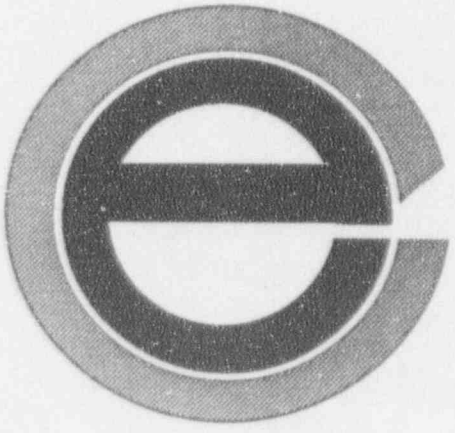
Third Ten-Year Inspection Interval

Inservice Inspection Plan

for
Quad Cities Station
Units 1 and 2



COMMONWEALTH EDISON COMPANY

THIRD TEN-YEAR INSPECTION INTERVAL
INSERVICE INSPECTION PLAN
FOR
QUAD CITIES NUCLEAR POWER STATION UNITS 1 AND 2

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REVISION SUMMARY SHEET

Section	Effective Page(s)	Revision	Date
1	1-1	0	09/10/92
2	2-1	0	09/10/92
3	3-1 to 3-7	0	09/10/92
4	4-1 to 4-2	0	09/10/92
5	5-1	0	09/10/92
6	6-1 to 6-2	0	09/10/92
7	7-1 to 7-7	0	09/10/92
8	8-1 to 8-6	0	09/10/92
9	9-1 to 9-4	0	09/10/92
10	10-1 to 10-31	0	09/10/92
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13	13-1 to 13-25	0	09/10/92

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INTRODUCTION AND PLAN DESCRIPTION

1. Introduction

1.1 This Inservice Inspection Plan outlines the requirements for the examination of ISI Class 1, 2, and 3 pressure retaining components and their supports at Quad Cities Nuclear Power Station, Units 1 and 2.

1.2 This Inservice Inspection Plan will be effective from February 18, 1993 through and including February 18, 2003 for Quad Cities Unit 1 and effective from March 10, 1993 through and including March 10, 2003, for Quad Cities Unit 2 for the third ten year interval.

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

2. Basis of Inservice Inspection Plan

2.1 This Plan was developed in accordance with the requirements delineated in the 1989 Edition of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, Subsections IWA, IWB, IWC, and IWD, per Inspection Program B of IWA-2432. The ISI Plan for Subsection IWF was developed in accordance with Code Case N-491 in anticipation of NRC approval by-way-of Regulatory Guide 1.147. This approach was discussed with Mr. Gil Millman and Mr. George Johnson of the NRC and found to be technically acceptable. Inspection Program B of Table 2410-2 in Code Case N-491 will be employed. A relief request (CR-06) covering the use of Case N-491 is included in Section 10.

2.2 An ISI Plan per Subsections IWE and IWL are not included in this submittal. These subsections are currently not required to be part of Inservice Inspection programs per 10CFR50.55a.

2.3 As allowed by 10 CFR 50.55a(c)(B) and USNRC Regulatory Guide 1.147, Revision 9, the following Code Cases are being incorporated into the Quad Cities ISI Program:

Case N-460 - Alternative Examination Coverage for Class 1 and Class 2 Welds, Section XI, Division 1.

Case N-498 - Alternate Rules for 10 Year Hydrostatic Pressure Testing for Class 1 and 2 Systems, Section XI, Division 1.

3. System Classification

3.1 The construction permit for Quad Cities Units 1 and 2 was issued on February 15, 1967. At that time, the ASME Boiler and Pressure Vessel Code covered only nuclear vessels. Piping, pumps, and valves were built primarily to the rules of USAS B31.1.0-1967, Power Piping.

3.2 The system classifications used for the Inservice Inspection Program are based on the requirements of 10 CFR 50 and Regulatory Guide 1.26, Revision 3. These classifications were developed for the sole purpose of assigning appropriate inservice inspection requirements for water, steam, and radioactive waste containing components.

3.3 Components within the reactor coolant pressure boundary, as defined in 10 CFR 50.2, are designated as Inservice Inspection Class 1, while other safety related components are designated as Inservice Inspection Class 2 or 3 in accordance with the guidelines of Regulatory Guide 1.26, Revision 3. Pursuant to 10 CFR 50.55a, paragraph (a)(1), the inservice inspection requirements of the ASME Boiler and Pressure Vessel Code, Section XI are assigned to these components, within the constraints of existing plant design.

4. Augmented Inservice Inspection Requirements

4.1 The following augmented inservice inspection requirements are being implemented at Quad Cities Station Units 1 and 2 in accordance with the latest licensing agreements pertaining to these requirements:

4.1.1 Generic Letter 88-01, Revision 2, NRC Position on IGSCC in BWR Austenitic Stainless Steel Piping.

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

4.1.3 NUREG-0619, BWR Feedwater Nozzle and Control Rod Drive Return Line Nozzle Cracking, dated November 1980.

5. Contents of Inservice Inspection Plan

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

5.1.1 Common to Both

Sections 1, 2, 3, and 5.

5.1.2 Inservice Inspection

Sections 4, 6, 7, 8, 9, and 10.

5.1.3 System Pressure Testing

Sections 11, 12, and 13.

5.2 **Section 1 - Table of Contents**

Provides the organizational format for the Inservice Inspection Plan.

5.3 **Section 2 - Revision Summary Sheet**

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

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

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

5.5 **Section 4 - Reactor Coolant Pressure Boundary Normal Make-Up Calculation**

Provides the basis for determining the size of ISI Class 1 water and steam lines exempted from surface and volumetric examination requirements per IWB-1200.

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

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

5.7 Section 6 - List of Applicable ISI Component and Piping Drawings

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

5.8 Sections 7 and 8 - Inservice Inspection Summary Tables

The Inservice Inspection Summary Tables for Units 1, 1/2, and 2 provide the following information:

5.8.1 Examination Category

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

5.8.2 Item Number and Item Description

Provides the item number and description as defined in ASME Section XI, Tables IWB-2500-1, IWC-2500-1, IWD-2500-1, and IWF-2500-1. Only those item numbers applicable to Quad Cities Station are identified.

5.8.3 Exam Requirements

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

5.8.4 Number of Components

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

5.8.5 Relief Request

Provides a listing of relief requests applicable to the item number. If a relief request number is identified, see the corresponding relief request in Section 10.

5.8.6 Technical Approach and Position

Provides a listing of technical approach and positions applicable to the item number. If a technical approach and position number is identified, see the corresponding technical approach and position in Section 9.

5.9 Section 9 - Inservice Inspection Technical Approach and Positions

When the requirements of ASME Section XI are not easily interpreted, Quad Cities Station has reviewed general licensing/regulatory requirements and industry practice to determine a practical method of implementing the Code requirements. The technical approach and position documents contained in this section have been provided to clarify Quad Cities Station's implementation of ASME Section XI requirements for inservice inspection. An index which summarizes each technical approach/position is included at the beginning of this section.

5.10 Section 10 - Inservice Inspection Relief Requests

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

5.11 Section 11 - System Pressure Testing Summary Table

The Unit 1 and 2 System Pressure Testing Summary Table, Section 11, provides the following information:

5.11.1 Examination Category

Provides the examination category as identified in ASME Section XI, Tables IWB-2500-1, IWC-2500-1, and IWD-2500-1.

5.11.2 Item Number

Provides the item number as identified in ASME Section XI, Tables IWB-2500-1, IWC-2500-1 and IWD-2500-1. Only those examination item numbers applicable to Quad Cities Station are included.

5.11.3 Description of Parts Examined

Provides the description of parts examined as identified in ASME Section XI, Tables IWB-2500-1, IWC-2500-1, and IWD-2500-1.

5.11.4 Examination Requirements

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

5.11.5 System

Provides the Quad Cities system applicable to the Technical Approach and Position and Relief Request of Sections 12 and 13, respectively.

5.11.6 Relief Request

Provides a listing of applicable relief requests. If a relief request number is identified, see the corresponding relief request in Section 13.

5.11.7 Technical Approach and Position

Provides a listing of applicable technical approach and positions. If a technical approach and position number is identified, see the corresponding technical approach and position in Section 12.

5.12 Section 12 - System Pressure Testing Technical Approach and Positions

When the requirements of ASME Section XI are not easily interpreted, Quad Cities Station has reviewed general licensing/regulatory requirements and industry practice to determine a practical method of implementing the Code requirement. The technical approach and position documents contained in this section have been provided to clarify Quad Cities Station's implementation of ASME Section XI requirements for system pressure testing. An index which summarizes each technical approach/position is included at the beginning of this section.

5.13 Section 13 - System Pressure Testing Relief Requests

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

REACTOR COOLANT PRESSURE BOUNDARY
NORMAL MAKE-UP CALCULATION
(Page 1 of 2)

References:
1. Quad Cities Units 1 and 2 UFSAR
2. General Electric Boiling Water Reactor System Department, Document No. 22A2750, Rev. 6

Calculation:

In determining the size of the liquid and steam lines exempt from surface and volumetric examination per IWB-1220(a), liquid lines were defined as those which penetrate the reactor pressure vessel (RPV) below the normal water level and steam lines as those which penetrate the RPV above the normal water level.

The reactor coolant makeup system at Quad Cities Station consists of the following system(s):

System	Pump Flow Rate	Maximum Fluid Temp.	Emergency Power
Safe Shutdown Reference 1, Revision 6, Section 10.16, pgs 97 & 100	400 GPM	140° F	Yes, On-site
RCIC Reference 1, Revision 6, Section 4.5, pg. 76 .	400 GPM	140° F	Yes, On-site

REACTOR COOLANT PRESSURE BOUNDARY
NORMAL MAKE-UP CALCULATION
(Page 2 of 2)

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

$$D_w = \frac{\sqrt{M_{70}\left[\frac{V_{70}}{V_{140}}\right]}}{17.8}$$ [Ref. 2 p. 7]

$$D_s = 2D_w$$

where:

D_w = exemption diameter for water in inches of inside pipe diameter.

D_s = exemption diameter for steam in inches of inside pipe diameter.

M_{70} = Volumetric flow rate of make-up water at 70° F in gal/min.

V_{70} = Specific volume of water at 70° F in ft^3/lb$_m$.

V_{140} = Specific volume of water at 140° F in ft^3/lb$_m$.

$$D_w = \frac{\sqrt{800\left[\frac{0.01605}{0.01629}\right]}}{17.8} = 1.57'' \text{ I.D.}$$

$$D_s = 2 \times 1.57'' = 3.14'' \text{ I.D.}$$

LIST OF APPLICABLE PIPING AND INSTRUMENTATION DIAGRAMS

(Page 1 of 1)

Unit 1 Drawing Number	Unit 2 Drawing Number	Title
M-13, SH. 1 & 2	M-60, SH. 1 & 2	Diagram of Main Steam Piping (MS)
M-15	M-62	Diagram of Reactor Feed Piping (FW)
M-22, SH. 1 & 3	M-69 SH. 1 & 3	Diagram of D.G. Cooling Water Piping (DGCW)
M-34 SH. 1	M-76 SH. 1	Diagram of Pressure Suppression Piping
M-35, SH. 1 & 2	M-77, SH. 1 & 2	Diagram of Nuclear Boiler & Reactor Recirculation Piping (RX & RR)
M-36	M-78	Diagram of Core Spray Piping (CS)
M-37	M-79	Diagram of R.H.R.S. Piping (RHR & RHRSW)
M-39, SH. 1 & 2	M-81, SH. 1 & 2	Diagram of R.H.R.S. Piping (RHR & RHRSW)
M-40	M-82	Diagram of Standby Liquid Control Piping (SBLC)
M-41 SH. 1	M-83 SH. 1	Diagram of Control Rod Drive Hydraulic Piping (CRD)
M-46	M-87	Diagram of H.P. Coolant Injection Piping (HPCI)
M-47	M-88	Diagram of Reactor Water Clean-Up Piping (RWCU)
M-50	M-89	Reactor Core Isolation Cooling (RCIC) Piping
M-1056, SH. 1	M-1061, SH. 1	Diagram of High Radiation Sampling System Piping
M-1551	M-1551	Diagram of Control Room HVAC

LIST OF APPLICABLE ISI ISOMETRIC DRAWINGS

(Page 1 of 2)

Unit 1 Drawing Number	Unit 2 Drawing Number	Title
M-3101, SH. 1 & 2	M-3111, SH. 1 & 2	ISI Class 1 Main Steam Piping
M-3101, SH. 4	M-3111, SH. 4	ISI Class 1 Main Steam Piping
M-3102, SH. 1 & 2	M-3112, SH. 1 & 2	ISI Class 1 Reactor Feedwater Piping
M-3103, SH. 1-5	M-3113, SH. 1-5	ISI Class 1 Reactor Recirculation Piping and Jet Pump Instrument
M-3104, SH. 1 & 2	M-3114, SH. 1 & 2	ISI Class 1 Core Spray Piping
M-3105, SH. 1-3	M-3115, SH. 1-3	ISI Class 1 Residual Heat Removal System
M-3106, SH. 1	M-3116, SH. 1	ISI Class 1 System Standby Liquid Control System
M-3107, SH. 1	M-3117, SH. 1	ISI Class 1 Control Rod Drive Piping
M-3108, SH. 1	M-3118, SH. 1	ISI Class 1 High Pressure Coolant Injection System
M-3109, SH. 1 & 2	M-3119, SH. 1 & 2	ISI Class 1 Reactor Water Cleanup Piping
M-3110, SH. 1	M-3120, SH. 1	ISI Class 1 Reactor Core Isolation Cooling System
M-3121 SH. 1	M-3121, SH. 2	ISI Class 1 Reactor Vessel
M-3130 SH. 1-4	M-3135 SH. 1-5	ISI Class 2 Core Spray Piping
M-3131 SH. 1-15	M-3136 SH. 1-13	ISI Class 2 Residual Heat Removal System
M-3132, SH. 1-5	M-3137, SH. 1-5	ISI Class 2 High Pressure Coolant Injection System
M-3134, SH. 1 & 2	M-3139, SH. 1 & 2	ISI Class 2 Control Rod Drive Piping
M-3142, SH. 1-5	M-3146, SH. 1-5	ISI Class 3 Main Steam Piping
M-3143, SH. 1-5	M-3145, SH. 1-6	ISI Class 3 Residual Heat Removal System
M-3144, SH. 1-3 & SH. 6	M-3144, SH. 4 & SH. 7-10	ISI Class 3 Diesel Generator Service Water Piping

LIST OF APPLICABLE ISI ISOMETRIC DRAWINGS

(Page 2 of 2)

Unit 1/2 Drawing Number	Title
M-3144, SH. 4-5 & SH. 11	ISI Class 3 Diesel Generator Service Water Piping

Unit 1
Inservice Inspection Summary Table
(Page 1 of 7)

Examination Category	Item Number	Description	Exam Requirements	Number of Components	Relief Request	Technical Approach & Position
B-A	B1.11	Circumferential Shell Welds	Volumetric	4	CR-08	CT-01
	B1.12	Longitudinal Shell Welds	Volumetric	15	CR-08	CT-01
	B1.21	Circumferential Head Welds	Volumetric	3	CR-08	
	B1.22	Meridional Head Welds	Volumetric	16	CR-08	
	B1.30	Shell-to-Flange Weld	Volumetric	1	CR-08	
	B1.40	Head-to-Flange Weld	Volumetric & Surface	1	CR-08	
B-D	B3.90	Nozzle-to-Vessel Welds in Reactor Vessel	Volumetric	29	CR-08	
	B3.100	Nozzle Inside Radius Section in Reactor Vessel	Volumetric	29	CR-01 CR-08	
B-E	B4.11	Partial Penetration Vessel Nozzle Welds	Visual, VT-2	1		
	B4.12	Partial Penetration Control Rod Drive Nozzle Welds	Visual, VT-2	177		
	B4.13	Partial Penetration Instrumentation Nozzle Welds	Visual, VT-2	5		

Unit 1
Inservice Inspection Summary Table
(Page 2 of 7)

Examination Category	Item Number	Description	Exam Requirements	Number of Components	Relief Request	Technical Approach & Position
B-F	B5.10	Dissimilar Metal Nozzle-to-Safe End Butt Welds NPS 4 or Larger	Volumetric & Surface	19	CR-04 CR-07 CR-08 CR-10	
	B5.20	Dissimilar Metal Nozzle-to-Safe End Butt Welds Less than NPS 4	Surface	4		
	B5.130	Dissimilar Metal Butt Welds in Piping NPS 4 or Larger	Volumetric & Surface	6	CR-04 CR-07 CR-08 CR-10	
B-G-1	B6.10	Reactor Vessel Closure Head Nuts	Surface	92	CR-11	
	B6.20	Reactor Vessel Closure Studs, in Place	Volumetric	92	CR-08 CR-12	
	B6.30	Reactor Vessel Closure Studs, when Removed	Volumetric & Surface	92	CR-08 CR-12	
	B6.40	Threads in Reactor Vessel Flange	Volumetric	92	CR-04 CR-08	
	B6.50	Reactor Vessel Closure Washers, Bushings	Visual, VT-1	92		
	B6.180	Bolts & Studs in Pumps	Volumetric	32	CR-08	
	B6.190	Flange Surface, When Connection Disassembled, in Pumps	Visual, VT-1	2		
	B6.200	Nuts, Bushings, & Washers in Pumps	Visual, VT-1	32		

Unit 1
Inservice Inspection Summary Table
(Page 3 of 7)

Examination Category	Item Number	Description	Exam Requirements	Number of Components	Relief Request	Technical Approach & Position
B-G-2	B7.50	Bolts, Studs, & Nuts in Piping	Visual, VT-1	6		
	B7.70	Bolts, Studs, & Nuts in Valves	Visual, VT-1	52		
	B7.80	Bolts, Studs, & Nuts in CRD Housings	Visual, VT-1	177		
B-J	B9.11	Circumferential Welds in Piping NPS 4 or Larger	Volumetric & Surface	410	CR-02 CR-04 CR-07 CR-08 CR-10 CR-13	
	B9.12	Longitudinal Welds in Piping NPS 4 or Larger	Volumetric & Surface	148	CR-02 CR-04 CR-08 CR-10	
	B9.21	Circumferential Welds in Piping Less than NPS 4	Surface	25	CR-02	
	B9.31	Branch Pipe Connection Welds NPS 4 or Larger	Volumetric & Surface	29	CR-02 CR-03 CR-04 CR-07 CR-08	
	B9.32	Branch Pipe Connection Welds Less than NPS 4	Surface	10	CR-02 CR-03	
	B9.40	Socket Welds	Surface	69	CR-02	

Unit 1
Inservice Inspection Summary Table
(Page 4 of 7)

Examination Category	Item Number	Description	Exam Requirements	Number of Components	Relief Request	Technical Approach & Position
B-L-2	B12.20	Pump Casings	Visual, VT-3	2		
B-M-2	B12.50	Valve Bodies, Exceeding NPS 4	Visual, VT-3	52		
B-N-1	B13.10	Vessel Interior	Visual, VT-3	1		
B-N-2	B13.20	Interior Attachments within Beltline Region in Reactor Vessel	Visual, VT-1	1		
	B13.30	Interior Attachments beyond Beltline Region in Reactor Vessel	Visual, VT-3	1		
	B13.40	Core Support Structure in Reactor Vessel	Visual, VT-3	1		
B-O	B14.10	Welds in CRD Housing	Volumetric or Surface	32		
C-A	C1.10	Shell Circumferential Welds	Volumetric	6	CR-08	
	C1.20	Head Circumferential Welds	Volumetric	2	CR-08	

Unit 1
Inservice Inspection Summary Table
(Page 5 of 7)

Examination Category	Item Number	Description	Exam Requirements	Number of Components	Relief Request	Technical Approach & Position
C-B	C2.31	Reinforcing Plate Welds to Nozzle & Vessel for Nozzles with Reinforcing Plates in Vessels > 1/2" Nominal Thickness	Surface	8		
	C2.33	Nozzle-to-Shell (or Head) Welds when Inside of Vessel is Inaccessible, for Vessels > 1/2" Nominal Thickness with Reinforcing Plates	Visual, VT-2	4		
C-C	C3.10	Integrally Welded Attachments to Pressure Vessels	Surface	8		
	C3.20	Integrally Welded Attachments to Piping	Surface	23		
	C3.30	Integrally Welded Attachments to Pumps	Surface	3		
C-F-1	C5.11	Circumferential Welds in Austenitic Stainless Steel or High Alloy Piping ≥ 3/8" Nominal Wall Thickness for Piping > NPS 4	Volumetric & Surface	5[1]	CR-04 CR-07 CR-08 CR-10	
C-F-2	C5.51	Circumferential Welds in Carbon or Low Alloy Steel Piping ≥ 3/8" Nominal Wall Thickness for Piping > NPS 4	Volumetric & Surface	537[1]	CR-04 CR-08	
	C5.70	Socket Welds in Carbon or Low Alloy Steel Piping	Surface	23		
	C5.81	Circumferential Welds in Carbon or Low Alloy Steel Pipe Branch Connections of Branch Piping > NPS 4 (Reference Table IWC-2500-1, Note 1)	Surface	39	CR-03	

Unit 1
Inservice Inspection Summary Table
(Page 6 of 7)

Examination Category	Item Number	Description	Exam Requirements	Number of Components	Relief Request	Technical Approach & Position
D-B	D2.20 - D2.60	Integral Attachments - Component Supports	Visual, VT-3	46		
F-A	F1.10	Class 1 Piping Supports[2]	Visual, VT-3	151	CR-06	
	F1.20	Class 2 Piping Supports[2]	Visual, VT-3	206	CR-06	
	F1.30	Class 3 Piping Supports[2]	Visual, VT-3	276	CR-06	
	F1.40	Supports Other Than Piping Supports[2]	Visual, VT-3	48	CR-06	
---	--	Code Class Snubbers, examination per IWF-5300(a)	Visual, VT-3	62	CR-09	
	--	Code Class Snubbers, testing per IWF-5300(b)	Testing per OMa-1988, Part 4	62	CR-09	

Notes:

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

2. The number of supports identified includes snubbers for the examination of their integral and nonintegral attachments per IWF-5300(c).

Unit 1/2
Inservice Inspection Summary Table
(Page 7 of 7)

Examination Category	Item Number	Description	Exam Requirements	Number of Components	Relief Request	Technical Approach & Position
F-A	F1.30	Class 3 Piping Supports	Visual, VT-3	68	CR-06	
	F1.40	Supports Other Than Piping Supports	Visual, VT 3	1	CR-06	

Unit 2
Inservice Inspection Summary Table
(Page 1 of 6)

Examination Category	Item Number	Description	Exam Requirements	Number of Components	Relief Request	Technical Approach & Position
B-A	B1.11	Circumferential Shell Welds	Volumetric	4	CR-08	CT-01
	B1.12	Longitudinal Shell Welds	Volumetric	13	CR-08	CT-01
	B1.21	Circumferential Head Welds	Volumetric	3	CR-08	
	B1.22	Meridional Head Welds	Volumetric	16	CR-08	
	B1.30	Shell-to-Flange Weld	Volumetric	1	CR-08	
	B1.40	Head-to-Flange Weld	Volumetric & Surface	1	CR-08	
B-D	B3.90	Nozzle-to-Vessel Welds in Reactor Vessel	Volumetric	29	CR-08	
	B3.100	Nozzle Inside Radius Section in Reactor Vessel	Volumetric	29	CR-01 CR-08	
B-E	B4.11	Partial Penetration Vessel Nozzle Welds	Visual, VT-2	1		
	B4.12	Partial Penetration Control Rod Drive Nozzle Welds	Visual, VT-2	177		
	B4.13	Partial Penetration Instrumentation Nozzle Welds	Visual, VT-2	5		

Unit 2
Inservice Inspection Summary Table
(Page 2 of 6)

Examination Category	Item Number	Description	Exam Requirements	Number of Components	Relief Request	Technical Approach & Position
B-F	B5.10	Dissimilar Metal Nozzle-to-Safe End Butt Welds NPS 4 or Larger	Volumetric & Surface	19	CR-04 CR-07 CR-08 CR-10	
	B5.20	Dissimilar Metal Nozzle-to-Safe End Butt Welds Less than NPS 4	Surface	4		
	B5.130	Dissimilar Metal Butt Welds in Piping NPS 4 or Larger	Volumetric & Surface	10	CR-04 CR-07 CR-08 CR-10	
B-G-1	B6.10	Reactor Vessel Closure Head Nuts	Surface	92	CR-11	
	B6.20	Reactor Vessel Closure Studs, in Place	Volumetric	92	CR-08 CR-12	
	B6.30	Reactor Vessel Closure Studs, when Removed	Volumetric & Surface	92	CR-08 CR-12	
	B6.40	Threads in Reactor Vessel Flange	Volumetric	92	CR-04 CR-08	
	B6.50	Reactor Vessel Closure Washers, Bushings	Visual, VT-1	92		
	B6.180	Bolts & Studs in Pumps	Volumetric	32	CR-08	
	B6.190	Flange Surface, When Connection Disassembled, in Pumps	Visual, VT-1	2		
	B6.200	Nuts, Bushings, & Washers in Pumps	Visual, VT-1	32		

Unit 2
Inservice Inspection Summary Table
(Page 3 of 6)

Examination Category	Item Number	Description	Exam Requirements	Number of Components	Relief Request	Technical Approach & Position
B-G-2	B7.50	Bolts, Studs, & Nuts in Piping	Visual, VT-1	6		
	B7.70	Bolts, Studs, & Nuts in Valves	Visual, VT-1	52		
	B7.80	Bolts, Studs, & Nuts in CRD Housings	Visual, VT-1	177		
B-J	B9.11	Circumferential Welds in Piping NPS 4 or Larger	Volumetric & Surface	405	CR-02 CR-04 CR-07 CR-08 CR-10 CR-13	
	B9.12	Longitudinal Welds in Piping NPS 4 or Larger	Volumetric & Surface	154	CR-02 CR-04 CR-08 CR-11	
	B9.21	Circumferential Welds in Piping Less than NPS 4	Surface	21	CR-02	
	B9.31	Branch Pipe Connection Welds NPS 4 or Larger	Volumetric & Surface	30	CR-02 CR-03 CR-04 CR-07 CR-08	
	B9.32	Branch Pipe Connection Welds Less than NPS 4	Surface	9	CR-02 CR-03	
	B9.40	Socket Welds	Surface	58	CR-02	

Unit 2
Inservice Inspection Summary Table
(Page 4 of 6)

Examination Category	Item Number	Description	Exam Requirements	Number of Components	Relief Request	Technical Approach & Position
B-L-2	B12.20	Pump Casings	Visual, VT-3	2		
B-M-2	B12.50	Valve Bodies, Exceeding NPS 4	Visual, VT-3	52		
B-N-1	B13.10	Vessel Interior	Visual, VT-3	1		
B-N-2	B13.20	Interior Attachments within Beltline Region in Reactor Vessel	Visual, VT-1	1		
	B13.30	Interior Attachments beyond Beltline Region in Reactor Vessel	Visual, VT-3	1		
	B13.40	Core Support Structure in Reactor Vessel	Visual, VT-3	1		
B-O	B14.10	Welds in CRD Housing	Volumetric or Surface	32		
C-A	C1.10	Shell Circumferential Welds	Volumetric	6	CR-08	
	C1.20	Head Circumferential Welds	Volumetric	2	CR-08	

Unit 2
Inservice Inspection Summary Table
(Page 5 of 6)

Examination Category	Item Number	Description	Exam Requirements	Number of Components	Relief Request	Technical Approach & Position
C-B	C2.31	Reinforcing Plate Welds to Nozzle & Vessel for Nozzles with Reinforcing Plates in Vessels > 1/2" Nominal Thickness	Surface	8		
	C2.33	Nozzle-to-Shell (or Head) Welds when Inside of Vessel is Inaccessible, for Vessels > 1/2" Nominal Thickness with Reinforcing Plates	Visual, VT-2	4		
C-C	C3.10	Integrally Welded Attachments to Pressure Vessels	Surface	8		
	C3.20	Integrally Welded Attachments to Piping	Surface	17		
	C3.30	Integrally Welded Attachments to Pumps	Surface	3		
C-F-1	C5.11	Circumferential Welds in Austenitic Stainless Steel or High Alloy Piping ≥ 3/8" Nominal Wall Thickness for Piping > NPS 4	Volumetric & Surface	5[1]	CR-04 CR-07 CR-08 CR-10	
C-F-2	C5.51	Circumferential Welds in Carbon or Low Alloy Steel Piping ≥ 3/8" Nominal Wall Thickness for Piping > NPS 4	Volumetric & Surface	546[1]	CR-04 CR-08	
	C5.70	Socket Welds in Carbon or Low Alloy Steel Piping	Surface	17		
	C5.81	Circumferential Welds in Carbon or Low Alloy Steel Pipe Branch Connections of Branch Piping > NPS 4 (Reference Table IWC-2500-1, Note 1)	Surface	34[1]	CR-03	

Unit 2
Inservice Inspection Summary Table
(Page 6 of 6)

Examination Category	Item Number	Description	Exam Requirements	Number of Components	Relief Request	Technical Approach & Position
D-B	D2.20 - D2.60	Integral Attachments - Component Supports	Visual, VT-3	43		
F-A	F1.10	Class 1 Piping Supports[2]	Visual, VT-3	125	CR-06	
	F1.20	Class 2 Piping Supports[2]	Visual, VT-3	192	CR-06	
	F1.30	Class 3 Piping Supports[2]	Visual, VT-3	275	CR-06	
	F1.40	Supports Other Than Piping Supports[2]	Visual, VT-3	48	CR-06	
—	--	Code Class Snubbers, Examination per IWF-5300(a)	Visual, VT-3	60	CR-09	
	--	Code Class Snubbers, Testing per IWF-5300(b)	Testing per OMa-1988, Part 4	60	CR-09	

Notes:

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

2. The number of supports identified includes snubbers for the examination of their integral and nonintegral attachments per IWF-5300(c).

INSERVICE INSPECTION
TECHNICAL APPROACH AND POSITION INDEX/SUMMARIES

Position	Page(s)	Summary
CT-01	9-2 to 9-3	Examination of pressure retaining welds in reactor vessel.
CT-02	9-4	Preparation of Inservice Inspection Summary Reports

TECHNICAL APPROACH AND POSITION NUMBER: CT-01

(Page 1 of 2)

COMPONENT IDENTIFICATION

Code Class:	1
Reference:	IWB-2500
	Table IWB-2500-1
Examination Category:	B-A
Item Numbers:	B1.11, B1.12, B1.51
Description:	Examination of Pressure Retaining Welds in the Reactor Vessel

CODE REQUIREMENT

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

Table IWB-2500-1 requires a volumetric examination to be performed each inspection interval on all reactor vessel shell welds, and material weld repairs in the beltline region where the repair depth exceeds 10% nominal vessel wall thickness.

POSITION

Volumetric examination of several reactor vessel shell welds, including those in the beltline region, from the reactor vessel outer surface is precluded by the close proximity of the biological shield wall and obstruction by the vessel insulation.

The mirror type insulation installed on the reactor vessel consists of interlocking panels that were not designed to be removed at the weld locations. Furthermore, the annular dimensions between the shield wall and the insulation are not sufficient to allow direct access to personnel for insulation removal.

Volumetric examination of the majority of the reactor vessel shell welds and material weld repairs may be feasible from the inner surface of the reactor vessel, using very specialized examination equipment that has just recently been developed. The full extent of examination coverage that can be achieved utilizing this specialized equipment is not currently known. This is due to the various vessel internal interferences.

Quad Cities Station is currently pursuing the development of a "Reactor Pressure Vessel (RPV) Examination Plan" that will provide a systematic approach to meeting the Section XI examination requirements. The extent of reactor vessel shell weld examination coverage that can be achieved utilizing the specialized examination equipment will also be determined.

TECHNICAL APPROACH AND POSITION NUMBER: CT-01

POSITION (Con't)

Only those reactor vessel shell welds and material weld repairs that are accessible from the outer surface of the reactor vessel will be scheduled for examination prior to the completion of the RPV Examination Plan. Upon completion of the RPV Examination Plan, Quad Cities Station will submit a relief request identifying the portions of the Reactor Vessel shell welds and material weld repairs that cannot be examined from either the outer or inner surface of the reactor vessel.

TECHNICAL APPROACH AND POSITION NUMBER: CT-02

COMPONENT IDENTIFICATION

Code Class:	1 and 2
Reference:	IWA-6220(c)
Examination Category:	Not Applicable
Item Numbers:	Not Applicable
Description:	Preparation of Inservice Inspection Summary Reports

CODE REQUIREMENT

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

POSITION

The primary purpose of inservice inspection summary reports is to document 1) the examinations and tests performed as required by the Inspection Plan, 2) the results of these examinations and tests, and 3) the repairs, replacements, and corrective measures taken in response to the results of these examinations and tests.

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

Quad Cities Station position is that only Form NIS-2's which document repairs and replacements resulting from Section XI inservice examinations and tests will be included in the ISI Summary Reports.

Quad Cities Station will maintain records including NIS-2 forms, as required by IWA-4000 and IWA-7000 for repairs and replacements resulting from activities other than required inservice inspection examinations and tests.

INSERVICE INSPECTION
RELIEF REQUEST INDEX/SUMMARIES

Relief Request	Page(s)	Summary
CR-01	10-2 to 10-3	Inspection of Standby Liquid Control nozzle inner radius.
CR-02	10-4 to 10-5	Selection of Class 1 Piping Welds for Examination
CR-03	10-6 to 10-9	Inspection of branch pipe connection welds designed with reinforcement saddles.
CR-04	10-10 to 10-11	Use of existing calibration blocks for ultrasonic examination of Class 1 and 2 components.
CR-05	10-12 to 10-13	Exemption of components and supports NPS 1 and smaller from the requirements of IWA-4000.
CR-06	10-14	Component support examination requirements.
CR-07	10-15 to 10-16	Expansion criteria for welds governed by Generic Letter 88-01 and NUREG 0313, Rev. 2.
CR-08	10-17 to 10-18	Exemption from Appendix VII ultrasonic examination personnel qualification requirements.
CR-09	10-19 to 10-21	The use of Technical Specifications for testing and visual examination of Code Class snubbers.
CR-10	10-22 to 10-23	Exemption from the Section XI examination requirements for weld overlay repaired weld joints.
CR-11	10-24 to 10-25	Use of alternative examination requirements, examination method, and acceptance standard for reactor vessel closure head nuts.
CR-12	10-26 to 10-28	Reactor Vessel Closure Stud Examination Requirements
CR-13	10-29 to 10-31	Pressure Retaining Welds in Piping

RELIEF REQUEST NUMBER: CR-01
(Page 1 of 2)

COMPONENT IDENTIFICATION

Code Class:	1
References:	IWB-2500 Table IWB-2500-1
Examination Category:	B-D
Item Number:	B3.100
Description:	Inspection of Standby Liquid Control Nozzle Inner Radius.
Component Numbers:	Unit 1: N10 Unit 2: N10

CODE REQUIREMENT

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

Table IWB-2500-1 requires a volumetric examination to be performed on the inner radius section of all reactor vessel nozzles each inspection interval.

BASIS FOR RELIEF

The Standby Liquid Control (SBLC) nozzle, as shown in Figure CR-01.1, is designed with an integral socket to which the boron injection piping is fillet welded. The geometric reflectors inherent in this design prevent a meaningful ultrasonic examination from being performed on the nozzle inner radius.

PROPOSED ALTERNATE EXAMINATION

As an alternate examination, Quad Cities Station will perform a VT-2 visual examination of the subject nozzles each refueling outage in conjunction with the Class 1 System Leakage Test.

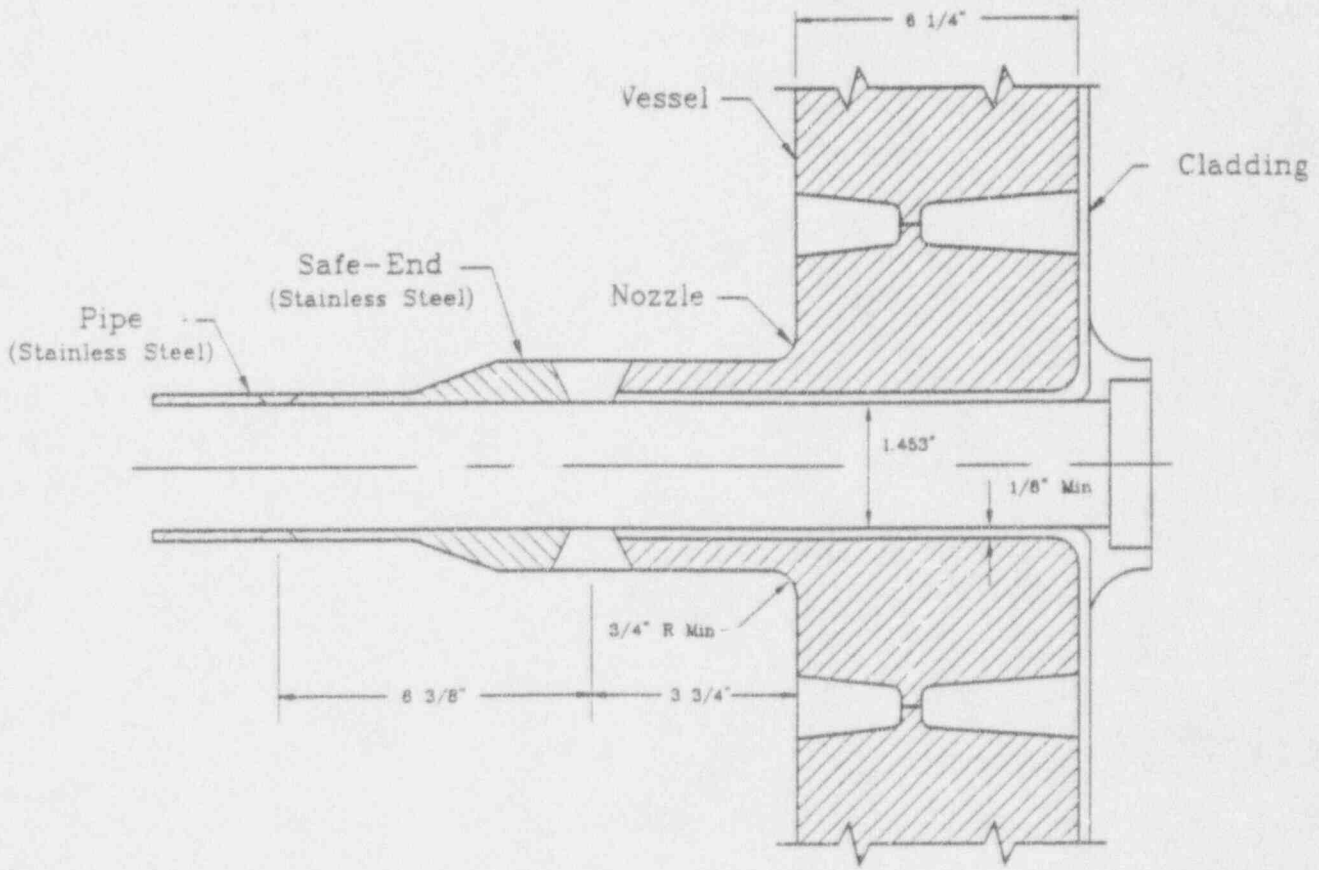
APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection Program for Quad Cities Units 1 and 2, which concludes on February 18, 2003 and March 10, 2003, respectively.

RELIEF REQUEST NUMBER: CR-01
(Page 2 of 2)

FIGURE CR-01.1

2 INCH STANDBY LIQUID CONTROL NOZZLE



RELIEF REQUEST NUMBER: CR-02
(Page 1 of 2)

COMPONENT IDENTIFICATION

Code Class:	1
References:	IWB-2500 Table IWB-2500-1
Examination Category:	B-J
Item Numbers:	B9.11, B9.12, B9.21, B9.31, B9.32, B9.40
Description:	Selection of Class 1 Piping Welds for Examination
Component Numbers:	Various Class 1 Welds

CODE REQUIREMENT

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

Table IWB-2500-1, Category B-J requires that Notes 1(b) and 2 be used in the selection of Class 1 piping welds for examination.

Note 1(b) states that examinations shall include all terminal ends and joints in each pipe or branch run connected to other components where the stress levels exceed the following limits under loads associated with specific seismic events and operational conditions:

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

Note 2 states that the initially selected welds shall be reexamined during each inspection interval.

BASIS FOR RELIEF

Because Quad Cities piping was designed primarily per ANSI B31.1.0-1967, the parameters S_m and U are not available for weld selection purposes. These parameters are ASME Section III piping design characteristics. Stress data per ANSI B31.1.0 does exist (S_c), however, correspondence to Class 1 weld locations is not evident or available in many cases. ANSI B31.1.0 does not include a cumulative usage factor parameter similar to U of ASME Section III.

By selecting all Class 1 terminal end welds and branch connections welds as discussed in the Proposed Alternate Examination section, all potentially high stressed welds will be included in the interval weld selection.

This selection methodology is deemed an acceptable alternative based on the design code employed for Quad Cities Class 1 piping and the stress data availability/correspondence situation described previously.

RELIEF REQUEST NUMBER: CR-02
(Page 2 of 2)

Quad Cities Station requests relief from the requirements of Table IWB-2500-1, Examination Category B-J, Note 2, for the third inspection interval. This requirement is deemed non-applicable for Quad Cities Units 1 and 2 on the following basis.

The ISI Class 1 piping weld selection for Interval 1 and Interval 2 at Quad Cities was based on ASME Section XI, 1974 Edition with addenda through Summer 1975. This weld selection basis calls for a separate, 25% weld selection for each interval. Reexamining all piping welds selected for Interval 2 in Interval 3 would be inconsistent with the selection criteria suggested in the Proposed Alternate Examination section, as the terminal and branch connection examinations were previously distributed randomly by intervals.

PROPOSED ALTERNATE EXAMINATION

ISI Class 1 piping welds will be selected for examination such that 25% of the total non-exempt welds are examined during the interval per the following criteria:

a) All accessible terminal end welds in each pipe or branch run connected to vessels.

b) All accessible terminal end welds in each pipe or branch run connected to other components.

c) All dissimilar metal welds between combinations of:

(1) carbon or low alloy steels to high alloy steels

(2) carbon or low alloy steels to high nickel alloys

(3) high alloy steels to high nickel alloys

d) Additional piping welds so that the total number of circumferential butt welds (or branch connection or socket welds) selected for examination equals 25% of the circumferential butt welds (or branch connection or socket welds) in the reactor coolant piping system. This total does not include welds excluded by IWB-1220. These additional welds may be located in one loop (one loop is defined for both PWR and BWR plants in the 1977 Edition). The additional piping welds will be distributed to the degree practicable, in a prorated fashion by system, line sizes and weld joint description (pipe-to-fitting, pipe-to-valve, etc.).

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection Program for Quad Cities Units 1 and 2, which concludes on February 18, 2003 and March 10, 2003, respectively.

RELIEF REQUEST NUMBER: CR-03
(Page 1 of 4)

COMPONENT IDENTIFICATION

Code Classes:	1 and 2
References:	IWB-2500 IWC-2500 Table IWB-2500-1 Table IWC-2500-1
Examination Categories:	B-J, C-F-1, C-F-2
Item Numbers:	B9.31, B9.32, C5.81
Description:	Inspection of Branch Pipe Connections Designed with Reinforcement Saddles.
Component Numbers:	Various Class 1 and 2 Welds

CODE REQUIREMENT

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

Table IWB-2500-1 requires a surface and volumetric examination to be performed on branch pipe connection welds NPS 4 and larger and surface examinations to be performed on branch pipe connection welds less than NPS 4.

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

Table IWC-2500-1 requires a surface examination to be performed on branch pipe connection welds greater than NPS 4 in BWRs.

BASIS FOR RELIEF

The design of certain Class 1 and 2 branch pipe connection welds calls for the use of reinforcement saddles. These saddles are fillet welded over the actual pressure retaining branch pipe to main pipe, completely encasing it as illustrated on Figures CR-03.1 and CR-03.2. This design precludes any type of surface or volumetric examination from being performed on the pressure retaining branch connection weld. However, additional assurance of the continued integrity of these joints is afforded by the fact that the reinforcement saddle strengthens the joint and reduces the stresses on the internal weld.

Based on the above, Quad Cities Station requests relief from the ASME Section XI requirements for the surface and volumetric examination of Class 1 and 2 branch pipe connection welds that are designed with a reinforcement saddle.

RELIEF REQUEST NUMBER: CR-03
(Page 2 of 4)

PROPOSED ALTERNATE EXAMINATION

As an alternate examination, Quad Cities Station will perform a surface examination of both the saddle to main pipe weld and the saddle to branch pipe weld, when the pressure retaining weld is made inaccessible due to the use of a reinforcement saddle. Additionally, a VT-2 visual examination of these joints will be performed in conjunction with the required Class 1 or Class 2 System Pressure Tests.

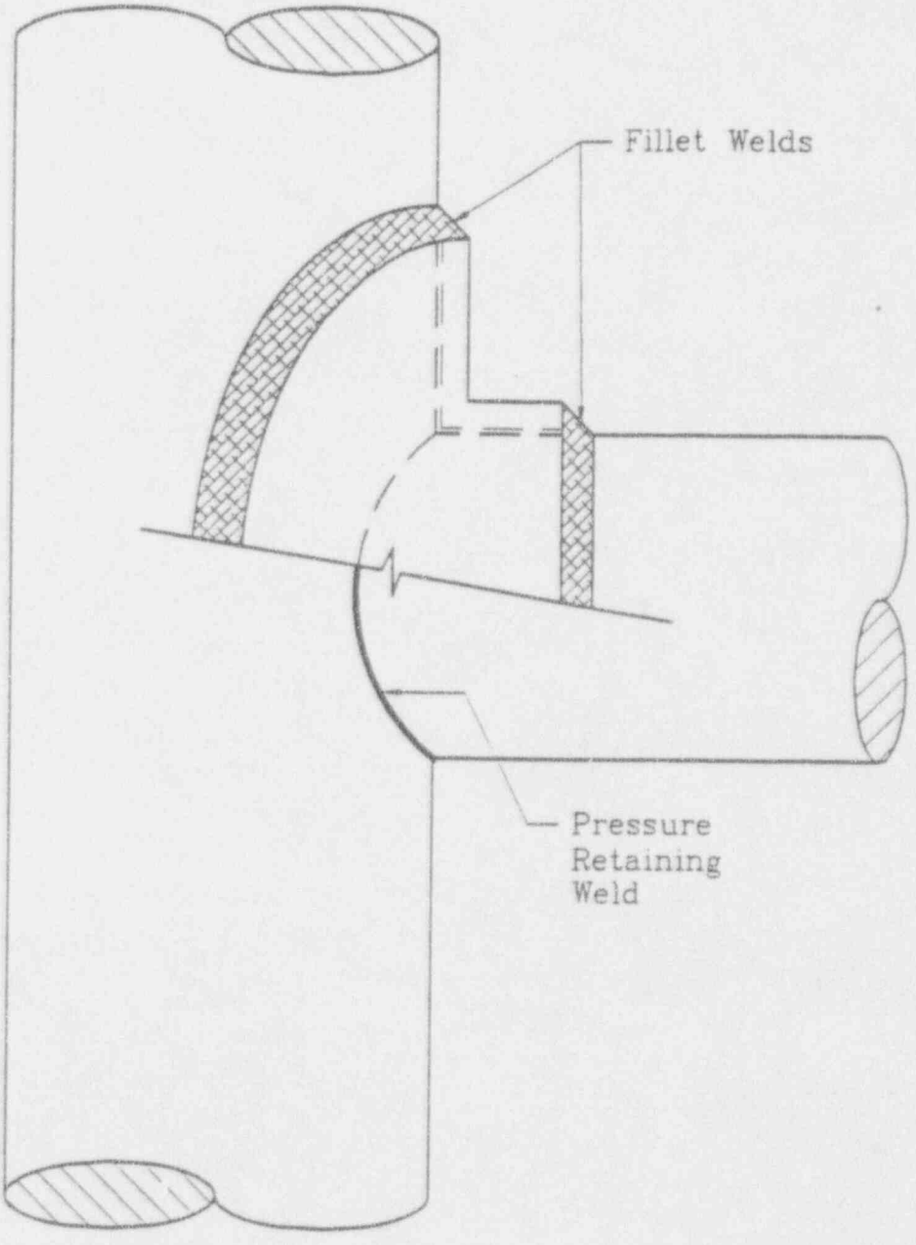
APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection Program for Quad Cities Units 1 and 2, which concludes on February 18, 2003 and March 10, 2003, respectively.

RELIEF REQUEST NUMBER: CR-03
(Page 3 of 4)

FIGURE CR-03.1

TYPE 1 TYPICAL SADDLE REINFORCEMENT



RELIEF REQUEST NUMBER: CR-03
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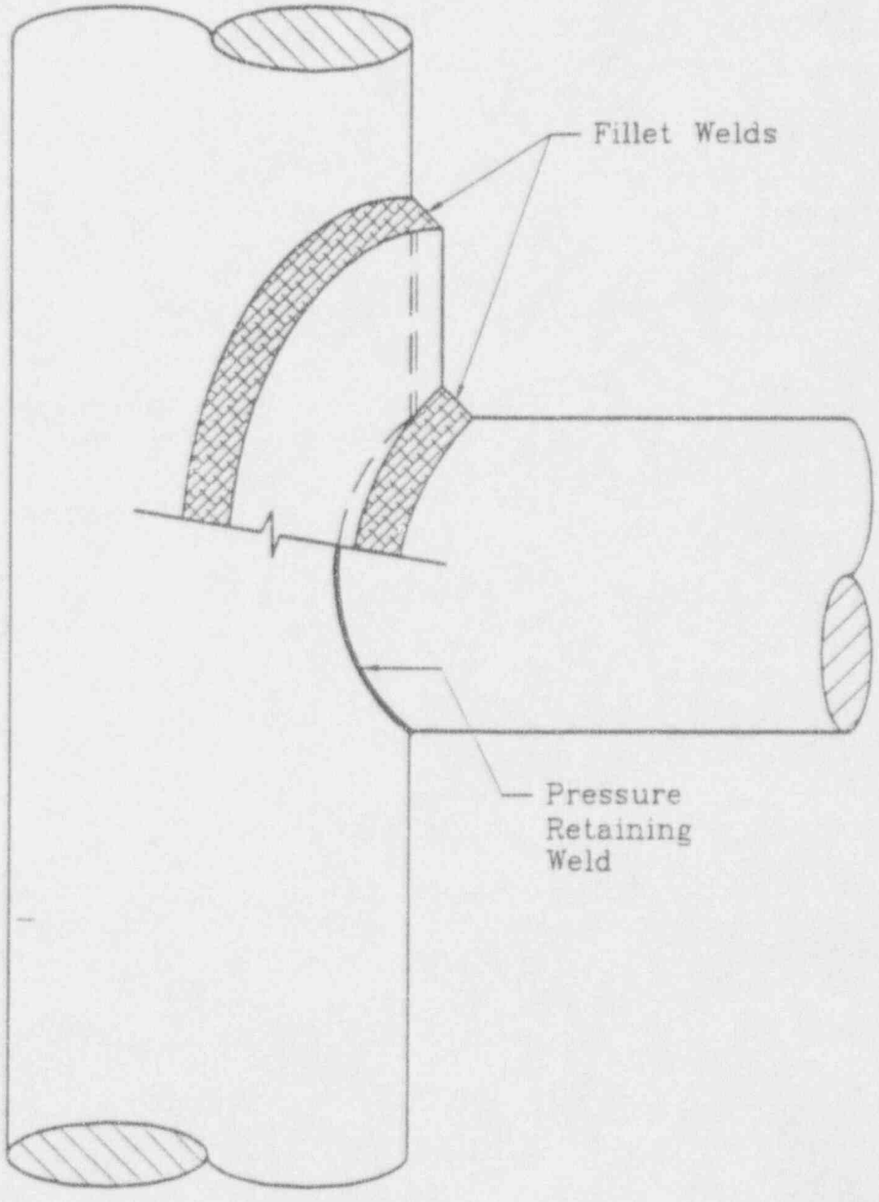
FIGURE CR-03.2

TYPE 2 TYPICAL SADDLE REINFORCEMENT



RELIEF REQUEST NUMBER: CR-04
(Page 1 of 2)

COMPONENT IDENTIFICATION

Code Classes:	1 and 2
References:	IWA-2232 Appendix I, I-2200 Appendix III, III-3411
Examination Categories:	B-F, B-G-1, B-J, C-F-1, C-F-2
Item Numbers:	B5.10, B5.130, B6.40, B9.11, B9.12, B9.31, C5.11, C5.12, C5.51, C5.52
Description:	Use of Existing Calibration Blocks for Ultrasonic Examination of Class 1 and 2 Components.
Component Numbers:	Various

CODE REQUIREMENT

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

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

Appendix III, III-3411 outlines the material specification requirements for calibration blocks. It basically requires calibration blocks to be fabricated from the same material specification as the piping being joined by the weld. It also states that if material of the same specification is not available, material of similar chemical analysis, tensile properties, and metallurgical structure may be used.

BASIS FOR RELIEF

Several of the calibration blocks currently being used at Quad Cities Station lack the documentation necessary to demonstrate compliance with the material specification requirements of Appendix III. This is because the documentation requirements existing at the time of their fabrication did not require traceability to the material's chemical or physical certifications. Consequently, the only documentation available for these existing calibration blocks is verification of the appropriate P-number grouping.

All other requirements of Appendices I and III are being met.

It would be impractical to fabricate a new set of calibration blocks in order to satisfy the documentation requirements of the current Code. Existing records, which indicate the appropriate P-number grouping, provide adequate assurance that the blocks will establish the proper ultrasonic calibration and sensitivity.

RELIEF REQUEST NUMBER: CR-04
(Page 2 of 2)

BASIS FOR RELIEF (Con't)

Based on the above, Quad Cities Station requests relief from the ASME Section XI, Appendix III requirements for calibration block material specifications, in order to allow the continued use of the existing calibration blocks.

PROPOSED ALTERNATE PROVISIONS

All future calibration blocks will meet the material specification requirements of ASME Section XI, Appendix III and will be provided with the documentation necessary to demonstrate compliance with these requirements. Additionally, when using existing calibration blocks that lack the appropriate documentation, a comparison will be made between the attenuation of the calibration block and the material being examined.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection Program for Quad Cities Units 1 and 2, which concludes on February 18, 2003 and March 10, 2003, respectively.

RELIEF REQUEST NUMBER: CR-05
(Page 1 of 2)

COMPONENT IDENTIFICATION

Code Class:	1, 2, and 3
References:	IWA-4000 IWA-7000
Examination Category:	Not Applicable
Item Number:	Not Applicable
Description:	Exemption of Piping, Valves and Fittings NPS 1 and Smaller, and Their Associated Supports from the Requirements of Article IWA-4000, Repair Procedures.

CODE REQUIREMENT

Repair activities on piping, valves, and fittings NPS 1 and smaller must meet the requirements of article IWA-4000.

BASIS FOR RELIEF

The rules governing Repair Procedures in IWA-4000 allow for repairs to be performed in accordance with the Owners Design Specifications (ODS) and the original Construction Code (OCC) of the component or system in lieu of the rules of Section XI as detailed in IWA-4120.

When repairs are performed on Code Class 1, 2 and 3 components in accordance with the ODS/OCC, the requirements of IWA-4130, Repair Program; IWA-4140, Inspection; IWA-4600, EXAMINATION; IWA-4700, PRESSURE TEST; and IWA-4800, RECORDS; remain applicable. The rules of paragraphs IWA-4200, MATERIAL; IWA-4300, DEFECT REMOVAL; IWA-4400, WELDING AND WELDER QUALIFICATIONS; and, IWA-4500, REPAIR WELDING; will be satisfied by the rules of the ODS/OCC and referenced procedures.

When performing repairs per the ODS/OCC on Code Class 1, 2, and 3 components 1" NPS and less, preservice baseline examinations per IWA-4600 (as specified in IWB-2200, IWC-2200, and IWD-2200) are not required; however, post repair examinations as required by ODS/OCC would be performed. Similarily, system hydrostatic testing of Code Class 1, 2, and 3 components 1" NPS and less is not required per IWA-4700.

The remaining Code Sections noted above as applicable, repair program essential requirements (IWA-4130), Authorized Inspection Agency involvement (IWA-4140), and record keeping/reporting requirements (IWA-4800), do not represent activities and documentation which constitute an improvement in plant safety, particularly for components 1" NPS and less.

A similar situation is the case of the replacement of 1" NPS and less components, which are clearly exempted by IWA-7400 from parallel requirements of IWA-7000 (see IWA-7130, IWA-7140, and IWA-7520).

RELIEF REQUEST NUMBER: CR-05
(Page 2 of 2)

BASIS FOR RELIEF (Con't)

Based on the requirements of IWA-4000 being unnecessary to maintain the integrity of components 1" NPS and less, and thus provide a commensurate increase in plant safety, Quad Cities Station requests relief from these rules as detailed previously.

PROPOSED ALTERNATE EXAMINATION

Quad Cities Station will document and perform repairs on components 1" NPS and less in accordance with the applicable Design Specification, Construction Codes and referenced Quality Assurance Procedures. These documents will include specific instructions for the design, materials, fabrication, construction, testing and certification associated with the repair. The repair documentation will be maintained and filed with the applicable Station Work Package.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection program for Quad Cities Units 1 and 2, which concludes on February 18, 2003 and March 10, 2003, respectively.

RELIEF REQUEST NUMBER: CR-06
(Page 1 of 1)

COMPONENT IDENTIFICATION

Code Classes:	1, 2, and 3
Reference:	IWF-1000, IWF-2000, IWF-3000
Examination Category:	F-A
Item Numbers:	F1.10 through F1.70
Description:	Component Support Examination Requirements
Component Numbers:	All Class 1, 2, and 3 component supports

CODE REQUIREMENT

All requirements included in IWF-1000, IWF-2000, and IWF-3000.

BASIS FOR RELIEF

Subsection IWF, Articles IWF-1000, IWF-2000, and IWF-3000 in the 1989 Edition of Section XI lacks a complete, concise set of rules for the inservice inspection of component supports. In particular, IWF-1230, Supports Exempt from Examination and Test; IWF-2510, Supports Selected for Examination; and Table IWF-2500-1 are lacking the information and detail needed to develop an effective inspection program.

Code Case N-491, Alternative Rules for Examination of Class 1, 2, 3, and MC Component Supports of Light Water Cooled Power Plants presents a set of requirements for IWF-1000, IWF-2000, and IWF-3000 which are complete and clarify questionable wording in the 1989 Edition.

Although currently not included in Regulatory Guide 1.147, Quad Cities Station understands that the NRC has reviewed Code Case N-491 and has no technical concerns with the included requirements.

Based on the above, Quad Cities Station requests relief from the requirements of ASME Section XI, 1989 Edition, Articles IWF-1000, -2000, and -3000.

PROPOSED ALTERNATE PROVISIONS

In lieu of the requirements of ASME Section XI, 1989 Edition, Articles IWF-1000, -2000, and -3000, Quad Cities Station will implement the alternative rules detailed in Code Case N-491.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection program for Quad Cities Units 1 and 2, which concludes on February 18, 2003 and March 10, 2003, respectively.

