	47K465-53/11	1-H36-28	1	068	M	PSA	PSA-3	3	10%
1-SNUB-68-RCH30	1-RCH-30	1-RCH-30	47K465-53/17A	1-H36-30	1	068	M	PSA	PSA-3	3	10%
1-SNUB-68-RCH833	1-RCH-833	1-RCH-833	0600102-13-09/10	1-H36-833	1	068	M	PSA	PSA-1/2	4	10%
1-SNUB-68-RCH835	1-RCH-835	1-RCH-835	0600102-13-09/5A	1-H36-835	1	068	M	PSA	PSA-1	3	10%
1-SNUB-68-RCH86	1-RCH-86	1-RCH-86	47K465-62/50	1-H36-86	1	068	M	PSA	PSA-3	3	10%
1-SNUB-68-RCH863	1-RCH-863	1-RCH-863	0600102-13-10/10	1-H36-863	1	068	M	PSA	PSA-1/2	4	10%
1-SNUB-68-RCH893	1-RCH-893	1-RCH-893	47K406-146/A109	1-H36-893	1	068	M	PSA	PSA-1	3	10%
1-SNUB-68-RCH895	1-RCH-895	1-RCH-895	47K406-146/105A	1-H36-895	1	068	M	PSA	PSA-1	3	10%
1-SNUB-68-RCH90	1-RCH-90	1-RCH-90	47K465-62/47	1-H36-90	1	068	M	PSA	PSA-1	3	10%
1-SNUB-68-RCH91L	1-RCH-91L	1-RCH-91L	47K465-62/46E	1-H36-91	1	068	M	PSA	PSA-3	3	10%
1-SNUB-68-RCH91U	1-RCH-91U	1-RCH-91U	47K465-62/46E	1-H36-91	1	068	M	PSA	PSA-3	3	10%

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<b>Component ID</b>	<b>Support ID</b>	<b>Mark No</b>	<b>ISO Dwg</b>	<b>Support Dwg</b>	<b>Class</b>	<b>Sys</b>	<b>Type</b>	<b>Mfg</b>	<b>Model</b>	<b>DTPG</b>	<b>Plan</b>
1-SNUB-68-RCH921N	1-RCH-921N	1-RCH-921N	0600102-13-12/5A	1-H36-921	1	068	M	PSA	PSA-1/4	4	10%
1-SNUB-68-RCH921S	1-RCH-921S	1-RCH-921S	0600102-13-12/5A	1-H36-921	1	068	M	PSA	PSA-1/4	4	10%
1-SNUB-68-RCH923	1-RCH-923	1-RCH-923	0600102-13-12/10	1-H36-923	1	068	M	PSA	PSA-1	3	10%
1-SNUB-68-RCH96	1-RCH-96	1-RCH-96	47K465-62/30	1-H36-96	1	068	M	PSA	PSA-3	3	10%
1-SNUB-70-CCH1043N	1-CCH-1043N	1-CCH-1043N	47K464-55/632	1-H10-1204	3	070	M	PSA	PSA-3	3	10%
1-SNUB-70-CCH1043S	1-CCH-1043S	1-CCH-1043S	47K464-55/632	1-H10-1204	3	070	M	PSA	PSA-3	3	10%
1-SNUB-70-CCH1044	1-CCH-1044	1-CCH-1044	47K464-55/632	1-H10-1206	3	070	M	PSA	PSA-10	3	10%
1-SNUB-70-CCH1047L	1-CCH-1047L	1-CCH-1047L	47K464-55/636	1-H10-1212	3	070	M	PSA	PSA-1	3	10%
1-SNUB-70-CCH1047U	1-CCH-1047U	1-CCH-1047U	47K464-55/636	1-H10-1212	3	070	M	PSA	PSA-1	3	10%
1-SNUB-70-CCH1051	1-CCH-1051	1-CCH-1051	47K464-55/648	1-H10-1219	3	070	M	PSA	PSA-3	3	10%
1-SNUB-70-CCH1052	1-CCH-1052	1-CCH-1052	47K464-55/648	1-H10-1221	3	070	M	PSA	PSA-1	3	10%
1-SNUB-70-CCH205	1-CCH-205	1-CCH-205	47K464-118/C02Z	1-H10-205	3	070	M	PSA	PSA-3	3	10%
1-SNUB-70-CCH402	1-CCH-402	1-CCH-402	47K464-52/10	1-H10-403	3	070	H	BE	BE-1-1/2	2	10%
1-SNUB-70-CCH403	1-CCH-403	1-CCH-403	47K464-52/14	1-H10-405	3	070	M	PSA	PSA-10	3	10%
1-SNUB-70-CCH407	1-CCH-407	1-CCH-407	47K464-52/28	1-H10-0410	3	070	M	PSA	PSA-10	3	10%
1-SNUB-70-CCH412	1-CCH-412	1-CCH-412	47K464-52/38X	1-H10-417	3	070	H	BE	BE-1-1/2	2	10%
1-SNUB-70-CCH421	1-CCH-421	1-CCH-421	47K464-50/142	1-H10-433	3	070	H	BE	BE-3-1/4	2	10%
1-SNUB-70-CCH444	1-CCH-444	1-CCH-444	47K464-51/931	1-H10-471	3	070	H	BE	BE-4	2	10%
1-SNUB-70-CCH445E	1-CCH-445E	1-CCH-445E	47K464-51/931	1-H10-472	3	070	H	BE	BE-2	2	10%
1-SNUB-70-CCH445W	1-CCH-445W	1-CCH-445W	47K464-51/931	1-H10-472	3	070	H	BE	BE-2	2	10%
1-SNUB-70-CCH62	1-CCH-62	1-CCH-62	47K464-112/F6A	1-H10-62	3	070	M	PSA	PSA-1	3	10%
1-SNUB-72-CSH100	1-CSH-100	1-CSH-100	47K437-71/185	1-H21-100	2	072	M	PSA	PSA-10	3	10%
1-SNUB-72-CSH14	1-CSH-14	1-CSH-14	47K437-64/300	1-H21-14	2	072	M	PSA	PSA-10	3	10%
1-SNUB-72-CSH15	1-CSH-15	1-CSH-15	47K437-64/290	1-H21-15	2	072	M	PSA	PSA-10	3	10%
1-SNUB-72-CSH17	1-CSH-17	1-CSH-17	47K437-64/315	1-H21-17	2	072	M	PSA	PSA-10	3	10%
1-SNUB-72-CSH18	1-CSH-18	1-CSH-18	47K437-64/320	1-H21-18	2	072	M	PSA	PSA-35	6	10%
1-SNUB-72-CSH35	1-CSH-35	1-CSH-35	47K437-66/745	1-H21-35	2	072	M	PSA	PSA-35	6	10%
1-SNUB-72-CSH37	1-CSH-37	1-CSH-37	47K437-66/735	1-H21-37	2	072	M	PSA	PSA-10	3	10%

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Component ID	Support ID	Mark No	ISO Dwg	Support Dwg	Class	Sys	Type	Mfg	Model	DTPG	Plan
1-SNUB-72-CSH44	1-CSH-44	1-CSH-44	47K437-66/850	1-H21-44	2	072	M	PSA	PSA-10	3	10%
1-SNUB-72-CSH45	1-CSH-45	1-CSH-45	47K437-66/845	1-H21-45	2	072	M	PSA	PSA-10	3	10%
1-SNUB-72-CSH469N	1-CSH-469N	1-CSH-469N	47K437-71/75	1-H21-497	2	072	M	PSA	PSA-3	3	10%
1-SNUB-72-CSH469S	1-CSH-469S	1-CSH-469S	47K437-71/75	1-H21-497	2	072	M	PSA	PSA-3	3	10%
1-SNUB-72-CSH47	1-CSH-47	1-CSH-47	47K437-66/870	1-H21-47	2	072	M	PSA	PSA-10	3	10%
1-SNUB-72-CSH470	1-CSH-470	1-CSH-470	47K437-71/60	1-H21-499	2	072	M	PSA	PSA-3	3	10%
1-SNUB-72-CSH48	1-CSH-48	1-CSH-48	47K437-66/875	1-H21-48	2	072	M	PSA	PSA-10	3	10%
1-SNUB-72-CSH5	1-CSH-5	1-CSH-5	47K437-64/205	1-H21-5	2	072	M	PSA	PSA-35	6	10%
1-SNUB-72-CSH65	1-CSH-65	1-CSH-65	47K437-68/115	1-H21-65	2	072	M	PSA	PSA-10	3	10%
1-SNUB-72-CSH66	1-CSH-66	1-CSH-66	47K437-68/110	1-H21-66	2	072	M	PSA	PSA-10	3	10%
1-SNUB-72-CSH67	1-CSH-67	1-CSH-67	47K437-68/100	1-H21-67	2	072	M	PSA	PSA-10	3	10%
1-SNUB-72-CSH7	1-CSH-7	1-CSH-7	47K437-64/195	1-H21-7	2	072	M	PSA	PSA-10	3	10%
1-SNUB-72-CSH74	1-CSH-74	1-CSH-74	47K437-68/210	1-H21-74	2	072	M	PSA	PSA-10	3	10%
1-SNUB-72-CSH75	1-CSH-75	1-CSH-75	47K437-68/205	1-H21-75	2	072	M	PSA	PSA-10	3	10%
1-SNUB-72-CSH77	1-CSH-77	1-CSH-77	47K437-68/230	1-H21-77	2	072	M	PSA	PSA-10	3	10%
1-SNUB-72-CSH78	1-CSH-78	1-CSH-78	47K437-68/235	1-H21-78	2	072	M	PSA	PSA-10	3	10%
1-SNUB-72-CSH95	1-CSH-95	1-CSH-95	47K437-71/170	1-H21-95	2	072	M	PSA	PSA-10	3	10%
1-SNUB-72-CSH96	1-CSH-96	1-CSH-96	47K437-71/165	1-H21-96	2	072	M	PSA	PSA-10	3	10%
1-SNUB-72-CSH99	1-CSH-99	1-CSH-99	47K437-71/190	1-H21-99	2	072	M	PSA	PSA-3	3	10%
1-SNUB-74-RHRH401	1-RHRH-401	1-RHRH-401	47K435-51-1/135	1-H63-402	2	074	H	BE	BE-1-1/2	2	10%
1-SNUB-74-RHRH408	1-RHRH-408	1-RHRH-408	47K435-51-1/239	1-H63-417	2	074	H	BE	BE-1-1/2	2	10%
1-SNUB-74-RHRH425	1-RHRH-425	1-RHRH-425	47K432-50/83	1-H63-446	2	074	M	PSA	PSA-1/2	4	10%
1-SNUB-74-RHRH430	1-RHRH-430	1-RHRH-430	47K432-50/92	1-H63-455	2	074	M	PSA	PSA-3	3	10%
1-SNUB-74-RHRH452	1-RHRH-452	1-RHRH-452	47K432-50/206	1-H63-490	2	074	M	PSA	PSA-1/4	4	10%
1-SNUB-74-RHRH457	1-RHRH-457	1-RHRH-457	47K432-50/223	1-H63-497	2	074	M	PSA	PSA-10	3	10%
1-SNUB-74-RHRH463	1-RHRH-463	1-RHRH-463	47K432-50/241	1-H63-506	2	074	M	PSA	PSA-1	3	10%
1-SNUB-74-RHRH467L	1-RHRH-467L	1-RHRH-467L	47K432-50/255	1-H63-512	2	074	M	PSA	PSA-3	3	10%
1-SNUB-74-RHRH467U	1-RHRH-467U	1-RHRH-467U	47K432-50/255	1-H63-512	2	074	M	PSA	PSA-3	3	10%



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Component ID	Support ID	Mark No	ISO Dwg	Support Dwg	Class	Sys	Type	Mfg	Model	DTPG	Plan
1-SNUB-74-RHRH471	1-RHRH-471	1-RHRH-471	47K432-50-1/23B	1-H63-519	2	074	M	PSA	PSA-10	3	10%
1-SNUB-74-RHRH472	1-RHRH-472	1-RHRH-472	47K432-50-1/26C	1-H63-521	2	074	M	PSA	PSA-3	3	10%
1-SNUB-74-RHRH482	1-RHRH-482	1-RHRH-482	47K432-51/785	1-H63-537	2	074	M	PSA	PSA-3	3	10%
1-SNUB-74-RHRH483	1-RHRH-483	1-RHRH-483	47K432-51/785	1-H63-539	2	074	M	PSA	PSA-3	3	10%
1-SNUB-74-RHRH491	1-RHRH-491	1-RHRH-491	47K432-51/899	1-H63-552	2	074	M	PSA	PSA-1	3	10%
1-SNUB-74-RHRH492	1-RHRH-492	1-RHRH-492	47K432-51/889	1-H63-554	2	074	M	PSA	PSA-1/2	4	10%
1-SNUB-74-RHRH493	1-RHRH-493	1-RHRH-493	47K432-51/942	1-H63-555	2	074	M	PSA	PSA-1/4	4	10%
1-SNUB-74-RHRH506	1-RHRH-506	1-RHRH-506	47K432-51/989	1-H63-572	2	074	M	PSA	PSA-1/4	4	10%
1-SNUB-74-RHRH6	1-RHRH-6	1-RHRH-6	1-0600102-03-01/18 AZ	1-H63-6	1	074	H	BE	BE-3-1/4	2	10%
1-SNUB-74-RHRH7L	1-RHRH-7L	1-RHRH-7L	47K432-59/18	1-H63-7	1	074	H	BE	BE-2-1/2	2	10%
1-SNUB-74-RHRH7U	1-RHRH-7U	1-RHRH-7U	47K432-59/18	1-H63-7	1	074	H	BE	BE-2-1/2	2	10%
1-SNUB-74-RHRH8	1-RHRH-8	1-RHRH-8	0600102-03-01/35B	1-H63-8	1	074	M	PSA	PSA-1	3	10%
1-SNUB-77-560-4-56	47A560-4-56	47A560-4-56	47K560-50/30	47A560-4-56	2	077	M	PSA	PSA-1/4	4	10%
1-SNUB-77-560-4-62	47A560-4-62	47A560-4-62	47K560-51/60	47A560-4-62	2	077	M	PSA	PSA-1/4	4	10%
1-SNUB-77-560-4-65	47A560-4-65	47A560-4-65	47K560-51/45	47A560-4-65	2	077	M	PSA	PSA-1/4	4	10%
1-SNUB-77-560-4-66	47A560-4-66	47A560-4-66	47K560-51/60	47A560-4-66	2	077	M	PSA	PSA-1/4	4	10%
1-SNUB-78-454-2-21	47A454-2-21	47A454-2-21	47K454-58/8	47A454-2-21	2	078	M	PSA	PSA-3	3	10%
1-SNUB-78-FPCH427	1-FPCH-427	1-FPCH-427	47K454-55/6	1-H50-427	3	078	M	PSA	PSA-1/2	4	10%
1-SNUB-78-FPCH441	1-FPCH-441	1-FPCH-441	47K454-55/25	1-H50-441	3	078	M	PSA	PSA-1	3	10%
1-SNUB-78-FPCH486	1-FPCH-486	1-FPCH-486	47K454-51/126	1-H50-486	3	078	M	PSA	PSA-3	3	10%
1-SNUB-81-492-2-52	47A492-2-52	47A492-2-52	47K492-50/D1	47A492-2-52	2	081	M	PSA	PSA-1/2	4	10%
2-SNUB-1-40017-12	47A400-17-12	47A400-17-12	47K400-56/66	47A400-17-12	2	001	M	PSA	PSA-1	3	10%
2-SNUB-1-40017-13	47A400-17-13	47A400-17-13	47K400-56/121	47A400-17-13	2	001	M	PSA	PSA-1/2	4	10%
2-SNUB-1-40017-15	47A400-17-15	47A400-17-15	47K400-56/195	47A400-17-15	2	001	M	PSA	PSA-1/2	4	10%
2-SNUB-1-40017-18	47A400-17-18	47A400-17-18	47K400-55/38	47A400-17-18	2	001	M	PSA	PSA-1/2	4	10%
2-SNUB-1-40017-19	47A400-17-19	47A400-17-19	47K400-57/OPER	47A400-17-19	2	001	M	PSA	PSA-1/4	4	10%
2-SNUB-1-40017-20	47A400-17-20	47A400-17-20	47K400-57/OPER	47A400-17-20	2	001	M	PSA	PSA-3	3	

**Attachment 6 - Snubber Test Plan**  
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Component ID	Support ID	Mark No	ISO Dwg	Support Dwg	Class	Sys	Type	Mfg	Model	DTPG	Plan
2-SNUB-1-40017-21	47A400-17-21	47A400-17-21	47K400-56/195	47A400-17-21	2	001	M	PSA	PSA-1/4	4	10%
2-SNUB-1-40017-22	47A400-17-22	47A400-17-22	47K400-54/150	47A400-17-22	2	001	M	PSA	PSA-1/4	4	10%
2-SNUB-1-40017-23	47A400-17-23	47A400-17-23	47K400-55/38	47A400-17-23	2	001	M	PSA	PSA-1/2	4	10%
2-SNUB-1-400-17-5	47A400-17-5	47A400-17-5	47K400-57/C06B	47A400-17-5	2	001	M	PSA	PSA-1/2	4	10%
2-SNUB-1-400-17-7	47A400-17-7	47A400-17-7	47K400-54/150	47A400-17-7	2	001	M	PSA	PSA-1/2	4	10%
2-SNUB-15-SGBH102	2-SGBH-102	2-SGBH-102	0600152-07-03/49B	2-H47-102	2	015	M	PSA	PSA-1	3	10%
2-SNUB-15-SGBH103	2-SGBH-103	2-SGBH-103	0600152-07-03/52	2-H47-103	2	015	M	PSA	PSA-1/2	4	10%
2-SNUB-15-SGBH104	2-SGBH-104	2-SGBH-104	47K400-82/57	2-H47-104	2	015	M	PSA	PSA-3	3	10%
2-SNUB-15-SGBH105	2-SGBH-105	2-SGBH-105	47K400-82/58	2-H47-105	2	015	M	PSA	PSA-3	3	10%
2-SNUB-15-SGBH11	2-SGBH-11	2-SGBH-11	0600152-07-01/27D	2-H47-11	2	015	M	PSA	PSA-1	3	10%
2-SNUB-15-SGBH125	2-SGBH-125	2-SGBH-125	0600152-07-04/76	2-H47-125	2	015	M	PSA	PSA-1	3	10%
2-SNUB-15-SGBH134	2-SGBH-134	2-SGBH-134	0600152-07-04/106	2-H47-134	2	015	M	PSA	PSA-1/2	4	10%
2-SNUB-15-SGBH32	2-SGBH-32	2-SGBH-32	47K400-80/18	2-H47-32	2	015	M	PSA	PSA-1/2	4	10%
2-SNUB-15-SGBH58	2-SGBH-58	2-SGBH-58	47K400-80/37A	2-H47-58	2	015	M	PSA	PSA-1	3	10%
2-SNUB-15-SGBH61	2-SGBH-61	2-SGBH-61	47K400-80/30	2-H47-61	2	015	M	PSA	PSA-1/2	4	10%
2-SNUB-15-SGBH69	2-SGBH-69	2-SGBH-69	47K400-81/14B	2-H47-69	2	015	M	PSA	PSA-1	3	10%
2-SNUB-15-SGBH76	2-SGBH-76	2-SGBH-76	47K400-81/32	2-H47-76	2	015	M	PSA	PSA-1	3	10%
2-SNUB-1-AMSH10	2-AMSH-10	2-AMSH-10	47K427-60/85	2-H2-10	3	003	M	PSA	PSA-1/2	4	10%
2-SNUB-1-AMSH12	2-AMSH-12	2-AMSH-12	47K427-60/107X	2-H2-12	2	003	M	PSA	PSA-3	3	10%
2-SNUB-1-AMSH17	2-AMSH-17	2-AMSH-17	47K427-60/142X	2-H2-17	2	003	M	PSA	PSA-1	3	10%
2-SNUB-1-AMSH6	2-AMSH-6	2-AMSH-6	47K427-60/18	2-H2-6	3	003	M	PSA	PSA-1/2	4	10%
2-SNUB-1-AMSH8N	2-AMSH-8N	2-AMSH-8N	47K427-60/22	2-H2-8	3	003	M	PSA	PSA-1/4	4	10%
2-SNUB-1-AMSH8S	2-AMSH-8S	2-AMSH-8S	47K427-60/22	2-H2-8	3	003	M	PSA	PSA-1/4	4	10%
2-SNUB-1-MSH300	2-MSH-300	2-MSH-300	47K400-74/5s	2-H1-300	2	001	M	PSA	PSA-100	6	10%
2-SNUB-1-MSH303E	2-MSH-303E	2-MSH-303E	47K400-74/6Y	2-H1-303	2	001	H	BE	BE-4	2	10%
2-SNUB-1-MSH303W	2-MSH-303W	2-MSH-303W	47K400-74/6Y	2-H1-303	2	001	H	BE	BE-4	2	10%
2-SNUB-1-MSH315	2-MSH-315	2-MSH-315	47K400-74/10X	2-H1-315	2	001	H	BE	BE-3-1/4	2	10%
2-SNUB-1-MSH322	2-MSH-322	2-MSH-322	47K400-74/47	2-H1-322	2	001	M	PSA	PSA-1	5	10%

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Component ID	Support ID	Mark No	ISO Dwg	Support Dwg	Class	Sys	Type	Mfg	Model	DTPG	Plan
2-SNUB-1-MSH340	2-MSH-340	2-MSH-340	47K400-75/6	2-H1-340	2	001	M	PSA	PSA-35	6	10%
2-SNUB-1-MSH343E	2-MSH-343E	2-MSH-343E	47K400-75/9	2-H1-343	2	001	H	BE	BE-4	2	10%
2-SNUB-1-MSH343W	2-MSH-343W	2-MSH-343W	47K400-75/9	2-H1-343	2	001	H	BE	BE-4	2	10%
2-SNUB-1-MSH353	2-MSH-353	2-MSH-353	47K400-75/29	2-H1-353	2	001	M	PSA	PSA-35	6	10%
2-SNUB-1-MSH357	2-MSH-357	2-MSH-357	47K400-75/76	2-H1-357	2	001	M	PSA	PSA-3	5	10%
2-SNUB-1-MSH380	2-MSH-380	2-MSH-380	47K400-76/5A	2-H1-380	2	001	M	PSA	PSA-35	6	10%
2-SNUB-1-MSH383E	2-MSH-383E	2-MSH-383E	47K400-76/8	2-H1-383	2	001	H	BE	BE-4	2	10%
2-SNUB-1-MSH383W	2-MSH-383W	2-MSH-383W	47K400-76/8	2-H1-383	2	001	H	BE	BE-4	2	10%
2-SNUB-1-MSH392	2-MSH-392	2-MSH-392	47K400-76/28	2-H1-392	2	001	M	PSA	PSA-35	6	10%
2-SNUB-1-MSH393	2-MSH-393	2-MSH-393	47K400-76/29	2-H1-393	2	001	M	PSA	PSA-35	6	10%
2-SNUB-1-MSH397	2-MSH-397	2-MSH-397	47K400-76/34	2-H1-397	2	001	M	PSA	PSA-1	5	10%
2-SNUB-1-MSH397	2-MSH-420	2-MSH-420	47K400-77/8S2	2-H01-420	2	001	M	PSA	PSA-35	6	10%
2-SNUB-1-MSH423E	2-MSH-423E	2-MSH-423E	47K400-77/11	2-H1-423	2	001	H	BE	BE-4	2	10%
2-SNUB-1-MSH423W	2-MSH-423W	2-MSH-423W	47K400-77/11	2-H1-423	2	001	H	BE	BE-4	2	10%
2-SNUB-1-MSH432	2-MSH-432	2-MSH-432	47K400-77/39	2-H1-432	2	001	M	PSA	PSA-100	6	10%
2-SNUB-1-MSH433	2-MSH-433	2-MSH-433	47K400-77/41	2-H1-433	2	001	M	PSA	PSA-35	6	10%
2-SNUB-1-MSH440	2-MSH-440	2-MSH-440	47K400-77/A50	2-H1-440	2	001	M	PSA	PSA-1	5	10%
2-SNUB-31-915-8-4	47A915-8-4	47A915-8-4	47K915-59	47A915-8-4	2	031	M	PSA	PSA-1	3	10%
2-SNUB-33-492-2-54	47A492-2-54	47A492-2-54	47K492-100/S4	47A492-2-54	2	033	M	PSA	PSA-1/2	4	10%
2-SNUB-3-AFDH223A	2-AFDH-223A	2-AFDH-223A	47K427-60/12	2-H3-223A	3	003	M	PSA	PSA-1	3	10%
2-SNUB-3-AFDH224N	2-AFDH-224N	2-AFDH-224N	47K427-60/30	2-H3-224	3	003	M	PSA	PSA-1/2	4	10%
2-SNUB-3-AFDH224S	2-AFDH-224S	2-AFDH-224S	47K427-60/30	2-H3-224	3	003	M	PSA	PSA-1/2	4	10%
2-SNUB-3-AFDH229	2-AFDH-229	2-AFDH-229	47K427-60/A62	2-H3-229	3	003	M	PSA	PSA-3	3	10%
2-SNUB-3-AFDH238	2-AFDH-238	2-AFDH-238	47K427-525-1/2	2-H3-238	3	003	M	PSA	PSA-1/2	4	10%
2-SNUB-3-AFDH240	2-AFDH-240	2-AFDH-240	47K427-525-1/4	2-H3-240	3	003	M	PSA	PSA-1/4	4	10%
2-SNUB-3-AFDH25	2-AFDH-25	2-AFDH-25	0600102-05-01/62A	2-H3-25	2	003	M	PSA	PSA-1/4	4	10%
2-SNUB-3-AFDH280	2-AFDH-280	2-AFDH-280	47K427-58/164	2-H3-280	2	003	M	PSA	PSA-1/2	4	10%
2-SNUB-3-AFDH3	2-AFDH-3	2-AFDH-3	0600102-05-01/C04	2-H3-3	2	003	M	PSA	PSA-3	3	10%

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Component ID	Support ID	Mark No	ISO Dwg	Support Dwg	Class	Sys	Type	Mfg	Model	DTPG	Plan
			A								
2-SNUB-3-AFDH315	2-AFDH-315	2-AFDH-315	47K427-59/306	2-H3-315	2	003	M	PSA	PSA-3	3	10%
2-SNUB-3-AFDH317	2-AFDH-317	2-AFDH-317	47K427-59/307	2-H3-317	2	003	M	PSA	PSA-1	3	10%
2-SNUB-3-AFDH42	2-AFDH-42	2-AFDH-42	0600102-05-02/8	2-H3-42	2	003	M	PSA	PSA-3	3	10%
2-SNUB-3-FDH203	2-FDH-203	2-FDH-203	47K401-50/6	2-H4-203	2	003	M	PSA	PSA-10	3	10%
2-SNUB-3-FDH204N	2-FDH-204N	2-FDH-204N	47K401-50/7	2-H4-204	2	003	M	PSA	PSA-10	3	10%
2-SNUB-3-FDH204S	2-FDH-204S	2-FDH-204S	47K401-50/7	2-H4-204	2	003	M	PSA	PSA-10	3	10%
2-SNUB-3-FDH206	2-FDH-206	2-FDH-206	47K401-50/8A	2-H4-206	2	003	H	BE	BE-6	2	10%
2-SNUB-3-FDH243	2-FDH-243	2-FDH-243	47K401-52/16	2-H4-243	2	003	M	PSA	PSA-10	3	10%
2-SNUB-3-FDH244L	2-FDH-244L	2-FDH-244L	47K401-52/20X	2-H4-244	2	003	H	BE	BE-3-1/4	2	10%
2-SNUB-3-FDH244U	2-FDH-244U	2-FDH-244U	47K401-52/20X	2-H4-244	2	003	H	BE	BE-3-1/4	2	10%
2-SNUB-3-FDH283	2-FDH-283	2-FDH-283	47K401-53/13	2-H4-283	2	003	M	PSA	PSA-10	3	10%
2-SNUB-3-FDH285	2-FDH-285	2-FDH-285	47K401-53/17	2-H4-285	2	003	H	BE	BE-4	2	10%
2-SNUB-3-FDH323	2-FDH-323	2-FDH-323	47K401-51/8	2-H4-323	2	003	M	PSA	PSA-10	3	10%
2-SNUB-3-FDH324	2-FDH-324	2-FDH-324	47K401-51/9	2-H4-324	2	003	H	BE	BE-4	2	
2-SNUB-59-492-1-27	47A492-1-27	47A492-1-27	47K492-152/115	47A492-1-27	2	059	M	PSA	PSA-1/4	4	10%
2-SNUB-62-406-12-1	47A406-12-1	47A406-12-1	47K406-134/B07	47A406-12-1	1	062	M	PSA	PSA-1/4	4	10%
2-SNUB-62-406-12-3	47A406-12-3	47A406-12-3	47K406-544-1	47A406-12-3	2	062	M	PSA	PSA-1/4	4	10%
2-SNUB-62-406-12-4	47A406-12-4	47A406-12-4	47K406-544-1	47A406-12-4	2	062	M	PSA	PSA-1/4	4	10%
2-SNUB-62-40613-3	47B406-13-3	47B406-13-3	47K406-130/A3AS	47B406-13-3	2	062	M	PSA	PSA-1/4	4	10%
2-SNUB-62-437-4-10	47A437-4-10	47A437-4-10	47K406-124/771	47A437-4-10	2	062	M	PSA	PSA-1/2	4	10%
2-SNUB-62-CVCH142	2-CVCH-142	2-CVCH-142	47K406-118/48B	2-H34-142	2	062	M	PSA	PSA-1	3	10%
2-SNUB-62-CVCH191L	2-CVCH-191L	2-CVCH-191L	47K406-129/14	2-H34-191	2	062	M	PSA	PSA-1/2	4	10%
2-SNUB-62-CVCH191U	2-CVCH-191U	2-CVCH-191U	47K406-129/14	2-H34-191	2	062	M	PSA	PSA-1/2	4	10%
2-SNUB-62-CVCH20	2-CVCH-20	2-CVCH-20	47K406-116/14A	2-H34-20	1	062	M	PSA	PSA-1/4	4	10%
2-SNUB-62-CVCH205	2-CVCH-205	2-CVCH-205	47K406-129/24A	2-H34-205	2	062	M	PSA	PSA-1	3	10%
2-SNUB-62-CVCH303	2-CVCH-303	2-CVCH-303	47K406-146/51	2-H34-303	1	062	M	PSA	PSA-3	3	10%
2-SNUB-62-CVCH347	2-CVCH-347	2-CVCH-347	47K406-142/41B	2-H34-347	1	062	M	PSA	PSA-3	3	10%

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Component ID	Support ID	Mark No	ISO Dwg	Support Dwg	Class	Sys	Type	Mfg	Model	DTPG	Plan
2-SNUB-62-CVCH349	2-CVCH-349	2-CVCH-349	47K406-142/V5	2-H34-349	1	062	M	PSA	PSA-1	3	10%
2-SNUB-62-CVCH363	2-CVCH-363	2-CVCH-363	47K406-141/75B	2-H34-363	1	062	M	PSA	PSA-3	3	10%
2-SNUB-62-CVCH364	2-CVCH-364	2-CVCH-364	47K406-141/75B	2-H34-364	1	062	M	PSA	PSA-10	3	10%
2-SNUB-62-CVCH400	2-CVCH-400	2-CVCH-400	47K406-50/525S	2-H34-400	2	062	M	PSA	PSA-1	3	10%
2-SNUB-62-CVCH413N	2-CVCH-413N	2-CVCH-413N	47K406-50/472A	2-H34-413	2	062	M	PSA	PSA-1/4	4	10%
2-SNUB-62-CVCH413S	2-CVCH-413S	2-CVCH-413S	47K406-50/472	2-H34-413	2	062	M	PSA	PSA-1/4	4	10%
2-SNUB-62-CVCH416	2-CVCH-416	2-CVCH-416	47K406-50/460	2-H34-416	2	062	M	PSA	PSA-1/4	4	10%
2-SNUB-62-CVCH429	2-CVCH-429	2-CVCH-429	2-47K406-63/397A	2-H34-429	2	062	M	PSA	PSA-1/4	4	10%
2-SNUB-62-CVCH432	2-CVCH-432	2-CVCH-432	ISI-0449-C-25/443	2-H34-432	2	062	M	PSA	PSA-1/2	4	10%
2-SNUB-62-CVCH450E	2-CVCH-450E	2-CVCH-450E	47K406-115/938	2-H34-450	2	062	M	PSA	PSA-1/2	4	10%
2-SNUB-62-CVCH450 W	2-CVCH-450W	2-CVCH-450W	47K406-115/938	2-H34-450	2	062	M	PSA	PSA-1/2	4	10%
2-SNUB-62-CVCH460	2-CVCH-460	2-CVCH-460	47K406-123/70	2-H34-460	2	062	M	PSA	PSA-10	3	10%
2-SNUB-62-CVCH466	2-CVCH-466	2-CVCH-466	47K406-123/184	2-H34-466	2	062	M	PSA	PSA-3	3	10%
2-SNUB-62-CVCH491	2-CVCH-491	2-CVCH-491	47K406-51/627	2-H34-491	2	062	M	PSA	PSA-1/2	4	10%
2-SNUB-62-CVCH502	2-CVCH-502	2-CVCH-502	47K406-111/43	2-H34-502	2	062	M	PSA	PSA-1	3	10%
2-SNUB-62-CVCH556	2-CVCH-556	2-CVCH-556	47K406-148/202	2-H34-556	2	062	M	PSA	PSA-1/4	4	10%
2-SNUB-62-CVCH557	2-CVCH-557	2-CVCH-557	47K406-148/209	2-H34-557	2	062	M	PSA	PSA-1	3	10%
2-SNUB-62-CVCH831	2-CVCH-831	2-CVCH-831	47K406-140/70	2-H34-831	1	062	M	PSA	PSA-1/4	4	10%
2-SNUB-62-CVCH841	2-CVCH-841	2-CVCH-841	47K406-125/10	2-H34-841	2	062	M	PSA	PSA-1/2	4	10%
2-SNUB-62-CVCH866	2-CVCH-866	2-CVCH-866	47K406-125/9ADS	2-H34-866	2	062	M	PSA	PSA-1/4	4	10%
2-SNUB-62-CVCH87	2-CVCH-87	2-CVCH-87	2-47K406-134/14	2-H34-87	1	062	M	PSA	PSA-1/2	4	10%
2-SNUB-62-CVCH894	2-CVCH-894	2-CVCH-894	47K406-126/14	2-H34-894	2	062	M	PSA	PSA-1/4	4	10%
2-SNUB-62-CVCH920	2-CVCH-920	2-CVCH-920	47K406-127/6	2-H34-920	1	062	M	PSA	PSA-1/4	4	10%
2-SNUB-62-CVCH931	2-CVCH-931	2-CVCH-931	47K406-128/10	2-H34-931	1	062	M	PSA	PSA-1/4	4	10%
2-SNUB-62-CVCH944	2-CVCH-944	2-CVCH-944	47K406-131/16A	2-H34-944	2	062	M	PSA	PSA-1/2	4	10%
2-SNUB-63-43513-32	47A435-13-32	47A435-13-32	47K435-59/57	47A435-13-32	2	063	M	PSA	PSA-1/4	4	10%
2-SNUB-63-43514-10	47A435-14-10	47A435-14-10	47K435-532-01	47A435-14-10	3	063	M	PSA	PSA-1/4	4	10%

**Attachment 6 - Snubber Test Plan**  
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Component ID	Support ID	Mark No	ISO Dwg	Support Dwg	Class	Sys	Type	Mfg	Model	DTPG	Plan
2-SNUB-63-435-8-3	47A435-8-3	47A435-8-3	47K435-83/OPI	47A435-8-3	2	063	M	PSA	PSA-1/2	4	10%
2-SNUB-63-SIH105	2-SIH-105	2-SIH-105	47K435-81/A20	2-H20-105	1	063	M	PSA	PSA-10	3	10%
2-SNUB-63-SIH106L	2-SIH-106L	2-SIH-106L	47K435-81/20	2-H20-106	1	063	M	PSA	PSA-10	3	10%
2-SNUB-63-SIH106U	2-SIH-106U	2-SIH-106U	47K435-81/20	2-H20-106	1	063	M	PSA	PSA-10	3	10%
2-SNUB-63-SIH109	2-SIH-109	2-SIH-109	47K435-81/11	2-H20-109	2	063	M	PSA	PSA-10	3	10%
2-SNUB-63-SIH11	2-SIH-11	2-SIH-11	47K435-84/31A	2-H20-11	2	063	M	PSA	PSA-3	3	10%
2-SNUB-63-SIH110N	2-SIH-110N	2-SIH-110N	47K435-81/11	2-H20-110	2	063	M	PSA	PSA-10	3	10%
2-SNUB-63-SIH110S	2-SIH-110S	2-SIH-110S	47K435-81/11	2-H20-110	2	063	M	PSA	PSA-10	3	10%
2-SNUB-63-SIH13	2-SIH-13	2-SIH-13	47K435-84/35	2-H20-13	2	063	M	PSA	PSA-3	3	10%
2-SNUB-63-SIH15	2-SIH-15	2-SIH-15	47K435-84/37	2-H20-15	2	063	M	PSA	PSA-3	3	10%
2-SNUB-63-SIH23	2-SIH-23	2-SIH-23	47K435-84/59	2-H20-23	1	063	M	PSA	PSA-10	3	10%
2-SNUB-63-SIH27	2-SIH-27	2-SIH-27	47K435-84/67A	2-H20-27	2	063	H	BE	BE-4	2	10%
2-SNUB-63-SIH28	2-SIH-28	2-SIH-28	47K435-89/77C	2-H20-28	2	063	M	PSA	PSA-3	3	10%
2-SNUB-63-SIH32	2-SIH-32	2-SIH-32	47K435-84/25F	2-H20-32	1	063	M	PSA	PSA-1	3	10%
2-SNUB-63-SIH40	2-SIH-40	2-SIH-40	47K435-82/17E	2-H20-40	2	063	M	PSA	PSA-1/2	4	10%
2-SNUB-63-SIH431	2-SIH-431	2-SIH-431	47K435-53/128	2-H20-431	2	063	M	PSA	PSA-10	3	10%
2-SNUB-63-SIH439	2-SIH-439	2-SIH-439	47K435-53/204	2-H20-439	2	063	M	PSA	PSA-3	3	10%
2-SNUB-63-SIH44	2-SIH-44	2-SIH-44	47K435-82/70	2-H20-44	2	063	M	PSA	PSA-10	3	10%
2-SNUB-63-SIH450	2-SIH-450	2-SIH-450	47K406-124/248	2-H20-450	2	063	M	PSA	PSA-10	3	10%
2-SNUB-63-SIH457	2-SIH-457	2-SIH-457	47K406-124/379	2-H20-457	2	063	M	PSA	PSA-3	3	10%
2-SNUB-63-SIH57	2-SIH-57	2-SIH-57	47K435-82/64	2-H20-57	2	063	M	PSA	PSA-3	3	10%
2-SNUB-63-SIH59	2-SIH-59	2-SIH-59	47K435-82/62	2-H20-59	2	063	M	PSA	PSA-10	3	10%
2-SNUB-63-SIH6	2-SIH-6	2-SIH-6	47K435-84/15	2-H20-6	1	063	M	PSA	PSA-35	6	10%
2-SNUB-63-SIH61N	2-SIH-61N	2-SIH-61N	47K435-82/60	2-H20-61	1	063	M	PSA	PSA-3	3	10%
2-SNUB-63-SIH61S	2-SIH-61S	2-SIH-61S	47K435-82/60	2-H20-61	1	063	M	PSA	PSA-3	3	10%
2-SNUB-63-SIH67	2-SIH-67	2-SIH-67	47K435-82/45	2-H20-67	1	063	M	PSA	PSA-10	3	10%
2-SNUB-63-SIH69	2-SIH-69	2-SIH-69	47K435-82/48A	2-H20-69	1	063	M	PSA	PSA-35	6	10%
2-SNUB-63-SIH72	2-SIH-72	2-SIH-72	47K435-82/A38	2-H20-72	2	063	M	PSA	PSA-10	3	10%

**Attachment 6 - Snubber Test Plan**  
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Component ID	Support ID	Mark No	ISO Dwg	Support Dwg	Class	Sys	Type	Mfg	Model	DTPG	Plan
2-SNUB-63-SIH814	2-SIH-814	2-SIH-814	0600102-09-11/B93	2-H20-814	2	063	M	PSA	PSA-3	3	10%
2-SNUB-67-25-312L	47A450-25-312L	47A450-25-312 L	47K450-234	TBD	3	067	M	PSA	PSA-3	3	10%
2-SNUB-67-25-312U	47A450-25-312U	47A450-25-312 U	47K450-234	TBD	3	067	M	PSA	PSA-3	3	10%
2-SNUB-67-45025357	47A450-25-357	47A450-25-357	47K450-211/92	47A450-25-357	3	067	M	PSA	PSA-3	3	10%
2-SNUB-67-45025368	47A450-25-368	47A450-25-368	47K450-209/15	47A450-25-368	3	067	M	PSA	PSA-3	3	10%
2-SNUB-67-45025369	47A450-25-369	47A450-25-369	47K450-209/25	47A450-25-369	3	067	M	PSA	PSA-1	3	10%
2-SNUB-67-45025384	47A450-25-384	47A450-25-384	47K450-212/55	47A450-25-384	3	067	M	PSA	PSA-1	3	10%
2-SNUB-67-45025386	47A450-25-386	47A450-25-386	47K450-212/92Y	47A450-25-386	3	067	M	PSA	PSA-1	3	10%
2-SNUB-67-45025441	47A450-25-441	47A450-25-441	47K450-210/24	47A450-25-441	2	067	M	PSA	PSA-3	3	10%
2-SNUB-67-45025442	47A450-25-442	47A450-25-442	47K450-207/50	47A450-25-442	3	067	M	PSA	PSA-3	3	10%
2-SNUB-67-45025445	47A450-25-445	47A450-25-445	47K450-234/9	47A450-25-445	2	067	M	PSA	PSA-3	3	10%
2-SNUB-67-45025446	47A450-25-446	47A450-25-446	47K450-201/21	47A450-25-446	3	067	M	PSA	PSA-3	3	10%
2-SNUB-67-4502619N	47A450-26-19N	47A450-26-19N	47K450-243/141	47A450-26-19	3	067	M	PSA	PSA-1/4	4	10%
2-SNUB-67-4502619S	47A450-26-19S	47A450-26-19S	47K450-243/141	47A450-26-19	3	067	M	PSA	PSA-1/4	4	10%
2-SNUB-67-45026-21	47A450-26-21	47A450-26-21	47K450-243/144A	47A450-26-21	3	067	M	PSA	PSA-1	3	10%
2-SNUB-67-4502622N	47A450-26-22N	47A450-26-22N	47K450-243/144	47A450-26-22	3	067	M	PSA	PSA-1/2	4	10%
2-SNUB-67-4502622S	47A450-26-22S	47A450-26-22S	47K450-243/144	47A450-26-22	3	067	M	PSA	PSA-1/2	4	10%
2-SNUB-67-45027-35	47A450-27-35	47A450-27-35	47K450-217/11A	47A450-27-35	2	067	M	PSA	PSA-1/4	5	10%
2-SNUB-67-45027-36	47A450-27-36	47A450-27-36	47K450-217/132	47A450-27-36	2	067	M	PSA	PSA-1/4	5	10%
2-SNUB-67-45027-37	47A450-27-37	47A450-27-37	47K450-217/132	47A450-27-37	2	067	M	PSA	PSA-1/4	5	10%
2-SNUB-67-450-27-8	47A450-27-8	47A450-27-8	47K450-217/118	47A450-27-8	2	067	M	PSA	PSA-1/2	5	10%
2-SNUB-67-450-27-9	47A450-27-9	47A450-27-9	47K450-217/139	47A450-27-9	2	067	M	PSA	PSA-1/4	5	10%
2-SNUB-68-465-1-4	47B465-1-4	47B465-1-4	2-47K465-53/14A	47B465-1-4	1	068	M	PSA	PSA-1	3	10%
2-SNUB-68-465-8-33	47A465-8-33	47A465-8-33	47K465-52/14	47A465-8-33	2	068	M	PSA	PSA-1/4	4	10%
2-SNUB-68-465-8-39	47A465-8-39	47A465-8-39	47K465-52/22	47A465-8-39	2	068	M	PSA	PSA-1/4	4	10%
2-SNUB-68-465-8-41	47A465-8-41	47A465-8-41	47K465-52/29D	47A465-8-41	2	068	M	PSA	PSA-1/4	4	10%

**Attachment 6 - Snubber Test Plan**  
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Component ID	Support ID	Mark No	ISO Dwg	Support Dwg	Class	Sys	Type	Mfg	Model	DTPG	Plan
2-SNUB-68-5001B	2-SG1-B	2-SG1-B	TBD	48N424	2	068	H	PMH	PMH-14	1	10%
2-SNUB-68-5001C	2-SG1-C	2-SG1-C	TBD	48N424	2	068	H	PMH	PMH-14	1	10%
2-SNUB-68-5001D	2-SG1-D	2-SG1-D	TBD	48N424	2	068	H	PMH	PMH-14	1	10%
2-SNUB-68-5002B	2-SG2-B	2-SG2-B	TBD	48N424	2	068	H	PMH	PMH-14	1	10%
2-SNUB-68-5002C	2-SG2-C	2-SG2-C	TBD	48N424	2	068	H	PMH	PMH-14	1	10%
2-SNUB-68-5002D	2-SG2-D	2-SG2-D	TBD	48N424	2	068	H	PMH	PMH-14	1	10%
2-SNUB-68-5003B	2-SG3-B	2-SG3-B	TBD	48N424	2	068	H	PMH	PMH-14	1	10%
2-SNUB-68-5003C	200571	2-SG3-C	TBD	48N424	2	068	H	PMH	PMH-14	1	10%
2-SNUB-68-5003D	2-SG3-D	2-SG3-D	TBD	48N424	2	068	H	PMH	PMH-14	1	10%
2-SNUB-68-5004B	2-SG4-B	2-SG4-B	TBD	48N424	2	068	H	PMH	PMH-14	1	10%
2-SNUB-68-5004C	2-SG4-C	2-SG4-C	TBD	48N424	2	068	H	PMH	PMH-14	1	10%
2-SNUB-68-5004D	2-SG4-D	2-SG4-D	TBD	48N424	2	068	H	PMH	PMH-14	1	10%
2-SNUB-68-RCH114L	2-RCH-114L	2-RCH-114L	47K465-56/58A	2-H36-114	1	068	M	PSA	PSA-3	3	10%
2-SNUB-68-RCH114U	2-RCH-114U	2-RCH-114U	47K465-56/58A	2-H36-114	1	068	M	PSA	PSA-3	3	10%
2-SNUB-68-RCH125E	2-RCH-125E	2-RCH-125E	47K465-57/34A	2-H36-125	1	068	M	PSA	PSA-3	3	10%
2-SNUB-68-RCH125W	2-RCH-125W	2-RCH-125W	47K465-57/34A	2-H36-125	1	068	M	PSA	PSA-3	3	10%
2-SNUB-68-RCH28	2-RCH-28	2-RCH-28	47K465-53/11	2-H36-28	1	068	M	PSA	PSA-3	3	10%
2-SNUB-68-RCH30	2-RCH-30	2-RCH-30	47K465-53/X17	2-H36-30	1	068	M	PSA	PSA-3	3	10%
2-SNUB-68-RCH65	2-RCH-65	2-RCH-65	47K465-56/101	2-H36-65	1	068	M	PSA	PSA-10	3	10%
2-SNUB-68-RCH71	2-RCH-71	2-RCH-71	47K465-56/81	2-H36-71	1	068	M	PSA	PSA-10	3	10%
2-SNUB-68-RCH833	2-RCH-833	2-RCH-833	0600102-13-09/10	2-H36-833	1	068	M	PSA	PSA-1/2	4	10%
2-SNUB-68-RCH835	2-RCH-835	2-RCH-835	0600102-13-09/5A	2-H36-835	1	068	M	PSA	PSA-1	3	10%
2-SNUB-68-RCH86	2-RCH-86	2-RCH-86	47K465-57/50B	2-H36-86	1	068	M	PSA	PSA-3	3	10%
2-SNUB-68-RCH893	2-RCH-893	2-RCH-893	47K406-146/110	2-H36-893	1	068	M	PSA	PSA-1	3	10%
2-SNUB-68-RCH895	2-RCH-895	2-RCH-895	47K406-146/105A	2-H36-895	1	068	M	PSA	PSA-1	3	10%
2-SNUB-68-RCH90	2-RCH-90	2-RCH-90	47K465-57/47	2-H36-90	1	068	M	PSA	PSA-3	3	10%
2-SNUB-68-RCH91E	2-RCH-91E	2-RCH-91E	47K465-57/46E	2-H36-91	1	068	M	PSA	PSA-3	3	10%
2-SNUB-68-RCH91W	2-RCH-91W	2-RCH-91W	47K465-57/46E(S46	2-H36-91	1	068	M	PSA	PSA-3	3	10%



**Attachment 6 - Snubber Test Plan**  
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Component ID	Support ID	Mark No	ISO Dwg	Support Dwg	Class	Sys	Type	Mfg	Model	DTPG	Plan
			E)								
2-SNUB-68-RCH923	2-RCH-923	2-RCH-923	0600102-13-12/10	2-H36-923	1	068	M	PSA	PSA-1	3	10%
2-SNUB-68-RCH96	2-RCH-96	2-RCH-96	47K465-57/30	2-H36-96	1	068	M	PSA	PSA-3	3	10%
2-SNUB-70-CCH175	2-CCH-175	2-CCH-175	47K464-99/60	2-H10-175	3	070	M	PSA	PSA-1/2	4	10%
2-SNUB-70-CCH205	2-CCH-205	2-CCH-205	47K464-99/6	2-H10-205	2	070	M	PSA	PSA-3	3	10%
2-SNUB-70-CCH323	2-CCH-323	2-CCH-323	0600152-04-09/6B	2-H10-323	3	070	M	PSA	PSA-3	3	10%
2-SNUB-70-CCH324	2-CCH-324	2-CCH-324	0600152-04-09/6B2	2-H10-324	3	070	M	PSA	PSA-1/2	4	10%
2-SNUB-70-CCH325	2-CCH-325	2-CCH-325	0600152-04-09/6B	2-H10-325	3	070	M	PSA	PSA-1/4	4	10%
2-SNUB-70-CCH473	2-CCH-473	2-CCH-473	47K464-86/3	2-H10-473	3	070	M	PSA	PSA-3	3	10%
2-SNUB-70-CCH62	2-CCH-62	2-CCH-62	47K464-98/6A	2-H10-62	3	070	M	PSA	PSA-1	3	10%
2-SNUB-70-CCH760N	2-CCH-760N	2-CCH-760N	47K464-56/236	2-H10-1116	3	070	M	PSA	PSA-3	3	10%
2-SNUB-70-CCH760S	2-CCH-760S	2-CCH-760S	47K464-56/236	2-H10-1116	3	070	M	PSA	PSA-3	3	10%
2-SNUB-70-CCH762	2-CCH-762	2-CCH-762	47K464-56/236	2-H10-1120	3	070	M	PSA	PSA-10	3	10%
2-SNUB-70-CCH764L	2-CCH-764L	2-CCH-764L	47K464-56/256	2-H10-1123	3	070	M	PSA	PSA-3	3	10%
2-SNUB-70-CCH764U	2-CCH-764U	2-CCH-764U	47K464-56/256	2-H10-1123	3	070	M	PSA	PSA-3	3	10%
2-SNUB-70-CCH768	2-CCH-768	2-CCH-768	47K464-56/2F1	2-H10-1130	3	070	M	PSA	PSA-3	3	10%
2-SNUB-70-CCH769	2-CCH-769	2-CCH-769	47K464-56/2F1	2-H10-1132	3	070	M	PSA	PSA-1	3	10%
2-SNUB-70-CCH844	2-CCH-844	2-CCH-844	47K464-101/6	2-H10-844	3	070	M	PSA	PSA-3	3	10%
2-SNUB-70-CCH845	2-CCH-845	2-CCH-845	47K464-101/6A	2-H10-845	3	070	M	PSA	PSA-3	3	10%
2-SNUB-72-CSH100	2-CSH-100	2-CSH-100	47K437-62/185	2-H21-100	2	072	M	PSA	PSA-10	3	10%
2-SNUB-72-CSH14	2-CSH-14	2-CSH-14	47K437-57/300	2-H21-14	2	072	M	PSA	PSA-10	3	10%
2-SNUB-72-CSH15	2-CSH-15	2-CSH-15	47K437-57/290	2-H21-15	2	072	M	PSA	PSA-10	3	10%
2-SNUB-72-CSH17	2-CSH-17	2-CSH-17	47K437-57/315	2-H21-17	2	072	M	PSA	PSA-10	3	10%
2-SNUB-72-CSH18	2-CSH-18	2-CSH-18	47K437-57/320	2-H21-18	2	072	M	PSA	PSA-35	6	10%
2-SNUB-72-CSH35	2-CSH-35	2-CSH-35	47K437-57/745	2-H21-35	2	072	M	PSA	PSA-35	6	10%
2-SNUB-72-CSH37	2-CSH-37	2-CSH-37	47K437-57/735	2-H21-37	2	072	M	PSA	PSA-10	3	10%
2-SNUB-72-CSH44	2-CSH-44	2-CSH-44	47K437-57/850	2-H21-44	2	072	M	PSA	PSA-10	3	10%
2-SNUB-72-CSH45	2-CSH-45	2-CSH-45	47K437-57/845	2-H21-45	2	072	M	PSA	PSA-10	3	10%

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Component ID	Support ID	Mark No	ISO Dwg	Support Dwg	Class	Sys	Type	Mfg	Model	DTPG	Plan
2-SNUB-72-CSH456N	2-CSH-456N	2-CSH-456N	47K406-124/781	2-H21-456	2	072	M	PSA	PSA-3	3	10%
2-SNUB-72-CSH456S	2-CSH-456S	2-CSH-456S	47K406-124/781B	2-H21-456	2	072	M	PSA	PSA-3	3	10%
2-SNUB-72-CSH457	2-CSH-457	2-CSH-457	47K406-124/781	2-H21-457	2	072	M	PSA	PSA-3	3	10%
2-SNUB-72-CSH47	2-CSH-47	2-CSH-47	47K437-57/870	2-H21-47	2	072	M	PSA	PSA-10	3	10%
2-SNUB-72-CSH48	2-CSH-48	2-CSH-48	47K437-57/875	2-H21-48	2	072	M	PSA	PSA-10	3	10%
2-SNUB-72-CSH5	2-CSH-5	2-CSH-5	47K437-57/205	2-H21-5	2	072	M	PSA	PSA-35	6	10%
2-SNUB-72-CSH65	2-CSH-65	2-CSH-65	47K437-60/115	2-H21-65	2	072	M	PSA	PSA-10	3	10%
2-SNUB-72-CSH66	2-CSH-66	2-CSH-66	47K437-60/110	2-H21-66	2	072	M	PSA	PSA-10	3	10%
2-SNUB-72-CSH67	2-CSH-67	2-CSH-67	47K437-60/100	2-H21-67	2	072	M	PSA	PSA-10	3	10%
2-SNUB-72-CSH7	2-CSH-7	2-CSH-7	47K437-57/195	2-H21-7	2	072	M	PSA	PSA-10	3	10%
2-SNUB-72-CSH74	2-CSH-74	2-CSH-74	47K437-60/210	2-H21-74	2	072	M	PSA	PSA-10	3	10%
2-SNUB-72-CSH75	2-CSH-75	2-CSH-75	47K437-60/205	2-H21-75	2	072	M	PSA	PSA-3	3	10%
2-SNUB-72-CSH77	2-CSH-77	2-CSH-77	47W437-60/230	2-H21-77	2	072	M	PSA	PSA-10	3	10%
2-SNUB-72-CSH78	2-CSH-78	2-CSH-78	47K437-60/235	2-H21-78	2	072	M	PSA	PSA-10	3	10%
2-SNUB-72-CSH95	2-CSH-95	2-CSH-95	47K437-62/170	2-H21-95	2	072	M	PSA	PSA-10	3	10%
2-SNUB-72-CSH96	2-CSH-96	2-CSH-96	47K437-62/165	2-H21-96	2	072	M	PSA	PSA-10	3	10%
2-SNUB-72-CSH99	2-CSH-99	2-CSH-99	47K437-62/190	2-H21-99	2	072	M	PSA	PSA-3	3	10%
2-SNUB-74-RHRH401	2-RHRH-401	2-RHRH-401	47K435-51-1/135	2-H63-401	2	074	M	PSA	PSA-3	3	10%
2-SNUB-74-RHRH408	2-RHRH-408	2-RHRH-408	47K435-51-1/239	2-H63-408	2	074	M	PSA	PSA-3	3	10%
2-SNUB-74-RHRH425	2-RHRH-425	2-RHRH-425	47K432-54/83	2-H63-425	2	074	M	PSA	PSA-1/2	4	10%
2-SNUB-74-RHRH430	2-RHRH-430	2-RHRH-430	47K432-54/92	2-H63-430	2	074	M	PSA	PSA-3	3	10%
2-SNUB-74-RHRH463	2-RHRH-463	2-RHRH-463	47K432-54/241	2-H63-463	2	074	M	PSA	PSA-1	3	10%
2-SNUB-74-RHRH483	2-RHRH-483	2-RHRH-483	47K432-56/785	2-H63-483	2	074	M	PSA	PSA-3	3	10%
2-SNUB-74-RHRH491	2-RHRH-491	2-RHRH-491	47K432-56/899	2-H63-491	2	074	M	PSA	PSA-1	3	10%
2-SNUB-74-RHRH493	2-RHRH-493	2-RHRH-493	47K432-56/942	2-H63-493	2	074	M	PSA	PSA-1/4	4	10%
2-SNUB-74-RHRH6	2-RHRH-6	2-RHRH-6	47K432-57/18AZ	2-H63-6	1	074	H	BE	BE-3-1/4	2	10%
2-SNUB-74-RHRH8	2-RHRH-8	2-RHRH-8	47K432-57/35B	2-H63-8	1	074	M	PSA	PSA-1	3	10%
2-SNUB-77-560-8-1	47A560-8-1	47A560-8-1	47K560-514-02	47A560-8-1	2	077	M	PSA	PSA-1/4	4	10%

**Attachment 6 - Snubber Test Plan**  
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<b>Component ID</b>	<b>Support ID</b>	<b>Mark No</b>	<b>ISO Dwg</b>	<b>Support Dwg</b>	<b>Class</b>	<b>Sys</b>	<b>Type</b>	<b>Mfg</b>	<b>Model</b>	<b>DTPG</b>	<b>Plan</b>
2-SNUB-77-560-8-2	47A560-8-2	47A560-8-2	47K560-54/45	47A560-8-2	2	077	M	PSA	PSA-1/4	4	10%
2-SNUB-77-560-8-3	47A560-8-3	47A560-8-3	47K560-54/60	47A560-8-3	2	077	M	PSA	PSA-1/4	4	10%
2-SNUB-77-560-8-4	47A560-8-4	47A560-8-4	47K560-514-2	47A560-8-4	2	077	M	PSA	PSA-1/4	4	10%
2-SNUB-77-560-8-5	47A560-8-5	47A560-8-5	47K560-50/30	47A560-8-5	2	077	M	PSA	PSA-1/4	4	10%
2-SNUB-77-560-8-6	47A560-8-6	47A560-8-6	47K560-514-2	47A560-8-6	2	077	M	PSA	PSA-1/4	4	10%
2-SNUB-77-560-8-7	47A560-8-7	47A560-8-7	47K560-514-02	47A560-8-7	2	077	M	PSA	PSA-1/4	4	10%
2-SNUB-77-560-8-8	47A560-8-8	47A560-8-8	47K560-54/60A	47A560-8-8	2	077	M	PSA	PSA-1/4	4	10%
2-SNUB-81-492-2-55	47A492-2-55	47A492-2-55	47K492-50/D1	47A492-2-55	2	081	M	PSA	PSA-1/2	4	10%

**Attachment 7 - Code Class 1, 2, and 3 Pumps Exempt**

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**Flow Diagram: 2-47W859-3**

PUMP ID	EXEMPTION BASIS
2-PMP-70-130	ISTA-1100

PUMP ID	EXEMPTION BASIS
2-PMP-70-131	ISTA-1100

**Flow Diagram: 47W855-1**

PUMP ID	EXEMPTION BASIS
0-PMP-78-9	ISTA-1100

PUMP ID	EXEMPTION BASIS
0-PMP-78-12	ISTA-1100

PUMP ID	EXEMPTION BASIS
0-PMP-78-35	ISTA-1100

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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**Flow Diagram: 0-17W600-1**

VALVE ID	EXEMPTION BASIS
0-ISIV-67-1001A	ISTC - 1200(c)
0-VTIV-67-1001B	ISTC - 1200(a)
0-ISIV-67-1002A	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
0-ISIV-67-1002B	ISTC - 1200(c)
0-ISIV-67-1003A	ISTC - 1200(c)
0-VTIV-67-1003B	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
0-ISIV-67-1004A	ISTC - 1200(c)
0-ISIV-67-1004B	ISTC - 1200(c)
0-VTIV-67-1004C	ISTC - 1200(a)

**Flow Diagram: 0-17W600-6**

VALVE ID	EXEMPTION BASIS
1-VTIV-67-1018A	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
2-VTIV-67-1018A	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-ISIV-67-1018B	ISTC - 1200(c)
2-ISIV-67-1018B	ISTC - 1200(c)

**Flow Diagram: 0-47W600-102**

VALVE ID	EXEMPTION BASIS
0-ISIV-90-250B	ISTC - 1200(c)
0-TTIV-90-250C	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
0-ISIV-90-251B	ISTC - 1200(c)
0-TTIV-90-251C	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
0-TTIV-90-252C	ISTC - 1200(a)
0-TTIV-90-253C	ISTC - 1200(a)

**Flow Diagram: 0-47W600-117**

VALVE ID	EXEMPTION BASIS
0-VTIV-70-369B	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
0-ISIV-70-369C	ISTC - 1200(c)
0-ISIV-70-369D	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
0-VTIV-70-370B	ISTC - 1200(a)
0-ISIV-70-370C	ISTC - 1200(c)

**Flow Diagram: 0-47W600-129**

VALVE ID	EXEMPTION BASIS
2-VTIV-3-322B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-ISIV-3-322C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-ISIV-3-322C	ISTC - 1200(c)

**Flow Diagram: 0-47W600-152-ISI**

VALVE ID	EXEMPTION BASIS
0-ISIV-78-204C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
0-ISIV-78-206C	ISTC - 1200(c)

**Flow Diagram: 0-47W600-31**

VALVE ID	EXEMPTION BASIS
1-ISIV-1-276B	ISTC - 1200(c)
2-ISIV-1-276C	ISTC - 1200(c)
1-VTIV-1-277B	ISTC - 1200(a)
2-ISIV-1-277B	ISTC - 1200(c)
1-ISIV-1-277C	ISTC - 1200(c)
1-ISIV-1-282B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-ISIV-1-282B	ISTC - 1200(c)
1-ISIV-1-283B	ISTC - 1200(c)
2-ISIV-1-283B	ISTC - 1200(c)
1-ISIV-1-300B	ISTC - 1200(c)
2-ISIV-1-300C	ISTC - 1200(c)
1-VTIV-1-301B	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
2-ISIV-1-301B	ISTC - 1200(c)
1-ISIV-1-301C	ISTC - 1200(c)
1-ISIV-1-302B	ISTC - 1200(c)
2-ISIV-1-302B	ISTC - 1200(c)
1-ISIV-1-303B	ISTC - 1200(c)
2-ISIV-1-303B	ISTC - 1200(c)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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**Flow Diagram: 0-47W600-64**

VALVE ID	EXEMPTION BASIS
2-ISIV-3-325B	ISTC - 1200(c)
1-ISIV-3-325C	ISTC - 1200(c)
2-ISIV-3-326B	ISTC - 1200(c)
2-ISIV-3-327B	ISTC - 1200(c)
1-ISIV-3-328B	ISTC - 1200(c)
1-ISIV-3-329B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-ISIV-3-329B	ISTC - 1200(c)
1-ISIV-3-330B	ISTC - 1200(c)
2-ISIV-3-330B	ISTC - 1200(c)
1-ISIV-3-331B	ISTC - 1200(c)
2-ISIV-3-331B	ISTC - 1200(c)
2-ISIV-3-334B	ISTC - 1200(c)
1-ISIV-3-334C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VTIV-68-428F	ISTC - 1200(a)
1-ISIV-68-428H	ISTC - 1200(a)
2-ISIV-68-428H	ISTC - 1200(a)
1-VTIV-68-428J	ISTC - 1200(a)
2-ISIV-68-429E	ISTC - 1200(c)
1-ISIV-68-429H	ISTC - 1200(c)
1-ISIV-68-429J	ISTC - 1200(c)

**Flow Diagram: 0-47W600-65**

VALVE ID	EXEMPTION BASIS
1-VTIV-3-318B	ISTC - 1200(a)
2-VTIV-3-318B	ISTC - 1200(a)
1-ISIV-3-318C	ISTC - 1200(c)
2-ISIV-3-318C	ISTC - 1200(c)
1-VTIV-3-319B	ISTC - 1200(a)
2-VTIV-3-319B	ISTC - 1200(a)
1-ISIV-3-319C	ISTC - 1200(c)
2-ISIV-3-319C	ISTC - 1200(c)
1-VTIV-3-320B	ISTC - 1200(a)
2-VTIV-3-320B	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-ISIV-3-320C	ISTC - 1200(c)
2-ISIV-3-320C	ISTC - 1200(c)
1-ISIV-3-322D	ISTC - 1200(c)
2-ISIV-3-322D	ISTC - 1200(c)
1-ISIV-3-323B	ISTC - 1200(c)
2-ISIV-3-323B	ISTC - 1200(c)
1-ISIV-3-324B	ISTC - 1200(c)
2-ISIV-3-324B	ISTC - 1200(c)
2-VTIV-3-332B	ISTC - 1200(a)
1-ISIV-3-332C	ISTC - 1200(c)
2-ISIV-3-332C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-DRIV-3-332D	ISTC - 1200(a)
1-VTIV-3-332F	ISTC - 1200(a)
1-VTIV-3-332G	ISTC - 1200(a)
1-ISIV-3-333B	ISTC - 1200(c)
2-ISIV-3-333B	ISTC - 1200(c)
2-DRIV-3-333C	ISTC - 1200(a)
1-VTIV-3-333E	ISTC - 1200(a)
1-ISIV-3-335B	ISTC - 1200(c)
2-ISIV-3-335B	ISTC - 1200(c)
1-ISIV-3-336B	ISTC - 1200(c)
2-ISIV-3-336B	ISTC - 1200(c)

**Flow Diagram: 0-47W600-75**

VALVE ID	EXEMPTION BASIS
1-VTIV-68-429L	ISTC - 1200(a)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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**Flow Diagram: 0-47W801-1**

VALVE ID	EXEMPTION BASIS
1-VLV-1-276A	ISTC - 1200(a)
2-VLV-1-276A	ISTC - 1200(a)
1-VLV-1-277A	ISTC - 1200(a)
2-VLV-1-277A	ISTC - 1200(a)
1-VLV-1-278A	ISTC - 1200(a)
2-VLV-1-278A	ISTC - 1200(a)
1-VLV-1-279A	ISTC - 1200(a)
1-VLV-1-281A	ISTC - 1200(a)
2-VLV-1-281A	ISTC - 1200(a)
1-VLV-1-282A	ISTC - 1200(a)
2-VLV-1-282A	ISTC - 1200(a)
1-VLV-1-283A	ISTC - 1200(a)
2-VLV-1-283A	ISTC - 1200(a)
1-VLV-1-284A	ISTC - 1200(a)
2-VLV-1-284A	ISTC - 1200(a)
1-VLV-1-285A	ISTC - 1200(a)
2-VLV-1-285A	ISTC - 1200(a)
1-VLV-1-287A	ISTC - 1200(a)
2-VLV-1-287A	ISTC - 1200(a)
1-VLV-1-288A	ISTC - 1200(a)
2-VLV-1-288A	ISTC - 1200(a)
1-VLV-1-289A	ISTC - 1200(a)
2-VLV-1-289A	ISTC - 1200(a)
1-VLV-1-290A	ISTC - 1200(a)
2-VLV-1-290A	ISTC - 1200(a)
1-VLV-1-291A	ISTC - 1200(a)
2-VLV-1-291A	ISTC - 1200(a)
1-VLV-1-292A	ISTC - 1200(a)
2-VLV-1-292A	ISTC - 1200(a)
1-VLV-1-293A	ISTC - 1200(a)
2-VLV-1-293A	ISTC - 1200(a)
1-VLV-1-295A	ISTC - 1200(a)
2-VLV-1-295A	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-VLV-1-296A	ISTC - 1200(a)
2-VLV-1-296A	ISTC - 1200(a)
1-VLV-1-297A	ISTC - 1200(a)
2-VLV-1-297A	ISTC - 1200(a)
1-VLV-1-298A	ISTC - 1200(a)
2-VLV-1-298A	ISTC - 1200(a)
1-VLV-1-299A	ISTC - 1200(a)
2-VLV-1-299A	ISTC - 1200(a)
1-VLV-1-300A	ISTC - 1200(a)
2-VLV-1-300A	ISTC - 1200(a)
1-VLV-1-301A	ISTC - 1200(a)
2-VLV-1-301A	ISTC - 1200(a)
1-VLV-1-302A	ISTC - 1200(a)
2-VLV-1-302A	ISTC - 1200(a)
1-VLV-1-303A	ISTC - 1200(a)
2-VLV-1-303A	ISTC - 1200(a)
1-VLV-1-304A	ISTC - 1200(a)
2-VLV-1-304A	ISTC - 1200(a)
1-VLV-1-305A	ISTC - 1200(a)
2-VLV-1-305A	ISTC - 1200(a)
1-VLV-1-307A	ISTC - 1200(a)
2-VLV-1-307A	ISTC - 1200(a)
1-VLV-1-533	ISTC - 1200(a)
2-VLV-1-533	ISTC - 1200(a)
1-VLV-1-535	ISTC - 1200(a)
2-VLV-1-535	ISTC - 1200(a)
1-VLV-1-537	ISTC - 1200(a)
2-VLV-1-537	ISTC - 1200(a)
1-VLV-1-539	ISTC - 1200(a)
2-VLV-1-539	ISTC - 1200(a)
1-VLV-1-540	ISTC - 1200(c)
2-VLV-1-540	ISTC - 1200(c)
1-VLV-1-541	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VLV-1-541	ISTC - 1200(c)
1-VLV-1-542	ISTC - 1200(c)
2-VLV-1-542	ISTC - 1200(c)
1-VLV-1-543	ISTC - 1200(c)
2-VLV-1-543	ISTC - 1200(c)
2-VLV-1-619	ISTC-1200(c)
1-VLV-1-619A	ISTC - 1200(c)
2-VLV-1-619A	ISTC - 1200(c)
2-VLV-1-620	ISTC-1200(c)
1-VLV-1-620A	ISTC - 1200(c)
2-VLV-1-620A	ISTC - 1200(c)
2-VLV-1-621	ISTC-1200(c)
1-VLV-1-621A	ISTC - 1200(c)
2-VLV-1-621A	ISTC - 1200(c)
2-VLV-1-622	ISTC-1200(c)
1-VLV-1-622A	ISTC - 1200(c)
2-VLV-1-622A	ISTC - 1200(c)
1-VLV-1-922	ISTC - 1200(a)
2-VLV-1-922	ISTC - 1200(a)
1-VLV-1-923	ISTC - 1200(a)
2-VLV-1-923	ISTC - 1200(a)
1-VLV-1-924	ISTC - 1200(a)
2-VLV-1-924	ISTC - 1200(a)
1-VLV-1-925	ISTC - 1200(a)
2-VLV-1-925	ISTC - 1200(a)
1-VLV-1-1007A	ISTC - 1200(a)
2-VLV-1-1007A	ISTC - 1200(a)
1-VLV-1-1008A	ISTC - 1200(a)
2-VLV-1-1008A	ISTC - 1200(a)
1-VLV-1-1009A	ISTC - 1200(a)
2-VLV-1-1009A	ISTC - 1200(a)
1-VLV-1-1010A	ISTC - 1200(a)
2-VLV-1-1010A	ISTC - 1200(a)

Attachment 8 - Code Class 1, 2, and 3 Valves Exempt

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Flow Diagram: 0-47W801-2

VALVE ID	EXEMPTION BASIS
1-VLV-1-800	ISTC - 1200(a)
2-VLV-1-800	ISTC - 1200(a)
1-VLV-1-801	ISTC - 1200(a)
2-VLV-1-801	ISTC - 1200(a)
1-VLV-1-802	ISTC - 1200(a)
2-VLV-1-802	ISTC - 1200(a)
1-VLV-1-803	ISTC - 1200(a)
2-VLV-1-803	ISTC - 1200(a)
1-VLV-1-804	ISTC - 1200(a)
2-VLV-1-804	ISTC - 1200(a)
1-VLV-1-805	ISTC - 1200(a)
2-VLV-1-805	ISTC - 1200(a)
1-VLV-1-806	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
2-VLV-1-806	ISTC - 1200(a)
1-VLV-1-807	ISTC - 1200(a)
2-VLV-1-807	ISTC - 1200(a)
1-VLV-1-808	ISTC - 1200(a)
2-VLV-1-808	ISTC - 1200(a)
1-VLV-1-809	ISTC - 1200(a)
2-VLV-1-809	ISTC - 1200(a)
1-VLV-1-810	ISTC - 1200(a)
2-VLV-1-810	ISTC - 1200(a)
1-VLV-1-811	ISTC - 1200(a)
2-VLV-1-811	ISTC - 1200(a)
1-VLV-1-812	ISTC - 1200(c)
2-VLV-1-812	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-VLV-1-813	ISTC - 1200(c)
2-VLV-1-813	ISTC - 1200(a)
1-VLV-1-814	ISTC - 1200(c)
2-VLV-1-814	ISTC - 1200(c)
1-VLV-1-815	ISTC - 1200(c)
2-VLV-1-815	ISTC - 1200(c)
1-VLV-1-816	ISTC - 1200(c)
2-VLV-1-816	ISTC - 1200(c)
1-VLV-1-817	ISTC - 1200(c)
2-VLV-1-817	ISTC - 1200(c)
1-VLV-1-818	ISTC - 1200(c)
2-VLV-1-818	ISTC - 1200(c)
1-VLV-1-819	ISTC - 1200(c)
2-VLV-1-819	ISTC - 1200(c)



**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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**Flow Diagram: 0-47W803-1**

VALVE ID	EXEMPTION BASIS
1-VLV-3-280A	ISTC - 1200(a)
2-VLV-3-280A	ISTC - 1200(a)
1-VLV-3-281A	ISTC - 1200(a)
2-VLV-3-281A	ISTC - 1200(a)
1-VLV-3-282A	ISTC - 1200(a)
2-VLV-3-282A	ISTC - 1200(a)
1-VLV-3-283A	ISTC - 1200(a)
2-VLV-3-283A	ISTC - 1200(a)
1-VLV-3-284A	ISTC - 1200(a)
2-VLV-3-284A	ISTC - 1200(a)
1-VLV-3-285A	ISTC - 1200(a)
2-VLV-3-285A	ISTC - 1200(a)
1-VLV-3-286A	ISTC - 1200(a)
2-VLV-3-286A	ISTC - 1200(a)
1-VLV-3-287A	ISTC - 1200(a)
2-VLV-3-287A	ISTC - 1200(a)
1-VLV-3-288A	ISTC - 1200(a)
2-VLV-3-288A	ISTC - 1200(a)
1-VLV-3-289A	ISTC - 1200(a)
2-VLV-3-289A	ISTC - 1200(a)
1-VLV-3-290A	ISTC - 1200(a)
2-VLV-3-290A	ISTC - 1200(a)
1-VLV-3-291A	ISTC - 1200(a)
2-VLV-3-291A	ISTC - 1200(a)
1-VLV-3-292A	ISTC - 1200(a)
2-VLV-3-292A	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-VLV-3-293A	ISTC - 1200(a)
2-VLV-3-293A	ISTC - 1200(a)
1-VLV-3-294A	ISTC - 1200(a)
2-VLV-3-294A	ISTC - 1200(a)
1-VLV-3-295A	ISTC - 1200(a)
2-VLV-3-295A	ISTC - 1200(a)
1-VLV-3-296A	ISTC - 1200(a)
2-VLV-3-296A	ISTC - 1200(a)
1-VLV-3-297A	ISTC - 1200(a)
2-VLV-3-297A	ISTC - 1200(a)
1-VLV-3-298A	ISTC - 1200(a)
2-VLV-3-298A	ISTC - 1200(a)
1-VLV-3-299A	ISTC - 1200(a)
2-VLV-3-299A	ISTC - 1200(a)
1-VLV-3-300A	ISTC - 1200(a)
2-VLV-3-300A	ISTC - 1200(a)
1-VLV-3-301A	ISTC - 1200(a)
2-VLV-3-301A	ISTC - 1200(a)
1-VLV-3-302A	ISTC - 1200(a)
2-VLV-3-302A	ISTC - 1200(a)
1-VLV-3-303A	ISTC - 1200(a)
2-VLV-3-303A	ISTC - 1200(a)
1-VLV-3-304A	ISTC - 1200(a)
2-VLV-3-304A	ISTC - 1200(a)
1-VLV-3-305A	ISTC - 1200(a)
2-VLV-3-305A	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-VLV-3-306A	ISTC - 1200(a)
2-VLV-3-306A	ISTC - 1200(a)
1-VLV-3-307A	ISTC - 1200(a)
2-VLV-3-307A	ISTC - 1200(a)
1-VLV-3-500	ISTC - 1200(a)
2-VLV-3-500	ISTC - 1200(a)
1-VLV-3-502	ISTC - 1200(a)
2-VLV-3-502	ISTC - 1200(a)
2-VLV-3-504	ISTC - 1200(a)
2-VLV-3-506	ISTC - 1200(a)
1-VLV-3-609	ISTC - 1200(c)
2-VLV-3-609	ISTC - 1200(c)
1-VLV-3-610	ISTC - 1200(c)
2-VLV-3-610	ISTC - 1200(c)
1-VLV-3-611	ISTC - 1200(a)
2-VLV-3-611	ISTC - 1200(a)
1-VLV-3-612	ISTC - 1200(c)
2-VLV-3-612	ISTC - 1200(c)
1-VLV-3-1011A	ISTC - 1200(a)
2-VLV-3-1011A	ISTC - 1200(a)
1-VLV-3-1012A	ISTC - 1200(a)
2-VLV-3-1012A	ISTC - 1200(a)
1-VLV-3-1013A	ISTC - 1200(a)
2-VLV-3-1013A	ISTC - 1200(a)
1-VLV-3-1014A	ISTC - 1200(a)
2-VLV-3-1014A	ISTC - 1200(a)