RELIEF REQUEST NUMBER: CR-07
(Page 1 of 2)

COMPONENT IDENTIFICATION

Code Classes:	1 and 2
References:	IWB-2430 IWC-2430
Examination Categories:	B-F, B-J, C-F-1
Item Numbers:	B5.10, B5.130, B9.11, B9.31, C5.11
Description:	Expansion Criteria for Welds Governed by Generic Letter 88-01 and NUREG-0313, Rev. 2.
Component Numbers:	All full penetration circumferential and branch pipe connection welds in austenitic stainless steel piping that is NPS 4 or larger and contains reactor coolant at a temperature greater than 200 degrees F during power operation.

CODE REQUIREMENT

IWB-2430 and IWC-2430 outline the additional examinations that must be performed when indications are revealed that exceed the acceptance standards of IWB-3000 and IWC-3000, respectively.

BASIS FOR RELIEF

Each of the subject welds fall under the augmented inspection program required by Generic Letter 88-01, and NUREG-0313, Rev. 2 (Reference L. Olshan [NRC] letter to T. Kovach [CECo], dated 8/21/90, transmitting SER of CECo's response to Generic Letter 88-01 for Quad Cities Units 1 and 2). This program governs examination methods, examination frequency, and sample expansion. The sample expansion requirements of this program are designed such that additional examinations are limited to welds that have the same susceptibility to Intergranular Stress Corrosion Cracking (IGSCC) as the weld in which the flaw was found. This methodology ensures that welds at a high risk for cracking are examined during the same refueling outage, while not requiring expenditure of the Man-Rem and outage time associated with examining additional low risk welds.

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

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

RELIEF REQUEST NUMBER: CR-07
(Page 2 of 2)

PROPOSED ALTERNATE PROVISIONS

Quad Cities Station will perform sample expansions as required only by Generic Letter 88-01 and NUREG-0313, Rev. 2 when unacceptable IGSCC flaw indications are identified in the subject welds.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection program for Quad Cities Units 1 and 2, which concludes on February 18, 2003 and March 10, 2003, respectively.

RELIEF REQUEST NUMBER: CR-08
(Page 1 of 2)

COMPONENT IDENTIFICATION

Code Classes:	1 and 2
References:	IWA-2311(b) Appendix VII
Examination Categories:	B-A, B-D, B-F, B-G-1, B-H, B-J, C-A, C-B, C-F-1, C-F-2
Item Numbers:	B1.10 through B1.51 B3.90, B3.100, B5.10, B5.130, B6.20, B6.30, B6.40, B6.180, B8.10, B9.11, B9.12, B9.31, C1.10, C1.20, C5.11, C5.12, C5.51, C5.52
Description:	Exemption from Appendix VII Ultrasonic Examination Personnel Qualification Requirements.
Component Numbers:	All Class 1 and 2 components requiring ultrasonic examination.

CODE REQUIREMENT

IWA-2311(b) requires the training, qualification, and certification of ultrasonic examination personnel to comply with the requirements of Appendix VII, in addition to the requirements of IWA-2300.

Appendix VII addresses requirements for the employer's written practice, qualification of ultrasonic examiners, qualification records, and the minimum content of initial training courses for the ultrasonic examination method.

BASIS FOR RELIEF

Appendix VII was first introduced in the 1988 Addenda to Section XI. This Appendix represents a dramatic change from previous Code editions and current industry practices in the requirements for qualification of ultrasonic examination personnel. For instance, new training programs must be developed and taught by trained instructors, employer's written practices must be completely rewritten, examination question banks must be developed, and specimen banks of at least 15 specimens (with 5 containing actual or simulated flaws) must be developed and purchased.

Implementation of this Appendix will require a massive industry effort. And although the industry is currently working towards compliance with Appendix VII, full implementation is still on going. In fact, since Appendix VII allows for the use of specimens prepared for ultrasonic performance demonstrations per Appendix VIII, many NDE vendors are developing these two programs simultaneously in order to avoid purchasing dual specimens.

Based on the above, Quad Cities Station requests relief from the ASME Section XI, Appendix VII requirements for the qualification of nondestructive examination personnel for ultrasonic examination.

RELIEF REQUEST NUMBER: CR-08
(Page 2 of 2)

PROPOSED ALTERNATE PROVISIONS

Quad Cities Station will utilize ultrasonic examination personnel qualified in accordance with the requirements of IWA-2300, with the exception of IWA-2311(b). Additionally, personnel utilized to perform ultrasonic examinations on IGSCC susceptible welds will be qualified in accordance with the latest EPRI guidelines.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection Program for Quad Cities Units 1 and 2, until such time as Quad Cities reaches full compliance with the provisions of ASME Section XI, Appendix VII. Quad Cities is committed to fully implementing the requirements of Appendix VII by the end of December 1994.

RELIEF REQUEST NUMBER: CR-09
(Page 1 of 3)

COMPONENT IDENTIFICATION

Code Class:	1, 2, 3
Reference:	IWF-5000
Examination Category:	Not Applicable
Item Numbers:	Not Applicable
Description:	ISI Snubbers Included In The Technical Specification Snubber Testing and Visual Examination Programs

CODE REQUIREMENTS

Preservice examination per IWF-5200(a) and Inservice examination per IWF-5300(a) in accordance with the first addenda to ASME/ANSI OM-1987 Edition, Part 4, published in 1988 (OMa-1988, Part 4, per 10CFR50.55a, paragraph (b)(2)(viii), published August 6, 1992).

Preservice testing per IWF-5200(b) and Inservice testing per IWF-5300(b) in accordance with the first addenda to ASME/ANSI OM-1987 Edition, Part 4, published in 1988 (OMa-1988, Part 4, per 10CFR50.55a, paragraph (b)(2)(viii), published August 6, 1992).

BASIS FOR RELIEF

Current Quad Cities Station Technical Specifications (TS) include comprehensive programs for visual examination and functional testing of all safety related hydraulic and mechanical snubbers. The program scope encompasses all Code Class 1, 2, and 3 snubbers.

Of the approximate total of 130 safety related snubbers per unit, approximately 60 are Code Class. The overlap of the visual examination and testing programs per ASME Section XI and Technical Specifications for the Code Class snubbers presents an unnecessary redundancy.

The TS snubber visual examination program and the program presented in OMa-1988, Part 4 per IWF-5200(a) and IWF-5300(a) are similar in content. Both programs include parallel criteria for operability, schedule, and sample size.

The TS snubber testing program and the program presented in OMa-1988, Part 4 per IWF-5200(b) and IWF-5300(b) are very similar in content. Both programs include parallel requirements for operability testing. Similar requirements for testing frequency, sample size, and additional sampling for failures are also included in both programs.

Regarding testing frequency and sample size, Quad Cities' TS Program calls for random testing of 10% of the total snubber population each refueling outage. Due to the random TS sampling, 10% of the Code snubbers may or may not be tested in a given outage, as required per OMa-1988; however, each program requires a 10% sample be tested (per outage) such that over a ten outage cycle 100% of the total snubber population is tested.

RELIEF REQUEST NUMBER: CR-09
(Page 2 of 3)

BASIS FOR RELIEF (Con't)

Regarding sample expansion for failures, Quad Cities' TS Program is similar to OMa-1988, Part 4. The requirements of this Technical Specifications Program are such that for each snubber that does not meet the functional test criteria, an additional 10% of that type of snubber shall be functionally tested. OMa-1988, Part 4 requires an additional sample lot of at least one-half the size of the intial sample to be tested until the total number tested is equal to the initial sample size multiplied by the factor 1+C/2, where C is the total number of snubbers found to be unacceptable. Quad Cities' TS Snubber Program sample expansion criteria definition of a type follows. The similar OMa-1988, Part 4 requirements are shown in parenthesis.

1. Snubbers from similar environments, where 'environment' takes into consideration temperature, humidity, and radiation. (Snubbers from other piping systems that have similar operating conditions such as temperature, humidity, vibration, and radiation.)

2. Snubbers of similar size. All snubbers at Quad Cities Station were manufactured by Pacific Scientific and are of the same design. (Snubbers of the same manufacturer's design.)

3. Snubbers of the same piping system. (Snubbers from the same piping system.)

4. Snubbers which were previously untested. (Snubbers which are previously untested.)

5. Snubbers immediately adjacent to those found unacceptable. (OMa-1988, Part 4 only, not included in Technical Specifications)

It is Quad Cities Station position that the snubber visual examination and testing programs of Technical Specification 3.6/4.6 meet the intent of the program required by OMa-1988, Part 4. No plant safety benefits will be realized by imposing both programs on the Code Class snubbers at Quad Cities Units 1 & 2.

Based on the above, Quad Cities Station requests relief from the ASME Section XI requirements for visual examination and testing of Code Class snubbers.

PROPOSED ALTERNATE PROVISIONS

Quad Cities Station will perform visual examinations of Code Class snubbers in accordance with the latest approved revision of Station Technical Specifications in lieu of the requirements of IWF-5200(a) and IWF-5300(a). The station plans to implement the guidance of Generic Letter 90-09 for snubber visual examinations with the submittal of future Technical Specification revisions.

RELIEF REQUEST NUMBER: CR-09
(Page 3 of 3)

ALTERNATIVES (Con't)

Quad Cities Station will perform functional testing of Code Class 1, 2 and 3 snubbers per plant Technical Specification 3.6/4.6-12 in lieu of the requirements of IWF-5200(b) and IWF-5300(b).

As required by IWF-5200(c) and IWF-5300(c) the examination of snubber integral and nonintegral attachments will be performed in accordance with Subsection IWF.

APPLICABLE TIME PERIOD
Relief is requested for the third ten-year interval of the Inservice Inspection Program for Quad Cities Units 1 and 2, which concludes on February 18, 2003 and March 10, 2003, respectively.

RELIEF REQUEST NUMBER: CR-10
(Page 1 of 2)

COMPONENT IDENTIFICATION

Code Classes:	1 and 2
References:	IWB-2500 IWC-2500 Table IWB-2500-1 Table IWC-2500-1 Figure IWB-2500-8 Figure IWC-2500-7
Examination Categories:	B-F, B-J, C-F-1
Item Numbers:	B5.10, B5.130, B9.11, B9.12, C5.11, C5.12
Description:	Exemption from the Section XI Examination Requirements for Weld Overlay Repaired Weld Joints.
Component Numbers:	All Class 1 and 2 weld overlay repaired welds

CODE REQUIREMENT

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

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

Tables IWB-2500-1 and IWC-2500-1 require a surface and volumetric examination to be performed on pressure retaining nozzle to safe-end welds (B-F) and piping welds (B-F, B-J, C-F-1), NPS 4 and larger.

Figures IWB-2500-8 and IWC-2500-7 require the surface examination to include the weld and 1/2 inch of base metal on each side of the weld, and the volumetric examination to include the lower 1/3 of the weld and base metal 1/4 inch on each side of the weld.

BASIS FOR RELIEF

Weld overlay repairs are examined in accordance with the requirements delineated in Generic Letter 88-01 using the ultrasonic examination (UT) technique developed by the NDE Center of the Electric Power Research Institute (EPRI). (Reference L. Olshan [NRC] letter to T. Kovach [CECo], dated 8/21/90, transmitting SER of CECo's response to Generic Letter 88-01 for Quad Cities Units 1 and 2.)

This EPRI UT technique is capable of detecting flaws in the weld overlay material and the outer 25% of the original pipe wall thickness. However, this technique cannot reliably detect flaws in the inner 75% of the original pipe wall thickness due to the unique acoustical properties of the weld overlay repairs.

RELIEF REQUEST NUMBER: CR-10
(Page 2 of 2)

BASIS FOR RELIEF (Con't)

Weld overlay repaired joints are sometimes inspected to satisfy the examination percentages required by ASME Section XI, Categories B-F, B-J, and C-F-1. In these cases, the examination volume required by Figures IWB-2500-8 or IWC-2500-7 of ASME Section XI cannot be satisfied.

Based on the above, Quad Cities Station requests relief from the required ASME Section XI examination volumes for Categories B-F, B-J, and C-F-1 when examining weld overlay repaired joints.

PROPOSED ALTERNATE EXAMINATION

As an alternate examination, Quad Cities Station will perform ultrasonic examinations of weld overlay repairs in accordance with the requirements set forth in Generic Letter 88-01. Additionally, when scheduled examinations of weld overlay repairs are being applied to the percentages required by ASME Section XI, a surface examination will be performed on the entire weld overlay surface. Also, a surface and volumetric examination will be performed on at least one pipe diameter length but not more than 12 inches of any intersecting longitudinal welds, as measured from the edges of the weld overlay.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection Program for Quad Cities Units 1 and 2, which concludes on February 18, 2003 and March 10, 2003, respectively.

RELIEF REQUEST NUMBER: CR-11
(Page 1 of 2)

COMPONENT IDENTIFICATION

Code Class:	1
References:	IWB-2500 Table IWB-2500-1
Examination Category:	B-G-1
Item Number:	B6.10
Description:	Use of alternative Examination Requirements, Examination Method, and Acceptance Standard for Reactor Vessel Closure Head Nuts.
Component Numbers:	All reactor vessel closure head nuts

CODE REQUIREMENT

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

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

BASIS FOR RELIEF

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

The incomplete set of rules for the examination of reactor vessel closure head nuts does not allow Quad Cities Station to implement an inspection program to verify the integrity of the this pressure retaining bolting.

The 1989 Edition of ASME Section XI, Category B-G-1, employs a VT-1 visual examination for nuts associated with Heat Exchangers, Piping, Pumps, and Valves (Item Numbers B6.140, B6.170, B6.200, and B6.230, respectively). These Category B-G-1 requirements also provide an Acceptance Standard, IWB-3517, for the VT-1 examinations. Accordingly, these rules are deemed by Quad Cites Station as an acceptable and complete set of rules to assure the integrity of reactor vessel closure nuts.

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

RELIEF REQUEST NUMBER: CR-11
(Page 2 of 2)

PROPOSED ALTERNATE POSITIONS

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

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection Program for Quad Cities Units 1 and 2, which concludes on February 18, 2003 and March 10, 2003, respectively.

RELIEF REQUEST NUMBER: CR-12
(Page 1 of 3)

COMPONENT IDENTIFICATION

Code Class:	1
References:	Table IWB-2500-1
	IWB-2430
Examination Category:	B-G-1
Item Number:	B6.20 (Closure Stud In Place)
	B6.30 (Closure Stud When Removed)
Description:	Reactor Vessel Closure Stud Examination Requirements

CODE REQUIREMENT

Table IWB-2500-1 requires a volumetric examination of reactor vessel closure studs if left in place, or a surface and volumetric examination of reactor vessel closure head studs when removed from the flange. Removal is not a requirement at any time.

IWB-2430 requires additional examinations to be performed during the current outage if examinations performed in accordance with Table IWB-2500-1 reveal indications exceeding the acceptance standards of Table IWB-3410-1. If indications exceeding the acceptance standards of Table IWB-3410-1 are found as a result of the additional examinations, IWB-2430 requires examinations to be further extended in the current outage to include "the remaining number of similar components ... within the same examination category ...."

BASIS FOR RELIEF

Commonwealth Edison Company (CECo) discovered extensive stress corrosion cracking (SCC) in two reactor vessel closure studs at Dresden Unit 2 in late 1988. CECo is currently analyzing the stud material microstructure and mechanical properties. CECo is also pursuing a proactive program of enhanced stud inspections which exceed the requirements of Section XI and the recommendations of General Electric Nuclear Energy (GE) Rapid Information Communication Services Information Letter (RICSIL) 055, Revision 1, "Reactor Pressure Vessel Head Stud Cracking," September 30, 1991. The CECo program is also intended to include some of the additional recommendations of Regulatory Guide 1.65.

GE RICSIL 055 recommends that enhanced end shot UT be performed on "at least five RPV head studs either during the next refueling outage or at the next available opportunity." (The enhanced end shot UT technique developed by CECo uses a 3/4" to 1" diameter transducer with a frequency of 3.5 or 5 MHz; the sensitivity of the examination is maximized by setting the background noise level at about 5% full screen height. This technique reliably detects a 0.3" deep saw cut notch from the top end of a reactor vessel stud. Any indications found with the enhanced end shot UT technique will be sized with bore probe UT. The bore probe UT technique developed by CECo reliably detects a 0.1" deep saw cut notch.

RELIEF REQUEST NUMBER: CR-12
(Page 2 of 3)

BASIS FOR RELIEF (Con't)

There are several reasons for removing a sample of studs and performing a surface examination:

- To provide data on incipient stud cracking.
- To allow for additional metallurgical evaluation of cracking mechanisms and potential embrittlement phenomena, if cracked studs are found and replaced.
- To provide a correlation between enhanced end shot UT, bore UT, and MT results, if cracked studs are found.

This information is necessary to make informed decisions on long-term inspection and potential replacement strategies.

Code structural margins will be assured thru the enhanced end shot UT of all studs, and bore probe UT sizing of all cracked studs. Enhanced end shot UT and bore probe UT results will be evaluated in accordance with "Fracture Mechanics Based Structural Margin Evaluation for Commonwealth Edison BWR Reactor Pressure Vessel Head Studs," GE Nuclear Energy Report GE-NE-523-92-0991, DRF 137-0010, September 1991 (submitted with an M.H. Richter (CECo) letter to T. E. Murley (NRC) dated October 3, 1991). The GE structural margin evaluation is based on conservative fracture mechanics methodology and actual fracture toughness testing of material from one of the low-toughness Dresden Unit 2 studs. If the end shot UT is found to be nonconservative, then an expanded sample with the more sensitive bore probe UT will be performed in accordance with the methodology described in the attached flow chart. This approach will assure that Code structural margins are maintained without expanding the MT sample.

Results of the enhanced end shot UT, bore probe UT, and MT will be compared in order to benchmark the minimum detection limit of the enhanced end shot UT technique. The minimum detection limit of the enhanced end shot UT technique will be judged against a conservative, bounding maximum allowable flaw size (established by the GE structural margin evaluation) which would be acceptable in all 92 studs at the same time (referred to as MAXAF on the attached flow chart). If the minimum flaw detection limit of the enhanced end shot UT is found to be greater than the MAXAF, additional bore probe examinations will be performed in lieu of the Section XI-required MT sample expansion.

Expanding the MT sample if unacceptable surface indications are found would greatly increase the critical path time and manrem burden. And, as other utilities have found, it may be impossible to remove the desired sample of studs, without damage, within the time constraints of a refueling outage. It is estimated that complete removal of all 92 studs, assuming no stuck studs, would take 10 additional critical path days and expend 8 additional manrem.

RELIEF REQUEST NUMBER: CR-12
(Page 3 of 3)

BASIS FOR RELIEF (Con't)

The proposed program is highly proactive, in that Section XI only requires a normal sensitivity end shot UT to be performed in place, and RICSIL 055 only recommends enhanced end shot UT of at least five studs. In accordance with Section XI, structural margin would still be assured by the enhanced end shot and bore probe UT. Yet much essential information could be gained by surface examination of a limited sample of studs. For these reasons, CECo requests relief from the MT sample expansion requirements of Section XI IWB-2430.

PROPOSED ALTERNATE EXAMINATION

During the third interval, each stud will be examined in place using enhanced end shot UT. Any flaws detected with enhanced end shot UT will be sized using bore probe UT.

If MT of a sample of studs reveals indications which are found by bore probe UT to exceed the MAXAF, and were not detected by the enhanced end shot UT, then sample expansion will proceed using bore probe UT in lieu of the Section XI-required MT sample expansion.

APPLICABLE TIME PERIOD

Relief is requested for the third ten year interval of the Inservice Inspection Program for Quad Cities Units 1 and 2 which concludes on February 18, 2003 and March 10, 2003, respectively.

RELIEF REQUEST NUMBER: CR-13
(Page 1 of 3)

COMPONENT IDENTIFICATION

Code Class:	1
References:	Table IWB-2500-1
Examination Category:	B-J
Item Number:	B9.11
Description:	Pressure Retaining Welds in Piping
Component Numbers:	Unit 1: 02AS-S15, 02BS-S15
	Unit 2: 02AS-S15, 02BS-S15

CODE REQUIREMENT

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

Table IWB-2500-1 requires volumetric and surface examination to be performed on circumferential and longitudinal welds 4 inches NPS and larger.

BASIS FOR RELIEF

There are two recirculation pumps in each subject unit. On the suction side of each recirculation pump there is one 28" NPS Cast Stainless Steel Elbow-to-Cast Stainless Steel Pump Body weld. The pump casings and attached elbows are fabricated from Grade CF8M stainless steel casting.

Ultrasonic examination (UT) and surface examination of these two (2) recirculation welds (per unit) is not practical because of the lack of accessibility to the outer surface of the welds. Additionally, the outer surface contour is not conducive to a meaningful UT.

The outside surface of the weld and adjacent base material is inaccessible for examination due tc the presence of a large whip restraint made of cables and trays. Removal and re-installation of each whip restraint would require in excess of 6.4 person-rem.

If the welds were made accessible for examination purposes, the current weld configuration (outside surface contour) of each weld would not be conducive to a meaningful UT. As shown in Figure CR-13.1, the 1.70" wide weld crown is located in the middle of a trough approximately 4" wide and 0.5" deep. This configuration is too restrictive for proper placement and movement of the transducer search unit(s) to obtain sufficient coverage in the axial direction (i.e., to search for circumferential flaws).

UT may not be effective even if the outside surface contour is machined to obtain sufficient clearance for the proper placement and movement of the transducer search units. The ability of current ultrasonic techniques to interrogate the complete weld volume in accordance with the requirements of ASME Section XI cannot be assured due to the highly attenuative nature of casting materials.

RELIEF REQUEST NUMBER: CR-13
(Page 2 of 3)

BASIS FOR RELIEF (Con't)

Margin of safety is assured without UT because (1) the carbon content and delta ferrite combinations of the subject CF8M castings exhibit resistance to Intergranular Stress Corrosion Cracking, and (2) the leakage associated with half of the critical flaw size was determined to be approximately 50 gpm, which far exceeds the minimum allowable unidentified leakage limit of 5 gpm specified in the Quad Cities Technical Specifications (From report SIR-92-002 by Structural Integrity Associates, Inc. for Commonwealth Edison Company, dated 03/12/92).

Based on the above, Quad Cities Station requests relief from the NDE requirements of ASME Section XI for the subject welds.

PROPOSED ALTERNATE EXAMINATION

As an alternate examination, Quad Cities Station will perform a VT-2 visual examination of the weld area, in accordance with IWA-5000 and IWB-5000, in conjunction with the Class 1 pressure test at the end of each refueling outage.

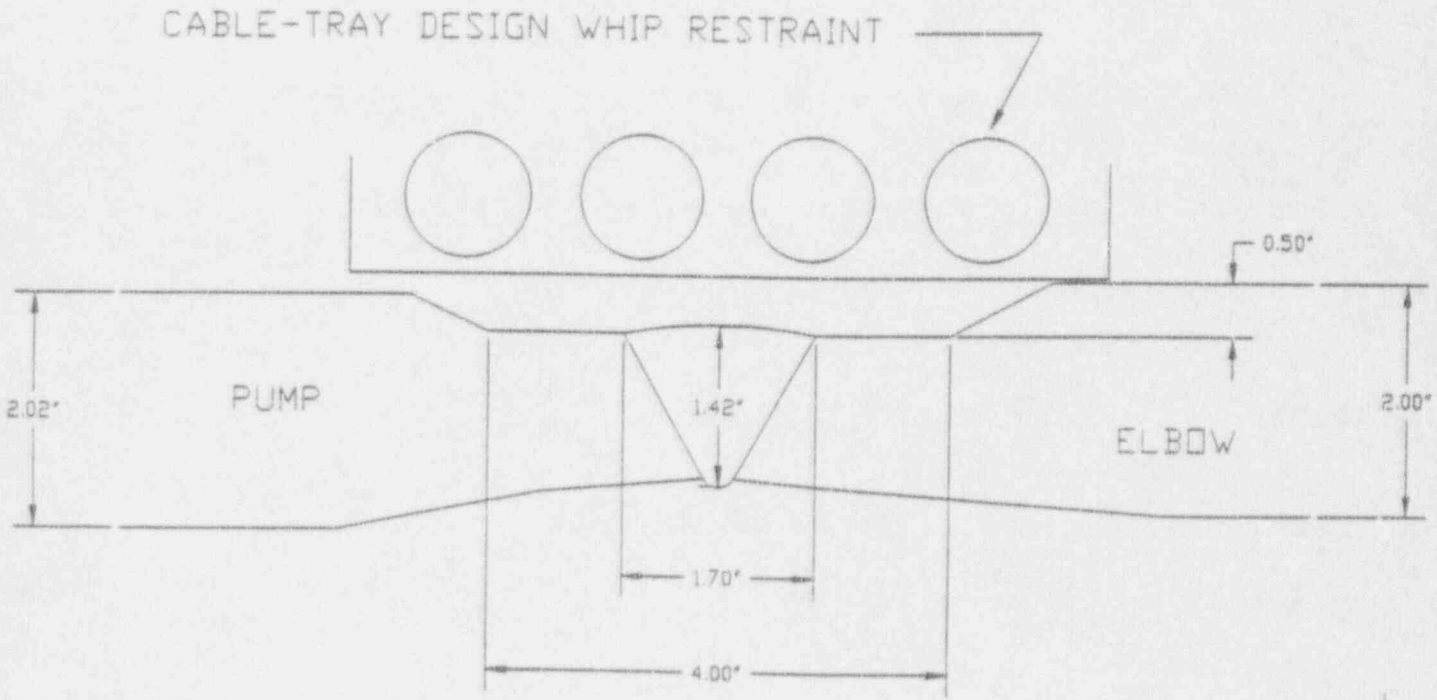
APPLICABLE TIME PERIOD

Relief is requested for the third ten year interval of the Inservice Inspection Program for Quad Cities Units 1 and 2 which concludes on February 18, 2003 and March 10, 2003, respectively.

RELIEF REQUEST NUMBER: CR-13
(Page 3 of 3)

FIGURE CR-13.1

ELBOW TO PUMP BODY WELD CONFIGURATION



Units 1 & 2
System Pressure Testing Summary Table
(Page 1 of 3)

Examination Category	Item Numbers	Description of Parts Examined	Examination Requirements	System	Relief Request	Technical Approach & Position
B-P		Pressure Retaining Boundary	Visual, VT-2	Reactor Coolant Pressure Boundary	see notes	see notes
	B15.10	• Reactor Vessel				
	B15.11			• MS • CRD • FW • RWCU		
	B15.50	• Piping		• RX • RCIC		
	B15.51			• RR • SBLC • CS • HPCI		
	B15.60	• Pumps		• RHR		
	B15.61					
	B15.70	• Valves				
	B15.71					

Notes:

1. PT-01 applies to all Category B-P systems.
2. PR-01, PR-08, and PR-09 apply to all Category B-P systems.

Units 1 & 2
System Pressure Testing Summary Table
(Page 2 of 3)

Examination Category	Item Numbers	Description of Parts Examined	Examination Requirements	System	Relief Request	Technical Approach & Position
C-H		Pressure Retaining Components	Visual, VT-2	All Class 2 components in: • FW • SBLC • RR • HPCI • CS • CRD • RHR	see notes	see notes
	C7.10 C7.20	• Pressure Vessels				
	C7.30 C7.40	• Piping				
	C7.50 C7.60	• Pumps		RPV Head Flange	PR-02	
	C7.70 C7.80	• Valves		RHR	PR-04	
				HPCI	PR-06	

Notes:

1. PT-01 and PT-02 apply to all Category C-H systems.
2. PR-08 applies to all Category C-H systems.

Units 1 & 2
System Pressure Testing Summary Table
(Page 3 of 3)

Examination Category	Item Numbers	Description of Parts Examined	Examination Requirements	System	Relief Request	Technical Approach & Position
D-B	D2.10	Pressure Retaining Components	Visual, VT-2	All Class 3 components in: • Pressure Suppression • RHR SW • Control Room HVAC • DG Cooling Water		see notes
				RHRSW, DGCW, HVAC	PR-03	
				MS RV Discharge Lines	PR-05	

Notes:

1. PT-01 and PT-02 apply to all Category D-B systems.

SYSTEM PRESSURE TESTING
TECHNICAL APPROACH AND POSITION INDEX/SUMMARIES

Position	Page(s)	Summary
PT-01	12-2 to 12-3	Hydrostatic and operational pressure testing of open ended piping.
PT-02	12-4	Valve seats as pressurization boundaries.

TECHNICAL APPROACH AND POSITION NUMBER: PT-01

COMPONENT IDENTIFICATION

Code Classes:	2 and 3
References:	IWA-5244 IWC-5222 IWD-5223
Examination Categories:	C-H, D-B
Description:	Hydrostatic and Operational Pressure Testing of Open Ended Piping.

CODE REQUIREMENT

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

POSITION

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

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

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

- For the open ended portion of the HPCI turbine steam exhaust line, from the last isolation valve to the discharge sparger in the Torus, adequate flow will be demonstrated by not exceeding normal steam exhaust line pressures during system functional testing.

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

TECHNICAL APPROACH AND POSITION NUMBER: PT-01

POSITION (Con't)

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

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

TECHNICAL APPROACH AND POSITION NUMBER: PT-02

COMPONENT IDENTIFICATION

Code Classes:	1, 2, and 3
References:	IWA-5221
	IWA-5222
	IWA-5223
	IWA-5224
Examination Categories:	B-P, C-H, D-B
Description:	Valve Seats as Pressurization Boundaries.

CODE REQUIREMENT

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

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

POSITION

Quad Cities Station's position is that regardless of the type of pressure test performed (i.e. Operational or Hydrostatic), the pressurization boundary extends up to the valve seat of the valve utilized for isolation. For example, in order to hydrostatically test the Class 1 components, the valve that provides the Class break would be utilized as the isolation point. In this case the true pressurization boundary, and class break, is actually at the valve seat.

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

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

In order to simplify preparation of the walkdown checklists, Quad Cities Station will perform a VT-2 visual examination of the entire boundary valve body and bonnet (during pressurization up to the valve seat).

SYSTEM PRESSURE TESTING
RELIEF REQUEST INDEX/SUMMARIES

Relief Request	Page(s)	Summary
PR-01	13-2 to 13-3	System leakage test pressure for the disassembly and reassembly of Class 1 mechanical connections.
PR-02	13-4 to 13-8	Exemption from pressure testing Reactor Vessel Head Flange Seal Leak Detection System.
PR-03	13-9 to 13-11	Reduced pressure hydrostatic testing for Residual Heat Removal Service Water, Diesel Generator Cooling Water and Control Room HVAC Service Water Piping.
PR-04	13-12 to 13-13	Alternate testing for Residual Heat Removal heat exchanger tubes.
PR-05	13-14 to 13-18	Functional and Hydrostatic pressure testing for the Main Steam Relief Valve discharge lines.
PR-06	13-19 to 13-21	Required hold time for the High Pressure Coolant Injection Turbine and connected steam inlet and discharge piping.
PR-07	13-22 to 13-23	Alternate testing for Class 1 and Class 2 repaired/replaced components.
PR-08	13-24 to 13-25	Definition of Pressure Retaining Boundary for System Leakage Test.

RELIEF REQUEST NUMBER: PR-01
(Page 1 of 2)

COMPONENT IDENTIFICATION

Code Class:	1
References:	IWA-5211(a) IWB-5221(a)
Examination Category:	B-P
Description:	System Leakage Test Pressure for the Disassembly and Reassembly of Class 1 Mechanical Connections.
Component Numbers:	Various

CODE REQUIREMENTS

IWA-5211(a) requires a system leakage test to be conducted following the opening and re-closing of a component in the system after pressurization to nominal operating pressure.

IWB-5221(a) states that the system leakage test shall be conducted at a test pressure not less than the nominal operating pressure associated with 100% rated reactor power.

BASIS FOR RELIEF

The nominal operating pressure associated with 100% rated reactor power is 1,000 psig. Near the end of each refueling outage, a system pressure test of all Class 1 pressure retaining components is conducted at 1,000 psig.

Subsequent to the system pressure test conducted during a refueling outage, or during forced maintenance outages which can occur during an operating cycle, it may become necessary to disassemble and reassemble Class 1 mechanical connections that are located in the drywell and cannot be isolated from the reactor vessel. For these situations, the performance of a Class 1 system leakage test at 1,000 psig would have a significant impact on the unit's critical path outage time and personnel exposure.

The normal Class 1 system pressure test, which is performed with the vessel flooded up, requires numerous equipment outages (e.g., approximately 380 valves must be taken out-of-service, Main Steam safety valves must be gagged). Performance of the equipment outages, coupled with the performance of the system leakage test, takes approximately 5 days (3 shifts per day) with a total personnel exposure of approximately 2.5 Man-Rem.

RELIEF REQUEST NUMBER: PR-01
(Page 2 of 2)

BASIS FOR RELIEF (Con't)

Performance of a system leakage test during normal start-up is possible, however, the test can not be performed at 1,000 psig. During unit start-up, the Electro-Hydraulic Control System precludes a reactor pressure above 950 psig without significant increases in reactor power. In order to achieve a pressure of 1,000 psig, the reactor would have to be at approximately 100% rated power. The radiation levels in the drywell at this power level are prohibitive, and prevent drywell entry by plant personnel.

A drywell entry to inspect for leakage can be performed at 920 psig, which is associated with approximately 15% reactor power. Performance of the leakage test in this manner would have an insignificant impact on the ability to detect leakage from a reassembled mechanical connection. It would also significantly reduce the personnel exposure and critical path outage time required for the test.

Based on the above, Quad Cities Station requests relief from the ASME Section XI requirements for the system leakage test pressure when performing pressure testing of reassembled, unisolable Class 1 mechanical connections.

PROPOSED ALTERNATE PROVISIONS

As an alternate examination, Quad Cities Station will perform a system leakage test at 920 psig during unit start-up when an unisolable Class 1 mechanical connection in the drywell has been disassembled and reassembled either: 1) subsequent to performance of the system pressure test conducted near the end of each refueling outage; or 2) during a forced maintenance outage in the course of an operating cycle.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection Program for Quad Cities Units 1 and 2, which concludes on February 18, 2003 and March 10, 2003, respectively.

RELIEF REQUEST NUMBER: PR-02
(Page 1 of 5)

COMPONENT IDENTIFICATION

Code Class:	2
References:	IWC-5210(a)(2) IWC-5210(a)(3) Table IWC-2500-1
Examination Category:	C-H
Description:	Exemption From Pressure Testing Reactor Vessel Head Flange Seal Leak Detection System.
Component Numbers:	See Figure PR-02.1

CODE REQUIREMENTS

IWC-5210(a)(2) requires the pressure retaining components within each system boundary to be subjected to a system pressure test conducted during a system inservice test for those systems required to operate during normal plant operations.

IWC-5210(a)(3) requires the pressure retaining components within each system boundary to be subjected to a system hydrostatic pressure test.

BASIS FOR RELIEF

The Reactor Vessel Head Flange Leak Detection Line is separated from the reactor pressure boundary by one passive membrane, a silver plated O-ring located on the vessel flange. A second O-ring is located on the opposite side of the tap in the vessel flange (See Figure PR-02.2). This line is required during plant operation in order to indicate failure of the inner flange seal O-ring. Failure of the O-ring would result in the annunciation of a High Level Alarm in the control room. On this annunciation, control room operators would quantify the leakage rate from the O-ring and then isolate the leak detection line from the drywell sump by closing the AO 1(2)-220-51 valve (see Figure PR-02.1). This action is taken in order to prevent steam cutting of the O-ring and the vessel flange. Failure of the inner O-ring is the only condition under which this line is pressurized.

RELIEF REQUEST NUMBER: PR-02
(Page 2 of 5)

BASIS FOR RELIEF (Con't)

The configuration of this system precludes hydrostatic testing while the vessel head is removed. As Figure PR-02.2 portrays, the odd configuration of the vessel tap, combined with the small size of the tap and the high test pressure requirement (1000 psig minimum), prevents the tap in the flange from being temporarily plugged. When the head is installed, an adequate pressure test cannot be performed. The inner O-ring is designed to withstand pressure in one direction only. Due to the groove that the O-ring sits in and the pin/wire clip assembly (See Figure PR-02.3), pressurization in the opposite direction could damage the O-ring and thus result in further damage to the O-ring and vessel flange itself from steam cutting.

Pressure testing of this line during the Class 1 System Leakage and/or Hydrostatic Test is precluded because the line will only be pressurized in the event of a failure of the inner O-ring. It is extremely impractical to purposely fail the inner O-ring in order to perform a test.

Based on the above, Quad Cities Station requests relief from the ASME Section XI requirements for static and operational pressure testing of the Reactor Vessel Head Flange Seal Leak Detection System.

PROPOSED ALTERNATE EXAMINATION

A VT-2 visual examination will be performed on the line during vessel flood-up in a refueling outage. The hydrostatic head developed due to the water above the vessel flange during flood-up will allow for the detection of any gross indications in the line. This examination will be performed with the frequency specified by table IWC-2500-1 for an IWC-5221 test (once each inspection period).

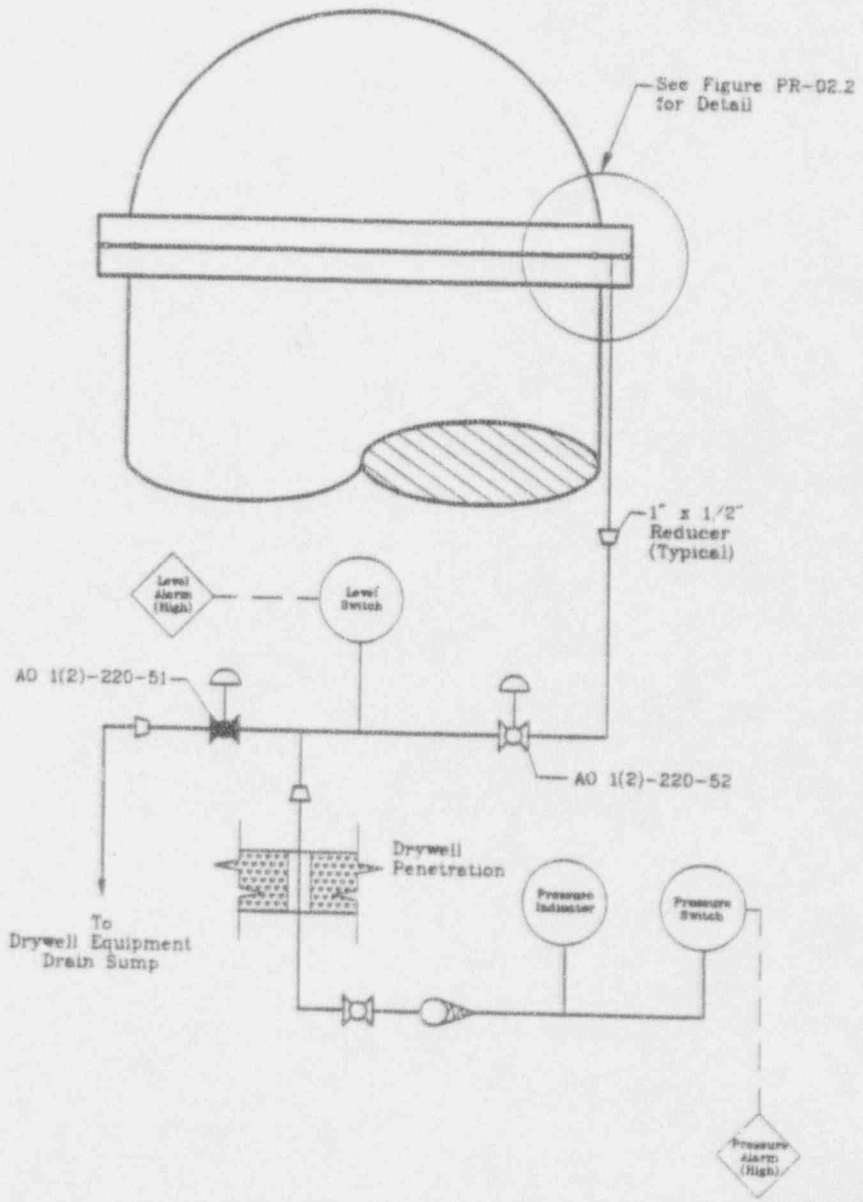
APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection Program for Quad Cities Units 1 and 2, which concludes on February 18, 2003 and March 10, 2003, respectively.

RELIEF REQUEST NUMBER: PR-02
(Page 3 of 5)

FIGURE PR-02.1

HEAD FLANGE SEAL LEAK DETECTION SCHEMATIC



RELIEF REQUEST NUMBER: PR-02
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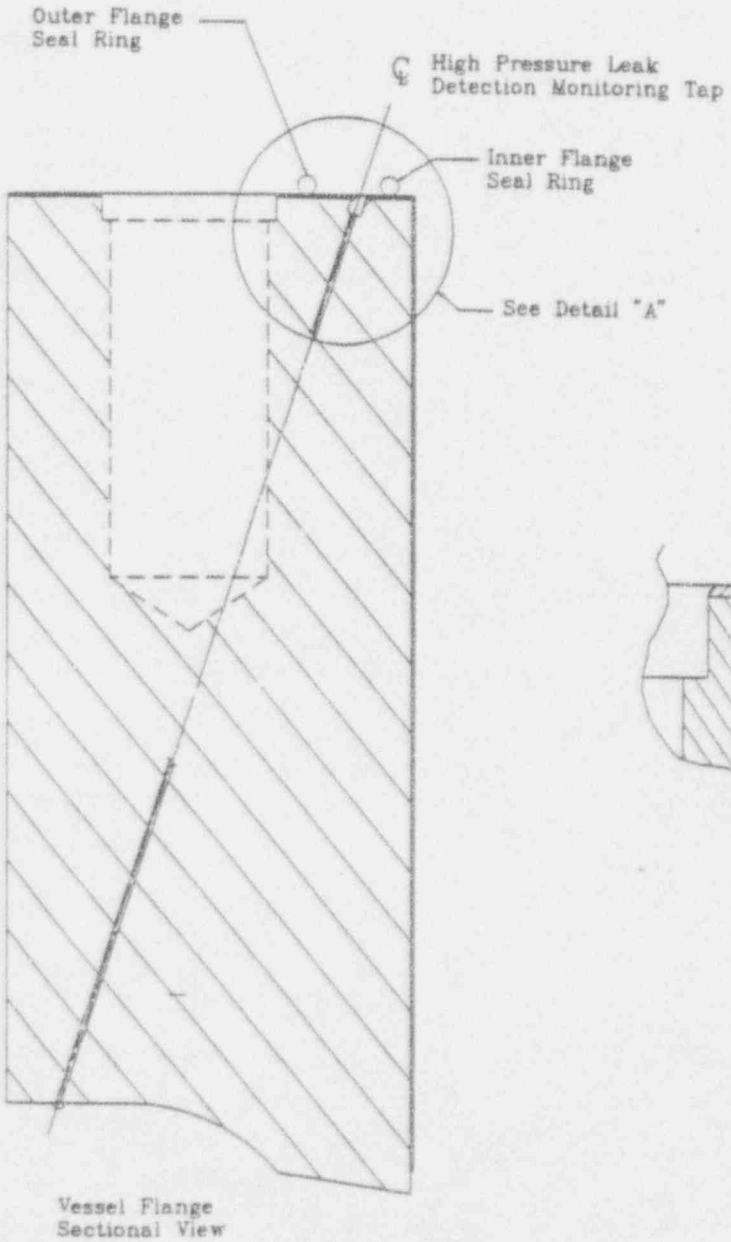
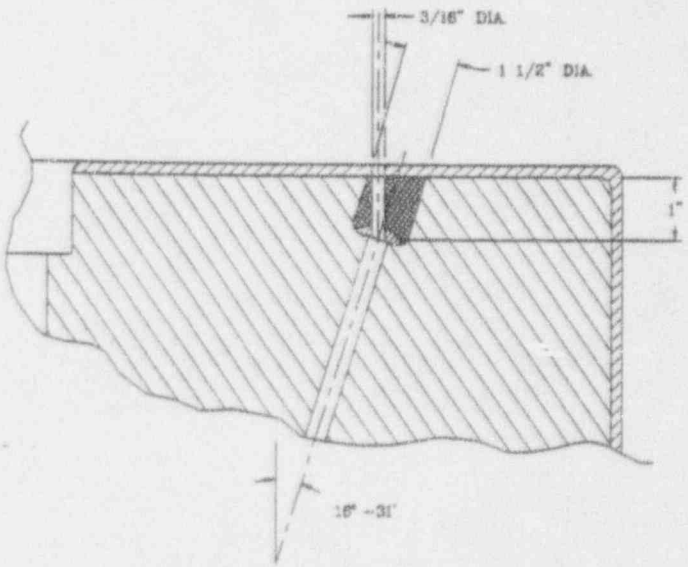
FIGURE PR-02.2

FLANGE SEAL LEAK DETECTION LINE DETAIL



Vessel Flange
Sectional View



Detail "A"

RELIEF REQUEST NUMBER: PR-02
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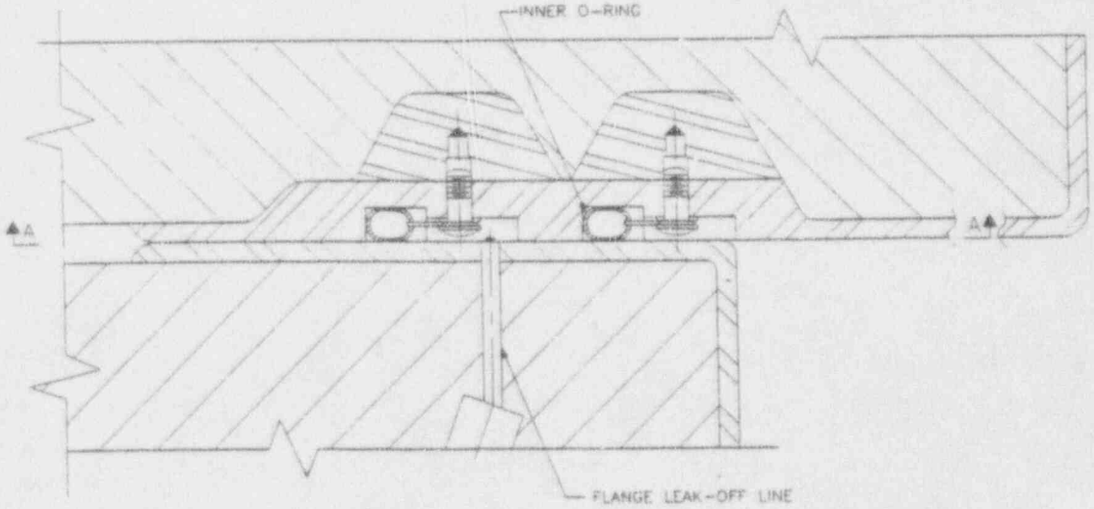
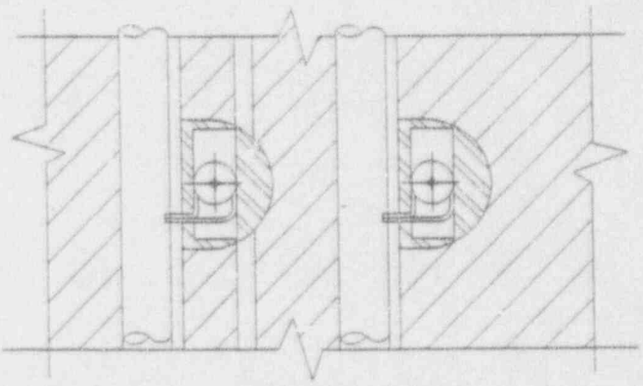
FIGURE IR-02.3

O-RING CONFIGURATION





SECTION A-A

RELIEF REQUEST NUMBER: PR-03
(Page 1 of 3)

COMPONENT IDENTIFICATION

Code Class:	3
References:	IWA-5265(b) IWD-5223(a)
Examination Category:	D-B
Item Number:	D2.10
Description:	Reduced Pressure Hydrostatic Testing for RHR Service Water, Diesel Generator Cooling Water and Control Room HVAC Service Water Piping.
Component Numbers:	Various

CODE REQUIREMENTS

IWA-5265(b) requires the pressure measuring instrument to be connected to a point in the pressure boundary, such that the imposed pressure on any component, including static head, will not exceed 106% of the specified test pressure in the system.

IWD-5223(a) states that the system hydrostatic test pressure shall be at least 1.10 times the system pressure P_{sv} for systems with design temperatures of 200 °F or less and at least 1.25 times the system pressure P_{sv} for systems with design temperatures greater than 200 °F.

BASIS FOR RELIEF

Due to the relatively low design pressure and large elevation change in the subject systems it is impossible to pressurize the highest elevation in the Test Block to the specified test pressure without pressurizing the lower elevations above 106% of this pressure.

The system configurations do not include any additional valves that could be closed to subdivide the test volumes into smaller runs of piping with less elevation change. Thus, the change in test pressure within the boundary due to static head exceeds the 6% limit established in IWA-5265(b).

In order to adhere to the limitations of IWA-5265(b) and to allow margin for pressure control, it will be necessary to test the upper elevations of the piping at a reduced pressure. This reduced pressure testing will only be performed when no other isolation is available that would reduce the elevation change experienced in a test volume.

Based on the above, Quad Cities Station requests relief from the ASME Section XI requirements for hydrostatic testing to 1.10 or 1.25 times P_{sv} of the test volumes listed in Table PR-03.1.

RELIEF REQUEST NUMBER: PR-03
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PROPOSED ALTERNATE EXAMINATION

The components will be hydrostatically tested such that the pressure at the lowest point in the test volume will equal 105% (±1%) of the Code required test pressure (1.10 x P_{sv} or 1.25 x P_{sv} based on design temperature). The minimum test pressure that the test volume will experience (at the highest elevation in the boundary) is listed in Table PR-03.1 as P_{min}. This approach is consistent with that outlined in Code Interpretation XI-1-89-68.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection Program for Quad Cities Units 1 and 2, which concludes on February 18, 2003 and March 10, 2003, respectively.

RELIEF REQUEST NUMBER: PR-03
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TABLE PR-03.1

Minimum Hydrostatic Test Pressure (Reduced Pressure Tests)

Unit Number	Component	Code Test Pressure (psig)	P_{min} (psig)
Unit 1	RHRSW A Discharge	437.5[1]	424.5
	DGCW	143.0[2]	123.6
Unit 2	RHRSW B Discharge	437.5[1]	427.8
	DGCW	143.0[2]	123.6
Unit 1/2	Control Room HVAC	165.0[2]	149.2
	DGCW	143.0[2]	123.6

Notes:

1. Unit 1 RHRSW A Discharge and Unit 2 RHRSW B Discharge piping have design temperatures greater than 200 °F such that the Code required test pressure is (1.25 x P_{sv}).

2. Unit 1 DGCW, Unit 2 DGCW, Unit 1/2 DGCW, and Control Room HVAC piping have design temperatures less than or equal to 200 °F such that the Code required test pressure is (1.10 x P_{sv}).

RELIEF REQUEST NUMBER: PR-03
(Page 1 of 3)

COMPONENT IDENTIFICATION

Code Class:	3
References:	IWA-5265(b) IWD-5223(a)
Examination Category:	D-B
Item Number:	D2.10
Description:	Reduced Pressure Hydrostatic Testing for RHR Service Water, Diesel Generator Cooling Water and Control Room HVAC Service Water Piping.
Component Numbers:	Various

CODE REQUIREMENTS

IWA-5265(b) requires the pressure measuring instrument to be connected to a point in the pressure boundary, such that the imposed pressure on any component, including static head, will not exceed 106% of the specified test pressure in the system.

IWD-5223(a) states that the system hydrostatic test pressure shall be at least 1.10 times the system pressure P_{sv} for systems with design temperatures of 200 °F or less.

BASIS FOR RELIEF

Due to the relatively low design pressure and large elevation change in the subject systems it is impossible to pressurize the highest elevation in the Test Block to the specified test pressure without pressurizing the lower elevations above 106% of this pressure.

The system configurations do not include any additional valves that could be closed to subdivide the test volumes into smaller runs of piping with less elevation change. Thus, the change in test pressure within the boundary due to static head exceeds the 6% limit established in IWA-5265(b).

In order to adhere to the limitations of IWA-5265(b) and to allow margin for pressure control, it will be necessary to test the upper elevations of the piping at a reduced pressure. This reduced pressure testing will only be performed when no other isolation is available that would reduce the elevation change experienced in a test volume.

Based on the above, Quad Cities Station requests relief from the ASME Section XI requirements for hydrostatic testing to 1.10 times P_{sv} of the test volumes listed in Table PR-03.1.

RELIEF REQUEST NUMBER: PR-03
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PROPOSED ALTERNATE EXAMINATION

The components will be hydrostatically tested such that the pressure at the lowest point in the test volume will equal 105% (±1%) of the Code required test pressure (1.10 x P_{sv}). The minimum test pressure that the test volume will experience (at the highest elevation in the boundary) is listed in Table PR-03.1 as P_{min}. This approach is consistent with that outlined in Code Interpretation XI-1-89-68.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection Program for Quad Cities Units 1 and 2, which concludes on February 18, 2003 and March 10, 2003, respectively.

RELIEF REQUEST NUMBER: PR-03
(Page 3 of 3)

TABLE PR-03.1

Minimum Hydrostatic Test Pressure (Reduced Pressure Tests)

Unit Number	Component	1.10 x P_{sv} (psig)	P_{min} (psig)
Unit 1	RHRSW A Discharge	385.0	369.4
	DGCW	143.0	123.6
Unit 2	RHRSW B Discharge	385.0	372.7
	DGCW	143.0	123.6
Unit 1/2	Control Room HVAC	165.0	149.2
	DGCW	143.0	123.6

RELIEF REQUEST NUMBER: PR-04
(Page 1 of 2)

COMPONENT IDENTIFICATION

Code Class:	2
Reference:	IWA-5241(b)
Examination Category:	C-H
Item Numbers:	C7.10, C7.20
Description:	Alternate Testing for Residual Heat Removal Heat Exchanger Tubes.
Component Numbers:	Unit 1: 1A-1003, 1B-1003 Unit 2: 2A-1003, 2B-1003

CODE REQUIREMENT

IWA-5241(b) states that the VT-2 visual examination of inaccessible components shall consist of an examination of the surrounding area, including floor areas or equipment surfaces located underneath the components, for evidence of leakage.

BASIS FOR RELIEF

The tubing inside the Residual Heat Removal (RHR) Heat Exchanger is inaccessible. A visual examiner cannot enter the RHR Heat Exchanger to perform an examination of the tubes during operational or hydrostatic pressure testing.

Based on the above, Quad Cities Station requests relief from the ASME Section XI requirements for performing a VT-2 visual examination of the RHR Heat Exchanger tubing during hydrostatic and operational pressure tests.

PROPOSED ALTERNATE EXAMINATION

Monitoring of radiation levels in the tube side cooling water will be performed as an alternate method of verifying tube integrity. Levels within Technical Specification limits will be considered acceptable.

RELIEF REQUEST NUMBER: PR-04
(Page 2 of 2)

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection Program for Quad Cities 1 and 2, which concludes on February 18, 2003 and March 10, 2003, respectively.

RELIEF REQUEST NUMBER: PR-05
(Page 1 of 5)

COMPONENT IDENTIFICATION

Code Class:	3
Reference:	IWA-5211(b), IWA-5211(d), IWD-5222, IWD-5223(f)
Examination Category:	D-B
Item Number:	D2.10
Description:	Functional and Hydrostatic Pressure Testing for the Main Steam Relief Valve Discharge Lines.
Component Numbers:	Various

CODE REQUIREMENT

IWA-5211(b) requires a system functional test to be conducted to verify operability in systems (or components) not required to operate during normal plant operation while under system operating pressure.

IWA-5211(d) requires a system hydrostatic test to be conducted during a plant shutdown at a pressure above nominal operating pressure or system pressure for which over-pressure protection is provided.

IWD-5222 requires the system test pressure of the system functional test to be the nominal operating pressure of the system.

IWD-5223(f) states that in lieu of a hydrostatic test on safety or relief valve piping which discharges into the containment pressure suppression pool, a pneumatic test shall be conducted (at a pressure of 90% of the pipe submergence head of water) that demonstrates leakage integrity.

BASIS FOR RELIEF

Quad Cities Station has five Main Steam Relief Valves with associated discharge lines and vacuum breakers. The discharge lines run down through the drywell, through the downcomers, and discharge into the Torus.

Normal plant operation calls for these lines to be pressurized only during semi-annual lift tests which verify the setpoints of each Main Steam Relief Valve. All of the discharge piping is contained inside of the drywell. At the power level during these lift tests, the radiation levels in the drywell are prohibitive and prevent inspection personnel from entering the drywell and performing VT-2 examinations during the Relief Valve functional testing.

RELIEF REQUEST NUMBER: PR-05
(Page 2 of 5)

BASIS FOR RELIEF (Con't)

The provisions of IWD-5223(f) call for a pneumatic test at a test pressure of 90% submergence head to be performed. The design of the Main Steam Relief Valves and associated discharge lines at Quad Cities Station does not allow for such a test to be performed that would demonstrate leakage integrity. Per 10CFR50.55a section (g)(4), Code Class components shall meet the requirements of ASME Section XI to the extent practical within the limitations of design, geometry, materials of construction of the components. The Electromatic Relief Valve pilot assemblies have a labyrinth type seal on the stem of the pilot valve disc (Figure PR-05.1). This seal will not prevent the leakage of air when pressurized from the discharge side. The Target Rock Relief Valve internals include several seating surfaces the may provide a leakage path when pressurized from the discharge line side (Figure PR-05.2). Since the purpose of this test is to determine the integrity of the discharge line and not the quality of the pilot valve seating surface, leakage in the Target Rock Valve would give inconclusive test results.

In addition to the above arguments, no test taps are currently available on these discharge lines to allow for the proper pressurization and depressurization of the system. The pressure associated with 90% submergence head in these lines relates to approximately 3-5 psig, while the normal surveillance lift test is performed at a minimum vessel pressure of 950 psig. At the low test pressure of the submergence head test, the vacuum breakers are not designed to provide a leak tight seal and would provide another leakage path that would prevent verification of component integrity.

Due to the variety of leakage paths described above, there is no available means to quantify leakage integrity doing a pneumatic submergence head type test.

Based on the above, Quad Cities Station requests relief from the ASME Section XI requirements for conducting a VT-2 under normal plant operating conditions and form the hydrostatic test requirements to perform a pneumatic test at 90% pipe submergence head once every inspection interval.

PROPOSED ALTERNATE EXAMINATION

A VT-3 visual examination will be conducted once every inspection period by VT-3 personnel to determine the condition of the part, component, or surface examined, including such conditions as cracks, wear, corrosion, erosion, or physical damage on the surfaces of the part or component. This visual examination will be done during the first refueling or forced outage post the normally scheduled Relief Valve Lift Tests. The minimum vessel pressure during this lift test is 950 psig as established by the normal surveillance procedure. At this pressure, the lift test challenges the discharge lines at a greater pressure that is much closure to their design pressure.

RELIEF REQUEST NUMBER: PR-05
(Page 3 of 5)

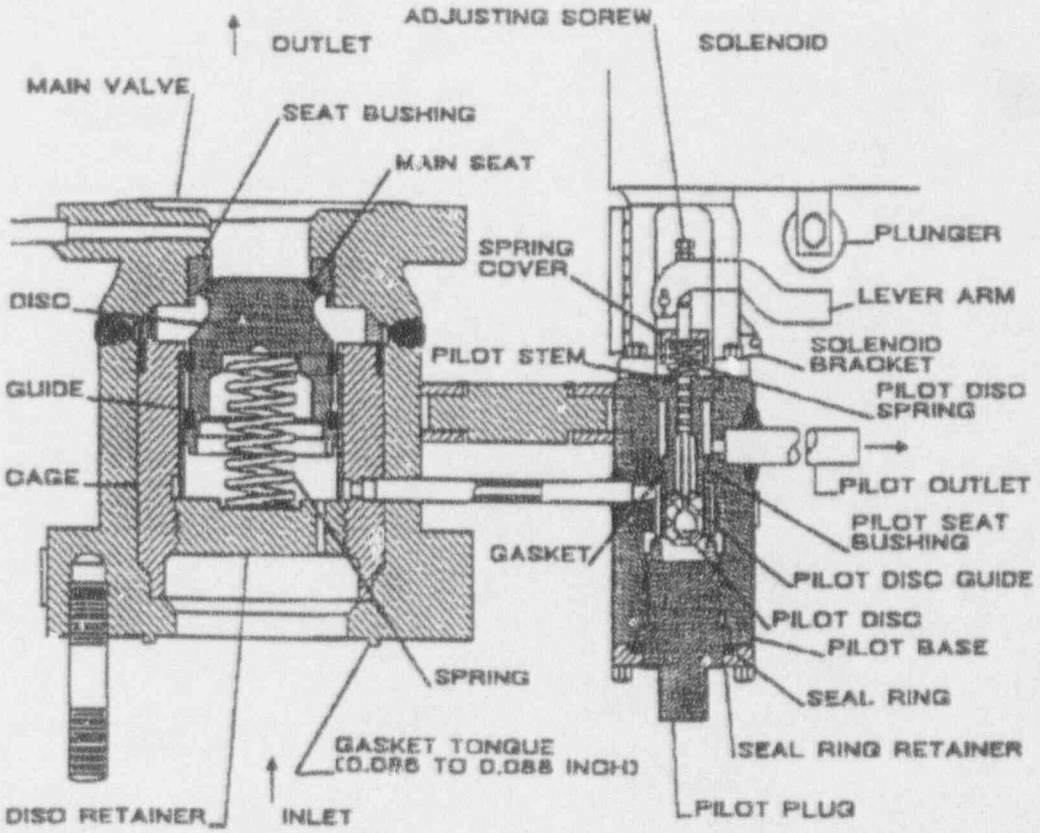
APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection Program for Quad Cities Units 1 and 2, which concludes on February 18, 2003 and March 10, 2003, respectively.

RELIEF REQUEST NUMBER: PR-05
(Page 4 of 5)

FIGURE PR-05.1

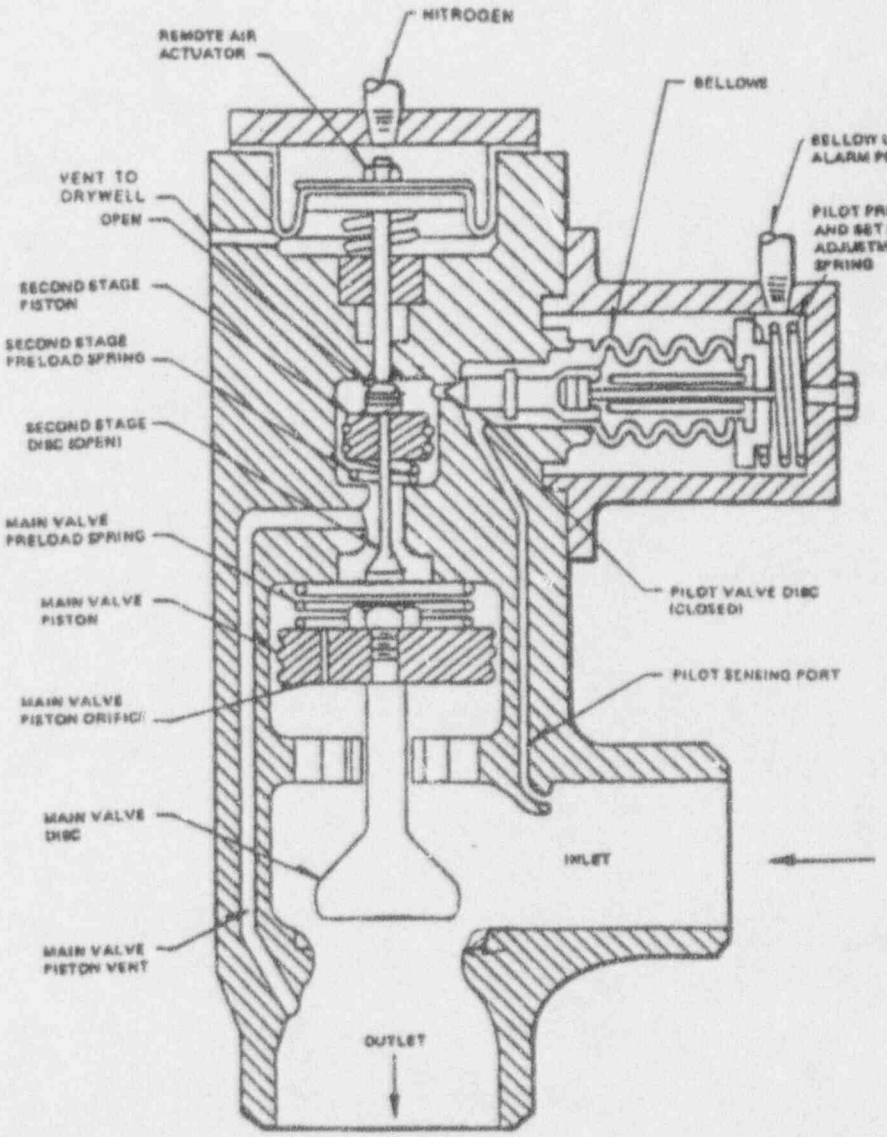
ELECTROMATIC SAFETY/RELIEF VALVE



RELIEF REQUEST NUMBER: PR-05
(Page 5 of 5)

FIGURE PR-05.2

TARGET ROCK SAFETY/RELIEF VALVE



RELIEF REQUEST NUMBER: PR-06
(Page 1 of 3)

COMPONENT IDENTIFICATION

Code Class:	2
Reference:	IWC-5222(a)
Examination Category:	C-H
Item Number:	C7.40
Description:	Required Hold Time for the High Pressure Coolant Injection (HPCI) Turbine and Connected Steam Inlet and Discharge Piping.
Component Numbers:	Unit 1: 1-2303 Unit 2: 2-2303

CODE REQUIREMENT

IWC-5222(a) states that the system hydrostatic test pressure shall be at least 1.25 times the system pressure P_{sv} for systems with a design temperature above 200 °F. It also states that the system pressure P_{sv} shall be the lowest pressure setting among the number of safety or relief valves provided for overpressure protection within the boundary to be tested (or, design pressure P_d if overpressure protection is not provided).

BASIS FOR RELIEF

In lieu of the hydrostatic test required by Table IWC-2500-1, Category C-H, Code Case N-498 allows for performing a VT-2 visual examination at nominal operating pressure, provided that a four hour hold time for insulated piping has been met. The Code Case also states that when these requirements are impractical, the rules and regulations of ASME Section XI, Subsection IWC shall govern.

Quad Cities' experience from conducting normal IST Surveillance Testing procedures on the HPCI system have demonstrated that Technical Specification Torus level and temperature limits are reached in 45 minutes to an hour. This deems the four hour hold time requirement of Code Case N-498 impractical and thus reverts the pressure test back to Section XI.

However, the hydrostatic test required by Table IWC-2500-1, Category C-H, is also impractical based on the following. The HPCI Turbine and HPCI Stop Valve shafts utilize a labyrinth design to provide a steam seal at the shafts (see Figure PR-06.1). The labyrinth seals reduce the pressure in the steam and, eventually, steam and condensate are collected by low pressure collection piping that is routed to the gland seal condenser. This low pressure piping can not be isolated from the turbine shaft and/or the stop valve shaft seals. During a static test this piping would experience the same pressure as the HPCI Turbine. Because this seal leak collection piping is of a much lower design pressure, a hydrostatic test at the HPCI Turbine design pressure could result in damage to the leak collection piping.

RELIEF REQUEST NUMBER: PR-06
(Page 2 of 3)

BASIS FOR RELIEF (Con't)

Based on the above, Quad Cities Station requests relief from the ASME Section XI requirements for performing a hydrostatic test of the HPCI Turbine and associated steam supply and discharge piping up to the last isolation valve before discharge into the Torus.

PROPOSED ALTERNATE EXAMINATION

A system functional test will be conducted (per IWC-5210(a)(1) and IWA-5213(b)) in lieu of the system hydrostatic test required once each interval.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection Program for Quad Cities Units 1 and 2, which concludes on February 18, 2003 and March 10, 2003, respectively.

RELIEF REQUEST NUMBER: PR-06
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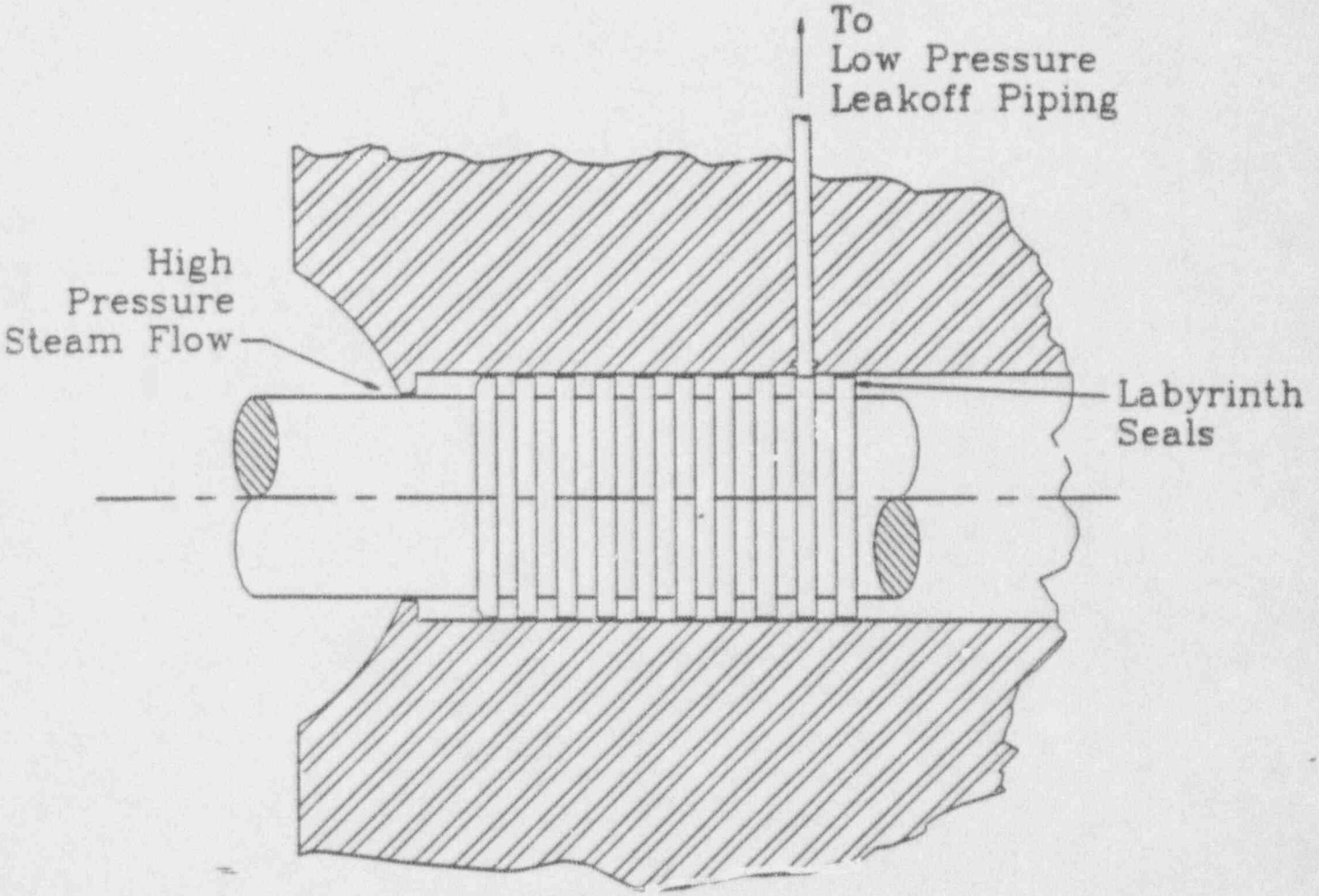
FIGURE PR-06.1

HPCI LABYRINTH SEALS



RELIEF REQUEST NUMBER: PR-07
(Page 1 of 2)

COMPONENT IDENTIFICATION

Code Classes:	1 and 2
References:	IWA-4700(a) IWA-4700(b) IWA-5214
Examination Categories:	B-P, C-H
Item Numbers:	B15.10 through B15.71 C7.10 through C7.80
Description:	Alternate Testing for ISI Class 1 and Class 2 Repaired/Replaced Components.
Component Numbers:	All Class 1 and Class 2 pressure retaining components subject to Hydrostatic Testing per IWA-4700.

CODE REQUIREMENT

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

BASIS FOR RELIEF

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

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

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

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

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

RELIEF REQUEST NUMBER: PR-07
(Page 2 of 2)

BASIS FOR RELIEF (Con't)

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

Little benefit is gained from the added challenge to the piping system provided by an elevated pressure hydrostatic test (when compared to an operational test), especially when one considers that the piping stress experienced during a hydrostatic test does not include the quite significant stresses affiliated with the thermal growth and dynamic loading associated with design basis events.

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

In addition to pressure tests, non-destructive examinations performed on repair/replacement welds and metal removal sites provide assurance of component integrity.

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

PROPOSED ALTERNATE PROVISIONS

A VT-2 visual examination will be performed with the Class 1 or 2 repaired/replaced component pressurized to nominal operating pressure. This visual examination will be performed after nominal operating pressure has been held for the following times:

- Non-Insulated components shall be held at nominal operating pressure for 10 minutes prior to examination.

- Insulated components shall be held at nominal operating pressure for 4 hours prior to examination.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection Program for Quad Cities Units 1 and 2, which concludes on February 18, 2003, and March 10, 2003, respectively.

RELIEF REQUEST NUMBER: PR-08
(Page 1 of 2)

COMPONENT IDENTIFICATION

Code Class:	1
Reference:	Table IWB-2500-1, Note 1
Examination Category:	B-P
Description:	Definition of Pressure Retaining Boundary for System Leakage Test.
Component Numbers:	All components subject to pressurization during a system leakage test.

CODE REQUIREMENT

Table IWB-2500-1, Note 1 states that the pressure retaining boundary during the system leakage test shall correspond to the reactor coolant system boundary, with all valves in the normal position, which is required for normal reactor operation start-up. The VT-2 visual examination shall, however, extend to and include the second closed valve at the boundary extremity.

BASIS FOR RELIEF

It is impractical to perform a system leakage test during actual reactor start-up. The high dose rates associated with 100% rated reactor power, the temperature levels in the drywell and the large amount of piping and components to be examined makes this examination a hardship. In lieu of a system leakage test during reactor start-up a hydrostatic test is performed at the pressure associated with 100% rated reactor power.

Section XI states that the boundary for the system leakage test shall be the reactor coolant pressure boundary with all valves in the position required during reactor start-up. It is impractical to extend the boundary this far during hydrostatic testing (at pressure associated with 100% rated reactor power). This would require extensive valve line-ups in such non-safety related (and non-code classed) systems as Main Steam, Feedwater, Condensate and Condensate Booster, Reactor Water Cleanup and Shutdown Cooling. None of theses systems are isolated from the reactor coolant pressure boundary during start-up.

In addition to the extensive line-ups required to perform a hydrostatic test of this magnitude, special measures would be required to temporarily support steam lines due to the excess weight of the water.

RELIEF REQUEST NUMBER: PR-08
(Page 2 of 2)

BASIS FOR RELIEF (Con't)

In summary, it is unsafe to perform a VT-2 visual examination during actual reactor start-up at 100% rated reactor power and it is unreasonable to perform a hydrostatic pressure test of the reactor coolant pressure system with all valves in the position required for normal reactor start-up.

Based on the above, Quad Cities Station requests relief from the ASME Section XI requirements for performing a system leakage test using the boundaries stated in Note 1 of Table IWB-2500-1.

PROPOSED ALTERNATE PROVISIONS

A VT-2 visual examination will be performed during a hydrostatic test at a pressure not less than that associated with 100% rated reactor power. The pressurization boundaries for this test will extend, as a minimum, to the first normally closed valve or to the outboard containment isolation valve for systems that normally have both isolation valves open during reactor start-up. The VT-2 visual examination will extend to the second isolation valve.

APPLICABLE TIME PERIOD

Relief is requested for the third ten-year interval of the Inservice Inspection Program for Quad Cities Units 1 and 2, which concludes on February 18, 2003 and March 10, 2003, respectively.

Revision 4
October 1, 1992

PUMP AND VALVE

INSERVICE TESTING PLAN

FOR

Quad Cities Nuclear Power Station, Unit 1
Commercial Service Date: February 18, 1973
Quad Cities Nuclear Power Station, Unit 2
Commercial Service Date: March 10, 1973
P. O. Box 216
Cordova, IL 61242

COMMONWEALTH EDISON COMPANY
P. O. Box 767
Chicago, Illinois 60690

REVISION SUMMARY SHEET

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Quad Cities Nuclear Power Station, Units 1 and 2
INSERVICE TESTING PLAN
INFORMATION COMMON TO PUMPS AND VALVES

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Quad Cities Nuclear Power Station, Units 1 and 2
INSERVICE TESTING PLAN
INFORMATION COMMON TO PUMPS AND VALVES

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INTRODUCTION AND PLAN DESCRIPTION

Quad Cities Nuclear Power Station, Units 1 and 2
INSERVICE TESTING PLAN
INFORMATION COMMON TO PUMPS AND VALVES

1.0 INTRODUCTION AND PLAN DESCRIPTION

This Inservice Testing Plan for ISI Class 1, 2, 3, and NC pumps and valves was developed in accordance with the inservice testing requirements in ASME Section XI, Subsections IWP and IWV. Where these requirements are determined to be impractical, specific relief is requested. All references to the "Code" in this Plan are taken from the ASME Boiler and Pressure Vessel Code, Section XI, Division I, "Rules for Inservice Inspection of Nuclear Power Plant Components", 1986 Edition.

This Inservice Testing Program will be effective for ten years beginning:

- Unit 1 - February 18, 1993, and
- Unit 2 - March 10, 1993.

This Plan is one of two Plans that cover Inservice Inspection and Inservice Testing at Quad Cities Nuclear Power Station. The other Plan covers:

- **Inservice Inspection** (Non-Destructive Examination)

The key features of the Inservice Testing Plan are; the Pump and Valve Listings that define the scope of the Inservice Testing Program, Relief Requests, Cold Shutdown Justifications, and Technical Approach and Positions. Administrative procedures, surveillance testing procedures, reference value test results, and other procedures and records required to define and execute the Inservice Testing Program are all retained at Quad Cities.

PIPING AND INSTRUMENTATION DIAGRAMS

2.0 PIPING AND INSTRUMENTATION DIAGRAMS

The Quad Cities Nuclear Power Station Piping and Instrumentation Diagrams (P&IDs) clearly define the scope of the ISI Class 1, 2, 3, and NC Inservice Testing Program. Systems or portions of systems subject to the requirements of ASME Section XI have been identified on the P&IDs.

The Legend and Symbols drawings (P&ID M-12 Sheets 1 and 2) provided with the P&IDs explains the ISI Classifications. Lists of P&IDs for Quad Cities Nuclear Power Station, Unit 1 have been included in Table 2.0-1 (sorted by System name) and Table 2.0-3 (sorted by P&ID number). Lists of P&IDs for Quad Cities Nuclear Power Station, Unit 2 have been included in Table 2.0-2 (sorted by System name) and Table 2.0-4 (sorted by P&ID number).

The ISI boundaries on the P&IDs are limited to safety related systems which contain water, steam, or radioactive materials in accordance with Regulatory Guide 1.26.

The P&IDs submitted with this Inservice Testing Plan are "For Information Only". A controlled set of P&IDs will be maintained at Quad Cities. The controlled set of P&IDs are regularly updated to ensure that all system additions and modifications are properly addressed by the IST Program.

Some pumps and valves that perform a safety function are not classified ISI Class 1, 2, or 3 (e.g., Diesel Fuel Oil Systems). These pumps and valves have been included in the IST Program in recognition of their importance to safety. They are noted as ISI Class "NC", meaning not classified ISI Class 1, 2, or 3, but safety related.

Table 2.0-1

LIST OF UNIT 1 INSERVICE INSPECTION PIPING AND INSTRUMENTATION DIAGRAMS (P&IDs)
(sorted by System name)

System Name	P&ID Number
ATMOSPHERIC CONTAINMENT ATMOSPHERE DILUTION SYSTEM	M-0642-1
CLEAN AND CONTAMINATED CONDENSATE PIPING	M-0058-3
CONTAINMENT ATMOSPHERE MONITOR SYSTEM	M-0641-1
CONTROL ROD DRIVE HYDRAULIC PIPING	M-0041-1
CONTROL ROOM HVAC	M-1551
CORE SPRAY PIPING	M-0036
DIESEL GENERATOR FUEL OIL PIPING	M-0029-2
HIGH PRESSURE COOLANT INJECTION PIPING	M-0046
HIGH RADIATION SAMPLING SYSTEM PIPING, LIQUID SAMPLING	M-1056-1
HIGH RADIATION SAMPLING SYSTEM, CONTAINMENT AIR SAMPLING	M-1057-1
INSTRUMENT AIR PIPING	M-0024-2
LOW PRESSURE SERVICE WATER PIPING	M-0022-1
MAIN STEAM PIPING	M-0013-1 M-0013-2
NUCLEAR BOILER & REACTOR RECIRCULATION PIPING	M-0035-1 M-0035-2
OFF GAS PIPING	M-0042-1
PRESSURE SUPPRESSION PIPING	M-0034-1
REACTOR BUILDING COOLING WATER PIPING	M-0033
REACTOR BUILDING EQUIPMENT DRAINS	M-0043
REACTOR CORE ISOLATION COOLING PIPING	M-0050
REACTOR FEED PIPING	M-0015

Table 2.0-1

LIST OF UNIT 1 INSERVICE INSPECTION PIPING AND INSTRUMENTATION DIAGRAMS (P&IDs)
(sorted by System name)

System Name	P&ID Number
REACTOR WATER CLEAN-UP PIPING	M-0047
RESIDUAL HEAT REMOVAL SYSTEM PIPING	M-0037 M-0039-1 M-0039-2
SERVICE AIR PIPING	M-0025-1 M-0025-2
SERVICE WATER PIPING, DIESEL GENERATOR COOLING WATER	M-0022-3
STANDBY GAS TREATMENT	M-0044
STANDBY LIQUID CONTROL PIPING	M-0040
TRAVERSING IN-CORE PROBE (TIP) SYSTEM	M-0584

Table 2.0-2

LIST OF UNIT 1 INSERVICE INSPECTION PIPING AND INSTRUMENTATION DIAGRAMS (P&IDs)
(sorted by P&ID number)

P&ID Number	System Name
M-0013-1	MAIN STEAM PIPING
M-0013-2	MAIN STEAM PIPING
M-0015	REACTOR FEED PIPING
M-0022-1	LOW PRESSURE SERVICE WATER PIPING
M-0022-3	SERVICE WATER PIPING, DIESEL GENERATOR COOLING WATER
M-0024-2	INSTRUMENT AIR PIPING
M-0025-1	SERVICE AIR PIPING
M-0025-2	SERVICE AIR PIPING
M-0029-2	DIESEL GENERATOR FUEL OIL PIPING
M-0033	REACTOR BUILDING COOLING WATER PIPING
M-0034-1	PRESSURE SUPPRESSION PIPING
M-0035-1	NUCLEAR BOILER & REACTOR RECIRCULATION PIPING
M-0035-2	NUCLEAR BOILER & REACTOR RECIRCULATION PIPING
M-0036	CORE SPRAY PIPING
M-0037	RESIDUAL HEAT REMOVAL SYSTEM PIPING
M-0039-1	RESIDUAL HEAT REMOVAL SYSTEM PIPING
M-0039-2	RESIDUAL HEAT REMOVAL SYSTEM PIPING
M-0040	STANDBY LIQUID CONTROL PIPING
M-0041-1	CONTROL ROD DRIVE HYDRAULIC PIPING
M-0042-1	OFF GAS PIPING
M-0043	REACTOR BUILDING EQUIPMENT DRAINS

Table 2.0-2

LIST OF UNIT 1 INSERVICE INSPECTION PIPING AND INSTRUMENTATION DIAGRAMS (P&IDs)
(sorted by P&ID number)

P&ID Number	System Name
M-0044	STANDBY GAS TREATMENT
M-0046	HIGH PRESSURE COOLANT INJECTION PIPING
M-0047	REACTOR WATER CLEAN-UP PIPING
M-0050	REACTOR CORE ISOLATION COOLING PIPING
M-0058-3	CLEAN AND CONTAMINATED CONDENSATE PIPING
M-0584	TRAVERSING IN-CORE PROBE (TIP) SYSTEM
M-0641-1	CONTAINMENT ATMOSPHERE MONITOR SYSTEM
M-0642-1	ATMOSPHERIC CONTAINMENT ATMOSPHERE DILUTION SYSTEM
M-1056-1	HIGH RADIATION SAMPLING SYSTEM PIPING, LIQUID SAMPLING
M-1057-1	HIGH RADIATION SAMPLING SYSTEM, CONTAINMENT AIR SAMPLING
M-1551	CONTROL ROOM HVAC

Table 2.0-3

LIST OF UNIT 2 INSERVICE INSPECTION PIPING AND INSTRUMENTATION DIAGRAMS (P&IDs)
(sorted by System name)

System Name	P&ID Number
ATMOSPHERIC CONTAINMENT ATMOSPHERE DILUTION SYSTEM	M-0642-2
CLEAN & CONTAMINATED CONDENSATE PIPING	M-0058-3
CONTAINMENT AIR SAMPLING SYSTEM	M-1062
CONTAINMENT ATMOSPHERE MONITOR SYSTEM	M-0641-2
CONTROL ROD DRIVE HYDRAULIC PIPING	M-0083-1
CONTROL ROOM HVAC	M-1551
CORE SPRAY PIPING	M-0078
DIESEL GENERATOR FUEL OIL PIPING	M-0029-2
HIGH PRESSURE COOLANT INJECTION PIPING	M-0087
INSTRUMENT AIR PIPING	M-0071-2
LIQUID SAMPLING	M-1061-1
MAIN STEAM PIPING	M-0060-1 M-0060-2
NUCLEAR BOILER & REACTOR RECIRCULATION PIPING	M-0077-1 M-0077-2
OFF GAS PIPNG	M-0084-1
PRESSURE SUPPRESSION PIPING	M-0076-1
REACTOR BUILDING COOLING WATER PIPING	M-0075
REACTOR BUILDING EQUIPMENT DRAINS	M-0085
REACTOR CORE ISOLATION COOLING PIPING	M-0089
REACTOR FEED PIPING	M-0062
REACTOR WATER CLEAN-UP PIPING	M-0088

Table 2.0-3

LIST OF UNIT 2 INSERVICE INSPECTION PIPING AND INSTRUMENTATION DIAGRAMS (P&IDs)
(sorted by System name)

System Name	P&ID Number
RESIDUAL HEAT REMOVAL SYSTEM PIPING	M-0079 M-0081-1 M-0081-2
SERVICE AIR PIPING	M-0072-1 M-0072-2
SERVICE WATER PIPING	M-0069-1
SERVICE WATER PIPING, DIESEL GENERATOR COOLING WATER	M-0069-3
STANDBY GAS TREATMENT	M-0044
STANDBY LIQUID CONTROL PIPING	M-0082

Table 2.0-4

LIST OF UNIT 2 INSERVICE INSPECTION PIPING AND INSTRUMENTATION DIAGRAMS (P&IDs)
(sorted by P&ID number)

P&ID Number	System Name
M-0029-2	DIESEL GENERATOR FUEL OIL PIPING
M-0044	STANDBY GAS TREATMENT
M-0058-3	CLEAN & CONTAMINATED CONDENSATE PIPING
M-0060-1	MAIN STEAM PIPING
M-0060-2	MAIN STEAM PIPING
M-0062	REACTOR FEED PIPING
M-0069-1	SERVICE WATER PIPING
M-0069-3	SERVICE WATER PIPING, DIESEL GENERATOR COOLING WATER
M-0071-2	INSTRUMENT AIR PIPING
M-0072-1	SERVICE AIR PIPING
M-0072-2	SERVICE AIR PIPING
M-0075	REACTOR BUILDING COOLING WATER PIPING
M-0076-1	PRESSURE SUPPRESSION PIPING
M-0077-1	NUCLEAR BOILER & REACTOR RECIRCULATION PIPING
M-0077-2	NUCLEAR BOILER & REACTOR RECIRCULATION PIPING
M-0078	CORE SPRAY PIPING
M-0079	RESIDUAL HEAT REMOVAL SYSTEM PIPING
M-0081-1	RESIDUAL HEAT REMOVAL SYSTEM PIPING
M-0081-2	RESIDUAL HEAT REMOVAL SYSTEM PIPING
M-0082	STANDBY LIQUID CONTROL PIPING
M-0083-1	CONTROL ROD DRIVE HYDRAULIC PIPING

Table 2.0-4

LIST OF UNIT 2 INSERVICE INSPECTION PIPING AND INSTRUMENTATION DIAGRAMS (P&JDs)
(sorted by P&ID number)

P&ID Number	System Name
M-0084-1	OFF GAS PIPNG
M-0085	REACTOR BUILDING EQUIPMENT DRAINS
M-0087	HIGH PRESSURE COOLANT INJECTION PIPING
M-0088	REACTOR WATER CLEAN-UP PIPING
M-0089	REACTOR CORE ISOLATION COOLING PIPING
M-0641-2	CONTAINMENT ATMOSPHERE MONITOR SYSTEM
M-0642-2	ATMOSPHERIC CONTAINMENT ATMOSPHERE DILUTION SYSTEM
M-1061-1	LIQUID SAMPLING
M-1062	CONTAINMENT AIR SAMPLING SYSTEM
M-1551	CONTROL ROOM HVAC

PUMP PROGRAM LISTING

1.0 PROGRAM LISTING

Table 1.0-1, "Pump Listing" lists all pumps included in the Quad Cities Nuclear Power Station, Unit 1 IST Program. Table 1.0-2, "Pump Listing" lists all pumps included in the Quad Cities Nuclear Power Station, Unit 2 IST Program.

The data contained in this Table identifies all pumps subject to inservice testing, the inservice test quantities, the inservice testing frequency, and any applicable remarks. The column headings in the Table are listed and explained below:

- **Pump Number**

  The unique number that identifies the pump. The Pump Listing is sorted by Pump Number.

- **Function**

  The common name/function for the pump.

- **IST Class**

  The ISI classification as shown on the Piping and Instrumentation Diagram (P&ID).

- **P&ID Number**

  The P&ID number. If the pump appears on multiple P&IDs, the primary P&ID will be listed.

- **Dwg Coor**

  The coordinate location (e.g., D-5) on the P&ID where the pump appears.

- **Test Type**

  Test type is an abbreviation for the Inservice Test Quantities listed in Table IWP-3100-1.

- **Relief Request**

  If a Relief Request is included in Section 2.0, the Relief Request number will appear.

- **Test Freq**

  The test frequency associated with each test type will be specified.

- **Technical Approach and Position**

  When appropriate, clarifying remarks concerning Quad Cities' technical approach and position have been included in Section 3.0.

Table 1.0-1
UNIT 1 PUMP LISTING

PUMP NUMBER	P&ID NUMBER	DWG COORD	IST CLASS	TEST TYPE	TEST FREQ	RELIEF REQUEST	TECHNICAL POSITION
1-3903	M-0022	A-10	3	INLET PRESSURE	QTLY		
				DIFFERNTL PRESSURE			
				FLOW RATE			
				VIBRATION		RP-00A	
				BEARING TEMPERATURE		RP-00B	
FUNCTION: DIESEL GENERATOR COOLING WATER							
1/2-3903	M-0022	A-10	2	INLET PRESSURE	QTLY		
				DIFFERNTL PRESSURE			
				FLOW RATE			
				VIBRATION		RP-00A	
				BEARING TEMPERATURE		RP-00B	
FUNCTION: DIESEL GENERATOR COOLING WATER							
1-5203	M-0029	F-3	NC	INLET PRESSURE	QTLY	RP-52A	
				DIFFERNTL PRESSURE		RP-52A	
				FLOW RATE			
				VIBRATION		RP-00A	
				BEARING TEMPERATURE		RP-00B	
FUNCTION: DIESEL GENERATOR FUEL OIL TRANSFER							

Table 1.0-1
UNIT 1 PUMP LISTING

PUMP NUMBER	P&ID NUMBER	DWG COORD	IST CLASS	TEST TYPE	TEST FREQ	RELIEF REQUEST	TECHNICAL POSITION
1/2-5203	M-0029	F-3	NC	INLET PRESSURE	QTLY	RP-52A	
				DIFFERNTL PRESSURE		RP-52A	
				FLOW RATE			
				VIBRATION		RP-00A	
				BEARING TEMPERATURE		RP-00B	
FUNCTION: DIESEL GENERATOR FUEL OIL TRANSFER							
1A-1401	M-0036	E-9	2	INLET PRESSURE	QTLY		
				DIFFERNTL PRESSURE			
				FLOW RATE			
				VIBRATION		RP-00A	
				BEARING TEMPERATURE		RP-00B	
FUNCTION: CORE SPRAY PUMP 1A							
1B-1401	M-0036	E-6	2	INLET PRESSURE	QTLY		
				DIFFERNTL PRESSURE			
				FLOW RATE			
				VIBRATION		RP-00A	
				BEARING TEMPERATURE		RP-00B	
FUNCTION: CORE SPRAY PUMP 1B							

Table 1.0-1
UNIT 1 PUMP LISTING

PUMP NUMBER	P&ID NUMBER	DWG COORD	IST CLASS	TEST TYPE	TEST FREQ	RELIEF REQUEST	TECHNICAL POSITION
1A-1002	M-0037	B-4	2	INLET PRESSURE	QTLY		
				DIFFERNTL PRESSURE			
				FLOW RATE			
				VIBRATION		RP-00A	
				BEARING TEMPERATURE		RP-00B	
FUNCTION: RHR PUMP 1A							
1B-1002	M-0037	E-4	2	INLET PRESSURE	QTLY		
				DIFFERNTL PRESSURE			
				FLOW RATE			
				VIBRATION		RP-00A	
				BEARING TEMPERATURE		RP-00B	
FUNCTION: RHR PUMP 1B							
1C-1002	M-0037	B-8	2	INLET PRESSURE	QTLY		
				DIFFERNTL PRESSURE			
				FLOW RATE			
				VIBRATION		RP-00A	
				BEARING TEMPERATURE		RP-00B	
FUNCTION: RHR PUMP 1C							

Table 1.0-1
UNIT 1 PUMP LISTING

PUMP NUMBER	P&ID NUMBER	DWG COORD	IST CLASS	TEST TYPE	TEST FREQ	RELIEF REQUEST	TECHNICAL POSITION
1D-1002	M-0037	E-8	2	INLET PRESSURE	QTLY		
				DIFFERNTL PRESSURE			
				FLOW RATE			
				VIBRATION		RP-00A	
				BEARING TEMPERATURE		RP-00B	
FUNCTION: RHR PUMP 1D							
1001-65A	M-0039	F-4	3	INLET PRESSURE	QTLY		
				DIFFERNTL PRESSURE			
				FLOW RATE			
				VIBRATION		RP-00A	
				BEARING TEMPERATURE		RP-00B	
FUNCTION: RHR SERVICE WATER A PUMP							
1001-65B	M-0039	F-4	3	INLET PRESSURE	QTLY		
				DIFFERNTL PRESSURE			
				FLOW RATE			
				VIBRATION		RP-00A	
				BEARING TEMPERATURE		RP-00B	
FUNCTION: RHR SERVICE WATER B PUMP							

Table 1.0-1
UNIT 1 PUMP LISTING

PUMP NUMBER	P&ID NUMBER	DWG COORD	IST CLASS	TEST TYPE	TEST FREQ	RELIEF REQUEST	TECHNICAL POSITION
1001-65C	M-0039	F-7	3	INLET PRESSURE	QTLY		
				DIFFERNTL PRESSURE			
				FLOW RATE			
				VIBRATION		RP-00A	
				BEARING TEMPERATURE		RP-00B	
FUNCTION: RHR SERVICE WATER C PUMP							
1001-65D	M-0039	F-4	3	INLET PRESSURE	QTLY		
				DIFFERNTL PRESSURE			
				FLOW RATE			
				VIBRATION		RP-00A	
				BEARING TEMPERATURE		RP-00B	
FUNCTION: RHR SERVICE WATER D PUMP							
1A-1102	M-0040	D-7	2	INLET PRESSURE	QTLY	RP-11A	
				DIFFERNTL PRESSURE		RP-11A	
				FLOW RATE			
				VIBRATION		RP-00A	
				BEARING TEMPERATURE		RP-00B	
FUNCTION: STANDBY LIQUID CONTROL PUMP 1A							

Table 1.0-1
UNIT 1 PUMP LISTING

PUMP NUMBER	P&ID NUMBER	DWG COORD	IST CLASS	TEST TYPE	TEST FREQ	RELIEF REQUEST	TECHNICAL POSITION
1B-1102	M-0040	E-7	2	INLET PRESSURE	QTLY	RP-11A	
				DIFFERNTL PRESSURE		RP-11A	
				FLOW RATE			
				VIBRATION		RP-00A	
				BEARING TEMPERATURE		RP-00B	
FUNCTION: STANDBY LIQUID CONTROL PUMP 1B							
1-2302	M-0046	A-4	2	SPEED	QTLY		
				INLET PRESSURE			
				DIFFERNTL PRESSURE			
				FLOW RATE			
				VIBRATION		RP-00A	
				BEARING TEMPERATURE		RP-00B	
FUNCTION: HIGH PRESSURE COOLANT INJECTION							
1-1302	M-0050	A-4	NC	SPEED	QTLY		
				INLET PRESSURE			
				DIFFERNTL PRESSURE			
				FLOW RATE			
				VIBRATION		RP-00A	
				BEARING TEMPERATURE		RP-00B	
FUNCTION: REACTOR CORE ISOLATION COOLING PUMP							

Table 1.0-2
UNIT 2 PUMP LISTING

PUMP NUMBER	P&ID NUMBER	DWG COORD	IST CLASS	TEST TYPE	TEST FREQ	RELIEF REQUEST	TECHNICAL POSITION
2-5203	M-0029	F-3	NC	INLET PRESSURE	QTLY	RP-52A	
				DIFFERNTL PRESSURE		RP-52A	
				FLOW RATE			
				VIBRATION		RP-00A	
				BEARING TEMPERATURE		RP-00B	
FUNCTION: DIESEL GENERATOR FUEL OIL TRANSFER							
2-3903	M-0069	A-10	3	INLET PRESSURE	QTLY		
				DIFFERNTL PRESSURE			
				FLOW RATE			
				VIBRATION		RP-00A	
				BEARING TEMPERATURE		RP-00B	
FUNCTION: DIESEL GENERATOR COOLING WATER							
2A-1401	M-0078	E-9	2	INLET PRESSURE	QTLY		
				DIFFERNTL PRESSURE			
				FLOW RATE			
				VIBRATION		RP-00A	
				BEARING TEMPERATURE		RP-00B	
FUNCTION: CORE SPRAY PUMP 2A							

Table 1.0-2
UNIT 2 PUMP LISTING

PUMP NUMBER	P&ID NUMBER	DWG COORD	IST CLASS	TEST TYPE	TEST FREQ	RELIEF REQUEST	TECHNICAL POSITION
2B-1401	M-0078	E-6	2	INLET PRESSURE	QTLY		
				DIFFERNTL PRESSURE			
				FLOW RATE			
				VIBRATION		kP-00A	
				BEARING TEMPERATURE		RP-00B	
FUNCTION: CORE SPRAY PUMP 2B							
2A-1002	M-0079	B-4	2	INLET PRESSURE	QTLY		
				DIFFERNTL PRESSURE			
				FLOW RATE			
				VIBRATION		RP-00A	
				BEARING TEMPERATURE		RP-00B	
FUNCTION: RHR PUMP 2A							
2B-1002	M-0079	E-4	2	INLET PRESSURE	QTLY		
				DIFFERNTL PRESSURE			
				FLOW RATE			
				VIBRATION		RP-00A	
				BEARING TEMPERATURE		RP-00B	
FUNCTION: RHR PUMP 2B							

Table 1.0-2
UNIT 2 PUMP LISTING

PUMP NUMBER	P&ID NUMBER	DWG COORD	IST CLASS	TEST TYPE	TEST FREQ	RELIEF REQUEST	TECHNICAL POSITION
2C-1002	M-0079	B-8	2	INLET PRESSURE	QTLY		
				DIFFERNTL PRESSURE			
				FLOW RATE			
				VIBRATION		RP-00A	
				BEARING TEMPERATURE		RP-00B	
FUNCTION: RHR PUMP 2C							
2D-1002	M-0079	E-8	2	INLET PRESSURE	QTLY		
				DIFFERNTL PRESSURE			
				FLOW RATE			
				VIBRATION		RP-00A	
				BEARING TEMPERATURE		RP-00B	
FUNCTION: RHR PUMP 2D							
1001-65A	M-0081	F-4	3	INLET PRESSURE	QTLY		
				DIFFERNTL PRESSURE			
				FLOW RATE			
				VIBRATION		RP-00A	
				BEARING TEMPERATURE		RP-00B	
FUNCTION: RHR SERVICE WATER A PUMP							

Table 1.0-2
UNIT 2 PUMP LISTING

PUMP NUMBER	P&ID NUMBER	DWG COORD	IST CLASS	TEST TYPE	TEST FREQ	RELIEF REQUEST	TECHNICAL POSITION
1001-65B	M-0081	F-4	3	INLET PRESSURE	QTLY		
				DIFFERNTL PRESSURE			
				FLOW RATE			
				VIBRATION		RP-00A	
				BEARING TEMPERATURE		RP-00B	
FUNCTION: RHR SERVICE WATER B PUMP							
1001-65C	M-0081	F-7	3	INLET PRESSURE	QTLY		
				DIFFERNTL PRESSURE			
				FLOW RATE			
				VIBRATION		RP-00A	
				BEARING TEMPERATURE		RP-00B	
FUNCTION: RHR SERVICE WATER C PUMP							
1001-65D	M-0081	F-4	3	INLET PRESSURE	QTLY		
				DIFFERNTL PRESSURE			
				FLOW RATE			
				VIBRATION		RP-00A	
				BEARING TEMPERATURE		RP-00B	
FUNCTION: RHR SERVICE WATER D PUMP							

Table 1.0-2
UNIT 2 PUMP LISTING

PUMP NUMBER	P&ID NUMBER	DWG COORD	IST CLASS	TEST TYPE	TEST FREQ	RELIEF REQUEST	TECHNICAL POSITION
2A-1102	M-0082	D-7	2	INLET PRESSURE	QTLY	RP-11A	
				DIFFERNTL PRESSURE		RP-11A	
				FLOW RATE			
				VIBRATION		RP-00A	
				BEARING TEMPERATURE		RP-00B	
FUNCTION: STANDBY LIQUID CONTROL PUMP 2A							
2B-1102	M-0082	E-7	2	INLET PRESSURE	QTLY	RP-11A	
				DIFFERNTL PRESSURE		RP-11A	
				FLOW RATE			
				VIBRATION		RP-00A	
				BEARING TEMPERATURE		RP-00B	
FUNCTION: STANDBY LIQUID CONTROL PUMP 2B							
2-2302	M-0087	A-4	2	SPEED	QTLY		
				INLET PRESSURE			
				DIFFERNTL PRESSURE			
				FLOW RATE			
				VIBRATION		RP-00A	
				BEARING TEMPERATURE		RP-00B	
FUNCTION: HIGH PRESSURE COOLANT INJECTION							

Table 1.0-2
UNIT 2 PUMP LISTING

PUMP NUMBER	P&ID NUMBER	DWG COORD	IST CLASS	TEST TYPE	TEST FREQ	RELIEF REQUEST	TECHNICAL POSITION
2-1302	M-0089	A-4	NC	SPEED	QTLY		
				INLET PRESSURE			
				DIFFERNTL PRESSURE			
				FLOW RATE			
				VIBRATION		RP-00A	
				BEARING TEMPERATURE		RP-00B	

FUNCTION: REACTOR CORE ISOLATION COOLING PUMP

PUMP RELIEF REQUESTS

2.0 RELIEF REQUESTS

Pursuant to 10CFR50.55a (g)(5)(iv), Relief Requests have been included when specific requirements in the Code are considered impractical. The enclosed Relief Requests are subject to change throughout the inspection interval. If testing requirements are determined to be impractical during the course of the interval, additional or modified Relief Requests will be submitted in accordance with 10CFR50.55a (g)(4)(iv) and NRC Generic Letter 89-04.

Relief Request numbers are in RP-NNA format, where;

RP: Relief Request for Pump Inservice Testing
(RV - Valve Inservice Testing)

NN: 00 for general issues

The first two characters of the Equipment Piece Number (system identifier) is used for system dependent Relief Requests.

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02 Reactor Recirculation and Nuclear Boiler
03 Control Rod Drive
07 Traversing In-Core Probe
10 Residual Heat Removal
11 Standby Liquid Control
12 Reactor Water Cleanup
13 Reactor Core Isolation Cooling
14 Core Spray
16 Containment and Pressure Suppression
19 Fuel Pool Cooling and Cleanup
20 Radwaste (Drywell Sump)
23 High Pressure Coolant Injection
24 Containment Atmosphere Monitor
25 Atmospheric Containment Atmosphere Dilution
30 Main Steam
32 Reactor Feedwater
33 Condensate (Clean and Contaminated)
37 Reactor Building Closed Cooling Water
39 Service Water
41 Fire Protection (Turbine and Diesel Oil)
46 Service Air
47 Instrument Air
48 Reactor Building Equipment Drains
49 Turbine Building Equipment Drains
52 Diesel Oil
54 Off Gas
57 Heating and Ventilating (Reactor Building Ventilation)
75 Standby Gas Treatment
89 High Radiation Sampling System

A: A unique, sequential, alphabetical character (e.g., RP-00A would address pump vibration velocity, RP-11A would address Standby Liquid Control pump differential pressure)

A summary of Relief Requests is provided in Table 2.0-1.

Table 2.0-1

RELIEF REQUEST SUMMARIES

RELIEF REQUEST	SUMMARY
RP-00A	Tables IWP-3100-1 and -2, IWP-4510 Vibration velocity will be used to assess pump mechanical degradation in lieu of vibration amplitude. Vibration velocity is more sensitive than vibration amplitude to all modes of pump degradation.
RP-00B	IWP-3100, Table IWP-3100-1 Bearing temperature is not a particularly useful test. Pump bearing vibration tests will detect mechanical problems well before bearing temperature begins to increase.
RP-11A	IWP-3100, Table IWP-3100-1, IWP-3110 Differential pressure and suction pressure cannot be measured for the Standby Liquid Control pumps. All evaluations of pump performance will be based on discharge pressure. Since these pumps are positive displacement pumps, discharge pressure is just as sensitive to change as differential pressure.
RP-52A	IWP-3100, Table IWP-3100-1, IWP-3110 Differential pressure and suction pressure cannot be measured for the Diesel Fuel Oil Transfer pumps. All evaluations of pump performance will be based on discharge pressure. Since these pumps are positive displacement pumps, discharge pressure is just as sensitive to change as differential pressure.

RELIEF REQUEST NUMBER: RP-v0A (Sheet 1 of 2)

COMPONENT IDENTIFICATION

PUMP NUMBER	CODE CLASS	DRAWING NUMBER	COORDINATE
<All pumps>	1, 2, & 3		

FUNCTION(S)

All pumps in the IST Plan are affected. These pumps are required to perform a specific function in shutting down the reactor or mitigating the consequences of an accident and are provided with an emergency power source.

CODE REQUIREMENT

Table IWP-3100-1, "Inservice Test Quantities," Vibration amplitude (V)

Table IWP-3100-2, "Allowable Ranges of Test Quantities," Acceptable, Alert Range, and Required Action Range for vibration amplitude

Article IWP-4510, "Vibration Amplitude," The Code requires vibration measurements to be recorded and analyzed based on displacement in mils (thousandths of an inch).

BASIS FOR RELIEF

10CFR50.55a(a)(3)(i), "acceptable level of quality and safety"

Low amplitude, high frequency vibration due to misalignment, imbalance, or bearing wear is difficult to detect via vibration amplitude measurements when pump speed is greater than or equal to 600 RPM.

Vibration velocity measurements are much more sensitive to small changes that are indicative of developing mechanical problems. Vibration velocity is a far more informative reading because it accounts for both displacement and frequency range. A vibration monitoring program based on velocity is more comprehensive than that required by the Code.

RELIEF REQUEST NUMBER: RP-00A (Sheet 2 of 2)

The specific limits assigned to the HPCI pumps are based on extensive experience with these pumps and the inherent high vibration levels associated with pumps of this design. The HPCI pump impellers have been modified to reduce vibration levels (~50%) yet absolute levels remain high. The turbine and pump rotating components have been re-balanced and extensive re-alignment work has been performed with little overall improvement in vibration levels. The station is confident that the existing vibration levels are not indicative of a degraded condition. Should the station be successful in reducing the vibration levels consistently below 0.300 ips, this relief request will be withdrawn.

PROPOSED ALTERNATE TESTING

Pump vibration measurements will be taken in vibration velocity (inches per second) if the pump speed is greater than or equal to 600 RPM. The allowable ranges of vibration velocity will be based on Table 1.

Table 1
ALLOWABLE RANGES OF VIBRATION VELOCITY

Pump Type	Acceptable Range	Alert Range	Required Action Range
Centrifugal with speed ≥ 600 RPM (except HPCI)	≤ 2.5 V_r, or ≤ 0.325 ips whichever is less	> 2.5 V_r, and ≤ 6.0 V_r, or > 0.325 ips and ≤ 0.700 ips whichever is less	> 6.0 V_r, or > 0.700 ips whichever is less
Centrifugal with speed ≥ 600 RPM (HPCI)	≤ 1.5 V_r, or ≤ 0.425 ips whichever is less	> 1.5 V_r, and ≤ 2.5 V_r, or > 0.425 ips and ≤ 0.700 ips whichever is less	> 2.5 V_r, or > 0.700 ips whichever is less
Reciprocating	≤ 2.5 V_r	> 2.5 V_r, and ≤ 6.0 V_r	> 6.0 V_r
Gear	≤ 2.5 V_r	> 2.5 V_r, and ≤ 6.0 V_r	> 6.0 V_r

V_r: vibration reference value
ips: inches per second
mils: thousandths of an inch (applies to low speed pumps only)

NOTE: There are no safety related centrifugal pumps that operate at speeds < 600 RPM at Quad Cities. There are no safety related vertical line shaft pumps at Quad Cities.

APPLICABLE TIME PERIOD

Relief is requested for the 3rd ten (10) year interval.

RELIEF REQUEST NUMBER: RP-00B (Sheet 1 of 2)

COMPONENT IDENTIFICATION

PUMP NUMBER	CODE CLASS	DRAWING NUMBER	COORDINATE
<All pumps>	1, 2, & 3		

FUNCTION(S)

All pumps in the IST Plan are affected. These pumps are required to perform a specific function in shutting down the reactor or mitigating the consequences of an accident and are provided with an emergency power source.

CODE REQUIREMENT

IWP-3100,	"Inservice Test Procedure," The test quantities shown in Table IWP-3100-1 shall be measured or observed and recorded.
Table IWP-3100-1,	"Inservice Test Quantities," Bearing Temperature (T_b) shall be measured.

BASIS FOR RELIEF

10CFR50.55a(a)(3)(i), "acceptable level of quality and safety"

Pump bearing vibration monitoring can be used to detect: worn bearings, misalignment of bearings, a change in the balance of rotating parts, a change in hydraulic forces, and general pump integrity. Quarterly pump bearing vibration measurements, combined with an observation of lubricant level/pressure, are more sensitive than bearing temperature measurements to the types of problems that may be exhibited by increased bearing temperature. Since bearing vibration monitoring is more sensitive and is performed more frequently, there is no need to measure bearing temperature.

RELIEF REQUEST NUMBER: RP-00B (Sheet 2 of 2)

BASIS FOR RELIEF (Continued)

Given controlled environmental conditions, bearing temperature measurements may be capable of detecting pump degradation, but the following problems exist in a power plant setting:

1. Many bearings are lubricated by the pumped fluid; and the temperature of the pumped fluid will change depending on the season.

2. Long run times to stabilize bearing temperature are not practical for the HPCI pump (during the summer, the Suppression Pool temperature may approach the 95 °F limit because the HPCI turbine exhaust is directed to the Suppression Pool).

These environmental condition variables make it extremely difficult, if not impossible, to evaluate bearing temperature test results.

Bearing temperature measurements could potentially be misinterpreted and they do not provide any additional information concerning the pump's condition. This inservice test quantity is impractical to measure and evaluate.

PROPOSED ALTERNATE TESTING

In comparison to the other tests used to detect mechanical and hydraulic change, a bearing temperature test does not provide additional, meaningful information. Vibration velocity measurements are much more sensitive to pump degradation. No alternate testing is appropriate.

APPLICABLE TIME PERIOD

Relief is requested for the 3rd ten (10) year interval.

RELIEF REQUEST NUMBER: RP-11A (Sheet 1 of 2)

COMPONENT IDENTIFICATION

PUMP NUMBER	CODE CLASS	DRAWING NUMBER	COORDINATE
Unit 1			
1102A	2	M-0040	D-7
1102B	2	M-0040	E-7
Unit 2			
1102A	2	M-0082	D-7
1102B	2	M-0082	E-7

FUNCTION(S)

The Standby Liquid Control (SBLC) pumps are used to inject poison (sodium pentaborate) into the reactor vessel, if the Control Rod Drive Hydraulic system fails The poison injected by the SBLC system will absorb neutrons and control reactivity.

CODE REQUIREMENT

IWP-3100,	"Inservice Test Procedure," The test quantities shown in Table IWP-3100-1 shall be measured or observed and recorded.
Table IWP-3100-1,	"Inservice Test Quantities," Inlet Pressure (P_i) shall be measured before pump startup and during the test. Differential pressure (dP) shall be measured.
IWP-3110,	"Reference Values," Differential Pressure will be duplicated during subsequent inservice testing.

BASIS FOR RELIEF

10CFR50.55a(a)(3)(i), "acceptable level of quality and safety"

The SBLC inservice test is conducted using the SBLC Test Tank (1104 @ B-7), rather than the Standby Liquid Control Tank (1103 @ A-7). The Test Tank is filled at the start of the test (minimum water level 16"), and the Test Tank level remains virtually constant throughout the inservice test.

RELIEF REQUEST NUMBER: RP-11A (Sheet 2 of 2)

BASIS FOR RELIEF (cont'd)

Inlet pressure instrumentation was not installed for the SBLC pumps. Inlet pressure before the test (P_b) could be calculated based on Test Tank level, but this calculated hydrostatic pressure is meaningless once the pump starts.

The SBLC pumps are positive displacement pumps. The performance of the SBLC pumps is not sensitive to changes in pump inlet pressure. SBLC discharge pressure can be substituted for differential pressure, and the ability to detect changes in hydraulic performance will not be affected.

OM-6 recognizes the validity of this approach and requires that outlet pressure be measured in lieu of ΔP.

PROPOSED ALTERNATE TESTING

Discharge pressure will be substituted for differential pressure in any test requirements or acceptance criteria for the SBLC pumps.

APPLICABLE TIME PERIOD

Relief is requested for the 3rd ten (10) year interval.

RELIEF REQUEST NUMBER: RP-52A (Sheet 1 of 2)

COMPONENT IDENTIFICATION

PUMP NUMBER	CODE CLASS	DRAWING NUMBER	COORDINATE
Unit 1			
5203	NC	M-0029	F-3
Unit 1/2			
5203-1/2	NC	M-0029	F-3
Unit 2			
5203	NC	M-0029	F-3

FUNCTION(S)

The Diesel Fuel Oil Transfer pumps are used to keep the Diesel Fuel Oil Day Tank (5202) full while the diesel generator is required to generate emergency power.

CODE REQUIREMENT

IWP-3100,	"Inservice Test Procedure," The test quantities shown in Table IWP-3100-1 shall be measured or observed and recorded.
Table IWP-3100-1,	"Inservice Test Quantities," Inlet Pressure (P_i) shall be measured before pump startup and during the test. Differential pressure (dP) shall be measured.
IWP-3110,	"Reference Values," Differential Pressure will be duplicated during subsequent inservice testing.

BASIS FOR RELIEF

10CFR50.55a(g)(6)(i), "impractical"
10CFR50.55a(a)(3)(i), "acceptable level of quality and safety"

Inlet pressure instrumentation was not installed for the Diesel Fuel Oil Transfer pumps. The Diesel Fuel Oil Storage Tanks (5201) are located below the Diesel Fuel Oil Transfer pumps. Therefore, the suction pressure will be negative, and the suction pressure before the test will vary from test-to-test depending on the tank level. Positive displacement, gear pumps are used in this application because they do not require positive suction head for proper operation. Diesel Fuel Oil Transfer pump

RELIEF REQUEST NUMBER: RP-52A (Sheet 2 of 2)

discharge pressure can be substituted for differential pressure, and the ability to detect changes in hydraulic performance will not be affected.

OM-6 recognizes the validity of this approach and requires that outlet pressure be measured in lieu of ΔP.

PROPOSED ALTERNATE TESTING

Discharge pressure will be substituted for differential pressure in any test requirements or acceptance criteria for the Diesel Fuel Oil Transfer pumps.

APPLICABLE TIME PERIOD

Relief is requested for the 3rd ten (10) year interval.

PUMP TECHNICAL APPROACH AND POSITIONS

3.0 TECHNICAL APPROACH AND POSITION

When the requirements of the Code are not easily interpreted, Quad Cities has reviewed general licensing and regulatory requirements, and industry practice to determine a practical method of implementing each Code requirement. The Technical Approach and Position documents in this section of the Plan have been provided to clarify Quad Cities' implementation of the Code.

A summary of Technical Approach and Positions is provided in Table 3.0-1.

Table 3.0-1

TECHNICAL APPROACH AND POSITION SUMMARIES

TECHNICAL APPROACH AND POSITION NUMBER	SUMMARY
TP-00A	Lubrication levels will be observed during each inservice test for pumps that are designed such that levels can be verified. The core spray (1401), RHR (1002), and the D/G fuel oil transfer (5203) pumps are lubricated by pump flowage. As such, lubricant level or pressure measurements are not relevant.

PUMP AUGMENTED INSERVICE TESTING REQUIREMENTS

4.0 AUGMENTED INSERVICE TESTING REQUIREMENTS

The following augmented inservice testing requirements are being implemented at Quad Cities Nuclear Power Station:

a. Reactor Core Isolation Cooling (RCIC) does not perform a safety function, and no credit is taken for the RCIC system in any UFSAR accident analyses. The RCIC pump has been included in the IST Plan at the NRC's request.

PUMP REFERENCES

5.0 REFERENCES

The references used to develop this Inservice Testing Program for pumps include:

a. ASME Boiler and Pressure Vessel Code, Section XI, Division I, "Inservice Inspection of Nuclear Power Plant Components", the 1986 Edition.

b. ASME/ANSI OM, "Operation and Maintenance of Nuclear Power Plants", including the 1990 Addenda.