**Flow Diagram: 0-47W803-2**

VALVE ID	EXEMPTION BASIS
1-VLV-3-314A	ISTC - 1200(a)
2-VLV-3-314A	ISTC - 1200(a)
1-VLV-3-315A	ISTC - 1200(a)
2-VLV-3-315A	ISTC - 1200(a)
1-VLV-3-316A	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-VLV-3-366A	ISTC - 1200(a)
2-VLV-3-366A	ISTC - 1200(a)
1-VLV-3-367A	ISTC - 1200(a)
2-VLV-3-367A	ISTC - 1200(a)
1-VLV-3-807	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
2-VLV-3-868	ISTC - 1200(c)
1-VLV-3-869	ISTC - 1200(c)
2-VLV-3-869	ISTC - 1200(c)
1-VLV-3-870	ISTC - 1200(c)
2-VLV-3-870	ISTC - 1200(c)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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VALVE ID	EXEMPTION BASIS
2-VLV-3-316A	ISTC - 1200(a)
1-VLV-3-317A	ISTC - 1200(a)
2-VLV-3-317A	ISTC - 1200(a)
1-VLV-3-318A	ISTC - 1200(a)
2-VLV-3-318A	ISTC - 1200(a)
1-VLV-3-319A	ISTC - 1200(a)
2-VLV-3-319A	ISTC - 1200(a)
1-VLV-3-320A	ISTC - 1200(a)
2-VLV-3-320A	ISTC - 1200(a)
1-VLV-3-321A	ISTC - 1200(a)
2-VLV-3-321A	ISTC - 1200(a)
1-VLV-3-322A	ISTC - 1200(a)
2-VLV-3-322A	ISTC - 1200(a)
1-VLV-3-323A	ISTC - 1200(a)
2-VLV-3-323A	ISTC - 1200(a)
1-VLV-3-324A	ISTC - 1200(a)
2-VLV-3-324A	ISTC - 1200(a)
1-VLV-3-325A	ISTC - 1200(a)
2-VLV-3-325A	ISTC - 1200(a)
1-VLV-3-326A	ISTC - 1200(a)
2-VLV-3-326A	ISTC - 1200(a)
1-VLV-3-327A	ISTC - 1200(a)
2-VLV-3-327A	ISTC - 1200(a)
1-VLV-3-328A	ISTC - 1200(a)
2-VLV-3-328A	ISTC - 1200(a)
1-VLV-3-329A	ISTC - 1200(a)
2-VLV-3-329A	ISTC - 1200(a)
1-VLV-3-330A	ISTC - 1200(a)
2-VLV-3-330A	ISTC - 1200(a)
1-VLV-3-331A	ISTC - 1200(a)
2-VLV-3-331A	ISTC - 1200(a)
1-VLV-3-332A	ISTC - 1200(a)
2-VLV-3-332A	ISTC - 1200(a)
1-VLV-3-333A	ISTC - 1200(a)
2-VLV-3-333A	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
2-VLV-3-807	ISTC - 1200(a)
1-VLV-3-808	ISTC - 1200(a)
2-VLV-3-808	ISTC - 1200(a)
1-VLV-3-811	ISTC - 1200(a)
2-VLV-3-811	ISTC - 1200(a)
1-VLV-3-812	ISTC - 1200(a)
2-VLV-3-812	ISTC - 1200(a)
1-VLV-3-813	ISTC - 1200(a)
2-VLV-3-813	ISTC - 1200(a)
1-VLV-3-822	ISTC - 1200(a)
2-VLV-3-822	ISTC - 1200(a)
2-VLV-3-823	ISTC - 1200(a)
1-ISV-3-824	ISTC - 1200(a)
2-ISV-3-824	ISTC - 1200(a)
1-ISV-3-825	ISTC - 1200(a)
2-ISV-3-825	ISTC - 1200(a)
1-VLV-3-826	ISTC - 1200(c)
2-VLV-3-826	ISTC - 1200(c)
1-VLV-3-827	ISTC - 1200(c)
2-VLV-3-827	ISTC - 1200(c)
1-VLV-3-828	ISTC - 1200(c)
2-VLV-3-828	ISTC - 1200(c)
1-VLV-3-829	ISTC - 1200(c)
2-VLV-3-829	ISTC - 1200(c)
1-VLV-3-834	ISTC - 1200(c)
2-VLV-3-834	ISTC - 1200(c)
1-VLV-3-835	ISTC - 1200(c)
2-VLV-3-835	ISTC - 1200(c)
1-VLV-3-838	ISTC - 1200(c)
2-VLV-3-838	ISTC - 1200(c)
1-VLV-3-839	ISTC - 1200(c)
2-VLV-3-839	ISTC - 1200(c)
1-VLV-3-840	ISTC - 1200(c)
2-VLV-3-840	ISTC - 1200(c)
1-VLV-3-841	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-VLV-3-875	ISTC - 1200(c)
2-VLV-3-875	ISTC - 1200(a)
1-VLV-3-876	ISTC - 1200(c)
2-VLV-3-876	ISTC - 1200(c)
1-VLV-3-877	ISTC - 1200(c)
2-VLV-3-877	ISTC - 1200(c)
1-VLV-3-878	ISTC - 1200(c)
2-VLV-3-878	ISTC - 1200(c)
1-VLV-3-879	ISTC - 1200(c)
2-VLV-3-879	ISTC - 1200(c)
1-VLV-3-880	ISTC - 1200(c)
2-VLV-3-880	ISTC - 1200(c)
1-VLV-3-881	ISTC - 1200(c)
2-VLV-3-881	ISTC - 1200(c)
1-VLV-3-882	ISTC - 1200(c)
2-VLV-3-882	ISTC - 1200(c)
1-VLV-3-883	ISTC - 1200(c)
2-VLV-3-883	ISTC - 1200(c)
1-VLV-3-884	ISTC - 1200(c)
2-VLV-3-884	ISTC - 1200(c)
1-VLV-3-885	ISTC - 1200(c)
2-VLV-3-885	ISTC - 1200(c)
1-VLV-3-886	ISTC - 1200(c)
2-VLV-3-886	ISTC - 1200(c)
1-VLV-3-887	ISTC - 1200(a)
2-VLV-3-887	ISTC - 1200(a)
1-VLV-3-888	ISTC - 1200(a)
2-VLV-3-888	ISTC - 1200(a)
1-VLV-3-889	ISTC - 1200(a)
2-VLV-3-889	ISTC - 1200(a)
1-VLV-3-890	ISTC - 1200(a)
2-VLV-3-890	ISTC - 1200(a)
1-VLV-3-896	ISTC - 1200(a)
2-VLV-3-896	ISTC - 1200(a)
1-VLV-3-897	ISTC - 1200(a)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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VALVE ID	EXEMPTION BASIS
1-VLV-3-334A	ISTC - 1200(a)
2-VLV-3-334A	ISTC - 1200(a)
1-VLV-3-334B	ISTC - 1200(a)
1-VLV-3-335A	ISTC - 1200(a)
2-VLV-3-335A	ISTC - 1200(a)
1-VLV-3-336A	ISTC - 1200(a)
2-VLV-3-336A	ISTC - 1200(a)
1-VLV-3-351A	ISTC - 1200(a)
2-VLV-3-351A	ISTC - 1200(a)
1-VLV-3-351B	ISTC - 1200(a)
2-VLV-3-351B	ISTC - 1200(a)
1-VLV-3-351C	ISTC - 1200(a)
2-VLV-3-351C	ISTC - 1200(a)
1-VLV-3-352A	ISTC - 1200(a)
2-VLV-3-352A	ISTC - 1200(a)
1-VLV-3-352B	ISTC - 1200(a)
2-VLV-3-352B	ISTC - 1200(a)
1-VLV-3-352C	ISTC - 1200(a)
2-VLV-3-352C	ISTC - 1200(a)
1-VLV-3-355A	ISTC - 1200(a)
2-VLV-3-355A	ISTC - 1200(a)
1-VLV-3-356A	ISTC - 1200(a)
2-VLV-3-356A	ISTC - 1200(a)
1-VLV-3-357A	ISTC - 1200(a)
2-VLV-3-357A	ISTC - 1200(a)
1-VLV-3-358A	ISTC - 1200(a)
2-VLV-3-358A	ISTC - 1200(a)
1-VLV-3-359A	ISTC - 1200(a)
2-VLV-3-359A	ISTC - 1200(a)
1-VLV-3-360A	ISTC - 1200(a)
2-VLV-3-360A	ISTC - 1200(a)
1-VLV-3-361A	ISTC - 1200(a)
2-VLV-3-361A	ISTC - 1200(a)
1-VLV-3-362A	ISTC - 1200(a)
2-VLV-3-362A	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
2-VLV-3-841	ISTC - 1200(c)
1-VLV-3-842	ISTC - 1200(a)
2-VLV-3-842	ISTC - 1200(a)
1-VLV-3-843	ISTC - 1200(c)
2-VLV-3-843	ISTC - 1200(c)
1-VLV-3-844	ISTC - 1200(c)
2-VLV-3-844	ISTC - 1200(c)
1-VLV-3-847	ISTC - 1200(a)
2-VLV-3-847	ISTC - 1200(a)
1-VLV-3-848	ISTC - 1200(a)
2-VLV-3-848	ISTC - 1200(a)
1-VLV-3-849	ISTC - 1200(a)
2-VLV-3-849	ISTC - 1200(a)
1-VLV-3-850	ISTC - 1200(a)
2-VLV-3-850	ISTC - 1200(a)
1-VLV-3-851	ISTC - 1200(a)
2-VLV-3-851	ISTC - 1200(a)
1-VLV-3-852	ISTC - 1200(a)
2-VLV-3-852	ISTC - 1200(a)
1-VLV-3-853	ISTC - 1200(a)
2-VLV-3-853	ISTC - 1200(a)
1-VLV-3-854	ISTC - 1200(a)
2-VLV-3-854	ISTC - 1200(a)
1-VLV-3-855	ISTC - 1200(a)
2-VLV-3-855	ISTC - 1200(a)
1-VLV-3-856	ISTC - 1200(a)
2-VLV-3-856	ISTC - 1200(a)
1-VLV-3-857	ISTC - 1200(a)
2-VLV-3-857	ISTC - 1200(a)
1-VLV-3-858	ISTC - 1200(a)
2-VLV-3-858	ISTC - 1200(a)
1-VLV-3-859	ISTC - 1200(a)
2-VLV-3-859	ISTC - 1200(a)
1-VLV-3-860	ISTC - 1200(a)
2-VLV-3-860	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
2-VLV-3-897	ISTC - 1200(a)
1-VLV-3-898	ISTC - 1200(a)
2-VLV-3-898	ISTC - 1200(a)
2-VLV-3-899	ISTC - 1200(a)
1-VLV-3-899	ISTC - 1200(a)
1-VLV-3-900	ISTC - 1200(a)
2-VLV-3-900	ISTC - 1200(a)
1-VLV-3-901	ISTC - 1200(a)
2-VLV-3-901	ISTC - 1200(a)
1-VLV-3-902	ISTC - 1200(a)
2-VLV-3-902	ISTC - 1200(a)
1-VLV-3-903	ISTC - 1200(a)
2-VLV-3-903	ISTC - 1200(a)
1-VLV-3-904	ISTC - 1200(a)
2-VLV-3-904	ISTC - 1200(a)
1-VLV-3-905	ISTC - 1200(a)
2-VLV-3-905	ISTC - 1200(a)
1-VLV-3-906	ISTC - 1200(a)
2-VLV-3-906	ISTC - 1200(a)
1-VLV-3-907	ISTC - 1200(a)
2-VLV-3-907	ISTC - 1200(a)
1-VLV-3-924	ISTC - 1200(a)
2-VLV-3-924	ISTC - 1200(a)
1-VLV-3-925	ISTC - 1200(a)
2-VLV-3-925	ISTC - 1200(a)
1-VLV-3-936	ISTC - 1200(c)
2-VLV-3-936	ISTC - 1200(c)
1-VLV-3-940	ISTC - 1200(c)
2-VLV-3-940	ISTC - 1200(c)
1-VLV-3-946	ISTC - 1200(a)
2-VLV-3-946	ISTC - 1200(a)
1-VLV-3-947	ISTC - 1200(a)
2-VLV-3-947	ISTC - 1200(a)
1-VLV-3-949	ISTC - 1200(a)
2-VLV-3-949	ISTC - 1200(a)

Attachment 8 - Code Class 1, 2, and 3 Valves Exempt

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VALVE ID	EXEMPTION BASIS
1-VLV-3-363A	ISTC - 1200(a)
2-VLV-3-363A	ISTC - 1200(a)
1-VLV-3-364A	ISTC - 1200(a)
2-VLV-3-364A	ISTC - 1200(a)
1-VLV-3-365A	ISTC - 1200(a)
2-VLV-3-365A	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-VLV-3-863	ISTC - 1200(a)
2-VLV-3-863	ISTC - 1200(a)
1-VLV-3-865	ISTC - 1200(a)
2-VLV-3-865	ISTC - 1200(a)
1-VLV-3-867	ISTC - 1200(c)
2-VLV-3-867	ISTC - 1200(c)
1-VLV-3-868	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-VLV-3-950	ISTC - 1200(a)
2-VLV-3-950	ISTC - 1200(a)
1-VLV-3-953	ISTC - 1200(a)
2-VLV-3-953	ISTC - 1200(a)
2-VLV-3-970	ISTC - 1200(a)
2-VLV-3-971	ISTC - 1200(a)
2-VLV-3-972	ISTC - 1200(a)

Flow Diagram: 0-47W803-3

VALVE ID	EXEMPTION BASIS
1-VLV-3-337A	ISTC - 1200(a)
2-VLV-3-337A	ISTC - 1200(a)
1-VLV-3-893	ISTC - 1200(a)
2-VLV-3-893	ISTC - 1200(a)
1-VLV-3-914	ISTC - 1200(c)
2-VLV-3-914	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-VLV-3-915	ISTC - 1200(c)
2-VLV-3-915	ISTC - 1200(c)
1-VLV-3-916	ISTC - 1200(c)
2-VLV-3-916	ISTC - 1200(c)
1-VLV-3-917	ISTC - 1200(c)
2-VLV-3-917	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-VLV-3-918	ISTC - 1200(a)
2-VLV-3-918	ISTC - 1200(a)
1-VLV-3-919	ISTC - 1200(a)
2-VLV-3-919	ISTC - 1200(a)
1-VLV-3-920	ISTC - 1200(c)
2-VLV-3-920	ISTC - 1200(c)

Flow Diagram: 0-47W809-2

VALVE ID	EXEMPTION BASIS
1-VLV-62-347A	ISTC - 1200(a)
1-VLV-62-348A	ISTC - 1200(a)
1-VLV-62-365A	ISTC - 1200(a)
2-VLV-62-802	ISTC - 1200(a)
1-VLV-62-810	ISTC - 1200(a)
2-VLV-62-810	ISTC - 1200(a)
1-VLV-62-901	ISTC - 1200(c)
1-VLV-62-902	ISTC - 1200(c)
1-VLV-62-903	ISTC - 1200(a)
1-VLV-62-904	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-VLV-62-905	ISTC - 1200(c)
1-VLV-62-906	ISTC - 1200(a)
1-VLV-62-907	ISTC - 1200(c)
1-VLV-62-908	ISTC - 1200(c)
1-VLV-62-909	ISTC - 1200(c)
1-VLV-62-910	ISTC - 1200(a)
1-VLV-62-911	ISTC - 1200(a)
1-VLV-62-912	ISTC - 1200(c)
1-VLV-62-913	ISTC - 1200(a)
1-VLV-62-914	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-VLV-62-915	ISTC - 1200(c)
1-VLV-62-916	ISTC - 1200(c)
1-VLV-62-917	ISTC - 1200(a)
1-VLV-62-918	ISTC - 1200(a)
1-VLV-62-919	ISTC - 1200(c)
1-VLV-62-920	ISTC - 1200(a)
1-VLV-62-922	ISTC - 1200(c)
1-VLV-62-927	ISTC - 1200(c)
1-VLV-62-932	ISTC - 1200(c)
1-VLV-62-936	ISTC - 1200(c)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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**Flow Diagram: 0-47W809-3**

VALVE ID	EXEMPTION BASIS
1-VLV-62-366A	ISTC - 1200(a)
2-VLV-62-366A	ISTC - 1200(a)
1-VLV-62-367A	ISTC - 1200(a)
2-VLV-62-367A	ISTC - 1200(a)
0-VLV-62-369A	ISTC - 1200(a)
0-VLV-62-370A	ISTC - 1200(a)
1-VLV-62-371A	ISTC - 1200(a)
2-VLV-62-371A	ISTC - 1200(a)
1-VLV-62-372A	ISTC - 1200(a)
2-VLV-62-372A	ISTC - 1200(a)
0-VLV-62-373A	ISTC - 1200(a)
0-VLV-62-374A	ISTC - 1200(a)
1-VLV-62-945	ISTC - 1200(c)
2-VLV-62-945	ISTC - 1200(c)
1-VLV-62-951	ISTC - 1200(c)
2-VLV-62-951	ISTC - 1200(c)
1-VLV-62-952	ISTC - 1200(c)
2-VLV-62-952	ISTC - 1200(c)
1-VLV-62-953	ISTC - 1200(c)
2-VLV-62-953	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-VLV-62-956	ISTC - 1200(c)
2-VLV-62-956	ISTC - 1200(c)
1-VLV-62-957	ISTC - 1200(c)
2-VLV-62-957	ISTC - 1200(c)
1-VLV-62-961	ISTC - 1200(a)
2-VLV-62-961	ISTC - 1200(a)
1-VLV-62-962A	ISTC - 1200(c)
2-VLV-62-962A	ISTC - 1200(c)
1-VLV-62-962B	ISTC - 1200(c)
2-VLV-62-962B	ISTC - 1200(c)
1-VLV-62-962C	ISTC - 1200(c)
2-VLV-62-962C	ISTC - 1200(c)
1-VLV-62-962D	ISTC - 1200(c)
2-VLV-62-962D	ISTC - 1200(c)
1-VLV-62-963	ISTC - 1200(c)
2-VLV-62-963	ISTC - 1200(c)
1-VLV-62-964	ISTC - 1200(c)
2-VLV-62-964	ISTC - 1200(c)
0-VLV-62-965	ISTC - 1200(c)
0-VLV-62-966	ISTC - 1200(a)
0-VLV-62-969	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-VLV-62-971	ISTC - 1200(c)
2-VLV-62-971	ISTC - 1200(c)
1-VLV-62-972	ISTC - 1200(c)
2-VLV-62-972	ISTC - 1200(c)
1-VLV-62-973	ISTC - 1200(c)
2-VLV-62-973	ISTC - 1200(c)
0-VLV-62-974	ISTC - 1200(c)
1-VLV-62-977	ISTC - 1200(c)
2-VLV-62-977	ISTC - 1200(c)
0-VLV-62-978	ISTC - 1200(c)
1-VLV-62-979	ISTC - 1200(c)
2-VLV-62-979	ISTC - 1200(c)
1-VLV-62-981A	ISTC - 1200(c)
2-VLV-62-981A	ISTC - 1200(c)
1-VLV-62-982A	ISTC - 1200(c)
2-VLV-62-982A	ISTC - 1200(c)
0-VLV-62-1077	ISTC - 1200(c)
1-VLV-62-1079	ISTC - 1200(a)
2-VLV-62-1079	ISTC - 1200(a)
0-VLV-62-1080	ISTC - 1200(a)
0-VLV-62-1082	ISTC - 1200(c)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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**Flow Diagram: 0-47W809-5**

VALVE ID	EXEMPTION BASIS
1-VLV-62-392A	ISTC - 1200(a)
2-VLV-62-392A	ISTC - 1200(a)
1-VLV-62-393A	ISTC - 1200(a)
2-VLV-62-393A	ISTC - 1200(a)
1-VLV-62-394A	ISTC - 1200(a)
2-VLV-62-394A	ISTC - 1200(a)
1-VLV-62-395A	ISTC - 1200(a)
2-VLV-62-395A	ISTC - 1200(a)
1-VLV-62-396A	ISTC - 1200(a)
2-VLV-62-396A	ISTC - 1200(a)
1-VLV-62-397A	ISTC - 1200(a)
2-VLV-62-397A	ISTC - 1200(a)
1-VLV-62-756	ISTC - 1200(c)
2-VLV-62-756	ISTC - 1200(c)
2-VLV-62-757	ISTC - 1200(c)
0-VLV-62-758	ISTC - 1200(c)
0-VLV-62-759	ISTC - 1200(c)
1-VLV-62-1047	ISTC - 1200(c)
2-VLV-62-1047	ISTC - 1200(c)
1-VLV-62-1048A	ISTC - 1200(c)
2-VLV-62-1048A	ISTC - 1200(c)
1-VLV-62-757-S	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-VLV-62-1048B	ISTC - 1200(c)
2-VLV-62-1048B	ISTC - 1200(c)
0-VLV-62-1049	ISTC - 1200(c)
1-VLV-62-1049	ISTC - 1200(c)
2-VLV-62-1049	ISTC - 1200(c)
1-VLV-62-1050A	ISTC - 1200(c)
2-VLV-62-1050A	ISTC - 1200(c)
1-VLV-62-1050B	ISTC - 1200(c)
2-VLV-62-1050B	ISTC - 1200(c)
1-VLV-62-1051A	ISTC - 1200(c)
2-VLV-62-1051A	ISTC - 1200(c)
1-VLV-62-1051B	ISTC - 1200(c)
2-VLV-62-1051B	ISTC - 1200(c)
1-VLV-62-1053A	ISTC - 1200(c)
2-VLV-62-1053A	ISTC - 1200(c)
1-VLV-62-1053B	ISTC - 1200(c)
2-VLV-62-1053B	ISTC - 1200(c)
1-VLV-62-1054A	ISTC - 1200(c)
2-VLV-62-1054A	ISTC - 1200(c)
1-VLV-62-1054B	ISTC - 1200(c)
2-VLV-62-1054B	ISTC - 1200(c)
1-VLV-62-1055A	ISTC - 1200(c)
2-VLV-62-1055A	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-VLV-62-1055B	ISTC - 1200(c)
2-VLV-62-1055B	ISTC - 1200(c)
0-VLV-62-1056	ISTC - 1200(c)
1-VLV-62-1056	ISTC - 1200(c)
2-VLV-62-1056	ISTC - 1200(c)
0-VLV-62-1057	ISTC - 1200(c)
1-VLV-62-1057	ISTC - 1200(c)
2-VLV-62-1057	ISTC - 1200(c)
0-VLV-62-1058	ISTC - 1200(a)
1-VLV-62-1058	ISTC - 1200(a)
2-VLV-62-1058	ISTC - 1200(a)
1-VLV-62-1060	ISTC - 1200(c)
2-VLV-62-1060	ISTC - 1200(c)
1-VLV-62-1061	ISTC - 1200(c)
2-VLV-62-1061	ISTC - 1200(c)
1-VLV-62-1062	ISTC - 1200(a)
2-VLV-62-1062	ISTC - 1200(a)
0-VLV-62-1088	ISTC - 1200(a)
1-VLV-62-1088	ISTC - 1200(a)
2-VLV-62-1088	ISTC - 1200(a)
0-VLV-62-1089	ISTC - 1200(a)
1-VLV-62-1089	ISTC - 1200(a)
2-VLV-62-1089	ISTC - 1200(a)

**Flow Diagram: 0-47W810-1**

VALVE ID	EXEMPTION BASIS
1-VLV-74-100A	ISTC - 1200(a)
2-VLV-74-100A	ISTC - 1200(a)
1-VLV-74-101A	ISTC - 1200(a)
2-VLV-74-101A	ISTC - 1200(a)
1-VLV-74-102A	ISTC - 1200(a)
2-VLV-74-102A	ISTC - 1200(a)
1-VLV-74-103A	ISTC - 1200(a)
2-VLV-74-103A	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-VLV-74-510	ISTC - 1200(a)
2-VLV-74-510	ISTC - 1200(a)
1-VLV-74-511	ISTC - 1200(a)
2-VLV-74-511	ISTC - 1200(a)
1-VLV-74-512	ISTC - 1200(a)
2-VLV-74-512	ISTC - 1200(a)
1-VLV-74-513	ISTC - 1200(a)
2-VLV-74-513	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-VLV-74-533	ISTC - 1200(a)
2-VLV-74-533	ISTC - 1200(a)
1-VLV-74-534	ISTC - 1200(c)
2-VLV-74-534	ISTC - 1200(c)
1-VLV-74-535	ISTC - 1200(c)
2-VLV-74-535	ISTC - 1200(c)
1-VLV-74-536	ISTC - 1200(a)
2-VLV-74-536	ISTC - 1200(a)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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VALVE ID	EXEMPTION BASIS
1-VLV-74-104A	ISTC - 1200(a)
2-VLV-74-104A	ISTC - 1200(a)
1-VLV-74-107A	ISTC - 1200(a)
2-VLV-74-107A	ISTC - 1200(a)
1-VLV-74-108A	ISTC - 1200(a)
2-VLV-74-108A	ISTC - 1200(a)
1-VLV-74-109A	ISTC - 1200(a)
2-VLV-74-109A	ISTC - 1200(a)
1-VLV-74-110A	ISTC - 1200(a)
2-VLV-74-110A	ISTC - 1200(a)
1-VLV-74-111A	ISTC - 1200(a)
2-VLV-74-111A	ISTC - 1200(a)
1-VLV-68-428A	ISTC - 1200(a)
2-VLV-68-428A	ISTC - 1200(a)
1-VLV-68-429A	ISTC - 1200(a)
1-VLV-74-500	ISTC - 1200(a)
1-VLV-74-501	ISTC - 1200(a)
1-VLV-74-503	ISTC - 1200(a)
1-VLV-74-504	ISTC - 1200(a)
2-VLV-74-504	ISTC - 1200(a)
1-VLV-74-506	ISTC - 1200(c)
2-VLV-74-506	ISTC - 1200(c)
1-VLV-74-507	ISTC - 1200(c)
2-VLV-74-507	ISTC - 1200(c)
1-VLV-74-508	ISTC - 1200(a)
2-VLV-74-508	ISTC - 1200(a)
1-VLV-74-509	ISTC - 1200(a)
2-VLV-74-509	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-VLV-74-516	ISTC - 1200(a)
2-VLV-74-516	ISTC - 1200(a)
1-VLV-74-517	ISTC - 1200(a)
2-VLV-74-517	ISTC - 1200(a)
1-VLV-74-518	ISTC - 1200(c)
2-VLV-74-518	ISTC - 1200(c)
1-VLV-74-519	ISTC - 1200(c)
2-VLV-74-519	ISTC - 1200(c)
1-VLV-74-520	ISTC - 1200(c)
2-VLV-74-520	ISTC - 1200(c)
1-VLV-74-521	ISTC - 1200(c)
2-VLV-74-521	ISTC - 1200(c)
1-VLV-74-522	ISTC - 1200(a)
2-VLV-74-522	ISTC - 1200(a)
1-VLV-74-524	ISTC - 1200(c)
2-VLV-74-524	ISTC - 1200(c)
1-VLV-74-525	ISTC - 1200(c)
2-VLV-74-525	ISTC - 1200(c)
1-VLV-74-526	ISTC - 1200(c)
2-VLV-74-526	ISTC - 1200(c)
1-VLV-74-527	ISTC - 1200(c)
2-VLV-74-527	ISTC - 1200(c)
1-VLV-74-528	ISTC - 1200(c)
2-VLV-74-528	ISTC - 1200(c)
1-VLV-74-529	ISTC - 1200(c)
2-VLV-74-529	ISTC - 1200(c)
1-VLV-74-532	ISTC - 1200(a)
2-VLV-74-532	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-VLV-74-537	ISTC - 1200(c)
2-VLV-74-537	ISTC - 1200(c)
1-VLV-74-538	ISTC - 1200(a)
2-VLV-74-538	ISTC - 1200(a)
1-VLV-74-539	ISTC - 1200(a)
2-VLV-74-539	ISTC - 1200(a)
1-VLV-74-540	ISTC - 1200(a)
2-VLV-74-540	ISTC - 1200(a)
1-VLV-74-541	ISTC - 1200(a)
2-VLV-74-541	ISTC - 1200(a)
1-VLV-74-542	ISTC - 1200(a)
2-VLV-74-542	ISTC - 1200(a)
1-VLV-74-543	ISTC - 1200(a)
2-VLV-74-543	ISTC - 1200(a)
1-VLV-74-544	ISTC - 1200(a)
2-VLV-74-544	ISTC - 1200(a)
1-VLV-74-545	ISTC - 1200(a)
2-VLV-74-545	ISTC - 1200(a)
1-VLV-74-546	ISTC - 1200(a)
2-VLV-74-546	ISTC - 1200(a)
1-VLV-74-547	ISTC - 1200(a)
2-VLV-74-547	ISTC - 1200(a)
1-VLV-74-548	ISTC - 1200(a)
2-VLV-74-548	ISTC - 1200(a)
1-VLV-74-556	ISTC - 1200(a)
2-VLV-74-556	ISTC - 1200(a)
1-VLV-74-557	ISTC - 1200(a)
2-VLV-74-557	ISTC - 1200(a)
1-VLV-74-558	ISTC - 1200(a)

**Flow Diagram: 0-47W812-1**

VALVE ID	EXEMPTION BASIS
1-VLV-72-201A	ISTC - 1200(a)
2-VLV-72-201A	ISTC - 1200(a)
1-VLV-72-202A	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
2-VLV-72-504	ISTC - 1200(c)
1-VLV-72-508	ISTC - 1200(a)
2-VLV-72-508	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
2-VLV-72-531	ISTC - 1200(a)
1-VLV-72-532	ISTC - 1200(a)
2-VLV-72-532	ISTC - 1200(a)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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VALVE ID	EXEMPTION BASIS
2-VLV-72-202A	ISTC - 1200(a)
1-VLV-72-203A	ISTC - 1200(a)
2-VLV-72-203A	ISTC - 1200(a)
1-VLV-72-204A	ISTC - 1200(a)
2-VLV-72-204A	ISTC - 1200(a)
1-VLV-72-205A	ISTC - 1200(a)
2-VLV-72-205A	ISTC - 1200(a)
1-VLV-72-207A	ISTC - 1200(a)
2-VLV-72-207A	ISTC - 1200(a)
1-VLV-72-208A	ISTC - 1200(a)
2-VLV-72-208A	ISTC - 1200(a)
1-VLV-72-209A	ISTC - 1200(a)
2-VLV-72-209A	ISTC - 1200(a)
1-VLV-72-210A	ISTC - 1200(a)
2-VLV-72-210A	ISTC - 1200(a)
1-VLV-72-211A	ISTC - 1200(a)
2-VLV-72-211A	ISTC - 1200(a)
1-VLV-72-212A	ISTC - 1200(a)
2-VLV-72-212A	ISTC - 1200(a)
1-VLV-72-213A	ISTC - 1200(a)
2-VLV-72-213A	ISTC - 1200(a)
1-VLV-72-214A	ISTC - 1200(a)
2-VLV-72-214A	ISTC - 1200(a)
1-VLV-72-215	ISTC - 1200(a)
2-VLV-72-215	ISTC - 1200(a)
1-VLV-72-216	ISTC - 1200(a)
2-VLV-72-216	ISTC - 1200(a)
1-VLV-72-217	ISTC - 1200(a)
2-VLV-72-217	ISTC - 1200(a)
1-VLV-72-218	ISTC - 1200(a)
2-VLV-72-218	ISTC - 1200(a)
1-VLV-72-502	ISTC - 1200(c)
2-VLV-72-502	ISTC - 1200(c)
1-VLV-72-503	ISTC - 1200(c)
2-VLV-72-503	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-VLV-72-509	ISTC - 1200(a)
2-VLV-72-509	ISTC - 1200(a)
1-VLV-72-510	ISTC - 1200(a)
2-VLV-72-510	ISTC - 1200(a)
1-VLV-72-511	ISTC - 1200(a)
2-VLV-72-511	ISTC - 1200(a)
1-VLV-72-514	ISTC - 1200(a)
2-VLV-72-514	ISTC - 1200(a)
1-VLV-72-515	ISTC - 1200(a)
2-VLV-72-515	ISTC - 1200(a)
1-VLV-72-516	ISTC - 1200(a)
2-VLV-72-516	ISTC - 1200(a)
1-VLV-72-517	ISTC - 1200(a)
2-VLV-72-517	ISTC - 1200(a)
1-VLV-72-518	ISTC - 1200(a)
2-VLV-72-518	ISTC - 1200(a)
1-VLV-72-519	ISTC - 1200(a)
2-VLV-72-519	ISTC - 1200(a)
1-VLV-72-520	ISTC - 1200(a)
2-VLV-72-520	ISTC - 1200(a)
1-VLV-72-521	ISTC - 1200(a)
2-VLV-72-521	ISTC - 1200(a)
1-VLV-72-522	ISTC - 1200(a)
2-VLV-72-522	ISTC - 1200(a)
1-VLV-72-523	ISTC - 1200(a)
2-VLV-72-523	ISTC - 1200(a)
1-VLV-72-524	ISTC - 1200(a)
2-VLV-72-524	ISTC - 1200(a)
1-VLV-72-525	ISTC - 1200(a)
2-VLV-72-525	ISTC - 1200(a)
1-VLV-72-526	ISTC - 1200(a)
2-VLV-72-526	ISTC - 1200(a)
1-VLV-72-527	ISTC - 1200(a)
2-VLV-72-527	ISTC - 1200(a)
1-VLV-72-530	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-VLV-72-533	ISTC - 1200(c)
2-VLV-72-533	ISTC - 1200(c)
1-VLV-72-534	ISTC - 1200(c)
2-VLV-72-534	ISTC - 1200(c)
1-VLV-72-535	ISTC - 1200(a)
2-VLV-72-535	ISTC - 1200(a)
1-VLV-72-536	ISTC - 1200(a)
2-VLV-72-536	ISTC - 1200(a)
1-VLV-72-537	ISTC - 1200(a)
2-VLV-72-537	ISTC - 1200(a)
1-VLV-72-538	ISTC - 1200(a)
2-VLV-72-538	ISTC - 1200(a)
1-VLV-72-539	ISTC - 1200(a)
2-VLV-72-539	ISTC - 1200(a)
1-VLV-72-540	ISTC - 1200(a)
2-VLV-72-540	ISTC - 1200(a)
1-VLV-72-541	ISTC - 1200(a)
2-VLV-72-541	ISTC - 1200(a)
1-VLV-72-542	ISTC - 1200(a)
2-VLV-72-542	ISTC - 1200(a)
1-VLV-72-543	ISTC - 1200(a)
2-VLV-72-543	ISTC - 1200(a)
1-VLV-72-544	ISTC - 1200(a)
2-VLV-72-544	ISTC - 1200(a)
1-VLV-72-545	ISTC - 1200(c)
2-VLV-72-545	ISTC - 1200(c)
1-VLV-72-546	ISTC - 1200(c)
2-VLV-72-546	ISTC - 1200(c)
1-VLV-72-550	ISTC - 1200(a)
1-VLV-72-551	ISTC - 1200(a)
2-VLV-72-551	ISTC - 1200(a)
1-VLV-72-552	ISTC - 1200(a)
2-VLV-72-552	ISTC - 1200(a)
1-VLV-72-553	ISTC - 1200(c)
2-VLV-72-553	ISTC - 1200(c)



**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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VALVE ID	EXEMPTION BASIS
1-VLV-72-504	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VLV-72-530	ISTC - 1200(a)
1-VLV-72-531	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-VLV-72-554	ISTC - 1200(c)
2-VLV-72-554	ISTC - 1200(c)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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**Flow Diagram: 0-47W813-1**

VALVE ID	EXEMPTION BASIS
1-VLV-68-401A	ISTC - 1200(a)
2-VLV-68-401A	ISTC - 1200(a)
1-VLV-68-402A	ISTC - 1200(a)
2-VLV-68-402A	ISTC - 1200(a)
1-VLV-68-403A	ISTC - 1200(a)
2-VLV-68-403A	ISTC - 1200(a)
1-VLV-68-404A	ISTC - 1200(c)
2-VLV-68-404A	ISTC - 1200(c)
1-VLV-68-407A	ISTC - 1200(a)
2-VLV-68-407A	ISTC - 1200(a)
1-VLV-68-411A	ISTC - 1200(a)
2-VLV-68-411A	ISTC - 1200(a)
1-VLV-68-412A	ISTC - 1200(a)
2-VLV-68-412A	ISTC - 1200(a)
1-VLV-68-413A	ISTC - 1200(a)
2-VLV-68-413A	ISTC - 1200(a)
1-VLV-68-414A	ISTC - 1200(c)
2-VLV-68-414A	ISTC - 1200(c)
1-VLV-68-421A	ISTC - 1200(a)
2-VLV-68-421A	ISTC - 1200(a)
1-VLV-68-422A	ISTC - 1200(a)
2-VLV-68-422A	ISTC - 1200(a)
1-VLV-68-423A	ISTC - 1200(a)
2-VLV-68-423A	ISTC - 1200(a)
1-VLV-68-424A	ISTC - 1200(c)
2-VLV-68-424A	ISTC - 1200(c)
1-VLV-68-431A	ISTC - 1200(a)
2-VLV-68-431A	ISTC - 1200(a)
1-VLV-68-432A	ISTC - 1200(a)
2-VLV-68-432A	ISTC - 1200(a)
1-VLV-68-433A	ISTC - 1200(a)
2-VLV-68-433A	ISTC - 1200(a)
1-VLV-68-434A	ISTC - 1200(c)
2-VLV-68-434A	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-VLV-68-441A	ISTC - 1200(a)
2-VLV-68-441A	ISTC - 1200(a)
1-VLV-68-442A	ISTC - 1200(a)
2-VLV-68-442A	ISTC - 1200(a)
1-VLV-68-443A	ISTC - 1200(a)
2-VLV-68-443A	ISTC - 1200(a)
1-VLV-68-444A	ISTC - 1200(a)
2-VLV-68-444A	ISTC - 1200(c)
1-VLV-68-445A	ISTC - 1200(a)
2-VLV-68-445A	ISTC - 1200(a)
1-VLV-68-446A	ISTC - 1200(a)
2-VLV-68-446A	ISTC - 1200(a)
1-VLV-68-454A	ISTC - 1200(a)
2-VLV-68-454A	ISTC - 1200(a)
1-VLV-68-455A	ISTC - 1200(a)
2-VLV-68-455A	ISTC - 1200(a)
2-VLV-68-456A	ISTC - 1200(a)
1-VLV-68-456B	ISTC - 1200(a)
1-VLV-68-500	ISTC - 1200(a)
2-VLV-68-500	ISTC - 1200(a)
1-VLV-68-501	ISTC - 1200(c)
2-VLV-68-501	ISTC - 1200(c)
1-VLV-68-502	ISTC - 1200(c)
2-VLV-68-502	ISTC - 1200(c)
1-VLV-68-503	ISTC - 1200(a)
2-VLV-68-503	ISTC - 1200(a)
1-VLV-68-549	ISTC - 1200(a)
2-VLV-68-549	ISTC - 1200(a)
1-VLV-68-551	ISTC - 1200(a)
2-VLV-68-551	ISTC - 1200(a)
1-VLV-68-552	ISTC - 1200(c)
2-VLV-68-552	ISTC - 1200(c)
1-VLV-68-553	ISTC - 1200(a)
2-VLV-68-553	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-VLV-68-555	ISTC - 1200(c)
2-VLV-68-555	ISTC - 1200(c)
1-VLV-68-557	ISTC - 1200(a)
2-VLV-68-557	ISTC - 1200(a)
1-VLV-68-560	ISTC - 1200(a)
2-VLV-68-560	ISTC - 1200(a)
1-VLV-68-561	ISTC - 1200(a)
2-VLV-68-561	ISTC - 1200(a)
1-VLV-68-566	ISTC - 1200(a)
2-VLV-68-566	ISTC - 1200(a)
1-VLV-68-567	ISTC - 1200(a)
2-VLV-68-567	ISTC - 1200(a)
1-VLV-68-568	ISTC - 1200(a)
2-VLV-68-568	ISTC - 1200(a)
1-VLV-68-575	ISTC - 1200(c)
2-VLV-68-575	ISTC - 1200(a)
1-VLV-68-577	ISTC - 1200(a)
2-VLV-68-577	ISTC - 1200(a)
1-VLV-68-578	ISTC - 1200(c)
2-VLV-68-578	ISTC - 1200(c)
1-VLV-68-581	ISTC - 1200(a)
2-VLV-68-581	ISTC - 1200(a)
1-VLV-68-593	ISTC - 1200(a)
2-VLV-68-593	ISTC - 1200(a)
1-VLV-68-594	ISTC - 1200(a)
2-VLV-68-594	ISTC - 1200(a)
1-VLV-68-597	ISTC - 1200(a)
2-VLV-68-597	ISTC - 1200(a)
1-VLV-68-598	ISTC - 1200(c)
2-VLV-68-598	ISTC - 1200(c)
1-VLV-68-602	ISTC - 1200(a)
2-VLV-68-602	ISTC - 1200(a)
1-VLV-68-603	ISTC - 1200(c)
2-VLV-68-603	ISTC - 1200(c)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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**Flow Diagram: 0-47W814-2**

VALVE ID	EXEMPTION BASIS
1-VLV-61-532	ISTC - 1200(a)
2-VLV-61-532	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-VLV-61-681	ISTC - 1200(a)
2-VLV-61-681	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-VLV-61-691	ISTC - 1200(a)
1-VLV-61-746	ISTC - 1200(a)

**Flow Diagram: 0-47W819-1**

VALVE ID	EXEMPTION BASIS
1-VLV-81-529	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
2-VLV-81-529	ISTC - 1200(a)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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**Flow Diagram: 0-47W845-1**

VALVE ID	EXEMPTION BASIS
1-VLV-67-9	ISTC - 1200(c)
2-VLV-67-9	ISTC - 1200(c)
1-VLV-67-10	ISTC - 1200(c)
2-VLV-67-10	ISTC - 1200(c)
1-VLV-67-505A	ISTC - 1200(c)
2-VLV-67-505A	ISTC - 1200(c)
1-VLV-67-505B	ISTC - 1200(c)
2-VLV-67-505B	ISTC - 1200(c)
1-VLV-67-506A	ISTC - 1200(c)
2-VLV-67-506A	ISTC - 1200(c)
1-VLV-67-506B	ISTC - 1200(c)
2-VLV-67-506B	ISTC - 1200(c)
1-VLV-67-507A	ISTC - 1200(c)
2-VLV-67-507A	ISTC - 1200(c)
1-VLV-67-507B	ISTC - 1200(c)
2-VLV-67-507B	ISTC - 1200(c)
1-VLV-67-510A	ISTC - 1200(c)
2-VLV-67-510A	ISTC - 1200(c)
1-VLV-67-510B	ISTC - 1200(c)
2-VLV-67-510B	ISTC - 1200(c)
1-VLV-67-511A	ISTC - 1200(c)
2-VLV-67-511A	ISTC - 1200(c)
1-VLV-67-511B	ISTC - 1200(c)
2-VLV-67-511B	ISTC - 1200(c)
1-VLV-67-515A	ISTC - 1200(c)
2-VLV-67-515A	ISTC - 1200(c)
1-VLV-67-515B	ISTC - 1200(c)
2-VLV-67-515B	ISTC - 1200(c)
1-VLV-67-516A	ISTC - 1200(c)
2-VLV-67-516A	ISTC - 1200(c)
1-VLV-67-516B	ISTC - 1200(c)