Part 6 - "Inservice Testing of Pumps in Light-Water Reactor Power Plants"

c. Final Safety Analysis Report, Revision 1, Quad Cities Nuclear Power Station, Units 1 and 2

d. Technical Specifications, Amendment 136, Quad Cities Nuclear Power Station, Unit 1

e. Technical Specifications, Amendment 127, Quad Cities Nuclear Power Station, Unit 2

VALVE PROGRAM LISTING

1.0 PROGRAM LISTING

Table 1.0-7, "Valve Listing" lists all valves included in the Quad Cities Nuclear Power Station, Unit 1 IST Program. Table 1.0-8, "Valve Listing" lists all valves included in the Quad Cities Nuclear Power Station, Unit 2 IST Program. The data contained in this Table identifies all valves subject to inservice testing, the type of inservice test, the inservice testing frequency for each inservice test, and any applicable remarks.

The heading on each page includes the following information:

- **P&ID Number**

  The Piping and Instrumentation Diagram number. If the valve appears on multiple P&IDs, the primary P&ID will be listed. The primary sort for the Valve Listing is P&ID Number.

- **Drawing Title** (System Name)

  The drawing title, as it appears in the lower right corner of the P&ID.

The column headings in the Table are listed and explained below:

- **Valve Number**

  The unique number that identifies the valve will be listed. The secondary sort for the Valve Listing is Valve Number.

- **Dwg Coor**

  The coordinate location (e.g., D-5) on the P&ID where the valve appears.

- **IST Class**

  The ISI classification as shown on the P&ID.

- **Function Category**

  A: Valves for which seat leakage is limited to a specific maximum amount in the closed position for fulfillment of their function

  B: Valves for which seat leakage in the closed position is inconsequential for fulfillment of their function

C: Valves which are self-actuating in response to some system characteristic, such as pressure (relief valves) or flow direction (check valves)

D: Valves which are actuated by an energy source capable of only one operation, such as rupture disks or explosive-actuated valves

(See Table 1.0-3)

- **Size (Inch)**

The nominal pipe size of the valve, in inches. If the valve size is listed as ".001," the valve diameter is smaller than 1.000".

- **Body Style**

The valve's body style (e.g., "BTF" for a butterfly valve), per Table 1.0-2

- **Actuator**

The type of actuator provided with the valve body (e.g., "MO" for a motor operated valve or "SA" for a self-actuated valve such as a check valve), per Table 1.0-1

- **Normal Position**

The valve's position during normal plant operation, per Table 1.0-4. NOTE: If the subject system does not operate during normal (power production) operation, the valve's normal position is the position of the valve when the system is not in operation.

- **Test Type** (and Stroke Direction)

The test type is an abbreviation for the type of test to be performed and the direction the test will be performed, per Table 1.0-6.

For a seat leakage test, the abbreviation will define the type of leak test (e.g., a 10CFR50, Appendix J, Type C local leak rate test of a containment isolation valve or a pressure isolation valve seat leak test). For an exercise test, the abbreviation will define the type of exercise test and the stroke direction associated with the test (e.g. a check valve stroke test to the closed position).

- **Test Freq**

  The test frequency associated with each test type will be specified, per Table 1.1-5.

- **Relief Request**

  If a Relief Request is included in Section 2.0, the Relief Request number will appear.

- **Cold Shutdown Justification**

  If a Cold Shutdown Justification is included in Section 4.0, the Cold Shutdown Justification number will appear.

- **Technical Approach and Position**

  When appropriate, clarifying remarks concerning Quad Cities' technical approach and position have been included in Section 3.0.

The footing after each valve includes the following information:

- **Description**

  The function performed by the valve will be described.

1.1 Valve Listing (sorted by Valve Number)

A Unit 1 Valve listing sorted by valve number is included in Table 1.0-9. A Unit 2 Valve listing sorted by valve number is included in Table 1.1-10. These listings will help the person who does not know the correct P&ID number find the valve in Tables 1.0-7 and 1.0-8, "Valve Listing".

1.2 Abbreviations

Abbreviations that appear in the Valve Listing are included in the following Tables:

Table	Abbreviation Listing
1.0-1	ACTUATOR
1.0-2	BODY STYLE
1.0-3	FUNCTION CATEGORY
1.0-4	NORMAL POSITION
1.0-5	TEST FREQUENCY
1.0-6	TEST TYPE

Table 1.0-1

ACTUATOR ABBREVIATIONS

ACTUATOR	DESCRIPTION
AO	AIR OPERATOR DIAPHRAGM, CYLINDER, AND OTHER TYPES OF AIR OPERATORS
EXP	EXPLOSIVE ACTUATOR
HO	HYDRAULIC OPERATOR
M	MANUAL OPERATOR HAND-WHEEL, CHAIN-WHEEL, AND OTHER TYPES OF NON-POWER OPERATORS
MO	MOTOR OPERATOR ALTERNATING CURRENT (AC) AND DIRECT CURRENT (DC) ELECTRIC MOTOR OPERATORS
SA	SELF-ACTUATING THE DESIGN OF THE VALVE ALLOWS THE VALVE TO SENSE SYSTEM CONDITIONS AND RESPOND ACCORDINGLY. CHECK, RELIEF, SAFETY, AND TRIP VALVES ARE SELF-ACTUATING.
SAP	SELF ACTUATED AND PILOT OPERATED
SO	SOLENOID OPERATOR

Table 1.0-2

BODY STYLE ABBREVIATIONS

BODY STYLE	DESCRIPTION
BAL	BALL VALVE
BTF	BUTTERFLY VALVE
CK	CHECK VALVE
DIA	DIAPHRAGM VALVE
GA	GATE VALVE
GL	GLOBE VALVE
PLG	PLUG VALVE
PLT	PILOT VALVE
RPD	RUPTURE DIAPHRAGM
RV	RELIEF VALVE
SCK	STOP CHECK VALVE
SHR	SHEAR VALVE
SO2	SOLENOID VALVE, 2-WAY
SO3	SOLENOID VALVE, 3-WAY
SO4	SOLENOID VALVE, 4-WAY
SRV	DUAL FUNCTION SAFETY/RELIEF VALVE
SV	SAFETY VALVE
XFC	EXCESS FLOW CHECK

Table 1.0-3

FUNCTION CATEGORY ABBREVIATIONS

FUNCTION CATEGORY	DESCRIPTION
A	PER IWV-2200(A), CATEGORY A APPLIES TO VALVES FOR WHICH SEAT LEAKAGE IS LIMITED TO A SPECIFIC MAXIMUM AMOUNT IN THE LOSED POSITION FOR FUFILLMENT OF THEIR FUNCTION.
A/C	FUNCTION_CAT 'A' AND 'C' APPLY.
B	PER IWV-2200(B), CATEGORY B APPLIES TO VALVES FOR WHICH SEAT LEAKAGE IN THE CLOSED POSITION IS INCONSEQUENTIAL FOR FUFILLMENT OF THEIR FUNCTION. [THIS CATEGORY INCLUDES POWER OPERATED VALVES THAT MUST BE EXERCISED OR FAIL SAFE TESTED, AND PASSIVE VALVES THAT DO NOT REQUIRE A SEAT LEAKAGE TEST THAT MUST BE INCLUDED IN THE NRC SUBMITTAL.]
B/C	FUNCTION_CAT 'B' AND 'C' APPLY.
C	PER IWV-2200(C), CATEGORY C APPLIES TO VALVES WHICH ARE SELF ACTUATING IN RESPONSE TO SOME SYSTEM CHARACTERISTIC SUCH AS PRESSURE (RELIEF VALVES) OR FLOW DIRECTION (CHECK VALVES)
D	PER IWV-2200(D), CATEGORY D APPLIES TO VALVES WHICH ARE ACTUATED BY AN ENERGY SOURCE CAPABLE OF ONLY ONE OPERATION, SUCH AS RUPTURE DISKS OR EXPLOSIVE ACTUATED VALVES.

Table 1.0-4

NORMAL POSITION ABBREVIATIONS

NORMAL POSITION	DESCRIPTION
C	NORMALLY CLOSED
C/FC	NORMALLY CLOSED, WILL FAIL CLOSED
C/FO	NORMALLY CLOSED, WILL FAIL OPEN
C/KL	NORMALLY CLOSED, KEY LOCK ON THE HAND SWITCH IN THE CONTROL ROOM
C/LO	NORMALLY CLOSED, LOCKED OPEN VIA A REMOTE ADMINISTRATIVE POSITION CONTROL SUCH AS A PADLOCK (E.G., A STOP CHECK VALVE)
D	NORMALLY DE-ENERGIZED
E	NORMALLY ENERGIZED
O	NORMALLY OPEN
O/FC	NORMALLY OPEN, WILL FAIL CLOSED
O/KL	NORMALLY OPEN, KEY LOCK ON THE HAND SWITCH IN THE CONTROL ROOM
SYS	THE VALVE POSITION IS DEPENDENT ON SYSTEM CONDITIONS - CHECK VALVES

Table 1.0-5

TEST FREQUENCY ABBREVIATIONS

TEST FREQUENCY	DESCRIPTION
CS	COLD SHUTDOWN, BUT NOT MORE FREQUENTLY THAN ONCE EVERY 91 DAYS. NOTE: NO (0) DURATION IN DAYS IS APPLICABLE TO THIS {TEST_FREQ} BECAUSE IT DOES NOT HAVE A REPETITIVE DURATION.
M3	QUARTERLY (ONCE EVERY THREE MONTHS) TESTING IS REQUIRED PER TECHNICAL SPECIFICATION TABLE 4.2-3, QUARTERLY IS DEFINED AS ONCE EVERY NINETY-TWO (92) DAYS
M6	SEMI-ANNUAL (ONCE EVERY SIX MONTHS) TESTING IS REQUIRED PER TECHNICAL SPECIFICATION TABLE 4.2-3, SEMI-ANNUAL IS DEFINED AS ONCE EVERY ONE HUNDRED EIGHTY-FOUR (184) DAYS
NT	NOT TESTED SEE APPLICABLE RELIEF REQUEST OR TECHNICAL APPROACH AND POSITION
RR	REACTOR REFUELING NOTE: NO (0) DURATION IN DAYS IS APPLICABLE TO THIS {TEST_FREQ} BECAUSE IT DOES NOT HAVE A REPETITIVE DURATION. NOT TO EXCEED ONCE EVERY 24 MONTHS.
S2	EXPLOSIVE CHARGE SAMPLE - 20% EVERY REFUELING
SA	SAMPLE OF CHECK VALVE IN A DISASSEMBLY GROUP NOTE: NO (0) DURATION IN DAYS IS APPLICABLE TO THIS {TEST_FREQ} BECAUSE IT DOES NOT HAVE A REPETITIVE DURATION. IN ACCORDANCE WITH GENERIC LETTER 89-04, POSITION 2, ONE VALVE IN THIS SAMPLE GROUP WILL BE DISASSEMBLED AT EACH REACTOR REFUELING.
Y2	TESTING REQUIRED ONCE EVERY TWO YEARS TWO (2) YEARS IS DEFINED AS ONCE EVERY SEVEN HUNDRED THIRTY TWO (732) DAYS

Table 1.0-5

TEST FREQUENCY ABBREVIATIONS

TEST FREQUENCY	DESCRIPTION
Y5	TESTING REQUIRED ONCE EVERY FIVE YEARS FIVE (5) YEARS IS DEFINED AS ONCE EVERY ONE THOUSAND EIGHT HUNDRED TWENTY-SIX DAYS (1826), WHICH ACCOUNTS FOR ONE LEAP YEAR IN THE FIVE YEAR INTERVAL.
YA	TESTING REQUIRED ONCE EVERY TEN YEARS TEN (10) YEARS IS DEFINED AS ONCE EVERY THREE THOUSAND SIX HUNDRED FIFTY-TWO DAYS (3652), WHICH ACCOUNTS FOR TWO LEAP YEARS IN THE TEN YEAR INTERVAL.

Table 1.0-6

TEST TYPE ABBREVIATIONS

TEST TYPE	DESCRIPTION
AT-01	TYPE C AIR LEAKAGE 10CFR50, APPENDIX J, TYPE C LOCAL LEAK RATE TEST (LLRT) OF A PRIMARY CONTAINMENT ISOLATION VALVE (CIV). THE VALVE SEAT LEAKAGE MEASURED DURING THIS TEST IS INCLUDED IN THE SUM OF THE LEAKAGE VS. 0.6 LA EVALUATION.
AT-02	XFC LEAKAGE EXCESS FLOW CHECK VALVE SEAT LEAKAGE TEST WILL BE CONDUCTED IN ACCORDANCE WITH TECHNICAL SPECIFICATION 4.7.D
AT-05	WW/DW LEAKAGE WETWELL (SUPPRESSION POOL) TO DRYWELL VACUUM BREAKER SEAT LEAKAGE. WETWELL TO DRYWELL VACUUM BREAKER SEAT LEAKAGE WILL BE CONDUCTED IN ACCORDANCE WITH TECHNICAL SPECIFICATION 4.7.A.4.B.4.
AT-06	ACCUM. LEAKAGE AIR OPERATED VALVE ACCUMULATOR SEAT LEAKAGE
BTC	EXERCISE CLOSED FULL STROKE EXERCISE TEST TO THE CLOSED POSITION, AND MEASURE THE STROKE TIME.
BTME	EXERCISE MANUAL VALVE FULL STROKE EXERCISE OF A MANUAL VALVE TO THE OPEN CLOSE POSITION. NO STROKE TIME WILL BE MEASURED.
BTD	DE-ENERGIZE FULL-STROKE EXERCISE TEST TO DE-ENERGIZE POSITION
BTE	ENERGIZE FULL-STROKE EXERCISE TEST TO ENERGIZED POSITION
BTO	EXERCISE OPEN FULL STROKE EXERCISE TEST TO THE OPEN POSITION, AND MEASURE THE STROKE TIME.
CT-SP	SET POINT VERIFY RELIEF VALVE OR SAFETY VALVE SET POINT VERIFICATION TEST

Table 1.0-6

TEST TYPE ABBREVIATIONS

TEST TYPE	DESCRIPTION
CTC	CHECK TO CLOSED CHECK VALVE EXERCISE TEST TO THE CLOSED POSITION
CTCP	CHECK TO PART. CLOSE CHECK VALVE PARTIAL STROKE EXERCISE TEST TO THE CLOSE POSITION
CTO	CHECK TO OPEN CHECK VALVE EXERCISE TEST TO THE OPEN POSITION
CTOME	MECH. EXER. OPEN MECHANICAL EXERCIZE TO THE OPEN POSITION
CTOP	CHECK TO PART. OPEN CHECK VALVE PARTIAL STROKE EXERCISE TEST TO THE OPEN POSITION
DT-E	EXPLOSIVE VALVE TEST
DT-M	RUPTURE DIAPHRAGM REPLACE RUPTURE DIAPHRAM EVERY FIVE (5) YEARS
FST	FAIL-SAFE TEST
PIT	POSITION INDICATION A POSITION INDICATION TEST IS USED TO VERIFY THAT THE REMOTE POSITION INDICATION DEVICE(S) ACCURATELY PROVIDE VALVE POSITION INFORMATION.

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0013-1
DRAWING TITLE : MAIN STEAM PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0203-001A-AO	F-4	1	A	20.000	GL	AO	O/FC	AT-01	RR		
								BTC	M3		TV-30C
								FST	RR	RV-02A	
								PIT	Y2		
FUNCTION : MAIN STEAM ISOLATION VALVE											
0203-001A-AP2	F-4	NC	B	.001	PLT	AO	E	BTD	RR	RV-30D	
								FST	RR	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACTUATOR 2-WAY AIR PILOT VALVE											
0203-001A-SOAC	F-4	NC	B	.001	SO3	SO	E	BTD	RR	RV-30D	
								FST	RR	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACT. 3-WAY AC CONTROL SOLENOID											
0203-001A-SODC	F-4	NC	B	.001	SO3	SO	E	BTD	RR	RV-30D	
								FST	RR	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACT. 3-WAY DC CONTROL SOLENOID											
0203-001B-AO	D-4	1	A	20.000	GL	AO	O/FC	AT-01	RR		
								BTC	M3		TV-30C
								FST	RR	RV-02A	
								PIT	Y2		
FUNCTION : MAIN STEAM ISOLATION VALVE											
0203-001B-AP2	F-4	NC	B	.001	PLT	AO	E	BTD	RR	RV-30D	
								FST	RR	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACTUATOR 2-WAY AIR PILOT VALVE											
0203-001B-AP4	F-4	NC	B	.001	SO4	SO	E	BTD	M3		
								FST	M3		
FUNCTION : MAIN STEAM ISOLATION VALVE ACTUATOR 4-WAY AIR PILOT VALVE											
0203-001B-SOAC	F-4	NC	B	.001	SO3	SO	E	BTD	RR	RV-30D	
								FST	RR	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACT. 3-WAY AC CONTROL SOLENOID											
0203-001B-SODC	F-4	NC	B	.001	SO3	SO	E	BTD	RR	RV-30D	
								FST	RR	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACT. 3-WAY DC CONTROL SOLENOID											
0203-001C-AO	C-4	1	A	20.000	GL	AO	O/FC	AT-01	RR		
								BTC	M3		TV-30C
								FST	RR	RV-02A	
								PIT	Y2		
FUNCTION : MAIN STEAM ISOLATION VALVE											
0203-001C-AP2	F-4	NC	B	.001	PLT	AO	E	BTD	RR	RV-30D	
								FST	RR	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACTUATOR 2-WAY AIR PILOT VALVE											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0013-1
DRAWING TITLE : MAIN STEAM PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0203-001C-AP4	F-4	NC	B	.001	SO4	SO	E	BTD	M3		
								FST	M3		
FUNCTION : MAIN STEAM ISOLATION VALVE ACTUATOR 4-WAY AIR PILOT VALVE											
0203-001C-SOAC	F-4	NC	B	.001	SO3	SO	E	BTD	RR	RV-30D	
								FST	RR	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACT. 3-WAY AC CONTROL SOLENOID											
0203-001C-SODC	F-4	NC	B	.001	SO3	SO	E	BTD	RR	RV-30D	
								FST	RR	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACT. 3-WAY DC CONTROL SOLENOID											
0203-001D-AO	B-4	1	A	20.000	GL	AO	O/FC	AT-01	RR		
								BTC	M3		TV-30C
								FST	RR	RV-02A	
								PIT	Y2		
FUNCTION : MAIN STEAM ISOLATION VALVE											
0203-001D-AP2	F-4	NC	B	.001	PLT	AO	E	BTD	RR	RV-30D	
								FST	RR	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACTUATOR 2-WAY AIR PILOT VALVE											
0203-001D-AP4	F-4	NC	B	.001	SO4	SO	E	BTD	M3		
								FST	M3		
FUNCTION : MAIN STEAM ISOLATION VALVE ACTUATOR 4-WAY AIR PILOT VALVE											
0203-001D-SOAC	F-4	NC	B	.001	SO3	SO	E	BTD	RR	RV-30D	
								FST	RR	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACT. 3-WAY AC CONTROL SOLENOID											
0203-001D-SODC	F-4	NC	B	.001	SO3	SO	E	BTD	RR	RV-30D	
								FST	RR	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACT. 3-WAY DC CONTROL SOLENOID											
0203-002A-AP4	F-4	NC	B	.001	SO4	SO	E	BTD	M3		
								FST	M3		
FUNCTION : MAIN STEAM ISOLATION VALVE ACTUATOR 4-WAY AIR PILOT VALVE											
0203-003A	F-7	1	B/C	6.625	SRV	SAP	C	BTC	M6	RV-30A	TV-30B
								BTO	M6	RV-30A	TV-30B
								CT-SP	Y5	RV-30B	
										RV-30E	
								PIT	Y2		
FUNCTION : MAIN STEAM - SAFETY/RELIEF VALVE (TARGET ROCK)											
0203-003A-SO	F-7	NC	B	.001	SO3	SO	D	BTD	M6	RV-30A	
								RTE	M6	RV-30A	
FUNCTION : MAIN STEAM - SAFETY/RELIEF VALVE (TARGET ROCK) SOLENOID											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0013-1
DRAWING TITLE : MAIN STEAM PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0203-003B	E-6	1	B	6.000	RV	SO	C	BTC BTO PIT	M6 M6 Y2	RV-30A RV-30A	
	FUNCTION : MAIN STEAM - ELECTROMATIC RELIEF VALVE										
0203-003C	C-8	1	B	6.000	RV	SO	C	BTC BTO PIT	M6 M6 Y2	RV-30A RV-30A	
	FUNCTION : MAIN STEAM - ELECTROMATIC RELIEF VALVE										
0203-003D	B-8	1	B	6.000	RV	SO	C	BTC BTO PIT	M6 M6 Y2	RV-30A RV-30A	
	FUNCTION : MAIN STEAM - ELECTROMATIC RELIEF VALVE										
0203-003E	E-8	1	B	6.000	RV	SO	C	BTC BTO PIT	M6 M6 Y2	RV-30A RV-30A	
	FUNCTION : MAIN STEAM - ELECTROMATIC RELIEF VALVE										
0203-004A	F-8	1	C	6.000	SV	SA	C	CT-SP PIT	Y5 Y2	RV-30B RV-30E	
	FUNCTION : MAIN STEAM - SAFETY VALVE										
0203-004A-RPD	F-8	NS	D	8.000	RPD	SA	C	DT-M	Y5		
	FUNCTION : MAIN STEAM - SAFETY VALVE DISCHARGE RUPTURE DIAPHRAGM										
0203-004B	E-5	1	C	6.000	SV	SA	C	CT-SP PIT	Y5 Y2	RV-30B RV-30E	
	FUNCTION : MAIN STEAM - SAFETY VALVE										
0203-004B-RPD	D-5	NS	D	8.000	RPD	SA	C	DT-M	Y5		
	FUNCTION : MAIN STEAM - SAFETY VALVE DISCHARGE RUPTURE DIAPHRAGM										
0203-004C	C-5	1	C	6.000	SV	SA	C	CT-SP PIT	Y5 Y2	RV-30B RV-30E	
	FUNCTION : MAIN STEAM - SAFETY VALVE										
0203-004C-RPD	C-5	NS	D	8.000	RPD	SA	C	DT-M	Y5		
	FUNCTION : MAIN STEAM - SAFETY VALVE DISCHARGE RUPTURE DIAPHRAGM										
0203-004D	B-5	1	C	6.000	SV	SA	C	CT-SP PIT	Y5 Y2	RV-30B RV-30E	
	FUNCTION : MAIN STEAM - SAFETY VALVE										
0203-004D-RPD	B-5	NS	D	8.000	RPD	SA	C	DT-M	Y5		
	FUNCTION : MAIN STEAM - SAFETY VALVE DISCHARGE RUPTURE DIAPHRAGM										

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0013-1
DRAWING TITLE : MAIN STEAM PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0203-004E	F-8	1	C	6.000	SV	SA	C	CT-SP	Y5	RV-30B RV-30E	
								PIT	Y2		
	FUNCTION : MAIN STEAM - SAFETY VALVE										
0203-004E-RPD	F-8	NS	D	8.000	RPD	SA	C	DT-M	Y5		
	FUNCTION : MAIN STEAM - SAFETY VALVE DISCHARGE RUPTURE DIAPHRAGM										
0203-004F	E-5	1	C	6.000	SV	SA	C	CT-SP	Y5	RV-30B RV-30E	
								PIT	Y2		
	FUNCTION : MAIN STEAM - SAFETY VALVE										
0203-004F-RPD	D-5	NS	D	8.000	RPD	SA	C	DT-M	Y5		
	FUNCTION : MAIN STEAM - SAFETY VALVE DISCHARGE RUPTURE DIAPHRAGM										
0203-004G	C-5	1	C	6.000	SV	SA	C	CT-SP	Y5	RV-30B RV-30E	
								PIT	Y2		
	FUNCTION : MAIN STEAM - SAFETY VALVE										
0203-004G-RPD	C-5	NS	D	8.000	RPD	SA	C	DT-M	Y5		
	FUNCTION : MAIN STEAM - SAFETY VALVE DISCHARGE RUPTURE DIAPHRAGM										
0203-004H	B-5	1	C	6.000	SV	SA	C	CT-SP	Y5	RV-30B RV-30E	
								PIT	Y2		
	FUNCTION : MAIN STEAM - SAFETY VALVE										
0203-004H-RPD	B-5	NS	D	8.000	RPD	SA	C	DT-M	Y5		
	FUNCTION : MAIN STEAM - SAFETY VALVE DISCHARGE RUPTURE DIAPHRAGM										
0220-001 -MO	E-4	1	A	3.000	GA	MO	C	AT-01	RR		
								BTC	M3		
								PIT	Y2		
	FUNCTION : MAIN STEAM LINE DRAIN ISOLATION VALVE										
0220-084A	F-3	NC	A/C	1.000	CK	SA	SYS	AT-06	Y2		
								CTC	RR	RV-47A	
	FUNCTION : MAIN STEAM ISOLATION VALVE ACCUMULATOR CHECK VALVE										
0220-084B	F-3	NC	A/C	1.000	CK	SA	SYS	AT-06	Y2		
								CTC	RR	RV-47A	
	FUNCTION : MAIN STEAM ISOLATION VALVE ACCUMULATOR CHECK VALVE										
0220-084C	F-3	NC	A/C	1.000	CK	SA	SYS	AT-06	Y2		
								CTC	RR	RV-47A	
	FUNCTION : MAIN STEAM ISOLATION VALVE ACCUMULATOR CHECK VALVE										
0220-084D	F-3	NC	A/C	1.000	CK	SA	SYS	AT-06	Y2		
								CTC	RR	RV-47A	
	FUNCTION : MAIN STEAM ISOLATION VALVE ACCUMULATOR CHECK VALVE										

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0013-2
DRAWING TITLE : MAIN STEAM PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0203-001A-AP4	F-7	NC	B	.001	SO4	SO	E	BTD	M3		
								FST	M3		
FUNCTION : MAIN STEAM ISOLATION VALVE ACTUATOR 4-WAY AIR PILOT VALVE											
0203-002A-AO	F-7	1	A	20.000	GL	AO	O/FC	AT-01	RR		
								BTC	M3		TV-30C
								FST	CS	CS-02C	
								PIT	Y2		
FUNCTION : MAIN STEAM ISOLATION VALVE											
0203-002A-AP2	F-7	NC	B	.001	PLT	AO	E	BTD	CS	RV-30D	
								FST	CS	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACTUATOR 2-WAY AIR PILOT VALVE											
0203-002A-SOAC	F-7	NC	B	.001	SO3	SO	E	BTD	RR	RV-30D	
								FST	RR	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACT. 3-WAY AC CONTROL SOLENOID											
0203-002A-SODC	F-7	NC	B	.001	SO3	SO	E	BTD	RR	RV-30D	
								FST	RR	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACT. 3-WAY DC CONTROL SOLENOID											
0203-002B-AO	E-7	1	A	20.000	GL	AO	O/FC	AT-01	RR		
								BTC	M3		TV-30C
								FST	CS	CS-02C	
								PIT	Y2		
FUNCTION : MAIN STEAM ISOLATION VALVE											
0203-002B-AP2	F-7	NC	B	.001	PLT	AO	E	BTD	CS	RV-30D	
								FST	CS	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACTUATOR 2-WAY AIR PILOT VALVE											
0203-002B-AP4	F-7	NC	B	.001	SO4	SO	E	BTD	M3		
								FST	M3		
FUNCTION : MAIN STEAM ISOLATION VALVE ACTUATOR 4-WAY AIR PILOT VALVE											
0203-002B-SOAC	F-7	NC	B	.001	SO3	SO	E	BTD	RR	RV-30D	
								FST	RR	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACT. 3-WAY AC CONTROL SOLENOID											
0203-002B-SODC	F-7	NC	B	.001	SO3	SO	E	BTD	RR	RV-30D	
								FST	RR	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACT. 3-WAY DC CONTROL SOLENOID											
0203-002C-AO	D-7	1	A	20.000	GL	AO	O/FC	AT-01	RR		
								BTC	M3		TV-30C
								FST	CS	CS-02C	
								PIT	Y2		
FUNCTION : MAIN STEAM ISOLATION VALVE											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0013-2
DRAWING TITLE : MAIN STEAM PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0203-002C-AP2	F-7	NC	B	.001	PLT	AO	E	BTD	CS	RV-30D	
								FST	CS	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACTUATOR 2-WAY AIR PILOT VALVE											
0203-002C-AP4	F-7	NC	B	.001	SO4	SO	E	BTD	M3		
								FST	M3		
FUNCTION : MAIN STEAM ISOLATION VALVE ACTUATOR 4-WAY AIR PILOT VALVE											
0203-002C-SOAC	F-7	NC	B	.001	SO3	SO	E	BTD	RR	RV-30D	
								FST	RR	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACT. 3-WAY AC CONTROL SOLENOID											
0203-002C-SODC	F-7	NC	B	.001	SO3	SO	E	BTD	RR	RV-30D	
								FST	RR	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACT. 3-WAY DC CONTROL SOLENOID											
0203-002D-AO	B-7	1	A	20.000	GL	AO	O/FC	AT-01	RR		
								BTC	M3		TV-30C
								FST	CS	CS-02C	
								PIT	Y2		
FUNCTION : MAIN STEAM ISOLATION VALVE											
0203-002D-AP2	F-7	NC	B	.001	PLT	AO	E	BTD	CS	RV-30D	
								FST	CS	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACTUATOR 2-WAY AIR PILOT VALVE											
0203-002D-AP4	F-7	NC	B	.001	SO4	SO	E	BTD	M3		
								FST	M3		
FUNCTION : MAIN STEAM ISOLATION VALVE ACTUATOR 4-WAY AIR PILOT VALVE											
0203-002D-SOAC	F-7	NC	B	.001	SO3	SO	E	BTD	RR	RV-30D	
								FST	RR	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACT. 3-WAY AC CONTROL SOLENOID											
0203-002D-SODC	F-7	NC	B	.001	SO3	SO	E	BTD	RR	RV-30D	
								FST	RR	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACT. 3-WAY DC CONTROL SOLENOID											
0220-002 -MO	E-7	1	A	3.000	GA	MO	C	AT-01	RR		
								BTC	M3		
								PIT	Y2		
FUNCTION : MAIN STEAM LINE DRAIN ISOLATION VALVE											
0220-017A	E-8	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : 1A MAIN STM INST LINE EXCESS FLOW CK VLV											
0220-017B	D-8	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : 1B MAIN STM INST LINE EXCESS FLOW CK VLV											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0013-2
DRAWING TITLE : MAIN STEAM PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0220-017C	C-8	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : 1C MAIN STM INST LINE EXCESS FLOW CK VLV										
0220-017D	B-8	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : 1D MAIN STM INST LINE EXCESS FLOW CK VLV										
0220-018A	E-8	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : 1A MAIN STM INST LINE EXCESS FLOW CK VLV										
0220-018B	D-8	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : 1B MAIN STM INST LINE EXCESS FLOW CK VLV										
0220-018C	C-8	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : 1C MAIN STM INST LINE EXCESS FLOW CK VLV										
0220-018D	B-8	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : 1D MAIN STM INST LINE EXCESS FLOW CK VLV										
0220-085A	F-7	NC	A/C	1.000	CK	SA	SYS	AT-06	Y2		
								CTC	CS	CS-47A	
	FUNCTION : MAIN STEAM ISOLATION VALVE ACCUMULATOR CHECK VALVE										
0220-085B	F-7	NC	A/C	1.000	CK	SA	SYS	AT-06	Y2		
								CTC	CS	CS-47A	
	FUNCTION : MAIN STEAM ISOLATION VALVE ACCUMULATOR CHECK VALVE										
0220-085C	F-7	NC	A/C	1.000	CK	SA	SYS	AT-06	Y2		
								CTC	CS	CS-47A	
	FUNCTION : MAIN STEAM ISOLATION VALVE ACCUMULATOR CHECK VALVE										
0220-085D	F-7	NC	A/C	1.000	CK	SA	SYS	AT-06	Y2		
								CTC	CS	CS-47A	
	FUNCTION : MAIN STEAM ISOLATION VALVE ACCUMULATOR CHECK VALVE										

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0015
DRAWING TITLE : REACTOR FEED PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0220-058A	E-2	1	A/C	18.000	CK	SA	SYS	AT-01	RR		
								CTC	RR	RV-32A	
FUNCTION : REACTOR FEED - CHECK VALVE INSIDE CONTAINMENT											
0220-058B	F-2	1	A/C	18.000	CK	SA	SYS	AT-01	RR		
								CTC	RR	RV-32A	
								CTO	M3		
FUNCTION : REACTOR FEED - CHECK VALVE INSIDE CONTAINMENT											
0220-059B	F-2	2	C	18.000	CK	SA	SYS	CTC	RR	RV-32A	
FUNCTION : REACTOR FEED - SECOND VALVE OUTSIDE CONTAINMENT											
0220-062A	E-2	1	A/C	18.000	CK	SA	SYS	AT-01	RR		
								CTC	RR	RV-32A	
FUNCTION : REACTOR FEED - FIRST CHECK VALVE OUTSIDE CONTAINMENT											
0220-062B	F-2	1	A/C	18.000	CK	SA	SYS	AT-01	RR		
								CTC	RR	RV-32A	
								CTO	M3		
FUNCTION : REACTOR FEED - FIRST CHECK VALVE OUTSIDE CONTAINMENT											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0022-1
DRAWING TITLE : LOW PRESSURE SERVICE WATER PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
3999-560	C-4	3	C	2.500	CK	SA	SYS	CTC	M3		
	FUNCTION : LPSW - SERVICE WATER TO HPCI ROOM COOLER CHECK VALVE										
3999-561	C-4	3	C	4.000	CK	SA	SYS	CTO	M3		
	FUNCTION : LPSW - SERVICE WATER TO VITAL COMPONENTS CHECK VALVE										

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0022-3
DRAWING TITLE : SERVICE WATER PIPING, DIESEL GENERATOR COOLING WATER

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
3999-085 - -1/2	B-8	3	C	8.000	CK	SA	SYS	CTC CTO	SA M3	RV-00F	
FUNCTION : LPSW - DG COOLING WATER PUMP DISCHARGE CHECK VALVE											
3999-086	F-8	3	C	8.000	CK	SA	SYS	CTC CTO	SA M3	RV-00F	
FUNCTION : LPSW - DG COOLING WATER PUMP DISCHARGE CHECK VALVE											
3999-088	D-6	3	C	6.000	CK	SA	SYS	CTO	M3		
FUNCTION : LPSW - DG COOLING WATER PUMP DISC. CROSS-TIE CHECK VALVE											
3999-089	D-6	3	B	6.000	GA	M	C	BTME	M3		TV-39A
FUNCTION : LPSW - DG COOLING WATER PUMP DISC. CROSS-TIE ISOLATION VALVE											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0024-2
DRAWING TITLE : INSTRUMENT AIR PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
4720	D-3	NC	A	1.000	DIA	AO	O/FC	AT-O1	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : INSTR. AIR - PCIV, AIR SUCTION FOR INSTR. AIR FROM DRYWELL											
4721	D-3	NC	A	1.000	DIA	AO	O/FC	AT-O1	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : INSTR. AIR - PCIV, AIR SUCTION FOR INSTR. AIR FROM DRYWELL											
4799-155	E-2	NC	A/C	2.000	CK	SA	SYS	AT-O1	RR		
								CTC	RR	RV-47B	
FUNCTION : INSTR. AIR - PCIV, INSTR. AIR SUPPLY TO DRYWELL											
4799-156	E-3	NC	A/C	2.000	CK	SA	SYS	AT-O1	RR		
								CTC	RR	RV-47B	
FUNCTION : INSTR. AIR - PCIV, INSTR. AIR SUPPLY TO DRYWELL											
4799-158	F-4	NC	A/C	.500	CK	SA	SYS	AT-O1	RR		
								CTC	RR	RV-47B	
FUNCTION : INSTR. AIR - PCIV, INSTR. AIR SUPPLY TO TORUS											
4799-159	F-4	NC	A/C	.500	CK	SA	SYS	AT-O1	RR		
								CTC	RR	RV-47B	
FUNCTION : INSTR. AIR - PCIV, INSTR. AIR SUPPLY TO TORUS											
4799-281A	B-2	NC	A/C	.500	CK	SA	SYS	AT-O6	Y2		
								CTC	RR	RV-47A	
FUNCTION : INSTR. AIR - TARGET ROCK ACCUMULATOR CHECK VALVE											
4799-485	D-3	NC	B	.500	SO3	SO	E	BTD	M3		
								FST	M3		
FUNCTION : INSTR. AIR - PCIV (AIR SUCTION FROM DRYWELL) SOLENOID VALVE											
4799-486	D-3	NC	B	.500	SO3	SO	E	BTD	M3		
								FST	M3		
FUNCTION : INSTR. AIR - PCIV (AIR SUCTION FROM DRYWELL) SOLENOID VALVE											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0025-1
DRAWING TITLE : SERVICE AIR PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
4699-046	E-3	NC	A	1.000	GL	M	C	AT-01	RR		
	FUNCTION : SERVICE AIR - PRIMARY CONTAINMENT ISOLATION VALVE										
4699-047	E-4	NC	A/C	1.000	CK	SA	SYS	AT-01	RR		
								CTC	RR	RV-46B	
	FUNCTION : SERVICE AIR - PRIMARY CONTAINMENT ISOLATION VALVE										

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0025-2
DRAWING TITLE : SERVICE AIR PIPING

VALVE NUMBER	DWG COOR	1ST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
4699-048 - -1/2	C-7	NC	C	1.500	CK	SA	SYS	CTO	M3		
FUNCTION : SERVICE AIR - (DIESEL) RECEIVER TANK BACKFLOW PROTECTION											
4699-123	E-6	NC	C	1.500	CK	SA	SYS	CTO	M3		
FUNCTION : SERVICE AIR - (DIESEL) RECEIVER TANK BACKFLOW PROTECTION											
4699-196	E-6	NC	C	1.500	CK	SA	SYS	CTO	M3		
FUNCTION : SERVICE AIR - (DIESEL) RECEIVER TA' BACKFLOW PROTECTION											
4699-196 - -1/2	C-6	NC	C	1.500	CK	SA	S..	CTO	M3		
FUNCTION : SERVICE AIR - (DIESEL) RECEIVER TANK BACKFLOW PROTECTION											
4699-226	E-3	NC	B	1.500	DIA	AO	C	BTC BTO	M3 M3	RV-46A RV-46A	
FUNCTION : SERVICE AIR - (DIESEL) AIR START RELAY VALVE											
4699-226 - -1/2	B-3	NC	B	1.500	GL	AO	C	BTC BTO	M3 M3	RV-46A RV-46A	
FUNCTION : SERVICE AIR - (DIESEL) AIR START RELAY VALVE											
4699-306A	E-8	NC	C	.750	RV	SA	C	CT-SP	YA		
FUNCTION : SERVICE AIR - (DIESEL) RECEIVER TANK SAFETY VALVE											
4699-306A- -1/2	B-8	NC	C	.750	RV	SA	C	CT-SP	YA		
FUNCTION : SERVICE AIR - (DIESEL) RECEIVER TANK SAFETY VALVE											
4699-306B	E-7	NC	C	.750	RV	SA	C	CT-SP	YA		
FUNCTION : SERVICE AIR - (DIESEL) RECEIVER TANK SAFETY VALVE											
4699-306B- -1/2	B-7	NC	C	.750	RV	SA	C	CT-SP	YA		
FUNCTION : SERVICE AIR - (DIESEL) RECEIVER TANK SAFETY VALVE											
4699-306C	E-6	NC	C	.750	RV	SA	C	CT-Sr	YA		
FUNCTION : SERVICE AIR - (DIESEL) RECEIVER TANK SAFETY VALVE											
4699-306C- -1/2	B-6	NC	C	.750	RV	SA	C	CT-SP	YA		
FUNCTION : SERVICE AIR - (DIESEL) RECEIVER TANK SAFETY VALVE											
4699-306D	E-5	NC	C	.750	RV	SA	C	CT-SP	YA		
FUNCTION : SERVICE AIR - (DIESEL) RECEIVER TANK SAFETY VALVE											
4699-306D- -1/2	B-5	NC	C	.750	RV	SA	C	CT-SP	YA		
FUNCTION : SERVICE AIR - (DIESEL) RECEIVER TANK SAFETY VALVE											
4699-307A	D-7	NC	A/C	.500	CK	SA	SYS	AT-06 CTC	Y2 M3		
FUNCTION : SERVICE AIR - (DIESEL) COMPRESSOR BACKFLOW PROTECTION											
4699-307A- -1/2	A-7	NC	A/C	.500	CK	SA	SYS	AT-06 CTC	Y2 M3		
FUNCTION : SERVICE AIR - (DIESEL) COMPRESSOR BACKFLOW PROTECTION											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0025-2
DRAWING TITLE : SERVICE AIR PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
4699-307B	D-5	NC	A/C	.500	CK	SA	SYS	AT-06 CTC	Y2 M3		
FUNCTION : SERVICE AIR - (DIESEL) COMPRESSOR BACKFLOW PROTECTION											
4699-307B- -1/2	A-5	NC	A/C	.500	CK	SA	SYS	AT-06 CTC	Y2 M3		
FUNCTION : SERVICE AIR - (DIESEL) COMPRESSOR BACKFLOW PROTECTION											
4699-309	E-3	NC	C	.375	CK	SA	SYS	CTC CTD	M3 M3		
FUNCTION : SERVICE AIR - (DIESEL) AIR START RELAY VALVE DPHRGM. CK VLV.											
4699-309 - -1/2	B-3	NC	C	.375	CK	SA	SYS	CTC CTD	M3 M3		
FUNCTION : SERVICE AIR - (DIESEL) AIR START RELAY VALVE DPHRGM. CK VLV.											
4699-310	E-4	NC	B	.375	SO3	SO	D	BTD BTE	M3 M3		
FUNCTION : SERVICE AIR - (DIESEL) START SOLENOID											
4699-310 - -1/2	B-4	NC	B	.375	SO3	SO	D	BTD BTE	M3 M3		
FUNCTION : SERVICE AIR - (DIESEL) START SOLENOID											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0029-2
DRAWING TITLE : DIESEL GENERATOR FUEL OIL PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
5201- -RV	D-2	NC	C	1.000	RV	SA	C	CT-SP	YA		
FUNCTION : DIESEL OIL - TRANSFER PUMP DISCHARGE RELIEF VALVE											
5201- -RV -1/2	D-5	NC	C	1.000	RV	SA	C	CT-SP	YA		
FUNCTION : DIESEL OIL - TRANSFER PUMP DISCHARGE RELIEF VALVE											
5201- -SO	A-2	NC	B	1.000	SO2	SO	O	BTO	M3	RV-52A	
FUNCTION : DIESEL OIL - TRANSFER PUMP TO DAY TANK CONTROL VALVE											
5201- -SO -1/2	A-6	NC	B	1.000	SO2	SO	C	BTO	M3	RV-52A	
FUNCTION : DIESEL OIL - TRANSFER PUMP TO DAY TANK CONTROL VALVE											
5299-003	D-2	NC	C	1.500	CK	SA	SYS	CTO	SA	RV-00E	
FUNCTION : DIESEL OIL - TRANSFER PUMP DISCHARGE BACKFLOW PROTECTION											
5299-003 - -1/2	D-5	NC	C	1.500	CK	SA	SYS	CTO	SA	RV-00E	
FUNCTION : DIESEL OIL - TRANSFER PUMP DISCHARGE BACKFLOW PROTECTION											
5299-005	D-2	NC	C	1.500	CK	SA	SYS	CTC CTO	M3 M3		
FUNCTION : DIESEL OIL - TRANSFER PUMP DISCHARGE BACKFLOW PROTECTION											
5299-005 - -1/2	D-5	NC	C	1.500	CK	SA	SYS	CTO	M3		
FUNCTION : DIESEL OIL - TRANSFER PUMP DISCHARGE BACKFLOW PROTECTION											
5299-157	C-3	NC	C	1.000	CK	SA	SYS	CTC CTO	M3 M3		
FUNCTION : DIESEL OIL - PRIMING PUMP DISCHARGE BACKFLOW PROTECTION											
5299-157 - -1/2	C-6	NC	C	1.000	CK	SA	SYS	CTC CTO	M3 M3		
FUNCTION : DIESEL OIL - PRIMING PUMP DISCHARGE BACKFLOW PROTECTION											
5299-158	D-3	NC	C	.750	CK	SA	SYS	CTC CTO	SA M3	RV-00F	
FUNCTION : DIESEL OIL - EXCESS FUEL RETURN BACKFLOW PROTECTION											
5299-158 - -1/2	D-6	NC	C	.750	CK	SA	SYS	CTC CTO	SA M3	RV-00F	
FUNCTION : DIESEL OIL - EXCESS FUEL RETURN BACKFLOW PROTECTION											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0033
DRAWING TITLE : REACTOR BUILDING COOLING WATER PIPING

VALVE NUMBER		DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
3702-	-MO	B-3	NC	A	8.000	GA	MO	O	AT-01	RR		
									BTC	CS	CS-37A	
									PIT	Y2		
		FUNCTION : RBCCW - PRIMARY CONTAINMENT ISOLATION VALVE										
3703-	-MO	B-1	NC	A	8.000	GA	MO	O	AT-01	RR		
									BTC	CS	CS-37A	
									PIT	Y2		
		FUNCTION : RBCCW - PRIMARY CONTAINMENT ISOLATION VALVE										
3706-	-MO	B-1	NC	A	8.000	GA	MO	O	AT-01	RR		
									BTC	CS	CS-37A	
									PIT	Y2		
		FUNCTION : RBCCW - PRIMARY CONTAINMENT ISOLATION VALVE										
3799-031		B-3	NC	A/C	8.000	CK	SA	SYS	AT-01	RR		
									CTC	RR	RV-37A	
		FUNCTION : RBCCW - PRIMARY CONTAINMENT ISOLATION VALVE										

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0034-1
DRAWING TITLE : PRESSURE SUPPRESSION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0220-081A	E-4	NC	C	1.000	CK	SA	SYS	CTOME	RR	RV-30C	
	FUNCTION : PRES. SUPPR. - SAFETY VALVE DISCHARGE VACUUM BREAKERS										
0220-081B	E-4	NC	C	1.000	CK	SA	SYS	CTOME	RR	RV-30C	
	FUNCTION : PRES. SUPPR. - SAFETY VALVE DISCHARGE VACUUM BREAKERS										
0220-081C	E-4	NC	C	1.000	CK	SA	SYS	CTOME	RR	RV-30C	
	FUNCTION : PRES. SUPPR. - SAFETY VALVE DISCHARGE VACUUM BREAKERS										
0220-081D	E-6	NC	C	1.000	CK	SA	SYS	CTOME	RR	RV-30C	
	FUNCTION : PRES. SUPPR. - SAFETY VALVE DISCHARGE VACUUM BREAKERS										
0220-081E	E-6	NC	C	1.000	CK	SA	SYS	CTOME	RR	RV-30C	
	FUNCTION : PRES. SUPPR. - SAFETY VALVE DISCHARGE VACUUM BREAKERS										
0220-105A	D-4	NC	C	8.000	CK	SA	SYS	CTOME	RR	RV-30C	
	FUNCTION : PRES. SUPPR. - SAFETY VALVE DISCHARGE VACUUM BREAKERS										
0220-105B	E-4	NC	C	8.000	CK	SA	SYS	CTOME	RR	RV-30C	
	FUNCTION : PRES. SUPPR. - SAFETY VALVE DISCHARGE VACUUM BREAKERS										
0220-105C	D-5	NC	C	8.000	CK	SA	SYS	CTOME	RR	RV-30C	
	FUNCTION : PRES. SUPPR. - SAFETY VALVE DISCHARGE VACUUM BREAKERS										
0220-105D	D-5	NC	C	8.000	CK	SA	SYS	CTOME	RR	RV-30C	
	FUNCTION : PRES. SUPPR. - SAFETY VALVE DISCHARGE VACUUM BREAKERS										
0220-105E	E-5	NC	C	8.000	CK	SA	SYS	CTOME	RR	RV-30C	
	FUNCTION : PRES. SUPPR. - SAFETY VALVE DISCHARGE VACUUM BREAKERS										
1601-020A-AO	D-9	NC	A	20.000	BTF	AO	C/FO	AT-01	RR		
								BTC	M3		
								BTO	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : PRES. SUPPR. - PRIMARY/SECONDARY CONTAINMENT VACUUM BREAKERS										
1601-020A-SO	A-1	NC	B	.001	SO4	SO	F	BTD	M3		
								BTE	M3		
								FST	M3		
	FUNCTION : PRES. SUPPR. - VACUUM BREAKER/PCIV CONTROL SOLENOID										
1601-020B-AO	E-9	NC	A	20.000	BTF	AO	C/FO	AT-01	RR		
								BTC	M3		
								BTO	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : PRES. SUPPR. - PRIMARY/SECONDARY CONTAINMENT VACUUM BREAKERS										

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0034-1
DRAWING TITLE : PRESSURE SUPPRESSION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
1601-020B-SO	A-1	NC	B	.001	SO4	SO	E	BTD	M3		
								BTE	M3		
								FST	M3		
FUNCTION : PRES. SUPPR. - VACUUM BREAKER/PCIV CONTROL SOLENOID											
1601-021 -AO	C-6	NC	A	18.000	BTF	AO	C/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : PRES. SUPPR. - DRYWELL INERT & PURGE											
1601-021 -SO	A-1	NC	B	.001	SO4	SO	D	BTD	M3		
								FST	M3		
FUNCTION : PRES. SUPPR. - MISC. PCIV AIR OPERATOR CONTROL SOLENOID											
1601-022 -AO	C-6	NC	A	18.000	BTF	AO	C/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : PRES. SUPPR. - DRYWELL INERT & PURGE											
1601-022 -SO	A-1	NC	B	.001	SO4	SO	D	BTD	M3		
								FST	M3		
FUNCTION : PRES. SUPPR. - MISC. PCIV AIR OPERATOR CONTROL SOLENOID											
1601-023 -AO	B-3	NC	A	18.000	BTF	AO	C/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : PRES. SUPPR. - DRYWELL VENT											
1601-023 -SO	A-1	NC	B	.001	SO4	SO	D	BTD	M3		
								FST	M3		
FUNCTION : PRES. SUPPR. - MISC. PCIV AIR OPERATOR CONTROL SOLENOID											
1601-024 -AO	B-2	NC	A	18.000	BTF	AO	C/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : PRES. SUPPR. - DRYWELL AND SUPPR. CHAMBER VENT TO RX BLDG.											
1601-024 -SO	A-1	NC	B	.001	SO4	SO	D	BTD	M3		
								FST	M3		
FUNCTION : PRES. SUPPR. - MISC. PCIV AIR OPERATOR CONTRDL SOLENOID											
1601-031A	D-9	NC	A/C	20.000	CK	SA	SYS	AT-01	RR		
								CTC	M3		
								CTOME	M3		
FUNCTION : PRES. SUPPR. - PRIMARY/SECONDARY CONTAINMENT VACUUM BREAKERS											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0034-1
DRAWING TITLE : PRESSURE SUPPRESSION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
1601-031B	E-9	NC	A/C	20.000	CK	SA	SYS	AT-01	RR		
								CTC	M3		
								CTOME	M3		
FUNCTION : PRES. SUPPR. - PRIMARY/SECONDARY CONTAINMENT VACUUM BREAKERS											
1601-032A	E-2	NC	A/C	.001	CK	SA	SYS	AT-05	RR	RV-16A	
								CTC	M3		
								CTO	M3		
								PIT	Y2		
FUNCTION : PRES. SUPPR. - DRYWELL/SUPPRESSION CHAMBER VACUUM BREAKERS											
1601-032B	E-2	NC	A/C	.001	CK	SA	SYS	AT-05	RR	RV-16A	
								CTC	M3		
								CTO	M3		
								PIT	Y2		
FUNCTION : PRES. SUPPR. - DRYWELL/SUPPRESSION CHAMBER VACUUM BREAKERS											
1601-032C	E-2	NC	A/C	.001	CK	SA	SYS	AT-05	RR	RV-16A	
								CTC	M3		
								CTO	M3		
								PIT	Y2		
FUNCTION : PRES. SUPPR. - DRYWELL/SUPPRESSION CHAMBER VACUUM BREAKERS											
1601-032D	E-2	NC	A/C	.001	CK	SA	SYS	AT-05	RR	RV-16A	
								CTC	M3		
								CTO	M3		
								PIT	Y2		
FUNCTION : PRES. SUPPR. - DRYWELL/SUPPRESSION CHAMBER VACUUM BREAKERS											
1601-032E	E-2	NC	A/C	.001	CK	SA	SYS	AT-05	RR	RV-16A	
								CTC	M3		
								CTO	M3		
								PIT	Y2		
FUNCTION : PRES. SUPPR. - DRYWELL/SUPPRESSION CHAMBER VACUUM BREAKERS											
1601-032F	E-2	NC	A/C	.001	CK	SA	SYS	AT-05	RR	RV-16A	
								CTC	M3		
								CTO	M3		
								PIT	Y2		
FUNCTION : PRES. SUPPR. - DRYWELL/SUPPRESSION CHAMBER VACUUM BREAKERS											
1601-033A	E-7	NC	A/C	.001	CK	SA	SYS	AT-05	RR	RV-16A	
								CTC	M3		
								CTO	M3		
								PIT	Y2		
FUNCTION : PRES. SUPPR. - DRYWELL/SUPPRESSION CHAMBER VACUUM BREAKERS											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0034-1
DRAWING TITLE : PRESSURE SUPPRESSION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
1601-033B	C-7	NC	A/C	.001	CK	SA	SYS	AT-05	RR	RV-16A	
								CTC	M3		
								CTO	M3		
								PIT	Y2		
	FUNCTION : PRES. SUPPR. - DRYWELL/SUPPRESSION CHAMBER VACUUM BREAKERS										
1601-033C	E-7	NC	A/C	.001	CK	SA	SYS	AT-05	RR	RV-16A	
								CTC	M3		
								CTO	M3		
								PIT	Y2		
	FUNCTION : PRES. SUPPR. - DRYWELL/SUPPRESSION CHAMBER VACUUM BREAKERS										
1601-033D	E-7	NC	A/C	.001	CK	SA	SYS	AT-05	RR	RV-16A	
								CTC	M3		
								CTO	M3		
								PIT	Y2		
	FUNCTION : PRES. SUPPR. - DRYWELL/SUPPRESSION CHAMBER VACUUM BREAKERS										
1601-033E	E-7	NC	A/C	.001	CK	SA	SYS	AT-05	RR	RV-16A	
								CTC	M3		
								CTO	M3		
								PIT	Y2		
	FUNCTION : PRES. SUPPR. - DRYWELL/SUPPRESSION CHAMBER VACUUM BREAKERS										
1601-033F	E-7	NC	A/C	.001	CK	SA	SYS	AT-05	RR	RV-16A	
								CTC	M3		
								CTO	M3		
								PIT	Y2		
	FUNCTION : PRES. SUPPR. - DRYWELL/SUPPRESSION CHAMBER VACUUM BREAKERS										
1601-055	A-6	NC	A	4.000	GA	AO	O/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : PRES. SUPPR. - NITROGEN MAKE-UP/PUMPBACK SUCTION										
1601-055 -SO	A-6	NC	B	.001	SO3	SO	E	BTD	M3		
								FST	M3		
	FUNCTION : PRES. SUPPR. - NITROGEN INERTION ISOLATION CONTROL SOLENOID										
1601-056 -AO	D-6	NC	A	18.000	BTF	AO	O/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : PRES. SUPPR. - CONTAINMENT INERTING/PUMPBACK SUCTION										
1601-056 -SO	A-1	NC	B	.001	SO4	SO	E	BTD	M3		
								FST	M3		
	FUNCTION : PRES. SUPPR. - MISC. PCIV AIR OPERATOR CONTROL SOLENOID										

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0034-1
DRAWING TITLE : PRESSURE SUPPRESSION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
1601-057	D-8	NC	A	1.000	GL	MO	O	AT-01	RR		
								BTC	M3		
								PIT	Y2		
	FUNCTION : PRES. SUPPR. - NITROGEN MAKE-UP/PUMPBACK DISCHARGE PATH										
1601-058 -AO	D-7	NC	A	1.000	GL	AO	C/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : PRES. SUPPR. - NITROGEN MAKE-UP/PUMPBACK ISOL. FROM TORUS										
1601-058 -SO	D-7	NC	B	.001	SO3	SO	D	BTD	M3		
								FST	M3		
	FUNCTION : PRES. SUPPR. - AIR OPERATED GLOBE VALVE SOLENOID										
1601-059 -AO	D-7	NC	A	1.000	GL	AO	O/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : PRES. SUPPR. - NITROGEN MAKE-UP/PUMPBACK DISCHARGE PATH										
1601-059 -SO	D-6	NC	B	.001	SO3	SO	E	BTD	M3		
								FST	M3		
	FUNCTION : PRES. SUPPR. - AIR OPERATED GLOBE VALVE SOLENOID										
1601-060 -AO	E-1	NC	A	18.000	BTF	AO	C/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : PRES. SUPPR. - SUPPRESSION CHAMBER VENT										
1601-060 -SO	A-1	NC	B	.001	SO4	SO	D	BTD	M3		
								FST	M3		
	FUNCTION : PRES. SUPPR. - MISC. PCIV AIR OPERATOR CONTROL SOLENOID										
1601-061 -AO	F-1	NC	A	2.000	GL	AO	C/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : PRES. SUPPR. - SUPPR. CHAMBER VENT BYPASS AND SBGT SUCTION										
1601-061 -SO	F-1	NC	B	.001	SO3	SO	D	BTD	M3		
								FST	M3		
	FUNCTION : PRES. SUPPR. - AIR OPERATED GLOBE VALVE SOLENOIDS										
1601-062 -AO	B-3	NC	A	2.000	GL	AO	O/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : PRES. SUPPR. - DRYWELL VENT BYPASS & STANDBY GAS TR. SUCTION										

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0034-1
DRA TITLE : PRESSURE SUPPRESSION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
1601-062 -SO	B-3	NC	B	.001	SO3	SO	D	BTD	M3		
								FST	M3		
FUNCTION : PRES. SUPPR. - AIR OPERATED GLOBE VALVE SOLENOIDS											
1601-063 -AO	A-2	NC	A	6.000	BTF	AO	C/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : PRES. SUPP. - STANDBY GAS TREAT. CONNECTION TO PRIMARY CONT.											
1601-063 -SO	A-3	NC	B	.001	SO4	SO	D	BTD	M3		
								FST	M3		
FUNCTION : PRES. SUPPR. - MISC. PCIV AIR OPERATOR CONTROL SOLENOID											
1699-009 -RV	D-8	NC	A/C	1.500	RV	SA	C	AT-01	RR		
								CT-SP	YA		
FUNCTION : PRES. SUPPR. - NITROGEN MAKE-UP OVERPRESSURE PROTECTION											
8801- A-FCV	C-3	NC	A	.500	DIA	AO	O/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8801- A-SO	C-3	NC	B	.001	SO3	SO	E	BTD	M3		
								FST	M3		
FUNCTION : PRES. SUPPR. - DIAPHRAGM VALVE SOLENOIDS											
8801- B-FCV	D-3	NC	A	.500	DIA	AO	O/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8801- B-SO	D-3	NC	B	.001	SO3	SO	E	BTD	M3		
								FST	M3		
FUNCTION : PRES. SUPPR. - DIAPHRAGM VALVE SOLENOIDS											
8801- C-FCV	D-3	NC	A	.500	DIA	AO	O/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8801- C-SO	D-3	NC	B	.001	SO3	SO	E	BTD	M3		
								FST	M3		
FUNCTION : PRES. SUPPR. - DIAPHRAGM VALVE SOLENOIDS											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0034-1
DRAWING TITLE . PRESSURE SUPPRESSION PIPING