**Flow Diagram: 0-47W845-2**

VALVE ID	EXEMPTION BASIS
2-VLV-67-516B	ISTC - 1200(c)
1-VLV-67-518A	ISTC - 1200(c)
2-VLV-67-518A	ISTC - 1200(c)
1-VLV-67-518B	ISTC - 1200(c)
2-VLV-67-518B	ISTC - 1200(c)
0-VLV-67-672A	ISTC - 1200(c)
0-VLV-67-672B	ISTC - 1200(c)
1-VLV-67-712A	ISTC - 1200(a)
2-VLV-67-712A	ISTC - 1200(a)
1-VLV-67-712B	ISTC - 1200(a)
2-VLV-67-712B	ISTC - 1200(a)
1-VLV-67-713A	ISTC - 1200(a)
2-VLV-67-713A	ISTC - 1200(a)
1-VLV-67-713B	ISTC - 1200(a)
2-VLV-67-713B	ISTC - 1200(a)
1-VLV-67-714A	ISTC - 1200(a)
2-VLV-67-714A	ISTC - 1200(a)
1-VLV-67-714B	ISTC - 1200(a)
2-VLV-67-714B	ISTC - 1200(a)
1-VLV-67-715A	ISTC - 1200(a)
2-VLV-67-715A	ISTC - 1200(a)
1-VLV-67-715B	ISTC - 1200(a)
2-VLV-67-715B	ISTC - 1200(a)
0-VLV-67-717A	ISTC - 1200(a)
0-VLV-67-717B	ISTC - 1200(a)
1-VLV-67-800A	ISTC - 1200(a)
2-VLV-67-800A	ISTC - 1200(a)
1-VLV-67-802A	ISTC - 1200(a)
2-VLV-67-802A	ISTC - 1200(a)
0-VLV-67-815A	ISTC - 1200(a)
0-VLV-67-818A	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
0-VLV-82-718	ISTC - 1200(a)
0-VLV-82-719	ISTC - 1200(a)
0-VLV-82-720	ISTC - 1200(a)
0-VLV-82-721	ISTC - 1200(a)
0-VLV-82-734	ISTC - 1200(a)
0-VLV-82-735	ISTC - 1200(a)
0-VLV-82-736	ISTC - 1200(a)
0-VLV-82-737	ISTC - 1200(a)
1-VLV-67-821A	ISTC - 1200(a)
1-VLV-67-821B	ISTC - 1200(a)
2-VLV-67-822A	ISTC - 1200(a)
1-VLV-67-825A	ISTC - 1200(a)
2-VLV-67-825A	ISTC - 1200(a)
1-VLV-67-826A	ISTC - 1200(a)
2-VLV-67-826A	ISTC - 1200(a)
1-VLV-67-827A	ISTC - 1200(a)
2-VLV-67-827A	ISTC - 1200(a)
1-VLV-67-828A	ISTC - 1200(a)
2-VLV-67-828A	ISTC - 1200(a)
1-VLV-67-907A	ISTC - 1200(a)
2-VLV-67-907A	ISTC - 1200(a)
1-VLV-67-908A	ISTC - 1200(a)
2-VLV-67-908A	ISTC - 1200(a)
1-VLV-67-909A	ISTC - 1200(a)
2-VLV-67-909A	ISTC - 1200(a)
1-VLV-67-910A	ISTC - 1200(a)
2-VLV-67-910A	ISTC - 1200(a)
1-VLV-67-911A	ISTC - 1200(a)
2-VLV-67-911A	ISTC - 1200(a)
1-VLV-67-912A	ISTC - 1200(a)
2-VLV-67-912A	ISTC - 1200(a)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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VALVE ID	EXEMPTION BASIS
0-VLV-67-240	ISTC - 1200(a)
0-VLV-67-241	ISTC - 1200(a)
0-VLV-67-242	ISTC - 1200(a)
0-VLV-67-243	ISTC - 1200(a)
1-VLV-67-520A	ISTC - 1200(c)
2-VLV-67-520A	ISTC - 1200(c)
1-VLV-67-520B	ISTC - 1200(c)
2-VLV-67-520B	ISTC - 1200(c)
1-VLV-67-521A	ISTC - 1200(c)
2-VLV-67-521A	ISTC - 1200(c)
1-VLV-67-521B	ISTC - 1200(c)
2-VLV-67-521B	ISTC - 1200(c)
1-VLV-67-522A	ISTC - 1200(c)
2-VLV-67-522A	ISTC - 1200(c)
1-VLV-67-522B	ISTC - 1200(c)
2-VLV-67-522B	ISTC - 1200(c)
1-VLV-67-524A	ISTC - 1200(c)
2-VLV-67-524A	ISTC - 1200(c)
1-VLV-67-524B	ISTC - 1200(c)
1-VLV-67-525A	ISTC - 1200(a)
2-VLV-67-525A	ISTC - 1200(a)
1-VLV-67-525B	ISTC - 1200(a)
2-VLV-67-525B	ISTC - 1200(a)
1-VLV-67-526A	ISTC - 1200(a)
2-VLV-67-526A	ISTC - 1200(a)
1-VLV-67-526B	ISTC - 1200(a)
2-VLV-67-526B	ISTC - 1200(a)
1-VLV-67-527A	ISTC - 1200(c)
2-VLV-67-527A	ISTC - 1200(c)
1-VLV-67-527B	ISTC - 1200(c)
2-VLV-67-527B	ISTC - 1200(c)
1-VLV-67-530A	ISTC - 1200(c)
2-VLV-67-530A	ISTC - 1200(c)
1-VLV-67-530B	ISTC - 1200(c)
2-VLV-67-530B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VLV-67-546	ISTC - 1200(c)
0-VLV-67-546C	ISTC - 1200(c)
2-VLV-67-551	ISTC - 1200(c)
1-VLV-67-551A	ISTC - 1200(c)
0-VLV-67-552	ISTC - 1200(c)
0-VLV-67-553	ISTC - 1200(c)
1-VLV-67-555	ISTC - 1200(a)
2-VLV-67-555	ISTC - 1200(a)
1-VLV-67-556	ISTC - 1200(a)
2-VLV-67-556	ISTC - 1200(a)
1-VLV-67-577A	ISTC - 1200(c)
2-VLV-67-577A	ISTC - 1200(c)
1-VLV-67-577B	ISTC - 1200(c)
2-VLV-67-577B	ISTC - 1200(c)
1-VLV-67-675	ISTC - 1200(c)
2-VLV-67-675	ISTC - 1200(c)
1-VLV-67-676	ISTC - 1200(a)
2-VLV-67-676	ISTC - 1200(a)
1-VLV-67-677	ISTC - 1200(a)
2-VLV-67-677	ISTC - 1200(a)
1-VLV-67-686	ISTC - 1200(a)
2-VLV-67-686	ISTC - 1200(a)
1-VLV-67-702	ISTC - 1200(a)
2-VLV-67-703	ISTC - 1200(a)
1-VLV-67-710A	ISTC - 1200(c)
2-VLV-67-710A	ISTC - 1200(c)
1-VLV-67-710B	ISTC - 1200(c)
2-VLV-67-710B	ISTC - 1200(c)
1-VLV-67-718A	ISTC - 1200(c)
2-VLV-67-718A	ISTC - 1200(c)
1-VLV-67-718B	ISTC - 1200(c)
2-VLV-67-718B	ISTC - 1200(c)
2-VLV-67-763A	ISTC - 1200(a)
2-VLV-67-763B	ISTC - 1200(a)
1-VLV-67-795A	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
0-VLV-90-250	ISTC - 1200(a)
0-VLV-90-251	ISTC - 1200(a)
0-VLV-90-252	ISTC - 1200(a)
0-VLV-90-253	ISTC - 1200(a)
2-VLV-67-960B	ISTC - 1200(a)
0-VLV-67-1500	ISTC - 1200(c)
1-ISV-67-1500	ISTC - 1200(c)
2-VLV-67-1500	ISTC - 1200(c)
0-VLV-67-1501	ISTC - 1200(c)
1-ISV-67-1501	ISTC - 1200(c)
2-VLV-67-1501	ISTC - 1200(c)
0-VLV-67-1502	ISTC - 1200(a)
1-DRV-67-1502	ISTC - 1200(a)
2-VLV-67-1502	ISTC - 1200(a)
0-VLV-67-1503	ISTC - 1200(a)
1-DRV-67-1503	ISTC - 1200(a)
2-VLV-67-1503	ISTC - 1200(a)
0-VLV-67-1504	ISTC - 1200(a)
1-VTV-67-1504	ISTC - 1200(a)
2-VLV-67-1504	ISTC - 1200(a)
1-DRV-67-1505	ISTC - 1200(a)
2-VLV-67-1505	ISTC - 1200(a)
0-VLV-67-1506	ISTC - 1200(c)
1-ISV-67-1506	ISTC - 1200(c)
2-VLV-67-1506	ISTC - 1200(c)
0-VLV-67-1507	ISTC - 1200(a)
1-VTV-67-1507	ISTC - 1200(a)
2-VLV-67-1507	ISTC - 1200(a)
2-VLV-67-1508	ISTC - 1200(a)
0-VLV-67-1509	ISTC - 1200(c)
1-ISV-67-1509	ISTC - 1200(c)
2-VLV-67-1509	ISTC - 1200(c)
1-DRV-67-1511	ISTC - 1200(a)
2-VLV-67-1511	ISTC - 1200(a)
0-VLV-67-1512	ISTC - 1200(a)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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VALVE ID	EXEMPTION BASIS
1-VLV-67-533A	ISTC - 1200(c)
2-VLV-67-533A	ISTC - 1200(c)
1-VLV-67-533B	ISTC - 1200(c)
2-VLV-67-533B	ISTC - 1200(c)
1-VLV-67-534A	ISTC - 1200(a)
2-VLV-67-534A	ISTC - 1200(a)
1-VLV-67-534B	ISTC - 1200(a)
2-VLV-67-534B	ISTC - 1200(a)
1-VLV-67-535A	ISTC - 1200(a)
2-VLV-67-535A	ISTC - 1200(a)
1-VLV-67-535B	ISTC - 1200(a)
2-VLV-67-535B	ISTC - 1200(a)
1-VLV-67-536A	ISTC - 1200(a)
2-VLV-67-536A	ISTC - 1200(a)
1-VLV-67-536B	ISTC - 1200(a)
2-VLV-67-536B	ISTC - 1200(a)
1-VLV-67-537A	ISTC - 1200(c)
2-VLV-67-537A	ISTC - 1200(c)
1-VLV-67-537B	ISTC - 1200(c)
2-VLV-67-537B	ISTC - 1200(c)
1-VLV-67-538A	ISTC - 1200(c)
2-VLV-67-538A	ISTC - 1200(c)
1-VLV-67-538B	ISTC - 1200(c)
2-VLV-67-538B	ISTC - 1200(c)
1-VLV-67-542A	ISTB1200(c)
2-VLV-67-542A	ISTB1200(c)
1-VLV-67-542B	ISTB1200(c)
2-VLV-67-542B	ISTB1200(c)
1-VLV-67-545	ISTC - 1200(a)
2-VLV-67-545	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
2-VLV-67-795A	ISTC - 1200(a)
1-VLV-67-795B	ISTC - 1200(a)
2-VLV-67-795B	ISTC - 1200(a)
1-RTV-67-801	ISTC - 1200(a)
1-RTV-67-803	ISTC - 1200(a)
2-VLV-67-822B	ISTC - 1200(a)
0-VLV-67-830A	ISTC - 1200(a)
1-VLV-67-831A	ISTC - 1200(a)
2-VLV-67-831A	ISTC - 1200(a)
1-VLV-67-832A	ISTC - 1200(a)
2-VLV-67-832A	ISTC - 1200(a)
1-VLV-67-833A	ISTC - 1200(a)
2-VLV-67-833A	ISTC - 1200(a)
1-VLV-67-860A	ISTC - 1200(a)
2-VLV-67-860A	ISTC - 1200(a)
1-VLV-67-860B	ISTC - 1200(a)
2-VLV-67-860B	ISTC - 1200(a)
1-VLV-67-861A	ISTC - 1200(a)
2-VLV-67-861A	ISTC - 1200(a)
1-VLV-67-861B	ISTC - 1200(a)
2-VLV-67-861B	ISTC - 1200(a)
0-VLV-67-913A	ISTC - 1200(a)
1-VLV-67-914A	ISTC - 1200(a)
2-VLV-67-914A	ISTC - 1200(a)
1-VLV-67-915A	ISTC - 1200(a)
2-VLV-67-915A	ISTC - 1200(a)
1-VLV-67-916A	ISTC - 1200(a)
2-VLV-67-916A	ISTC - 1200(a)
1-VLV-67-960A	ISTC - 1200(a)
2-VLV-67-960A	ISTC - 1200(a)
1-VLV-67-960B	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-DRV-67-1512	ISTC - 1200(a)
2-VLV-67-1512	ISTC - 1200(a)
0-VLV-67-1530	ISTC - 1200(a)
1-VTV-67-1530	ISTC - 1200(a)
0-VLV-67-1531	ISTC - 1200(a)
1-DRV-67-1534	ISTC - 1200(a)
1-VTV-67-1535	ISTC - 1200(a)
1-DRV-67-1536	ISTC - 1200(a)
1-VTV-67-1537	ISTC - 1200(a)
1-VLV-67-1564	ISTC - 1200(a)
2-VLV-67-1564	ISTC - 1200(a)
1-VLV-67-1565	ISTC - 1200(a)
2-VLV-67-1565	ISTC - 1200(a)
1-ISV-67-1578	ISTC - 1200(c)
2-ISV-67-1578	ISTC - 1200(c)
1-VLV-67-1591A	ISTC - 1200(a)
2-VLV-67-1591A	ISTC - 1200(a)
1-VLV-67-1591B	ISTC - 1200(a)
2-VLV-67-1591B	ISTC - 1200(a)
1-VLV-67-1592A	ISTC - 1200(a)
1-VLV-67-1592B	ISTC - 1200(a)
0-VLV-67-1610	ISTC - 1200(c)
0-VLV-67-1611	ISTC - 1200(c)
0-VLV-67-1612	ISTC - 1200(c)
0-VLV-67-1613	ISTC - 1200(c)
0-VLV-67-1630	ISTC - 1200(a)
0-VLV-67-1631	ISTC - 1200(a)
0-VLV-67-1632	ISTC - 1200(c)
0-VLV-67-1633	ISTC - 1200(a)
0-VLV-67-1650	ISTC - 1200(a)
1-VLV-67-1651	ISTC - 1200(a)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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**Flow Diagram: 0-47W845-5**

VALVE ID	EXEMPTION BASIS
1-FCV-67-492	ISTC-1200(b)

VALVE ID	EXEMPTION BASIS
1-FCV-67-489	ISTC-1200(b)

VALVE ID	EXEMPTION BASIS
2-FCV-67-489	ISTC-1200(b)
2-FCV-67-492	ISTC-1200(b)

**Flow Diagram: 0-47W845-5-ISI**

VALVE ID	EXEMPTION BASIS
0-VLV-67-625B	ISTC - 1200(a)
0-VLV-40-674	ISTC - 1200(c)
0-VLV-40-675	ISTC - 1200(c)
0-VLV-40-676	ISTC - 1200(c)
0-VLV-40-677	ISTC - 1200(c)
0-VLV-67-721A	ISTC - 1200(c)
0-VLV-67-721B	ISTC - 1200(c)
0-VLV-67-722A	ISTC - 1200(c)
0-VLV-67-722B	ISTC - 1200(c)
0-VLV-67-725A	ISTC - 1200(c)
0-VLV-67-725B	ISTC - 1200(c)
0-VLV-67-726A	ISTC - 1200(c)
0-VLV-67-726B	ISTC - 1200(c)
1-VLV-67-727A	ISTC - 1200(c)
2-VLV-67-727A	ISTC - 1200(c)
1-VLV-67-727B	ISTC - 1200(c)
2-VLV-67-727B	ISTC - 1200(c)
1-VLV-67-728A	ISTC - 1200(c)
2-VLV-67-728A	ISTC - 1200(c)
1-VLV-67-728B	ISTC - 1200(c)
2-VLV-67-728B	ISTC - 1200(c)
0-VLV-67-729A	ISTC - 1200(c)
0-VLV-67-730A	ISTC - 1200(c)
0-VLV-67-731A	ISTC - 1200(c)
1-VLV-67-734A	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VLV-67-734A	ISTC - 1200(a)
1-VLV-67-734B	ISTC - 1200(a)
2-VLV-67-734B	ISTC - 1200(a)
0-VLV-67-741A	ISTC - 1200(c)
0-VLV-67-741B	ISTC - 1200(c)
0-VLV-67-742A	ISTC - 1200(c)
0-VLV-67-742B	ISTC - 1200(c)
0-VLV-67-745A	ISTC - 1200(c)
0-VLV-67-745B	ISTC - 1200(c)
0-VLV-67-746A	ISTC - 1200(c)
0-VLV-67-746B	ISTC - 1200(c)
0-VLV-67-749A	ISTC - 1200(c)
0-VLV-67-749B	ISTC - 1200(c)
0-VLV-67-750A	ISTC - 1200(c)
0-VLV-67-751A	ISTC - 1200(c)
0-VLV-67-752A	ISTC - 1200(c)
0-VLV-67-1001	ISTC - 1200(a)
0-VLV-67-1002	ISTC - 1200(a)
0-VLV-67-1003	ISTC - 1200(a)
0-VLV-67-1004	ISTC - 1200(a)
0-VLV-67-1005	ISTC - 1200(a)
0-VLV-67-1006	ISTC - 1200(a)
0-VLV-67-1007	ISTC - 1200(a)
0-VLV-67-1008	ISTC - 1200(a)
0-VLV-67-1009	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
0-VLV-67-1010	ISTC - 1200(a)
0-VLV-67-1011	ISTC - 1200(a)
0-VLV-67-1012	ISTC - 1200(a)
0-VLV-67-1013	ISTC - 1200(a)
0-VLV-67-1014	ISTC - 1200(a)
0-VLV-67-1015	ISTC - 1200(a)
0-VLV-67-1016	ISTC - 1200(a)
1-VLV-67-1017	ISTC - 1200(a)
2-VLV-67-1017	ISTC - 1200(a)
1-VLV-67-1018	ISTC - 1200(a)
2-VLV-67-1018	ISTC - 1200(a)
1-VLV-67-1019	ISTC - 1200(a)
2-VLV-67-1019	ISTC - 1200(a)
1-VLV-67-1020	ISTC - 1200(a)
2-VLV-67-1020	ISTC - 1200(a)
1-VLV-67-1022	ISTC - 1200(c)
2-VLV-67-1022	ISTC - 1200(a)
1-VLV-67-1023	ISTC - 1200(a)
2-VLV-67-1023	ISTC - 1200(a)
1-VLV-67-1024	ISTC - 1200(a)
2-VLV-67-1024	ISTC - 1200(a)
1-VLV-67-1026	ISTC - 1200(a)
2-VLV-67-1026	ISTC - 1200(a)
1-VLV-67-1071	ISTC - 1200(a)
1-VLV-67-1074	ISTC - 1200(a)
2-VLV-67-1074	ISTC - 1200(a)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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**Flow Diagram: 0-47W850-26-ISI**

VALVE ID	EXEMPTION BASIS
0-VLV-26-924	ISTC - 1200(a)
0-VLV-26-925	ISTC - 1200(a)
0-VLV-26-926	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
0-VLV-26-927	ISTC - 1200(a)
0-VLV-26-928	ISTC - 1200(a)
0-VLV-26-929	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
0-VLV-26-930	ISTC - 1200(a)
0-VLV-26-931	ISTC - 1200(a)
0-VLV-26-932	ISTC - 1200(a)
0-VLV-26-933	ISTC - 1200(a)

**Flow Diagram: 0-47W855-1-ISI**

VALVE ID	EXEMPTION BASIS
0-VLV-78-204A	ISTC - 1200(a)
0-VLV-78-205A	ISTC - 1200(a)
0-VLV-78-206A	ISTC - 1200(a)
0-VLV-78-207A	ISTC - 1200(a)
0-VLV-78-208A	ISTC - 1200(a)
0-VLV-78-209A	ISTC - 1200(a)
0-VLV-78-210A	ISTC - 1200(a)
0-VLV-78-221A	ISTC - 1200(a)
0-VLV-78-222A	ISTC - 1200(a)
0-VLV-78-223A	ISTC - 1200(a)
0-VLV-78-224A	ISTC - 1200(a)
1-VLV-78-226A	ISTC - 1200(a)
2-VLV-78-226A	ISTC - 1200(a)
1-VLV-78-228A	ISTC - 1200(a)
2-VLV-78-228A	ISTC - 1200(a)
0-VLV-78-230A	ISTC - 1200(a)
0-VLV-78-231A	ISTC - 1200(a)
0-VLV-78-232A	ISTC - 1200(a)
0-VLV-78-233A	ISTC - 1200(a)
0-VLV-78-501	ISTC - 1200(c)
0-VLV-78-502	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
0-VLV-78-503	ISTC - 1200(c)
0-VLV-78-504	ISTC - 1200(c)
0-VLV-78-505	ISTC - 1200(c)
0-VLV-78-506	ISTC - 1200(c)
0-VLV-78-507	ISTC - 1200(c)
0-VLV-78-508	ISTC - 1200(c)
0-VLV-78-511	ISTC - 1200(c)
0-VLV-78-512	ISTC - 1200(c)
0-VLV-78-514	ISTC - 1200(c)
0-VLV-78-515	ISTC - 1200(c)
0-VLV-78-516	ISTC - 1200(c)
0-VLV-78-517	ISTC - 1200(c)
0-VLV-78-518	ISTC - 1200(c)
0-VLV-78-519	ISTC - 1200(c)
0-RTV-78-520	ISTC - 1200(a)
0-VLV-78-521	ISTC - 1200(c)
0-VLV-78-522	ISTC - 1200(c)
0-VLV-78-523	ISTC - 1200(c)
0-VLV-78-524	ISTC - 1200(c)
0-VLV-78-525	ISTC - 1200(c)
0-VLV-78-526	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
0-VLV-78-528	ISTC - 1200(a)
0-VLV-78-529	ISTC - 1200(c)
0-VLV-78-530	ISTC - 1200(c)
0-VLV-78-531	ISTC - 1200(c)
0-VLV-78-532	ISTC - 1200(c)
0-VLV-78-533	ISTC - 1200(c)
0-VLV-78-578	ISTC - 1200(a)
0-VLV-78-579	ISTC - 1200(c)
0-RTV-78-580	ISTC - 1200(a)
0-VLV-78-582	ISTC - 1200(c)
0-VLV-78-584	ISTC - 1200(c)
0-VLV-78-585	ISTC - 1200(c)
0-VLV-78-587	ISTC - 1200(c)
0-VLV-78-588	ISTC - 1200(c)
0-VLV-78-589	ISTC - 1200(a)
0-VLV-78-590	ISTC - 1200(a)
0-VLV-78-594	ISTC - 1200(c)
0-VLV-78-595	ISTC - 1200(c)
0-VLV-78-596	ISTC - 1200(c)
0-VLV-78-597	ISTC - 1200(c)
0-VLV-78-599	ISTC - 1200(c)

**Flow Diagram: 0-47W856-1-ISI**

VALVE ID	EXEMPTION BASIS
1-VLV-59-651	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
2-VLV-59-651	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-VLV-59-704	ISTC - 1200(a)
2-VLV-59-704	ISTC - 1200(a)

**Flow Diagram: 0-47W859-1-ISI**



**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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VALVE ID	EXEMPTION BASIS
1-VLV-70-250A	ISTC - 1200(a)
1-VLV-70-251A	ISTC - 1200(a)
0-VLV-70-252A	ISTC - 1200(a)
2-VLV-70-253A	ISTC - 1200(a)
2-VLV-70-254A	ISTC - 1200(a)
1-VLV-70-255A	ISTC - 1200(a)
2-VLV-70-256A	ISTC - 1200(a)
0-VLV-70-257A	ISTC - 1200(a)
1-VLV-70-257A	ISTC - 1200(a)
2-VLV-70-257A	ISTC - 1200(a)
1-VLV-70-258A	ISTC - 1200(a)
2-VLV-70-258A	ISTC - 1200(a)
1-VLV-70-259A	ISTC - 1200(a)
2-VLV-70-259A	ISTC - 1200(a)
1-VLV-70-260A	ISTC - 1200(a)
2-VLV-70-260A	ISTC - 1200(a)
1-VLV-70-271A	ISTC - 1200(a)
2-VLV-70-271A	ISTC - 1200(a)
1-VLV-70-272A	ISTC - 1200(a)
2-VLV-70-272A	ISTC - 1200(a)
1-VLV-70-273A	ISTC - 1200(a)
2-VLV-70-273A	ISTC - 1200(a)
1-VLV-70-284A	ISTC - 1200(a)
2-VLV-70-284A	ISTC - 1200(a)
1-VLV-70-285A	ISTC - 1200(a)
2-VLV-70-285A	ISTC - 1200(a)
1-VLV-70-286A	ISTC - 1200(a)
2-VLV-70-286A	ISTC - 1200(a)
1-VLV-70-287A	ISTC - 1200(a)
2-VLV-70-287A	ISTC - 1200(a)
1-VLV-70-288A	ISTC - 1200(a)
2-VLV-70-288A	ISTC - 1200(a)
1-VLV-70-289A	ISTC - 1200(a)
2-VLV-70-289A	ISTC - 1200(a)
1-VLV-70-290A	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-VLV-70-372A	ISTC - 1200(a)
1-VLV-70-501	ISTC - 1200(c)
2-VLV-70-501	ISTC - 1200(c)
0-VLV-70-503	ISTC - 1200(c)
1-VLV-70-503A	ISTC - 1200(c)
2-VLV-70-503A	ISTC - 1200(c)
1-VLV-70-503B	ISTC - 1200(c)
2-VLV-70-503B	ISTC - 1200(c)
0-VLV-70-505	ISTC - 1200(c)
1-VLV-70-505A	ISTC - 1200(c)
2-VLV-70-505A	ISTC - 1200(c)
1-VLV-70-505B	ISTC - 1200(c)
2-VLV-70-505B	ISTC - 1200(c)
0-VLV-70-506	ISTC - 1200(a)
1-VLV-70-506A	ISTC - 1200(a)
2-VLV-70-506A	ISTC - 1200(a)
1-VLV-70-506B	ISTC - 1200(a)
2-VLV-70-506B	ISTC - 1200(a)
1-VLV-70-507	ISTC - 1200(c)
2-VLV-70-507	ISTC - 1200(c)
1-VLV-70-508	ISTC - 1200(c)
2-VLV-70-508	ISTC - 1200(c)
0-VLV-70-509	ISTC - 1200(a)
1-VLV-70-509	ISTC - 1200(a)
2-VLV-70-509	ISTC - 1200(a)
0-VLV-70-513	ISTC - 1200(a)
1-VLV-70-513	ISTC - 1200(a)
2-VLV-70-513	ISTC - 1200(a)
1-VLV-70-514	ISTC - 1200(a)
2-VLV-70-514	ISTC - 1200(a)
0-VLV-70-515	ISTC - 1200(c)
1-VLV-70-516	ISTC - 1200(c)
2-VLV-70-516	ISTC - 1200(c)
1-VLV-70-517	ISTC - 1200(a)
2-VLV-70-517	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-VLV-70-544B	ISTC - 1200(c)
2-VLV-70-544B	ISTC - 1200(c)
1-VLV-70-544C	ISTC - 1200(c)
2-VLV-70-544C	ISTC - 1200(c)
1-VLV-70-552B	ISTC - 1200(c)
2-VLV-70-552B	ISTC - 1200(c)
0-VLV-70-715	ISTC - 1200(a)
1-VLV-70-715	ISTC - 1200(a)
2-VLV-70-715	ISTC - 1200(a)
0-VLV-70-716	ISTC - 1200(a)
1-VLV-70-716	ISTC - 1200(a)
2-VLV-70-716	ISTC - 1200(a)
0-VLV-70-717	ISTC - 1200(a)
1-VLV-70-717A	ISTC - 1200(a)
2-VLV-70-717A	ISTC - 1200(a)
1-VLV-70-717B	ISTC - 1200(a)
2-VLV-70-717B	ISTC - 1200(a)
0-VLV-70-771	ISTC - 1200(c)
1-VLV-70-771	ISTC - 1200(c)
2-VLV-70-771	ISTC - 1200(c)
0-VLV-70-772	ISTC - 1200(c)
1-VLV-70-772	ISTC - 1200(c)
2-VLV-70-772	ISTC - 1200(c)
1-DRV-70-773	ISTC - 1200(a)
2-VLV-70-773	ISTC - 1200(a)
0-VLV-70-774	ISTC - 1200(a)
1-VTV-70-774	ISTC - 1200(a)
2-VLV-70-774	ISTC - 1200(a)
0-VLV-70-775	ISTC - 1200(a)
1-VTV-70-775	ISTC - 1200(a)
2-VLV-70-775	ISTC - 1200(a)
0-VLV-70-776	ISTC - 1200(c)
1-VLV-70-776	ISTC - 1200(c)
2-VLV-70-776	ISTC - 1200(c)
0-VLV-70-777	ISTC - 1200(c)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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VALVE ID	EXEMPTION BASIS
2-VLV-70-290A	ISTC - 1200(a)
1-VLV-70-291A	ISTC - 1200(a)
2-VLV-70-291A	ISTC - 1200(a)
1-VLV-70-354A	ISTC - 1200(a)
2-VLV-70-354A	ISTC - 1200(a)
1-VLV-70-355A	ISTC - 1200(a)
2-VLV-70-355A	ISTC - 1200(a)
1-VLV-70-356A	ISTC - 1200(a)
2-VLV-70-356A	ISTC - 1200(a)
1-VLV-70-357A	ISTC - 1200(a)
2-VLV-70-357A	ISTC - 1200(a)
0-VLV-70-358A	ISTC - 1200(a)
0-VLV-70-359A	ISTC - 1200(a)
0-VLV-70-360A	ISTC - 1200(a)
0-VLV-70-361A	ISTC - 1200(a)
1-VLV-70-362A	ISTC - 1200(a)
1-VLV-70-363A	ISTC - 1200(a)
0-VLV-70-364A	ISTC - 1200(a)
2-VLV-70-365A	ISTC - 1200(a)
2-VLV-70-366A	ISTC - 1200(a)
2-VLV-70-367A	ISTC - 1200(a)
2-VLV-70-368A	ISTC - 1200(a)
0-VLV-70-369A	ISTC - 1200(a)
0-VLV-70-370A	ISTC - 1200(a)
1-VLV-70-371A	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-VLV-70-518	ISTC - 1200(c)
2-VLV-70-518	ISTC - 1200(c)
1-VLV-70-519	ISTC - 1200(c)
2-VLV-70-519	ISTC - 1200(c)
1-VLV-70-520	ISTC - 1200(c)
2-VLV-70-520	ISTC - 1200(c)
0-VLV-70-522	ISTC - 1200(c)
0-VLV-70-523A	ISTC - 1200(a)
0-VLV-70-523B	ISTC - 1200(a)
0-VLV-70-525A	ISTC - 1200(a)
0-VLV-70-525B	ISTC - 1200(a)
0-VLV-70-526A	ISTC - 1200(a)
0-VLV-70-526B	ISTC - 1200(a)
0-VLV-70-528A	ISTC - 1200(a)
0-VLV-70-528B	ISTC - 1200(a)
0-VLV-70-529A	ISTC - 1200(c)
0-VLV-70-529B	ISTC - 1200(c)
0-VLV-70-530	ISTC - 1200(c)
1-VLV-70-536	ISTC - 1200(c)
2-VLV-70-536	ISTC - 1200(c)
1-VLV-70-537	ISTC - 1200(c)
2-VLV-70-537	ISTC - 1200(c)
1-VLV-70-543	ISTC - 1200(c)
2-VLV-70-543	ISTC - 1200(c)
1-VLV-70-544A	ISTC - 1200(c)
2-VLV-70-544A	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-VLV-70-777	ISTC - 1200(c)
2-VLV-70-777	ISTC - 1200(c)
0-VLV-70-778	ISTC - 1200(a)
1-DRV-70-778	ISTC - 1200(a)
2-VLV-70-778	ISTC - 1200(a)
0-VLV-70-779	ISTC - 1200(a)
1-DRV-70-779	ISTC - 1200(a)
2-VLV-70-779	ISTC - 1200(a)
0-VLV-70-780	ISTC - 1200(a)
2-VLV-70-780	ISTC - 1200(a)
2-VLV-70-781	ISTC - 1200(a)
0-VLV-70-790	ISTC - 1200(a)
1-VTV-70-790	ISTC - 1200(a)
2-VLV-70-790	ISTC - 1200(a)
0-VLV-70-797	ISTC - 1200(a)
0-VLV-70-798	ISTC - 1200(a)
1-VTV-70-798	ISTC - 1200(a)
0-VLV-70-799	ISTC - 1200(a)
1-VLV-70-799	ISTC - 1200(a)
1-VLV-70-820	ISTC - 1200(a)
2-VLV-70-820	ISTC - 1200(a)
1-DRV-70-826	ISTC - 1200(a)
1-VTV-70-827	ISTC - 1200(a)
1-VTV-70-828	ISTC - 1200(a)
1-RTV-70-829	ISTC - 1200(a)
1-RTV-70-830	ISTC - 1200(a)

**Flow Diagram: 0-47W859-4-ISI**

VALVE ID	EXEMPTION BASIS
1-VLV-70-261A	ISTC - 1200(a)
2-VLV-70-261A	ISTC - 1200(a)
1-VLV-70-262A	ISTC - 1200(a)
2-VLV-70-262A	ISTC - 1200(a)
1-VLV-70-263A	ISTC - 1200(a)
2-VLV-70-263A	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-VLV-70-546B	ISTC - 1200(c)
2-VLV-70-546B	ISTC - 1200(c)
1-VLV-70-547A	ISTC - 1200(a)
2-VLV-70-547A	ISTC - 1200(a)
1-VLV-70-547B	ISTC - 1200(a)
2-VLV-70-547B	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-VLV-70-563A	ISTC - 1200(a)
2-VLV-70-563A	ISTC - 1200(a)
1-VLV-70-563B	ISTC - 1200(a)
2-VLV-70-563B	ISTC - 1200(a)
1-VLV-70-564A	ISTC - 1200(c)
2-VLV-70-564A	ISTC - 1200(c)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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<b>VALVE ID</b>	<b>EXEMPTION BASIS</b>
1-VLV-70-264A	ISTC - 1200(a)
2-VLV-70-264A	ISTC - 1200(a)
1-VLV-70-265A	ISTC - 1200(a)
2-VLV-70-265A	ISTC - 1200(a)
1-VLV-70-266A	ISTC - 1200(a)
2-VLV-70-266A	ISTC - 1200(a)
1-VLV-70-267A	ISTC - 1200(a)
2-VLV-70-267A	ISTC - 1200(a)
1-VLV-70-268A	ISTC - 1200(a)
2-VLV-70-268A	ISTC - 1200(a)
1-VLV-70-269A	ISTC - 1200(a)
2-VLV-70-269A	ISTC - 1200(a)
1-VLV-70-270A	ISTC - 1200(a)
1-VLV-70-274A	ISTC - 1200(a)
2-VLV-70-274A	ISTC - 1200(a)
1-VLV-70-275A	ISTC - 1200(a)
2-VLV-70-275A	ISTC - 1200(a)
1-VLV-70-276A	ISTC - 1200(a)
2-VLV-70-276A	ISTC - 1200(a)
1-VLV-70-277A	ISTC - 1200(a)
2-VLV-70-277A	ISTC - 1200(a)
1-VLV-70-278A	ISTC - 1200(a)
2-VLV-70-278A	ISTC - 1200(a)
1-VLV-70-279A	ISTC - 1200(a)
2-VLV-70-279A	ISTC - 1200(a)
1-VLV-70-280A	ISTC - 1200(a)
2-VLV-70-280A	ISTC - 1200(a)
1-VLV-70-281A	ISTC - 1200(a)
2-VLV-70-281A	ISTC - 1200(a)
1-VLV-70-282A	ISTC - 1200(a)
2-VLV-70-282A	ISTC - 1200(a)
1-VLV-70-283A	ISTC - 1200(a)
2-VLV-70-283A	ISTC - 1200(a)
1-VLV-70-545A	ISTC - 1200(c)
2-VLV-70-545A	ISTC - 1200(c)

<b>VALVE ID</b>	<b>EXEMPTION BASIS</b>
1-VLV-70-548A	ISTC - 1200(a)
2-VLV-70-548A	ISTC - 1200(c)
1-VLV-70-548B	ISTC - 1200(a)
2-VLV-70-548B	ISTC - 1200(a)
1-VLV-70-549A	ISTC - 1200(a)
2-VLV-70-549A	ISTC - 1200(a)
1-VLV-70-549B	ISTC - 1200(a)
2-VLV-70-549B	ISTC - 1200(a)
1-VLV-70-550A	ISTC - 1200(a)
2-VLV-70-550A	ISTC - 1200(a)
1-VLV-70-550B	ISTC - 1200(a)
2-VLV-70-550B	ISTC - 1200(a)
1-VLV-70-552A	ISTC - 1200(c)
2-VLV-70-552A	ISTC - 1200(c)
1-VLV-70-553A	ISTC - 1200(c)
2-VLV-70-553A	ISTC - 1200(c)
1-VLV-70-553B	ISTC - 1200(c)
2-VLV-70-553B	ISTC - 1200(c)
1-VLV-70-555A	ISTC - 1200(a)
2-VLV-70-555A	ISTC - 1200(a)
1-VLV-70-555B	ISTC - 1200(a)
2-VLV-70-555B	ISTC - 1200(a)
1-VLV-70-557A	ISTC - 1200(c)
2-VLV-70-557A	ISTC - 1200(c)
1-VLV-70-557B	ISTC - 1200(c)
2-VLV-70-557B	ISTC - 1200(c)
1-VLV-70-558A	ISTC - 1200(c)
2-VLV-70-558A	ISTC - 1200(c)
1-VLV-70-558B	ISTC - 1200(c)
2-VLV-70-558B	ISTC - 1200(c)
1-VLV-70-560A	ISTC - 1200(c)
2-VLV-70-560A	ISTC - 1200(c)
1-VLV-70-560B	ISTC - 1200(c)
2-VLV-70-560B	ISTC - 1200(c)
1-VLV-70-562A	ISTC - 1200(c)

<b>VALVE ID</b>	<b>EXEMPTION BASIS</b>
1-VLV-70-564B	ISTC - 1200(c)
2-VLV-70-564B	ISTC - 1200(c)
1-VLV-70-566A	ISTC - 1200(c)
2-VLV-70-566A	ISTC - 1200(c)
1-VLV-70-566B	ISTC - 1200(c)
2-VLV-70-566B	ISTC - 1200(c)
1-VLV-70-567A	ISTC - 1200(c)
2-VLV-70-567A	ISTC - 1200(c)
1-VLV-70-567B	ISTC - 1200(c)
2-VLV-70-567B	ISTC - 1200(c)
1-VLV-70-568A	ISTC - 1200(a)
2-VLV-70-568A	ISTC - 1200(a)
1-VLV-70-568B	ISTC - 1200(a)
2-VLV-70-568B	ISTC - 1200(a)
1-VLV-70-569A	ISTC - 1200(a)
2-VLV-70-569A	ISTC - 1200(c)
1-VLV-70-569B	ISTC - 1200(c)
2-VLV-70-569B	ISTC - 1200(c)
1-VLV-70-571A	ISTC - 1200(c)
2-VLV-70-571A	ISTC - 1200(c)
1-VLV-70-571B	ISTC - 1200(c)
2-VLV-70-571B	ISTC - 1200(c)
1-VLV-70-572A	ISTC - 1200(c)
2-VLV-70-572A	ISTC - 1200(c)
1-VLV-70-572B	ISTC - 1200(c)
2-VLV-70-572B	ISTC - 1200(c)
1-VLV-70-725A	ISTC - 1200(c)
2-VLV-70-725A	ISTC - 1200(c)
1-VLV-70-725B	ISTC - 1200(c)
2-VLV-70-725B	ISTC - 1200(c)
1-VLV-70-809	ISTC - 1200(c)
2-VLV-70-809	ISTC - 1200(c)
1-VLV-70-810	ISTC - 1200(c)
2-VLV-70-810	ISTC - 1200(c)
1-VLV-70-813	ISTC - 1200(c)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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VALVE ID	EXEMPTION BASIS
1-VLV-70-545B	ISTC - 1200(c)
2-VLV-70-545B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VLV-70-562A	ISTC - 1200(c)
1-VLV-70-562B	ISTC - 1200(c)
2-VLV-70-562B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VLV-70-813	ISTC - 1200(c)
1-VLV-70-814	ISTC - 1200(c)
2-VLV-70-814	ISTC - 1200(c)

**Flow Diagram: 0-47W860-1-ISI**

VALVE ID	EXEMPTION BASIS
1-VLV-50-513	ISTC - 1200(c)
1-VLV-50-514	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VLV-50-515	ISTC - 1200(c)
2-VLV-50-516	ISTC - 1200(c)
1-VLV-50-517	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-VLV-50-518	ISTC - 1200(c)
2-VLV-50-519	ISTC - 1200(c)
2-VLV-50-520	ISTC - 1200(c)

**Flow Diagram: 0-47W865-8-ISI**

VALVE ID	EXEMPTION BASIS
0-VLV-313-979	ISTC - 1200(a)
0-VLV-313-980	ISTC - 1200(c)
0-VLV-313-981	ISTC - 1200(a)
0-VLV-313-982	ISTC - 1200(a)
0-VLV-313-983	ISTC - 1200(c)
0-VLV-313-984	ISTC - 1200(c)
0-VLV-313-986	ISTC - 1200(a)
0-VLV-313-987	ISTC - 1200(a)
0-VLV-313-988	ISTC - 1200(c)
0-VLV-313-990	ISTC - 1200(c)
0-VLV-313-991	ISTC - 1200(a)
0-VLV-313-992	ISTC - 1200(c)
0-VLV-313-993	ISTC - 1200(a)
0-VLV-313-994	ISTC - 1200(a)
0-VLV-313-995	ISTC - 1200(c)
0-VLV-313-996	ISTC - 1200(a)
0-VLV-313-997	ISTC - 1200(c)
0-VLV-313-998	ISTC - 1200(c)
0-VLV-313-1000	ISTC - 1200(c)
0-VLV-313-1001	ISTC - 1200(c)
0-VLV-313-1002	ISTC - 1200(c)
1-VLV-313-1004	ISTC - 1200(c)
2-VLV-313-1004	ISTC - 1200(c)
1-VLV-313-1005	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
0-VLV-313-1026	ISTC - 1200(c)
0-VLV-313-1028	ISTC - 1200(a)
0-VLV-313-1029	ISTC - 1200(a)
0-VLV-313-1030	ISTC - 1200(c)
0-VLV-313-1031	ISTC - 1200(a)
0-VLV-313-1032	ISTC - 1200(c)
0-VLV-313-1033	ISTC - 1200(a)
0-VLV-313-1034	ISTC - 1200(c)
0-VLV-313-1035	ISTC - 1200(a)
0-VLV-313-1036	ISTC - 1200(a)
0-VLV-313-1037	ISTC - 1200(c)
0-VLV-313-1038	ISTC - 1200(a)
0-VLV-313-1039	ISTC - 1200(c)
0-VLV-313-1040	ISTC - 1200(c)
0-VLV-313-1042	ISTC - 1200(c)
0-VLV-313-1043	ISTC - 1200(c)
0-VLV-313-1044	ISTC - 1200(c)
1-VLV-313-1046	ISTC - 1200(c)
2-VLV-313-1046	ISTC - 1200(c)
1-VLV-313-1047	ISTC - 1200(c)
2-VLV-313-1047	ISTC - 1200(c)
1-VLV-313-1048	ISTC - 1200(c)
2-VLV-313-1048	ISTC - 1200(c)
1-VLV-313-1049	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-VLV-313-1071	ISTC - 1200(c)
2-VLV-313-1071	ISTC - 1200(c)
0-VLV-313-1072	ISTC - 1200(c)
0-VLV-313-1073	ISTC - 1200(c)
0-VLV-313-1074	ISTC - 1200(a)
0-VLV-313-1075	ISTC - 1200(a)
1-VLV-313-1213	ISTC - 1200(a)
2-VLV-313-1213	ISTC - 1200(a)
1-VLV-313-1214	ISTC - 1200(a)
2-VLV-313-1214	ISTC - 1200(a)
1-VLV-313-1215	ISTC - 1200(a)
2-VLV-313-1215	ISTC - 1200(a)
1-VLV-313-1216	ISTC - 1200(a)
2-VLV-313-1216	ISTC - 1200(a)
0-VLV-313-1911	ISTC - 1200(a)
0-VLV-313-1912	ISTC - 1200(a)
0-VLV-313-1913	ISTC - 1200(a)
0-VLV-313-1914	ISTC - 1200(a)
0-VLV-313-1915	ISTC - 1200(a)
1-VLV-313-1916	ISTC - 1200(a)
0-VLV-313-1917	ISTC - 1200(a)
0-VLV-313-1918	ISTC - 1200(a)
2-VLV-313-1919	ISTC - 1200(a)
2-VLV-313-1920	ISTC - 1200(a)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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VALVE ID	EXEMPTION BASIS
2-VLV-313-1005	ISTC - 1200(c)
1-VLV-313-1006	ISTC - 1200(c)
2-VLV-313-1006	ISTC - 1200(c)
1-VLV-313-1007	ISTC - 1200(c)
2-VLV-313-1007	ISTC - 1200(c)
1-VLV-313-1008	ISTC - 1200(c)
1-VLV-313-1009	ISTC - 1200(a)
2-VLV-313-1009	ISTC - 1200(a)
1-VLV-313-1010	ISTC - 1200(a)
2-VLV-313-1010	ISTC - 1200(c)
1-VLV-313-1011	ISTC - 1200(a)
2-VLV-313-1011	ISTC - 1200(a)
1-VLV-313-1012	ISTC - 1200(c)
2-VLV-313-1012	ISTC - 1200(c)
1-VLV-313-1013	ISTC - 1200(c)
2-VLV-313-1013	ISTC - 1200(c)
0-VLV-313-1021	ISTC - 1200(a)
0-VLV-313-1022	ISTC - 1200(c)
0-VLV-313-1023	ISTC - 1200(a)
0-VLV-313-1024	ISTC - 1200(a)
0-VLV-313-1025	ISTC - 1200(a)