VALVE NUMBER	DWG COOR	1ST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
8801- D-FCV	E-3	NC	A	.500	DIA	AO	O/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : PRES. SUPPR. - SUPPRESSION CHAMBER AIR SAMPLE											
8801- D-SO	D-3	NC	B	.001	SO3	SO	E	BTD	M3		
								FST	M3		
FUNCTION : PRES. SUPPR. - DIAPHRAGM VALVE SOLENOIDS											
8802- A-FCV	C-3	NC	A	.500	DIA	AO	O/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8802- A-SO	C-3	NC	B	.001	SO3	SO	E	BTD	M3		
								FST	M3		
FUNCTION : PRES. SUPPR. - DIAPHRAGM VALVE SOLENOIDS											
8802- B-FCV	D-3	NC	A	.500	DIA	AO	O/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8802- B-SO	D-3	NC	B	.001	SO3	SO	E	BTD	M3		
								FST	M3		
FUNCTION : PRES. SUPPR. - DIAPHRAGM VALVE SOLENOIDS											
8802- C-FCV	D-3	NC	A	.500	DIA	AO	O/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8802- C-SO	D-3	NC	B	.001	SO3	SO	E	BTD	M3		
								FST	M3		
FUNCTION : PRES. SUPPR. - DIAPHRAGM VALVE SOLENOIDS											
8802- D-FCV	E-3	NC	A	.500	DIA	AO	O/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : PRES. SUPPR. - SUPPRESSION CHAMBER AIR SAMPLE											
8802- D-SO	E-3	NC	B	.001	SO3	SO	E	BTD	M3		
								FST	M3		
FUNCTION : PRES. SUPPR. - DIAPHRAGM VALVE SOLENOIDS											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0034-1
DRAWING TITLE : PRESSURE SUPPRESSION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
8803	C-6	NC	A	.500	GL	AO	O/FC	AT-01 BTC FST PIT	RR M3 M3 Y2		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- -SO	C-6	NC	B	.001	SO3	SO	E	BTD FST	M3 M3		
FUNCTION : PRES. SUPPR. - AIR OPERATED GLOBE VALVE SOLENOIDS											
8803- 1D	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 1E	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 1F	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 1G	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 1H	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 1I	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 1J	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 1K	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 1L	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 1M	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 1N	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 1O	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 1P	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 1Q	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0034-1
DRAWING TITLE : PRESSURE SUPPRESSION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
8803- 1R	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 1S	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 1T	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 1U	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 1V	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 1W	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 1X	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 1Y	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2D	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2E	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2F	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2G	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2H	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2I	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2J	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2K	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2L	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0034-1
DRAWING TITLE : PRESSURE SUPPRESSION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
8803- 2M	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2N	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2O	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2P	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2Q	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2R	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2S	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2T	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2U	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2V	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2W	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2X	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2Y	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8804	D-6	NC	A	.500	GL	AO	O/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8804- -SO	D-6	NC	B	.001	SO3	SO	E	BTD	M3		
								FST	M3		
FUNCTION : PRES. SUPPR. - AIR OPERATED GLOBE VALVE SOLENOIDS											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0035-1
DRAWING TITLE : NUCLEAR BOILER & REACTOR RECIRCULATION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0220-051	E-5	1	B	.500	DIA	AO	C/FC	FST LIT	CS Y2	CS-02B	
FUNCTION : REACTOR RECIRCULATION - FLANGE LEAK DETECTOR DRAIN LINE											
0220-051 -SO	E-5	NC	B	.999	SO3	SO	D	FST	CS	CS-02B	
FUNCTION : REACTOR RECIRC - FLANGE LEAK DETECTOR DRAIN LINE SOLENOID											
0220-054	E-6	1	A/C	1.000	XFC	SA	SYS	AT-02 CTC	RR RR	RV-00B	
FUNCTION : RX PS-1-261-20 & PI-1-261-21 EXCESS FLOW CK VLV											
0263-2-011	E-6	1	A/C	1.000	XFC	SA	SYS	AT-02 CTC	RR RR	RV-00B	
FUNCTION : RX LT-1-263-61 HI SIDE EXCESS FLOW CK VLV											
0263-2-013A	D-6	1	A/C	1.000	XFC	SA	SYS	AT-02 CTC	RR RR	RV-00B	
FUNCTION : RX LT-1-263-57 HI SIDE EXCESS FLOW CK VLV											
0263-2-013B	D-3	1	A/C	1.000	XFC	SA	SYS	AT-02 CTC	RR RR	RV-00B	
FUNCTION RX LT-1-263-58 HI SIDE EXCESS FLOW CK VLV											
0263-2-015A	D-6	1	A/C	1.000	XFC	SA	SYS	AT-02 CTC	RR RR	RV-00B	
FUNCTION : RX LT-1-263-57 LO SIDE EXCESS FLOW CK VLV											
0263-2-015B	D-3	1	A/C	1.000	XFC	SA	SYS	AT-02 CTC	RR RR	RV-00B	
FUNCTION : RX LT-1-263-58 LO SIDE EXCESS FLOW CK VLV											
0263-2-017A	D-6	1	A/C	1.000	XFC	SA	SYS	AT-02 CTC	RR RR	RV-00B	
FUNCTION : RX LT-1-646A & LT-1-263-23A LO SIDE EXCESS FLOW CK VLV											
0263-2-017B	D-3	1	A/C	1.000	XFC	SA	SYS	AT-02 CTC	RR RR	RV-00B	
FUNCTION : RX LT-1-646B & LT-1-263-23B LO SIDE EXCESS FLOW CK VLV											
0263-2-019A	C-6	1	A/C	1.000	XFC	SA	SYS	AT-02 CTC	RR RR	RV-00B	
FUNCTION : RX LT-1-646A & PT-1-647A HI SIDE EXCESS FLOW CK VLV											
0263-2-019B	C-3	1	A/C	1.000	XFC	SA	SYS	AT-02 CTC	RR RR	RV-00B	
FUNCTION : RX LT-1-646B & PI-1-647B HI SIDE EXCESS FLOW CK VLV											
0263-2-020A	B-6	1	A/C	1.000	XFC	SA	SYS	AT-02 CTC	RR RR	RV-00B	
FUNCTION : JET PMP 1 FT-1-263-63A HI SIDE EXCESS FLOW CK VLV											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0035-1
DRAWING TITLE : NUCLEAR BOILER & REACTOR RECIRCULATION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0263-2-020B	B-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : JET PMP 6 FT-1-263-63B HI SIDE EXCESS FLOW CK VLV											
0263-2-020C	B-3	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : JET PMP 11 FT-1-263-63C HI SIDE EXCESS FLOW CK VLV											
0263-2-020D	B-3	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : JET PMP 16 FT-1-263-63D HI SIDE EXCESS FLOW CK VLV											
0263-2-023A	C-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : JET PMP 1 FT-1-263-63A LO SIDE EXCESS FLOW CK VLV											
0263-2-023B	C-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : JET PMP 6 FT-1-263-63B LO SIDE EXCESS FLOW CK VLV											
0263-2-023C	B-3	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : JET PMP 11 FT-1-263-63C LO SIDE EXCESS FLOW CK VLV											
0263-2-023D	B-3	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : JET PMP 16 FT-1-263-63D LO SIDE EXCESS FLOW CK VLV											
0263-2-025	B-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : RX CORE PLATE DPT-1-263-62 LO SIDE EXCESS FLOW CK VLV											
0263-2-027	A-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : RX CORE PLATE DPT-1-263-62 HI SIDE EXCESS FLOW CK VLV											
0263-2-031B	C-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : JET PMP 2 FT-1-263-64B LO SIDE EXCESS FLOW CK VLV											
0263-2-031C	C-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : JET PMP 3 FT-1-263-64C LO SIDE EXCESS FLOW CK VLV											
0263-2-031D	C-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : JET PMP 4 FT-1-263-64D LO SIDE EXCESS FLOW CK VLV											
0263-2-031E	C-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : JET PMP 5 FT-1-263-64E LO SIDE EXCESS FLOW CK VLV											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0035-1
DRAWING TITLE : NUCLEAR BOILER & REACTOR RECIRCULATION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0263-2-020B	B-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : JET PMP 6 FT-1-263-63B HI SIDE EXCESS FLOW CK VLV											
0263-2-020C	B-3	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : JET PMP 11 FT-1-263-63C HI SIDE EXCESS FLOW CK VLV											
0263-2-020D	B-3	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : JET PMP 16 FT-1-263-63D HI SIDE EXCESS FLOW CK VLV											
0263-2-023A	C-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : JET PMP 1 FT-1-263-63A LO SIDE EXCESS FLOW CK VLV											
0263-2-023B	C-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : JET PMP 6 FT-1-263-63B LO SIDE EXCESS FLOW CK VLV											
0263-2-023C	B-3	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : JET PMP 11 FT-1-263-63C LO SIDE EXCESS FLOW CK VLV											
0263-2-023D	B-3	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : JET PMP 16 FT-1-263-63D LO SIDE EXCESS FLOW CK VLV											
0263-2-025	B-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : RX CORE PLATE DPT-1-263-62 LO SIDE EXCESS FLOW CK VLV											
0263-2-027	A-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : RX CORE PLATE DPT-1-263-62 HI SIDE EXCESS FLOW CK VLV											
0263-2-031B	C-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : JET PMP 2 FT-1-263-64B LO SIDE EXCESS FLOW CK VLV											
0263-2-031C	C-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : JET PMP 3 FT-1-263-64C LO SIDE EXCESS FLOW CK VLV											
0263-2-031D	C-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : JET PMP 4 FT-1-263-64D LO SIDE EXCESS FLOW CK VLV											
0263-2-031E	C-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : JET PMP 5 FT-1-263-64E LO SIDE EXCESS FLOW CK VLV											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0035-1
DRAWING TITLE : NUCLEAR BOILER & REACTOR RECIRCULATION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0263-2-031G	C-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : JET PMP 7 FT-1-263-64G LO SIDE EXCESS FLOW CK VLV										
0263-2-031H	C-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : JET PMP 8 FT-1-263-64H LO SIDE EXCESS FLOW CK VLV										
0263-2-031J	C-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : JET PMP 9 FT-1-263-64J LO SIDE EXCESS FLOW CK VLV										
0263-2-031K	C-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : JET PMP 10 FT-1-263-64K LO SIDE EXCESS FLOW CK VLV										
0263-2-031M	C-3	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : JET PMP 13 FT-1-263-64M LO SIDE EXCESS FLOW CK VLV										
0263-2-031N	C-3	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : JET PMP 13 FT-1-263-64N LO SIDE EXCESS FLOW CK VLV										
0263-2-031P	C-3	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : JEP PMP 14 FT-1-264-64P LO SIDE EXCESS FLOW CK VLV										
0263-2-031R	C-3	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : JEP PMP 15 FT-1-263-64R LO SIDE EXCESS FLOW CK VLV										
0263-2-031T	C-3	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : JET PMP 17 FT-1-263-64T LO SIDE EXCESS FLOW CK VLV										
0263-2-031U	C-3	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : JET PMP 18 FT-1-263-64U LO SIDE SHUTOFF VLV										
0263-2-031V	C-3	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : JET PMP 19 FT-1-263-64V LO SIDE EXCESS FLOW CK VLV										
0263-2-031W	C-3	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : JET PMP 20 FT-1-263-64W LO SIDE EXCESS FLOW CK VLV										
0263-2-033	B-3	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : RECIRC LOOP JET PMP FT LO SIDE EXCESS FLOW CK VLV										

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0035-1
DRAWING TITLE : NUCLEAR BOILER & REACTOR RECIRCULATION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0263-2-042A	C-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : RX LT-1-263-73A HI SIDE EXCESS FLOW CK VLV											
0263-2-042B	C-3	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : RX LT-1-263-73B HI SIDE EXCESS FLOW CK VLV											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0035-2
DRAWING TITLE : NUCLEAR BOILER & REACTOR RECIRCULATION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTUATOR	NORMAL POSITION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0202-005A-MO	D-6	1	B	28.000	GA	MO	O	BTC PIT	CS Y2	CS-02A	
FUNCTION : REACTOR RECIRCULATION - RECIRC. PUMP DISCHARGE VALVE											
0202-005B-MO	D-3	1	B	28.000	GA	MO	O	BTC PIT	CS Y2	CS-02A	
FUNCTION : REACTOR RECIRCULATION - RECIRC. PUMP DISCHARGE VALVE											
0220-019A	B-6	1	A/C	1.000	XFC	SA	SYS	AT-02 CTC	RR RR	RV-00B	
FUNCTION : RECIRC PMP DPT-1-261-5A LO SIDE EXCESS FLOW CK VLV											
0220-019B	B-3	1	A/C	1.000	XFC	SA	SYS	AT-02 CTC	RR RR	RV-00B	
FUNCTION : RECIRC PMP DPT-1-261-5B LO SIDE EXCESS FLOW CK VLV											
0220-020A	B-6	1	A/C	1.000	XFC	SA	SYS	AT-02 CTC	RR RR	RV-00B	
FUNCTION : RECIRC PMP DPT-1-261-5A HI SIDE EXCESS FLOW CK VLV											
0220-020B	B-3	1	A/C	1.000	XFC	SA	SYS	AT-02 CTC	RR RR	RV-00B	
FUNCTION : RECIRC PMP DPT-1-261-5B HI SIDE EXCESS FLOW CK VLV											
0220-021A	D-8	1	A/C	1.000	XFC	SA	SYS	AT-02 CTC	RR RR	RV-00B	
FUNCTION : RECIRC PMP FT-1-261-6A LO SIDE EXCESS FLOW CK VLV											
0220-021B	D-1	1	A/C	1.000	XFC	SA	SYS	AT-02 CTC	RR RR	RV-00B	
FUNCTION : RECIRC PMP FT-1-261-6C LO SIDE EXCESS FLOW CK VLV											
0220-022A	D-8	1	A/C	1.000	XFC	SA	SYS	AT-02 CTC	RR RR	RV-00B	
FUNCTION : RECIRC PMP FT-1-261-6A HI SIDE EXCESS FLOW CK VLV											
0220-022B	D-1	1	A/C	1.000	XFC	SA	SYS	AT-02 CTC	RR RR	RV-00B	
FUNCTION : RECIRC PMP FT-1-261-6C HI SIDE EXCESS FLOW CK VLV											
0220-044	E-2	1	A	.750	GL	AO	O/FC	AT-01 BTC FST PIT	RR M3 M3 Y2		
FUNCTION : REACTOR RECIRCULATION - REACTOR WATER SAMPLE LINE ISOLATION											
0220-044 -SO	E-2	NC	B	.001	SOB	SO	E	BTD FST	M3 M3		
FUNCTION : REACTOR RECIRCULATION - CONTROL SOLENOID											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0035-2
DRAWING TITLE : NUCLEAR BOILER & REACTOR RECIRCULATION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0220-045	E-1	1	A	.750	GL	AO	O/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : REACTOR RECIRCULATION - REACTOR WATER SAMPLE LINE ISOLATION											
0220-045 -SO	E-1	NC	B	.001	SO3	SO	E	BTD	M3		
								FST	M3		
FUNCTION : REACTOR RECIRCULATION - CONTROL SOLENOID											
0220-067A	E-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : RECIRC LOOP DPIS-1-261-34A A EXCESS FLOW CK VLV											
0220-067B	F-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : RECIRC LOOP DPIS-1-261-34A B EXCESS FLOW CK VLV											
0220-067C	E-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : RECIRC LOOP DPIS-1-261-34C A EXCESS FLOW CK VLV											
0220-067D	F-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : RECIRC LOOP DPIS-1-261-34C B EXCESS FLOW CK VLV											
0220-067E	E-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : RECIRC LOOP DPIS-1-261-34B A EXCESS FLOW CK VLV											
0220-067F	F-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : RECIRC LOOP DPIS-1-261-34B B EXCESS FLOW CK VLV											
0220-067G	E-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : RECIRC LOOP DPIS-1-261-34D A EXCESS FLOW CK VLV											
0220-067H	F-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : RECIRC LOOP DPIS-1-261-34D B EXCESS FLOW CK VLV											
0220-089A	E-1	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : RECIRC PMP SUCT PS-1-261-23A EXCESS FLOW CK VLV											
0220-089B	E-1	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : RECIRC PMP SUCT PS-1-261-23B EXCESS FLOW CK VLV											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0035-2
DRAWING TITLE : NUCLEAR BOILER & REACTOR RECIRCULATION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0262-2-D05A	B-7	1	A/C	1.000	XFC	SA	SYS	AT-02 CTC	RR RR	RV-D0B	
	FUNCTION : RECIRC PMP SEAL CAVITY 2 PI/PT EXCESS FLOW CK VLV										
0262-2-D05B	B-2	1	A/C	1.000	XFC	SA	SYS	AT-02 CTC	RR RR	RV-D0B	
	FUNCTION : RECIRC PMP SEAL CAVITY 2 PI/PT EXCESS FLOW CK VLV										
0262-2-D06A	B-7	1	A/C	1.000	XFC	SA	SYS	AT-02 CTC	RR RR	RV-D0B	
	FUNCTION : RECIRC PMP SEAL CAVITY 1 PI/PT EXCESS FLOW CK VLV										
0262-2-D06B	B-2	1	A/C	1.000	XFC	SA	SYS	AT-02 CTC	RR RR	RV-D0B	
	FUNCTION : RECIRC PMP SEAL CAVITY 1 PI/PT EXCESS FLOW CK VLV										

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0036
DRAWING TITLE : CORE SPRAY PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
1402-003A-MO	F-7	2	B	18.000	GA	MO	O	BTO	M3		
								PIT	Y2		
FUNCTION : CORE SPRAY - SUPPRESSION POOL SUCTION LINE ISOLATION											
1402-003B-MO	F-5	2	B	18.000	GA	MO	O	BTO	M3		
								PIT	Y2		
FUNCTION : CORE SPRAY - SUPPRESSION POOL SUCTION LINE ISOLATION											
1402-004A-MO	B-8	2	B	8.000	GL	MO	C	BTC	M3		
								PIT	Y2		
FUNCTION : CORE SPRAY - FULL FLOW TEST RETURN TO THE SUPPRESSION POOL											
1402-004B-MO	C-8	2	B	8.000	GL	MO	C	BTC	M3		
								PIT	Y2		
FUNCTION : CORE SPRAY - FULL FLOW TEST RETURN TO THE SUPPRESSION POOL											
1402-008A	E-9	2	C	12.000	SCK	SA	C/LO	CTO	M3		
FUNCTION : CORE SPRAY - PUMP DISCHARGE BACKFLOW PREVENTION											
1402-008B	E-6	2	C	12.000	SCK	SA	C/LO	CTO	M3		
FUNCTION : CORE SPRAY - PUMP DISCHARGE BACKFLOW PREVENTION											
1402-009A-AO	C-3	1	A/C	10.000	CK	AO	SYS	CTC	CS	CS-00A	
								CTO	CS	CS-00A	
								PIT	Y2		
FUNCTION : CORE SPRAY - REACTOR VESSEL INJECTION CHECK VALVE											
1402-009B-AO	C-3	1	A/C	10.000	CK	AO	SYS	CTC	CS	CS-00A	
								CTO	CS	CS-00A	
								PIT	Y2		
FUNCTION : CORE SPRAY - REACTOR VESSEL INJECTION CHECK VALVE											
1402-013A	E-9	2	C	1.500	SCK	SA	C/LO	CTO	M3		
FUNCTION : CORE SPRAY - MINIMUM FLOW RECIR. LINE BACKFLOW PREVENTION											
1402-013B	E-6	2	C	1.500	SCK	SA	C/LO	CTO	M3		
FUNCTION : CORE SPRAY - MINIMUM FLOW RECIR. LINE BACKFLOW PREVENTION											
1402-024A-MO	B-2	2	A	10.000	GA	MO	O	AT-01	RR		
								BTC	M3		
								BTO	M3		
								PIT	Y2		
FUNCTION : CORE SPRAY - INJECTION LINE ISOLATION VALVE											
1402-024B-MO	B-5	2	A	10.000	GA	MO	O	AT-01	RR		
								BTC	M3		
								BTO	M3		
								PIT	Y2		
FUNCTION : CORE SPRAY - INJECTION LINE ISOLATION VALVE											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0036
DRAWING TITLE : CORE SPRAY PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
1402-025A-MO	C-2	1	A	10.000	GA	MO	C	AT-01	RR		
								BTC	M3		
								BTO	M3		
								PIT	Y2		
	FUNCTION : CORE SPRAY - REACTOR VESSEL INJECTION MOTOR OPERATED VALVE										
1402-025B-MO	C-5	1	A	10.000	GA	MO	C	AT-01	RR		
								BTC	M3		
								BTO	M3		
								PIT	Y2		
	FUNCTION : CORE SPRAY - REACTOR VESSEL INJECTION MOTOR OPERATED VALVE										
1402-028A-RV	C-9	2	C	2.000	RV	SA	C	CT-SP	YA		
	FUNCTION : CORE SPRAY - CLASS 2 DISCHARGE LINE OVERPRESSURE PROTECTION										
1402-028B-RV	D-8	2	C	2.000	RV	SA	C	CT-SP	YA		
	FUNCTION : CORE SPRAY - CLASS 2 DISCHARGE LINE OVERPRESSURE PROTECTION										
1402-031A	D-3	1	A/C	.750	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : CORE SPRAY PMP DPIS-1-1459A LO SIDE EXCESS FLOW CK VLV										
1402-031B	D-4	1	A/C	.750	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : CORE SPRAY PMP DPIS-1-1459B LO SIDE EXCESS FLOW CK VLV										
1402-038A-MO	E-8	2	B	1.500	GA	MO	C	BTC	M3		
								BTO	M3		
								PIT	Y2		
	FUNCTION : CORE SPRAY - MINIMUM FLOW RECIRCULATION LINE ISOLATION										
1402-038B-MO	E-7	2	B	1.500	GA	MO	C	BTC	M3		
								BTO	M3		
								PIT	Y2		
	FUNCTION : CORE SPRAY - MINIMUM FLOW RECIRCULATION LINE ISOLATION										
1402-071	D-7	2	A/C	1.500	CK	SA	SYS	CTC	SA	RV-00F	
	FUNCTION : CORE SPRAY - CONDENSATE MAKE-UP TRANSFER LINE ISOLATION										

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0037
DRAWING TITLE : RESIDUAL HEAT REMOVAL SYSTEM PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
1001-007A-MO	B-6	2	B	14.000	GA	MO	O/KL	BTO PIT	M3 Y2		
FUNCTION : RHR - SUPPRESSION POOL SUCTION LINE ISOLATION											
1001-007B-MO	E-6	2	B	14.000	GA	MO	O/KL	BTO PIT	M3 Y2		
FUNCTION : RHR - SUPPRESSION POOL SUCTION LINE ISOLATION											
1001-007C-MO	B-6	2	B	14.000	GA	MO	O/KL	BTO PIT	M3 Y2		
FUNCTION : RHR - SUPPRESSION POOL SUCTION LINE ISOLATION											
1001-007D-MO	E-6	2	B	14.000	GA	MO	O/KL	BTO PIT	M3 Y2		
FUNCTION : RHR - SUPPRESSION POOL SUCTION LINE ISOLATION											
1001-043A-MO	B-4	2	B	14.000	GA	MO	C/KL	BTC PIT	CS Y2	CS-10B	
FUNCTION : RHR - SHUTDOWN COOLING SUCTION ISOLATION											
1001-043B-MO	E-4	2	B	14.000	GA	MO	C/KL	BTC PIT	CS Y2	CS-10B	
FUNCTION : RHR - SHUTDOWN COOLING SUCTION ISOLATION											
1001-043C-MO	B-8	2	B	14.000	GA	MO	C/KL	BTC PIT	CS Y2	CS-10B	
FUNCTION : RHR - SHUTDOWN COOLING SUCTION ISOLATION											
1001-043D-MO	D-8	2	B	14.000	GA	MO	C/KL	BTC PIT	CS Y2	CS-10B	
FUNCTION : RHR - SHUTDOWN COOLING SUCTION ISOLATION											
1001-067A	B-3	2	C	12.000	CK	SA	SYS	CTC CTO	M3 M3		
FUNCTION : RHR - PUMP DISCHARGE BACKFLOW PREVENTION											
1001-067B	E-3	2	C	12.000	CK	SA	SYS	CTC CTO	M3 M3		
FUNCTION : RHR - PUMP DISCHARGE BACKFLOW PREVENTION											
1001-067C	B-9	2	C	12.000	CK	SA	SYS	CTC CTO	M3 M3		
FUNCTION : RHR - PUMP DISCHARGE BACKFLOW PREVENTION											
1001-067D	E-9	2	C	12.000	CK	SA	SYS	CTC CTO	M3 M3		
FUNCTION : RHR - PUMP DISCHARGE BACKFLOW PREVENTION											
1001-125A-RV	B-5	2	C	1.000	RV	SA	C	CT-SP	YA		
FUNCTION : RHR - PUMP SUCTION OVERPRESSURE PROTECTION											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0037
DRAWING TITLE : RESIDUAL HEAT REMOVAL SYSTEM PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
1001-125B-RV	E-5	2	C	1.000	RV	SA	C	CT-SP	YA		
	FUNCTION : RHR - PUMP SUCTION OVERPRESSURE PROTECTION										
1001-125C-RV	B-7	2	C	1.000	RV	SA	C	CT-SP	YA		
	FUNCTION : RHR - PUMP SUCTION OVERPRESSURE PROTECTION										
1001-125D-RV	E-7	2	C	1.000	RV	SA	C	CT-SP	YA		
	FUNCTION : RHR - PUMP SUCTION OVERPRESSURE PROTECTION										
1001-142A	B-3	2	C	2.000	CK	SA	SYS	CTC CTO	M3 M3		
	FUNCTION : RHR - MINIMUM FLOW RECIRCULATION LINE BACKFLOW PREVENTION										
1001-142B	D-3	2	C	2.000	CK	SA	SYS	CTC CTO	M3 M3		
	FUNCTION : RHR - MINIMUM FLOW RECIRCULATION LINE BACKFLOW PREVENTION										
1001-142C	B-9	2	C	2.000	CK	SA	SYS	CTC CTO	M3 M3		
	FUNCTION : RHR - MINIMUM FLOW RECIRCULATION LINE BACKFLOW PREVENTION										
1001-142D	E-9	2	C	2.000	CK	SA	SYS	CTC CTO	M3 M3		
	FUNCTION : RHR - MINIMUM FLOW RECIRCULATION LINE BACKFLOW PREVENTION										
1001-165A-RV	A-2	3	C	4.000	RV	SA	C	CT-SP	YA		
	FUNCTION : RHR - HEAT EXCHANGER THERMAL RELIEF VALVES										
1001-165B-RV	A-10	3	C	4.000	RV	SA	C	CT-SP	YA		
	FUNCTION : RHR - HEAT EXCHANGER THERMAL RELIEF VALVES										
1001-166A-RV	A-2	2	C	1.000	RV	SA	C	CT-SP	YA		
	FUNCTION : RHR - HEAT EXCHANGER THERMAL RELIEF VALVES										
1001-166B-RV	A-10	2	C	1.000	RV	SA	C	CT-SP	YA		
	FUNCTION : RHR - HEAT EXCHANGER THERMAL RELIEF VALVES										

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0039-1
DRAWING TITLE : RESIDUAL HEAT REMOVAL SYSTEM PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
1001-016A-MO	A-7	2	B	18.000	GL	MO	O	BTC BTO PIT	M3 M3 Y2		
FUNCTION : RHR HEAT EXCHANGER BYPASS LINE ISOLATION											
1001-016B-MO	A-2	2	B	18.000	GL	MO	O	BTC BTO PIT	M3 M3 Y2		
FUNCTION : RHR HEAT EXCHANGER BYPASS LINE ISOLATION											
1001-018A-MO	C-6	2	B	3.000	GA	MO	C	BTC BTO PIT	M3 M3 Y2		
FUNCTION : RHR - MINIMUM FLOW RECIRCULATION RETURN LINE ISOLATION											
1001-018B-MO	C-3	2	B	3.000	GA	MO	C	BTC BTO PIT	M3 M3 Y2		
FUNCTION : RHR - MINIMUM FLOW RECIRCULATION RETURN LINE ISOLATION											
1001-019A-MO	B-6	2	B	18.000	GA	MO	O/KL	BTC BTO PIT	CS CS Y2	CS-10B CS-10B	
FUNCTION : RHR - CROSS TIE LINE ISOLATION											
1001-019B-MO	B-2	2	B	18.000	GA	MO	O/KL	BTC BTO PIT	CS CS Y2	CS-10B CS-10B	
FUNCTION : RHR - CROSS TIE LINE ISOLATION											
1001-020 -MO	B-3	2	B	3.000	GA	MO	C	BTC BTO PIT	M3 M3 Y2		
FUNCTION : RHR - TRANSFER LINE TO RADWASTE ISOLATION											
1001-021 -MO	B-3	NC	B	3.000	GA	MO	C	BTC BTO PIT	M3 M3 Y2		
FUNCTION : RHR - TRANSFER LINE TO RADWASTE ISOLATION											
1001-022A-RV	E-8	2	C	1.000	RV	SA	C	CT-SP	YA		
FUNCTION : RHR - RHR PUMP DISCHARGE OVERPRESSURE PROTECTION											
1001-022B-RV	E-2	2	C	1.000	RV	SA	C	CT-SP	YA		
FUNCTION : RHR - RHR PUMP DISCHARGE OVERPRESSURE PROTECTION											
1001-023A-MO	E-6	2	B	10.000	GA	MO	C	BTC PIT	M3 Y2		
FUNCTION : RHR - DRYWELL SPRAY MOTOR OPERATED ISOLATION VALVE											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0039-1
DRAWING TITLE : RESIDUAL HEAT REMOVAL SYSTEM PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
1001-023B-MO	E-3	2	B	10.000	GA	MO	C	BTC PIT	M3 Y2		
FUNCTION : RHR - DRYWELL SPRAY MOTOR OPERATED ISOLATION VALVE											
1001-026A-MO	E-5	2	B	10.000	GA	MO	C	BTC PIT	M3 Y2		
FUNCTION : RHR - DRYWELL SPRAY MOTOR OPERATED ISOLATION VALVE											
1001-026B-MO	E-4	2	B	10.000	GA	MO	C	BTC PIT	M3 Y2		
FUNCTION : RHR - DRYWELL SPRAY MOTOR OPERATED ISOLATION VALVE											
1001-028A-MO	E-6	2	B	16.000	GL	MO	O	BTC BTO PIT	M3 M3 Y2		
FUNCTION : RHR - REACTOR VESSEL INJECTION MOTOR OPERATED VALVE											
1001-028B-MO	E-3	2	B	16.000	GL	MO	O	BTC BTO PIT	M3 M3 Y2		
FUNCTION : RHR - REACTOR VESSEL INJECTION MOTOR OPERATED VALVE											
1001-029A-MO	E-6	1	B	16.000	GA	MO	C	BTC BTO PIT	M3 M3 Y2		
FUNCTION : RHR - REACTOR VESSEL INJECTION MOTOR OPERATED VALVE											
1001-029B-MO	E-3	1	B	16.000	GA	MO	C	BTC BTO PIT	M3 M3 Y2		
FUNCTION : RHR - REACTOR VESSEL INJECTION MOTOR OPERATED VALVE											
1001-034A-MO	E-7	2	B	16.000	GA	MO	C	BTC BTO PIT	M3 M3 Y2		
FUNCTION : RHR - SUPPRESSION POOL COOLING AND SPRAY ISOLATION VALVE											
1001-034B-MO	E-3	2	B	16.000	GA	MO	C	BTC BTO PIT	M3 M3 Y2		
FUNCTION : RHR - SUPPRESSION POOL COOLING AND SPRAY ISOLATION VALVE											
1001-036A-MO	E-7	2	B	14.000	GL	MO	C	BTC BTO PIT	M3 M3 Y2		
FUNCTION : RHR - SUPPRESSION POOL COOLING MOTOR OPERATED ISOLATION VLV.											
1001-036B-MO	D-3	2	B	14.000	GL	MO	C	BTC BTO PIT	M3 M3 Y2		
FUNCTION : RHR - SUPPRESSION POOL COOLING MOTOR OPERATED ISOLATION VLV.											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0039-1
DRAWING TITLE : RESIDUAL HEAT REMOVAL SYSTEM PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
1001-037A-MO	E-7	2	B	6.000	GL	MO	C	BTC	M3		
								PIT	Y2		
FUNCTION : RHR - SUPPRESSION POOL SPRAY MOTOR OPERATED ISOLATION VALVE											
1001-037B-MO	D-3	2	B	6.000	GL	MO	C	BTC	M3		
								PIT	Y2		
FUNCTION : RHR - SUPPRESSION POOL SPRAY MOTOR OPERATED ISOLATION VALVE											
1001-047 -MO	C-4	1	A	20.000	GA	MO	C	AT-01	RR		
								BTC	CS	CS-10A	
								PIT	Y2		
FUNCTION : RHR - SHUTDOWN COOLING MOTOR OPERATED ISOLATION VALVE											
1001-050 -MO	D-4	1	A	20.000	GA	MO	C	AT-01	RR		
								BTC	CS	CS-10A	
								PIT	Y2		
FUNCTION : RHR - SHUTDOWN COOLING MOTOR OPERATED ISOLATION VALVE											
1001-059	F-3	2	C	1.000	RV	SA	C	CT-SP	YA		
FUNCTION : RHR - RHR DISCHARGE PIPING OVERPRESSURE PROTECTION											
1001-068A-AO	E-5	1	A/C	16.000	CK	AO	SYS	CTC	CS	CS-00A	
								CTO	CS	CS-00A	
								PIT	Y2		
FUNCTION : RHR - REACTOR VESSEL INJECTION CHECK VALVE											
1001-068B-AO	E-4	1	A/C	16.000	CK	AO	SYS	CTC	CS	CS-00A	
								CTO	CS	CS-00A	
								PIT	Y2		
FUNCTION : RHR - REACTOR VESSEL INJECTION CHECK VALVE											
1001-131	B-7	2	C	3.000	CK	SA	SYS	CTC	SA	RV-00F	
FUNCTION : RHR - CONDENSATE MAKE-UP TRANSFER LINE ISOLATION											
1001-136A	D-8	2	C	3.000	CK	SA	SYS	CTC	SA	RV-00F	
FUNCTION : RHR - CONDENSATE MAKE-UP TRANSFER LINE ISOLATION											
1001-136B	E-2	2	C	3.000	CK	SA	SYS	CTC	SA	RV-00F	
FUNCTION : RHR - CONDENSATE MAKE-UP TRANSFER LINE ISOLATION											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0039-2
DRAWING TITLE : RESIDUAL HEAT REMOVAL SYSTEM PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTUATOR	NORMAL POSITION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
1001-002A	C-7	3	C	12.000	CK	SA	SYS	CTC CTO	M3 M3		
	FUNCTION : RHR(SW) - PUMP DISCHARGE CHECK VALVE										
1001-002B	B-7	3	C	12.000	CK	SA	SYS	CTC CTO	M3 M3		
	FUNCTION : RHR(SW) - PUMP DISCHARGE CHECK VALVE										
1001-002C	D-2	3	C	12.000	CK	SA	SYS	CTC CTO	M3 M3		
	FUNCTION : RHR(SW) - PUMP DISCHARGE CHECK VALVE										
1001-002D	B-2	3	C	12.000	CK	SA	SYS	CTC CTO	M3 M3		
	FUNCTION : RHR(SW) - PUMP DISCHARGE CHECK VALVE										
1001-005A-MO	E-6	3	B	12.000	GL	MO	C	BTO	M3		
	FUNCTION : RHR(SW) - FLOW CONTROL VALVE										
1001-005B-MO	E-3	3	B	12.000	GL	MO	C	BTO	M3		
	FUNCTION : RHR(SW) - FLOW CONTROL VALVE										

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-D040
DRAWING TITLE : STANDBY LIQUID CONTROL PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
1101-015	C-3	1	A/C	1.500	CK	SA	SYS	AT-01	RR		
								CTC	RR	RV-11A	
								CTO	RR	RV-11A	
								CTOP	CS	RV-11A	
FUNCTION : SBLC - INJECTION LINE CHECK VALVE											
1101-016	C-3	1	A/C	1.500	CK	SA	SYS	AT-01	RR		
								CTC	RR	RV-11A	
								CTO	RR	RV-11A	
								CTOP	CS	RV-11A	
FUNCTION : SBLC - PRIMARY CONTAINMENT ISOLATION (CHECK) VALVE											
1101-043A	D-6	2	C	1.500	CK	SA	SYS	CTC	M3		
								CTO	M3		
FUNCTION : SBLC - PUMP DISCHARGE CHECK VALVE											
1101-043B	D-6	2	C	1.500	CK	SA	SYS	CTC	M3		
								CTO	M3		
FUNCTION : SBLC - PUMP DISCHARGE CHECK VALVE											
1105- A-RV	C-7	2	C	1.500	RV	SA	C	CT-SP	YA		
FUNCTION : SBLC - RELIEF VALVE FOR OVERPRESSURIZATION PROTECTION											
1105- B-RV	E-6	2	C	1.500	RV	SA	C	CT-SP	YA		
FUNCTION : SBLC - RELIEF VALVE FOR OVERPRESSURIZATION PROTECTION											
1106- A	C-4	2	D	1.500	SHR	EXP	C/KL	DT-E	S2		
FUNCTION : SBLC - EXPLOSIVE ACTUATED (SQUIB) VALVE											
1106- B	D-4	2	D	1.500	SHR	EXP	C/KL	DT-E	S2		
FUNCTION : SBLC - EXPLOSIVE ACTUATED (SQUIB) VALVE											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0041-1
DRAWING TITLE : CONTROL ROD DRIVE HYDRAULIC PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTUATOR	NORMAL POSITION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0302-020A	E-8	NC	B	.500	SO3	SO	E	BTD FST	CS CS	CS-03B CS-03B	
FUNCTION : CRD SCRAM DUMP (SOLENOID) VALVES											
0302-020B	E-8	NC	B	.500	SO3	SO	E	BTD FST	CS CS	CS-03B CS-03B	
FUNCTION : CRD SCRAM DUMP (SOLENOID) VALVES											
0302-021A	E-6	2	B	1.000	DIA	AO	C/FC	BTC FST PIT	M3 M3 Y2		
FUNCTION : CRD SCRAM DISCHARGE VOLUME VENT (SDV)											
0302-021B	E-6	NC	B	1.000	DIA	AO	C/FC	BTC FST PIT	M3 M3 Y2		
FUNCTION : CRD SCRAM DISCHARGE VOLUME VENT (SDV)											
0302-021C	F-1	2	B	1.000	DIA	AO	C/FC	BTC FST PIT	M3 M3 Y2		
FUNCTION : CRD SCRAM DISCHARGE VOLUME VENT (SDV)											
0302-021D	F-1	NC	B	1.000	DIA	AO	C/FC	BTC FST PIT	M3 M3 Y2		
FUNCTION : CRD SCRAM DISCHARGE VOLUME VENT (SDV)											
0302-022A	F-5	2	B	2.000	DIA	AO	C/FC	BTC FST PIT	M3 M3 Y2		
FUNCTION : CRD SCRAM DISCHARGE VOLUME (SDV) DRAIN											
0302-022B	F-5	NC	B	2.000	DIA	AO	C/FC	BTC FST PIT	M3 M3 Y2		
FUNCTION : CRD SCRAM DISCHARGE VOLUME (SDV) DRAIN											
0302-022C	F-3	2	B	2.000	DIA	AO	C/FC	BTC FST PIT	M3 M3 Y2		
FUNCTION : CRD SCRAM DISCHARGE VOLUME (SDV) DRAIN											
0302-022D	F-2	NC	B	2.000	DIA	AO	C/FC	BTC FST PIT	M3 M3 Y2		
FUNCTION : CRD SCRAM DISCHARGE VOLUME (SDV) DRAIN											
0302-025A	E-7	NC	B	1.000	SO3	SO	D	BTE	CS	CS-03B	
FUNCTION : CRD ALTERNATE ROD INJECTION SCRAM (SOLENOID) VALVES											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0041-1
DRAWING TITLE : CONTROL ROD DRIVE HYDRAULIC PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0302-025B	E-7	NC	B	1.000	SO3	SO	D	BTE	CS	CS-03B	
	FUNCTION : CRD ALTERNATE ROD INJECTION SCRAM (SOLENOID) VALVES										
0302-181A	D-8	NC	B	1.000	SO2	SO	C/FO	BTO	CS	CS-03B	
								FST	CS	CS-03B	
	FUNCTION : CRD ALTERNATE ROD INJECTION SCRAM (SOLENOID) VALVES										
0302-181B	D-8	NC	B	1.000	SO2	SO	C/FO	BTO	CS	CS-03B	
								FST	CS	CS-03B	
	FUNCTION : CRD ALTERNATE ROD INJECTION SCRAM (SOLENOID) VALVES										
0302-182A	F-8	NC	B	1.000	SO2	SO	C/FO	BTO	CS	CS-03B	
								FST	CS	CS-03B	
	FUNCTION : CRD ALTERNATE ROD INJECTION SCRAM (SOLENOID) VALVES										
0302-182B	F-8	NC	B	1.000	SO2	SO	C/FO	BTO	CS	CS-03B	
								FST	CS	CS-03B	
	FUNCTION : CRD ALTERNATE ROD INJECTION SCRAM (SOLENOID) VALVES										
0305-000_-RPD	E-10	1	D	.250	RPD	SA	C	DT-M	Y5		
	FUNCTION : CRD ACCUMULATOR RUPTURE D' :K (TYPICAL OF 177)										
0305-114	E-9	2	C	.750	CK	SA	SYS	CTC	RR	RV-03A	TV-03A
								CTO	RR	RV-03A	
	FUNCTION : CRD HCU BACKFLOW PROTECTON (TYP. OF 177)										
0305-115	E-10	1	A/C	.500	CK	SA	SYS	AT-06	Y2		
								CTC	CS	CS-03A	TV-03A
	FUNCTION : CRD ACCUMULATOR DISCHARGE BACKFLOW PROTECTON (TYP. OF 177)										
0305-117	E-9	NC	B	.375	SO3	SO	E	BTD	RR	RV-03A	TV-03A
								FST	RR	RV-03A	
	FUNCTION : SCRAM PILOT SOLENOID VALVES (TYP. OF 177)										
0305-118	E-9	NC	B	.375	SO3	SO	E	BTD	RR	RV-03A	TV-03A
								FST	RR	RV-03A	
	FUNCTION : SCRAM PILOT SOLENOID VALVES (TYP. OF 177)										
0305-120 -FCV	C-10	1	B	1.000	SO2	SO	C/FC	BTC	M3		TV-03A
								FST	M3		
	FUNCTION : CRD HCU DIRECTIONAL (WITHDRAW) CONTROL VALVE (TYP. OF 177)										
0305-121 -SO	C-9	1	B	.750	SO2	SO	C/FC	BTC	M3		TV-03A
								FST	M3		
	FUNCTION : CRD HCU DIRECTIONAL (INSERT) CONTROL VALVE (TYP. OF 177)										
0305-122 -SO	C-9	1	B	.750	SO2	SO	C/FC	BTC	M3		TV-03A
								FST	M3		
	FUNCTION : CRD HCU DIRECTIONAL (WITHDRAW) CONTROL VALVE (TYP. OF 177)										

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0041-1
DRAWING TITLE : CONTROL ROD DRIVE HYDRAULIC PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0305-123 -FCV	C-10	1	B	1.000	SO2	SO	C/FC	BTC FST	M3 M3		TV-03A
FUNCTION : CRD HCU DIRECTIONAL (INSERT) CONTROL VALVE (TYP. OF 177)											
0305-126 -CV	D-10	1	B	1.000	DIA	AO	C/FO	BTO FST PIT	RR RR Y2	RV-03A RV-03A	TV-03A
FUNCTION : CRD ACCUM. DISCHARGE TO SPEED SCRAM INSERTION (TYP. OF 177)											
0305-127 -CV	D-9	1	B	.750	DIA	AO	C/FO	BTO FST PIT	RR RR Y2	RV-03A RV-03A	TV-03A
FUNCTION : DISCHARGE CRD HCU TO THE SCRAM DISCHARGE VOL.(TYP. OF 177)											
0305-138	C-10	1	C	.500	CK	SA	SYS	CTC	M3		TV-03A
FUNCTION : CRD DRIVE WATER BACKFLOW PROTECTON (TYP. OF 177)											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0042-1
DRAWING TITLE : OFF GAS PIPING

VALVE NUMBER	DWG COOR	1ST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
5401- A-AO	E-8	NC	B	18.000	BTF	AO	O/FC	BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : OFF GAS - CONDENSER ISOLATION VALVE											
5401- A-CK	Z-99	NC	A/C	.001	CK	SA	SYS	AT-D6	Y2		
								CTC	CS	CS-54A	
FUNCTION : OFF GAS - CONDENSER ISOLATION VALVE ACCUM. CHECK VALVES											
5401- A-SO	E-7	NC	B	.001	SO4	SO	E	BTD	M3		
								FST	M3		
FUNCTION : OFF GAS - CONDENSER ISOLATION SOLENOID											
5401- B-AO	E-8	NC	B	18.000	BTF	AO	O/FC	BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : OFF GAS - CONDENSER ISOLATION VALVE											
5401- B-CK	Z-99	NC	A/C	.001	CK	SA	SYS	AT-D6	Y2		
								CTC	CS	CS-54A	
FUNCTION : OFF GAS - CONDENSER ISOLATION VALVE ACCUM. CHECK VALVES											
5401- B-SO	E-7	NC	B	.001	SO4	SO	E	BTD	M3		
								FST	M3		
FUNCTION : OFF GAS - CONDENSER ISOLATION SOLENOID											
5402- A-AO	D-3	NC	B	18.000	GA	AO	O/FC	BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : OFF GAS - CONDENSER ISOLATION VALVE											
5402- A-CK	Z-99	NC	A/C	.001	CK	SA	SYS	AT-D6	Y2		
								CTC	CS	CS-54A	
FUNCTION : OFF GAS - CONDENSER ISOLATION VALVE ACCUM. CHECK VALVES											
5402- A-SO	D-2	NC	B	.001	SO4	SO	E	BTD	M3		
								FST	M3		
FUNCTION : OFF GAS - CONDENSER ISOLATION SOLENOID											
5402- B-AO	D-3	NC	B	18.000	GA	AO	O/FC	BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : OFF GAS - CONDENSER ISOLATION VALVE											
5402- B-CK	Z-99	NC	A/C	.001	CK	SA	SYS	AT-D6	Y2		
								CTC	CS	CS-54A	
FUNCTION : OFF GAS - CONDENSER ISOLATION VALVE ACCUM. CHECK VALVES											
5402- B-SO	D-2	NC	B	.001	SO4	SO	E	BTD	M3		
								FST	M3		
FUNCTION : OFF GAS - CONDENSER ISOLATION SOLENOID											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0043
DRAWING TITLE : REACTOR BUILDING EQUIPMENT DRAINS

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
2001-003 -AO	F-7	NC	A	3.000	PLG	AO	C/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : RX BLDG EQUIP DRNS. - PRIMARY CONTAINMENT ISOLATION VALVE										
2001-003 -SO	F-7	NC	B	.001	SO3	SO	D	BTD	M3		
								FST	M3		
	FUNCTION : RX BLDG EQUIP DRNS. - PRIMARY CONT. ISOLATION VALVE SOLENOID										
2001-004 -AO	F-7	NC	A	3.000	PLG	AO	C/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : RX BLDG EQUIP DRNS. - PRIMARY CONTAINMENT ISOLATION VALVE										
2001-004 -SO	F-7	NC	B	.001	SO3	SO	D	BTD	M3		
								FST	M3		
	FUNCTION : RX BLDG EQUIP DRNS. - PRIMARY CONT. ISOLATION VALVE SOLENOID										
2001-015 -AO	E-4	NC	A	3.000	PLG	AO	C/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : RX BLDG EQUIP DRNS. - PRIMARY CONTAINMENT ISOLATION VALVE										
2001-015 -SO	E-4	NC	B	.001	SO3	SO	D	BTD	M3		
								FST	M3		
	FUNCTION : RX BLDG EQUIP DRNS. - PRIMARY CONT. ISOLATION VALVE SOLENOID										
2001-016 -AO	E-3	NC	A	3.000	PLG	AO	C/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : RX BLDG EQUIP DRNS. - PRIMARY CONTAINMENT ISOLATION VALVE										
2001-016 -SO	E-3	NC	B	.001	SO3	SO	D	BTD	M3		
								FST	M3		
	FUNCTION : RX BLDG EQUIP DRNS. - PRIMARY CONT. ISOLATION VALVE SOLENOID										

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0044
DRAWING TITLE : STANDBY GAS TREATMENT

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
7503- -MO	B-2	NC	B	18.000	BTF	MO	O	BTC BTO PIT	M3 M3 Y2		
FUNCTION : SBGT - TRAIN INLET ISOLATION VALVE											
7504- A-MO -1/2	D-3	NC	B	6.000	BTF	MO	O	BTC BTO PIT	M3 M3 Y2		
FUNCTION : SBGT - COOLING AIR INLET											
7504- B-MO -1/2	A-3	NC	B	6.000	BTF	MO	O	BTC BTO PIT	M3 M3 Y2		
FUNCTION : SBGT - COOLING AIR INLET											
7505- A-MO -1/2	D-3	NC	B	24.000	BTF	MO	C	BTC BTO PIT	M3 M3 Y2		
FUNCTION : SBGT - TRAIN SELECT AND INLET ISOLATION VALVE											
7505- B-MO -1/2	B-3	NC	B	24.000	BTF	MO	C	BTC BTO PIT	M3 M3 Y2		
FUNCTION : SBGT - TRAIN SELECT AND INLET ISOLATION VALVE											
7507- A-MO -1/2	D-9	NC	B	24.000	BTF	MO	C	BTC BTO PIT	M3 M3 Y2		
FUNCTION : SBGT - TRAIN SELECTION AND OUTLET ISOLATION VALVE											
7507- B-MO -1/2	B-9	NC	B	24.000	BTF	MO	C	BTC BTO PIT	M3 M3 Y2		
FUNCTION : SBGT - TRAIN SELECTION AND OUTLET ISOLATION VALVE											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0046
DRAWING TITLE : HIGH PRESSURE COOLANT INJECTION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
2301-003 -MO	A-7	2	B	10.000	GA	MO	C	BTO	M3		
								PIT	Y2		
FUNCTION : HPCI STEAM SUPPLY/BLOCKING VALVE, PRE-HEATS THE SUPPLY LINE											
2301-004 -MO	C-9	1	A	10.000	GA	MO	O	AT-01	RR		
								BTC	CS	CS-23A	
								BTO	CS	CS-23A	
								PIT	Y2		
FUNCTION : HPCI STEAM SUPPLY FROM THE REACTOR VESSEL TO THE TURBINE											
2301-005 -MO	B-10	1	A	10.000	GA	MO	O	AT-01	RR		
								BTC	CS	CS-23A	
								BTO	CS	CS-23A	
								PIT	Y2		
FUNCTION : HPCI STEAM SUPPLY FROM THE REACTOR VESSEL TO THE TURBINE											
2301-007 -AO	E-6	2	C	14.000	CK	AO	SYS	CTO	CS	CS-00A	
								PIT	Y2		
FUNCTION : HPCI INJECTION LINE TO FEEDWATER BACKFLOW PREVENTION											
2301-008 -MO	E-6	2	B	14.000	GA	MO	C	BTO	M3		
								PIT	Y2		
FUNCTION : HPCI INJECTION LINE TO FEEDWATER ISOLATION											
2301-009 -MO	E-5	2	B	14.000	GA	MO	O	BTO	M3		
								PIT	Y2		
FUNCTION : HPCI INJECTION LINE TO FEEDWATER ISOLATION											
2301-010 -MO	E-5	2	B	12.000	GL	MO	C	BTC	M3		
								PIT	Y2		
FUNCTION : HPCI FULL FLOW TEST RETURN TO CONDENSATE STORAGE TANK											
2301-014 -MO	C-6	2	B	4.000	GL	MO	C	BTC	M3		
								BTO	M3		
								PIT	Y2		
FUNCTION : HPCI MINIMUM FLOW RECIRCULATION LINE ISOLATION											
2301-020	E-1	2	C	16.000	CK	SA	SYS	CTC	SA	RV-00F	
FUNCTION : HPCI TO CONDENSATE STORAGE TANK BACKFLOW PREVENTION											
2301-023 -RV	B-3	2	C	1.500	RV	SA	C	CT-SP	YA		
FUNCTION : HPCI BOOSTER SUCTION LINE OVERPRESSURE PROTECTION											
2301-026	D-10	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : MAIN STM TO HPCI DP/P HI SIDE EXCESS FLOW CK VLV											
2301-027	D-10	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : MAIN STM TO HPCI DP/P LO SIDE EXCESS FLOW CK VLV											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0046
DRAWING TITLE : HIGH PRESSURE COOLANT INJECTION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
2301-028	B-9	2	B	1.000	GL	AO	C/FO	BTO	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : HPCI STEAM LINE DRAIN POT DISCHARGE TO SUPPRESSION CHAMBER											
2301-028 -SO	B-9	NC	B	.001	SO3	SO	D	BTD	M3		
								FST	M3		
FUNCTION : HPCI STEAM LINE DRAIN POT DISCHARGE TO TORUS SOLENOID											
2301-029	B-10	2	B	1.000	GL	AO	O/FC	BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : HPCI STEAM LINE DRAIN POT DISCHARGE TO THE MAIN CONDENSER											
2301-029 -SO	B-10	NC	B	.001	SO3	SO	D	BTD	M3		
								FST	M3		
FUNCTION : HPCI STEAM LINE DRAIN POT DISCHARGE TO CONDENSER SOLENOID											
2301-030	B-10	NC	B	1.000	GL	AO	O/FC	BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : HPCI STEAM LINE DRAIN POT DISCHARGE TO THE MAIN CONDENSER											
2301-030 -SO	B-10	NC	B	.001	SO3	SO	D	BTD	M3		
								FST	M3		
FUNCTION : HPCI STEAM LINE DRAIN POT DISCHARGE TO CONDENSER SOLENOID											
2301-034	C-8	2	A/C	2.000	CK	SA	SYS	AT-01	RR		
								CTC	RR	RV-23A	
								CTO	SA	RV-00E	
FUNCTION : HPCI, ALL DRAIN POTS, DISCHARGE TO SUPPRESSION CHAMBER											
2301-035 -MO	E-7	2	B	16.000	GA	MO	C	BTO	M3		
								PIT	Y2		
FUNCTION : HPCI SUPPRESSION CHAMBER SUCTION LINE ISOLATION											
2301-036 -MO	E-9	2	B	16.000	GA	MO	C	BTC	M3		
								BTO	M3		
								PIT	Y2		
FUNCTION : HPCI SUPPRESSION CHAMBER SUCTION LINE ISOLATION											
2301-039	E-8	2	C	16.000	CK	SA	SYS	CTO	SA	RV-00E	
								CTOP	CS	RV-00E	
FUNCTION : HPCI SUPPRESSION CHAMBER SUCTION BACKFLOW PREVENTION											
2301-040	D-7	2	C	4.000	CK	SA	SYS	CTO	M3		
FUNCTION : HPCI MINIMUM FLOW RECIRCULATION LINE BACKFLOW PREVENTION											
2301-045	B-8	2	C	24.000	CK	SA	SYS	CTC	RR	RV-23A	
								CTO	M3		
FUNCTION : HPCI TURBINE EXHAUST BACKFLOW PREVENTION											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0046
DRAWING TITLE : HIGH PRESSURE COOLANT INJECTION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
2301-048 -MO	B-4	2	B	4.000	GA	MO	O	BTO	M3		
								PIT	Y2		
FUNCTION : HPCI LUBE OIL AND GLAND SEAL COOLING WATER RETURN ISOLATION											
2301-049 -MO	E-4	2	B	4.000	GA	MO	C	BTC	M3		
								PIT	Y2		
FUNCTION : HPCI LUBE OIL AND GLAND SEAL COOLING WATER RETURN ISOLATION											
2301-050	C-5	2	C	4.000	CK	SA	SYS	CTO	SA	RV-ODE	
								CTOP	M3	RV-ODE	
FUNCTION : HPCI LUBE OIL COOLER AND GLAND SEAL CONDENSR TO BOOSTER PUMP											
2301-051	C-5	2	C	4.000	CK	SA	SYS	CTC	SA	RV-ODF	
								CTCP	M3	RV-ODF	
FUNCTION : HPCI GLAND SEAL/LUBE OIL COOLING PUMP BACKFLOW PREVENTION											
2301-053 -RV	C-4	2	C	4.000	RV	SA	C	CT-SP	YA		
FUNCTION : HPCI GLAND SEAL/LUBE OIL OVERPRESSURE PROTECTION											
2301-064	A-7	2	B	1.000	GL	AO	O/FC	BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : HPCI TURBINE STOP VALVE ABOVE SEAT DRAIN DISCHARGE											
2301-064 -SO	A-6	NC	B	.001	SO3	SO	D	BTE	M3		
								FST	M3		
FUNCTION : HPCI TURBINE STOP VALVE ABOVE SEAT DRAIN DISCHARGE SOLENOID											
2301-065	A-8	NC	B	1.000	GL	AO	O/FC	BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : HPCI TURBINE STOP VALVE ABOVE SEAT DRAIN DISCHARGE											
2301-065 -SO	A-7	NC	B	.001	SO3	SO	D	BTE	M3		
								FST	M3		
FUNCTION : HPCI TURBINE STOP VALVE ABOVE SEAT DRAIN DISCHARGE SOLENOID											
2301-068	A-6	2	D	16.000	RPD	SA	C	DT-M	Y5		
FUNCTION : HPCI TURBINE EXHAUST LINE RUPTURE DIAPHRAGM											
2301-069	A-6	2	D	16.000	RPD	SA	C	DT-M	Y5		
FUNCTION : HPCI TURBINE EXHAUST LINE RUPTURE DIAPHRAGM											
2301-071	D-8	2	A/C	2.000	SCK	SA	C/LO	AT-01	RR		
								CTC	SA	RV-ODF	
								CTO	SA	RV-ODE	
FUNCTION : HPCI, ALL DRAIN PDTS, DISCHARGE TO SUPPRESSION CHAMBER											
2301-074	C-8	2	C	12.000	SCK	SA	C/LO	CTO	M3		
FUNCTION : HPCI TURBINE EXHAUST BACKFLOW PREVENTION											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0046
DRAWING TITLE : HIGH PRESSURE COOLANT INJECTION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
2301-075	B-4	2	C	4.000	CK	SA	SYS	CTO	SA	RV-00E	
								CTOP	M3	RV-00E	
	FUNCTION : HPCI COST TO GLAND SEAL/LUBE OIL COOLER BACKFLOW PREVENTION										
2301-076	E-4	2	C	2.000	CK	SA	SYS	CTC	SA	RV-00F	
								CTCP	M3	RV-00F	
	FUNCTION : HPCI GLAND SEAL CONDENSER RETURN PUMP BACKFLOW PREVENTION										
2317	A-7	2	B	24.000	PLG	MO	C	BTC	M3		
								BTO	M3		
								PIT	Y2		
	FUNCTION : HPCI TURBINE STOP VALVE										
2399-040- MO	D-8	2	A	4.000	GA	MO	O	AT-01	RR		
								BTC	M3		
								BTO	M3		
	FUNCTION : HPCI TURBINE EXHAUST VACUUM BREAKER										
2399-041- MO	C-8	2	A	4.000	GA	MO	O	AT-01	RR		
								BTC	M3		
								BTO	M3		
	FUNCTION : HPCI TURBINE EXHAUST VACUUM BREAKER										
2399-064	C-8	2	C	4.000	CK	SA	SYS	CTC	CS	CS-23B	
	FUNCTION : HPCI TURBINE EXHAUST VACUUM BREAKER										
2399-065	C-8	2	C	4.000	CK	SA	SYS	CTC	CS	CS-23B	
	FUNCTION : HPCI TURBINE EXHAUST VACUUM BREAKER										
2399-066	C-8	2	C	4.000	CK	SA	SYS	CTC	CS	CS-23B	
	FUNCTION : HPCI TURBINE EXHAUST VACUUM BREAKER										
2399-067	C-8	2	C	4.000	CK	SA	SYS	CTC	CS	CS-23B	
	FUNCTION : HPCI TURBINE EXHAUST VACUUM BREAKER										
2901-010	D-7	2	C	4.000	CK	SA	SYS	CTC	SA	RV-00F	
	FUNCTION : HPCI SAFE SHUTDOWN MAKE-UP TO HPCI BACKFLOW PROTECTION										