**Flow Diagram: 0-47W881-5-ISI**

VALVE ID	EXEMPTION BASIS
1-ISIV-43-862	ISTC - 1200(c)
2-ISIV-43-862	ISTC - 1200(c)
1-TTIV-43-863	ISTC - 1200(a)
2-TTIV-43-863	ISTC - 1200(a)

**Flow Diagram: 0-47W881-9-ISI**

VALVE ID	EXEMPTION BASIS
0-ISV-43-724	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VLV-313-1049	ISTC - 1200(c)
1-VLV-313-1050	ISTC - 1200(c)
2-VLV-313-1050	ISTC - 1200(c)
1-VLV-313-1051	ISTC - 1200(a)
2-VLV-313-1051	ISTC - 1200(a)
1-VLV-313-1052	ISTC - 1200(a)
2-VLV-313-1052	ISTC - 1200(a)
1-VLV-313-1053	ISTC - 1200(a)
2-VLV-313-1053	ISTC - 1200(a)
0-VLV-313-1054	ISTC - 1200(a)
0-VLV-313-1055	ISTC - 1200(a)
0-VLV-313-1056	ISTC - 1200(a)
0-VLV-313-1057	ISTC - 1200(a)
0-VLV-313-1058	ISTC - 1200(c)
0-VLV-313-1059	ISTC - 1200(c)
1-VLV-313-1068	ISTC - 1200(a)
2-VLV-313-1068	ISTC - 1200(a)
1-VLV-313-1069	ISTC - 1200(a)
2-VLV-313-1069	ISTC - 1200(a)
1-VLV-313-1070	ISTC - 1200(c)
2-VLV-313-1070	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-ISIV-43-866	ISTC - 1200(c)
2-ISIV-43-866	ISTC - 1200(c)
1-TTIV-43-867	ISTC - 1200(a)
2-TTIV-43-867	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
0-ISV-43-725	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VLV-313-1921	ISTC - 1200(a)
1-VLV-313-1922	ISTC - 1200(a)
1-VLV-313-1923	ISTC - 1200(a)
1-VLV-313-1924	ISTC - 1200(a)
1-VLV-313-1925	ISTC - 1200(a)
1-VLV-313-1926	ISTC - 1200(a)
1-VLV-313-1927	ISTC - 1200(a)
0-VLV-313-1928	ISTC - 1200(a)
0-VLV-313-1929	ISTC - 1200(a)
0-VLV-313-1930	ISTC - 1200(a)
0-VLV-313-1931	ISTC - 1200(a)
0-VLV-313-1932	ISTC - 1200(a)
0-VLV-313-1933	ISTC - 1200(a)
0-VLV-313-1934	ISTC - 1200(a)
0-VLV-313-2020	ISTC - 1200(a)
0-VLV-313-2021	ISTC - 1200(a)
0-VLV-313-2022	ISTC - 1200(a)
0-VLV-313-2023	ISTC - 1200(a)
2-VLV-313-2024	ISTC - 1200(a)
0-VLV-313-2030	ISTC - 1200(a)
0-VLV-313-2031	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-ISIV-43-870	ISTC - 1200(c)
2-ISIV-43-870	ISTC - 1200(c)
1-TTIV-43-871	ISTC - 1200(a)
2-TTIV-43-871	ISTC - 1200(a)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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**Flow Diagram: 1-17W600-13**

VALVE ID	EXEMPTION BASIS
1-VTIV-67-1019A	ISTC - 1200(a)
1-ISIV-67-1019B	ISTC - 1200(c)
1-ISIV-67-1019C	ISTC - 1200(c)
1-ISIV-67-1019D	ISTC - 1200(c)
1-ISIV-67-1019E	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-VTIV-67-1020A	ISTC - 1200(a)
1-ISIV-67-1020B	ISTC - 1200(c)
1-ISIV-67-1020C	ISTC - 1200(c)
1-VTIV-67-1023A	ISTC - 1200(a)
1-ISIV-67-1023B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-ISIV-67-1023C	ISTC - 1200(c)
1-ISIV-67-1023D	ISTC - 1200(c)
1-ISIV-67-1023E	ISTC - 1200(c)
1-VTIV-67-1024A	ISTC - 1200(a)
1-ISIV-67-1024B	ISTC - 1200(c)
1-ISIV-67-1024C	ISTC - 1200(c)

**Flow Diagram: 1-47W600-1148-ISI**

VALVE ID	EXEMPTION BASIS
1-ISIV-63-503B	ISTC - 1200(c)
2-ISIV-63-503B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-ISIV-68-403Y	ISTC - 1200(c)
1-ISIV-63-503C	ISTC - 1200(c)
2-ISIV-63-503C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-ISIV-68-403Y	ISTC - 1200(c)
1-ISIV-68-403Z	ISTC - 1200(c)
2-ISIV-68-403Z	ISTC - 1200(c)

**Flow Diagram: 1-47W600-115**

VALVE ID	EXEMPTION BASIS
1-ISIV-62-356B	ISTC - 1200(c)

**Flow Diagram: 1-47W600-116**

VALVE ID	EXEMPTION BASIS
1-ISIV-70-354B	ISTC - 1200(c)
1-ISIV-70-354E	ISTC - 1200(c)
1-VTIV-70-355B	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-ISIV-70-355C	ISTC - 1200(c)
1-ISIV-70-355G	ISTC - 1200(c)
1-ISIV-70-356B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-ISIV-70-356C	ISTC - 1200(c)
1-VTIV-70-357B	ISTC - 1200(a)
1-ISIV-70-357C	ISTC - 1200(c)
1-ISIV-70-357D	ISTC - 1200(c)

**Flow Diagram: 1-47W600-118**

VALVE ID	EXEMPTION BASIS
1-ISIV-62-342B	ISTC - 1200(c)
1-ISIV-62-343B	ISTC - 1200(c)
1-ISIV-62-345B	ISTC - 1200(c)
1-ISIV-62-346B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-ISIV-62-357B	ISTC - 1200(c)
1-ISIV-62-357C	ISTC - 1200(c)
1-ISIV-62-358B	ISTC - 1200(c)
1-ISIV-62-358C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-ISIV-62-361B	ISTC - 1200(c)
1-ISIV-62-361C	ISTC - 1200(c)
2-ISIV-62-361C	ISTC - 1200(c)
1-ISIV-62-362B	ISTC - 1200(c)
1-ISIV-62-362C	ISTC - 1200(c)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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**Flow Diagram: 1-47W600-131**

VALVE ID	EXEMPTION BASIS
1-VTIV-72-204D	ISTC - 1200(a)
1-VTIV-72-205B	ISTC - 1200(a)
1-VTIV-70-267B	ISTC - 1200(a)
1-VTIV-70-280B	ISTC - 1200(a)
1-ISIV-70-280C	ISTC - 1200(c)
1-VTIV-70-281B	ISTC - 1200(a)
1-ISIV-70-281C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-ISIV-72-205C	ISTC - 1200(a)
1-ISIV-72-205D	ISTC - 1200(c)
1-VTIV-72-206B	ISTC - 1200(a)
1-ISIV-72-206C	ISTC - 1200(c)
1-ISIV-72-206E	ISTC - 1200(c)
1-VTIV-72-207B	ISTC - 1200(a)
1-ISIV-72-207C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-VTIV-72-212B	ISTC - 1200(a)
1-ISIV-72-212C	ISTC - 1200(c)
1-ISIV-72-212E	ISTC - 1200(c)
1-ISIV-72-213B	ISTC - 1200(c)
1-VTIV-72-213D	ISTC - 1200(a)
1-ISIV-72-213E	ISTC - 1200(c)
1-VTIV-72-214B	ISTC - 1200(a)
1-ISIV-72-214C	ISTC - 1200(c)

**Flow Diagram: 1-47W600-132**

VALVE ID	EXEMPTION BASIS
1-ISIV-63-337B	ISTC - 1200(c)
1-ISIV-63-337C	ISTC - 1200(c)
1-ISIV-63-337D	ISTC - 1200(c)
1-ISIV-63-338B	ISTC - 1200(c)
1-ISIV-63-338C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-ISIV-63-338D	ISTC - 1200(c)
1-ISIV-63-339B	ISTC - 1200(c)
1-ISIV-63-339C	ISTC - 1200(c)
1-ISIV-63-339D	ISTC - 1200(c)
1-ISIV-63-340B	ISTC - 1200(c)
1-ISIV-63-340C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-ISIV-72-203B	ISTC - 1200(c)
1-ISIV-72-204B	ISTC - 1200(c)
1-ISIV-72-210B	ISTC - 1200(c)
1-ISIV-72-211B	ISTC - 1200(c)
1-VTIV-72-211D	ISTC - 1200(a)
1-ISIV-63-340D	ISTC - 1200(c)

**Flow Diagram: 1-47W600-137-ISI**

VALVE ID	EXEMPTION BASIS
1-VTIV-70-284B	ISTC - 1200(a)
1-ISIV-70-284C	ISTC - 1200(c)
1-VTIV-70-285B	ISTC - 1200(a)
1-ISIV-70-285C	ISTC - 1200(c)
1-ISIV-70-285E	ISTC - 1200(c)
1-VTIV-70-286B	ISTC - 1200(a)
1-ISIV-70-286C	ISTC - 1200(c)
1-ISIV-70-286E	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-ISIV-70-287B	ISTC - 1200(c)
2-ISIV-70-287B	ISTC - 1200(c)
1-ISIV-70-288B	ISTC - 1200(c)
2-ISIV-70-288B	ISTC - 1200(c)
1-VTIV-70-289B	ISTC - 1200(a)
1-ISIV-70-289C	ISTC - 1200(c)
1-VTIV-70-290B	ISTC - 1200(a)
1-ISIV-70-290C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-VTIV-70-291B	ISTC - 1200(a)
1-ISIV-70-291C	ISTC - 1200(c)
0-VTIV-70-358B	ISTC - 1200(a)
0-ISIV-70-358C	ISTC - 1200(c)
0-ISIV-70-359B	ISTC - 1200(c)
0-VTIV-70-360B	ISTC - 1200(a)
0-ISIV-70-360C	ISTC - 1200(c)
0-ISIV-70-361B	ISTC - 1200(c)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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**Flow Diagram: 1-47W600-142-ISI**

VALVE ID	EXEMPTION BASIS
1-ISIV-63-351B	ISTC - 1200(c)
1-ISIV-63-352B	ISTC - 1200(c)
1-ISIV-63-353B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-ISIV-63-354B	ISTC - 1200(c)
1-ISIV-63-355B	ISTC - 1200(c)
1-ISIV-63-356B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-ISIV-63-357B	ISTC - 1200(c)
1-ISIV-63-358B	ISTC - 1200(c)
1-ISIV-63-377C	ISTC - 1200(c)
1-ISIV-63-378C	ISTC - 1200(c)

**Flow Diagram: 1-47W600-143-ISI**

VALVE ID	EXEMPTION BASIS
1-TTIV-63-373B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VLV-63-376A	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-TTIV-63-376B	ISTC - 1200(c)

**Flow Diagram: 1-47W600-144-ISI**

VALVE ID	EXEMPTION BASIS
1-ISIV-67-800B	ISTC - 1200(c)
1-ISIV-67-800C	ISTC - 1200(c)
1-VTIV-67-800D	ISTC - 1200(a)
1-ISIV-67-802B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-ISIV-67-802C	ISTC - 1200(c)
1-VTIV-67-802D	ISTC - 1200(a)
1-ISIV-67-907B	ISTC - 1200(c)
1-ISIV-67-907C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-VTIV-67-907D	ISTC - 1200(a)
1-ISIV-67-908B	ISTC - 1200(c)
1-ISIV-67-908C	ISTC - 1200(c)
2-DRIV-67-908D	ISTC - 1200(a)

**Flow Diagram: 1-47W600-154-ISI**

VALVE ID	EXEMPTION BASIS
1-VTIV-63-303C	ISTC - 1200(c)
1-VTIV-63-304C	ISTC - 1200(a)
1-VTIV-63-305C	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-ISIV-63-305D	ISTC - 1200(c)
1-VTIV-63-306C	ISTC - 1200(a)
1-ISIV-63-306D	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-VTIV-63-307C	ISTC - 1200(a)
1-ISIV-63-307D	ISTC - 1200(c)
1-VTIV-63-308C	ISTC - 1200(a)
1-ISIV-63-308D	ISTC - 1200(c)

**Flow Diagram: 1-47W600-163-ISI**

VALVE ID	EXEMPTION BASIS
1-VTIV-63-301B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-VTIV-63-302B	ISTC - 1200(c)

**Flow Diagram: 1-47W600-164-ISI**

VALVE ID	EXEMPTION BASIS
1-VTIV-63-342C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-ISIV-63-343B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-VTIV-63-343C	ISTC - 1200(c)



**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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**Flow Diagram: 1-47W600-171-ISI**

VALVE ID	EXEMPTION BASIS
1-ISIV-67-844B	ISTC - 1200(a)
1-ISIV-67-846B	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-ISIV-67-848B	ISTC - 1200(a)
1-ISIV-67-850B	ISTC - 1200(a)
1-ISIV-67-925C	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-ISIV-67-926C	ISTC - 1200(a)
1-ISIV-67-928C	ISTC - 1200(a)
1-ISIV-67-930C	ISTC - 1200(a)

**Flow Diagram: 1-47W600-172-ISI**

VALVE ID	EXEMPTION BASIS
1-ISIV-68-443B	ISTC - 1200(c)
1-ISIV-68-443C	ISTC - 1200(c)
1-ISIV-68-443D	ISTC - 1200(c)
1-ISIV-68-443F	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-EQIV-68-443G	ISTC - 1200(c)
1-ISIV-68-443H	ISTC - 1200(c)
1-ISIV-68-444B	ISTC - 1200(c)
1-EQIV-68-444C	ISTC - 1200(c)
1-ISIV-68-444D	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-ISIV-68-445C	ISTC - 1200(c)
1-ISIV-68-445D	ISTC - 1200(c)
1-ISIV-68-446D	ISTC - 1200(c)
1-ISIV-68-446E	ISTC - 1200(c)
1-ISIV-68-446J	ISTC - 1200(c)

**Flow Diagram: 1-47W600-174-ISI**

VALVE ID	EXEMPTION BASIS
1-VTIV-63-385B	ISTC - 1200(c)
1-ISIV-63-385C	ISTC - 1200(c)
1-VTIV-67-801A	ISTC - 1200(a)
1-DRIV-67-801B	ISTC - 1200(a)
1-VTIV-67-801C	ISTC - 1200(a)
1-ISIV-67-801D	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-VTIV-67-803A	ISTC - 1200(a)
1-DRIV-67-803B	ISTC - 1200(a)
1-VTIV-67-803C	ISTC - 1200(a)
1-ISIV-67-803D	ISTC - 1200(c)
0-VTIV-67-830B	ISTC - 1200(a)
0-ISIV-67-830C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VTIV-67-831B	ISTC - 1200(a)
2-ISIV-67-831C	ISTC - 1200(c)
0-VTIV-67-913B	ISTC - 1200(a)
0-ISIV-67-913C	ISTC - 1200(c)
2-VTIV-67-914B	ISTC - 1200(a)
2-ISIV-67-914C	ISTC - 1200(c)

**Flow Diagram: 1-47W600-200-ISI**

VALVE ID	EXEMPTION BASIS
1-ISIV-63-309A	ISTC - 1200(c)
1-ISIV-63-309D	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-VTIV-63-309J	ISTC - 1200(a)
1-ISIV-63-310A	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-ISIV-63-310D	ISTC - 1200(c)
1-VTIV-63-310G	ISTC - 1200(a)

**Flow Diagram: 1-47W600-228-ISI**

VALVE ID	EXEMPTION BASIS
1-VTIV-3-367B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-ISIV-3-367C	ISTC - 1200(c)

**Flow Diagram: 1-47W600-23**

VALVE ID	EXEMPTION BASIS
1-ISIV-1-287C	ISTC - 1200(c)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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**Flow Diagram: 1-47W600-241-ISI**

VALVE ID	EXEMPTION BASIS
1-TTIV-63-374B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-TTIV-63-375B	ISTC - 1200(c)

**Flow Diagram: 1-47W600-26**

VALVE ID	EXEMPTION BASIS
1-VTIV-1-278B	ISTC - 1200(a)
1-ISIV-1-278C	ISTC - 1200(a)
1-ISIV-1-279C	ISTC - 1200(c)
1-ISIV-1-279E	ISTC - 1200(a)
1-VTIV-1-287B	ISTC - 1200(a)
1-VTIV-1-295B	ISTC - 1200(a)
1-ISIV-1-295C	ISTC - 1200(c)
1-VTIV-1-304C	ISTC - 1200(a)
1-ISIV-1-304D	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-VTIV-3-292B	ISTC - 1200(a)
1-ISIV-3-292C	ISTC - 1200(c)
1-VTIV-3-295C	ISTC - 1200(a)
1-VTIV-1-305C	ISTC - 1200(a)
1-ISIV-1-305D	ISTC - 1200(c)
1-VTIV-1-1008B	ISTC - 1200(a)
1-ISIV-1-1008C	ISTC - 1200(c)
1-VTIV-1-1009B	ISTC - 1200(a)
1-ISIV-1-1009C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-ISIV-3-295D	ISTC - 1200(c)
2-ISIV-3-301B	ISTC - 1200(c)
1-VTIV-3-301C	ISTC - 1200(a)
1-ISIV-3-301D	ISTC - 1200(c)
1-VTIV-3-1012B	ISTC - 1200(a)
1-ISIV-3-1012C	ISTC - 1200(a)
1-ISIV-3-1012H	ISTC - 1200(c)
1-VTIV-3-1013B	ISTC - 1200(a)
1-ISIV-3-1013C	ISTC - 1200(c)

**Flow Diagram: 1-47W600-27**

VALVE ID	EXEMPTION BASIS
1-VTIV-1-281B	ISTC - 1200(a)
1-ISIV-1-281C	ISTC - 1200(c)
1-VTIV-1-288B	ISTC - 1200(a)
1-ISIV-1-288C	ISTC - 1200(c)
1-VTIV-1-289B	ISTC - 1200(a)
1-ISIV-1-289C	ISTC - 1200(c)
1-VTIV-1-296B	ISTC - 1200(a)
1-VTIV-1-296C	ISTC - 1200(a)
1-VTIV-1-296D	ISTC - 1200(a)
1-ISIV-1-296E	ISTC - 1200(c)
1-VTIV-1-297B	ISTC - 1200(a)
1-VTIV-1-297C	ISTC - 1200(a)
1-VTIV-1-297D	ISTC - 1200(a)
1-ISIV-1-297E	ISTC - 1200(c)
1-ISIV-1-307C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-DRIV-3-269G	ISTC - 1200(c)
1-ISIV-3-280B	ISTC - 1200(c)
1-VTIV-3-286C	ISTC - 1200(a)
1-ISIV-3-286D	ISTC - 1200(c)
1-VTIV-3-289B	ISTC - 1200(a)
1-ISIV-3-289C	ISTC - 1200(c)
1-VTIV-3-296F	ISTC - 1200(a)
1-VTIV-3-297E	ISTC - 1200(a)
1-ISIV-3-297F	ISTC - 1200(c)
1-VTIV-3-302E	ISTC - 1200(a)
1-ISIV-3-302F	ISTC - 1200(c)
1-VTIV-1-1007B	ISTC - 1200(a)
1-ISIV-1-1007C	ISTC - 1200(c)
1-VTIV-1-1010B	ISTC - 1200(a)
1-ISIV-1-1010C	ISTC - 1200(c)
2-ISIV-1-1010C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-VTIV-3-303D	ISTC - 1200(a)
1-ISIV-3-303G	ISTC - 1200(c)
1-ISIV-62-305B	ISTC - 1200(c)
1-VTIV-3-307C	ISTC - 1200(a)
2-ISIV-3-307C	ISTC - 1200(c)
1-ISIV-3-307D	ISTC - 1200(c)
1-ISIV-68-428B	ISTC - 1200(c)
1-ISIV-68-428D	ISTC - 1200(c)
1-ISIV-68-428E	ISTC - 1200(c)
1-VTIV-68-428G	ISTC - 1200(a)
1-VTIV-3-1011B	ISTC - 1200(a)
1-ISIV-3-1011C	ISTC - 1200(c)
1-ISIV-3-1011H	ISTC - 1200(c)
1-VTIV-3-1014B	ISTC - 1200(a)
1-ISIV-3-1014C	ISTC - 1200(c)
1-ISIV-62-304B	ISTC - 1200(c)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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**Flow Diagram: 1-47W600-28**

VALVE ID	EXEMPTION BASIS
1-ISIV-3-281B	ISTC - 1200(c)
1-VTIV-3-293B	ISTC - 1200(a)
1-ISIV-3-293C	ISTC - 1200(c)
1-ISIV-3-293E	ISTC - 1200(c)
1-VTIV-3-293K	ISTC - 1200(a)
1-ISIV-3-294B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-VTIV-3-294C	ISTC - 1200(a)
1-ISIV-3-294G	ISTC - 1200(c)
1-VTIV-3-294K	ISTC - 1200(a)
1-VTIV-3-298B	ISTC - 1200(a)
1-ISIV-3-298C	ISTC - 1200(c)
1-ISIV-3-299C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-ISIV-70-294B	ISTC - 1200(c)
1-ISIV-70-295B	ISTC - 1200(c)
1-ISIV-3-300C	ISTC - 1200(c)
1-ISIV-3-305B	ISTC - 1200(c)
1-VTIV-3-305J	ISTC - 1200(a)
1-ISIV-3-306B	ISTC - 1200(c)
1-VTIV-3-306K	ISTC - 1200(a)

**Flow Diagram: 1-47W600-287-ISI**

VALVE ID	EXEMPTION BASIS
1-VLV-68-453A	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-ISIV-68-454B	ISTC - 1200(c)
1-ISIV-68-455B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-VLV-68-456A	ISTC - 1200(c)
2-VLV-68-456B	ISTC - 1200(c)

**Flow Diagram: 1-47W600-29**

VALVE ID	EXEMPTION BASIS
1-VTIV-3-284C	ISTC - 1200(a)
1-ISIV-3-284D	ISTC - 1200(c)
1-VTIV-3-285C	ISTC - 1200(a)
1-ISIV-3-285D	ISTC - 1200(c)
1-VTIV-3-296C	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-ISIV-3-296D	ISTC - 1200(c)
1-VTIV-3-297C	ISTC - 1200(a)
1-ISIV-3-297D	ISTC - 1200(c)
1-VTIV-3-302B	ISTC - 1200(a)
1-ISIV-3-302C	ISTC - 1200(c)
1-ISIV-3-302D	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-VTIV-3-303B	ISTC - 1200(a)
1-ISIV-3-303C	ISTC - 1200(c)
1-VTIV-3-304B	ISTC - 1200(a)
1-VTIV-3-304C	ISTC - 1200(a)
1-ISIV-3-304D	ISTC - 1200(c)
1-ISIV-62-329C	ISTC - 1200(c)

**Flow Diagram: 1-47W600-294-ISI**

VALVE ID	EXEMPTION BASIS
1-ISIV-3-284F	ISTC - 1200(c)
1-ISIV-3-285B	ISTC - 1200(c)
1-ISIV-3-290F	ISTC - 1200(c)
1-ISIV-3-291F	ISTC - 1200(c)
2-ISIV-3-299C	ISTC - 1200(c)
1-VTIV-3-299D	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-ISIV-3-299E	ISTC - 1200(c)
2-ISIV-3-300C	ISTC - 1200(c)
1-VTIV-3-300D	ISTC - 1200(a)
1-ISIV-3-300E	ISTC - 1200(c)
2-VTIV-3-305C	ISTC - 1200(a)
2-VTIV-3-305D	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-VTIV-3-305F	ISTC - 1200(a)
1-ISIV-3-305G	ISTC - 1200(c)
2-VTIV-3-306C	ISTC - 1200(a)
2-VTIV-3-306D	ISTC - 1200(a)
1-VTIV-3-306F	ISTC - 1200(a)
1-ISIV-3-306G	ISTC - 1200(c)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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**Flow Diagram: 1-47W600-30**

VALVE ID	EXEMPTION BASIS
1-ISIV-1-284B	ISTC - 1200(c)
1-ISIV-1-285B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-ISIV-1-290B	ISTC - 1200(c)
1-ISIV-1-291D	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-ISIV-1-292B	ISTC - 1200(c)
1-ISIV-1-293B	ISTC - 1200(c)
1-ISIV-1-298B	ISTC - 1200(c)

**Flow Diagram: 1-47W600-32**

VALVE ID	EXEMPTION BASIS
1-ISIV-63-359B	ISTC - 1200(c)
1-ISIV-63-360B	ISTC - 1200(c)
1-ISIV-63-361B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-ISIV-63-362B	ISTC - 1200(c)
1-ISIV-63-363B	ISTC - 1200(c)
1-ISIV-63-364B	ISTC - 1200(a)
1-ISIV-63-365B	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-ISIV-70-308C	ISTC - 1200(c)
1-ISIV-70-309C	ISTC - 1200(c)
1-ISIV-63-366B	ISTC - 1200(c)
1-ISIV-63-383C	ISTC - 1200(c)

**Flow Diagram: 1-47W600-35**

VALVE ID	EXEMPTION BASIS
1-ISIV-70-250C	ISTC - 1200(c)
1-ISIV-70-251C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
0-ISIV-70-252C	ISTC - 1200(c)
1-ISIV-70-362C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-ISIV-70-363C	ISTC - 1200(c)
0-ISIV-70-364C	ISTC - 1200(c)

**Flow Diagram: 1-47W600-41**

VALVE ID	EXEMPTION BASIS
0-ISIV-67-815B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
0-VTIV-67-815D	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
0-ISIV-67-818B	ISTC - 1200(c)
0-VTIV-67-818D	ISTC - 1200(a)

**Flow Diagram: 1-47W600-62**

VALVE ID	EXEMPTION BASIS
1-ISIV-3-315E	ISTC - 1200(c)
1-ISIV-3-317C	ISTC - 1200(c)
1-ISIV-3-317D	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-ISIV-3-317E	ISTC - 1200(c)
2-VTIV-70-367B	ISTC - 1200(a)
2-ISIV-70-367C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VTIV-70-368B	ISTC - 1200(a)
2-ISIV-70-368C	ISTC - 1200(c)
1-ISIV-70-372C	ISTC - 1200(c)

**Flow Diagram: 1-47W600-75**

VALVE ID	EXEMPTION BASIS
1-ISIV-68-429B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-ISIV-68-429C	ISTC - 1200(c)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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**Flow Diagram: 1-47W600-80**

VALVE ID	EXEMPTION BASIS
1-VTIV-68-401B	ISTC - 1200(a)
1-VTIV-68-401C	ISTC - 1200(a)
1-ISIV-68-401D	ISTC - 1200(c)
1-VTIV-68-402B	ISTC - 1200(a)
1-VTIV-68-402C	ISTC - 1200(a)
1-ISIV-68-402D	ISTC - 1200(c)
1-VTIV-68-403B	ISTC - 1200(a)
1-VTIV-68-403C	ISTC - 1200(a)
1-ISIV-68-403D	ISTC - 1200(c)
1-VTIV-68-404B	ISTC - 1200(a)
1-VTIV-68-404C	ISTC - 1200(a)
1-ISIV-68-404D	ISTC - 1200(c)
1-VTIV-68-404E	ISTC - 1200(a)
1-ISIV-68-404F	ISTC - 1200(c)
1-VTIV-68-404G	ISTC - 1200(a)
1-ISIV-68-404H	ISTC - 1200(c)
1-VTIV-68-411B	ISTC - 1200(a)
1-VTIV-68-411C	ISTC - 1200(a)
1-ISIV-68-411D	ISTC - 1200(c)
1-VTIV-68-411E	ISTC - 1200(a)
1-VTIV-68-412B	ISTC - 1200(a)
1-VTIV-68-412C	ISTC - 1200(a)
1-ISIV-68-412D	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-VTIV-68-413B	ISTC - 1200(a)
1-VTIV-68-413C	ISTC - 1200(a)
1-ISIV-68-413D	ISTC - 1200(c)
1-VTIV-68-413E	ISTC - 1200(a)
1-VTIV-68-414B	ISTC - 1200(a)
1-VTIV-68-414C	ISTC - 1200(a)
1-ISIV-68-414D	ISTC - 1200(c)
1-VTIV-68-414E	ISTC - 1200(a)
2-VTIV-68-414E	ISTC - 1200(a)
1-ISIV-68-414F	ISTC - 1200(c)
1-VTIV-68-414G	ISTC - 1200(a)
1-ISIV-68-414H	ISTC - 1200(c)
1-VTIV-68-414I	ISTC - 1200(a)
1-VTIV-68-421B	ISTC - 1200(a)
1-VTIV-68-421C	ISTC - 1200(a)
1-VTIV-68-421D	ISTC - 1200(a)
1-ISIV-68-421E	ISTC - 1200(c)
1-VTIV-68-422B	ISTC - 1200(a)
1-VTIV-68-422C	ISTC - 1200(a)
2-VTIV-68-422C	ISTC - 1200(a)
1-ISIV-68-422D	ISTC - 1200(c)
1-VTIV-68-423B	ISTC - 1200(a)
1-VTIV-68-423C	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-ISIV-68-423D	ISTC - 1200(c)
1-VTIV-68-424B	ISTC - 1200(a)
1-VTIV-68-424C	ISTC - 1200(a)
1-VTIV-68-424D	ISTC - 1200(a)
1-ISIV-68-424E	ISTC - 1200(c)
1-VTIV-68-424F	ISTC - 1200(a)
1-ISIV-68-424G	ISTC - 1200(c)
1-VTIV-68-424H	ISTC - 1200(a)
1-ISIV-68-424I	ISTC - 1200(c)
1-VTIV-68-431B	ISTC - 1200(a)
1-ISIV-68-431D	ISTC - 1200(c)
1-VTIV-68-432B	ISTC - 1200(a)
1-VTIV-68-432C	ISTC - 1200(a)
1-ISIV-68-432D	ISTC - 1200(c)
1-VTIV-68-433B	ISTC - 1200(a)
1-VTIV-68-433C	ISTC - 1200(a)
1-ISIV-68-433D	ISTC - 1200(c)
1-VTIV-68-434B	ISTC - 1200(a)
1-VTIV-68-434C	ISTC - 1200(a)
1-ISIV-68-434D	ISTC - 1200(c)
1-VTIV-68-434E	ISTC - 1200(a)
1-ISIV-68-434F	ISTC - 1200(c)
1-VTIV-68-434G	ISTC - 1200(a)
1-ISIV-68-434H	ISTC - 1200(c)

**Flow Diagram: 1-47W600-92**

VALVE ID	EXEMPTION BASIS
1-ISIV-1-276C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-ISIV-1-284D	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-ISIV-1-292D	ISTC - 1200(c)
1-ISIV-1-300C	ISTC - 1200(c)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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**Flow Diagram: 1-47W600-93**

VALVE ID	EXEMPTION BASIS
1-VTIV-74-102C	ISTC - 1200(a)
1-ISIV-74-102D	ISTC - 1200(c)
1-ISIV-74-103B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-VTIV-74-103C	ISTC - 1200(a)
1-VTIV-74-104B	ISTC - 1200(a)
1-VTIV-74-109C	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-ISIV-74-109D	ISTC - 1200(c)
1-VTIV-74-110B	ISTC - 1200(a)
1-ISIV-74-110E	ISTC - 1200(c)
1-VTIV-74-111B	ISTC - 1200(a)

**Flow Diagram: 1-47W809-1**

VALVE ID	EXEMPTION BASIS
1-VLV-62-304A	ISTC - 1200(a)
1-VLV-62-305A	ISTC - 1200(a)
1-VLV-62-306A	ISTC - 1200(a)
1-VLV-62-307A	ISTC - 1200(a)
1-VLV-62-312A	ISTC - 1200(a)
1-VLV-62-313A	ISTC - 1200(a)
1-VLV-62-314A	ISTC - 1200(a)
1-VLV-62-315A	ISTC - 1200(a)
1-VLV-62-320A	ISTC - 1200(a)
1-VLV-62-321A	ISTC - 1200(a)
1-VLV-62-322A	ISTC - 1200(a)
1-VLV-62-323A	ISTC - 1200(a)
1-VLV-62-328A	ISTC - 1200(a)
1-VLV-62-329A	ISTC - 1200(a)
1-VLV-62-330A	ISTC - 1200(a)
1-VLV-62-331A	ISTC - 1200(a)
1-VLV-62-332A	ISTC - 1200(a)
1-VLV-62-333A	ISTC - 1200(a)
1-VLV-62-334A	ISTC - 1200(a)
1-VLV-62-335A	ISTC - 1200(a)
1-VLV-62-336A	ISTC - 1200(a)
1-VLV-62-337A	ISTC - 1200(a)
1-VLV-62-340A	ISTC - 1200(a)
1-VLV-62-341A	ISTC - 1200(a)
1-VLV-62-342A	ISTC - 1200(a)
1-VLV-62-343A	ISTC - 1200(a)
1-VLV-62-345A	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-VLV-62-535	ISTC - 1200(c)
1-VLV-62-536	ISTC - 1200(c)
1-VLV-62-537	ISTC - 1200(c)
1-VLV-62-538	ISTC - 1200(c)
1-VLV-62-539	ISTC - 1200(c)
1-VLV-62-540	ISTC - 1200(a)
1-VLV-62-541	ISTC - 1200(a)
1-VLV-62-542	ISTC - 1200(a)
1-VLV-62-544	ISTC - 1200(a)
1-VLV-62-545	ISTC - 1200(a)
1-VLV-62-551	ISTC - 1200(a)
1-VLV-62-552	ISTC - 1200(a)
1-VLV-62-553	ISTC - 1200(a)
1-VLV-62-554	ISTC - 1200(a)
1-VLV-62-555	ISTC - 1200(a)
1-VLV-62-556	ISTC - 1200(c)
1-VLV-62-557	ISTC - 1200(c)
1-VLV-62-558	ISTC - 1200(c)
1-VLV-62-559	ISTC - 1200(c)
1-VLV-62-564	ISTC - 1200(c)
1-VLV-62-566	ISTC - 1200(c)
1-VLV-62-567	ISTC - 1200(c)
1-VLV-62-568	ISTC - 1200(a)
1-VLV-62-569	ISTC - 1200(a)
1-VLV-62-570	ISTC - 1200(a)
1-VLV-62-571	ISTC - 1200(a)
1-VLV-62-572	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-VLV-62-616	ISTC - 1200(a)
1-VLV-62-617	ISTC - 1200(a)
1-VLV-62-618	ISTC - 1200(a)
1-VLV-62-619	ISTC - 1200(a)
1-VLV-62-637	ISTC - 1200(a)
1-VLV-62-641	ISTC - 1200(a)
1-VLV-62-642	ISTC - 1200(c)
1-VLV-62-643	ISTC - 1200(c)
1-VLV-62-644	ISTC - 1200(c)
1-VLV-62-645	ISTC - 1200(a)
1-VLV-62-646	ISTC - 1200(a)
1-VLV-62-647	ISTC - 1200(c)
1-VLV-62-648	ISTC - 1200(c)
1-VLV-62-650	ISTC - 1200(c)
1-VLV-62-651	ISTC - 1200(a)
1-VLV-62-652	ISTC - 1200(c)
1-VLV-62-653	ISTC - 1200(c)
1-VLV-62-654	ISTC - 1200(a)
1-VLV-62-657	ISTC - 1200(c)
1-VLV-62-663	ISTC - 1200(a)
1-VLV-62-664	ISTC - 1200(a)
1-VLV-62-665	ISTC - 1200(a)
1-VLV-62-666	ISTC - 1200(a)
1-VLV-62-667	ISTC - 1200(a)
1-VLV-62-669	ISTC - 1200(c)
1-VLV-62-670	ISTC - 1200(a)
1-VLV-62-671	ISTC - 1200(c)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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<b>VALVE ID</b>	<b>EXEMPTION BASIS</b>
1-VLV-62-346A	ISTC - 1200(a)
1-VLV-62-350A	ISTC - 1200(a)
1-VLV-62-351A	ISTC - 1200(a)
1-VLV-62-352A	ISTC - 1200(a)
1-VLV-62-353A	ISTC - 1200(a)
1-VLV-62-354A	ISTC - 1200(a)
1-VLV-62-355A	ISTC - 1200(a)
1-VLV-62-356A	ISTC - 1200(a)
1-VLV-62-357A	ISTC - 1200(a)
1-VLV-62-358A	ISTC - 1200(a)
1-VLV-62-361A	ISTC - 1200(a)
1-VLV-62-362A	ISTC - 1200(a)
1-VLV-62-501	ISTC - 1200(a)
1-VLV-62-502	ISTC - 1200(a)
1-VLV-62-503	ISTC - 1200(a)
1-VLV-62-508	ISTC - 1200(c)
1-VLV-62-509	ISTC - 1200(c)
1-VLV-62-510	ISTC - 1200(c)
1-VLV-62-512	ISTC - 1200(a)
1-VLV-62-513	ISTC - 1200(a)
1-VLV-62-520	ISTC - 1200(a)
1-VLV-62-521	ISTC - 1200(a)
1-VLV-62-522	ISTC - 1200(a)
1-VLV-62-524	ISTC - 1200(c)
1-VLV-62-526	ISTC - 1200(c)
1-VLV-62-527	ISTC - 1200(c)
1-VLV-62-528	ISTC - 1200(a)
1-VLV-62-529	ISTC - 1200(a)
1-VLV-62-531	ISTC - 1200(c)
1-VLV-62-533	ISTC - 1200(c)
1-VLV-62-534	ISTC - 1200(c)

<b>VALVE ID</b>	<b>EXEMPTION BASIS</b>
1-VLV-62-573	ISTC - 1200(a)
1-VLV-62-574	ISTC - 1200(a)
1-VLV-62-575	ISTC - 1200(a)
1-VLV-62-580	ISTC - 1200(a)
1-VLV-62-581	ISTC - 1200(a)
1-VLV-62-582	ISTC - 1200(a)
1-VLV-62-583	ISTC - 1200(a)
1-VLV-62-584	ISTC - 1200(a)
1-VLV-62-585	ISTC - 1200(a)
1-VLV-62-586	ISTC - 1200(a)
1-VLV-62-587	ISTC - 1200(a)
1-VLV-62-592	ISTC - 1200(c)
1-VLV-62-593	ISTC - 1200(c)
1-VLV-62-594	ISTC - 1200(c)
2-VLV-62-594	ISTC - 1200(c)
1-VLV-62-595	ISTC - 1200(c)
1-VLV-62-596	ISTC - 1200(c)
1-VLV-62-597	ISTC - 1200(c)
1-VLV-62-598	ISTC - 1200(c)
1-VLV-62-599	ISTC - 1200(c)
1-VLV-62-600	ISTC - 1200(a)
1-VLV-62-601	ISTC - 1200(a)
1-VLV-62-602	ISTC - 1200(a)
1-VLV-62-603	ISTC - 1200(a)
1-VLV-62-604	ISTC - 1200(c)
1-VLV-62-605	ISTC - 1200(c)
1-VLV-62-606	ISTC - 1200(c)
1-VLV-62-607	ISTC - 1200(c)
1-VLV-62-608	ISTC - 1200(c)
1-VLV-62-609	ISTC - 1200(c)
1-VLV-62-610	ISTC - 1200(c)
1-VLV-62-611	ISTC - 1200(c)

<b>VALVE ID</b>	<b>EXEMPTION BASIS</b>
1-VLV-62-672	ISTC - 1200(c)
1-VLV-62-673	ISTC - 1200(c)
1-VLV-62-676	ISTC - 1200(c)
1-VLV-62-678	ISTC - 1200(a)
1-VLV-62-679	ISTC - 1200(c)
1-VLV-62-681	ISTC - 1200(c)
1-VLV-62-682	ISTC - 1200(a)
1-VLV-62-683	ISTC - 1200(a)
1-VLV-62-686	ISTC - 1200(c)
1-VLV-62-689	ISTC - 1200(a)
1-VLV-62-690	ISTC - 1200(c)
1-VLV-62-695	ISTC - 1200(a)
1-VLV-62-699	ISTC - 1200(c)
1-VLV-62-701	ISTC - 1200(a)
1-VLV-62-703	ISTC - 1200(a)
1-VLV-62-704	ISTC - 1200(a)
1-VLV-62-705	ISTC - 1200(a)
1-VLV-62-706	ISTC - 1200(a)
1-VLV-62-707	ISTC - 1200(a)
1-VLV-62-708	ISTC - 1200(a)
1-VLV-62-710	ISTC - 1200(a)
1-VLV-62-711	ISTC - 1200(a)
1-VLV-62-714	ISTC - 1200(c)
1-VLV-62-715	ISTC - 1200(c)
1-VLV-62-721	ISTC - 1200(a)
1-VLV-62-723	ISTC - 1200(c)
1-VLV-62-724	ISTC - 1200(a)
1-VLV-62-760	ISTC - 1200(c)
1-VLV-62-761	ISTC - 1200(c)
1-VLV-62-763	ISTC - 1200(a)
1-VLV-62-764	ISTC - 1200(c)
1-VLV-62-765	ISTC - 1200(a)