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0047
DRAWING TITLE : REACTOR WATER CLEAN-UP PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
1201-002 -MO	B-6	1	A	6.000	GA	MO	O	AT-01	RR		
								BTC	M3		
								PIT	Y2		
FUNCTION : RWCU - PRIMARY CONTAINMENT ISOLATION VALVE											
1201-005 -MO	B-7	1	A	6.000	GA	MO	O	AT-01	RR		
								BTC	M3		
								PIT	Y2		
FUNCTION : RWCU - PRIMARY CONTAINMENT ISOLATION VALVE											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0050
DRAWING TITLE : REACTOR CORE ISOLATION COOLING PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
1301-015A	A-2	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
										*	
	FUNCTION : RCIC - EXCESS FLOW CHECK VALVE										
1301-015B	B-2	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
										*	
	FUNCTION : RCIC - EXCESS FLOW CHECK VALVE										
1301-016 -MO	B-2	1	A	3.000	GA	MO	O	AT-01	RR		
								BTC	M3		
								PIT	Y2		
	FUNCTION : RCIC - TURBINE STEAM FEED ISOLATION VALVE										
1301-017 -MO	B-3	1	A	3.000	GA	MO	O	AT-01	RR		
								BTC	M3		
								PIT	Y2		
	FUNCTION : RCIC - TURBINE STEAM FEED ISOLATION VALVE										
1301-040	D-4	NC	A/C	2.000	CK	SA	SYS	AT-01	RR		
								CTC	RR	RV-13A	
	FUNCTION : RCIC - TURBINE DISCHARGE ISOLATION VALVE, PCIV										
1301-041	D-2	NC	A/C	8.000	CK	SA	SYS	AT-01	RR		
								CTC	RR	RV-13A	
	FUNCTION : RCIC - TURBINE DISCHARGE ISOLATION VALVE, PCIV										
1301-047	D-4	NC	A/C	2.000	CK	SA	SYS	CTC	SA	RV-00F	
	FUNCTION : RCIC - MINIMUM FLOW RETURN CHECK VALVE, PCIV										
1301-055	D-3	NC	A/C	2.000	SCK	SA	C/LO	AT-01	RR		
								CTC	SA	RV-00F	
	FUNCTION : RCIC - TURBINE DISCHARGE ISOLATION VALVE, PCIV										
1301-064	D-2	NC	A/C	8.000	SCK	SA	C/LO	AT-01	RR		
								CTC	SA	RV-00F	
	FUNCTION : RCIC - TURBINE DISCHARGE ISOLATION VALVE, PCIV										

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0058-3
DRAWING TITLE : CLEAN AND CONTAMINATED CONDENSATE PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
4399-045	D-5	NC	A	3.000	GA	M	C	AT-01	RR		
	FUNCTION : C & C CONDENSATE - PRIMARY CONTAINMENT ISOLATION VALVE										
4399-046	D-5	NC	A/C	3.000	CK	SA	SYS	AT-01 CTC	RR RR	RV-43A	
	FUNCTION : C & C CONDENSATE - PRIMARY CONTAINMENT ISOLATION VALVE										

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0584
DRAWING TITLE : TRAVERSING IN-CORE PROBE (TIP) SYSTEM

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0737-001B	C-4	NC	A	.375	BAL	SO	C/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : TRAVERSING IN-CORE PROBE BALL VALVE, PCIV											
0737-001C	C-3	NC	A	.375	BAL	SO	C/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : TRAVERSING IN-CORE PROBE BALL VALVE, PCIV											
0737-001D	C-4	NC	A	.375	BAL	SO	C/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : TRAVERSING IN-CORE PROBE BALL VALVE, PCIV											
0737-001E	C-4	NC	A	.375	BAL	SO	C/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : TRAVERSING IN-CORE PROBE BALL VALVE, PCIV											
0737-001F	C-4	NC	A	.375	BAL	SO	C/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : TRAVERSING IN-CORE PROBE BALL VALVE, PCIV											
0737-002B	C-4	NC	A	.375	SHR	EXP	O/KL	AT-01	RR		TV-07A
								DT-E	S2		
FUNCTION : TRAVERSING IN-CORE PROBE SHEAR VALVE, PCIV											
0737-002C	C-4	NC	A	.375	SHR	EXP	O/KL	AT-01	RR		TV-07A
								DT-E	S2		
FUNCTION : TRAVERSING IN-CORE PROBE SHEAR VALVE, PCIV											
0737-002D	C-4	NC	A	.375	SHR	EXP	O/KL	AT-01	RR		TV-07A
								DT-E	S2		
FUNCTION : TRAVERSING IN-CORE PROBE SHEAR VALVE, PCIV											
0737-002E	C-4	NC	A	.375	SHR	EXP	O/KL	AT-01	RR		TV-07A
								DT-E	S2		
FUNCTION : TRAVERSING IN-CORE PROBE SHEAR VALVE, PCIV											
0737-002F	C-4	NC	A	.375	SHR	EXP	O/KL	AT-01	RR		TV-07A
								DT-E	S2		
FUNCTION : TRAVERSING IN-CORE PROBE SHEAR VALVE, PCIV											

Table 1.C-7
UNIT 1 VALVE LISTING

DRAWING : M-0584
DRAWING TITLE : TRAVERSING IN-CORE PROBE (TIP) SYSTEM

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0743	C-5	NC	A/C	.375	CK	SA	SYS	AT-01 CTC	RR RR	RV-07A	

FUNCTION : TRAVERSING IN-CORE PROBE CHECK VALVE, PCIV

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0641-1
DRAWING TITLE : CONTAINMENT ATMOSPHERE MONITOR SYSTEM

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
2499-D01A-SO	D-6	NC	A	.500	SO2	SO	C/FC	AT-01	RR		
								BTC	M3		
								BTO	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : CAM - DRYWELL SAMPLE PATH SELECTION VALVE											
2499-D01B-SO	D-3	NC	A	.500	SO2	SO	C/FC	AT-01	RR		
								BTC	M3		
								BTO	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : CAM - DRYWELL SAMPLE PATH SELECTION VALVE											
2499-D02A-SO	D-6	NC	A	.500	SO2	SO	C/FC	AT-01	RR		
								BTC	M3		
								BTO	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : CAM - DRYWELL SAMPLE PATH SELECTION VALVE											
2499-D02B-SO	D-3	NC	A	.500	SO2	SO	C/FC	AT-01	RR		
								BTC	M3		
								BTO	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : CAM - DRYWELL SAMPLE PATH SELECTION VALVE											
2499-D03A-SO	B-7	NC	A	.500	SO2	SO	C/FC	AT-01	RR		
								BTC	M3		
								BTO	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : CAM - SUPPRESSION CHAMBER SAMPLE PATH SELECTION VALVE											
2499-D03B-SO	B-2	NC	A	.500	SO2	SO	C/FC	AT-01	RR		
								BTC	M3		
								BTO	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : CAM - SUPPRESSION CHAMBER SAMPLE PATH SELECTION VALVE											
2499-D04A-SO	B-6	NC	A	.500	SO2	SO	C/FC	AT-01	RR		
								BTC	M3		
								BTO	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : CAM - SUPPRESSION CHAMBER SAMPLE PATH SELECTION VALVE											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0641-1
DRAWING TITLE : CONTAINMENT ATMOSPHERE MONITOR SYSTEM

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
2499-D04B-SO	B-3	NC	A	.500	SO2	SO	C/FC	AT-01	RR		
								BTC	M3		
								BTO	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : CAM - SUPPRESSION CHAMBER SAMPLE PATH SELECTION VALVE											
2499-D22A	C-7	NC	A/C	.500	CK	SA	SYS	AT-01	RR		
								CTC	RR	RV-24A	
								CTO	SA	RV-DDE	
								CTOP	M3	RV-DDE	
FUNCTION : CAM - ATMOSPHERE SAMPLE RETURN CHECK VALVE											
2499-D22B	C-2	NC	A/C	.500	CK	SA	SYS	AT-01	RR		
								CTC	RR	RV-24A	
								CTO	SA	RV-DDE	
								CTOP	M3	RV-DDE	
FUNCTION : CAM - ATMOSPHERE SAMPLE RETURN CHECK VALVE											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0642-1
DRAWING TITLE : ATMOSPHERIC CONTAINMENT ATMOSPHERE DILUTION SYSTEM

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
2599-D02A-AO	C-4	NC	A	1.500	GL	AO	C/FC	AT-01	RR		
								BTC	M3		
								BTO	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : ACAD - AIR INJECTION INTO THE DRYWELL SELECTON VALVE											
2599-D02A-SO	D-3	NC	B	1.000	SO3	SO	D	BTD	M3		
								BTE	M3		
								FST	M3		
FUNCTION : ACAD - AIR INJECTION INTO THE DRYWELL SELECTION VALVE SOLEN.											
2599-D02B-AO	C-5	NC	A	1.500	GL	AO	C/FC	AT-01	RR		
								BTC	M3		
								BTO	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : ACAD - AIR INJECTION INTO THE DRYWELL SELECTON VALVE											
2599-D02B-SO	D-6	NC	B	1.000	SO3	SO	D	BTD	M3		
								BTE	M3		
								FST	M3		
FUNCTION : ACAD - AIR INJECTION : TO THE DRYWELL SELECTION VALVE SOLEN.											
2599-D03A-AO	C-3	NC	A	1.000	GL	AO	C/FC	AT-01	RR		
								BTC	M3		
								BTO	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : ACAD - AIR INJECTION INTO THE SUPPR. CHAMBER SELECTION VLV.											
2599-D03A-SO	C-2	NC	B	1.000	SO3	SO	D	BTD	M3		
								BTE	M3		
								FST	M3		
FUNCTION : ACAD - AIR INJ. INTO THE SUPPR. CHAB. SELECTION VALVE SOLEN.											
2599-D03B-AO	C-6	NC	A	1.000	GL	AO	C/FC	AT-01	RR		
								BTC	M3		
								BTO	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : ACAD - AIR INJECTION INTO THE SUPPR. CHAMBER SELECTION VLV.											
2599-D03B-SO	C-7	NC	B	1.000	SO3	SO	D	BTD	M3		
								BTE	M3		
								FST	M3		
FUNCTION : ACAD - AIR INJ. INTO THE SUPPR. CHAB. SELECTION VALVE SOLEN.											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-0642-1
DRAWING TITLE : ATMOSPHERIC CONTAINMENT ATMOSPHERE DILUTION SYSTEM

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
2599-D04A-AO	F-3	NC	A	1.000	GL	AO	C/FC	AT-D1	RR		
								BTC	M3		
								BTO	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : ACAD - PRESSURE BLEED-OFF ISOLATION VALVE										
2599-D04A-SO	F-3	NC	B	1.000	SO3	SO	D	BTD	M3		
								BTE	M3		
								FST	M3		
	FUNCTION : ACAD - BLEED-OFF ISOLATION VALVE SOLENOID										
2599-D04B-AO	E-3	NC	A	1.000	GL	AO	C/FC	AT-D1	RR		
								BTC	M3		
								BTO	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : ACAD - PRESSURE BLEED-OFF ISOLATION VALVE										
2599-D04B-SO	E-3	NC	B	1.000	SO3	SO	D	BTD	M3		
								BTE	M3		
								FST	M3		
	FUNCTION : ACAD - BLEED-OFF ISOLATION VALVE SOLENOID										
2599-D05A-FCV	F-5	NC	A	1.000	DIA	AO	C/FC	AT-D1	RR		
								FST	M3		
								PIT	Y2		
	FUNCTION : ACAD - PRESSURE BLEED-OFF ISOLATION AND THROTTLING/FCV VALVE										
2599-D05A-SO	F-5	NC	B	1.000	SO3	SO	D	FST	M3		
	FUNCTION : ACAD - BLEED-OFF ISOLATION AND FCV VALVE SOLENOID										
2599-D05B-FCV	E-5	NC	A	1.000	DIA	AO	C/FC	AT-D1	RR		
								FST	M3		
								PIT	Y2		
	FUNCTION : ACAD - PRESSURE BLEED-OFF ISOLATION AND THROTTLING/FCV VALVE										
2599-D05B-SO	E-5	NC	B	1.000	SO3	SO	D	FST	M3		
	FUNCTION : ACAD - BLEED-OFF ISOLATION AND FCV VALVE SOLENOID										
2599-D08	F-8	NC	C	1.000	CK	SA	SYS	CTO	M3		
	FUNCTION : ACAD - BLEED-OFF BACKFLOW CHECK VALVE										
2599-022	A-7	NC	C	1.500	CK	SA	SYS	CTO	M3		
	FUNCTION : ACAD - AIR COMPRESSOR BACKFLOW PROTECTION CHECK VALVE										
2599-023A	C-3	NC	A/C	1.500	CK	SA	SYS	AT-D1	RR		
								CTC	RR	RV-25A	
								CTO	M3		
	FUNCTION : ACAD - AIR INJECTION INTO THE DRYWELL CHECK VALVE										

Table 1.0-7
UNIT 1 VALVE LISTINGS

DRAWING : M-D642-1
DRAWING TITLE : ATMOSPHERIC CONTAINMENT ATMOSPHERE DILUTION SYSTEM

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
2599-023B	C-6	NC	A/C	1.500	CK	SA	SYS	AT-D1	RR		
								CTC	RR	RV-25A	
								CTD	M3		
	FUNCTION : ACAD - AIR INJECTION INTO THE DRYWELL CHECK VALVE										
2599-024A	C-3	NC	A/C	1.000	CK	SA	SYS	AT-D1	RR		
								CTC	RR	RV-25A	
								CTD	M3		
	FUNCTION : ACAD - AIR INJECTION INTO THE SUPPR. CHAMBER CHECK VALVE										
2599-024B	C-6	NC	A/C	1.000	CK	SA	SYS	AT-D1	RR		
								CTC	RR	RV-25A	
								CTD	M3		
	FUNCTION : ACAD - AIR INJECTION INTO THE SUPPR. CHAMBER CHECK VALVE										
2599-998 -RV	A-5	NC	C	.001	RV	SA	C	CT-SP	YA		
	FUNCTION : ACAD - AIR COMPRESSOR SAFETY VALVE										
2599-999	A-6	NC	C	1.250	CK	SA	SYS	CTD	M3		
	FUNCTION : ACAD - AIR COMPRESSOR BACKFLOW PROTECTION CHECK VALVE										

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-1056-1
DRAWING TITLE : HIGH RADIATION SAMPLING SYSTEM PIPING, LIQUID SAMPLING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
1099-092A-FCV	E-5	2	B	1.000	DIA	AO	C/FC	BTC FST PIT	M3 M3 Y2		
FUNCTION : RHR - SAMPLING SELECT VALVE											
1099-092B-FCV	D-5	2	B	1.000	DIA	AO	C/FC	BTC FST PIT	M3 M3 Y2		
FUNCTION : RHR - SAMPLING SELECT VALVE											
8941-705 -XCV	C-6	2	B	.500	DIA	AO	C/FC	BTC FST PIT	M3 M3 Y2		
FUNCTION : CORE SPRAY - SAMPLING SELECT VALVE											
8941-705 -XSV	C-7	NC	B	.001	SO3	SO	D	BTD FST	M3 M3		
FUNCTION : CORE SPRAY - SAMPLING SELECT VALVE SOLENOID											
8941-709 -XSV	E-5	NC	B	.001	SO3	SO	D	BTD FST	M3 M3		
FUNCTION : RHR - SAMPLING SELECT VALVE SOLENOID											
8941-710 -XSV	D-5	NC	B	.001	SO3	SO	D	BTD FST	M3 M3		
FUNCTION : RHR - SAMPLING SELECT VALVE SOLENOID											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-1057-1
DRAWING TITLE : HIGH RADIATION SAMPLING SYSTEM, CONTAINMENT AIR SAMPLING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
8941-101 -XCV	C-6	NC	B	.500	DIA	AO	C/FC	BTC FST PIT	M3 M3 Y2		
FUNCTION : SBGT/CAS - SAMPLING ISOLATION VALVE (FOR ACAD & DRYW. PURGE)											
8941-101 -XSV	C-6	NC	B	.001	SO3	SO	D	BTD FST	M3 M3		
FUNCTION : SBGT/CAS - SAMPLING ISOLATION VALVE SOLENOID											

Table 1.0-7
UNIT 1 VALVE LISTING

DRAWING : M-1551
DRAWING TITLE : CONTROL ROOM HVAC

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
5741-306 -XCV-1/2	D-7	NC	B	1.000	DIA	AO	C/FC	BTC	M3		TV-57B
								FST	M3		TV-57B
								PIT	Y2		TV-57B
	FUNCTION : CONTR. RM. HVAC - AFU FIRE PROTECTION SPARGER ISOLATION VLV.										
5741-306 -XSV-1/2	D-7	NC	B	.001	SO3	SO	D	BTD	M3		TV-57B
								FST	M3		TV-57B
	FUNCTION : CONTR. RM. HVAC - AFU FIRE PROT. SPARGER ISOLATION VLV. SOL.										
5741-319A-XCV -1/2	C-2	3	B	2.500	DIA	AO	O/FO	FST	M3		
	FUNCTION : CONTR. RM. HVAC - RHRSW FLOW CONTROL VALVE										
5741-319A-XSV -1/2	C-2	NC	B	.001	SO3	SO	D	FST	M3		
	FUNCTION : CONTR. RM. HVAC - RHRSW FLOW CONTROL VALVE SOLENOID										
5741-319B-XCV -1/2	C-2	3	B	3.000	DIA	AO	C/FC	FST	M3		
	FUNCTION : CONTR. RM. HVAC - SERVICE WATER FLOW CONTROL VALVE										
5741-319B-XSV -1/2	C-2	NC	B	.001	SO3	SO	D	FST	M3		
	FUNCTION : CONTR. RM. HVAC - SERVICE WATER FLOW CONTROL VALVE SOLENOID										
5741-333 -FCV -1/2	C-3	3	B	2.500	DIA	AO	O/FO	FST	M3		
	FUNCTION : CONTR. RM. HVAC - RHRSW FLOW CONTROL VALVE										
5741-345 -PSV -1/2	B-3	3	C	2.000	RV	SA	C	CT-SP	YA		
	FUNCTION : CONTR. RM. HVAC - RHRSW RELIEF VALVE, OVERPRESSURE PROT.										
5799-381 - -1/2	C-3	3	B	2.500	GL	M	C	BTME	M3		TV-57A
	FUNCTION : CONTR. RM. HVAC - FCV MANUAL BYPASS VALVE										
5799-386	C-2	3	C	2.500	CK	SA	SYS	CTC	M3		
	FUNCTION : CONTR. RM. HVAC - RHRSW BACKFLOW PROTECTION CHECK VALVE										
5799-410 - -1/2	C-2	3	C	3.000	CK	SA	SYS	CTC	M3		
	FUNCTION : CONTR. RM. HVAC - RHRSW TO SW BACKFLOW PROTECTION										

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-D029-2
DRAWING TITLE : DIESEL GENERATOR FUEL OIL PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
5201- -RV	D-7	NC	C	1.000	RV	SA	C	CT-SP	YA		
FUNCTION : DIESEL OIL - TRANSFER PUMP DISCHARGE RELIEF VALVE											
5201- -SO	A-8	NC	B	1.000	SO2	SO	O	BTO	M3	RV-52A	
FUNCTION : DIESEL OIL - TRANSFER PUMP TO DAY TANK CONTROL VALVE											
5299-003	D-8	NC	C	1.500	CK	SA	SYS	CTO	SA	RV-DDE	
FUNCTION : DIESEL OIL - TRANSFER PUMP DISCHARGE BACKFLOW PROTECTION											
5299-005	D-8	NC	C	1.500	CK	SA	SYS	CTC	M3		
								CTO	M3		
FUNCTION : DIESEL OIL - TRANSFER PUMP DISCHARGE BACKFLOW PROTECTION											
5299-042	D-9	NC	C	.500	CK	SA	SYS	CTO	M3		
FUNCTION : DIESEL OIL - FUEL PUMP DISCHARGE HEADER BACKFLOW PROTECT.											
5299-157	C-9	NC	C	1.000	CK	SA	SYS	CTC	M3		
								CTO	M3		
FUNCTION : DIESEL OIL - PRIMING PUMP DISCHARGE BACKFLOW PROTECTION											
5299-158	D-9	NC	C	.750	CK	SA	SYS	CTC	SA	RV-DDF	
								CTO	M3		
FUNCTION : DIESEL OIL - EXCESS FUEL RETURN BACKFLOW PROTECTION											

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0044
DRAWING TITLE : STANDBY GAS TREATMENT

VALVE NUMBER		DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
7503-	-MO	D-2	NC	B	18.000	BTF	MO	O	BTC BTO PIT	M3 M3 Y2		

FUNCTION : SBGT - TRAIN INLET ISOLATION VALVE

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0058-3
DRAWING TITLE : CLEAN & CONTAMINATED CONDENSATE PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
4399-045	A-4	NC	A	3.000	GA	M	C	AT-01	RR		
	FUNCTION : C & C CONDENSATE - PRIMARY CONTAINMENT ISOLATION VALVE										
4399-046	A-4	NC	A/C	3.000	CK	SA	SYS	AT-01 CTC	RR RR	RV-43A	
	FUNCTION : C & C CONDENSATE - PRIMARY CONTAINMENT ISOLATION VALVE										

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0060-1
DRAWING TITLE : MAIN STEAM PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0203-001A-AO	F-4	1	A	20.000	GL	AO	O/FC	AT-01	RR		
								BTC	M3		TV-30C
								FST	RR	RV-02A	
								PIT	Y2		
FUNCTION : MAIN STEAM ISOLATION VALVE											
0203-001A-AP2	F-4	NC	B	.001	PLT	AO	E	BTD	RR	RV-30D	
								FST	RR	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACTUATOR 2-WAY AIR PILOT VALVE											
0203-001A-AP4	F-4	NC	B	.001	SO4	SO	E	BTD	M3		
								FST	M3		
FUNCTION : MAIN STEAM ISOLATION VALVE ACTUATOR 4-WAY AIR PILOT VALVE											
0203-001A-SOAC	F-4	NC	B	.001	SO3	SO	E	BTD	RR	RV-30D	
								FST	RR	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACT. 3-WAY AC CONTROL SOLENOID											
0203-001A-SODC	F-4	NC	B	.001	SO3	SO	E	BTD	RR	RV-30D	
								FST	RR	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACT. 3-WAY DC CONTROL SOLENOID											
0203-001B-AO	D-4	1	A	20.000	GL	AO	O/FC	AT-01	RR		
								BTC	M3		TV-30C
								FST	RR	RV-02A	
								PIT	Y2		
FUNCTION : MAIN STEAM ISOLATION VALVE											
0203-001B-AP2	F-4	NC	B	.001	PLT	AO	E	BTD	RR	RV-30D	
								FST	RR	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACTUATOR 2-WAY AIR PILOT VALVE											
0203-001B-AP4	F-4	NC	B	.001	SO4	SO	E	BTD	M3		
								FST	M3		
FUNCTION : MAIN STEAM ISOLATION VALVE ACTUATOR 4-WAY AIR PILOT VALVE											
0203-001B-SOAC	F-4	NC	B	.001	SO3	SO	E	BTD	RR	RV-30D	
								FST	RR	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACT. 3-WAY AC CONTROL SOLENOID											
0203-001B-SODC	F-4	NC	B	.001	SO3	SO	E	BTD	RR	RV-30D	
								FST	RR	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACT. 3-WAY DC CONTROL SOLENOID											
0203-001C-AO	C-4	1	A	20.000	GL	AO	O/FC	AT-01	RR		
								BTC	M3		TV-30C
								FST	RR	RV-02A	
								PIT	Y2		
FUNCTION : MAIN STEAM ISOLATION VALVE											

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0060-1
DRAWING TITLE : MAIN STEAM PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0203-001C-AP2	F-4	NC	B	.001	PLT	AO	E	BTD	RR	RV-30D	
								FST	RR	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACTUATOR 2-WAY AIR PILOT VALVE											
0203-001C-AP4	F-4	NC	B	.001	SO4	SO	E	BTD	M3		
								FST	M3		
FUNCTION : MAIN STEAM ISOLATION VALVE ACTUATOR 4-WAY AIR PILOT VALVE											
0203-001C-SOAC	F-4	NC	B	.001	SO3	SO	E	BTD	RR	RV-30D	
								FST	RR	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACT. 3-WAY AC CONTROL SOLENOID											
0203-001C-SODC	F-4	NC	B	.001	SO3	SO	E	BTD	RR	RV-30D	
								FST	RR	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACT. 3-WAY DC CONTROL SOLENOID											
0203-001C-AO	B-4	1	A	20.000	GL	AO	O/FC	AT-01	RR		
								BTC	M3		TV-30C
								FST	RR	RV-02A	
								PIT	Y2		
FUNCTION : MAIN STEAM ISOLATION VALVE											
0203-001D-AP2	F-4	NC	B	.001	PLT	AO	E	BTD	RR	RV-30D	
								FST	RR	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACTUATOR 2-WAY AIR PILOT VALVE											
0203-001D-AP4	F-4	NC	B	.001	SO4	SO	E	BTD	M3		
								FST	M3		
FUNCTION : MAIN STEAM ISOLATION VALVE ACTUATOR 4-WAY AIR PILOT VALVE											
0203-001D-SOAC	F-4	NC	B	.001	SO3	SO	E	BTD	RR	RV-30D	
								FST	RR	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACT. 3-WAY AC CONTROL SOLENOID											
0203-001D-SODC	F-4	NC	B	.001	SO3	SO	E	BTD	RR	RV-30D	
								FST	RR	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACT. 3-WAY DC CONTROL SOLENOID											
0203-003A	F-7	1	B/C	6.625	SRV	SAP	C	BTC	M6	RV-30A	TV-30B
								BTD	M6	RV-30A	TV-30B
								CT-SP	Y5	RV-30B	
										RV-30E	
								PIT	Y2		
FUNCTION : MAIN STEAM - SAFETY/RELIEF VALVE (TARGET ROCK)											
0203-003A-SO	F-7	NC	B	.001	SO3	SO	D	BTD	M6	RV-30A	
								BTE	M6	RV-30A	
FUNCTION : MAIN STEAM - SAFETY/RELIEF VALVE (TARGET ROCK) SOLENOID											

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0060-1
DRAWING TITLE : MAIN STEAM PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0203-003B	D-6	1	B	6.000	RV	SO	C	BTC BTO PIT	M6 M6 Y2	RV-30A RV-30A	
	FUNCTION : MAIN STEAM - ELECTROMATIC RELIEF VALVE										
0203-003C	C-8	1	B	6.000	RV	SO	C	BTC BTO PIT	M6 M6 Y2	RV-30A RV-30A	
	FUNCTION : MAIN STEAM - ELECTROMATIC RELIEF VALVE										
0203-003D	B-8	1	B	6.000	RV	SO	C	BTC BTO PIT	M6 M6 Y2	RV-30A RV-30A	
	FUNCTION : MAIN STEAM - ELECTROMATIC RELIEF VALVE										
0203-003E	D-8	1	B	6.000	RV	SO	C	BTC BTO PIT	M6 M6 Y2	RV-30A RV-30A	
	FUNCTION : MAIN STEAM - ELECTROMATIC RELIEF VALVE										
0203-004A	F-8	1	C	6.000	SV	SA	C	CT-SP PIT	Y5 Y2	RV-30B RV-30E	
	FUNCTION : MAIN STEAM - SAFETY VALVE										
0203-004A-RPD	F-8	NS	D	8.000	RPD	SA	C	DT-M	Y5		
	FUNCTION : MAIN STEAM - SAFETY VALVE DISCHARGE RUPTURE DIAPHRAGM										
0203-004B	E-5	1	C	6.000	SV	SA	C	CT-SP PIT	Y5 Y2	RV-30B RV-30E	
	FUNCTION : MAIN STEAM - SAFETY VALVE										
0203-004B-RPD	D-5	NS	D	8.000	RPD	SA	C	DT-M	Y5		
	FUNCTION : MAIN STEAM - SAFETY VALVE DISCHARGE RUPTURE DIAPHRAGM										
0203-004C	C-5	1	C	6.000	SV	SA	C	CT-SP PIT	Y5 Y2	RV-30B RV-30E	
	FUNCTION : MAIN STEAM - SAFETY VALVE										
0203-004C-RPD	C-5	NS	D	8.000	RPD	SA	C	DT-M	Y5		
	FUNCTION : MAIN STEAM - SAFETY VALVE DISCHARGE RUPTURE DIAPHRAGM										
0203-004D	B-8	1	C	6.000	SV	SA	C	CT-SP PIT	Y5 Y2	RV-30B RV-30E	
	FUNCTION : MAIN STEAM - SAFETY VALVE										
0203-004D-RPD	B-8	NS	D	8.000	RPD	SA	C	DT-M	Y5		
	FUNCTION : MAIN STEAM - SAFETY VALVE DISCHARGE RUPTURE DIAPHRAGM										

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0060-1
DRAWING TITLE : MAIN STEAM PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0203-004E	F-8	1	C	6.000	SV	SA	C	CT-SP	Y5	RV-30B RV-30E	
								PIT	Y2		
	FUNCTION : MAIN STEAM - SAFETY VALVE										
0203-004E-RPD	F-8	NS	D	8.000	RPD	SA	C	DT-M	Y5		
	FUNCTION : MAIN STEAM - SAFETY VALVE DISCHARGE RUPTURE DIAPHRAGM										
0203-004F	E-5	1	C	8.000	SV	SA	C	CT-SP	Y5	RV-30B RV-30E	
								PIT	Y2		
	FUNCTION : MAIN STEAM - SAFETY VALVE										
0203-004F-RPD	D-5	NS	D	8.000	RPD	SA	C	DT-M	Y5		
	FUNCTION : MAIN STEAM - SAFETY VALVE DISCHARGE RUPTURE DIAPHRAGM										
0203-004G	C-5	1	C	6.000	SV	SA	C	CT-SP	Y5	RV-30B RV-30E	
								PIT	Y2		
	FUNCTION : MAIN STEAM - SAFETY VALVE										
0203-004G-RPD	C-5	NS	D	8.000	RPD	SA	C	DT-M	Y5		
	FUNCTION : MAIN STEAM - SAFETY VALVE DISCHARGE RUPTURE DIAPHRAGM										
0203-004H	B-8	1	C	6.000	SV	SA	C	CT-SP	Y5	RV-30B RV-30E	
								PIT	Y2		
	FUNCTION : MAIN STEAM - SAFETY VALVE										
0203-004H-RPD	B-8	NS	D	8.000	RPD	SA	C	DT-M	Y5		
	FUNCTION : MAIN STEAM - SAFETY VALVE DISCHARGE RUPTURE DIAPHRAGM										
0220-001 -MO	E-4	1	A	3.000	GA	MO	C	AT-01	RR		
								BTC	M3		
								PIT	Y2		
	FUNCTION : MAIN STEAM LINE DRAIN ISOLATION VALVE										
0220-084A	F-3	NC	A/C	1.000	CK	SA	SYS	AT-06	Y2		
								CTC	RR	RV-47A	
	FUNCTION : MAIN STEAM ISOLATION VALVE ACCUMULATOR CHECK VALVE										
0220-084B	F-3	NC	A/C	1.000	CK	SA	SYS	AT-06	Y2		
								CTC	RR	RV-47A	
	FUNCTION : MAIN STEAM ISOLATION VALVE ACCUMULATOR CHECK VALVE										
0220-084C	F-3	NC	A/C	1.000	CK	SA	SYS	AT-06	Y2		
								CTC	RR	RV-47A	
	FUNCTION : MAIN STEAM ISOLATION VALVE ACCUMULATOR CHECK VALVE										
0220-084D	F-3	NC	A/C	1.000	CK	SA	SYS	AT-06	Y2		
								CTC	RR	RV-47A	
	FUNCTION : MAIN STEAM ISOLATION VALVE ACCUMULATOR CHECK VALVE										

Table 1.0-B
UNIT 2 VALVE LISTING

DRAWING : M-0060-2
DRAWING TITLE : MAIN STEAM PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0203-002A-AO	F-7	1	A	20.000	GL	AO	O/FC	AT-01	RR		
								BTC	M3		TV-30C
								FST	CS	CS-02C	
								PIT	Y2		
FUNCTION : MAIN STEAM ISOLATION VALVE											
0203-002A-AP2	F-7	NC	B	.001	PLT	AO	E	BTD	CS	RV-30D	
								FST	CS	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACTUATOR 2-WAY AIR PILOT VALVE											
0203-002A-AP4	F-7	NC	B	.001	SO4	SO	E	BTD	M3		
								FST	M3		
FUNCTION : MAIN STEAM ISOLATION VALVE ACTUATOR 4-WAY AIR PILOT VALVE											
0203-002A-SOAC	F-7	NC	B	.001	SO3	SO	E	BTD	RR	RV-30D	
								FST	RR	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACT. 3-WAY AC CONTROL SOLENOID											
0203-002A-SODC	F-7	NC	B	.001	SO3	SO	E	BTD	RR	RV-30D	
								FST	RR	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACT. 3-WAY DC CONTROL SOLENOID											
0203-002B-AO	E-7	1	A	20.000	GL	AO	O/FC	AT-01	RR		
								BTC	M3		TV-30C
								FST	CS	CS-02C	
								PIT	Y2		
FUNCTION : MAIN STEAM ISOLATION VALVE											
0203-002B-AP2	F-7	NC	B	.001	PLT	AO	E	BTD	CS	RV-30D	
								FST	CS	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACTUATOR 2-WAY AIR PILOT VALVE											
0203-002B-AP4	F-7	NC	B	.001	SO4	SO	E	BTD	M3		
								FST	M3		
FUNCTION : MAIN STEAM ISOLATION VALVE ACTUATOR 4-WAY AIR PILOT VALVE											
0203-002B-SOAC	F-7	NC	B	.001	SO3	SO	E	BTD	RR	RV-30D	
								FST	RR	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACT. 3-WAY AC CONTROL SOLENOID											
0203-002B-SODC	F-7	NC	B	.001	SO3	SO	E	BTD	RR	RV-30D	
								FST	RR	RV-30D	
FUNCTION : MAIN STEAM ISOLATION VALVE ACT. 3-WAY DC CONTROL SOLENOID											
0203-002C-AO	D-7	1	A	20.000	GL	AO	O/FC	AT-01	RR		
								BTC	M3		TV-30C
								FST	CS	CS-02C	
								PIT	Y2		
FUNCTION : MAIN STEAM ISOLATION VALVE											

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0060-2
DRAWING TITLE : MAIN STEAM PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0203-002C-AP2	F-7	NC	B	.001	PLT	AO	E	BTD	CS	RV-30D	
								FST	CS	RV-30D	
	FUNCTION : MAIN STEAM ISOLATION VALVE ACTUATOR 2-WAY AIR PILOT VALVE										
0203-002C-AP4	F-7	NC	B	.001	SO4	SO	E	BTD	M3		
								FST	M3		
	FUNCTION : MAIN STEAM ISOLATION VALVE ACTUATOR 4-WAY AIR PILOT VALVE										
0203-002C-SOAC	F-7	NC	B	.001	SO3	SO	E	BTD	RR	RV-30D	
								FST	RR	RV-30D	
	FUNCTION : MAIN STEAM ISOLATION VALVE ACT. 3-WAY AC CONTROL SOLENOID										
0203-002C-SODC	F-7	NC	B	.001	SO3	SO	E	BTD	RR	RV-30D	
								FST	RR	RV-30D	
	FUNCTION : MAIN STEAM ISOLATION VALVE ACT. 3-WAY DC CONTROL SOLENOID										
0203-002D-AO	C-7	1	A	20.000	GL	AO	O/FC	AT-01	RR		
								BTC	M3		TV-30C
								FST	CS	CS-02C	
								PIT	Y2		
	FUNCTION : MAIN STEAM ISOLATION VALVE										
0203-002D-AP2	F-7	NC	B	.001	PLT	AO	E	BTD	CS	RV-30D	
								FST	CS	RV-30D	
	FUNCTION : MAIN STEAM ISOLATION VALVE ACTUATOR 2-WAY AIR PILOT VALVE										
0203-002D-AP4	F-7	NC	B	.001	SO4	SO	E	BTD	M3		
								FST	M3		
	FUNCTION : MAIN STEAM ISOLATION VALVE ACTUATOR 4-WAY AIR PILOT VALVE										
0203-002D-SOAC	F-7	NC	B	.001	SO3	SO	E	BTD	RR	RV-30D	
								FST	RR	RV-30D	
	FUNCTION : MAIN STEAM ISOLATION VALVE ACT. 3-WAY AC CONTROL SOLENOID										
0203-002D-SODC	F-7	NC	B	.001	SO3	SO	E	BTD	RR	RV-30D	
								FST	RR	RV-30D	
	FUNCTION : MAIN STEAM ISOLATION VALVE ACT. 3-WAY DC CONTROL SOLENOID										
0220-002 -MO	E-7	1	A	3.000	GA	MO	C	AT-01	RR		
								BTC	M3		
								PIT	Y2		
	FUNCTION : MAIN STEAM LINE DRAIN ISOLATION VALVE										
0220-017A	E-8	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : 1A MAIN STM INST LINE EXCESS FLOW CK VLV										
0220-017B	D-8	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : 1B MAIN STM INST LINE EXCESS FLOW CK VLV										

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0060-2
DRAWING TITLE : MAIN STEAM PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0220-017C	C-8	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-008	
FUNCTION : 1C MAIN STM INST LINE EXCESS FLOW CK VLV											
0220-017D	B-8	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-008	
FUNCTION : 1D MAIN STM INST LINE EXCESS FLOW CK VLV											
0220-018A	E-8	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-008	
FUNCTION : 1A MAIN STM INST LINE EXCESS FLOW CK VLV											
0220-018B	D-8	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-008	
FUNCTION : 1B MAIN STM INST LINE EXCESS FLOW CK VLV											
0220-018C	C-8	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-008	
FUNCTION : 1C MAIN STM INST LINE EXCESS FLOW CK VLV											
0220-018D	B-8	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-008	
FUNCTION : 1D MAIN STM INST LINE EXCESS FLOW CK VLV											
0220-085A	F-7	NC	A/C	1.000	CK	SA	SYS	AT-06	Y2		
								CTC	CS	CS-47A	
FUNCTION : MAIN STEAM ISOLATION VALVE ACCUMULATOR CHECK VALVE											
0220-085B	F-7	NC	A/C	1.000	CK	SA	SYS	AT-06	Y2		
								CTC	CS	CS-47A	
FUNCTION : MAIN STEAM ISOLATION VALVE ACCUMULATOR CHECK VALVE											
0220-085C	F-7	NC	A/C	1.000	CK	SA	SYS	AT-06	Y2		
								CTC	CS	CS-47A	
FUNCTION : MAIN STEAM ISOLATION VALVE ACCUMULATOR CHECK VALVE											
0220-085D	F-7	NC	A/C	1.000	CK	SA	SYS	AT-06	Y2		
								CTC	CS	CS-47A	
FUNCTION : MAIN STEAM ISOLATION VALVE ACCUMULATOR CHECK VALVE											

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0062
DRAWING TITLE : REACTOR FEED PIPING

VALVE NUMBER	DWG COOR	1ST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0220-058A	E-2	1	A/C	18.000	CK	SA	SYS	AT-01	RR		
								CTC	RR	RV-32A	
	FUNCTION : REACTOR FEED - CHECK VALVE INSIDE CONTAINMENT										
0220-058B	F-2	1	A/C	18.000	CK	SA	SYS	AT-01	RR		
								CTC	RR	RV-32A	
								CTO	M3		
	FUNCTION : REACTOR FEED - CHECK VALVE INSIDE CONTAINMENT										
0220-059B	F-2	2	C	18.000	CK	SA	SYS	CTC	RR	RV-32A	
	FUNCTION : REACTOR FEED - SECOND VALVE OUTSIDE CONTAINMENT										
0220-062A	E-2	1	A/C	18.000	CK	SA	SYS	AT-01	RR		
								CTC	RR	RV-32A	
	FUNCTION : REACTOR FEED - FIRST CHECK VALVE OUTSIDE CONTAINMENT										
0220-062B	F-2	1	A/C	18.000	CK	SA	SYS	AT-01	RR		
								CTC	RR	RV-32A	
								CTO	M3		
	FUNCTION : REACTOR FEED - FIRST CHECK VALVE OUTSIDE CONTAINMENT										

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0069-1
DRAWING TITLE : SERVICE WATER PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
3999-560	D-8	3	C	2.500	CK	SA	SYS	CTC	M3		
FUNCTION : LPSW - SERVICE WATER TO HPCI ROOM COOLER CHECK VALVE											
3999-561	D-7	3	C	4.000	CK	SA	SYS	CTO	M3		
FUNCTION : LPSW - SERVICE WATER TO VITAL COMPONENTS CHECK VALVE											

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0069-3
DRAWING TITLE : SERVICE WATER PIPING, DIESEL GENERATOR COOLING WATER

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
3999-086	C-8	3	C	8.000	CK	SA	SYS	CTD	M3		
	FUNCTION : LPSW - DG COOLING WATER PUMP DISCHARGE CHECK VALVE										
3999-088	E-6	3	C	6.000	CK	SA	SYS	CTC CTO	SA M3	RV-00F	
	FUNCTION : LPSW - DG COOLING WATER PUMP DISC. CROSS-TIE CHECK VALVE										
3999-089	D-6	3	B	6.000	GA	M	C	BTME	M3		TV-39A
	FUNCTION : LPSW - DG COOLING WATER PUMP DISC. CROSS-TIE ISOLATION VALVE										
3999-139	E-5	3	C	6.000	CK	SA	SYS	CTO	M3		
	FUNCTION : LPSW - 1/2-3903 TO 2-3903 PUMP BACK FLOW PROTECTION										

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0071-2
DRAWING TITLE : INSTRUMENT AIR PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0737-001A	F-7	NC	A	.375	BAL	SO	C/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : TRAVERSING IN-CORE PROBE BALL VALVE, PCIV										
0737-001B	F-7	NC	A	.375	BAL	SO	C/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : TRAVERSING IN-CORE PROBE BALL VALVE, PCIV										
0737-001C	F-7	NC	A	.375	BAL	SO	C/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : TRAVERSING IN-CORE PROBE BALL VALVE, PCIV										
0737-001D	F-7	NC	A	.375	BAL	SO	C/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : TRAVERSING IN-CORE PROBE BALL VALVE, PCIV										
0737-001E	F-7	NC	A	.375	BAL	SO	C/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : TRAVERSING IN-CORE PROBE BALL VALVE, PCIV										
0737-002A	F-7	NC	A	.375	SHR	EXP	O/KL	AT-01	RR		TV-07A
								DT-E	S2		
	FUNCTION : TRAVERSING IN-CORE PROBE SHEAR VALVE, PCIV										
0737-002B	F-7	NC	A	.375	SHR	EXP	O/KL	AT-01	RR		TV-07A
								DT-E	S2		
	FUNCTION : TRAVERSING IN-CORE PROBE SHEAR VALVE, PCIV										
0737-002C	F-7	NC	A	.375	SHR	EXP	O/KL	AT-01	RR		TV-07A
								DT-E	S2		
	FUNCTION : TRAVERSING IN-CORE PROBE SHEAR VALVE, PCIV										
0737-002D	F-7	NC	A	.375	SHR	EXP	O/KL	AT-01	RR		TV-07A
								DT-E	S2		
	FUNCTION : TRAVERSING IN-CORE PROBE SHEAR VALVE, PCIV										
0737-002E	F-7	NC	A	.375	SHR	EXP	O/KL	AT-01	RR		TV-07A
								DT-E	S2		
	FUNCTION : TRAVERSING IN-CORE PROBE SHEAR VALVE, PCIV										

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0071-2
DRAWING TITLE : INSTRUMENT AIR PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
4720	D-3	NC	A	1.000	DIA	AO	O/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : INSTR. AIR - PCIV, AIR SUCTION FOR INSTR. AIR FROM DRYWELL										
4721	D-3	NC	A	1.000	DIA	AO	O/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : INSTR. AIR - PCIV, AIR SUCTION FOR INSTR. AIR FROM DRYWELL										
4799-155	E-2	NC	A/C	2.000	CK	SA	SYS	AT-01	RR		
								CTC	RR	RV-47B	
	FUNCTION : INSTR. AIR - PCIV, INSTR. AIR SUPPLY TO DRYWELL										
4799-156	E-3	NC	A/C	2.000	CK	SA	SYS	AT-01	RR		
								CTC	RR	RV-47B	
	FUNCTION : INSTR. AIR - PCIV, INSTR. AIR SUPPLY TO DRYWELL										
4799-158	F-4	NC	A/C	.500	CK	SA	SYS	AT-01	RR		
								CTC	RR	RV-47B	
	FUNCTION : INSTR. AIR - PCIV, INSTR. AIR SUPPLY TO TORUS										
4799-159	F-4	NC	A/C	.500	CK	SA	SYS	AT-01	RR		
								CTC	RR	RV-47B	
	FUNCTION : INSTR. AIR - PCIV, INSTR. AIR SUPPLY TO TORUS										
4799-281A	B-2	NC	A/C	.500	CK	SA	SYS	AT-06	Y2		
								CTC	RR	RV-47A	
	FUNCTION : INSTR. AIR - TARGET ROCK ACCUMULATOR CHECK VALVE										
4799-482	D-3	NC	B	.500	SO3	SO	E	BTD	M3		
								FST	M3		
	FUNCTION : INSTR. AIR - PCIV (AIR SUCTION FROM DRYWELL) SOLENOID VALVE										
4799-483	D-3	NC	B	.500	SO3	SO	E	BTD	M3		
								FST	M3		
	FUNCTION : INSTR. AIR - PCIV (AIR SUCTION FROM DRYWELL) SOLENOID VALVE										
743	B-7	NC	A/C	.375	CK	SA	SYS	AT-01	RR		
								CTC	RR	RV-07A	
	FUNCTION : TRAVERSING IN-CORE PROBE CHECK VALVE, PCIV										

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0072-1
DRAWING TITLE : SERVICE AIR PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
4699-046	E-6	NC	A	1.000	GL	M	C	AT-01	RR		
	FUNCTION : SERVICE AIR - PRIMARY CONTAINMENT ISOLATION VALVE										
4699-047	E-6	NC	A	1.000	CK	SA	SYS	AT-01	RR		
								CTC	RR	RV-46B	
	FUNCTION : SERVICE AIR - PRIMARY CONTAINMENT ISOLATION VALVE										

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0072-2
DRAWING TITLE : SERVICE AIR PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTUATOR	NORMAL POSITION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
4699-123	D-6	NC	C	1.500	CK	SA	SYS	CTO	M3		
	FUNCTION : SERVICE AIR - (DIESEL) RECEIVER TANK BACKFLOW PROTECTION										
4699-196	D-5	NC	C	1.500	CK	SA	SYS	CTO	M3		
	FUNCTION : SERVICE AIR - (DIESEL) RECEIVER TANK BACKFLOW PROTECTION										
4699-226	C-2	NC	B	1.500	DIA	AO	C	BTC	M3	RV-46A	
								BTO	M3	RV-46A	
	FUNCTION : SERVICE AIR - (DIESEL) AIR START RELAY VALVE										
4699-306A	D-7	NC	C	.750	RV	SA	C	CT-SP	YA		
	FUNCTION : SERVICE AIR - (DIESEL) RECEIVER TANK SAFETY VALVE										
4699-306B	D-6	NC	C	.750	RV	SA	C	CT-SP	YA		
	FUNCTION : SERVICE AIR - (DIESEL) RECEIVER TANK SAFETY VALVE										
4699-306C	D-5	NC	C	.750	RV	SA	C	CT-SP	YA		
	FUNCTION : SERVICE AIR - (DIESEL) RECEIVER TANK SAFETY VALVE										
4699-306D	D-5	NC	C	.750	RV	SA	C	CT-SP	YA		
	FUNCTION : SERVICE AIR - (DIESEL) RECEIVER TANK SAFETY VALVE										
4699-307A	C-6	NC	A/C	.500	CK	SA	SYS	AT-06	Y2		
								CTC	M3		
	FUNCTION : SERVICE AIR - (DIESEL) COMPRESSOR BACKFLOW PROTECTION										
4699-307B	C-5	NC	A/C	.500	CK	SA	SYS	AT-06	Y2		
								CTC	M3		
	FUNCTION : SERVICE AIR - (DIESEL) COMPRESSOR BACKFLOW PROTECTION										
4699-309	C-3	NC	C	.375	CK	SA	SYS	CTC	M3		
								CTO	M3		
	FUNCTION : SERVICE AIR - (DIESEL) AIR START RELAY VALVE DPHRGM. CK VLV.										
4699-310	D-3	NC	B	.375	SO3	SO	D	BTD	M3		
								BTE	M3		
	FUNCTION : SERVICE AIR - (DIESEL) START SOLENDID										

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0075
DRAWING TITLE : REACTOR BUILDING COOLING WATER PIPING

VALVE NUMBER		DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
3702-	-MO	B-3	NC	A	8.000	GA	MO	O	AT-O1	RR		
									BTC	CS	CS-37A	
									PIT	Y2		
FUNCTION : RBCCW - PRIMARY CONTAINMENT ISOLATION VALVE												
3703-	-MO	B-1	NC	A	8.000	GA	MO	O	AT-O1	RR		
									BTC	CS	CS-37A	
									PIT	Y2		
FUNCTION : RBCCW - PRIMARY CONTAINMENT ISOLATION VALVE												
3706-	-MO	B-1	NC	A	8.000	GA	MO	O	AT-O1	RR		
									BTC	CS	CS-37A	
									PIT	Y2		
FUNCTION : RBCCW - PRIMARY CONTAINMENT ISOLATION VALVE												
3799-031		B-3	NC	A/C	8.000	CK	SA	SYS	AT-O1	RR		
									CTC	RR	RV-37A	
FUNCTION : RBCCW - PRIMARY CONTAINMENT ISOLATION VALVE												

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0076-1
DRAWING TITLE : PRESSURE SUPPRESSION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTUATOR	NORMAL POSITION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0220-081A	E-4	NC	C	1.000	CK	SA	SYS	CTOME	RR	RV-30C	
	FUNCTION : PRES. SUPPR. - SAFETY VALVE DISCHARGE VACUUM BREAKERS										
0220-081B	E-4	NC	C	1.000	CK	SA	SYS	CTOME	RR	RV-30C	
	FUNCTION : PRES. SUPPR. - SAFETY VALVE DISCHARGE VACUUM BREAKERS										
0220-081C	E-4	NC	C	1.000	CK	SA	SYS	CTOME	RR	RV-30C	
	FUNCTION : PRES. SUPPR. - SAFETY VALVE DISCHARGE VACUUM BREAKERS										
0220-081D	E-6	NC	C	1.000	CK	SA	SYS	CTOME	RR	RV-30C	
	FUNCTION : PRES. SUPPR. - SAFETY VALVE DISCHARGE VACUUM BREAKERS										
0220-081E	E-6	NC	C	1.000	CK	SA	SYS	CTOME	RR	RV-30C	
	FUNCTION : PRES. SUPPR. - SAFETY VALVE DISCHARGE VACUUM BREAKERS										
0220-105A	D-4	NC	C	8.000	CK	SA	SYS	CTOME	RR	RV-30C	
	FUNCTION : PRES. SUPPR. - SAFETY VALVE DISCHARGE VACUUM BREAKERS										
0220-105B	E-4	NC	C	8.000	CK	SA	SYS	CTOME	RR	RV-30C	
	FUNCTION : PRES. SUPPR. - SAFETY VALVE DISCHARGE VACUUM BREAKERS										
0220-105C	E-5	NC	C	8.000	CK	SA	SYS	CTOME	RR	RV-30C	
	FUNCTION : PRES. SUPPR. - SAFETY VALVE DISCHARGE VACUUM BREAKERS										
0220-105D	D-5	NC	C	8.000	CK	SA	SYS	CTOME	RR	RV-30C	
	FUNCTION : PRES. SUPPR. - SAFETY VALVE DISCHARGE VACUUM BREAKERS										
0220-105E	E-5	NC	C	8.000	CK	SA	SYS	CTOME	RR	RV-30C	
	FUNCTION : PRES. SUPPR. - SAFETY VALVE DISCHARGE VACUUM BREAKERS										
1601-020A-AO	D-9	NC	A	20.000	BTF	AO	C/FO	AT-01	RR		
								BTC	M3		
								BTO	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : PRES. SUPPR. - PRIMARY/SECONDARY CONTAINMENT VACUUM BREAKERS										
1601-020A-SO	A-1	NC	B	.001	SO4	SO	E	BTO	M3		
								BTE	M3		
								FST	M3		
	FUNCTION : PRES. SUPPR. - VACUUM BREAKER/PCIV CONTROL SOLENOID										
1601-020B-AO	E-9	NC	A	20.000	BTF	AO	C/FO	AT-01	RR		
								BTC	M3		
								BTO	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : PRES. SUPPR. - PRIMARY/SECONDARY CONTAINMENT VACUUM BREAKERS										

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0076-1
DRAWING TITLE : PRESSURE SUPPRESSION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
1601-020B-SO	A-1	NC	B	.001	SO4	SO	E	BTD	M3		
								BTE	M3		
								FST	M3		
	FUNCTION : PRES. SUPPR. - VACUUM BREAKER/PCIV CONTROL SOLENOID										
1601-021 -AO	C-6	NC	A	18.000	BTF	AO	C/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : PRES. SUPPR. - DRYWELL INERT & PURGE										
1601-021 -SO	A-1	NC	B	.001	SO4	SO	D	BTD	M3		
								FST	M3		
	FUNCTION : PRES. SUPPR. - MISC. PCIV AIR OPERATOR CONTROL SOLENOID										
1601-022 -AO	C-6	NC	A	18.000	BTF	AO	C/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : PRES. SUPPR. - DRYWELL INERT & PURGE										
1601-022 -SO	C-7	NC	B	.001	SO4	SO	D	BTD	M3		
								FST	M3		
	FUNCTION : PRES. SUPPR. - MISC. PCIV AIR OPERATOR CONTROL SOLENOID										
1601-023 -AO	B-3	NC	A	18.000	BTF	AO	C/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : PRES. SUPPR. - DRYWELL VENT										
1601-023 -SO	A-1	NC	B	.001	SO4	SO	D	BTD	M3		
								FST	M3		
	FUNCTION : PRES. SUPPR. - MISC. PCIV AIR OPERATOR CONTROL SOLENOID										
1601-024 -AO	B-2	NC	A	18.000	BTF	AO	C/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : PRES. SUPPR. - DRYWELL AND SUPPR. CHAMBER VENT TO RX BLDG.										
1601-024 -SO	A-1	NC	B	.001	SO4	SO	D	BTD	M3		
								FST	M3		
	FUNCTION : PRES. SUPPR. - MISC. PCIV AIR OPERATOR CONTROL SOLENOID										
1601-031A	D-9	NC	A/C	20.000	CK	SA	SYS	AT-01	RR		
								CTC	M3		
								CTOME	M3		
	FUNCTION : PRES. SUPPR. - PRIMARY/SECONDARY CONTAINMENT VACUUM BREAKERS										

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0076-1
DRAWING TITLE : PRESSURE SUPPRESSION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
1601-031B	E-9	NC	A/C	20.000	CK	SA	SYS	AT-01	RR		
								CTC	M3		
								CTOME	M3		
FUNCTION : PRES. SUPPR. - PRIMARY/SECONDARY CONTAINMENT VACUUM BREAKERS											
1601-032A	E-2	NC	A/C	.001	CK	SA	SYS	AT-05	RR	RV-16A	
								CTC	M3		
								CTO	M3		
								PIT	Y2		
FUNCTION : PRES. SUPPR. - DRYWELL/SUPPRESSION CHAMBER VACUUM BREAKERS											
1601-032B	E-2	NC	A/C	.001	CK	SA	SYS	AT-05	RR	RV-16A	
								CTC	M3		
								CTO	M3		
								PIT	Y2		
FUNCTION : PRES. SUPPR. - DRYWELL/SUPPRESSION CHAMBER VACUUM BREAKERS											
1601-032C	E-2	NC	A/C	.001	CK	SA	SYS	AT-05	RR	RV-16A	
								CTC	M3		
								CTO	M3		
								PIT	Y2		
FUNCTION : PRES. SUPPR. - DRYWELL/SUPPRESSION CHAMBER VACUUM BREAKERS											
1601-032D	E-2	NC	A/C	.001	CK	SA	SYS	AT-05	RR	RV-16A	
								CTC	M3		
								CTO	M3		
								PIT	Y2		
FUNCTION : PRES. SUPPR. - DRYWELL/SUPPRESSION CHAMBER VACUUM BREAKERS											
1601-032E	E-2	NC	A/C	.001	CK	SA	SYS	AT-05	RR	RV-16A	
								CTC	M3		
								CTO	M3		
								PIT	Y2		
FUNCTION : PRES. SUPPR. - DRYWELL/SUPPRESSION CHAMBER VACUUM BREAKERS											
1601-032F	E-3	NC	A/C	.001	CK	SA	SYS	AT-05	RR	RV-16A	
								CTC	M3		
								CTO	M3		
								PIT	Y2		
FUNCTION : PRES. SUPPR. - DRYWELL/SUPPRESSION CHAMBER VACUUM BREAKERS											
1601-033A	E-7	NC	A/C	.001	CK	SA	SYS	AT-05	RR	RV-16A	
								CTC	M3		
								CTO	M3		
								PIT	Y2		
FUNCTION : PRES. SUPPR. - DRYWELL/SUPPRESSION CHAMBER VACUUM BREAKERS											