**Flow Diagram: 1-47W811-1**

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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VALVE ID	EXEMPTION BASIS
1-VLV-63-301A	ISTC - 1200(a)
1-VLV-63-302A	ISTC - 1200(a)
1-VLV-63-303A	ISTC - 1200(a)
1-VLV-63-304A	ISTC - 1200(a)
1-VLV-63-305A	ISTC - 1200(a)
1-VLV-63-306A	ISTC - 1200(a)
1-VLV-63-307A	ISTC - 1200(a)
1-VLV-63-308A	ISTC - 1200(a)
1-VLV-63-309A	ISTC - 1200(a)
1-VLV-63-310A	ISTC - 1200(a)
1-VLV-63-311A	ISTC - 1200(a)
1-VLV-63-312A	ISTC - 1200(a)
1-VLV-63-313A	ISTC - 1200(a)
1-VLV-63-314A	ISTC - 1200(a)
1-VLV-63-315A	ISTC - 1200(a)
1-VLV-63-316A	ISTC - 1200(a)
1-VLV-63-317A	ISTC - 1200(a)
1-VLV-63-317B	ISTC - 1200(a)
1-VLV-63-318A	ISTC - 1200(a)
1-VLV-63-318B	ISTC - 1200(a)
1-VLV-63-319A	ISTC - 1200(a)
1-VLV-63-320A	ISTC - 1200(a)
1-VLV-63-321A	ISTC - 1200(a)
1-VLV-63-322A	ISTC - 1200(a)
1-VLV-63-323A	ISTC - 1200(a)
1-VLV-63-324A	ISTC - 1200(a)
1-VLV-63-325A	ISTC - 1200(a)
1-VLV-63-326A	ISTC - 1200(a)
1-VLV-63-327A	ISTC - 1200(a)
1-VLV-63-328A	ISTC - 1200(a)
1-VLV-63-329A	ISTC - 1200(a)
1-VLV-63-330A	ISTC - 1200(a)
1-VLV-63-331A	ISTC - 1200(a)
1-VLV-63-332A	ISTC - 1200(a)
1-VLV-63-333A	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-VLV-63-361A	ISTC - 1200(a)
1-VLV-63-362A	ISTC - 1200(a)
1-VLV-63-363A	ISTC - 1200(a)
1-VLV-63-364A	ISTC - 1200(a)
1-VLV-63-365A	ISTC - 1200(a)
1-VLV-63-366A	ISTC - 1200(a)
1-VLV-63-371A	ISTC - 1200(a)
1-VLV-63-372A	ISTC - 1200(a)
1-VLV-63-373A	ISTC - 1200(a)
1-VLV-63-374A	ISTC - 1200(a)
1-VLV-63-375A	ISTC - 1200(a)
1-VLV-63-377A	ISTC - 1200(a)
1-VLV-63-378A	ISTC - 1200(a)
1-VLV-63-379A	ISTC - 1200(a)
1-VLV-63-380A	ISTC - 1200(a)
1-VLV-63-381A	ISTC - 1200(a)
1-VLV-63-382A	ISTC - 1200(a)
1-VLV-63-383A	ISTC - 1200(a)
1-VLV-63-384A	ISTC - 1200(a)
1-VLV-63-385A	ISTC - 1200(a)
1-VLV-63-386A	ISTC - 1200(a)
1-VLV-63-411	ISTC - 1200(c)
1-VLV-63-413	ISTC - 1200(a)
1-VLV-63-500	ISTC - 1200(a)
1-VLV-63-501	ISTC - 1200(a)
1-VLV-63-503	ISTC - 1200(c)
1-VLV-63-504	ISTC - 1200(c)
1-VLV-63-505	ISTC - 1200(a)
1-VLV-63-506	ISTC - 1200(a)
1-VLV-63-507	ISTC - 1200(a)
1-VLV-63-508	ISTC - 1200(a)
1-VLV-63-509	ISTC - 1200(c)
1-VLV-63-512	ISTC - 1200(a)
1-VLV-63-513	ISTC - 1200(a)
1-VLV-63-514	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-VLV-63-595	ISTC - 1200(a)
1-VLV-63-596	ISTC - 1200(a)
1-VLV-63-597	ISTC - 1200(a)
1-VLV-63-599	ISTC - 1200(c)
1-VLV-63-600	ISTC - 1200(a)
1-VLV-63-601	ISTC - 1200(c)
1-VLV-63-606	ISTC - 1200(a)
1-VLV-63-607	ISTC - 1200(a)
1-VLV-63-608	ISTC - 1200(a)
1-VLV-63-609	ISTC - 1200(a)
1-VLV-63-610	ISTC - 1200(c)
1-VLV-63-611	ISTC - 1200(c)
1-VLV-63-612	ISTC - 1200(c)
1-VLV-63-613	ISTC - 1200(c)
1-VLV-63-614	ISTC - 1200(a)
1-VLV-63-615	ISTC - 1200(a)
1-VLV-63-616	ISTC - 1200(a)
1-VLV-63-617	ISTC - 1200(a)
1-VLV-63-628	ISTC - 1200(a)
1-VLV-63-629	ISTC - 1200(a)
1-VLV-63-630	ISTC - 1200(a)
1-VLV-63-631	ISTC - 1200(a)
1-VLV-63-636	ISTC - 1200(a)
1-VLV-63-638	ISTC - 1200(a)
1-VLV-63-639	ISTC - 1200(a)
1-VLV-63-642	ISTC - 1200(a)
1-VLV-63-645	ISTC - 1200(c)
1-VLV-63-648	ISTC - 1200(a)
1-VLV-63-649	ISTC - 1200(a)
1-VLV-63-650	ISTC - 1200(a)
1-VLV-63-651	ISTC - 1200(a)
1-VLV-63-652	ISTC - 1200(a)
1-VLV-63-653	ISTC - 1200(a)
1-VLV-63-654	ISTC - 1200(a)
1-VLV-63-655	ISTC - 1200(a)



**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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VALVE ID	EXEMPTION BASIS
1-VLV-63-334A	ISTC - 1200(a)
1-VLV-63-337A	ISTC - 1200(a)
1-VLV-63-338A	ISTC - 1200(a)
1-VLV-63-339A	ISTC - 1200(a)
1-VLV-63-340A	ISTC - 1200(a)
1-VLV-63-341A	ISTC - 1200(a)
1-VLV-63-342A	ISTC - 1200(a)
1-VLV-63-343A	ISTC - 1200(a)
1-VLV-63-344A	ISTC - 1200(a)
1-VLV-63-351A	ISTC - 1200(a)
1-VLV-63-352A	ISTC - 1200(a)
1-VLV-63-353A	ISTC - 1200(a)
1-VLV-63-354A	ISTC - 1200(a)
1-VLV-63-355A	ISTC - 1200(a)
1-VLV-63-356A	ISTC - 1200(a)
1-VLV-63-357A	ISTC - 1200(a)
1-VLV-63-358A	ISTC - 1200(a)
1-VLV-63-359A	ISTC - 1200(a)
1-VLV-63-360A	ISTC - 1200(a)
1-VLV-63-542	ISTC-1200(b)
1-VLV-63-544	ISTC-1200(b)
1-VLV-63-546	ISTC-1200(b)
1-VLV-63-548	ISTC-1200(b)
1-VLV-63-550	ISTC-1200(b)
1-VLV-63-552	ISTC-1200(b)
1-VLV-63-554	ISTC-1200(b)
1-VLV-63-556	ISTC-1200(b)
1-VLV-63-582	ISTC-1200(b)
2-VLV-63-582	ISTC-1200(b)
1-VLV-63-583	ISTC-1200(b)
1-VLV-63-584	ISTC-1200(b)
1-VLV-63-585	ISTC-1200(b)

VALVE ID	EXEMPTION BASIS
1-VLV-63-515	ISTC - 1200(a)
1-VLV-63-516	ISTC - 1200(a)
1-VLV-63-517	ISTC - 1200(a)
1-VLV-63-518	ISTC - 1200(a)
1-VLV-63-519	ISTC - 1200(a)
1-VLV-63-520	ISTC - 1200(a)
1-VLV-63-521	ISTC - 1200(a)
1-VLV-63-525	ISTC - 1200(c)
1-VLV-63-527	ISTC - 1200(c)
1-VLV-63-529	ISTC - 1200(a)
1-VLV-63-531	ISTC - 1200(c)
1-VLV-63-532	ISTC - 1200(a)
1-VLV-63-533	ISTC - 1200(a)
1-VLV-63-537	ISTC - 1200(a)
1-VLV-63-538	ISTC - 1200(a)
1-VLV-63-539	ISTC - 1200(a)
1-VLV-63-540	ISTC - 1200(a)
1-VLV-63-541	ISTC - 1200(a)
1-VLV-63-566	ISTC - 1200(a)
1-VLV-63-567	ISTC - 1200(a)
1-VLV-63-568	ISTC - 1200(a)
1-VLV-63-569	ISTC - 1200(a)
1-VLV-63-571	ISTC - 1200(c)
1-VLV-63-574	ISTC - 1200(a)
1-VLV-63-575	ISTC - 1200(a)
1-VLV-63-576	ISTC - 1200(a)
1-VLV-63-578	ISTC - 1200(a)
1-VLV-63-590	ISTC - 1200(c)
1-VLV-63-591	ISTC - 1200(c)
1-VLV-63-592	ISTC - 1200(a)
1-VLV-63-593	ISTC - 1200(a)
1-VLV-63-594	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-VLV-63-656	ISTC - 1200(a)
1-VLV-63-657	ISTC - 1200(a)
1-VLV-63-658	ISTC - 1200(a)
1-VLV-63-659	ISTC - 1200(a)
1-VLV-63-660	ISTC - 1200(a)
1-VLV-63-661	ISTC - 1200(a)
1-VLV-63-667	ISTC - 1200(a)
1-VLV-63-668	ISTC - 1200(a)
1-VLV-63-669	ISTC - 1200(a)
1-VLV-63-670	ISTC - 1200(a)
1-VLV-63-671	ISTC - 1200(a)
1-VLV-63-672	ISTC - 1200(a)
1-VLV-63-673	ISTC - 1200(a)
1-VLV-63-674	ISTC - 1200(a)
1-VLV-63-675	ISTC - 1200(a)
1-VLV-63-706	ISTC - 1200(a)
1-VLV-63-707	ISTC - 1200(a)
1-VLV-63-708	ISTC - 1200(a)
1-VLV-63-750	ISTC - 1200(a)
1-VLV-63-800	ISTC - 1200(c)
1-VLV-63-801	ISTC - 1200(a)
1-VLV-63-817	ISTC - 1200(a)
1-VLV-63-819	ISTC - 1200(a)
1-VLV-63-823	ISTC - 1200(a)
1-VLV-63-831	ISTC - 1200(a)
1-VLV-63-833	ISTC - 1200(a)
1-VLV-63-835	ISTC - 1200(c)
1-VLV-63-836	ISTC - 1200(a)
1-VLV-63-862	ISTC - 1200(a)
1-VLV-63-864	ISTC - 1200(a)
1-VLV-63-866	ISTC - 1200(a)
1-VLV-63-868	ISTC - 1200(a)
1-VLV-63-870	ISTC - 1200(a)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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**Flow Diagram: 1-47W845-2**

VALVE ID	EXEMPTION BASIS
1-VLV-67-567A	ISTC - 1200(c)

**Flow Diagram: 1-47W845-3**

VALVE ID	EXEMPTION BASIS
1-VLV-67-560A	ISTC - 1200(a)
1-VLV-67-560B	ISTC - 1200(a)
1-VLV-67-560C	ISTC - 1200(a)
1-VLV-67-560D	ISTC - 1200(a)
1-VLV-67-561A	ISTC - 1200(a)
1-VLV-67-561B	ISTC - 1200(a)
1-VLV-67-561C	ISTC - 1200(a)
1-VLV-67-561D	ISTC - 1200(a)
1-VLV-67-563A	ISTC - 1200(a)
1-VLV-67-563B	ISTC - 1200(a)
1-VLV-67-563C	ISTC - 1200(a)
1-VLV-67-563D	ISTC - 1200(a)
1-VLV-67-564A	ISTC - 1200(c)
1-VLV-67-564B	ISTC - 1200(c)
1-VLV-67-564C	ISTC - 1200(c)
1-VLV-67-564D	ISTC - 1200(c)
1-VLV-67-565A	ISTA-1100
1-VLV-67-565B	ISTA-1100
1-VLV-67-565C	ISTA-1100
1-VLV-67-565D	ISTA-1100
1-VLV-67-566A	ISTA-1100
1-VLV-67-566B	ISTA-1100
1-VLV-67-566C	ISTA-1100
1-VLV-67-566D	ISTA-1100
1-VLV-67-567B	ISTC - 1200(c)
1-VLV-67-567C	ISTC - 1200(c)
1-VLV-67-567D	ISTC - 1200(c)
1-VLV-67-570A	ISTC - 1200(c)
1-VLV-67-570B	ISTC - 1200(c)
1-VLV-67-572A	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-VLV-67-934A	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-VLV-67-576C	ISTC - 1200(a)
1-VLV-67-576D	ISTC - 1200(a)
1-VLV-67-660A	ISTC - 1200(a)
1-VLV-67-660B	ISTC - 1200(a)
1-VLV-67-661A	ISTC - 1200(a)
1-VLV-67-661B	ISTC - 1200(a)
1-VLV-67-663A	ISTC - 1200(a)
1-VLV-67-664A	ISTC - 1200(a)
1-VLV-67-664B	ISTC - 1200(a)
1-VLV-67-665A	ISTC - 1200(c)
1-VLV-67-665B	ISTC - 1200(c)
1-VLV-67-690B	ISTC - 1200(a)
1-VLV-67-693A	ISTC - 1200(a)
1-VLV-67-693B	ISTC - 1200(a)
1-VLV-67-693C	ISTC - 1200(a)
1-VLV-67-693D	ISTC - 1200(a)
1-VLV-67-694A	ISTC - 1200(a)
1-VLV-67-694B	ISTC - 1200(a)
1-VLV-67-694C	ISTC - 1200(a)
1-VLV-67-694D	ISTC - 1200(a)
1-VLV-67-695A	ISTC - 1200(a)
1-VLV-67-695B	ISTC - 1200(a)
1-VLV-67-695C	ISTC - 1200(a)
1-VLV-67-695D	ISTC - 1200(a)
1-VLV-67-696A	ISTC - 1200(a)
1-VLV-67-696B	ISTC - 1200(a)
1-VLV-67-696C	ISTC - 1200(a)
1-VLV-67-696D	ISTC - 1200(a)
1-VLV-67-697A	ISTC - 1200(a)
1-VLV-67-697B	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-VLV-67-700D	ISTC - 1200(a)
1-VLV-67-771	ISTC - 1200(a)
1-VLV-67-773	ISTC - 1200(a)
1-VLV-67-774	ISTC - 1200(a)
1-VLV-67-775	ISTC - 1200(a)
1-VLV-67-776	ISTC - 1200(a)
1-VLV-67-777	ISTC - 1200(a)
1-VLV-67-778	ISTC - 1200(a)
1-VLV-67-781A	ISTC - 1200(a)
1-VLV-67-781B	ISTC - 1200(a)
1-VLV-67-781C	ISTC - 1200(a)
1-VLV-67-781D	ISTC - 1200(a)
1-VLV-67-844A	ISTC - 1200(a)
1-VLV-67-845A	ISTC - 1200(a)
1-VLV-67-846A	ISTC - 1200(a)
1-VLV-67-847A	ISTC - 1200(a)
1-VLV-67-848A	ISTC - 1200(a)
1-VLV-67-849A	ISTC - 1200(a)
1-VLV-67-850A	ISTC - 1200(a)
1-VLV-67-851A	ISTC - 1200(a)
1-VLV-67-862A	ISTC - 1200(a)
1-VLV-67-862B	ISTC - 1200(a)
1-VLV-67-863A	ISTC - 1200(a)
1-VLV-67-863B	ISTC - 1200(a)
1-VLV-67-864A	ISTC - 1200(a)
1-VLV-67-864B	ISTC - 1200(a)
1-VLV-67-865A	ISTC - 1200(a)
1-VLV-67-865B	ISTC - 1200(a)
1-VLV-67-925A	ISTC - 1200(a)
1-VLV-67-926A	ISTC - 1200(a)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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VALVE ID	EXEMPTION BASIS
1-VLV-67-572B	ISTC - 1200(c)
1-VLV-67-572C	ISTC - 1200(c)
1-VLV-67-572D	ISTC - 1200(c)
1-VLV-67-574A	ISTC - 1200(a)
1-VLV-67-574B	ISTC - 1200(a)
1-VLV-67-574C	ISTC - 1200(a)
1-VLV-67-574D	ISTC - 1200(a)
1-VLV-67-576A	ISTC - 1200(a)
1-VLV-67-576B	ISTC - 1200(a)
1-VLV-67-650A	ISTC-1200(c)
1-VLV-67-651A	ISTC-1200(c)
1-VLV-67-652B	ISTC-1200(c)
1-VLV-67-653B	ISTC-1200(c)

VALVE ID	EXEMPTION BASIS
1-VLV-67-697C	ISTC - 1200(a)
1-VLV-67-697D	ISTC - 1200(a)
1-VLV-67-698A	ISTC - 1200(a)
1-VLV-67-698B	ISTC - 1200(a)
1-VLV-67-698C	ISTC - 1200(a)
1-VLV-67-698D	ISTC - 1200(a)
1-VLV-67-699A	ISTC - 1200(a)
1-VLV-67-699B	ISTC - 1200(a)
1-VLV-67-699C	ISTC - 1200(a)
1-VLV-67-699D	ISTC - 1200(a)
1-VLV-67-700A	ISTC - 1200(a)
1-VLV-67-700B	ISTC - 1200(a)
1-VLV-67-700C	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-VLV-67-927A	ISTC - 1200(a)
1-VLV-67-928A	ISTC - 1200(a)
1-VLV-67-929A	ISTC - 1200(a)
1-VLV-67-930A	ISTC - 1200(a)
1-VLV-67-931A	ISTC - 1200(a)
1-VLV-67-935A	ISTC - 1200(a)
1-VLV-67-936A	ISTC - 1200(a)
1-VLV-67-937A	ISTC - 1200(a)
1-VLV-67-938A	ISTC - 1200(a)
1-VLV-67-939A	ISTC - 1200(a)
1-VLV-67-940A	ISTC - 1200(b)
1-VLV-67-941A	ISTC - 1200(a)
1-VLV-67-942A	ISTC - 1200(a)

**Flow Diagram: 1-47W845-6**

VALVE ID	EXEMPTION BASIS
1-VLV-67-600A	ISTC - 1200(c)
1-VLV-67-600B	ISTC - 1200(c)
1-VLV-67-601A	ISTC - 1200(c)
1-VLV-67-601B	ISTC - 1200(c)
1-VLV-67-602A	ISTC - 1200(c)
1-VLV-67-602B	ISTC - 1200(c)
1-VLV-67-603A	ISTC - 1200(c)
1-VLV-67-603B	ISTC - 1200(c)
1-VLV-67-604A	ISTC - 1200(c)
1-VLV-67-604B	ISTC - 1200(c)
1-VLV-67-605A	ISTC - 1200(c)
1-VLV-67-605B	ISTC - 1200(c)
1-VLV-67-606A	ISTC - 1200(c)
1-VLV-67-606B	ISTC - 1200(c)
1-VLV-67-607A	ISTC - 1200(c)
1-VLV-67-607B	ISTC - 1200(c)
1-VLV-67-608A	ISTC - 1200(c)
1-VLV-67-608B	ISTC - 1200(c)
1-VLV-67-609A	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
0-VLV-67-646B	ISTC - 1200(c)
0-VLV-67-647A	ISTC - 1200(c)
0-VLV-67-647B	ISTC - 1200(c)
1-VLV-67-680	ISTC - 1200(c)
1-VLV-67-683	ISTC - 1200(c)
1-VLV-67-704A	ISTC - 1200(c)
1-VLV-67-704B	ISTC - 1200(c)
1-VLV-67-705A	ISTC - 1200(c)
1-VLV-67-705B	ISTC - 1200(c)
1-VLV-67-707A	ISTC - 1200(c)
1-VLV-67-707B	ISTC - 1200(c)
1-VLV-67-708A	ISTC - 1200(c)
1-VLV-67-708B	ISTC - 1200(c)
1-VLV-67-709A	ISTC - 1200(c)
1-VLV-67-709B	ISTC - 1200(c)
0-VLV-67-711A	ISTC - 1200(a)
0-VLV-67-711B	ISTC - 1200(a)
1-VLV-67-737A	ISTC - 1200(c)
1-VLV-67-737B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-VLV-67-888A	ISTC - 1200(a)
1-VLV-67-888B	ISTC - 1200(a)
0-VLV-67-889A	ISTC - 1200(a)
0-VLV-67-889B	ISTC - 1200(a)
0-VLV-67-890A	ISTC - 1200(a)
0-VLV-67-890B	ISTC - 1200(a)
1-VLV-67-891A	ISTC - 1200(a)
1-VLV-67-891B	ISTC - 1200(a)
1-VLV-67-892A	ISTC - 1200(a)
1-VLV-67-892B	ISTC - 1200(a)
0-VLV-67-894A	ISTC - 1200(a)
0-VLV-67-894B	ISTC - 1200(a)
0-VLV-67-895A	ISTC - 1200(a)
0-VLV-67-895B	ISTC - 1200(a)
1-VLV-67-896A	ISTC - 1200(a)
1-VLV-67-896B	ISTC - 1200(a)
1-VLV-67-897A	ISTC - 1200(a)
1-VLV-67-897B	ISTC - 1200(a)
1-VLV-67-1516	ISTC - 1200(a)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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VALVE ID	EXEMPTION BASIS
1-VLV-67-609B	ISTC - 1200(c)
1-VLV-67-610A	ISTC - 1200(c)
1-VLV-67-610B	ISTC - 1200(c)
1-VLV-67-611A	ISTC - 1200(c)
1-VLV-67-611B	ISTC - 1200(c)
1-VLV-67-612A	ISTC - 1200(c)
1-VLV-67-612B	ISTC - 1200(c)
1-VLV-67-613A	ISTC - 1200(c)
1-VLV-67-613B	ISTC - 1200(c)
0-VLV-67-614A	ISTC - 1200(a)
0-VLV-67-614B	ISTC - 1200(a)
0-VLV-67-615A	ISTC - 1200(c)
0-VLV-67-615B	ISTC - 1200(c)
0-VLV-67-616A	ISTC - 1200(a)
0-VLV-67-616B	ISTC - 1200(a)
0-VLV-67-617A	ISTC - 1200(a)
0-VLV-67-617B	ISTC - 1200(a)
0-VLV-67-618A	ISTC - 1200(c)
0-VLV-67-618B	ISTC - 1200(c)
0-VLV-67-619A	ISTC - 1200(a)
0-VLV-67-619B	ISTC - 1200(a)
0-VLV-67-620A	ISTC - 1200(c)
0-VLV-67-620B	ISTC - 1200(c)
0-VLV-67-621A	ISTC - 1200(a)
0-VLV-67-621B	ISTC - 1200(a)
0-VLV-67-622A	ISTC - 1200(a)
0-VLV-67-622B	ISTC - 1200(a)
0-VLV-67-623A	ISTC - 1200(c)
0-VLV-67-623B	ISTC - 1200(c)
0-VLV-67-624A	ISTC - 1200(a)
0-VLV-67-624B	ISTC - 1200(a)
1-VLV-67-639	ISTC - 1200(c)
1-VLV-67-641	ISTC - 1200(c)
0-VLV-67-642A	ISTC - 1200(c)
0-VLV-67-642B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-VLV-67-764B	ISTC - 1200(c)
1-VLV-67-766A	ISTC - 1200(c)
1-VLV-67-772	ISTC - 1200(a)
1-VLV-67-793	ISTC - 1200(c)
1-VLV-67-794	ISTC - 1200(c)
1-VLV-67-852A	ISTC - 1200(a)
1-VLV-67-852B	ISTC - 1200(a)
1-VLV-67-853A	ISTC - 1200(a)
1-VLV-67-853B	ISTC - 1200(a)
1-VLV-67-868A	ISTC - 1200(a)
1-VLV-67-868B	ISTC - 1200(a)
1-VLV-67-869A	ISTC - 1200(a)
1-VLV-67-869B	ISTC - 1200(a)
1-VLV-67-870A	ISTC - 1200(a)
1-VLV-67-870B	ISTC - 1200(a)
1-VLV-67-871A	ISTC - 1200(a)
1-VLV-67-871B	ISTC - 1200(a)
1-VLV-67-872A	ISTC - 1200(a)
1-VLV-67-872B	ISTC - 1200(a)
1-VLV-67-873A	ISTC - 1200(a)
1-VLV-67-873B	ISTC - 1200(a)
1-VLV-67-874A	ISTC - 1200(a)
1-VLV-67-874B	ISTC - 1200(a)
1-VLV-67-875A	ISTC - 1200(a)
1-VLV-67-875B	ISTC - 1200(a)
1-VLV-67-879A	ISTC - 1200(a)
1-VLV-67-879B	ISTC - 1200(a)
1-VLV-67-880A	ISTC - 1200(a)
1-VLV-67-880B	ISTC - 1200(a)
1-VLV-67-881A	ISTC - 1200(a)
1-VLV-67-881B	ISTC - 1200(a)
1-VLV-67-882B	ISTC - 1200(a)
1-VLV-67-883A	ISTC - 1200(a)
1-VLV-67-883B	ISTC - 1200(a)
1-VLV-67-884A	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-VLV-67-1517	ISTC - 1200(a)
1-VLV-67-1518	ISTC - 1200(a)
1-VLV-67-1519	ISTC - 1200(a)
1-VLV-67-1545A	ISTC - 1200(c)
1-VLV-67-1545B	ISTC - 1200(c)
1-VLV-67-1546A	ISTC - 1200(a)
1-VLV-67-1546B	ISTC - 1200(a)
1-VLV-67-1547A	ISTC - 1200(a)
1-VLV-67-1548A	ISTC - 1200(a)
1-VLV-67-1548B	ISTC - 1200(a)
1-VLV-67-1549A	ISTC - 1200(c)
1-VLV-67-1549B	ISTC - 1200(c)
1-VLV-67-1552A	ISTC - 1200(c)
1-VLV-67-1552B	ISTC - 1200(c)
1-VLV-67-1553A	ISTC - 1200(c)
1-VLV-67-1553B	ISTC - 1200(c)
0-VLV-67-1554A	ISTC - 1200(c)
0-VLV-67-1554B	ISTC - 1200(c)
0-VLV-67-1555A	ISTC - 1200(c)
0-VLV-67-1555B	ISTC - 1200(c)
1-VLV-67-1556	ISTC - 1200(a)
1-VLV-67-1557	ISTC - 1200(a)
1-VLV-67-1558	ISTC - 1200(a)
1-VLV-67-1559	ISTC - 1200(a)
0-VLV-67-1560	ISTC - 1200(a)
0-VLV-67-1561	ISTC - 1200(a)
0-VLV-67-1562	ISTC - 1200(a)
0-VLV-67-1576B	ISTC - 1200(a)
1-VLV-67-1600A	ISTC - 1200(a)
1-VLV-67-1600B	ISTC - 1200(a)
1-VLV-67-1601A	ISTC - 1200(c)
1-VLV-67-1601B	ISTC - 1200(c)
1-VLV-67-1602A	ISTC - 1200(c)
1-VLV-67-1602B	ISTC - 1200(c)
1-VLV-67-1604A	ISTC - 1200(a)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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VALVE ID	EXEMPTION BASIS
0-VLV-67-643A	ISTC - 1200(c)
0-VLV-67-643B	ISTC - 1200(c)
0-VLV-67-644A	ISTC - 1200(c)
0-VLV-67-644B	ISTC - 1200(c)
0-VLV-67-645A	ISTC - 1200(c)
0-VLV-67-645B	ISTC - 1200(c)
0-VLV-67-646A	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-VLV-67-884B	ISTC - 1200(a)
1-VLV-67-885A	ISTC - 1200(a)
1-VLV-67-885B	ISTC - 1200(a)
1-VLV-67-886A	ISTC - 1200(a)
1-VLV-67-886B	ISTC - 1200(a)
1-VLV-67-887A	ISTC - 1200(a)
1-VLV-67-887B	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-VLV-67-1604B	ISTC - 1200(a)
1-VLV-67-1605A	ISTC - 1200(a)
1-VLV-67-1605B	ISTC - 1200(a)
1-VLV-67-1606	ISTC - 1200(a)
1-VLV-67-1620	ISTC - 1200(c)
1-VLV-67-1621	ISTC - 1200(c)
0-VLV-67-1624	ISTC - 1200(a)
0-VLV-67-1625	ISTC - 1200(a)

**Flow Diagram: 1-47W859-2-ISI**

VALVE ID	EXEMPTION BASIS
1-VLV-70-292A	ISTC - 1200(a)
1-VLV-70-293A	ISTC - 1200(a)
1-VLV-70-294A	ISTC - 1200(a)
1-VLV-70-295A	ISTC - 1200(a)
1-VLV-70-296A	ISTC - 1200(a)
1-VLV-70-297A	ISTC - 1200(a)
1-VLV-70-298A	ISTC - 1200(a)
1-VLV-70-299A	ISTC - 1200(a)
1-VLV-70-300A	ISTC - 1200(a)
1-VLV-70-301A	ISTC - 1200(a)
1-VLV-70-302A	ISTC - 1200(a)
1-VLV-70-303A	ISTC - 1200(a)
1-VLV-70-304A	ISTC - 1200(a)
1-VLV-70-305A	ISTC - 1200(a)
1-VLV-70-306A	ISTC - 1200(a)
1-VLV-70-307A	ISTC - 1200(a)
1-VLV-70-308A	ISTC - 1200(a)
1-VLV-70-309A	ISTC - 1200(a)
1-VLV-70-310A	ISTC - 1200(a)
1-VLV-70-311A	ISTC - 1200(a)
1-VLV-70-312A	ISTC - 1200(a)
1-VLV-70-313A	ISTC - 1200(a)
1-VLV-70-314A	ISTC - 1200(a)
1-VLV-70-315A	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-VLV-70-389A	ISTC - 1200(a)
1-VLV-70-390A	ISTC - 1200(a)
1-VLV-70-573	ISTC - 1200(c)
1-VLV-70-574	ISTC - 1200(c)
1-VLV-70-575	ISTC - 1200(a)
1-VLV-70-576	ISTC - 1200(a)
1-VLV-70-577	ISTC - 1200(c)
1-VLV-70-579	ISTC - 1200(a)
1-VLV-70-580	ISTC - 1200(c)
1-VLV-70-581	ISTC - 1200(a)
1-VLV-70-582A	ISTC - 1200(a)
1-VLV-70-582B	ISTC - 1200(a)
1-VLV-70-583	ISTC - 1200(a)
1-VLV-70-585	ISTC - 1200(c)
1-VLV-70-586	ISTC - 1200(c)
1-VLV-70-587	ISTC - 1200(c)
1-VLV-70-588	ISTC - 1200(a)
1-VLV-70-600	ISTC - 1200(a)
0-VLV-70-601	ISTC - 1200(c)
1-VLV-70-637	ISTC - 1200(c)
1-VLV-70-661	ISTC - 1200(c)
1-VLV-70-662	ISTC - 1200(c)
1-VLV-70-663A	ISTC - 1200(a)
1-VLV-70-663B	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
1-VLV-70-691A	ISTC - 1200(a)
1-VLV-70-691B	ISTC - 1200(a)
1-VLV-70-691C	ISTC - 1200(a)
1-VLV-70-691D	ISTC - 1200(a)
1-VLV-70-691E	ISTC - 1200(a)
1-VLV-70-693	ISTC - 1200(c)
1-VLV-70-695A	ISTC - 1200(c)
1-VLV-70-695B	ISTC - 1200(c)
1-VLV-70-695C	ISTC - 1200(c)
1-VLV-70-695D	ISTC - 1200(c)
1-VLV-70-696A	ISTC - 1200(c)
1-VLV-70-696B	ISTC - 1200(c)
1-VLV-70-696C	ISTC - 1200(c)
1-VLV-70-696D	ISTC - 1200(c)
1-VLV-70-697A	ISTC - 1200(a)
1-VLV-70-697B	ISTC - 1200(a)
1-VLV-70-697C	ISTC - 1200(a)
1-VLV-70-697D	ISTC - 1200(a)
1-VLV-70-699	ISTC - 1200(a)
1-VLV-70-700	ISTC - 1200(c)
1-VLV-70-701	ISTC - 1200(a)
1-VLV-70-702	ISTC - 1200(c)
1-VLV-70-702A	ISTC - 1200(a)
1-VLV-70-702B	ISTC - 1200(a)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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VALVE ID	EXEMPTION BASIS
1-VLV-70-316A	ISTC - 1200(a)
1-VLV-70-317A	ISTC - 1200(a)
1-VLV-70-318A	ISTC - 1200(a)
1-VLV-70-319A	ISTC - 1200(a)
1-VLV-70-320A	ISTC - 1200(a)
1-VLV-70-321A	ISTC - 1200(a)
1-VLV-70-322A	ISTC - 1200(a)
1-VLV-70-323A	ISTC - 1200(a)
1-VLV-70-324A	ISTC - 1200(a)
1-VLV-70-325A	ISTC - 1200(a)
1-VLV-70-326A	ISTC - 1200(a)
1-VLV-70-327A	ISTC - 1200(a)
1-VLV-70-328A	ISTC - 1200(a)
1-VLV-70-329A	ISTC - 1200(a)
1-VLV-70-330A	ISTC - 1200(a)
1-VLV-70-331A	ISTC - 1200(a)
1-VLV-70-332A	ISTC - 1200(a)
1-VLV-70-333A	ISTC - 1200(a)
1-VLV-70-334A	ISTC - 1200(a)
1-VLV-70-335A	ISTC - 1200(a)
1-VLV-70-336A	ISTC - 1200(a)
1-VLV-70-337A	ISTC - 1200(a)
1-VLV-70-338A	ISTC - 1200(a)
1-VLV-70-339A	ISTC - 1200(a)
1-VLV-70-373A	ISTC - 1200(a)
1-VLV-70-374A	ISTC - 1200(a)
1-VLV-70-375A	ISTC - 1200(a)
1-VLV-70-376A	ISTC - 1200(a)

**Flow Diagram: 1-47W881-6-ISI**

VALVE ID	EXEMPTION BASIS
1-TV-43-464	ISTC - 1200(a)
1-VLV-43-484	ISTC - 1200(c)
1-VLV-43-489	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VLV-70-663C	ISTC - 1200(a)
1-VLV-70-663D	ISTC - 1200(a)
1-VLV-70-669	ISTC - 1200(c)
1-VLV-70-670	ISTC - 1200(c)
1-VLV-70-672	ISTC - 1200(c)
1-VLV-70-673A	ISTC - 1200(c)
1-VLV-70-673B	ISTC - 1200(c)
1-VLV-70-674A	ISTC - 1200(a)
1-VLV-70-674B	ISTC - 1200(a)
1-VLV-70-677A	ISTC - 1200(c)
1-VLV-70-677B	ISTC - 1200(c)
1-VLV-70-678A	ISTC - 1200(a)
1-VLV-70-678B	ISTC - 1200(a)
1-VLV-70-678C	ISTC - 1200(a)
1-VLV-70-678D	ISTC - 1200(a)
1-VLV-70-678E	ISTC - 1200(a)
1-VLV-70-680	ISTC - 1200(c)
1-VLV-70-684A	ISTC - 1200(c)
1-VLV-70-684B	ISTC - 1200(c)
1-VLV-70-684C	ISTC - 1200(c)
1-VLV-70-684D	ISTC - 1200(c)
1-VLV-70-685A	ISTC - 1200(a)
1-VLV-70-685B	ISTC - 1200(a)
1-VLV-70-686A	ISTC - 1200(a)
1-VLV-70-686B	ISTC - 1200(a)
1-VLV-70-688	ISTC - 1200(c)
1-VLV-70-689	ISTC - 1200(a)
1-VLV-70-690	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-VLV-43-492	ISTC - 1200(a)
1-VLV-43-493	ISTC - 1200(a)
1-VLV-43-494	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-VLV-70-702C	ISTC - 1200(a)
1-VLV-70-702D	ISTC - 1200(a)
1-VLV-70-702E	ISTC - 1200(a)
1-VLV-70-702F	ISTC - 1200(a)
1-VLV-70-704A	ISTC - 1200(a)
1-VLV-70-705	ISTC - 1200(c)
1-VLV-70-706	ISTC - 1200(a)
1-VLV-70-733	ISTC - 1200(a)
1-VLV-70-734	ISTC - 1200(c)
1-VLV-70-735	ISTC - 1200(a)
1-VLV-70-736	ISTC - 1200(c)
1-VLV-70-737	ISTC - 1200(a)
1-VLV-70-738	ISTC - 1200(a)
1-VLV-70-742	ISTC - 1200(a)
1-VLV-70-760	ISTC - 1200(a)
1-VLV-70-761	ISTC - 1200(a)
1-VLV-70-762	ISTC - 1200(a)
1-VLV-70-763	ISTC - 1200(a)
1-VLV-70-764	ISTC - 1200(a)
1-VLV-70-765	ISTC - 1200(a)
1-VLV-70-766	ISTC - 1200(c)
1-VLV-70-767	ISTC - 1200(a)
1-VLV-70-768	ISTC - 1200(a)
1-VLV-70-769	ISTC - 1200(a)
1-VLV-70-770	ISTC - 1200(c)
1-VLV-70-784	ISTC - 1200(a)
1-VLV-70-801	ISTC - 1200(c)
1-VLV-70-802	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-VLV-43-497	ISTC - 1200(a)
1-VLV-43-498	ISTC - 1200(a)
1-VLV-43-499	ISTC - 1200(c)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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**Flow Diagram: 2-17W600-13**

VALVE ID	EXEMPTION BASIS
2-VTIV-67-1019A	ISTC - 1200(a)
2-ISIV-67-1019B	ISTC - 1200(c)
2-ISIV-67-1019C	ISTC - 1200(c)
2-ISIV-67-1019D	ISTC - 1200(c)
2-ISIV-67-1019E	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VTIV-67-1020A	ISTC - 1200(a)
2-ISIV-67-1020B	ISTC - 1200(c)
2-ISIV-67-1020C	ISTC - 1200(c)
2-VTIV-67-1023A	ISTC - 1200(a)
2-ISIV-67-1023B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-ISIV-67-1023C	ISTC - 1200(c)
2-ISIV-67-1023D	ISTC - 1200(c)
2-ISIV-67-1023E	ISTC - 1200(c)
2-VTIV-67-1024A	ISTC - 1200(a)
2-ISIV-67-1024B	ISTC - 1200(c)
2-ISIV-67-1024C	ISTC - 1200(c)

**Flow Diagram: 2-17W600-2**

VALVE ID	EXEMPTION BASIS
0-ISIV-67-1005A	ISTC - 1200(c)
0-ISIV-67-1006A	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
0-ISIV-67-1006B	ISTC - 1200(c)
0-ISIV-67-1007A	ISTC - 1200(c)
0-VTIV-67-1007B	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
0-ISIV-67-1008A	ISTC - 1200(c)
0-ISIV-67-1008B	ISTC - 1200(c)
0-VTIV-67-1008C	ISTC - 1200(a)

**Flow Diagram: 2-17W600-3**

VALVE ID	EXEMPTION BASIS
0-ISIV-67-1011A	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
0-ISIV-67-1012A	ISTC - 1200(c)

**Flow Diagram: 2-47W600-113**

VALVE ID	EXEMPTION BASIS
2-VTIV-67-825B	ISTC - 1200(a)
2-ISIV-67-825C	ISTC - 1200(c)
2-VTIV-67-826B	ISTC - 1200(a)
2-ISIV-67-826C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VTIV-67-827B	ISTC - 1200(a)
2-ISIV-67-827C	ISTC - 1200(c)
2-VTIV-67-828B	ISTC - 1200(a)
2-ISIV-67-828C	ISTC - 1200(c)
0-VLV-67-910B	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
2-ISIV-67-910C	ISTC - 1200(c)
2-VTIV-67-911B	ISTC - 1200(a)
2-ISIV-67-911C	ISTC - 1200(c)
2-VTIV-67-912B	ISTC - 1200(a)
2-ISIV-67-912C	ISTC - 1200(c)

**Flow Diagram: 2-47W600-114**

VALVE ID	EXEMPTION BASIS
2-ISIV-67-832B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-ISIV-67-833C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-ISIV-67-915C	ISTC - 1200(c)
2-ISIV-67-916C	ISTC - 1200(c)

**Flow Diagram: 2-47W600-115**

VALVE ID	EXEMPTION BASIS
2-ISIV-62-356B	ISTC - 1200(c)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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**Flow Diagram: 2-47W600-116**

VALVE ID	EXEMPTION BASIS
2-ISIV-70-354B	ISTC - 1200(c)
2-ISIV-70-354E	ISTC - 1200(c)
2-VTIV-70-355B	ISTC - 1200(a)
2-ISIV-70-355C	ISTC - 1200(c)
2-ISIV-70-355G	ISTC - 1200(c)
2-ISIV-70-356B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VTIV-72-205B	ISTC - 1200(a)
2-ISIV-72-205C	ISTC - 1200(c)
2-ISIV-70-356C	ISTC - 1200(c)
2-VTIV-70-357B	ISTC - 1200(a)
2-ISIV-70-357C	ISTC - 1200(c)
2-ISIV-70-357D	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-ISIV-72-205D	ISTC - 1200(c)
2-VTIV-72-206B	ISTC - 1200(a)
2-ISIV-72-206C	ISTC - 1200(c)
2-ISIV-72-206D	ISTC - 1200(c)
2-VTIV-72-207B	ISTC - 1200(a)
2-ISIV-72-207D	ISTC - 1200(c)

**Flow Diagram: 2-47W600-118**

VALVE ID	EXEMPTION BASIS
2-ISIV-62-342C	ISTC - 1200(c)
2-ISIV-62-343C	ISTC - 1200(c)
2-ISIV-62-345C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-ISIV-62-346C	ISTC - 1200(c)
2-ISIV-62-357B	ISTC - 1200(c)
2-ISIV-62-357C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-ISIV-62-358D	ISTC - 1200(c)
2-EQIV-62-358E	ISTC - 1200(c)
2-ISIV-62-361B	ISTC - 1200(c)

**Flow Diagram: 2-47W600-131**

VALVE ID	EXEMPTION BASIS
2-VTIV-72-212B	ISTC - 1200(a)
2-ISIV-72-212C	ISTC - 1200(c)
2-ISIV-72-212D	ISTC - 1200(c)
2-VTIV-72-213B	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
2-ISIV-72-213C	ISTC - 1200(c)
2-ISIV-72-213D	ISTC - 1200(c)
2-VTIV-72-214B	ISTC - 1200(a)
2-ISIV-72-214C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
0-ISIV-78-230B	ISTC - 1200(c)
0-ISIV-78-231B	ISTC - 1200(c)
0-ISIV-78-232B	ISTC - 1200(c)
0-ISIV-78-233B	ISTC - 1200(c)

**Flow Diagram: 2-47W600-132**

VALVE ID	EXEMPTION BASIS
2-ISIV-63-337B	ISTC - 1200(c)
2-ISIV-63-337C	ISTC - 1200(c)
2-ISIV-63-337D	ISTC - 1200(c)
2-ISIV-63-338B	ISTC - 1200(c)
2-ISIV-63-338C	ISTC - 1200(c)
2-ISIV-63-338D	ISTC - 1200(c)
2-ISIV-63-339B	ISTC - 1200(c)
2-ISIV-63-339C	ISTC - 1200(c)
2-ISIV-63-339D	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VTIV-72-201B	ISTC - 1200(a)
2-ISIV-72-201C	ISTC - 1200(c)
2-VTIV-72-202B	ISTC - 1200(a)
2-ISIV-72-202C	ISTC - 1200(c)
2-ISIV-72-203B	ISTC - 1200(c)
1-VTIV-72-203D	ISTC - 1200(a)
2-VTIV-72-203D	ISTC - 1200(a)
2-ISIV-63-340B	ISTC - 1200(c)
2-ISIV-63-340C	ISTC - 1200(c)
2-ISIV-63-340D	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-ISIV-72-204B	ISTC - 1200(c)
2-VTIV-72-204D	ISTC - 1200(a)
2-VTIV-72-208B	ISTC - 1200(a)
2-ISIV-72-208C	ISTC - 1200(c)
2-VTIV-72-209B	ISTC - 1200(a)
2-ISIV-72-209C	ISTC - 1200(c)
2-ISIV-72-210B	ISTC - 1200(c)
2-VTIV-72-210D	ISTC - 1200(a)
2-ISIV-72-211B	ISTC - 1200(c)
2-VTIV-72-211D	ISTC - 1200(a)



**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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**Flow Diagram: 2-47W600-136-ISI**

VALVE ID	EXEMPTION BASIS
2-ISIV-70-258B	ISTC - 1200(c)
2-VTIV-70-259B	ISTC - 1200(a)
2-ISIV-70-259C	ISTC - 1200(c)
2-ISIV-70-259F	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VTIV-70-260B	ISTC - 1200(a)
2-ISIV-70-260C	ISTC - 1200(c)
2-ISIV-70-260G	ISTC - 1200(c)
2-ISIV-70-271B	ISTC - 1200(c)
2-VTIV-70-272B	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
2-ISIV-70-272C	ISTC - 1200(c)
2-ISIV-70-272G	ISTC - 1200(c)
2-VTIV-70-273B	ISTC - 1200(a)
2-ISIV-70-273C	ISTC - 1200(c)
2-ISIV-70-273F	ISTC - 1200(c)

**Flow Diagram: 2-47W600-137-ISI**

VALVE ID	EXEMPTION BASIS
2-ISIV-70-284B	ISTC - 1200(c)
2-ISIV-70-285B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-ISIV-70-285F	ISTC - 1200(c)
2-ISIV-70-286B	ISTC - 1200(c)
2-ISIV-70-286E	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-ISIV-70-289B	ISTC - 1200(c)
2-ISIV-70-290B	ISTC - 1200(c)
2-ISIV-70-291B	ISTC - 1200(c)

**Flow Diagram: 2-47W600-142-ISI**

VALVE ID	EXEMPTION BASIS
2-ISIV-63-351B	ISTC - 1200(c)
2-ISIV-63-352B	ISTC - 1200(c)
2-ISIV-63-353B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-ISIV-63-354B	ISTC - 1200(c)
2-ISIV-63-355B	ISTC - 1200(c)
2-ISIV-63-356B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-ISIV-63-357B	ISTC - 1200(c)
2-ISIV-63-358B	ISTC - 1200(c)
2-ISIV-63-377C	ISTC - 1200(c)

**Flow Diagram: 2-47W600-143-ISI**

VALVE ID	EXEMPTION BASIS
2-VLV-63-373A	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-TTIV-63-373B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-VLV-63-376A	ISTC - 1200(c)
2-TTIV-63-376B	ISTC - 1200(c)

**Flow Diagram: 2-47W600-144-ISI**

VALVE ID	EXEMPTION BASIS
2-ISIV-67-800B	ISTC - 1200(c)
2-ISIV-67-800C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-ISIV-67-802B	ISTC - 1200(c)
2-ISIV-67-802C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-ISIV-67-907B	ISTC - 1200(c)
2-ISIV-67-907C	ISTC - 1200(c)
2-ISIV-67-908C	ISTC - 1200(c)

**Flow Diagram: 2-47W600-154-ISI**

VALVE ID	EXEMPTION BASIS
2-ISIV-63-303C	ISTC - 1200(c)
2-VTIV-63-305B	ISTC - 1200(a)
2-ISIV-63-305C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VTIV-63-306B	ISTC - 1200(a)
2-ISIV-63-306C	ISTC - 1200(c)
2-VTIV-63-307B	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
2-ISIV-63-307C	ISTC - 1200(c)
2-VTIV-63-308B	ISTC - 1200(a)
2-ISIV-63-308C	ISTC - 1200(c)
2-ISIV-63-344C	ISTC - 1200(c)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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**Flow Diagram: 2-47W600-163-ISI**

VALVE ID	EXEMPTION BASIS
2-VTIV-63-301B	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
2-ISIV-63-301C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VTIV-63-302B	ISTC - 1200(a)
2-ISIV-63-302C	ISTC - 1200(c)

**Flow Diagram: 2-47W600-164-ISI**

VALVE ID	EXEMPTION BASIS
2-ISIV-63-342B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-ISIV-63-343B	ISTC - 1200(c)

**Flow Diagram: 2-47W600-165-ISI**

VALVE ID	EXEMPTION BASIS
2-VLV-68-429A	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VTIV-68-429B	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
2-ISIV-68-429C	ISTC - 1200(c)
2-VTIV-68-429D	ISTC - 1200(a)

**Flow Diagram: 2-47W600-169-ISI**

VALVE ID	EXEMPTION BASIS
2-VTIV-70-298B	ISTC - 1200(a)
2-VTIV-70-298C	ISTC - 1200(a)
2-VTIV-70-298D	ISTC - 1200(a)
2-ISIV-70-298E	ISTC - 1200(c)
2-VTIV-70-299B	ISTC - 1200(a)
2-VTIV-70-299C	ISTC - 1200(a)
2-ISIV-70-299D	ISTC - 1200(c)
2-VTIV-70-300B	ISTC - 1200(a)
2-ISIV-70-300C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VTIV-70-301B	ISTC - 1200(a)
2-ISIV-70-301C	ISTC - 1200(c)
2-VTIV-70-302B	ISTC - 1200(a)
2-VTIV-70-302C	ISTC - 1200(a)
2-ISIV-70-302D	ISTC - 1200(c)
2-VTIV-70-303B	ISTC - 1200(a)
2-ISIV-70-303C	ISTC - 1200(c)
2-VTIV-70-304B	ISTC - 1200(a)
2-VTIV-70-304C	ISTC - 1200(a)
2-ISIV-70-304D	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VTIV-70-305B	ISTC - 1200(a)
2-ISIV-70-305C	ISTC - 1200(c)
2-VTIV-70-322B	ISTC - 1200(a)
2-ISIV-70-322C	ISTC - 1200(c)
2-VTIV-70-323B	ISTC - 1200(a)
2-ISIV-70-323C	ISTC - 1200(c)
2-VTIV-70-326B	ISTC - 1200(c)
2-ISIV-70-326C	ISTC - 1200(c)
2-VTIV-70-327B	ISTC - 1200(c)
2-ISIV-70-327C	ISTC - 1200(c)

**Flow Diagram: 2-47W600-171-ISI**

VALVE ID	EXEMPTION BASIS
2-ISIV-67-844B	ISTC - 1200(c)
2-ISIV-67-845B	ISTC - 1200(c)
2-ISIV-67-846B	ISTC - 1200(c)
2-ISIV-67-847B	ISTC - 1200(c)
2-ISIV-67-848B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-ISIV-67-849B	ISTC - 1200(c)
2-ISIV-67-850B	ISTC - 1200(c)
2-ISIV-67-851B	ISTC - 1200(c)
2-ISIV-67-925C	ISTC - 1200(c)
2-ISIV-67-926C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-ISIV-67-927B	ISTC - 1200(c)
2-ISIV-67-928C	ISTC - 1200(c)
2-ISIV-67-929B	ISTC - 1200(c)
2-ISIV-67-930C	ISTC - 1200(c)
2-ISIV-67-931B	ISTC - 1200(c)
2-ISIV-67-934B	ISTC - 1200(c)

Attachment 8 - Code Class 1, 2, and 3 Valves Exempt

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Flow Diagram: 2-47W600-174-ISI

VALVE ID	EXEMPTION BASIS
2-VLV-63-385A	ISTC - 1200(c)
2-VTIV-63-385B	ISTC - 1200(a)
2-ISIV-63-385C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VTIV-70-263B	ISTC - 1200(a)
2-VLV-63-386A	ISTC - 1200(c)
2-VTIV-63-386B	ISTC - 1200(c)
2-ISIV-63-386C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-ISIV-70-263C	ISTC - 1200(c)
2-ISIV-70-276B	ISTC - 1200(c)
2-VTIV-70-277B	ISTC - 1200(a)
2-ISIV-70-277C	ISTC - 1200(c)

Flow Diagram: 2-47W600-181-ISI

VALVE ID	EXEMPTION BASIS
2-VTIV-62-306B	ISTC - 1200(a)
2-ISIV-62-306C	ISTC - 1200(c)
2-VTIV-62-307B	ISTC - 1200(a)
2-ISIV-62-307C	ISTC - 1200(c)
2-VTIV-62-314B	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
2-ISIV-62-314C	ISTC - 1200(c)
2-VTIV-62-315B	ISTC - 1200(a)
2-ISIV-62-315C	ISTC - 1200(c)
2-VTIV-62-322B	ISTC - 1200(a)
2-ISIV-62-322C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VTIV-62-323B	ISTC - 1200(c)
2-ISIV-62-323C	ISTC - 1200(c)
2-VTIV-62-330B	ISTC - 1200(a)
2-ISIV-62-330C	ISTC - 1200(c)
2-VTIV-62-331B	ISTC - 1200(a)
2-ISIV-62-331C	ISTC - 1200(c)

Flow Diagram: 2-47W600-228-ISI

VALVE ID	EXEMPTION BASIS
2-VTIV-3-364B	ISTC - 1200(c)
2-ISIV-3-364C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-ISIV-3-365B	ISTC - 1200(c)
2-ISIV-3-366B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VTIV-3-367B	ISTC - 1200(c)
2-ISIV-3-367C	ISTC - 1200(c)

Flow Diagram: 2-47W600-241-ISI

VALVE ID	EXEMPTION BASIS
2-VLV-63-374A	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-TTIV-63-374B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VLV-63-375A	ISTC - 1200(c)

Flow Diagram: 2-47W600-244-ISI

VALVE ID	EXEMPTION BASIS
2-ISIV-70-354H	

VALVE ID	EXEMPTION BASIS
2-ISIV-70-355K	

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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**Flow Diagram: 2-47W600-26**

VALVE ID	EXEMPTION BASIS
2-VTIV-1-278B	ISTC - 1200(a)
2-ISIV-1-278C	ISTC - 1200(c)
2-VTIV-1-279B	ISTC - 1200(a)
2-ISIV-1-279C	ISTC - 1200(c)
2-VTIV-1-287B	ISTC - 1200(a)
2-ISIV-1-287C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VTIV-3-292D	ISTC - 1200(a)
2-ISIV-3-292E	ISTC - 1200(c)
2-ISIV-1-295B	ISTC - 1200(c)
2-ISIV-1-304B	ISTC - 1200(c)
2-ISIV-1-305B	ISTC - 1200(c)
2-ISIV-1-1008B	ISTC - 1200(c)
2-ISIV-1-1009B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VTIV-3-295B	ISTC - 1200(a)
2-ISIV-3-295C	ISTC - 1200(c)
2-ISIV-62-312D	ISTC - 1200(c)
2-ISIV-62-313D	ISTC - 1200(c)
2-ISIV-3-1012B	ISTC - 1200(c)
2-ISIV-3-1012C	ISTC - 1200(c)
2-ISIV-3-1013B	ISTC - 1200(c)

**Flow Diagram: 2-47W600-27**

VALVE ID	EXEMPTION BASIS
2-VTIV-1-281B	ISTC - 1200(a)
2-ISIV-1-281C	ISTC - 1200(c)
2-VTIV-1-288B	ISTC - 1200(a)
2-VTIV-1-288C	ISTC - 1200(a)
2-VTIV-1-288D	ISTC - 1200(a)
2-ISIV-1-288E	ISTC - 1200(c)
2-VTIV-1-289B	ISTC - 1200(a)
2-VTIV-1-289C	ISTC - 1200(a)
2-VTIV-1-289D	ISTC - 1200(a)
2-ISIV-1-289E	ISTC - 1200(c)
2-VTIV-1-296B	ISTC - 1200(a)
2-VTIV-1-296C	ISTC - 1200(a)
2-VTIV-1-296D	ISTC - 1200(a)
2-ISIV-1-296E	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-ISIV-3-280B	ISTC - 1200(c)
2-VTIV-3-286D	ISTC - 1200(a)
2-ISIV-3-286E	ISTC - 1200(c)
2-VTIV-3-289B	ISTC - 1200(a)
2-ISIV-3-289C	ISTC - 1200(c)
2-ISIV-3-296B	ISTC - 1200(c)
2-VTIV-1-297B	ISTC - 1200(a)
2-ISIV-3-297B	ISTC - 1200(c)
2-VTIV-1-297C	ISTC - 1200(a)
2-VTIV-1-297D	ISTC - 1200(a)
2-ISIV-1-297E	ISTC - 1200(c)
2-VTIV-1-307B	ISTC - 1200(a)
2-ISIV-1-307C	ISTC - 1200(c)
2-ISIV-1-1007C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-ISIV-3-302B	ISTC - 1200(c)
2-ISIV-3-303D	ISTC - 1200(c)
2-ISIV-62-304B	ISTC - 1200(c)
2-ISIV-62-305B	ISTC - 1200(c)
2-VTIV-3-307B	ISTC - 1200(a)
2-VTIV-68-428B	ISTC - 1200(a)
2-VTIV-68-428C	ISTC - 1200(a)
2-ISIV-68-428D	ISTC - 1200(c)
2-ISIV-68-428E	ISTC - 1200(c)
2-ISIV-68-428K	ISTC - 1200(c)
2-VTIV-3-1011B	ISTC - 1200(a)
2-ISIV-3-1011C	ISTC - 1200(c)
2-ISIV-3-1011H	ISTC - 1200(c)
2-VTIV-3-1014B	ISTC - 1200(a)
2-ISIV-3-1014C	ISTC - 1200(c)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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**Flow Diagram: 2-47W600-28**

VALVE ID	EXEMPTION BASIS
2-ISIV-3-281B	ISTC - 1200(c)
2-ISIV-3-282X	ISTC - 1200(c)
2-VTIV-3-287B	ISTC - 1200(a)
2-VTIV-3-287C	ISTC - 1200(a)
2-ISIV-3-287D	ISTC - 1200(c)
2-ISIV-3-287E	ISTC - 1200(c)
2-VTIV-3-288B	ISTC - 1200(a)
2-VTIV-3-288C	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
2-ISIV-3-288E	ISTC - 1200(c)
2-ISIV-3-288K	ISTC - 1200(c)
2-ISIV-3-293B	ISTC - 1200(c)
2-ISIV-3-293C	ISTC - 1200(c)
2-ISIV-3-294B	ISTC - 1200(c)
2-ISIV-3-294C	ISTC - 1200(c)
2-VTIV-3-298C	ISTC - 1200(a)
2-ISIV-3-298D	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-ISIV-70-294B	ISTC - 1200(c)
2-ISIV-70-295B	ISTC - 1200(c)
2-ISIV-3-299D	ISTC - 1200(c)
2-ISIV-3-300D	ISTC - 1200(c)
2-VTIV-3-305B	ISTC - 1200(a)
2-ISIV-3-305F	ISTC - 1200(c)
2-VTIV-3-306B	ISTC - 1200(a)
2-ISIV-3-306F	ISTC - 1200(c)

**Flow Diagram: 2-47W600-285-ISI**

VALVE ID	EXEMPTION BASIS
2-ISIV-68-441DD	ISTC - 1200(c)
2-ISIV-68-442E	ISTC - 1200(c)
2-ISIV-68-442G	ISTC - 1200(c)
2-ISIV-68-443B	ISTC - 1200(c)
2-ISIV-68-443C	ISTC - 1200(c)
2-ISIV-68-443D	ISTC - 1200(c)
2-ISIV-68-443E	ISTC - 1200(c)
2-ISIV-68-443F	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-EQIV-68-443G	ISTC - 1200(c)
2-ISIV-68-443H	ISTC - 1200(c)
2-ISIV-68-445B	ISTC - 1200(c)
2-ISIV-68-445C	ISTC - 1200(c)
2-ISIV-68-445D	ISTC - 1200(c)
2-DRIV-68-445DA	ISTC - 1200(c)
2-EQIV-68-445E	ISTC - 1200(c)
2-ISIV-68-446B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-ISIV-68-446C	ISTC - 1200(c)
2-ISIV-68-446D	ISTC - 1200(c)
2-ISIV-68-446E	ISTC - 1200(c)
2-ISIV-68-446F	ISTC - 1200(c)
2-ISIV-68-446G	ISTC - 1200(c)
2-ISIV-68-446J	ISTC - 1200(c)
2-ISIV-68-575B	ISTC - 1200(c)
2-EQIV-68-575C	ISTC - 1200(c)
2-ISIV-68-575D	ISTC - 1200(c)

**Flow Diagram: 2-47W600-289-ISI**

VALVE ID	EXEMPTION BASIS
2-ISIV-68-454B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-ISIV-68-455B	ISTC - 1200(c)

**Flow Diagram: 2-47W600-29**

VALVE ID	EXEMPTION BASIS
2-ISIV-3-283B	ISTC - 1200(c)
2-VTIV-3-284C	ISTC - 1200(a)
2-ISIV-3-284E	ISTC - 1200(c)
2-VTIV-3-285C	ISTC - 1200(a)
2-ISIV-3-285D	ISTC - 1200(c)
2-ISIV-3-290B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VTIV-3-291C	ISTC - 1200(a)
2-ISIV-3-291D	ISTC - 1200(c)
2-VTIV-3-296C	ISTC - 1200(a)
2-ISIV-3-296E	ISTC - 1200(c)
2-VTIV-3-297C	ISTC - 1200(a)
2-ISIV-3-297D	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VTIV-3-302C	ISTC - 1200(a)
2-ISIV-3-302D	ISTC - 1200(c)
2-ISIV-3-302E	ISTC - 1200(c)
2-VTIV-3-303B	ISTC - 1200(a)
2-ISIV-3-303C	ISTC - 1200(c)
2-VTIV-3-304B	ISTC - 1200(a)
2-ISIV-3-304C	ISTC - 1200(a)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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**Flow Diagram: 2-47W600-294-ISI**

VALVE ID	EXEMPTION BASIS
2-ISIV-3-284B	ISTC - 1200(c)
2-ISIV-3-285B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-ISIV-3-290E	ISTC - 1200(c)
2-ISIV-3-291B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-ISIV-3-305E	ISTC - 1200(c)
2-ISIV-3-306E	ISTC - 1200(c)

**Flow Diagram: 2-47W600-30**

VALVE ID	EXEMPTION BASIS
2-ISIV-1-284C	ISTC - 1200(c)
2-ISIV-1-285B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-ISIV-1-290B	ISTC - 1200(c)
2-ISIV-1-292C	ISTC - 1200(c)
2-ISIV-1-293B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-ISIV-1-298B	ISTC - 1200(c)
2-ISIV-1-299X	ISTC - 1200(c)
2-ISIV-1-299Y	ISTC - 1200(c)

**Flow Diagram: 2-47W600-32**

VALVE ID	EXEMPTION BASIS
2-ISIV-63-383C	ISTC - 1200(c)

**Flow Diagram: 2-47W600-34**

VALVE ID	EXEMPTION BASIS
2-ISIV-70-366C	ISTC - 1200(c)

**Flow Diagram: 2-47W600-488-ISI**

VALVE ID	EXEMPTION BASIS
1-ISIV-72-215B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-ISIV-72-216B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-ISIV-72-217B	ISTC - 1200(c)
1-ISIV-72-218B	ISTC - 1200(c)

**Flow Diagram: 2-47W600-490-ISI**

VALVE ID	EXEMPTION BASIS
2-ISIV-72-215B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-ISIV-72-216B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-ISIV-72-217B	ISTC - 1200(c)
2-ISIV-72-218B	ISTC - 1200(c)

**Flow Diagram: 2-47W600-62**

VALVE ID	EXEMPTION BASIS
2-VTIV-3-314B	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
2-ISIV-3-314C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VTIV-3-315B	ISTC - 1200(a)
2-ISIV-3-316B	ISTC - 1200(c)

**Flow Diagram: 2-47W600-63**

VALVE ID	EXEMPTION BASIS
2-ISIV-68-441B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-EQIV-68-441C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-EQIV-68-442F	ISTC - 1200(c)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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**Flow Diagram: 2-47W600-80**

VALVE ID	EXEMPTION BASIS
2-VTIV-68-401B	ISTC - 1200(a)
2-VTIV-68-401C	ISTC - 1200(a)
2-VTIV-68-401D	ISTC - 1200(a)
2-ISIV-68-401E	ISTC - 1200(c)
2-VTIV-68-402B	ISTC - 1200(a)
2-VTIV-68-402C	ISTC - 1200(a)
2-ISIV-68-402D	ISTC - 1200(c)
2-VTIV-68-403B	ISTC - 1200(a)
2-VTIV-68-403C	ISTC - 1200(a)
2-ISIV-68-403D	ISTC - 1200(c)
2-VTIV-68-404B	ISTC - 1200(a)
2-ISIV-68-404C	ISTC - 1200(c)
2-VTIV-68-404D	ISTC - 1200(a)
2-ISIV-68-404E	ISTC - 1200(c)
2-VTIV-68-404F	ISTC - 1200(a)
2-ISIV-68-404G	ISTC - 1200(c)
2-VTIV-68-404H	ISTC - 1200(a)
2-VTIV-68-411B	ISTC - 1200(a)
2-VTIV-68-411C	ISTC - 1200(a)
2-ISIV-68-411D	ISTC - 1200(c)
2-VTIV-68-412B	ISTC - 1200(a)
2-VTIV-68-412C	ISTC - 1200(a)
2-VTIV-68-412D	ISTC - 1200(a)

**Flow Diagram: 2-47W600-92**

VALVE ID	EXEMPTION BASIS
2-ISIV-1-276B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-ISIV-68-412E	ISTC - 1200(c)
2-VTIV-68-413B	ISTC - 1200(a)
2-VTIV-68-413C	ISTC - 1200(a)
2-VTIV-68-413D	ISTC - 1200(a)
2-ISIV-68-413E	ISTC - 1200(c)
2-VTIV-68-414B	ISTC - 1200(a)
2-VTIV-68-414C	ISTC - 1200(a)
2-ISIV-68-414D	ISTC - 1200(c)
2-ISIV-68-414F	ISTC - 1200(c)
2-VTIV-68-414G	ISTC - 1200(a)
2-ISIV-68-414H	ISTC - 1200(c)
2-VTIV-68-414I	ISTC - 1200(a)
2-VTIV-68-421B	ISTC - 1200(a)
2-VTIV-68-421C	ISTC - 1200(a)
2-VTIV-68-421D	ISTC - 1200(a)
2-ISIV-68-421E	ISTC - 1200(c)
2-VTIV-68-422B	ISTC - 1200(a)
2-VTIV-68-422D	ISTC - 1200(a)
2-ISIV-68-422E	ISTC - 1200(c)
2-VTIV-68-423B	ISTC - 1200(a)
2-VTIV-68-423C	ISTC - 1200(a)
2-ISIV-68-423D	ISTC - 1200(c)
2-VTIV-68-424B	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
2-ISIV-1-284B	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VTIV-68-424C	ISTC - 1200(a)
2-ISIV-68-424D	ISTC - 1200(c)
2-VTIV-68-424E	ISTC - 1200(a)
2-ISIV-68-424F	ISTC - 1200(c)
2-VTIV-68-424G	ISTC - 1200(a)
2-ISIV-68-424H	ISTC - 1200(c)
2-VTIV-68-431B	ISTC - 1200(a)
2-VTIV-68-431C	ISTC - 1200(a)
2-ISIV-68-431D	ISTC - 1200(c)
2-VTIV-68-432B	ISTC - 1200(a)
2-VTIV-68-432C	ISTC - 1200(a)
2-ISIV-68-432D	ISTC - 1200(c)
2-VTIV-68-433B	ISTC - 1200(a)
2-VTIV-68-433C	ISTC - 1200(a)
2-VTIV-68-433D	ISTC - 1200(a)
2-VTIV-68-433E	ISTC - 1200(a)
2-ISIV-68-433F	ISTC - 1200(c)
2-VTIV-68-434B	ISTC - 1200(a)
2-ISIV-68-434C	ISTC - 1200(c)
2-VTIV-68-434D	ISTC - 1200(a)
2-ISIV-68-434E	ISTC - 1200(c)
2-VTIV-68-434F	ISTC - 1200(a)
2-ISIV-68-434G	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-ISIV-1-292B	ISTC - 1200(c)
2-ISIV-1-300B	ISTC - 1200(c)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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**Flow Diagram: 2-47W600-93**

VALVE ID	EXEMPTION BASIS
2-VTIV-74-100B	ISTC - 1200(a)
2-VTIV-74-101B	ISTC - 1200(a)
2-VTIV-74-102C	ISTC - 1200(a)
2-ISIV-74-102D	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VTIV-74-103C	ISTC - 1200(a)
2-ISIV-74-103D	ISTC - 1200(c)
2-VTIV-74-104B	ISTC - 1200(a)
2-VTIV-74-107B	ISTC - 1200(a)
2-VTIV-74-108B	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
2-VTIV-74-109B	ISTC - 1200(a)
2-ISIV-74-109D	ISTC - 1200(c)
2-VTIV-74-110B	ISTC - 1200(a)
2-ISIV-74-110E	ISTC - 1200(c)
2-VTIV-74-111B	ISTC - 1200(a)

**Flow Diagram: 2-47W60-113**

VALVE ID	EXEMPTION BASIS
2-VTIV-67-909B	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
2-ISIV-67-909C	ISTC - 1200(c)

**Flow Diagram: 2-47W809-1**

VALVE ID	EXEMPTION BASIS
2-FCV-62-89	ISTC-1200(b)
2-VLV-62-304A	ISTC - 1200(a)
2-VLV-62-305A	ISTC - 1200(a)
2-VLV-62-306A	ISTC - 1200(a)
2-VLV-62-307A	ISTC - 1200(a)
2-VLV-62-312A	ISTC - 1200(a)
2-VLV-62-313A	ISTC - 1200(a)
2-VLV-62-314A	ISTC - 1200(a)
2-VLV-62-315A	ISTC - 1200(a)
2-VLV-62-320A	ISTC - 1200(a)
2-VLV-62-321A	ISTC - 1200(a)
2-VLV-62-322A	ISTC - 1200(a)
2-VLV-62-323A	ISTC - 1200(a)
2-VLV-62-328A	ISTC - 1200(a)
2-VLV-62-329A	ISTC - 1200(a)
2-VLV-62-330A	ISTC - 1200(a)
2-VLV-62-331A	ISTC - 1200(a)
2-VLV-62-332A	ISTC - 1200(a)
2-VLV-62-333A	ISTC - 1200(a)
2-VLV-62-334A	ISTC - 1200(a)
2-VLV-62-335A	ISTC - 1200(a)
2-VLV-62-336A	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
2-VLV-62-535	ISTC - 1200(c)
2-VLV-62-536	ISTC - 1200(c)
2-VLV-62-537	ISTC - 1200(c)
2-VLV-62-538	ISTC - 1200(c)
2-VLV-62-539	ISTC - 1200(c)
2-VLV-62-540	ISTC - 1200(a)
2-VLV-62-541	ISTC - 1200(a)
2-VLV-62-542	ISTC - 1200(a)
2-VLV-62-544	ISTC - 1200(a)
2-VLV-62-545	ISTC - 1200(a)
2-VLV-62-551	ISTC - 1200(a)
2-VLV-62-552	ISTC - 1200(a)
2-VLV-62-553	ISTC - 1200(a)
2-VLV-62-554	ISTC - 1200(a)
2-VLV-62-555	ISTC - 1200(a)
2-VLV-62-556	ISTC - 1200(c)
2-VLV-62-557	ISTC - 1200(c)
2-VLV-62-558	ISTC - 1200(c)
2-VLV-62-559	ISTC - 1200(c)
2-VLV-62-564	ISTC - 1200(c)
2-VLV-62-565	ISTC - 1200(c)
2-VLV-62-566	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VLV-62-618	ISTC - 1200(a)
2-VLV-62-619	ISTC - 1200(a)
2-VLV-62-641	ISTC - 1200(a)
2-VLV-62-642	ISTC - 1200(c)
2-VLV-62-643	ISTC - 1200(c)
2-VLV-62-644	ISTC - 1200(c)
2-VLV-62-645	ISTC - 1200(a)
2-VLV-62-646	ISTC - 1200(a)
2-VLV-62-647	ISTC - 1200(c)
2-VLV-62-648	ISTC - 1200(c)
2-VLV-62-650	ISTC - 1200(c)
2-VLV-62-651	ISTC - 1200(a)
2-VLV-62-652	ISTC - 1200(c)
2-VLV-62-653	ISTC - 1200(c)
2-VLV-62-654	ISTC - 1200(a)
2-VLV-62-655	ISTC - 1200(a)
2-VLV-62-657	ISTC - 1200(c)
2-VLV-62-663	ISTC - 1200(a)
2-VLV-62-664	ISTC - 1200(a)
2-VLV-62-665	ISTC - 1200(a)
2-VLV-62-666	ISTC - 1200(a)
2-VLV-62-667	ISTC - 1200(a)



**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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<b>VALVE ID</b>	<b>EXEMPTION BASIS</b>
2-VLV-62-337A	ISTC - 1200(a)
2-VLV-62-340A	ISTC - 1200(a)
2-VLV-62-341A	ISTC - 1200(a)
2-VLV-62-342A	ISTC - 1200(a)
2-VLV-62-343A	ISTC - 1200(a)
2-VLV-62-345A	ISTC - 1200(a)
2-VLV-62-346A	ISTC - 1200(a)
2-VLV-62-350A	ISTC - 1200(a)
2-VLV-62-351A	ISTC - 1200(a)
2-VLV-62-352A	ISTC - 1200(a)
2-VLV-62-353A	ISTC - 1200(a)
2-VLV-62-354A	ISTC - 1200(a)
2-VLV-62-355A	ISTC - 1200(a)
2-VLV-62-356A	ISTC - 1200(a)
2-VLV-62-357A	ISTC - 1200(a)
2-VLV-62-358A	ISTC - 1200(a)
2-VLV-62-361A	ISTC - 1200(a)
2-VLV-62-362A	ISTC - 1200(a)
2-VLV-62-501	ISTC - 1200(a)
2-VLV-62-502	ISTC - 1200(a)
2-VLV-62-503	ISTC - 1200(a)
2-VLV-62-508	ISTC - 1200(c)
2-VLV-62-509	ISTC - 1200(c)
2-VLV-62-510	ISTC - 1200(c)
2-VLV-62-512	ISTC - 1200(a)
2-VLV-62-513	ISTC - 1200(a)
2-VLV-62-520	ISTC - 1200(a)
2-VLV-62-521	ISTC - 1200(a)
2-VLV-62-522	ISTC - 1200(a)
2-VLV-62-524	ISTC - 1200(c)
2-VLV-62-526	ISTC - 1200(c)
2-VLV-62-527	ISTC - 1200(c)
2-VLV-62-528	ISTC - 1200(a)
2-VLV-62-529	ISTC - 1200(a)
2-VLV-62-531	ISTC - 1200(c)

<b>VALVE ID</b>	<b>EXEMPTION BASIS</b>
2-VLV-62-567	ISTC - 1200(c)
2-VLV-62-568	ISTC - 1200(a)
2-VLV-62-569	ISTC - 1200(a)
2-VLV-62-570	ISTC - 1200(a)
2-VLV-62-571	ISTC - 1200(a)
2-VLV-62-572	ISTC - 1200(a)
2-VLV-62-573	ISTC - 1200(a)
2-VLV-62-574	ISTC - 1200(a)
2-VLV-62-575	ISTC - 1200(a)
2-VLV-62-580	ISTC - 1200(a)
2-VLV-62-581	ISTC - 1200(a)
2-VLV-62-582	ISTC - 1200(a)
2-VLV-62-583	ISTC - 1200(a)
2-VLV-62-584	ISTC - 1200(a)
2-VLV-62-585	ISTC - 1200(a)
2-VLV-62-586	ISTC - 1200(a)
2-VLV-62-587	ISTC - 1200(a)
2-VLV-62-592	ISTC - 1200(c)
2-VLV-62-595	ISTC - 1200(c)
2-VLV-62-596	ISTC - 1200(c)
2-VLV-62-597	ISTC - 1200(c)
2-VLV-62-598	ISTC - 1200(c)
2-VLV-62-599	ISTC - 1200(c)
2-VLV-62-600	ISTC - 1200(a)
2-VLV-62-601	ISTC - 1200(a)
2-VLV-62-602	ISTC - 1200(a)
2-VLV-62-603	ISTC - 1200(a)
2-VLV-62-604	ISTC - 1200(c)
2-VLV-62-605	ISTC - 1200(c)
2-VLV-62-606	ISTC - 1200(c)
2-VLV-62-607	ISTC - 1200(c)
2-VLV-62-608	ISTC - 1200(c)
2-VLV-62-609	ISTC - 1200(c)
2-VLV-62-610	ISTC - 1200(c)
2-VLV-62-611	ISTC - 1200(c)

<b>VALVE ID</b>	<b>EXEMPTION BASIS</b>
2-VLV-62-669	ISTC - 1200(c)
2-VLV-62-670	ISTC - 1200(a)
2-VLV-62-671	ISTC - 1200(c)
2-VLV-62-672	ISTC - 1200(c)
2-VLV-62-673	ISTC - 1200(c)
2-VLV-62-676	ISTC - 1200(c)
2-VLV-62-678	ISTC - 1200(a)
2-VLV-62-679	ISTC - 1200(c)
2-VLV-62-680	ISTC - 1200(c)
2-VLV-62-681	ISTC - 1200(c)
2-VLV-62-682	ISTC - 1200(a)
2-VLV-62-683	ISTC - 1200(a)
2-VLV-62-686	ISTC - 1200(c)
2-VLV-62-689	ISTC - 1200(a)
2-VLV-62-690	ISTC - 1200(c)
2-VLV-62-695	ISTC - 1200(a)
2-VLV-62-699	ISTC - 1200(c)
2-VLV-62-701	ISTC - 1200(a)
2-VLV-62-703	ISTC - 1200(a)
2-VLV-62-704	ISTC - 1200(a)
2-VLV-62-705	ISTC - 1200(a)
2-VLV-62-707	ISTC - 1200(a)
2-VLV-62-708	ISTC - 1200(a)
2-VLV-62-710	ISTC - 1200(a)
2-VLV-62-711	ISTC - 1200(a)
2-VLV-62-714	ISTC - 1200(c)
2-VLV-62-715	ISTC - 1200(c)
2-VLV-62-721	ISTC - 1200(a)
2-VLV-62-723	ISTC - 1200(c)
2-VLV-62-724	ISTC - 1200(a)
2-VLV-62-760	ISTC - 1200(c)
2-VLV-62-761	ISTC - 1200(c)
2-VLV-62-763	ISTC - 1200(a)
2-VLV-62-764	ISTC - 1200(c)
2-VLV-62-765	ISTC - 1200(a)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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VALVE ID	EXEMPTION BASIS
2-VLV-62-533	ISTC - 1200(c)
2-VLV-62-534	ISTC - 1200(c)

**Flow Diagram: 2-47W811-1**

VALVE ID	EXEMPTION BASIS
2-VLV-63-301A	ISTC - 1200(a)
2-VLV-63-302A	ISTC - 1200(a)
2-VLV-63-303A	ISTC - 1200(a)
2-VLV-63-304A	ISTC - 1200(a)
2-VLV-63-305A	ISTC - 1200(a)
2-VLV-63-306A	ISTC - 1200(a)
2-VLV-63-307A	ISTC - 1200(a)
2-VLV-63-308A	ISTC - 1200(a)
2-VLV-63-309A	ISTC - 1200(a)
2-VLV-63-310A	ISTC - 1200(a)
2-VLV-63-311A	ISTC - 1200(a)
2-VLV-63-312A	ISTC - 1200(a)
2-VLV-63-313A	ISTC - 1200(a)
2-VLV-63-314A	ISTC - 1200(a)
2-VLV-63-315A	ISTC - 1200(a)
2-VLV-63-316A	ISTC - 1200(a)
2-VLV-63-317A	ISTC - 1200(a)
2-VLV-63-318A	ISTC - 1200(a)
2-VLV-63-319A	ISTC - 1200(a)
2-VLV-63-320A	ISTC - 1200(a)
2-VLV-63-321A	ISTC - 1200(a)
2-VLV-63-322A	ISTC - 1200(a)
2-VLV-63-323A	ISTC - 1200(a)
2-VLV-63-324A	ISTC - 1200(a)
2-VLV-63-325A	ISTC - 1200(a)
2-VLV-63-326A	ISTC - 1200(a)
2-VLV-63-327A	ISTC - 1200(a)
2-VLV-63-328A	ISTC - 1200(a)
2-VLV-63-329A	ISTC - 1200(a)
2-VLV-63-330A	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
2-VLV-62-616	ISTC - 1200(a)
2-VLV-62-617	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
2-VLV-63-363A	ISTC - 1200(a)
2-VLV-63-364A	ISTC - 1200(a)
2-VLV-63-365A	ISTC - 1200(a)
2-VLV-63-366A	ISTC - 1200(a)
2-VLV-63-371A	ISTC - 1200(a)
2-VLV-63-372A	ISTC - 1200(a)
2-VLV-63-377A	ISTC - 1200(a)
2-VLV-63-378A	ISTC - 1200(a)
2-VLV-63-379A	ISTC - 1200(a)
2-VLV-63-380A	ISTC - 1200(a)
2-VLV-63-381A	ISTC - 1200(a)
2-VLV-63-382A	ISTC - 1200(a)
2-VLV-63-383A	ISTC - 1200(a)
2-VLV-63-384A	ISTC - 1200(a)
2-VLV-63-411	ISTC - 1200(c)
2-VLV-63-413	ISTC - 1200(a)
2-VLV-63-414	ISTC - 1200(c)
2-VLV-63-415	ISTC - 1200(c)
2-VLV-63-500	ISTC - 1200(a)
2-VLV-63-501	ISTC - 1200(a)
2-VLV-63-503	ISTC - 1200(c)
2-VLV-63-504	ISTC - 1200(c)
2-VLV-63-505	ISTC - 1200(a)
2-VLV-63-506	ISTC - 1200(a)
2-VLV-63-507	ISTC - 1200(a)
2-VLV-63-508	ISTC - 1200(a)
2-VLV-63-509	ISTC - 1200(c)
2-VLV-63-512	ISTC - 1200(a)
2-VLV-63-513	ISTC - 1200(a)
2-VLV-63-514	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
2-VLV-62-1092	ISTC - 1200(a)
2-VLV-62-1093	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
2-VLV-63-601	ISTC - 1200(c)
2-VLV-63-606	ISTC - 1200(a)
2-VLV-63-607	ISTC - 1200(a)
2-VLV-63-608	ISTC - 1200(a)
2-VLV-63-609	ISTC - 1200(a)
2-VLV-63-610	ISTC - 1200(c)
2-VLV-63-611	ISTC - 1200(c)
2-VLV-63-612	ISTC - 1200(c)
2-VLV-63-613	ISTC - 1200(c)
2-VLV-63-614	ISTC - 1200(a)
2-VLV-63-615	ISTC - 1200(a)
2-VLV-63-616	ISTC - 1200(a)
2-VLV-63-617	ISTC - 1200(a)
2-VLV-63-628	ISTC - 1200(a)
2-VLV-63-629	ISTC - 1200(a)
2-VLV-63-630	ISTC - 1200(a)
2-VLV-63-631	ISTC - 1200(a)
2-VLV-63-636	ISTC - 1200(a)
2-VLV-63-638	ISTC - 1200(a)
2-VLV-63-639	ISTC - 1200(a)
2-VLV-63-642	ISTC - 1200(a)
2-VLV-63-645	ISTC - 1200(c)
2-VLV-63-648	ISTC - 1200(a)
2-VLV-63-649	ISTC - 1200(a)
2-VLV-63-650	ISTC - 1200(a)
2-VLV-63-651	ISTC - 1200(a)
2-VLV-63-652	ISTC - 1200(a)
2-VLV-63-653	ISTC - 1200(a)
2-VLV-63-654	ISTC - 1200(a)
2-VLV-63-655	ISTC - 1200(a)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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<b>VALVE ID</b>	<b>EXEMPTION BASIS</b>
2-VLV-63-331A	ISTC - 1200(a)
2-VLV-63-332A	ISTC - 1200(a)
2-VLV-63-333A	ISTC - 1200(a)
2-VLV-63-334A	ISTC - 1200(a)
2-VLV-63-337A	ISTC - 1200(a)
2-VLV-63-338A	ISTC - 1200(a)
2-VLV-63-339A	ISTC - 1200(a)
2-VLV-63-340A	ISTC - 1200(a)
2-VLV-63-341A	ISTC - 1200(a)
2-VLV-63-342A	ISTC - 1200(a)
2-VLV-63-343A	ISTC - 1200(a)
2-VLV-63-344A	ISTC - 1200(a)
2-VLV-63-351A	ISTC - 1200(a)
2-VLV-63-352A	ISTC - 1200(a)
2-VLV-63-353A	ISTC - 1200(a)
2-VLV-63-354A	ISTC - 1200(a)
2-VLV-63-355A	ISTC - 1200(a)
2-VLV-63-356A	ISTC - 1200(a)
2-VLV-63-357A	ISTC - 1200(a)
2-VLV-63-358A	ISTC - 1200(a)
2-VLV-63-359A	ISTC - 1200(a)
2-VLV-63-360A	ISTC - 1200(a)
2-VLV-63-361A	ISTC - 1200(a)
2-VLV-63-362A	ISTC - 1200(a)
2-VLV-63-542	ISTC-1200(b)
2-VLV-63-544	ISTC-1200(b)
2-VLV-63-546	ISTC-1200(b)
2-VLV-63-548	ISTC-1200(b)
2-VLV-63-550	ISTC-1200(b)
2-VLV-63-552	ISTC-1200(b)
2-VLV-63-554	ISTC-1200(b)
2-VLV-63-556	ISTC-1200(b)
2-VLV-63-583	ISTC-1200(b)
2-VLV-63-584	ISTC-1200(b)
2-VLV-63-585	ISTC-1200(b)