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0076-1
DRAWING TITLE : PRESSURE SUPPRESSION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
1601-033B	E-7	NC	A/C	.001	CK	SA	SYS	AT-05	RR	RV-16A	
								CTC	M3		
								CTO	M3		
								PIT	Y2		
	FUNCTION : PRES. SUPPR. - DRYWELL/SUPPRESSION CHAMBER VACUUM BREAKERS										
1601-033C	E-7	NC	A/C	.001	CK	SA	SYS	AT-05	RR	RV-16A	
								CTC	M3		
								CTO	M3		
								PIT	Y2		
	FUNCTION : PRES. SUPPR. - DRYWELL/SUPPRESSION CHAMBER VACUUM BREAKERS										
1601-033D	E-7	NC	A/C	.001	CK	SA	SYS	AT-05	RR	RV-16A	
								CTC	M3		
								CTO	M3		
								PIT	Y2		
	FUNCTION : PRES. SUPPR. - DRYWELL/SUPPRESSION CHAMBER VACUUM BREAKERS										
1601-033E	E-7	NC	A/C	.001	CK	SA	SYS	AT-05	RR	RV-16A	
								CTC	M3		
								CTO	M3		
								PIT	Y2		
	FUNCTION : PRES. SUPPR. - DRYWELL/SUPPRESSION CHAMBER VACUUM BREAKERS										
1601-033F	E-7	NC	A/C	.001	CK	SA	SYS	AT-05	RR	RV-16A	
								CTC	M3		
								CTO	M3		
								PIT	Y2		
	FUNCTION : PRES. SUPPR. - DRYWELL/SUPPRESSION CHAMBER VACUUM BREAKERS										
1601-055	A-6	NC	A	4.000	GA	AO	O/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : PRES. SUPPR. - NITROGEN MAKE-UP/PUMPBACK SUCTION										
1601-055 -SO	A-6	NC	B	.001	SO3	SO	E	BTD	M3		
								FST	M3		
	FUNCTION : PRES. SUPPR. - NITROGEN INERTION ISOLATION CONTROL SOLENOID										
1601-056 -AO	D-6	NC	A	18.000	BTF	AO	O/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : PRES. SUPPR. - CONTAINMENT INERTING/PUMPBACK SUCTION										
1601-056 -SO	A-1	NC	B	.001	SO4	SO	E	BTD	M3		
								FST	M3		
	FUNCTION : PRES. SUPPR. - MISC. PCIV AIR OPERATOR CONTROL SOLENOID										

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0076-1
DRAWING TITLE : PRESSURE SUPPRESSION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
1601-057	D-8	NC	A	1.000	GL	MO	O	AT-01	RR		
								BTC	M3		
								PIT	Y2		
	FUNCTION : PRES. SUPPR. - NITROGEN MAKE-UP/PUMPBACK DISCHARGE PATH										
1601-058 -AO	D-7	NC	A	1.000	GL	AO	C/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : PRES. SUPPR. - NITROGEN MAKE-UP/PUMPBACK ISOL. FROM TORUS										
1601-058 -SO	D-7	NC	B	.001	SO3	SO	D	BTD	M3		
								FST	M3		
	FUNCTION : PRES. SUPPR. - AIR OPERATED GLOBE VALVE SOLENOID										
1601-059 -AO	D-7	NC	A	1.000	GL	AO	O/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : PRES. SUPPR. - NITROGEN MAKE-UP/PUMPBACK DISCHARGE PATH										
1601-059 -SO	D-6	NC	B	.001	SO3	SO	E	BTD	M3		
								FST	M3		
	FUNCTION : PRES. SUPPR. - AIR OPERATED GLOBE VALVE SOLENOID										
1601-060 -AO	E-1	NC	A	18.000	BTF	AO	C/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : PRES. SUPPR. - SUPPRESSION CHAMBER VENT										
1601-060 -SO	F-1	NC	B	.001	SO4	SO	D	BTD	M3		
								FST	M3		
	FUNCTION : PRES. SUPPR. - MISC. PCIV AIR OPERATOR CONTROL SOLENOID										
1601-061 -AO	F-1	NC	A	2.000	GL	AO	C/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : PRES. SUPPR. - SUPPR. CHAMBER VENT BYPASS AND SBGT SUCTION										
1601-061 -SO	F-1	NC	B	.001	SO3	SO	D	BTD	M3		
								FST	M3		
	FUNCTION : PRES. SUPPR. - AIR OPERATED GLOBE VALVE SOLENOIDS										
1601-062 -AO	B-3	NC	A	2.000	GL	AO	O/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : PRES. SUPPR. - DRYWELL VENT BYPASS & STANDBY GAS TR. SUCTION										

Table 1.0-B
UNIT 2 VALVE LISTING

DRAWING : M-0076-1
DRAWING TITLE : PRESSURE SUPPRESSION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTUATOR	NORMAL POSITION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
1601-062 -SO	B-3	NC	B	.001	SO3	SO	D	BTD	M3		
								FST	M3		
FUNCTION : PRES. SUPPR. - AIR OPERATED GLOBE VALVE SOLENOIDS											
1601-063 -AO	A-2	NC	A	6.000	BTF	AO	C/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : PRES. SUPP. - STANDBY GAS TREAT. CONNECTION TO PRIMARY CONT.											
1601-063 -SO	A-3	NC	B	.001	SO4	SO	D	BTC	M3		
								FST	M3		
FUNCTION : PRES. SUPPR. - MISC. PCIV AIR OPERATOR CONTROL SOLENOID											
1699-009 -RV	D-8	NC	A/C	1.500	RV	SA	C	AT-01	RR		
								CT-SP	YA		
FUNCTION : PRES. SUPPR. - NITROGEN MAKE-UP OVERPRESSURE PROTECTION											
8801- A-FCV	C-3	NC	A	.500	DIA	AO	O/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8801- A-SO	C-3	NC	B	.001	SO3	SO	E	BTD	M3		
								FST	M3		
FUNCTION : PRES. SUPPR. - DIAPHRAGM VALVE SOLENOIDS											
8801- B-FCV	D-3	NC	A	.500	DIA	AO	O/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8801- B-SO	D-3	NC	B	.001	SO3	SO	E	BTD	M3		
								FST	M3		
FUNCTION : PRES. SUPPR. - DIAPHRAGM VALVE SOLENOIDS											
8801- C-FCV	D-3	NC	A	.500	DIA	AO	O/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8801- C-SO	D-3	NC	B	.001	SO3	SO	E	BTD	M3		
								FST	M3		
FUNCTION : PRES. SUPPR. - DIAPHRAGM VALVE SOLENOIDS											

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0076-1
DRAWING TITLE : PRESSURE SUPPRESSION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
8801- D-FCV	E-3	NC	A	.500	DIA	AO	O/FC	AT-01 BTC FST PIT	RR M3 M3 Y2		
FUNCTION : PRES. SUPPR. - SUPPRESSION CHAMBER AIR SAMPLE											
8801- D-SO	E-3	NC	B	.001	SO3	SO	E	BTD FST	M3 M3		
FUNCTION : PRES. SUPPR. - DIAPHRAGM VALVE SOLENOIDS											
8802- A-FCV	C-3	NC	A	.500	DIA	AO	O/FC	AT-01 BTC FST PIT	RR M3 M3 Y2		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8802- A-SO	C-3	NC	B	.001	SO3	SO	E	BTD FST	M3 M3		
FUNCTION : PRES. SUPPR. - DIAPHRAGM VALVE SOLENOIDS											
8802- B-FCV	D-3	NC	A	.500	DIA	AO	O/FC	AT-01 BTC FST PIT	RR M3 M3 Y2		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8802- B-SO	D-3	NC	B	.001	SO3	SO	E	BTD FST	M3 M3		
FUNCTION : PRES. SUPPR. - DIAPHRAGM VALVE SOLENOIDS											
8802- C-FCV	D-3	NC	A	.500	DIA	AO	O/FC	AT-01 BTC FST PIT	RR M3 M3 Y2		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8802- C-SO	D-3	NC	B	.001	SO3	SO	E	BTD FST	M3 M3		
FUNCTION : PRES. SUPPR. - DIAPHRAGM VALVE SOLENOIDS											
8802- D-FCV	E-3	NC	A	.500	DIA	AO	O/FC	AT-01 BTC FST PIT	RR M3 M3 Y2		
FUNCTION : PRES. SUPPR. - SUPPRESSION CHAMBER AIR SAMPLE											
8802- D-SO	E-3	NC	B	.001	SO3	SO	E	BTD FST	M3 M3		
FUNCTION : PRES. SUPPR. - DIAPHRAGM VALVE SOLENOIDS											

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0076-1
DRAWING TITLE : PRESSURE SUPPRESSION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
8803	D-6	NC	A	.500	GL	AO	O/FC	AT-01 BTC FST PIT	RR M3 M3 Y2		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- -SD	C-6	NC	B	.001	SO3	SD	E	BTD FST	M3 M3		
FUNCTION : PRES. SUPPR. - AIR OPERATED GLOBE VALVE SOLENOIDS											
8803- 1D	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 1E	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 1F	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 1G	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 1H	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 1I	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 1J	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 1K	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 1L	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 1M	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 1N	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 1O	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 1P	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 1Q	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0076-1
DRAWING TITLE : PRESSURE SUPPRESSION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
8803- 1R	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 1S	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 1T	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 1U	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 1V	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 1W	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 1X	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 1Y	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2D	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2E	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2F	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2G	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2H	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2I	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2J	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2K	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2L	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0076-1
DRAWING TITLE : PRESSURE SUPPRESSION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
8803- 2M	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2N	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2O	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2P	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2Q	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2R	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2S	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2T	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2U	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2V	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2W	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2X	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8803- 2Y	D-3	NC	A	.500	GA	M	C	AT-01	RR		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8804	C-6	NC	A	.500	GL	AO	O/FC	AT-01 BTC FST PIT	RR M3 M3 Y2		
FUNCTION : PRES. SUPPR. - DRYWELL AIR SAMPLE											
8804- -SO	D-6	NC	B	.001	SO3	SO	E	BTD FST	M3 M3		
FUNCTION : PRES. SUPPR. - AIR OPERATED GLOBE VALVE SOLENOIDS											

Table 1.0-B
UNIT 2 VALVE LISTING

DRAWING : M-0077-1
DRAWING TITLE : NUCLEAR BOILER & REACTOR RECIRCULATION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTUATOR	NORMAL POSITION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0220-051	E-5	1	B	.500	DIA	AO	C/FC	FST PIT	CS Y2	CS-02B	
FUNCTION : REACTOR RECIRCULATION - FLANGE LEAK DETECTOR DRAIN LINE											
0220-051 -SO	E-5	NC	B	.999	SO3	SO	D	FST	CS	CS-02B	
FUNCTION : REACTOR RECIRC - FLANGE LEAK DETECTOR DRAIN LINE SOLENOID											
0220-054	E-6	1	A/C	1.000	XFC	SA	SYS	AT-02 CTC	RR RR	RV-00B	
FUNCTION : RX PS-1-261-20 & PI-1-261-21 EXCESS FLOW CK VLV											
0263-2-011	E-6	1	A/C	1.000	XFC	SA	SYS	AT-02 CTC	RR RR	RV-00B	
FUNCTION : RX LT-1-263-61 HI SIDE EXCESS FLOW CK VLV											
0263-2-013A	D-6	1	A/C	1.000	XFC	SA	SYS	AT-02 CTC	RR RR	RV-00B	
FUNCTION : RX LT-1-263-57 HI SIDE EXCESS FLOW CK VLV											
0263-2-013B	D-3	1	A/C	1.000	XFC	SA	SYS	AT-02 CTC	RR RR	RV-00B	
FUNCTION : RX LT-1-263-58 HI SIDE EXCESS FLOW CK VLV											
0263-2-015A	D-6	1	A/C	1.000	XFC	SA	SYS	AT-02 CTC	RR RR	RV-00B	
FUNCTION : RX LT-1-263-57 LO SIDE EXCESS FLOW CK VLV											
0263-2-015B	D-3	1	A/C	1.000	XFC	SA	SYS	AT-02 CTC	RR RR	RV-00B	
FUNCTION : RX LT-1-263-58 LO SIDE EXCESS FLOW CK VLV											
0263-2-017A	D-6	1	A/C	1.000	XFC	SA	SYS	AT-02 CTC	RR RR	RV-00B	
FUNCTION : RX LT-1-646A & LT-1-263-23A LO SIDE EXCESS FLOW CK VLV											
0263-2-017B	D-3	1	A/C	1.000	XFC	SA	SYS	AT- CTC	RR RR	RV-00B	
FUNCTION : RX LT-1-646B & LT-1-263-23B LO SIDE EXCESS FLOW CK VLV											
0263-2-019A	C-6	1	A/C	1.000	XFC	SA	SYS	AT-02 CTC	RR RR	RV-00B	
FUNCTION : RX LT-1-646A & PT-1-647A HI SIDE EXCESS FLOW CK VLV											
0263-2-019B	C-3	1	A/C	1.000	XFC	SA	SYS	AT-02 CTC	RR RR	RV-00B	
FUNCTION : RX LT-1-646B & PI-1-647B HI SIDE EXCESS FLOW CK VLV											
0263-2-020A	B-6	1	A/C	1.000	XFC	SA	SYS	AT-02 CTC	RR RR	RV-00B	
FUNCTION : JET PMP 1 FT-1-263-63A HI SIDE EXCESS FLOW CK VLV											

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0077-1
DRAWING TITLE : NUCLEAR BOILER & REACTOR RECIRCULATION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0263-2-020B	B-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : JET PMP 6 FT-1-263-63B HI SIDE EXCESS FLOW CK VLV										
0263-2-020C	B-3	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : JET PMP 11 FT-1-263-63C HI SIDE EXCESS FLOW CK VLV										
0263-2-020D	B-3	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : JET PMP 16 FT-1-263-63D HI SIDE EXCESS FLOW CK VLV										
0263-2-023A	C-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : JET PMP 1 FT-1-263-63A LO SIDE EXCESS FLOW CK VLV										
0263-2-023B	C-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : JET PMP 6 FT-1-263-63B LO SIDE EXCESS FLOW CK VLV										
0263-2-023C	B-3	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : JET PMP 11 FT-1-263-63C LO SIDE EXCESS FLOW CK VLV										
0263-2-023D	B-3	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : JET PMP 16 FT-1-263-63D LO SIDE EXCESS FLOW CK VLV										
0263-2-025	B-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : RX CORE PLATE DPT-1-263-62 LO SIDE EXCESS FLOW CK VLV										
0263-2-027	A-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : RX CORE PLATE DPT-1-263-62 HI SIDE EXCESS FLOW CK VLV										
0263-2-031B	C-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : JET PMP 2 FT-1-263-64B LO SIDE EXCESS FLOW CK VLV										
0263-2-031C	C-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : JET PMP 3 FT-1-263-64C LO SIDE EXCESS FLOW CK VLV										
0263-2-031D	C-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : JET PMP 4 FT-1-263-64D LO SIDE EXCESS FLOW CK VLV										
0263-2-031E	C-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : JET PMP 5 FT-1-263-64E LO SIDE EXCESS FLOW CK VLV										

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0077-1
DRAWING TITLE : NUCLEAR BOILER & REACTOR RECIRCULATION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0263-2-031G	C-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : JET PMP 7 FT-1-263-64G LO SIDE EXCESS FLOW CK VLV										
0263-2-031H	C-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : JET PMP 8 FT-1-263-64H LO SIDE EXCESS FLOW CK VLV										
0263-2-031J	C-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : JET PMP 9 FT-1-263-64J LO SIDE EXCESS FLOW CK VLV										
0263-2-031K	C-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : JET PMP 10 FT-1-263-64K LO SIDE EXCESS FLOW CK VLV										
0263-2-031M	C-3	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : JET PMP 13 FT-1-263-64M LO SIDE EXCESS FLOW CK VLV										
0263-2-031N	C-3	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : JET PMP 13 FT-1-263-64N LO SIDE EXCESS FLOW CK VLV										
0263-2-031P	C-3	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : JEP PMP 14 FT-1-264-64P LO SIDE EXCESS FLOW CK VLV										
0263-2-031R	C-3	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : JEP PMP 15 FT-1-263-64R LO SIDE EXCESS FLOW CK VLV										
0263-2-031T	C-3	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : JET PMP 17 FT-1-263-64T LO SIDE EXCESS FLOW CK VLV										
0263-2-031U	C-3	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : JET PMP 18 FT-1-263-64U LO SIDE SHUTOFF VLV										
0263-2-031V	C-3	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : JET PMP 19 FT-1-263-64V LO SIDE EXCESS FLOW CK VLV										
0263-2-031W	C-3	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : JET PMP 20 FT-1-263-64W LO SIDE EXCESS FLOW CK VLV										
0263-2-033	B-3	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : RECIRC LOOP JET PMP FT LO SIDE EXCESS FLOW CK VLV										

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0077-1
DRAWING TITLE : NUCLEAR BOILER & REACTOR RECIRCULATION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0263-2-042A	C-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : RX LT-1-263-73A HI SIDE EXCESS FLOW CK VLV										
0263-2-042B	C-3	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : RX LT-1-263-73B HI SIDE EXCESS FLOW CK VLV										

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0077-2
DRAWING TITLE : NUCLEAR BOILER & REACTOR RECIRCULATION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0202-005A-MO	D-6	1	B	28.000	GA	MO	O	BTC PIT	CS Y2	CS-02A	
FUNCTION : REACTOR RECIRCULATION - RECIRC. PUMP DISCHARGE VALVE											
0202-005B-MO	D-3	1	B	28.000	GA	MO	O	BTC PIT	CS Y2	CS-02A	
FUNCTION : REACTOR RECIRCULATION - RECIRC. PUMP DISCHARGE VALVE											
0220-019A	B-6	1	A/C	1.000	XFC	SA	SYS	AT-02 CTC	RR RR	RV-00B	
FUNCTION : RECIRC PMP DPT-1-261-5A LO SIDE EXCESS FLOW CK VLV											
0220-019B	B-3	1	A/C	1.000	XFC	SA	SYS	AT-02 CTC	RR RR	RV-00B	
FUNCTION : RECIRC PMP DPT-1-261-5B LO SIDE EXCESS FLOW CK VLV											
0220-020A	B-6	1	A/C	1.000	XFC	SA	SYS	AT-02 CTC	RR RR	RV-00B	
FUNCTION : RECIRC PMP DPT-1-261-5A HI SIDE EXCESS FLOW CK VLV											
0220-020B	B-3	1	A/C	1.000	XFC	SA	SYS	AT-02 CTC	RR RR	RV-00B	
FUNCTION : RECIRC PMP DPT-1-261-5B HI SIDE EXCESS FLOW CK VLV											
0220-021A	D-8	1	A/C	1.000	XFC	SA	SYS	AT-02 CTC	RR RR	RV-00B	
FUNCTION : RECIRC PMP FT-1-261-6A LO SIDE EXCESS FLOW CK VLV											
0220-021B	D-1	1	A/C	1.000	XFC	SA	SYS	AT-02 CTC	RR RR	RV-00B	
FUNCTION : RECIRC PMP FT-1-261-6C LO SIDE EXCESS FLOW CK VLV											
0220-022A	D-8	1	A/C	1.000	XFC	SA	SYS	AT-02 CTC	RR RR	RV-00B	
FUNCTION : RECIRC PMP FT-1-261-6A HI SIDE EXCESS FLOW CK VLV											
0220-022B	D-1	1	A/C	1.000	XFC	SA	SYS	AT-02 CTC	RR RR	RV-00B	
FUNCTION : RECIRC PMP FT-1-261-6C HI SIDE EXCESS FLOW CK VLV											
0220-044	E-5	1	A	.750	GL	AO	O/FC	AT-01 BTC FST PIT	RR M3 M3 Y2		
FUNCTION : REACTOR RECIRCULATION - REACTOR WATER SAMPLE LINE ISOLATION											
0220-044 -SO	E-5	NC	B	.001	SO3	SO	E	BTD FST	M3 M3		
FUNCTION : REACTOR RECIRCULATION - CONTROL SOLENOID											

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0077-2
DRAWING TITLE : NUCLEAR BOILER & REACTOR RECIRCULATION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0220-045	E-7	1	A	.750	GL	AO	O/FC	AT-O1	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : REACTOR RECIRCULATION - REACTOR WATER SAMPLE LINE ISOLATION											
0220-045 -SO	D-7	NC	B	.001	SO3	SO	E	BTD	M3		
								FST	M3		
FUNCTION : REACTOR RECIRCULATION - CONTROL SOLENOID											
0220-067A	F-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : RECIRC LOOP DPIS-1-261-34A A EXCESS FLOW CK VLV											
0220-067B	F-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : RECIRC LOOP DPIS-1-261-34A B EXCESS FLOW CK VLV											
0220-067C	F-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : RECIRC LOOP DPIS-1-261-34C A EXCESS FLOW CK VLV											
0220-067D	F-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : RECIRC LOOP DPIS-1-261-34C B EXCESS FLOW CK VLV											
0220-067E	E-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : RECIRC LOOP DPIS-1-261-34B A EXCESS FLOW CK VLV											
0220-067F	F-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : RECIRC LOOP DPIS-1-261-34B B EXCESS FLOW CK VLV											
0220-067G	E-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : RECIRC LOOP DPIS-1-261-34D A EXCESS FLOW CK VLV											
0220-067H	F-6	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : RECIRC LOOP DPIS-1-261-34D B EXCESS FLOW CK VLV											
0220-089A	E-1	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : RECIRC PMP SUCT PS-1-261-23A EXCESS FLOW CK VLV											
0220-089B	E-1	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : RECIRC PMP SUCT PS-1-261-23B EXCESS FLOW CK VLV											

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0077-2
DRAWING TITLE : NUCLEAR BOILER & REACTOR RECIRCULATION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0262-2-005A	B-7	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : RECIRC PMP SEAL CAVITY 2 PI/PT EXCESS FLOW CK VLV										
0262-2-005B	B-2	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : RECIRC PMP SEAL CAVITY 2 PI/PT EXCESS FLOW CK VLV										
0262-2-006A	B-7	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : RECIRC PMP SEAL CAVITY 1 PI/PT EXCESS FLOW CK VLV										
0262-2-006B	B-2	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
	FUNCTION : RECIRC PMP SEAL CAVITY 1 PI/PT EXCESS FLOW CK VLV										

Table 1.0-B
UNIT 2 VALVE LISTING

DRAWING : M-007B
DRAWING TITLE : CORE SPRAY PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
1001-018B-MO	C-3	2	B	3.000	GA	MO	C	BTC	M3		
								BTO	M3		
								PIT	Y2		
	FUNCTION : RHR - MINIMUM FLOW RECIRCULATION RETURN LINE ISOLATION										
1402-003A-MO	F-7	2	B	18.000	GA	MO	O	BTO	M3		
								PIT	Y2		
	FUNCTION : CORE SPRAY - SUPPRESSION POOL SUCTION LINE ISOLATION										
1402-003B-MO	F-5	2	B	18.000	GA	MO	O	BTO	M3		
								PIT	Y2		
	FUNCTION : CORE SPRAY - SUPPRESSION POOL SUCTION LINE ISOLATION										
1402-004A-MO	B-8	2	B	8.000	GL	MO	C	BTC	M3		
								PIT	Y2		
	FUNCTION : CORE SPRAY - FULL FLOW TEST RETURN TO THE SUPPRESSION POOL										
1402-004B-MO	C-8	2	B	8.000	GL	MO	C	BTC	M3		
								PIT	Y2		
	FUNCTION : CORE SPRAY - FULL FLOW TEST RETURN TO THE SUPPRESSION POOL										
1402-008A	E-9	2	C	12.000	SCK	SA	C/LO	CTO	M3		
	FUNCTION : CORE SPRAY - PUMP DISCHARGE BACKFLOW PREVENTION										
1402-008B	E-6	2	C	12.000	SCK	SA	C/LO	CTO	M3		
	FUNCTION : CORE SPRAY - PUMP DISCHARGE BACKFLOW PREVENTION										
1402-009A-AO	C-3	1	A/C	10.000	CK	AO	SYS	CTC	CS	CS-00A	
								CTO	CS	CS-00A	
								PIT	Y2		
	FUNCTION : CORE SPRAY - REACTOR VESSEL INJECTION CHECK VALVE										
1402-009B-AO	C-4	1	A/C	10.000	CK	AO	SYS	CTC	CS	CS-00A	
								CTO	CS	CS-00A	
								PIT	Y2		
	FUNCTION : CORE SPRAY - REACTOR VESSEL INJECTION CHECK VALVE										
1402-013A	E-10	2	C	1.500	SCK	SA	C/LO	CTO	M3		
	FUNCTION : CORE SPRAY - MINIMUM FLOW RECIR. LINE BACKFLOW PREVENTION										
1402-013B	E-6	2	C	1.500	SCK	SA	C/LO	CTO	M3		
	FUNCTION : CORE SPRAY - MINIMUM FLOW RECIR. LINE BACKFLOW PREVENTION										
1402-024A-MO	B-2	2	A	10.000	GA	MO	O	AT-01	RR		
								BTC	M3		
								BTO	M3		
								PIT	Y2		
	FUNCTION : CORE SPRAY - INJECTION LINE ISOLATION VALVE										

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-007B
DRAWING TITLE : CORE SPRAY PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
1402-024B-MO	B-5	2	A	10.000	GA	MO	O	AT-O1	RR		
								BTC	M3		
								BTO	M3		
								PIT	Y2		
FUNCTION : CORE SPRAY - INJECTION LINE ISOLATION VALVE											
1402-025A-MO	C-2	1	A	10.000	GA	MO	C	AT-O1	RR		
								BTC	M3		
								BTO	M3		
								PIT	Y2		
FUNCTION : CORE SPRAY - REACTOR VESSEL INJECTION MOTOR OPERATED VALVE											
1402-025B-MO	C-5	1	A	10.000	GA	MO	C	AT-O1	RR		
								BTC	M3		
								BTO	M3		
								PIT	Y2		
FUNCTION : CORE SPRAY - REACTOR VESSEL INJECTION MOTOR OPERATED VALVE											
1402-028A-RV	C-9	2	C	2.000	RV	SA	C	CT-SP	YA		
FUNCTION : CORE SPRAY - CLASS 2 DISCHARGE LINE OVERPRESSURE PROTECTION											
1402-028B-RV	D-6	2	C	2.000	RV	SA	C	CT-SP	YA		
FUNCTION : CORE SPRAY - CLASS 2 DISCHARGE LINE OVERPRESSURE PROTECTION											
1402-031A	D-3	1	A/C	.750	XFC	SA	SYS	AT-O2	RR		
								CTC	RR	RV-00B	
FUNCTION : CORE SPRAY PMP DPIS-1-1459A LO SIDE EXCESS FLOW CK VLV											
1402-031B	D-4	1	A/C	.750	XFC	SA	SYS	AT-O2	RR		
								CTC	RR	RV-00B	
FUNCTION : CORE SPRAY PMP DPIS-1-1459B LO SIDE EXCESS FLOW CK VLV											
1402-038A-MO	D-8	2	B	1.500	GA	MO	C	BTC	M3		
								BTO	M3		
								PIT	Y2		
FUNCTION : CORE SPRAY - MINIMUM FLOW RECIRCULATION LINE ISOLATION											
1402-038B-MO	E-7	2	B	1.500	GA	MO	C	BTC	M3		
								BTO	M3		
								PIT	Y2		
FUNCTION : CORE SPRAY - MINIMUM FLOW RECIRCULATION LINE ISOLATION											
1402-070	E-7	2	C	1.500	CK	SA	SYS	CTC	SA	RV-00F	
FUNCTION : CORE SPRAY - CONDENSATE MAKE-UP TRANSFER LINE ISOLATION											

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0079
DRAWING TITLE : RESIDUAL HEAT REMOVAL SYSTEM PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
1001-007A-MO	B-6	2	B	14.000	GA	MO	O/KL	BTO PIT	M3 Y2		
FUNCTION : RHR - SUPPRESSION POOL SUCTION LINE ISOLATION											
1001-007B-MO	E-6	2	B	14.000	GA	MO	O/KL	BTO PIT	M3 Y2		
FUNCTION : RHR - SUPPRESSION POOL SUCTION LINE ISOLATION											
1001-007C-MO	B-6	2	B	14.000	GA	MO	O/KL	BTO PIT	M3 Y2		
FUNCTION : RHR - SUPPRESSION POOL SUCTION LINE ISOLATION											
1001-007D-MO	E-6	2	B	14.000	GA	MO	O/KL	BTO PIT	M3 Y2		
FUNCTION : RHR - SUPPRESSION POOL SUCTION LINE ISOLATION											
1001-043A-MO	B-4	2	B	14.000	GA	MO	C/KL	BTC PIT	CS Y2	CS-10B	
FUNCTION : RHR - SHUTDOWN COOLING SUCTION ISOLATION											
1001-043B-MO	E-4	2	B	14.000	GA	MO	C/KL	BTC PIT	CS Y2	CS-10B	
FUNCTION : RHR - SHUTDOWN COOLING SUCTION ISOLATION											
1001-043C-MO	B-8	2	B	14.000	GA	MO	C/KL	BTC PIT	CS Y2	CS-10B	
FUNCTION : RHR - SHUTDOWN COOLING SUCTION ISOLATION											
1001-043D-MO	D-8	2	B	14.000	GA	MO	C/KL	BTC PIT	CS Y2	CS-10B	
FUNCTION : RHR - SHUTDOWN COOLING SUCTION ISOLATION											
1001-067A	B-3	2	C	12.000	CK	SA	SYS	CTC CTO	M3 M3		
FUNCTION : RHR - PUMP DISCHARGE BACKFLOW PREVENTION											
1001-067B	E-3	2	C	12.000	CK	SA	SYS	CTC CTO	M3 M3		
FUNCTION : RHR - PUMP DISCHARGE BACKFLOW PREVENTION											
1001-067C	B-9	2	C	12.000	CK	SA	SYS	CTC CTO	M3 M3		
FUNCTION : RHR - PUMP DISCHARGE BACKFLOW PREVENTION											
1001-067D	E-9	2	C	12.000	CK	SA	SYS	CTC CTO	M3 M3		
FUNCTION : RHR - PUMP DISCHARGE BACKFLOW PREVENTION											
1001-125A-RV	B-5	2	C	1.000	RV	SA	C	CT-SP	YA		
FUNCTION : RHR - PUMP SUCTION OVERPRESSURE PROTECTION											

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0079
DRAWING TITLE : RESIDUAL HEAT REMOVAL SYSTEM PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
1001-125B-RV	E-5	2	C	1.000	RV	SA	C	CT-SP	YA		
	FUNCTION : RHR - PUMP SUCTION OVERPRESSURE PROTECTION										
1001-125C-RV	B-7	2	C	1.000	RV	SA	C	CT-SP	YA		
	FUNCTION : RHR - PUMP SUCTION OVERPRESSURE PROTECTION										
1001-125D-RV	E-7	2	C	1.000	RV	SA	C	CT-SP	YA		
	FUNCTION : RHR - PUMP SUCTION OVERPRESSURE PROTECTION										
1001-142A	B-3	2	C	2.000	CK	SA	SYS	CTC CTO	M3 M3		
	FUNCTION : RHR - MINIMUM FLOW RECIRCULATION LINE BACKFLOW PREVENTION										
1001-142B	E-3	2	C	2.000	CK	SA	SYS	CTC CTO	M3 M3		
	FUNCTION : RHR - MINIMUM FLOW RECIRCULATION LINE BACKFLOW PREVENTION										
1001-142C	B-9	2	C	2.000	CK	SA	SYS	CTC CTO	M3 M3		
	FUNCTION : RHR - MINIMUM FLOW RECIRCULATION LINE BACKFLOW PREVENTION										
1001-142D	E-9	2	C	2.000	CK	SA	SYS	CTC CTO	M3 M3		
	FUNCTION : RHR - MINIMUM FLOW RECIRCULATION LINE BACKFLOW PREVENTION										
1001-165A-RV	A-2	3	C	4.000	RV	SA	C	CT-SP	YA		
	FUNCTION : RHR - HEAT EXCHANGER THERMAL RELIEF VALVES										
1001-165B-RV	A-10	3	C	4.000	RV	SA	C	CT-SP	YA		
	FUNCTION : RHR - HEAT EXCHANGER THERMAL RELIEF VALVES										
1001-166A-RV	A-2	2	C	1.000	RV	SA	C	CT-SP	YA		
	FUNCTION : RHR - HEAT EXCHANGER THERMAL RELIEF VALVES										
1001-166B-RV	A-10	2	C	1.000	RV	SA	C	CT-SP	YA		
	FUNCTION : RHR - HEAT EXCHANGER THERMAL RELIEF VALVES										

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0081-1
DRAWING TITLE : RESIDUAL HEAT REMOVAL SYSTEM PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
1001-016A-MO	A-7	2	B	18.000	GL	MO	O	BTC	M3		
								BTO	M3		
								PIT	Y2		
FUNCTION : RHR HEAT EXCHANGER BYPASS LINE ISOLATION											
1001-016B-MO	A-2	2	B	18.000	GL	MO	O	BTC	M3		
								BTO	M3		
								PIT	Y2		
FUNCTION : RHR HEAT EXCHANGER BYPASS LINE ISOLATION											
1001-018A-MO	C-6	2	B	3.000	GA	MO	C	BTC	M3		
								BTO	M3		
								PIT	Y2		
FUNCTION : RHR - MINIMUM FLOW RECIRCULATION RETURN LINE ISOLATION											
1001-019A-MO	B-8	2	B	18.000	GA	MO	O/KL	BTC	CS	CS-10B	
								BTO	CS	CS-10B	
								PIT	Y2		
FUNCTION : RHR - CROSS TIE LINE ISOLATION											
1001-019B-MO	B-2	2	B	18.000	GA	MO	O/KL	BTC	CS	CS-10B	
								BTO	CS	CS-10B	
								PIT	Y2		
FUNCTION : RHR - CROSS TIE LINE ISOLATION											
1001-020 -MO	B-7	2	B	3.000	GA	MO	C	BTC	M3		
								BTO	M3		
								PIT	Y2		
FUNCTION : RHR - TRANSFER LINE TO RADWASTE ISOLATION											
1001-021 -MO	C-7	NC	B	3.000	GA	MO	C	BTC	M3		
								BTO	M3		
								PIT	Y2		
FUNCTION : RHR - TRANSFER LINE TO RADWASTE ISOLATION											
1001-022A-RV	E-8	2	C	1.000	RV	SA	C	CT-SP	YA		
FUNCTION : RHR - RHR PUMP DISCHARGE OVERPRESSURE PROTECTION											
1001-022B-RV	E-2	2	C	1.000	RV	SA	C	CT-SP	YA		
FUNCTION : RHR - RHR PUMP DISCHARGE OVERPRESSURE PROTECTION											
1001-023A-MO	E-6	2	B	10.000	GA	MO	C	BTC	M3		
								PIT	Y2		
FUNCTION : RHR - DRYWELL SPRAY MOTOR OPERATED ISOLATION VALVE											
1001-023B-MO	E-3	2	B	10.000	GA	MO	C	BTC	M3		
								PIT	Y2		
FUNCTION : RHR - DRYWELL SPRAY MOTOR OPERATED ISOLATION VALVE											

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0081-1
DRAWING TITLE : RESIDUAL HEAT REMOVAL SYSTEM PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
1001-026A-MO	E-5	2	B	10.000	GA	MO	C	BTC PIT	M3 Y2		
FUNCTION : RHR - DRYWELL SPRAY MOTOR OPERATED ISOLATION VALVE											
1001-026B-MO	E-4	2	B	10.000	GA	MO	C	BTC PIT	M3 Y2		
FUNCTION : RHR - DRYWELL SPRAY MOTOR OPERATED ISOLATION VALVE											
1001-028A-MO	E-6	2	B	16.000	GL	MO	O	BTC BTO PIT	M3 M3 Y2		
FUNCTION : RHR - REACTOR VESSEL INJECTION MOTOR OPERATED VALVE											
1001-028B-MO	E-3	2	B	16.000	GL	MO	O	BTC BTO PIT	M3 M3 Y2		
FUNCTION : RHR - REACTOR VESSEL INJECTION MOTOR OPERATED VALVE											
1001-029A-MO	E-6	1	A	16.000	GA	MO	C	BTC BTO PIT	M3 M3 Y2		
FUNCTION : RHR - REACTOR VESSEL INJECTION MOTOR OPERATED VALVE											
1001-029B-MO	E-3	1	A	16.000	GA	MO	C	BTC BTO PIT	M3 M3 Y2		
FUNCTION : RHR - REACTOR VESSEL INJECTION MOTOR OPERATED VALVE											
1001-034A-MO	E-7	2	B	16.000	GA	MO	C	BTC BTO PIT	M3 M3 Y2		
FUNCTION : RHR - SUPPRESSION POOL COOLING AND SPRAY ISOLATION VALVE											
1001-034B-MO	E-3	2	B	16.000	GA	MO	C	BTC BTO PIT	M3 M3 Y2		
FUNCTION : RHR - SUPPRESSION POOL COOLING AND SPRAY ISOLATION VALVE											
1001-036A-MO	E-7	2	B	14.000	GL	MO	C	BTC BTO PIT	M3 M3 Y2		
FUNCTION : RHR - SUPPRESSION POOL COOLING MOTOR OPERATED ISOLATION VLV.											
1001-036B-MO	D-3	2	B	14.000	GL	MO	C	BTC BTO PIT	M3 M3 Y2		
FUNCTION : RHR - SUPPRESSION POOL COOLING MOTOR OPERATED ISOLATION VLV.											
1001-037A-MO	E-7	2	B	6.000	GL	MO	C	BTC PIT	M3 Y2		
FUNCTION : RHR - SUPPRESSION POOL SPRAY MOTOR OPERATED ISOLATION VALVE											

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0081-1
DRAWING TITLE : RESIDUAL HEAT REMOVAL SYSTEM PIPING

VALVE NUMBER	DWG COOR	1ST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
1001-037B-MO	D-3	2	B	6.000	GL	MO	C	BTC PIT	M3 Y2		
	FUNCTION : RHR - SUPPRESSION POOL SPRAY MOTOR OPERATED ISOLATION VALVE										
1001-047 -MO	C-4	1	A	20.000	GA	MO	C	AT-01 BTC PIT	RR CS Y2	CS-10A	
	FUNCTION : RHR - SHUTDOWN COOLING MOTOR OPERATED ISOLATION VALVE										
1001-050 -MO	D-4	1	A	20.000	GA	MO	C	AT-01 BTC PIT	RR CS Y2	CS-10A	
	FUNCTION : RHR - SHUTDOWN COOLING MOTOR OPERATED ISOLATION VALVE										
1001-059	F-3	2	C	1.000	RV	SA	C	CT-SP	YA		
	FUNCTION : RHR - RHR DISCHARGE PIPING OVERPRESSURE PROTECTION										
1001-068A-AO	E-5	1	A/C	16.000	CK	AO	SYS	CTC CTO PIT	CS CS Y2	CS-00A CS-00A	
	FUNCTION : RHR - REACTOR VESSEL INJECTION CHECK VALVE										
1001-068B-AO	E-4	1	A/C	16.000	CK	AO	SYS	CTC CTO PIT	CS CS Y2	CS-00A CS-00A	
	FUNCTION : RHR - REACTOR VESSEL INJECTION CHECK VALVE										
1001-131	B-2	2	C	3.000	CK	SA	SYS	CTC	SA	RV-00F	
	FUNCTION : RHR - CONDENSATE MAKE-UP TRANSFER LINE ISOLATION										
1001-136A	D-8	2	C	3.000	CK	SA	SYS	CTC	SA	RV-00F	
	FUNCTION : RHR - CONDENSATE MAKE-UP TRANSFER LINE ISOLATION										
1001-136B	E-2	2	C	3.000	CK	SA	SYS	CTC	SA	RV-00F	
	FUNCTION : RHR - CONDENSATE MAKE-UP TRANSFER LINE ISOLATION										

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-00B1-2
DRAWING TITLE : RESIDUAL HEAT REMOVAL SYSTEM PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
1001-002A	C-7	3	C	12.000	CK	SA	SYS	CTC CTO	M3 M3		
	FUNCTION : RHR(SW) - PUMP DISCHARGE CHECK VALVE										
1001-002B	B-7	3	C	12.000	CK	SA	SYS	CTC CTO	M3 M3		
	FUNCTION : RHR(SW) - PUMP DISCHARGE CHECK VALVE										
1001-002C	D-2	3	C	12.000	CK	SA	SYS	CTC CTO	M3 M3		
	FUNCTION : RHR(SW) - PUMP DISCHARGE CHECK VALVE										
1001-002D	B-2	3	C	12.000	CK	SA	SYS	CTC CTO	M3 M3		
	FUNCTION : RHR(SW) - PUMP DISCHARGE CHECK VALVE										
1001-005A-MO	E-6	3	B	12.000	GL	MO	C	BTO	M3		
	FUNCTION : RHR(SW) - FLOW CONTROL VALVE										
1001-005B-MO	E-3	3	B	12.000	GL	MO	C	BTO	M3		
	FUNCTION : RHR(SW) - FLOW CONTROL VALVE										

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0082
DRAWING TITLE : STANDBY LIQUID CONTROL PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
1101-015	C-3	1	A/C	1.500	CK	SA	SYS	AT-01	RR		
								CTC	RR	RV-11A	
								CTO	RR	RV-11A	
								CTOP	CS	RV-11A	
FUNCTION : SBLC - INJECTION LINE CHECK VALVE											
1101-016	C-4	1	A/C	1.500	CK	SA	SYS	AT-01	RR		
								CTC	RR	RV-11A	
								CTO	RR	RV-11A	
								CTOP	CS	RV-11A	
FUNCTION : SBLC - PRIMARY CONTAINMENT ISOLATION (CHECK) VALVE											
1101-043A	D-6	2	C	1.500	CK	SA	SYS	CTC	M3		
								CTO	M3		
FUNCTION : SBLC - PUMP DISCHARGE CHECK VALVE											
1101-043B	E-6	2	C	1.500	CK	SA	SYS	CTC	M3		
								CTO	M3		
FUNCTION : SBLC - PUMP DISCHARGE CHECK VALVE											
1105- A-RV	C-7	2	C	1.500	RV	SA	C	CT-SP	YA		
FUNCTION : SBLC - RELIEF VALVE FOR OVERPRESSURIZATION PROTECTION											
1105- B-RV	E-6	2	C	1.500	RV	SA	C	CT-SP	YA		
FUNCTION : SBLC - RELIEF VALVE FOR OVERPRESSURIZATION PROTECTION											
1106- A	C-4	2	D	1.500	SHR	EXP	C/KL	DT-E	S2		
FUNCTION : SBLC - EXPLOSIVE ACTUATED (SQUIB) VALVE											
1106- B	D-4	2	D	1.500	SHR	EXP	C/KL	DT-E	S2		
FUNCTION : SBLC - EXPLOSIVE ACTUATED (SQUIB) VALVE											

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0083-1
DRAWING TITLE : CONTROL ROD DRIVE HYDRAULIC PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0302-020A	C-8	NC	B	.500	SO3	SO	E	BTD FST	CS CS	CS-03B CS-03B	
FUNCTION : CRD SCRAM DUMP (SOLENOID) VALVES											
0302-020B	E-8	NC	B	.500	SO3	SO	E	BTD FST	CS CS	CS-03B CS-03B	
FUNCTION : CRD SCRAM DUMP (SOLENOID) VALVES											
0302-021A	E-6	2	B	1.000	DIA	AO	C/FC	BTC FST PIT	M3 M3 Y2		
FUNCTION : CRD SCRAM DISCHARGE VOLUME VENT (SDV)											
0302-021B	E-6	NC	B	1.000	DIA	AO	C/FC	BTC FST PIT	M3 M3 Y2		
FUNCTION : CRD SCRAM DISCHARGE VOLUME VENT (SDV)											
0302-021C	F-1	2	B	1.000	DIA	AO	C/FC	BTC FST PIT	M3 M3 Y2		
FUNCTION : CRD SCRAM DISCHARGE VOLUME VENT (SDV)											
0302-021D	F-1	NC	B	1.000	DIA	AO	C/FC	BTC FST PIT	M3 M3 Y2		
FUNCTION : CRD SCRAM DISCHARGE VOLUME VENT (SDV)											
0302-022A	F-5	2	B	2.000	DIA	AO	C/FC	BTC FST PIT	M3 M3 Y2		
FUNCTION : CRD SCRAM DISCHARGE VOLUME (SDV) DRAIN											
0302-022B	F-5	NC	B	2.000	DIA	AO	C/FC	BTC FST PIT	M3 M3 Y2		
FUNCTION : CRD SCRAM DISCHARGE VOLUME (SDV) DRAIN											
0302-022C	F-3	2	B	2.000	DIA	AO	C/FC	BTC FST PIT	M3 M3 Y2		
FUNCTION : CRD SCRAM DISCHARGE VOLUME (SDV) DRAIN											
0302-022D	F-2	NC	B	2.000	DIA	AO	C/FC	BTC FST PIT	M3 M3 Y2		
FUNCTION : CRD SCRAM DISCHARGE VOLUME (SDV) DRAIN											
0302-025A	E-7	NC	B	1.000	SO3	SO	D	BTE	CS	CS-03B	
FUNCTION : CRD ALTERNATE ROD INJECTION SCRAM (SOLENOID) VALVES											

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0083-1
DRAWING TITLE : CONTROL ROD DRIVE HYDRAULIC PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0302-025B	E-7	NC	B	1.000	SO3	SO	D	BTE	CS	CS-03B	
FUNCTION : CRD ALTERNATE ROD INJECTION SCRAM (SOLENOID) VALVES											
0302-181A	E-8	NC	B	1.000	SO2	SO	C/FO	BTO	CS	CS-03B	
								FST	CS	CS-03B	
FUNCTION : CRD ALTERNATE ROD INJECTION SCRAM (SOLENOID) VALVES											
0302-181B	E-8	NC	B	1.000	SO2	SO	C/FO	BTO	CS	CS-03B	
								FST	CS	CS-03B	
FUNCTION : CRD ALTERNATE ROD INJECTION SCRAM (SOLENOID) VALVES											
0302-182A	F-8	NC	B	1.000	SO2	SO	C/FO	BTO	CS	CS-03B	
								FST	CS	CS-03B	
FUNCTION : CRD ALTERNATE ROD INJECTION SCRAM (SOLENOID) VALVES											
0302-182B	F-8	NC	B	1.000	SO2	SO	C/FO	BTO	CS	CS-03B	
								FST	CS	CS-03B	
FUNCTION : CRD ALTERNATE ROD INJECTION SCRAM (SOLENOID) VALVES											
0305-000_-RPD	E-10	1	D	.250	RPD	SA	C	DT-M	Y5		
FUNCTION : CRD ACCUMULATOR RUPTURE DISK (TYPICAL OF 177)											
0305-114	E-9	2	C	.750	CK	SA	SYS	CTC	RR	RV-03A	TV-03A
								CTO	RR	RV-03A	
FUNCTION : CRD HCU BACKFLOW PROTECTON (TYP. OF 177)											
0305-115	E-10	1	A/C	.500	CK	SA	SYS	AT-06	Y2		
								CTC	CS	CS-03A	TV-03A
FUNCTION : CRD ACCUMULATOR DISCHARGE BACKFLOW PROTECTON (TYP. OF 177)											
0305-117	E-9	NC	B	.375	SO3	SO	E	BTD	RR	RV-03A	TV-03A
								FST	RR	RV-03A	
FUNCTION : SCRAM PILOT SOLENOID VALVES (TYP. OF 177)											
0305-118	E-9	NC	B	.375	SO3	SO	E	BTD	RR	RV-03A	TV-03A
								FST	RR	RV-03A	
FUNCTION : SCRAM PILOT SOLENOID VALVES (TYP. OF 177)											
0305-120 -FCV	C-10	1	B	1.000	SO2	SO	C/FC	BTC	M3		TV-03A
								FST	M3		
FUNCTION : CRD HCU DIRECTIONAL (WITHDRAW) CONTROL VALVE (TYP. OF 177)											
0305-121 -SO	C-9	1	B	.750	SO2	SO	C/FC	BTC	M3		TV-03A
								FST	M3		
FUNCTION : CRD HCU DIRECTIONAL (INSERT) CONTROL VALVE (TYP. OF 177)											
0305-122 -SO	C-9	1	B	.750	SO2	SO	C/FC	BTC	M3		TV-03A
								FST	M3		
FUNCTION : CRD HCU DIRECTIONAL (WITHDRAW) CONTROL VALVE (TYP. OF 177)											

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0083-1
DRAWING TITLE : CONTROL ROD DRIVE HYDRAULIC PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
0305-123 -FCV	C-10	1	B	1.000	SO2	SO	C/FC	BTC FST	M3 M3		TV-03A
FUNCTION : CRD HCU DIRECTIONAL (INSERT) CONTROL VALVE (TYP. OF 177)											
0305-126 -CV	D-10	1	B	1.000	DIA	AO	C/FO	BTO FST PIT	RR RR Y2	RV-03A RV-03A	TV-03A
FUNCTION : CRD ACCUM. DISCHARGE TO SPEED SCRAM INSERTION (TYP. OF 177)											
0305-127 -CV	D-9	1	B	.750	DIA	AO	C/FO	BTO FST PIT	RR RR Y2	RV-03A RV-03A	TV-03A
FUNCTION : DISCHARGE CRD HCU TO THE SCRAM DISCHARGE VOL.(TYP. OF 177)											
0305-138	C-10	1	C	.500	CK	SA	SYS	CTC	M3		TV-03A
FUNCTION : CRD DRIVE WATER BACKFLOW PROTECTON (TYP. OF 177)											

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0084-1
DRAWING TITLE : OFF GAS PIPNG

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
5401- A-AO	E-8	NC	B	18.000	BTF	AO	O/FC	BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : OFF GAS - CONDENSER ISOLATION VALVE											
5401- A-CK	Z-99	NC	A/C	.001	CK	SA	SYS	AT-06	Y2		
								CTC	CS	CS-54A	
FUNCTION : OFF GAS - CONDENSER ISOLATION VALVE ACCUM. CHECK VALVE											
5401- A-SO	E-7	NC	B	.001	SO4	SO	E	BTD	M3		
								FST	M3		
FUNCTION : OFF GAS - CONDENSER ISOLATION VALVE SOLENOID											
5401- B-AO	E-8	NC	B	18.000	BTF	AO	O/FC	BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : OFF GAS - CONDENSER ISOLATION VALVE											
5401- B-CK	Z-99	NC	A/C	.001	CK	SA	SYS	AT-06	Y2		
								CTC	CS	CS-54A	
FUNCTION : OFF GAS - CONDENSER ISOLATION VALVE ACCUM. CHECK VALVE											
5401- B-SO	E-7	NC	B	.001	SO4	SO	E	BTD	M3		
								FST	M3		
FUNCTION : OFF GAS - CONDENSER ISOLATION VALVE SOLENOID											
5402- A-AO	D-3	NC	B	18.000	GA	AO	O/FC	BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : OFF GAS - CONDENSER ISOLATION VALVE											
5402- A-CK	Z-99	NC	A/C	.001	CK	SA	SYS	AT-06	Y2		
								CTC	CS	CS-54A	
FUNCTION : OFF GAS - CONDENSER ISOLATION VALVE ACCUM. CHECK VALVE											
5402- A-SO	D-2	NC	B	.001	SO4	SO	E	BTD	M3		
								FST	M3		
FUNCTION : OFF GAS - CONDENSER ISOLATION VALVE SOLENOID											
5402- B-AO	D-3	NC	B	18.000	GA	AO	O/FC	BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : OFF GAS - CONDENSER ISOLATION VALVE											
5402- B-CK	Z-99	NC	A/C	.001	CK	SA	SYS	AT-06	Y2		
								CTC	CS	CS-54A	
FUNCTION : OFF GAS - CONDENSER ISOLATION VALVE ACCUM. CHECK VALVE											
5402- B-SO	D-2	NC	B	.001	SO4	SO	E	BTD	M3		
								FST	M3		
FUNCTION : OFF GAS - CONDENSER ISOLATION VALVE SOLENOID											

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0085
DRAWING TITLE : REACTOR BUILDING EQUIPMENT DRAINS

VALVE NUMBER	DWG COOR	1ST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
2001-003 -AO	F-7	NC	A	3.000	PLG	AO	C/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : RX BLDG EQUIP DRNS. - PRIMARY CONTAINMENT ISOLATION VALVE										
2001-003 -SO	F-7	NC	B	.001	SO3	SO	D	BTD	M3		
								FST	M3		
	FUNCTION : RX BLDG EQUIP DRNS. - PRIMARY CONT. ISOLATION VALVE SOLENOID										
2001-004 -AO	F-7	NC	A	3.000	PLG	AO	C/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : RX BLDG EQUIP DRNS. - PRIMARY CONTAINMENT ISOLATION VALVE										
2001-004 -SO	F-7	NC	B	.001	SO3	SO	D	BTD	M3		
								FST	M3		
	FUNCTION : RX BLDG EQUIP DRNS. - PRIMARY CONT. ISOLATION VALVE SOLENOID										
2001-015 -AO	D-4	NC	A	3.000	PLG	AO	C/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : RX BLDG EQUIP DRNS. - PRIMARY CONTAINMENT ISOLATION VALVE										
2001-015 -SO	E-4	NC	B	.001	SO3	SO	D	BTD	M3		
								FST	M3		
	FUNCTION : RX BLDG EQUIP DRNS. - PRIMARY CONT. ISOLATION VALVE SOLENOID										
2001-016 -AO	D-3	NC	A	3.000	PLG	AO	C/FC	AT-01	RR		
								BTC	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : RX BLDG EQUIP DRNS. - PRIMARY CONTAINMENT ISOLATION VALVE										
2001-016 -SO	E-3	NC	B	.001	SO3	SO	D	BTD	M3		
								FST	M3		
	FUNCTION : RX BLDG EQUIP DRNS. - PRIMARY CONT. ISOLATION VALVE SOLENOID										

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0087
DRAWING TITLE : HIGH PRESSURE COOLANT INJECTION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
2301-003 -MO	A-7	2	B	10.000	GA	MO	C	BTO	M3		
								PIT	Y2		
FUNCTION : HPCI STEAM SUPPLY/BLOCKING VALVE, PRE-HEATS THE SUPPLY LINE											
2301-004 -MO	C-9	1	A	10.000	GA	MO	O	AT-01	RR		
								BTC	CS	CS-23A	
								BTO	CS	CS-23A	
								PIT	Y2		
FUNCTION : HPCI STEAM SUPPLY FROM THE REACTOR VESSEL TO THE TURBINE											
2301-005 -MO	B-10	1	A	10.000	GA	MO	O	AT-01	RR		
								BTC	CS	CS-23A	
								BTO	CS	CS-23A	
								PIT	Y2		
FUNCTION : HPCI STEAM SUPPLY FROM THE REACTOR VESSEL TO THE TURBINE											
2301-007 -AO	E-6	2	C	14.000	CK	AO	SYS	CTO	CS	CS-00A	
								PIT	Y2		
FUNCTION : HPCI INJECTION LINE TO FEEDWATER BACKFLOW PREVENTION											
2301-008 -MO	E-6	2	B	14.000	GA	MO	C	BTO	M3		
								PIT	Y2		
FUNCTION : HPCI INJECTION LINE TO FEEDWATER ISOLATION											
2301-009 -MO	E-5	2	B	14.000	GA	MO	O	BTO	M3		
								PIT	Y2		
FUNCTION : HPCI INJECTION LINE TO FEEDWATER ISOLATION											
2301-010 -MO	E-5	2	B	12.000	GL	MO	C	BTC	M3		
								PIT	Y2		
FUNCTION : HPCI FULL FLOW TEST RETURN TO CONDENSATE STORAGE TANK											
2301-014 -MO	C-6	2	B	4.000	GL	MO	C	BTC	M3		
								BTO	M3		
								PIT	Y2		
FUNCTION : HPCI MINIMUM FLOW RECIRCULATION LINE ISOLATION											
2301-020	E-1	2	C	16.000	CK	SA	SYS	CTC	SA	RV-00F	
FUNCTION : HPCI TO CONDENSATE STORAGE TANK BACKFLOW PREVENTION											
2301-023 -RV	A-3	2	C	1.500	RV	SA	C	CT-SP	YA		
FUNCTION : HPCI BOOSTER SUCTION LINE OVERPRESSURE PROTECTION											
2301-026	D-10	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : MAIN STM TO HPCI DP/P HI SIDE EXCESS FLOW CK VLV											
2301-027	D-10	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
FUNCTION : MAIN STM TO HPCI DP/P LO SIDE EXCESS FLOW CK VLV											

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0087
DRAWING TITLE : HIGH PRESSURE COOLANT INJECTION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTUATOR	NORMAL POSITION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
2301-028	B-9	2	B	1.000	GL	AO	C/FO	BTO	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : HPCI STEAM LINE DRAIN POT DISCHARGE TO SUPPRESSION CHAMBER											
2301-028 -SO	B-9	NC	B	.001	SO3	SO	D	BTD	M3		
								FST	M3		
FUNCTION : HPCI STEAM LINE DRAIN POT DISCHARGE TO TORUS SOLENOID											
2301-029	B-10	2	B	1.000	GL	AO	O/FC	BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : HPCI STEAM LINE DRAIN POT DISCHARGE TO THE MAIN CONDENSER											
2301-029 -SO	B-10	NC	B	.001	SO3	SO	D	BTD	M3		
								FST	M3		
FUNCTION : HPCI STEAM LINE DRAIN POT DISCHARGE TO CONDENSER SOLENOID											
2301-030	B-10	NC	B	1.000	GL	AO	O/FC	BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : HPCI STEAM LINE DRAIN POT DISCHARGE TO THE MAIN CONDENSER											
2301-030 -SO	B-10	NC	B	.001	SO3	SO	D	BTD	M3		
								FST	M3		
FUNCTION : HPCI STEAM LINE DRAIN POT DISCHARGE TO CONDENSER SOLENOID											
2301-034	C-8	2	A/C	2.000	CK	SA	SYS	AT-01	RR		
								CTC	RR	RV-23A	
								CTO	SA	RV-00E	
FUNCTION : HPCI, ALL DRAIN POTS, DISCHARGE TO SUPPRESSION CHAMBER											
2301-035 -MO	E-7	2	B	16.000	GA	MO	C	BTO	M3		
								PIT	Y2		
FUNCTION : HPCI SUPPRESSION CHAMBER SUCTION LINE ISOLATION											
2301-036 -MO	E-9	2	B	16.000	GA	MO	C	BTC	M3		
								BTO	M3		
								PIT	Y2		
FUNCTION : HPCI SUPPRESSION CHAMBER SUCTION LINE ISOLATION											
2301-039	E-8	2	C	16.000	CK	SA	SYS	CTO	SA	RV-00E	
								CTOP	C5	RV-00E	
FUNCTION : HPCI SUPPRESSION CHAMBER SUCTION BACKFLOW PREVENTION											
2301-040	D-7	2	C	4.000	CK	SA	SYS	CTO	M3		
FUNCTION : HPCI MINIMUM FLOW RECIRCULATION LINE BACKFLOW PREVENTION											
2301-045	B-8	2	C	24.000	CK	SA	SYS	CTC	RR	RV-23A	
								CTO	M3		
FUNCTION : HPCI TURBINE EXHAUST BACKFLOW PREVENTION											