<b>VALVE ID</b>	<b>EXEMPTION BASIS</b>
2-VLV-63-515	ISTC - 1200(a)
2-VLV-63-516	ISTC - 1200(a)
2-VLV-63-517	ISTC - 1200(a)
2-VLV-63-518	ISTC - 1200(a)
2-VLV-63-519	ISTC - 1200(a)
2-VLV-63-520	ISTC - 1200(a)
2-VLV-63-521	ISTC - 1200(a)
2-VLV-63-525	ISTC - 1200(c)
2-VLV-63-527	ISTC - 1200(c)
2-VLV-63-529	ISTC - 1200(a)
2-VLV-63-532	ISTC - 1200(a)
2-VLV-63-533	ISTC - 1200(a)
2-VLV-63-537	ISTC - 1200(a)
2-VLV-63-538	ISTC - 1200(a)
2-VLV-63-539	ISTC - 1200(a)
2-VLV-63-540	ISTC - 1200(a)
2-VLV-63-541	ISTC - 1200(a)
2-VLV-63-566	ISTC - 1200(a)
2-VLV-63-567	ISTC - 1200(a)
2-VLV-63-568	ISTC - 1200(a)
2-VLV-63-569	ISTC - 1200(a)
2-VLV-63-571	ISTC - 1200(c)
2-VLV-63-574	ISTC - 1200(a)
2-VLV-63-575	ISTC - 1200(a)
2-VLV-63-576	ISTC - 1200(a)
2-VLV-63-578	ISTC - 1200(a)
2-VLV-63-590	ISTC - 1200(c)
2-VLV-63-591	ISTC - 1200(c)
2-VLV-63-592	ISTC - 1200(a)
2-VLV-63-593	ISTC - 1200(a)
2-VLV-63-594	ISTC - 1200(a)
2-VLV-63-595	ISTC - 1200(a)
2-VLV-63-596	ISTC - 1200(a)
2-VLV-63-597	ISTC - 1200(a)
2-VLV-63-599	ISTC - 1200(c)

<b>VALVE ID</b>	<b>EXEMPTION BASIS</b>
2-VLV-63-656	ISTC - 1200(a)
2-VLV-63-657	ISTC - 1200(a)
2-VLV-63-658	ISTC - 1200(a)
2-VLV-63-659	ISTC - 1200(a)
2-VLV-63-660	ISTC - 1200(a)
2-VLV-63-661	ISTC - 1200(a)
2-VLV-63-667	ISTC - 1200(a)
2-VLV-63-668	ISTC - 1200(a)
2-VLV-63-669	ISTC - 1200(a)
2-VLV-63-670	ISTC - 1200(a)
2-VLV-63-671	ISTC - 1200(a)
2-VLV-63-672	ISTC - 1200(a)
2-VLV-63-673	ISTC - 1200(a)
2-VLV-63-674	ISTC - 1200(a)
2-VLV-63-675	ISTC - 1200(a)
2-VLV-63-706	ISTC - 1200(a)
2-VLV-63-707	ISTC - 1200(a)
2-VLV-63-708	ISTC - 1200(a)
2-VLV-63-750	ISTC - 1200(a)
2-VLV-63-800	ISTC - 1200(c)
2-VLV-63-801	ISTC - 1200(a)
2-VLV-63-816	ISTC - 1200(a)
2-VLV-63-817	ISTC - 1200(a)
2-VLV-63-819	ISTC - 1200(a)
2-VLV-63-823	ISTC - 1200(a)
2-VLV-63-831	ISTC - 1200(a)
2-VLV-63-833	ISTC - 1200(a)
2-VLV-63-835	ISTC - 1200(c)
2-VLV-63-836	ISTC - 1200(a)
2-VLV-63-860	ISTC - 1200(a)
2-VLV-63-861	ISTC - 1200(a)
2-VLV-63-862	ISTC - 1200(a)
2-VLV-63-864	ISTC - 1200(a)
2-VLV-63-866	ISTC - 1200(a)
2-VLV-63-868	ISTC - 1200(a)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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VALVE ID	EXEMPTION BASIS
2-VLV-63-600	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
2-VLV-63-870	ISTC - 1200(a)

**Flow Diagram: 2-47W845-2**

VALVE ID	EXEMPTION BASIS
2-VLV-67-650A	ISTC-1200(c)

**Flow Diagram: 2-47W845-3**

VALVE ID	EXEMPTION BASIS
2-VLV-67-560A	ISTC - 1200(a)
2-VLV-67-560B	ISTC - 1200(a)
2-VLV-67-560C	ISTC - 1200(a)
2-VLV-67-560D	ISTC - 1200(a)
2-VLV-67-561A	ISTC - 1200(a)
2-VLV-67-561B	ISTC - 1200(a)
2-VLV-67-561C	ISTC - 1200(a)
2-VLV-67-561D	ISTC - 1200(a)
2-VLV-67-563A	ISTC - 1200(a)
2-VLV-67-563B	ISTC - 1200(a)
2-VLV-67-563C	ISTC - 1200(a)
2-VLV-67-563D	ISTC - 1200(a)
2-VLV-67-564A	ISTC - 1200(c)
2-VLV-67-564B	ISTC - 1200(c)
2-VLV-67-564C	ISTC - 1200(c)
2-VLV-67-564D	ISTC - 1200(c)
2-VLV-67-566A	ISTA-1100
2-VLV-67-566B	ISTA-1100
2-VLV-67-566C	ISTA-1100
2-VLV-67-566D	ISTA-1100
2-VLV-67-567A	ISTC - 1200(c)
2-VLV-67-567B	ISTC - 1200(c)
2-VLV-67-567C	ISTC - 1200(c)
2-VLV-67-567D	ISTC - 1200(c)
2-VLV-67-572A	ISTC - 1200(c)
2-VLV-67-572B	ISTC - 1200(c)
2-VLV-67-572C	ISTC - 1200(c)
2-VLV-67-572D	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VLV-67-586D	ISTC - 1200(a)
2-VLV-67-587A	ISTC - 1200(c)
2-VLV-67-587B	ISTC - 1200(c)
2-VLV-67-587C	ISTC - 1200(c)
2-VLV-67-587D	ISTC - 1200(c)
2-VLV-67-588A	ISTC - 1200(c)
2-VLV-67-588B	ISTC - 1200(c)
2-VLV-67-588C	ISTC - 1200(c)
2-VLV-67-588D	ISTC - 1200(c)
2-VLV-67-589A	ISTC - 1200(c)
2-VLV-67-589B	ISTC - 1200(c)
2-VLV-67-589C	ISTC - 1200(c)
2-VLV-67-589D	ISTC - 1200(c)
2-VLV-67-688A	ISTC - 1200(a)
2-VLV-67-688B	ISTC - 1200(a)
2-VLV-67-688C	ISTC - 1200(a)
2-VLV-67-688D	ISTC - 1200(a)
2-VLV-67-689A	ISTC - 1200(a)
2-VLV-67-689B	ISTC - 1200(a)
2-VLV-67-689C	ISTC - 1200(a)
2-VLV-67-689D	ISTC - 1200(a)
2-VLV-67-690A	ISTC - 1200(a)
2-VLV-67-690B	ISTC - 1200(a)
2-VLV-67-690C	ISTC - 1200(a)
2-VLV-67-690D	ISTC - 1200(a)
2-VLV-67-691A	ISTC - 1200(c)
2-VLV-67-691B	ISTC - 1200(c)
2-VLV-67-691C	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VLV-67-764	ISTC - 1200(a)
2-VLV-67-765	ISTC - 1200(a)
2-VLV-67-766	ISTC - 1200(a)
2-VLV-67-767	ISTC - 1200(a)
2-VLV-67-768	ISTC - 1200(a)
2-VLV-67-769	ISTC - 1200(a)
2-VLV-67-770	ISTC - 1200(a)
2-VLV-67-771	ISTC - 1200(a)
2-VLV-67-772	ISTC - 1200(a)
2-VLV-67-773	ISTC - 1200(a)
2-VLV-67-774	ISTC - 1200(a)
2-VLV-67-775	ISTC - 1200(a)
2-VLV-67-776	ISTC - 1200(a)
2-VLV-67-777	ISTC - 1200(a)
2-VLV-67-778	ISTC - 1200(a)
2-VLV-67-781A	ISTC - 1200(a)
2-VLV-67-781B	ISTC - 1200(a)
2-VLV-67-781C	ISTC - 1200(a)
2-VLV-67-781D	ISTC - 1200(a)
2-VLV-67-836A	ISTC - 1200(a)
2-VLV-67-837A	ISTC - 1200(a)
2-VLV-67-838A	ISTC - 1200(a)
2-VLV-67-839A	ISTC - 1200(a)
2-VLV-67-840A	ISTC - 1200(a)
2-VLV-67-841A	ISTC - 1200(a)
2-VLV-67-842A	ISTC - 1200(a)
2-VLV-67-843A	ISTC - 1200(a)
2-VLV-67-844A	ISTC - 1200(a)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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VALVE ID	EXEMPTION BASIS
2-VLV-67-574A	ISTC - 1200(a)
2-VLV-67-574B	ISTC - 1200(a)
2-VLV-67-574C	ISTC - 1200(a)
2-VLV-67-574D	ISTC - 1200(a)
2-VLV-67-576A	ISTC - 1200(a)
2-VLV-67-576B	ISTC - 1200(a)
2-VLV-67-576C	ISTC - 1200(a)
2-VLV-67-576D	ISTC - 1200(a)
2-VLV-67-578A	ISTC - 1200(a)
2-VLV-67-578B	ISTC - 1200(a)
2-VLV-67-578C	ISTC - 1200(a)
2-VLV-67-578D	ISTC - 1200(a)
2-VLV-67-579A	ISTC - 1200(a)
2-VLV-67-579B	ISTC - 1200(a)
2-VLV-67-579C	ISTC - 1200(a)
2-VLV-67-579D	ISTC - 1200(a)
2-VLV-67-581A	ISTC - 1200(a)
2-VLV-67-581B	ISTC - 1200(a)
2-VLV-67-581D	ISTC - 1200(a)
2-VLV-67-583A	ISTC - 1200(c)
2-VLV-67-583B	ISTC - 1200(c)
2-VLV-67-583C	ISTC - 1200(c)
2-VLV-67-583D	ISTC - 1200(c)
2-VLV-67-584A	ISTC - 1200(a)
2-VLV-67-584B	ISTC - 1200(a)
2-VLV-67-584C	ISTC - 1200(a)
2-VLV-67-584D	ISTC - 1200(a)
2-VLV-67-586A	ISTC - 1200(a)
2-VLV-67-586B	ISTC - 1200(a)
2-VLV-67-586C	ISTC - 1200(a)
2-VLV-67-651A	ISTC-1200(c)
2-VLV-67-652B	ISTC-1200(c)
2-VLV-67-653B	ISTC-1200(c)
2-VLV-67-786A	ISTA-1100
2-VLV-67-786B	ISTA-1100

VALVE ID	EXEMPTION BASIS
2-VLV-67-691D	ISTC - 1200(c)
2-VLV-67-692A	ISTC - 1200(c)
2-VLV-67-692B	ISTC - 1200(c)
2-VLV-67-692C	ISTC - 1200(c)
2-VLV-67-692D	ISTC - 1200(c)
2-VLV-67-693A	ISTC - 1200(a)
2-VLV-67-693B	ISTC - 1200(a)
2-VLV-67-693C	ISTC - 1200(a)
2-VLV-67-693D	ISTC - 1200(a)
2-VLV-67-694A	ISTC - 1200(a)
2-VLV-67-694B	ISTC - 1200(a)
2-VLV-67-694C	ISTC - 1200(a)
2-VLV-67-694D	ISTC - 1200(a)
2-VLV-67-695A	ISTC - 1200(a)
2-VLV-67-695B	ISTC - 1200(a)
2-VLV-67-695C	ISTC - 1200(a)
2-VLV-67-695D	ISTC - 1200(a)
2-VLV-67-696A	ISTC - 1200(a)
2-VLV-67-696B	ISTC - 1200(a)
2-VLV-67-696C	ISTC - 1200(a)
2-VLV-67-696D	ISTC - 1200(a)
2-VLV-67-697A	ISTC - 1200(a)
2-VLV-67-697B	ISTC - 1200(a)
2-VLV-67-697C	ISTC - 1200(a)
2-VLV-67-697D	ISTC - 1200(a)
2-VLV-67-698A	ISTC - 1200(a)
2-VLV-67-698B	ISTC - 1200(a)
2-VLV-67-698C	ISTC - 1200(a)
2-VLV-67-698D	ISTC - 1200(a)
2-VLV-67-699A	ISTC - 1200(a)
2-VLV-67-699B	ISTC - 1200(a)
2-VLV-67-699C	ISTC - 1200(a)
2-VLV-67-699D	ISTC - 1200(a)
2-VLV-67-700A	ISTC - 1200(a)
2-VLV-67-700B	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
2-VLV-67-845A	ISTC - 1200(a)
2-VLV-67-846A	ISTC - 1200(a)
2-VLV-67-847A	ISTC - 1200(a)
2-VLV-67-848A	ISTC - 1200(a)
2-VLV-67-849A	ISTC - 1200(a)
2-VLV-67-850A	ISTC - 1200(a)
2-VLV-67-851A	ISTC - 1200(a)
2-VLV-67-862A	ISTC - 1200(a)
2-VLV-67-862B	ISTC - 1200(a)
2-VLV-67-863A	ISTC - 1200(a)
2-VLV-67-863B	ISTC - 1200(a)
2-VLV-67-864A	ISTC - 1200(a)
2-VLV-67-864B	ISTC - 1200(a)
2-VLV-67-865A	ISTC - 1200(a)
2-VLV-67-865B	ISTC - 1200(a)
2-VLV-67-917A	ISTC - 1200(a)
2-VLV-67-918A	ISTC - 1200(a)
2-VLV-67-919A	ISTC - 1200(a)
2-VLV-67-920A	ISTC - 1200(a)
2-VLV-67-921A	ISTC - 1200(a)
2-VLV-67-922A	ISTC - 1200(a)
2-VLV-67-923A	ISTC - 1200(a)
2-VLV-67-925A	ISTC - 1200(a)
2-VLV-67-927A	ISTC - 1200(a)
2-VLV-67-928A	ISTC - 1200(a)
2-VLV-67-929A	ISTC - 1200(a)
2-VLV-67-930A	ISTC - 1200(a)
2-VLV-67-931A	ISTC - 1200(a)
2-VLV-67-934A	ISTC - 1200(a)
2-VLV-67-935A	ISTC - 1200(a)
2-VLV-67-936A	ISTC - 1200(a)
2-VLV-67-937A	ISTC - 1200(a)
2-VLV-67-938A	ISTC - 1200(a)
2-VLV-67-939A	ISTC - 1200(a)
2-VLV-67-940A	ISTC - 1200(a)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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VALVE ID	EXEMPTION BASIS
2-VLV-67-786C	ISTA-1100
2-VLV-67-786D	ISTA-1100

VALVE ID	EXEMPTION BASIS
2-VLV-67-700C	ISTC - 1200(a)
2-VLV-67-700D	ISTC - 1200(a)
2-VLV-67-763	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
2-VLV-67-941A	ISTC - 1200(a)
2-VLV-67-942A	ISTC - 1200(a)
2-VLV-67-926A-B	ISTC - 1200(a)

**Flow Diagram: 2-47W845-4**

VALVE ID	EXEMPTION BASIS
2-VLV-67-600A	ISTC - 1200(c)
2-VLV-67-600B	ISTC - 1200(c)
2-VLV-67-601A	ISTC - 1200(c)
2-VLV-67-601B	ISTC - 1200(c)
2-VLV-67-602A	ISTC - 1200(c)
2-VLV-67-602B	ISTC - 1200(c)
2-VLV-67-603A	ISTC - 1200(c)
2-VLV-67-603B	ISTC - 1200(c)
2-VLV-67-604A	ISTC - 1200(c)
2-VLV-67-604B	ISTC - 1200(c)
2-VLV-67-605A	ISTC - 1200(c)
2-VLV-67-605B	ISTC - 1200(c)
2-VLV-67-606A	ISTC - 1200(c)
2-VLV-67-606B	ISTC - 1200(c)
2-VLV-67-607A	ISTC - 1200(c)
2-VLV-67-607B	ISTC - 1200(c)
2-VLV-67-608A	ISTC - 1200(c)
2-VLV-67-608B	ISTC - 1200(c)
2-VLV-67-609A	ISTC - 1200(c)
2-VLV-67-609B	ISTC - 1200(c)
2-VLV-67-610A	ISTC - 1200(c)
2-VLV-67-610B	ISTC - 1200(c)
2-VLV-67-611A	ISTC - 1200(c)
2-VLV-67-611B	ISTC - 1200(c)
2-VLV-67-612A	ISTC - 1200(c)
2-VLV-67-612B	ISTC - 1200(c)
2-VLV-67-613A	ISTC - 1200(c)
2-VLV-67-613B	ISTC - 1200(c)
0-VLV-67-648A	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VLV-67-707B	ISTC - 1200(c)
2-VLV-67-708A	ISTC - 1200(c)
2-VLV-67-708B	ISTC - 1200(c)
2-VLV-67-709A	ISTC - 1200(c)
2-VLV-67-709B	ISTC - 1200(c)
2-VLV-67-737A	ISTC - 1200(c)
2-VLV-67-737B	ISTC - 1200(c)
2-VLV-67-764B	ISTC - 1200(c)
2-VLV-67-765B	ISTC - 1200(c)
2-VLV-67-766A	ISTC - 1200(c)
2-VLV-67-791A	ISTC - 1200(c)
2-VLV-67-791B	ISTC - 1200(c)
2-VLV-67-792A	ISTC - 1200(c)
2-VLV-67-792B	ISTC - 1200(c)
2-VLV-67-793	ISTC - 1200(c)
2-VLV-67-794	ISTC - 1200(c)
2-VLV-67-852A	ISTC - 1200(a)
2-VLV-67-852B	ISTC - 1200(a)
2-VLV-67-853A	ISTC - 1200(a)
2-VLV-67-853B	ISTC - 1200(a)
2-VLV-67-866A	ISTC - 1200(a)
2-VLV-67-866B	ISTC - 1200(a)
2-VLV-67-867A	ISTC - 1200(a)
2-VLV-67-867B	ISTC - 1200(a)
2-VLV-67-868A	ISTC - 1200(a)
2-VLV-67-868B	ISTC - 1200(a)
2-VLV-67-869A	ISTC - 1200(a)
2-VLV-67-869B	ISTC - 1200(a)
2-VLV-67-870A	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
2-VLV-67-878B	ISTC - 1200(a)
2-VLV-67-880A	ISTC - 1200(a)
2-VLV-67-880B	ISTC - 1200(a)
2-VLV-67-881A	ISTC - 1200(a)
2-VLV-67-881B	ISTC - 1200(a)
1-VLV-67-882A	ISTC - 1200(a)
2-VLV-67-882A	ISTC - 1200(a)
2-VLV-67-882B	ISTC - 1200(a)
2-VLV-67-883A	ISTC - 1200(a)
2-VLV-67-883B	ISTC - 1200(a)
2-VLV-67-884A	ISTC - 1200(a)
2-VLV-67-884B	ISTC - 1200(a)
2-VLV-67-885A	ISTC - 1200(a)
2-VLV-67-885B	ISTC - 1200(a)
2-VLV-67-886A	ISTC - 1200(a)
2-VLV-67-886B	ISTC - 1200(a)
2-VLV-67-888A	ISTC - 1200(a)
2-VLV-67-888B	ISTC - 1200(a)
2-VLV-67-1516	ISTC - 1200(a)
2-VLV-67-1517	ISTC - 1200(a)
2-VLV-67-1518	ISTC - 1200(a)
2-VLV-67-1519	ISTC - 1200(a)
2-VLV-67-1545A	ISTC - 1200(c)
2-VLV-67-1545B	ISTC - 1200(c)
2-VLV-67-1546B	ISTC - 1200(a)
2-VLV-67-1547A	ISTC - 1200(a)
2-VLV-67-1548A	ISTC - 1200(a)
2-VLV-67-1548B	ISTC - 1200(a)
2-VLV-67-1549A	ISTC - 1200(c)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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VALVE ID	EXEMPTION BASIS
0-VLV-67-648B	ISTC - 1200(c)
0-VLV-67-673A	ISTC - 1200(c)
0-VLV-67-673B	ISTC - 1200(c)
0-VLV-67-674A	ISTC - 1200(c)
0-VLV-67-674B	ISTC - 1200(c)
2-VLV-67-680	ISTC - 1200(c)
2-VLV-67-683	ISTC - 1200(c)
0-VLV-67-684A	ISTC - 1200(c)
0-VLV-67-684B	ISTC - 1200(c)
0-VLV-67-685A	ISTC - 1200(c)
0-VLV-67-685B	ISTC - 1200(c)
2-VLV-67-704A	ISTC - 1200(c)
2-VLV-67-704B	ISTC - 1200(c)
2-VLV-67-705A	ISTC - 1200(c)
2-VLV-67-705B	ISTC - 1200(c)
2-VLV-67-707A	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VLV-67-870B	ISTC - 1200(a)
2-VLV-67-871A	ISTC - 1200(a)
2-VLV-67-871B	ISTC - 1200(a)
2-VLV-67-872A	ISTC - 1200(a)
2-VLV-67-872B	ISTC - 1200(a)
2-VLV-67-873A	ISTC - 1200(a)
2-VLV-67-873B	ISTC - 1200(a)
2-VLV-67-874A	ISTC - 1200(a)
2-VLV-67-874B	ISTC - 1200(a)
2-VLV-67-875A	ISTC - 1200(a)
2-VLV-67-875B	ISTC - 1200(a)
2-VLV-67-876A	ISTC - 1200(a)
2-VLV-67-876B	ISTC - 1200(a)
2-VLV-67-877A	ISTC - 1200(a)
2-VLV-67-877B	ISTC - 1200(a)
2-VLV-67-878A	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
2-VLV-67-1549B	ISTC - 1200(c)
2-VLV-67-1550A	ISTC - 1200(c)
2-VLV-67-1550B	ISTC - 1200(c)
2-VLV-67-1551A	ISTC - 1200(c)
2-VLV-67-1551B	ISTC - 1200(c)
2-VLV-67-1568	ISTC - 1200(a)
2-VLV-67-1569	ISTC - 1200(a)
2-VLV-67-1570	ISTC - 1200(a)
2-VLV-67-1571	ISTC - 1200(a)
2-VLV-67-1572	ISTC - 1200(a)
2-VLV-67-1573	ISTC - 1200(a)
2-VLV-67-1574	ISTC - 1200(a)
2-VLV-67-1575	ISTC - 1200(a)
2-VLV-67-1622	ISTC - 1200(c)
2-VLV-67-1623	ISTC - 1200(c)
0-VLV-67-1626	ISTC - 1200(a)
0-VLV-67-1627	ISTC - 1200(a)

**Flow Diagram: 2-47W859-3-ISI**

VALVE ID	EXEMPTION BASIS
2-VLV-70-292A	ISTC - 1200(a)
2-VLV-70-293A	ISTC - 1200(a)
2-VLV-70-294A	ISTC - 1200(a)
2-VLV-70-295A	ISTC - 1200(a)
2-VLV-70-296A	ISTC - 1200(a)
2-VLV-70-297A	ISTC - 1200(a)
2-VLV-70-298A	ISTC - 1200(a)
2-VLV-70-299A	ISTC - 1200(a)
2-VLV-70-300A	ISTC - 1200(a)
2-VLV-70-301A	ISTC - 1200(a)
2-VLV-70-302A	ISTC - 1200(a)
2-VLV-70-303A	ISTC - 1200(a)
2-VLV-70-304A	ISTC - 1200(a)
2-VLV-70-305A	ISTC - 1200(a)
2-VLV-70-306A	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
2-VLV-70-574	ISTC - 1200(c)
2-VLV-70-575	ISTC - 1200(a)
2-VLV-70-576	ISTC - 1200(a)
2-VLV-70-577	ISTC - 1200(c)
2-VLV-70-579	ISTC - 1200(a)
2-VLV-70-580	ISTC - 1200(c)
2-VLV-70-581	ISTC - 1200(a)
2-VLV-70-582A	ISTC - 1200(a)
2-VLV-70-582B	ISTC - 1200(a)
2-VLV-70-583	ISTC - 1200(a)
2-VLV-70-585	ISTC - 1200(c)
2-VLV-70-586	ISTC - 1200(c)
2-VLV-70-587	ISTC - 1200(c)
2-VLV-70-588	ISTC - 1200(a)
2-VLV-70-600	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
2-VLV-70-696B	ISTC - 1200(c)
2-VLV-70-696C	ISTC - 1200(c)
2-VLV-70-696D	ISTC - 1200(c)
2-VLV-70-697A	ISTC - 1200(a)
2-VLV-70-697B	ISTC - 1200(a)
2-VLV-70-697C	ISTC - 1200(a)
2-VLV-70-697D	ISTC - 1200(a)
2-VLV-70-699	ISTC - 1200(a)
2-VLV-70-700	ISTC - 1200(c)
2-VLV-70-701	ISTC - 1200(a)
2-VLV-70-702	ISTC - 1200(c)
2-VLV-70-702A	ISTC - 1200(a)
2-VLV-70-702B	ISTC - 1200(a)
2-VLV-70-702C	ISTC - 1200(a)
2-VLV-70-702D	ISTC - 1200(a)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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VALVE ID	EXEMPTION BASIS
2-VLV-70-307A	ISTC - 1200(a)
2-VLV-70-308A	ISTC - 1200(a)
2-VLV-70-309A	ISTC - 1200(a)
2-VLV-70-310A	ISTC - 1200(a)
2-VLV-70-311A	ISTC - 1200(a)
2-VLV-70-312A	ISTC - 1200(a)
2-VLV-70-313A	ISTC - 1200(a)
2-VLV-70-314A	ISTC - 1200(a)
2-VLV-70-315A	ISTC - 1200(a)
2-VLV-70-316A	ISTC - 1200(a)
2-VLV-70-317A	ISTC - 1200(a)
2-VLV-70-318A	ISTC - 1200(a)
2-VLV-70-319A	ISTC - 1200(a)
2-VLV-70-320A	ISTC - 1200(a)
2-VLV-70-321A	ISTC - 1200(a)
2-VLV-70-322A	ISTC - 1200(a)
2-VLV-70-323A	ISTC - 1200(a)
2-VLV-70-324A	ISTC - 1200(a)
2-VLV-70-325A	ISTC - 1200(a)
2-VLV-70-326A	ISTC - 1200(a)
2-VLV-70-327A	ISTC - 1200(a)
2-VLV-70-328A	ISTC - 1200(a)
2-VLV-70-329A	ISTC - 1200(a)
2-VLV-70-330A	ISTC - 1200(a)
2-VLV-70-331A	ISTC - 1200(a)
2-VLV-70-332A	ISTC - 1200(a)
2-VLV-70-333A	ISTC - 1200(a)
2-VLV-70-334A	ISTC - 1200(a)
2-VLV-70-335A	ISTC - 1200(a)
2-VLV-70-336A	ISTC - 1200(a)
2-VLV-70-337A	ISTC - 1200(a)
2-VLV-70-338A	ISTC - 1200(a)
2-VLV-70-339A	ISTC - 1200(a)
2-VLV-70-373A	ISTC - 1200(a)
2-VLV-70-374A	ISTC - 1200(a)

VALVE ID	EXEMPTION BASIS
2-VLV-70-637	ISTC - 1200(c)
2-VLV-70-661	ISTC - 1200(c)
2-VLV-70-662	ISTC - 1200(c)
2-VLV-70-669	ISTC - 1200(c)
2-VLV-70-670	ISTC - 1200(c)
2-VLV-70-672	ISTC - 1200(c)
2-VLV-70-673A	ISTC - 1200(c)
2-VLV-70-673B	ISTC - 1200(c)
2-VLV-70-674A	ISTC - 1200(a)
2-VLV-70-674B	ISTC - 1200(a)
2-VLV-70-677A	ISTC - 1200(c)
2-VLV-70-677B	ISTC - 1200(c)
2-VLV-70-678A	ISTC - 1200(a)
2-VLV-70-678B	ISTC - 1200(a)
2-VLV-70-678C	ISTC - 1200(a)
2-VLV-70-678D	ISTC - 1200(a)
2-VLV-70-678E	ISTC - 1200(a)
2-VLV-70-680	ISTC - 1200(c)
2-VLV-70-684A	ISTC - 1200(c)
2-VLV-70-684B	ISTC - 1200(c)
2-VLV-70-684C	ISTC - 1200(c)
2-VLV-70-684D	ISTC - 1200(c)
2-VLV-70-685A	ISTC - 1200(a)
2-VLV-70-685B	ISTC - 1200(a)
2-VLV-70-686A	ISTC - 1200(a)
2-VLV-70-686B	ISTC - 1200(a)
2-VLV-70-688	ISTC - 1200(c)
2-VLV-70-689	ISTC - 1200(a)
2-VLV-70-690	ISTC - 1200(c)
2-VLV-70-691A	ISTC - 1200(a)
2-VLV-70-691B	ISTC - 1200(a)
2-VLV-70-691C	ISTC - 1200(a)
2-VLV-70-691D	ISTC - 1200(a)
2-VLV-70-691E	ISTC - 1200(a)
2-VLV-70-693	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VLV-70-702E	ISTC - 1200(a)
2-VLV-70-702F	ISTC - 1200(a)
2-VLV-70-704A	ISTC - 1200(a)
2-VLV-70-705	ISTC - 1200(c)
2-VLV-70-706	ISTC - 1200(a)
2-VLV-70-726	ISTC - 1200(a)
2-VLV-70-727A	ISTC - 1200(c)
2-ISV-70-727B	ISTC - 1200(c)
2-VLV-70-731A	ISTC - 1200(c)
2-ISV-70-731B	ISTC - 1200(c)
2-VLV-70-733	ISTC - 1200(a)
2-VLV-70-734	ISTC - 1200(c)
2-VLV-70-735	ISTC - 1200(a)
2-VLV-70-736	ISTC - 1200(c)
2-VLV-70-737	ISTC - 1200(a)
2-VLV-70-738	ISTC - 1200(a)
2-ISV-70-739	ISTC - 1200(c)
2-ISV-70-740	ISTC - 1200(c)
2-VLV-70-742	ISTC - 1200(a)
2-VLV-70-759	ISTC - 1200(a)
2-VLV-70-760	ISTC - 1200(a)
2-VLV-70-761	ISTC - 1200(a)
2-VLV-70-762	ISTC - 1200(a)
2-VLV-70-763	ISTC - 1200(a)
2-VLV-70-764	ISTC - 1200(a)
2-VLV-70-765	ISTC - 1200(a)
2-VLV-70-766	ISTC - 1200(c)
2-VLV-70-767	ISTC - 1200(a)
2-VLV-70-768	ISTC - 1200(a)
2-VLV-70-769	ISTC - 1200(a)
2-VLV-70-770	ISTC - 1200(c)
2-VLV-70-784	ISTC - 1200(a)
2-VLV-70-801	ISTC - 1200(c)
2-VLV-70-802	ISTC - 1200(c)
0-ISV-70-1043	ISTC - 1200(c)



**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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VALVE ID	EXEMPTION BASIS
2-VLV-70-375A	ISTC - 1200(a)
2-VLV-70-376A	ISTC - 1200(a)
2-VLV-70-389A	ISTC - 1200(a)
2-VLV-70-390A	ISTC - 1200(a)
2-VLV-70-573	ISTC - 1200(c)

**Flow Diagram: 2-47W881-6-ISI**

VALVE ID	EXEMPTION BASIS
2-TV-43-464	ISTC - 1200(a)
2-VLV-43-484	ISTC - 1200(c)
2-VLV-43-489	ISTC - 1200(c)

**Flow Diagram: 47W485-2**

VALVE ID	EXEMPTION BASIS
1-VLV-67-540A	ISTB1200(c)
2-VLV-67-540A	ISTB1200(c)
1-VLV-67-540B	ISTB1200(c)
2-VLV-67-540B	ISTB1200(c)
1-VLV-67-541A	ISTB1200(c)
2-VLV-67-541A	ISTB1200(c)
1-VLV-67-541B	ISTB1200(c)

**Flow Diagram: 47W801-1**

VALVE ID	EXEMPTION BASIS
1-VLV-1-619	ISTC-1200(c)

**Flow Diagram: 47W801-3**

VALVE ID	EXEMPTION BASIS
2-FCV-1-51	ISTC-1200skid

VALVE ID	EXEMPTION BASIS
2-VLV-70-695A	ISTC - 1200(c)
2-VLV-70-695B	ISTC - 1200(c)
2-VLV-70-695C	ISTC - 1200(c)
2-VLV-70-695D	ISTC - 1200(c)
2-VLV-70-696A	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VLV-43-492	ISTC - 1200(a)
2-VLV-43-493	ISTC - 1200(a)
2-VLV-43-494	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VLV-67-541B	ISTB1200(c)
1-VLV-67-947B	ISTC-1200(c)
1-VLV-67-948A	ISTC-1200(c)
1-VLV-67-948B	ISTC-1200(c)
0-VLV-67-1615	ISTC-1200(c)
0-VLV-67-1616	ISTC-1200(c)
0-VLV-67-1617	ISTC-1200(c)
0-VLV-67-1618	ISTC-1200(c)

VALVE ID	EXEMPTION BASIS
1-VLV-1-620	ISTC-1200(c)

VALVE ID	EXEMPTION BASIS
1-FCV-1-51	ISTC-1200skid

VALVE ID	EXEMPTION BASIS
2-ISV-70-1043	ISTC - 1200(c)
0-ISV-70-1044	ISTC - 1200(c)
2-ISV-70-1044	ISTC - 1200(c)
2-ISV-70-1201	ISTC - 1200(c)
2-ISV-70-1202	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
2-VLV-43-497	ISTC - 1200(a)
2-VLV-43-498	ISTC - 1200(a)
2-VLV-43-499	ISTC - 1200(c)

VALVE ID	EXEMPTION BASIS
1-VLV-67-590A	ISTB1200(c)
1-VLV-67-590B	ISTB1200(c)
2-VLV-67-947A	ISTC-1200(c)
2-VLV-67-947B	ISTC-1200(c)
2-VLV-67-948A	ISTC-1200(c)
2-VLV-67-948B	ISTC-1200(c)
1-VLV-67-1619	ISTC-1200(c)
0-VLV-67-948B	ISTC-1200(c)

VALVE ID	EXEMPTION BASIS
1-VLV-1-621	ISTC-1200(c)
1-VLV-1-622	ISTC-1200(c)

**Attachment 8 - Code Class 1, 2, and 3 Valves Exempt**

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**Flow Diagram: 47W809-1**

VALVE ID	EXEMPTION BASIS
1-FCV-62-9	ISTA-1100
2-FCV-62-9	ISTA-1100
1-FCV-62-22	ISTA-1100
2-FCV-62-22	ISTA-1100
1-FCV-62-35	ISTA-1100
2-FCV-62-35	ISTA-1100
1-FCV-62-48	ISTA-1100
2-FCV-62-48	ISTA-1100
1-FCV-62-54	ISTA-1100
1-FCV-62-83	ISTA-1100
2-FCV-62-83	ISTA-1100
1-FSV-62-125	ISTA-1100
2-FSV-62-125	ISTA-1100

VALVE ID	EXEMPTION BASIS
2-FCV-62-54	ISTA-1100
2-FCV-62-55	ISTA-1100
1-FCV-62-55	ISTA-1100
1-FCV-62-56	ISTC-1200(b)
2-FCV-62-56	ISTA-1100
2-FCV-62-59	ISTA-1100
1-FCV-62-59	ISTA-1100
1-FCV-62-89	ISTC-1200(b)
1-VLV-62-547	ISTA-1100
2-VLV-62-547	ISTA-1100
2-VLV-62-548	ISTA-1100
1-VLV-62-548	ISTA-1100
1-VLV-62-658	ISTA-1100

VALVE ID	EXEMPTION BASIS
1-FCV-62-53	ISTA-1100
2-FCV-62-53	ISTA-1100
1-TCV-62-79	ISTA-1100
2-TCV-62-79	ISTA-1100
1-FCV-62-85	ISTA-1100
2-FCV-62-85	ISTA-1100
1-FCV-62-86	ISTA-1100
2-FCV-62-86	ISTA-1100
2-VLV-62-658	ISTA-1100
1-VLV-62-694	ISTA-1100
2-VLV-62-694	ISTA-1100
1-VLV-62-1095	ISTA-1100
2-VLV-62-1095	ISTA-1100

**Flow Diagram: 47W809-5**

VALVE ID	EXEMPTION BASIS
0-FCV-62-241	ISTA-1100

VALVE ID	EXEMPTION BASIS
1-FCV-62-237	ISTA-1100

VALVE ID	EXEMPTION BASIS
2-FCV-62-237	ISTA-1100

**Flow Diagram: 47W813-1**

VALVE ID	EXEMPTION BASIS
1-FCV-68-22	ISTA-1100
1-PCV-68-340B	ISTC-1200(b)

VALVE ID	EXEMPTION BASIS
2-FCV-68-22	ISTA-1100
1-PCV-68-340D	ISTC-1200(b)

VALVE ID	EXEMPTION BASIS
2-PCV-68-340B	ISTC-1200(b)
2-PCV-68-340D	ISTC-1200(b)

**Flow Diagram: 47W845-1**

VALVE ID	EXEMPTION BASIS
1-FCV-67-65	ISTA-1100
2-FCV-67-65	ISTA-1100

VALVE ID	EXEMPTION BASIS
1-FCV-67-68	ISTA-1100
2-FCV-67-68	ISTA-1100

VALVE ID	EXEMPTION BASIS
1-VLV-67-513B	ISTA-1100
2-VLV-67-513B	ISTA-1100

**Flow Diagram: 47W845-2**

VALVE ID	EXEMPTION BASIS
1-CKV-67-1577	ISTA-1100
2-CKV-67-1577	ISTA-1100

VALVE ID	EXEMPTION BASIS
1-VLV-67-947A	ISTC-1200(c)
1-VLV-67-1614	ISTC-1200(c)

VALVE ID	EXEMPTION BASIS
1-VLV-67-513A	ISTA-1100
2-VLV-67-513A	ISTA-1100

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Flow Diagram: 47W845-4

VALVE ID	EXEMPTION BASIS
0-FSV-32-87	ISTC-1200skid

Flow Diagram: 47W845-6

VALVE ID	EXEMPTION BASIS
0-FSV-32-61	ISTC-1200skid

Flow Diagram: 47W848-1

VALVE ID	EXEMPTION BASIS
1-VLV-32-291	ISTC-1200(b)
2-VLV-32-343	ISTC-1200(b)

VALVE ID	EXEMPTION BASIS
1-VLV-32-283	ISTC-1200(b)
2-VLV-32-352	ISTC-1200(b)

VALVE ID	EXEMPTION BASIS
1-VLV-32-371	ISTC-1200(b)
2-VLV-32-381	ISTC-1200(b)

Flow Diagram: 47W850-10

VALVE ID	EXEMPTION BASIS
1-VLV-26-1258	ISTC-1200(a)

VALVE ID	EXEMPTION BASIS
1-VLV-26-1293	ISTC-1200(a)

VALVE ID	EXEMPTION BASIS
2-VLV-26-1258	ISTC-1200(a)
2-VLV-26-1293	ISTC-1200(a)

Flow Diagram: 47W855-1

VALVE ID	EXEMPTION BASIS
0-VLV-78-509	ISTA-1100

VALVE ID	EXEMPTION BASIS
0-VLV-78-510	ISTA-1100

VALVE ID	EXEMPTION BASIS
0-VLV-78-586	ISTA-1100

Flow Diagram: 47W859-1

VALVE ID	EXEMPTION BASIS
1-VLV-70-540	ISTA-1100

VALVE ID	EXEMPTION BASIS
2-VLV-70-540	ISTA-1100

Flow Diagram: 47W859-2/3

VALVE ID	EXEMPTION BASIS
1-FCV-70-139	ISTA-1100
1-VLV-70-671	ISTA-1100

VALVE ID	EXEMPTION BASIS
2-FCV-70-139	ISTA-1100
1-VLV-70-676A	ISTA-1100
1-VLV-70-676B	ISTA-1100

VALVE ID	EXEMPTION BASIS
2-VLV-70-671	ISTA-1100
2-VLV-70-676A	ISTA-1100
2-VLV-70-676B	ISTA-1100