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0087
DRAWING TITLE : HIGH PRESSURE COOLANT INJECTION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
2301-048 -MO	B-4	2	B	4.000	GA	MO	O	BTO	M3		
								PIT	Y2		
FUNCTION : HPCI LUBE OIL AND GLAND SEAL COOLING WATER RETURN ISOLATION											
2301-049 -MO	E-4	2	B	4.000	GA	MO	C	BTC	M3		
								PIT	Y2		
FUNCTION : HPCI LUBE OIL AND GLAND SEAL COOLING WATER RETURN ISOLATION											
2301-050	C-5	2	C	4.000	CK	SA	SYS	CTO	SA	RV-ODE	
								CTOP	M3	RV-ODE	
FUNCTION : HPCI LUBE OIL COOLER AND GLAND SEAL CONDENSR TO BOOSTER PUMP											
2301-051	C-5	2	C	4.000	CK	SA	SYS	CTC	SA	RV-ODF	
								CTCP	M3	RV-ODF	
FUNCTION : HPCI GLAND SEAL/LUBE OIL COOLING PUMP BACKFLOW PREVENTION											
2301-053 -RV	C-4	2	C	4.000	RV	SA	C	CT-SP	YA		
FUNCTION : HPCI GLAND SEAL/LUBE OIL OVERPRESSURE PROTECTION											
2301-064	A-7	2	B	1.000	GL	AO	O/FC	BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : HPCI TURBINE STOP VALVE ABOVE SEAT DRAIN DISCHARGE											
2301-064 -SO	A-6	NC	B	.001	SO3	SO	D	BTE	M3		
								FST	M3		
FUNCTION : HPCI TURBINE STOP VALVE ABOVE SEAT DRAIN DISCHARGE SOLENOID											
2301-065	A-8	NC	B	1.000	GL	AO	O/FC	BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : HPCI TURBINE STOP VALVE ABOVE SEAT DRAIN DISCHARGE											
2301-065 -SO	A-7	NC	B	.001	SO3	SO	D	BTE	M3		
								FST	M3		
FUNCTION : HPCI TURBINE STOP VALVE ABOVE SEAT DRAIN DISCHARGE SOLENOID											
2301-068	A-6	2	D	16.000	RPD	SA	C	DT-M	Y5		
FUNCTION : HPCI TURBINE EXHAUST LINE RUPTURE DIAPHRAGM											
2301-069	A-6	2	D	16	RPD	SA	C	DT-M	Y5		
FUNCTION : HPCI TURBINE EXHAUST LINE RUPTURE DIAPHRAGM											
2301-071	D-8	2	A/C	.000	SCK	SA	C/LO	AT-01	RR		
								CTC	SA	RV-ODF	
								CTO	SA	RV-ODE	
FUNCTION : HPCI, ALL DRAIN POTS, DISCHARGE TO SUPPRESSION CHAMBER											
2301-074	C-8	2	C	12.000	SCK	SA	C/LO	CTO	M3		
FUNCTION : HPCI TURBINE EXHAUST BACKFLOW PREVENTION											

Table 1.0-B
UNIT 2 VALVE LISTING

DRAWING : M-D087
DRAWING TITLE : HIGH PRESSURE COOLANT INJECTION PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
2301-075	B-4	2	C	4.000	CK	SA	SYS	CTO CTOP	SA M3	RV-D0E RV-D0E	
	FUNCTION : HPCI COST TO GLAND SEAL/LUBE OIL COOLER BACKFLOW PREVENTION										
2301-076	E-4	2	C	2.000	CK	SA	SYS	CTC CTCP	SA M3	RV-D0F RV-D0F	
	FUNCTION : HPCI GLAND SEAL CONDENSER RETURN PUMP BACKFLOW PREVENTION										
2317	A-7	2	B	24.000	PLG	HO	C	BTC BTO PIT	M3 M2 Y2		
	FUNCTION : HPCI TURBINE STOP VALVE										
2399-040- MO	D-8	2	A	4.000	GA	MO	O	AT-D1 BTC BTO	RR M3 M3		
	FUNCTION : HPCI TURBINE EXHAUST VACUUM BREAKER										
2399-041- MO	C-8	2	A	4.000	GA	MO	O	AT-D1 BTC BTO	RR M3 M3		
	FUNCTION : HPCI TURBINE EXHAUST VACUUM BREAKER										
2399-064	C-8	2	C	4.000	CK	SA	SYS	CTC	CS	CS-23B	
	FUNCTION : HPCI TURBINE EXHAUST VACUUM BREAKER										
2399-065	C-8	2	C	4.000	CK	SA	SYS	CTC	CS	CS-23B	
	FUNCTION : HPCI TURBINE EXHAUST VACUUM BREAKER										
2399-066	C-8	2	C	4.000	CK	SA	SYS	CTC	CS	CS-23B	
	FUNCTION : HPCI TURBINE EXHAUST VACUUM BREAKER										
2399-067	C-8	2	C	4.000	CK	SA	SYS	CTC	CS	CS-23B	
	FUNCTION : HPCI TURBINE EXHAUST VACUUM BREAKER										
2901-010	D-7	2	C	4.000	CK	SA	SYS	CTC	SA	RV-D0F	
	FUNCTION : HPCI SAFE SHUTDOWN MAKE-UP TO HPCI BACKFLOW PROTECTION										

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0088
DRAWING TITLE : REACTOR WATER CLEAN-UP PIPING

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
1201-002 -MO	B-6	1	A	6.000	GA	MO	O	AT-01	RR		
								BTC	M3		
								PIT	Y2		
FUNCTION : RWCU - PRIMARY CONTAINMENT ISOLATION VALVE											
1201-005 -MO	B-7	1	A	6.000	GA	MO	O	AT-01	RR		
								BTC	M3		
								PIT	Y2		
FUNCTION : RWCU - PRIMARY CONTAINMENT ISOLATION VALVE											

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0089
DRAWING TITLE : REACTOR CORE ISOLATION COOLING PIPING

VALVE NUMBER	DWG COOR	1ST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
1301-015A	A-2	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
										*	
FUNCTION : RCIC - EXCESS FLOW CHECK VALVE											
1301-015B	B-2	1	A/C	1.000	XFC	SA	SYS	AT-02	RR		
								CTC	RR	RV-00B	
										*	
FUNCTION : RCIC - EXCESS FLOW CHECK VALVE											
1301-016 -MO	B-2	1	A	3.000	GA	MO	O	AT-01	RR		
								BTC	M3		
								PIT	Y2		
FUNCTION : RCIC - TURBINE STEAM FEED ISOLATION VALVE											
1301-017 -MO	B-3	1	A	3.000	GA	MO	O	AT-01	RR		
								BTC	M3		
								PIT	Y2		
FUNCTION : RCIC - TURBINE STEAM FEED ISOLATION VALVE											
1301-040	D-3	NC	A/C	2.000	CK	SA	SYS	AT-01	RR		
								CTC	RR	RV-13A	
FUNCTION : RCIC - TURBINE DISCHARGE ISOLATION VALVE, PCIV											
1301-041	D-2	NC	A/C	8.000	CK	SA	SYS	AT-01	RR		
								CTC	RR	RV-13A	
FUNCTION : RCIC - TURBINE DISCHARGE ISOLATION VALVE, PCIV											
1301-047	D-4	NC	C	2.000	CK	SA	SYS	CTC	SA	RV-00F	
FUNCTION : RCIC - MINIMUM FLOW RETURN CHECK VALVE, PCIV											
1301-055	D-3	NC	A/C	2.000	SCK	SA	C/LO	AT-01	RR		
								CTC	SA	RV-00F	
FUNCTION : RCIC - TURBINE DISCHARGE ISOLATION VALVE, PCIV											
1301-064	D-2	NC	A/C	8.000	SCK	SA	C/LO	AT-01	RR		
								CTC	SA	RV-00F	
FUNCTION : RCIC - TURBINE DISCHARGE ISOLATION VALVE, PCIV											

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0641-2
DRAWING TITLE : CONTAINMENT ATMOSPHERE MONITOR SYSTEM

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
2499-001A-SO	D-6	NC	A	.500	SO2	SO	C/FC	AT-01	RR		
								BTC	M3		
								BTO	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : CAM - DRYWELL SAMPLE PATH SELECTION VALVE											
2499-001B-SO	D-3	NC	A	.500	SO2	SO	C/FC	AT-01	RR		
								BTC	M3		
								BTO	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : CAM - DRYWELL SAMPLE PATH SELECTION VALVE											
2499-002A-SO	D-6	NC	A	.500	SO2	SO	C/FC	AT-01	RR		
								BTC	M3		
								BTO	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : CAM - DRYWELL SAMPLE PATH SELECTION VALVE											
2499-002B-SO	D-3	NC	A	.500	SO2	SO	C/FC	AT-01	RR		
								BTC	M3		
								BTO	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : CAM - DRYWELL SAMPLE PATH SELECTION VALVE											
2499-003A-SO	B-7	NC	A	.500	SO2	SO	C/FC	AT-01	RR		
								BTC	M3		
								BTO	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : CAM - SUPPRESSION CHAMBER SAMPLE PATH SELECTION VALVE											
2499-003B-SO	B-2	NC	A	.500	SO2	SO	C/FC	AT-01	RR		
								BTC	M3		
								BTO	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : CAM - SUPPRESSION CHAMBER SAMPLE PATH SELECTION VALVE											
2499-004A-SO	B-6	NC	A	.500	SO2	SO	C/FC	AT-01	RR		
								BTC	M3		
								BTO	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : CAM - SUPPRESSION CHAMBER SAMPLE PATH SELECTION VALVE											

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0641-2
DRAWING TITLE : CONTAINMENT ATMOSPHERE MONITOR SYSTEM

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
2499-004B-SO	B-3	NC	A	.500	SO2	SO	C/FC	AT-01	RR		
								BTC	M3		
								BTD	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : CAM - SUPPRESSION CHAMBER SAMPLE PATH SELECTION VALVE											
2499-022A	C-7	NC	A/C	.500	CK	SA	SYS	AT-01	RR		
								CTC	RR	RV-24A	
								CTO	SA	RV-00E	
								CTOP	M3	RV-00E	
FUNCTION : CAM - ATMOSPHERE SAMPLE RETURN CHECK VALVE											
2499-022B	C-2	NC	A/C	.500	CK	SA	SYS	AT-01	RR		
								CTC	RR	RV-24A	
								CTO	SA	RV-00E	
								CTOP	M3	RV-00E	
FUNCTION : CAM - ATMOSPHERE SAMPLE RETURN CHECK VALVE											

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0642-2
DRAWING TITLE : ATMOSPHERIC CONTAINMENT ATMOSPHERE DILUTION SYSTEM

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTUATOR	NORMAL POSITION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
2599-002A-AO	D-5	NC	A	1.500	GL	AO	C/FC	AT-01	RR		
								BTC	M3		
								BTO	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : ACAD - AIR INJECTION INTO THE DRYWELL SELECTON VALVE										
2599-002A-SO	D-6	NC	B	1.000	SO3	SO	D	BTD	M3		
								BTE	M3		
								FST	M3		
	FUNCTION : ACAD - AIR INJECTION INTO THE DRYWELL SELECTION VALVE SOLEN.										
2599-002B-AO	D-4	NC	A	1.500	GL	AO	C/FC	AT-01	RR		
								BTC	M3		
								BTO	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : ACAD - AIR INJECTION INTO THE DRYWELL SELECTON VALVE										
2599-002B-SO	D-3	NC	B	1.000	SO3	SO	D	BTD	M3		
								BTE	M3		
								FST	M3		
	FUNCTION : ACAD - AIR INJECTION INTO THE DRYWELL SELECTION VALVE SOLEN.										
2599-003A-AO	C-6	NC	A	1.000	GL	AO	C/FC	AT-01	RR		
								BTC	M3		
								BTO	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : ACAD - AIR INJECTION INTO THE SUPPR. CHAMBER SELECTION VLV.										
2599-003A-SO	C-7	NC	B	1.000	SO3	SO	D	BTD	M3		
								BTE	M3		
								FST	M3		
	FUNCTION : ACAD - AIR INJ. INTO THE SUPPR. CHAB. SELECTION VALVE SOLEN.										
2599-003B-AO	C-3	NC	A	1.000	GL	AO	C/FC	AT-01	RR		
								BTC	M3		
								BTD	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : ACAD - AIR INJECTION INTO THE SUPPR. CHAMBER SELECTION VLV.										
2599-003B-SO	C-2	NC	B	1.000	SO3	SO	D	BTD	M3		
								BTE	M3		
								FST	M3		
	FUNCTION : ACAD - AIR INJ. INTO THE SUPPR. CHAB. SELECTION VALVE SOLEN.										

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0642-2
DRAWING TITLE : ATMOSPHERIC CONTAINMENT ATMOSPHERE DILUTION SYSTEM

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTUATOR	NORMAL POSITION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
2599-004A-AO	F-3	NC	A	1.000	GL	AO	C/FC	AT-01	RR		
								BTC	M3		
								BTO	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : ACAD - PRESSURE BLEED-OFF ISOLATION VALVE										
2599-004A-SO	F-3	NC	B	1.000	SO3	SO	D	BTD	M3		
								BTE	M3		
								FST	M3		
	FUNCTION : ACAD - BLEED-OFF ISOLATION VALVE SOLENOID										
2599-004B-AO	E-3	NC	A	1.000	GL	AO	C/FC	AT-01	RR		
								BTC	M3		
								BTO	M3		
								FST	M3		
								PIT	Y2		
	FUNCTION : ACAD - PRESSURE BLEED-OFF ISOLATION VALVE										
2599-004B-SO	E-3	NC	B	1.000	SO3	SO	D	BTD	M3		
								BTE	M3		
								FST	M3		
	FUNCTION : ACAD - BLEED-OFF ISOLATION VALVE SOLENOID										
2599-005A-FCV	F-5	NC	A	1.000	DIA	AO	C/FC	AT-01	RR		
								FST	M3		
								PIT	Y2		
	FUNCTION : ACAD - PRESSURE BLEED-OFF ISOLATION AND THROTTLING/FCV VALVE										
2599-005A-SO	F-5	NC	B	1.000	SO3	SO	D	FST	M3		
	FUNCTION : ACAD - BLEED-OFF ISOLATION AND FCV VALVE SOLENOID										
2599-005B-FCV	E-5	NC	A	1.000	DIA	AO	C/FC	AT-01	RR		
								FST	M3		
								PIT	Y2		
	FUNCTION : ACAD - PRESSURE BLEED-OFF ISOLATION AND THROTTLING/FCV VALVE										
2599-005B-SO	E-5	NC	B	1.000	SO3	SO	D	FST	M3		
	FUNCTION : ACAD - BLEED-OFF ISOLATION AND FCV VALVE SOLENOID										
2599-008	F-8	NC	C	1.000	CK	SA	SYS	CTO	M3		
	FUNCTION : ACAD - BLEED-OFF BACKFLOW CHECK VALVE										
2599-022	A-7	NC	C	1.500	CK	SA	SYS	CTO	M3		
	FUNCTION : ACAD - AIR COMPRESSOR BACKFLOW PROTECTION CHECK VALVE										
2599-023A	C-6	NC	A/C	1.500	CK	SA	SYS	AT-01	RR		
								CTC	RR	RV-25A	
								CTO	M3		
	FUNCTION : ACAD - AIR INJECTION INTO THE DRYWELL CHECK VALVE										

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-0642-2
DRAWING TITLE : ATMOSPHERIC CONTAINMENT ATMOSPHERE DILUTION SYSTEM

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
2599-023B	C-3	NC	A/C	1.500	CK	SA	SYS	AT-01	RR		
								CTC	RR	RV-25A	
								CTO	M3		
FUNCTION : ACAD - AIR INJECTION INTO THE DRYWELL CHECK VALVE											
2599-024A	C-6	NC	A/C	1.000	CK	SA	SYS	AT-01	RR		
								CTC	RR	RV-25A	
								CTO	M3		
FUNCTION : ACAD - AIR INJECTION INTO THE SUPPR. CHAMBER CHECK VALVE											
2599-024B	C-3	NC	A/C	1.000	CK	SA	SYS	AT-01	RR		
								CTC	RR	RV-25A	
								CTO	M3		
FUNCTION : ACAD - AIR INJECTION INTO THE SUPPR. CHAMBER CHECK VALVE											
2599-998 -RV	B-5	NC	C	.001	RV	SA	C	CT-SP	YA		
FUNCTION : ACAD - AIR COMPRESSOR SAFETY VALVE											
2599-999	A-6	NC	C	1.250	CK	SA	SYS	CTO	M3		
FUNCTION : ACAD - AIR COMPRESSOR BACKFLOW PROTECTION CHECK VALVE											

Table 1.0-B
UNIT 2 VALVE LISTING

DRAWING : M-1061-1
DRAWING TITLE : LIQUID SAMPLING

VALVE NUMBER	LOG CL	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTUATOR	NORMAL POSITION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
1099-092A-FCV	E-5	2	B	1.000	DIA	AO	C/FC	BTC FST PIT	M3 M3 Y2		
FUNCTION : RHR - SAMPLING SELECT VALVE											
1099-092B-FCV	D-5	2	B	1.000	DIA	AO	C/FC	BTC FST PIT	M3 M3 Y2		
FUNCTION : RHR - SAMPLING SELECT VALVE											
8941-705 -XCV	C-6	2	B	.500	DIA	AO	C/FC	BTC FST PIT	M3 M3 Y2		
FUNCTION : CORE SPRAY - SAMPLING SELECT VALVE											
8941-705 -XSV	C-7	NC	B	.001	SO3	SO	D	BTD FST	M3 M3		
FUNCTION : CORE SPRAY - SAMPLING SELECT VALVE SOLENOID											
8941-709 -XSV	E-5	NC	B	.001	SO3	SO	D	BTD FST	M3 M3		
FUNCTION : RHR - SAMPLING SELECT VALVE SOLENOID											
8941-710 -XSV	D-5	NC	B	.001	SO3	SO	D	BTD FST	M3 M3		
FUNCTION : RHR - SAMPLING SELECT VALVE SOLENOID											

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-1062
DRAWING TITLE : CONTAINMENT AIR SAMPLING SYSTEM

VALVE NUMBER	DWG COOR	IST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
8941-101 -XCV	C-6	NC	B	.500	DIA	AO	C/FC	BTC	M3		
								FST	M3		
								PIT	Y2		
FUNCTION : SBGT/CAS - SAMPLING ISOLATION VALVE (FOR ACAD & DRYW. PURGE)											
8941-101 -XSV	C-6	NC	B	.001	SO3	SO	D	BTD	M3		
								FST	M3		
FUNCTION : SBGT/CAS - SAMPLING ISOLATION VALVE SOLENOID											

Table 1.0-8
UNIT 2 VALVE LISTING

DRAWING : M-1551
DRAWING TITLE : CONTROL ROOM HVAC

VALVE NUMBER	DWG COOR	1ST CLASS	FUNCTION CATEGORY	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION	TEST TYPE	TEST FREQ	RELIEF REQUEST OR COLD SHUTDOWN	TECHNICAL POSITION
5799-386	C-2	3	C	2.500	CK	SA	SYS	CTC	M3		
FUNCTION : CONTR. RM. HVAC - RHRSW BACKFLOW PROTECTION CHECK VALVE											

TABLE 1.0-9
UNIT 1 VALVE LISTING
(Sorted by P&ID)

P&ID NUMBER	VALVE NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
M-0013-1	0203-001A-AO	F-4	1	20.000	GL	AO	O/FC
	0203-001A-AP2	F-4	NC	.001	PLT	AO	E
	0203-001A-SOAC	F-4	NC	.001	SO3	SO	E
	0203-001A-SODC	F-4	NC	.001	SO3	SO	E
	0203-001B-AO	D-4	1	20.000	GL	AO	O/FC
	0203-001B-AP2	F-4	NC	.001	PLT	AO	E
	0203-001B-AP4	F-4	NC	.001	SO4	SO	E
	0203-001B-SOAC	F-4	NC	.001	SO3	SO	E
	0203-001B-SODC	F-4	NC	.001	SO3	SO	E
	0203-001C-AO	C-4	1	20.000	GL	AO	O/FC
	0203-001C-AP2	F-4	NC	.001	PLT	AO	E
	0203-001C-AP4	F-4	NC	.001	SO4	SO	E
	0203-001C-SOAC	F-4	NC	.001	SO3	SO	E
	0203-001C-SODC	F-4	NC	.001	SO3	SO	E
	0203-001D-AO	B-4	1	20.000	GL	AO	O/FC
	0203-001D-AP2	F-4	NC	.001	PLT	AO	E
	0203-001D-AP4	F-4	NC	.001	SO4	SO	E
	0203-001D-SOAC	F-4	NC	.001	SO3	SO	E
	0203-001D-SODC	F-4	NC	.001	SO3	SO	E
	0203-002A-AP4	F-4	NC	.001	SO4	SO	E
	0203-003A	F-7	1	6.625	SRV	SAP	C
	0203-003A-SO	F-7	NC	.001	SO3	SO	D
	0203-003B	E-6	1	6.000	RV	SO	C
	0203-003C	C-8	1	6.000	RV	SO	C
	0203-003D	B-8	1	6.000	RV	SO	C
	0203-003E	E-8	1	6.000	RV	SO	C
	0203-004A	F-8	1	6.000	SV	SA	C
	0203-004A-RPD	F-8	NS	8.000	RPD	SA	C
	0203-004B	E-5	1	6.000	SV	SA	C
	0203-004B-RPD	D-5	NS	8.000	RPD	SA	C
	0203-004C	C-5	1	6.000	SV	SA	C
	0203-004C-RPD	C-5	NS	8.000	RPD	SA	C
	0203-004D	B-5	1	6.000	SV	SA	C
	0203-004D-RPD	B-5	NS	8.000	RPD	SA	C
	0203-004E	F-8	1	6.000	SV	SA	C
	0203-004E-RPD	F-8	NS	8.000	RPD	SA	C
	0203-004F	E-5	1	6.000	SV	SA	C
	0203-004F-RPD	D-5	NS	8.000	RPD	SA	C
	0203-004G	C-5	1	6.000	SV	SA	C
	0203-004G-RPD	C-5	NS	8.000	RPD	SA	C
	0203-004H	B-5	1	6.000	SV	SA	C
	0203-004H-RPD	B-5	NS	8.000	RPD	SA	C
	0220-001 -MO	E-4	1	3.000	GA	MO	C
	0220-084A	F-3	NC	1.000	CK	SA	SYS
	0220-084B	F-3	NC	1.000	CK	SA	SYS
	0220-084C	F-3	NC	1.000	CK	SA	SYS
	0220-084D	F-3	NC	1.000	CK	SA	SYS
M-0013-2	0203-001A-AP4	F-7	NC	.001	SO4	SO	E
	0203-002A-AO	F-7	1	20.000	GL	AO	O/FC
	0203-002A-AP2	F-7	NC	.001	PLT	AO	E
	0203-002A-SOAC	F-7	NC	.001	SO3	SO	E

TABLE 1.0-9
UNIT 1 VALVE LISTING
(Sorted by P&ID)

P&ID NUMBER	VALVE NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
M-0013-2	0203-002A-SODC	F-7	NC	.001	SO3	SO	E
	0203-002B-AO	E-7	1	20.000	GL	AO	O/FC
	0203-002B-AP2	F-7	NC	.001	PLT	AO	E
	0203-002B-AP4	F-7	NC	.001	SO4	SO	E
	0203-002B-SOAC	F-7	NC	.001	SO3	SO	E
	0203-002B-SODC	F-7	NC	.001	SO3	SO	E
	0203-002C-AO	D-7	1	20.000	GL	AO	O/FC
	0203-002C-AP2	F-7	NC	.001	PLT	AO	E
	0203-002C-AP4	F-7	NC	.001	SO4	SO	E
	0203-002C-SOAC	F-7	NC	.001	SO3	SO	E
	0203-002C-SODC	F-7	NC	.001	SO3	SO	E
	0203-002D-AO	B-7	1	20.000	GL	AO	O/FC
	0203-002D-AP2	F-7	NC	.001	PLT	AO	E
	0203-002D-AP4	F-7	NC	.001	SO4	SO	E
	0203-002D-SOAC	F-7	NC	.001	SO3	SO	E
	0203-002D-SODC	F-7	NC	.001	SO3	SO	E
	0220-002 -MO	E-7	1	3.000	GA	MO	C
	0220-017A	E-8	1	1.000	XFC	SA	SYS
	0220-017B	D-8	1	1.000	XFC	SA	SYS
	0220-017C	C-8	1	1.000	XFC	SA	SYS
	0220-017D	B-8	1	1.000	XFC	SA	SYS
	0220-018A	E-8	1	1.000	XFC	SA	SYS
	0220-018B	D-8	1	1.000	XFC	SA	SYS
	0220-018C	C-8	1	1.000	XFC	SA	SYS
	0220-018D	B-8	1	1.000	XFC	SA	SYS
	0220-085A	F-7	NC	1.000	CK	SA	SYS
	0220-085B	F-7	NC	1.000	CK	SA	SYS
	0220-085C	F-7	NC	1.000	CK	SA	SYS
	0220-085D	F-7	NC	1.000	CK	SA	SYS
M-0015	0220-058A	E-2	1	18.000	CK	SA	SYS
	0220-058B	F-2	1	18.000	CK	SA	SYS
	0220-059B	F-2	2	18.000	CK	SA	SYS
	0220-062A	E-2	1	18.000	CK	SA	SYS
	0220-062B	F-2	1	18.000	CK	SA	SYS
M-0022-1	3999-560	C-4	3	2.500	CK	SA	SYS
	3999-561	C-4	3	4.000	CK	SA	SYS
M-0022-3	3999-085 - -1/2	B-8	3	8.000	CK	SA	SYS
	3999-086	F-8	3	8.000	CK	SA	SYS
	3999-088	D-6	3	6.000	CK	SA	SYS
	3999-089	D-6	3	6.000	GA	M	C
M-0024-2	4720	D-3	NC	1.000	DIA	AO	O/FC
	4721	D-3	NC	1.000	DIA	AO	O/FC
	4799-155	E-2	NC	2.000	CK	SA	SYS
	4799-156	E-3	NC	2.000	CK	SA	SYS
	4799-158	F-4	NC	.500	CK	SA	SYS
	4799-159	F-4	NC	.500	CK	SA	SYS
	4799-281A	B-2	NC	.500	CK	SA	SYS
	4799-485	D-3	NC	.500	SO3	SO	E
	4799-486	D-3	NC	.500	SO3	SO	E
M-0025-1	4699-046	E-3	NC	1.000	GL	M	C
	4699-047	E-4	NC	1.000	CK	SA	SYS

TABLE 1.0-9
UNIT 1 VALVE LISTING
(Sorted by P&ID)

P&ID NUMBER	VALVE NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
M-0025-2	4699-048 - -1/2	C-7	NC	1.500	CK	SA	SYS
	4699-123	E-6	NC	1.500	CK	SA	SYS
	4699-196	E-6	NC	1.500	CK	SA	SYS
	4699-196 - -1/2	C-6	NC	1.500	CK	SA	SYS
	4699-226	E-3	NC	1.500	DIA	AO	C
	4699-226 - -1/2	B-3	NC	1.500	GL	AO	C
	4699-306A	E-8	NC	.750	RV	SA	C
	4699-306A- -1/2	B-8	NC	.750	RV	SA	C
	4699-306B	E-7	NC	.750	RV	SA	C
	4699-306B- -1/2	B-7	NC	.750	RV	SA	C
	4699-306C	E-6	NC	.750	RV	SA	C
	4699-306C- -1/2	B-6	NC	.750	RV	SA	C
	4699-306D	E-5	NC	.750	RV	SA	C
	4699-306D- -1/2	B-5	NC	.750	RV	SA	C
	4699-307A	D-7	NC	.500	CK	SA	SYS
	4699-307A- -1/2	A-7	NC	.500	CK	SA	SYS
	4699-307B	D-5	NC	.500	CK	SA	SYS
	4699-307B- -1/2	A-5	NC	.500	CK	SA	SYS
	4699-309	E-3	NC	.375	CK	SA	SYS
	4699-309 - -1/2	B-3	NC	.375	CK	SA	SYS
	4699-310	E-4	NC	.375	SO3	SO	D
	4699-310 - -1/2	B-4	NC	.375	SO3	SO	D
M-0029-2	5201- -RV	D-2	NC	1.000	RV	SA	C
	5201- -RV -1/2	D-5	NC	1.000	RV	SA	C
	5201- -SO	A-2	NC	1.000	SO2	SO	O
	5201- -SO -1/2	A-6	NC	1.000	SO2	SO	C
	5299-003	D-2	NC	1.500	CK	SA	SYS
	5299-003 - -1/2	D-5	NC	1.500	CK	SA	SYS
	5299-005	D-2	NC	1.500	CK	SA	SYS
	5299-005 - -1/2	D-5	NC	1.500	CK	SA	SYS
	5299-042	D-4	NC	.500	CK	SA	SYS
	5299-042 - -1/2	D-6	NC	.500	CK	SA	SYS
	5299-157	C-3	NC	1.000	CK	SA	SYS
	5299-157 - -1/2	C-6	NC	1.000	CK	SA	SYS
	5299-158	D-3	NC	.750	CK	SA	SYS
	5299-158 - -1/2	D-6	NC	.750	CK	SA	SYS
M-0033	3702- -MO	B-3	NC	8.000	GA	MO	O
	3703- -MO	B-1	NC	8.000	GA	MO	O
	3706- -MO	B-1	NC	8.000	GA	MO	O
	3799-031	B-3	NC	8.000	CK	SA	SYS
M-0034-1	0220-081A	E-4	NC	1.000	CK	SA	SYS
	0220-081B	E-4	NC	1.000	CK	SA	SYS
	0220-081C	E-4	NC	1.000	CK	SA	SYS
	0220-081D	E-6	NC	1.000	CK	SA	SYS
	0220-081E	E-6	NC	1.000	CK	SA	SYS
	0220-105A	D-4	NC	8.000	CK	SA	SYS
	0220-105B	E-4	NC	8.000	CK	SA	SYS
	0220-105C	D-5	NC	8.000	CK	SA	SYS
	0220-105D	D-5	NC	8.000	CK	SA	SYS
	0220-105E	E-5	NC	8.000	CK	SA	SYS
	1601-020A-AO	D-9	NC	20.000	BTF	AO	C/FO

TABLE 1.0-9
UNIT 1 VALVE LISTING
(Sorted by P&ID)

P&ID NUMBER	VALVE NUMBER	DWG COOR.	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
M-0034-1	1601-020A-SO	A-1	NC	.001	SO4	SO	E
	1601-020B-AO	E-9	NC	20.000	BTF	AO	C/FO
	1601-020B-SO	A-1	NC	.001	SO4	SO	E
	1601-021 -AO	C-6	NC	18.000	BTF	AO	C/FC
	1601-021 -SO	A-1	NC	.001	SO4	SO	D
	1601-022 -AO	C-6	NC	18.000	BTF	AO	C/FC
	1601-022 -SO	A-1	NC	.001	SO4	SO	D
	1601-023 -AO	B-3	NC	18.000	BTF	AO	C/FC
	1601-023 -SO	A-1	NC	.001	SO4	SO	D
	1601-024 -AO	B-2	NC	18.000	BTF	AO	C/FC
	1601-024 -SO	A-1	NC	.001	SO4	SO	D
	1601-031A	D-9	NC	20.000	CK	SA	SYS
	1601-031B	E-9	NC	20.000	CK	SA	SYS
	1601-032A	E-2	NC	.001	CK	SA	SYS
	1601-032B	E-2	NC	.001	CK	SA	SYS
	1601-032C	E-2	NC	.001	CK	SA	SYS
	1601-032D	E-2	NC	.001	CK	SA	SYS
	1601-032E	E-2	NC	.001	CK	SA	SYS
	1601-032F	E-2	NC	.001	CK	SA	SYS
	1601-033A	E-7	NC	.001	CK	SA	SYS
	1601-033B	E-7	NC	.001	CK	SA	SYS
	1601-033C	E-7	NC	.001	CK	SA	SYS
	1601-033D	E-7	NC	.001	CK	SA	SYS
	1601-033E	E-7	NC	.001	CK	SA	SYS
	1601-033F	E-7	NC	.001	CK	SA	SYS
	1601-055	A-6	NC	4.000	GA	AO	O/FC
	1601-055 -SO	A-6	NC	.001	SO3	SO	E
	1601-056 -AO	D-6	NC	18.000	BTF	AO	O/FC
	1601-056 -SO	A-1	NC	.001	SO4	SO	E
	1601-057	D-8	NC	1.000	GL	MO	O
	1601-058 -AO	D-7	NC	1.000	GL	AO	C/FC
	1601-058 -SO	D-7	NC	.001	SO3	SO	D
	1601-059 -AO	D-7	NC	1.000	GL	AO	O/FC
	1601-059 -SO	D-6	NC	.001	SO3	SO	E
	1601-060 -AO	E-1	NC	18.000	BTF	AO	C/FC
	1601-060 -SO	A-1	NC	.001	SO4	SO	D
	1601-061 -AO	F-1	NC	2.000	GL	AO	C/FC
	1601-061 -SO	F-1	NC	.001	SO3	SO	D
	1601-062 -AO	B-3	NC	2.000	GL	AO	O/FC
	1601-062 -SO	B-3	NC	.001	SO3	SO	D
	1601-063 -AO	A-2	NC	6.000	BTF	AO	C/FC
	1601-063 -SO	A-3	NC	.001	SO4	SO	D
	1699-009 -RV	D-8	NC	1.500	RV	SA	C
	8801- A-FCV	C-3	NC	.500	DIA	AO	O/FC
	8801- A-SO	C-3	NC	.001	SO3	SO	E
	8801- B-FCV	D-3	NC	.500	DIA	AO	O/FC
	8801- B-SO	D-3	NC	.001	SO3	SO	E
	8801- C-FCV	D-3	NC	.500	DIA	AO	O/FC
	8801- C-SO	D-3	NC	.001	SO3	SO	E
	8801- D-FCV	E-3	NC	.500	DIA	AO	O/FC
	8801- D-SO	D-3	NC	.001	SO3	SO	E

TABLE 1.0-9
UNIT 1 VALVE LISTING
(Sorted by P&ID)

P&ID NUMBER	VALVE NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
M-0034-1	8802- A-FCV	C-3	NC	.500	DIA	AO	O/FC
	8802- A-SO	C-3	NC	.001	SO3	SO	E
	8802- B-FCV	D-3	NC	.500	DIA	AO	O/FC
	8802- B-SO	D-3	NC	.001	SO3	SO	E
	8802- C-FCV	D-3	NC	.500	DIA	AO	O/FC
	8802- C-SO	D-3	NC	.001	SO3	SO	E
	8802- D-FCV	E-3	NC	.500	DIA	AO	O/FC
	8802- D-SO	E-3	NC	.001	SO3	SO	E
	8803	C-6	NC	.500	GL	AO	O/FC
	8803- -SO	C-6	NC	.001	SO3	SO	E
	8803- 1D	D-3	NC	.500	GA	M	C
	8803- 1E	D-3	NC	.500	GA	M	C
	8803- 1F	D-3	NC	.500	GA	M	C
	8803- 1G	D-3	NC	.500	GA	M	C
	8803- 1H	D-3	NC	.500	GA	M	C
	8803- 1I	D-3	NC	.500	GA	M	C
	8803- 1J	D-3	NC	.500	GA	M	C
	8803- 1K	D-3	NC	.500	GA	M	C
	8803- 1L	D-3	NC	.500	GA	M	C
	8803- 1M	D-3	NC	.500	GA	M	C
	8803- 1N	D-3	NC	.500	GA	M	C
	8803- 1O	D-3	NC	.500	GA	M	C
	8803- 1P	D-3	NC	.500	GA	M	C
	8803- 1Q	D-3	NC	.500	GA	M	C
	8803- 1R	D-3	NC	.500	GA	M	C
	8803- 1S	D-3	NC	.500	GA	M	C
	8803- 1T	D-3	NC	.500	GA	M	C
	8803- 1U	D-3	NC	.500	GA	M	C
	8803- 1V	D-3	NC	.500	GA	M	C
	8803- 1W	D-3	NC	.500	GA	M	C
	8803- 1X	D-3	NC	.500	GA	M	C
	8803- 1Y	D-3	NC	.500	GA	M	C
	8803- 2D	D-3	NC	.500	GA	M	C
	8803- 2E	D-3	NC	.500	GA	M	C
	8803- 2F	D-3	NC	.500	GA	M	C
	8803- 2G	D-3	NC	.500	GA	M	C
	8803- 2H	D-3	NC	.500	GA	M	C
	8803- 2I	D-3	NC	.500	GA	M	C
	8803- 2J	D-3	NC	.500	GA	M	C
	8803- 2K	D-3	NC	.500	GA	M	C
	8803- 2L	D-3	NC	.500	GA	M	C
	8803- 2M	D-3	NC	.500	GA	M	C
	8803- 2N	D-3	NC	.500	GA	M	C
	8803- 2O	D-3	NC	.500	GA	M	C
	8803- 2P	D-3	NC	.500	GA	M	C
	8803- 2Q	D-3	NC	.500	GA	M	C
	8803- 2R	D-3	NC	.500	GA	M	C
	8803- 2S	D-3	NC	.500	GA	M	C
	8803- 2T	D-3	NC	.500	GA	M	C
	8803- 2U	D-3	NC	.500	GA	M	C
	8803- 2V	D-3	NC	.500	GA	M	C

TABLE 1.0-9
UNIT 1 VALVE LISTING
(Sorted by P&ID)

P&ID NUMBER	VALVE NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
M-0034-1	8803- 2W	D-3	NC	.500	GA	M	C
	8803- 2X	D-3	NC	.500	GA	M	C
	8803- 2Y	D-3	NC	.500	GA	M	C
	8804	D-6	NC	.500	GL	AO	O/FC
	8804- -SO	D-6	NC	.001	SO3	SO	E
M-0035-1	0220-051	E-5	1	.500	DIA	AO	C/FC
	0220-051 -SO	E-5	NC	.999	SO3	SO	D
	0220-054	E-6	1	1.000	XFC	SA	SYS
	0263-2-011	E-6	1	1.000	XFC	SA	SYS
	0263-2-013A	D-6	1	1.000	XFC	SA	SYS
	0263-2-013B	D-3	1	1.000	XFC	SA	SYS
	0263-2-015A	D-6	1	1.000	XFC	SA	SYS
	0263-2-015B	D-3	1	1.000	XFC	SA	SYS
	0263-2-017A	D-6	1	1.000	XFC	SA	SYS
	0263-2-017B	D-3	1	1.000	XFC	SA	SYS
	0263-2-019A	C-6	1	1.000	XFC	SA	SYS
	0263-2-019B	C-3	1	1.000	XFC	SA	SYS
	0263-2-020A	B-6	1	1.000	XFC	SA	SYS
	0263-2-020B	B-6	1	1.000	XFC	SA	SYS
	0263-2-020C	B-3	1	1.000	XFC	SA	SYS
	0263-2-020D	B-3	1	1.000	XFC	SA	SYS
	0263-2-023A	C-6	1	1.000	XFC	SA	SYS
	0263-2-023B	C-6	1	1.000	XFC	SA	SYS
	0263-2-023C	B-3	1	1.000	XFC	SA	SYS
	0263-2-023D	B-3	1	1.000	XFC	SA	SYS
	0263-2-025	B-6	1	1.000	XFC	SA	SYS
	0263-2-027	A-6	1	1.000	XFC	SA	SYS
	0263-2-031B	C-6	1	1.000	XFC	SA	SYS
	0263-2-031C	C-6	1	1.000	XFC	SA	SYS
	0263-2-031D	C-6	1	1.000	XFC	SA	SYS
	0263-2-031E	C-6	1	1.000	XFC	SA	SYS
	0263-2-031G	C-6	1	1.000	XFC	SA	SYS
	0263-2-031H	C-6	1	1.000	XFC	SA	SYS
	0263-2-031J	C-6	1	1.000	XFC	SA	SYS
	0263-2-031K	C-6	1	1.000	XFC	SA	SYS
	0263-2-031M	C-3	1	1.000	XFC	SA	SYS
	0263-2-031N	C-3	1	1.000	XFC	SA	SYS
	0263-2-031P	C-3	1	1.000	XFC	SA	SYS
	0263-2-031R	C-3	1	1.000	XFC	SA	SYS
	0263-2-031T	C-3	1	1.000	XFC	SA	SYS
	0263-2-031U	C-3	1	1.000	XFC	SA	SYS
	0263-2-031V	C-3	1	1.000	XFC	SA	SYS
	0263-2-031W	C-3	1	1.000	XFC	SA	SYS
	0263-2-033	B-3	1	1.000	XFC	SA	SYS
	0263-2-042A	C-6	1	1.000	XFC	SA	SYS
	0263-2-042B	C-3	1	1.000	XFC	SA	SYS
M-0035-2	0202-005A-MO	D-6	1	28.000	GA	MO	O
	0202-005B-MO	D-3	1	28.000	GA	MO	O
	0220-019A	B-6	1	1.000	XFC	SA	SYS
	0220-019B	B-3	1	1.000	XFC	SA	SYS
	0220-020A	B-6	1	1.000	XFC	SA	SYS

TABLE 1.0-9
UNIT 1 VALVE LISTING
(Sorted by P&ID)

P&ID NUMBER	VALVE NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
M-0035-2	0220-020B	B-3	1	1.000	XFC	SA	SYS
	0220-021A	D-8	1	1.000	XFC	SA	SYS
	0220-021B	D-1	1	1.000	XFC	SA	SYS
	0220-022A	D-8	1	1.000	XFC	SA	SYS
	0220-022B	D-1	1	1.000	XFC	SA	SYS
	0220-044	E-2	1	.750	GL	AO	O/FC
	0220-044 -SO	E-2	NC	.001	SO3	SO	E
	0220-045	E-1	1	.750	GL	AO	O/FC
	0220-045 -SO	E-1	NC	.001	SO3	SO	E
	0220-067A	E-6	1	1.000	XFC	SA	SYS
	0220-067B	F-6	1	1.000	XFC	SA	SYS
	0220-067C	E-6	1	1.000	XFC	SA	SYS
	0220-067D	F-6	1	1.000	XFC	SA	SYS
	0220-067E	E-6	1	1.000	XFC	SA	SYS
	0220-067F	F-6	1	1.000	XFC	SA	SYS
	0220-067G	E-6	1	1.000	XFC	SA	SYS
	0220-067H	F-6	1	1.000	XFC	SA	SYS
	0220-089A	E-1	1	1.000	XFC	SA	SYS
	0220-089B	E-1	1	1.000	XFC	SA	SYS
	0262-2-005A	B-7	1	1.000	XFC	SA	SYS
	0262-2-005B	B-2	1	1.000	XFC	SA	SYS
	0262-2-006A	B-7	1	1.000	XFC	SA	SYS
	0262-2-006B	B-2	1	1.000	XFC	SA	SYS
M-0036	1402-003A-MO	F-7	2	18.000	GA	MO	O
	1402-003B-MO	F-5	2	18.000	GA	MO	O
	1402-004A-MO	B-8	2	8.000	GL	MO	C
	1402-004B-MO	C-8	2	8.000	GL	MO	C
	1402-008A	E-9	2	12.000	SCK	SA	C/LO
	1402-008B	E-6	2	12.000	SCK	SA	C/LO
	1402-009A-AO	C-3	1	10.000	CK	AO	SYS
	1402-009B-AO	C-3	1	10.000	CK	AO	SYS
	1402-013A	E-9	2	1.500	SCK	SA	C/LO
	1402-013B	E-6	2	1.500	SCK	SA	C/LO
	1402-024A-MO	B-2	2	10.000	GA	MO	O
	1402-024B-MO	B-5	2	10.000	GA	MO	O
	1402-025A-MO	C-2	1	10.000	GA	MO	C
	1402-025B-MO	C-5	1	10.000	GA	MO	C
	1402-028A-RV	C-9	2	2.000	RV	SA	C
	1402-028B-RV	D-6	2	2.000	RV	SA	C
	1402-031A	D-3	1	.750	XFC	SA	SYS
	1402-031B	D-4	1	.750	XFC	SA	SYS
	1402-038A-MO	E-8	2	1.500	GA	MO	C
	1402-038B-MO	E-7	2	1.500	GA	MO	C
	1402-071	D-7	2	1.500	CK	SA	SYS
M-0037	1001-007A-MO	B-6	2	14.000	GA	MO	O/KL
	1001-007B-MO	E-6	2	14.000	GA	MO	O/KL
	1001-007C-MO	B-6	2	14.000	GA	MO	O/KL
	1001-007D-MO	E-6	2	14.000	GA	MO	O/KL
	1001-043A-MO	B-4	2	14.000	GA	MO	C/KL
	1001-043B-MO	E-4	2	14.000	GA	MO	C/KL
	1001-043C-MO	B-8	2	14.000	GA	MO	C/KL

TABLE 1.0-9
UNIT 1 VALVE LISTING
(Sorted by P&ID)

P&ID NUMBER	VALVE NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
M-0037	1001-043D-MO	D-8	2	14.000	GA	MO	C/KL
	1001-067A	B-3	2	12.000	CK	SA	SYS
	1001-067B	E-3	2	12.000	CK	SA	SYS
	1001-067C	B-9	2	12.000	CK	SA	SYS
	1001-067D	E-9	2	12.000	CK	SA	SYS
	1001-125A-RV	B-5	2	1.000	RV	SA	C
	1001-125B-RV	E-5	2	1.000	RV	SA	C
	1001-125C-RV	B-7	2	1.000	RV	SA	C
	1001-125D-RV	E-7	2	1.000	RV	SA	C
	1001-142A	B-3	2	2.000	CK	SA	SYS
	1001-142B	D-3	2	2.000	CK	SA	SYS
	1001-142C	B-9	2	2.000	CK	SA	SYS
	1001-142D	E-9	2	2.000	CK	SA	SYS
	1001-165A-RV	A-2	3	4.000	RV	SA	C
	1001-165B-RV	A-10	3	4.000	RV	SA	C
	1001-166A-RV	A-2	2	1.000	RV	SA	C
	1001-166B-RV	A-10	2	1.000	RV	SA	C
M-0039-1	1001-016A-MO	A-7	2	18.000	GL	MO	O
	1001-016B-MO	A-2	2	18.000	GL	MO	O
	1001-018A-MO	C-6	2	3.000	GA	MO	C
	1001-018B-MO	C-3	2	3.000	GA	MO	C
	1001-019A-MO	B-8	2	18.000	GA	MO	O/KL
	1001-019B-MO	B-2	2	18.000	GA	MO	O/KL
	1001-020 -MO	B-3	2	3.000	GA	MO	C
	1001-021 -MO	B-3	NC	3.000	GA	MO	C
	1001-022A-RV	E-8	2	1.000	RV	SA	C
	1001-022B-RV	E-2	2	1.000	RV	SA	C
	1001-023A-MO	E-6	2	10.000	GA	MO	C
	1001-023B-MO	E-3	2	10.000	GA	MO	C
	1001-026A-MO	E-5	2	10.000	GA	MO	C
	1001-026B-MO	E-4	2	10.000	GA	MO	C
	1001-028A-MO	E-6	2	16.000	GL	MO	O
	1001-028B-MO	E-3	2	16.000	GL	MO	O
	1001-029A-MO	E-6	1	16.000	GA	MO	C
	1001-029B-MO	E-3	1	16.000	GA	MO	C
	1001-034A-MO	E-7	2	16.000	GA	MO	C
	1001-034B-MO	E-3	2	16.000	GA	MO	C
	1001-036A-MO	E-7	2	14.000	GL	MO	C
	1001-036B-MO	D-3	2	14.000	GL	MO	C
	1001-037A-MO	E-7	2	6.000	GL	MO	C
	1001-037B-MO	D-3	2	6.000	GL	MO	C
	1001-047 -MO	C-4	1	20.000	GA	MO	C
	1001-050 -MO	D-4	1	20.000	GA	MO	C
	1001-059	F-3	2	1.000	RV	SA	C
	1001-068A-AO	E-5	1	16.000	CK	AO	SYS
	1001-068B-AO	E-4	1	16.000	CK	AO	SYS
	1001-131	B-7	2	3.000	CK	SA	SYS
	1001-136A	D-8	2	3.000	CK	SA	SYS
	1001-136B	E-2	2	3.000	CK	SA	SYS
M-0039-2	1001-002A	C-7	3	12.000	CK	SA	SYS
	1001-002B	B-7	3	12.000	CK	SA	SYS

TABLE 1.0-9
UNIT 1 VALVE LISTING
(Sorted by P&ID)

P&ID NUMBER	VALVE NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
M-0039-2	1001-002C	D-2	3	12.000	CK	SA	SYS
	1001-002D	B-2	3	12.000	CK	SA	SYS
	1001-005A-MO	E-6	3	12.000	GL	MO	C
	1001-005A-MO	E-3	3	12.000	GL	MO	C
M-0040	1101-015	C-3	1	1.500	CK	SA	SYS
	1101-016	C-3	1	1.500	CK	SA	SYS
	1101-043A	D-6	2	1.500	CK	SA	SYS
	1101-043B	D-6	2	1.500	CK	SA	SYS
	1105- A-RV	C-7	2	1.500	RV	SA	C
	1105- B-RV	E-6	2	1.500	RV	SA	C
	1106- A	C-4	2	1.500	SHR	EXP	C/KL
	1106- B	D-4	2	1.500	SHR	EXP	C/KL
M-0041-1	0302-020A	E-8	NC	.500	SO3	SO	E
	0302-020B	E-8	NC	.500	SO3	SO	E
	0302-021A	E-6	2	1.000	DIA	AO	C/FC
	0302-021B	E-6	NC	1.000	DIA	AO	C/FC
	0302-021C	F-1	2	1.000	DIA	AO	C/FC
	0302-021D	F-1	NC	1.000	DIA	AO	C/FC
	0302-022A	F-5	2	2.000	DIA	AO	C/FC
	0302-022B	F-5	NC	2.000	DIA	AO	C/FC
	0302-022C	F-3	2	2.000	DIA	AO	C/FC
	0302-022D	F-2	NC	2.000	DIA	AO	C/FC
	0302-025A	E-7	NC	1.000	SO3	SO	D
	0302-025B	E-7	NC	1.000	SO3	SO	D
	0302-181A	D-8	NC	1.000	SO2	SO	C/FO
	0302-181B	D-8	NC	1.000	SO2	SO	C/FO
	0302-182A	F-8	NC	1.000	SO2	SO	C/FO
	0302-182B	F-8	NC	1.000	SO2	SO	C/FO
	0305-000_-RPD	E-10	1	.250	RPD	SA	C
	0305-114	E-9	2	.750	CK	SA	SYS
	0305-115	E-10	1	.500	CK	SA	SYS
	0305-117	E-9	NC	.375	SO3	SO	E
	0305-118	E-9	NC	.375	SO3	SO	E
	0305-120 -FCV	C-10	1	1.000	SO2	SO	C/FC
	0305-121 -SO	C-9	1	.750	SO2	SO	C/FC
	0305-122 -SO	C-9	1	.750	SO2	SO	C/FC
	0305-123 -FCV	C-10	1	1.000	SO2	SO	C/FC
	0305-126 -CV	D-10	1	1.000	DIA	AO	C/FO
	0305-127 -CV	D-9	1	.750	DIA	AO	C/FO
	0305-138	C-10	1	.500	CK	SA	SYS
M-0042-1	5401- A-AO	E-8	NC	18.000	BTF	AO	O/FC
	5401- A-CK	Z-99	NC	.001	CK	SA	SYS
	5401- A-SO	E-7	NC	.001	SO4	SO	E
	5401- B-AO	E-8	NC	18.000	BTF	AO	O/FC
	5401- B-CK	Z-99	NC	.001	CK	SA	SYS
	5401- B-SO	E-7	NC	.001	SO4	SO	E
	5402- A-AO	D-3	NC	18.000	GA	AO	O/FC
	5402- A-CK	Z-99	NC	.001	CK	SA	SYS
	5402- A-SO	D-2	NC	.001	SO4	SO	E
	5402- B-AO	D-3	NC	18.000	GA	AO	O/FC
	5402- B-CK	Z-99	NC	.001	CK	SA	SYS
	5402- B-SO	D-2	NC	.001	SO4	SO	E

TABLE 1.0-9
UNIT 1 VALVE LISTING
(Sorted by P&ID)

P&ID NUMBER	VALVE NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
M-0043	2001-003 -AO	F-7	NC	3.000	PLG	AO	C/FC
	2001-003 -SO	F-7	NC	.001	SO3	SO	D
	2001-004 -AO	F-7	NC	3.000	PLG	AO	C/FC
	2001-004 -SO	F-7	NC	.001	SO3	SO	D
	2001-015 -AO	E-4	NC	3.000	PLG	AO	C/FC
	2001-015 -SO	E-4	NC	.001	SO3	SO	D
	2001-016 -AO	E-3	NC	3.000	PLG	AO	C/FC
	2001-016 -SO	E-3	NC	.001	SO3	SO	D
M-0044	7503- -MO	B-2	NC	18.000	BTF	MO	O
	7504- A-MO -1/2	D-3	NC	6.000	BTF	MO	O
	7504- B-MO -1/2	A-3	NC	6.000	BTF	MO	O
	7505- A-MO -1/2	D-3	NC	24.000	BTF	MO	C
	7505- B-MO -1/2	B-3	NC	24.000	BTF	MO	C
	7507- A-MO -1/2	D-9	NC	24.000	BTF	MO	C
	7507- B-MO -1/2	B-9	NC	24.000	BTF	MO	C
M-0046	2301-003 -MO	A-7	2	10.000	GA	MO	C
	2301-004 -MO	C-9	1	10.000	GA	MO	O
	2301-005 -MO	B-10	1	10.000	GA	MO	O
	2301-007 -AO	E-6	2	14.000	CK	AO	SYS
	2301-008 -MO	E-6	2	14.000	GA	MO	C
	2301-009 -MO	E-5	2	14.000	GA	MO	O
	2301-010 -MO	E-5	2	12.000	GL	MO	C
	2301-014 -MO	C-6	2	4.000	GL	MO	C
	2301-020	E-1	2	16.000	CK	SA	SYS
	2301-023 -RV	B-3	2	1.500	RV	SA	C
	2301-026	D-10	1	1.000	XFC	SA	SYS
	2301-027	D-10	1	1.000	XFC	SA	SYS
	2301-028	B-9	2	1.000	GL	AO	C/FO
	2301-028 -SO	B-9	NC	.001	SO3	SO	D
	2301-029	B-10	2	1.000	GL	AO	O/FC
	2301-029 -SO	B-10	NC	.001	SO3	SO	D
	2301-030	B-10	NC	1.000	GL	AO	O/FC
	2301-030 -SO	B-10	NC	.001	SO3	SO	D
	2301-034	C-8	2	2.000	CK	SA	SYS
	2301-035 -MO	E-7	2	16.000	GA	MO	C
	2301-036 -MO	E-9	2	16.000	GA	MO	C
	2301-039	E-8	2	16.000	CK	SA	SYS
	2301-040	D-7	2	4.000	CK	SA	SYS
	2301-045	B-8	2	24.000	CK	SA	SYS
	2301-048 -MO	B-4	2	4.000	GA	MO	O
	2301-049 -MO	E-4	2	4.000	GA	MO	C
	2301-050	C-5	2	4.000	CK	SA	SYS
	2301-051	C-5	2	4.000	CK	SA	SYS
	2301-053 -RV	C-4	2	4.000	RV	SA	C
	2301-064	A-7	2	1.000	GL	AO	O/FC
	2301-064 -SO	A-6	NC	.001	SO3	SO	D
	2301-065	A-8	NC	1.000	GL	AO	O/FC
	2301-065 -SO	A-7	NC	.001	SO3	SO	D
	2301-068	A-6	2	16.000	RPD	SA	C
	2301-069	A-6	2	16.000	RPD	SA	C
	2301-071	D-8	2	2.000	SCK	SA	C/LO
	2301-074	C-8	2	12.000	SCK	SA	C/LO

TABLE 1.0-9
UNIT 1 VALVE LISTING
(Sorted by P&ID)

P&ID NUMBER	VALVE NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
M-0046	2301-075	B-4	2	4.000	CK	SA	SYS
	2301-076	E-4	2	2.000	CK	SA	SYS
	2317	A-7	2	24.000	PLG	HO	C
	2399-040- MO	D-8	2	4.000	GA	MO	O
	2399-041- MO	C-8	2	4.000	GA	MO	O
	2399-064	C-8	2	4.000	CK	SA	SYS
	2399-065	C-8	2	4.000	CK	SA	SYS
	2399-066	C-8	2	4.000	CK	SA	SYS
	2399-067	C-8	2	4.000	CK	SA	SYS
	2901-010	D-7	2	4.000	CK	SA	SYS
M-0047	1201-002 -MO	B-6	1	6.000	GA	MO	O
	1201-005 -MO	B-7	1	6.000	GA	MO	O
M-0050	1301-015A	A-2	1	1.000	XFC	SA	SYS
	1301-015B	B-2	1	1.000	XFC	SA	SYS
	1301-016 -MO	B-2	1	3.000	GA	MO	O
	1301-017 -MO	B-3	1	3.000	GA	MO	O
	1301-040	D-4	NC	2.000	CK	SA	SYS
	1301-041	D-2	NC	8.000	CK	SA	SYS
	1301-047	D-4	NC	2.000	CK	SA	SYS
	1301-055	D-3	NC	2.000	SCK	SA	C/LO
	1301-064	D-2	NC	8.000	SCK	SA	C/LO
M-0058-3	4399-045	D-5	NC	3.000	GA	M	C
	4399-046	D-5	NC	3.000	CK	SA	SYS
M-0584	0737-001B	C-4	NC	.375	BAL	SO	C/FC
	0737-001C	C-3	NC	.375	BAL	SO	C/FC
	0737-001D	C-4	NC	.375	BAL	SO	C/FC
	0737-001E	C-4	NC	.375	BAL	SO	C/FC
	0737-001F	C-4	NC	.375	BAL	SO	C/FC
	0737-002B	C-4	NC	.375	SHR	EXP	O/KL
	0737-002C	C-4	NC	.375	SHR	EXP	O/KL
	0737-002D	C-4	NC	.375	SHR	EXP	O/KL
	0737-002E	C-4	NC	.375	SHR	EXP	O/KL
	0737-002F	C-4	NC	.375	SHR	EXP	O/KL
	0743	C-5	NC	.375	CK	SA	SYS
M-0641-1	2499-001A-SO	D-6	NC	.500	SO2	SO	C/FC
	2499-001B-SO	D-3	NC	.500	SO2	SO	C/FC
	2499-002A-SO	D-6	NC	.500	SO2	SO	C/FC
	2499-002B-SO	D-3	NC	.500	SO2	SO	C/FC
	2499-003A-SO	B-7	NC	.500	SO2	SO	C/FC
	2499-003B-SO	B-2	NC	.500	SO2	SO	C/FC
	2499-004A-SO	B-6	NC	.500	SO2	SO	C/FC
	2499-004B-SO	B-3	NC	.500	SO2	SO	C/FC
	2499-022A	C-7	NC	.500	CK	SA	SYS
	2499-022B	C-2	NC	.500	CK	SA	SYS
M-0642-1	2599-002A-AO	C-4	NC	1.500	GL	AO	C/FC
	2599-002A-SO	D-3	NC	1.000	SO3	SO	D
	2599-002B-AO	C-5	NC	1.500	GL	AO	C/FC
	2599-002B-SO	D-6	NC	1.000	SO3	SO	D
	2599-003A-AO	C-3	NC	1.000	GL	AO	C/FC
	2599-003A-SO	C-2	NC	1.000	SO3	SO	D
	2599-003B-AO	C-6	NC	1.000	GL	AO	C/FC

TABLE 1.0-9
UNIT 1 VALVE LISTING
(Sorted by P&ID)

P&ID NUMBER	VALVE NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
M-0642-1	2599-003B-SO	C-7	NC	1.000	SO3	SO	D
	2599-004A-AO	F-3	NC	1.000	GL	AO	C/FC
	2599-004A-SO	F-3	NC	1.000	SO3	SO	D
	2599-004B-AO	E-3	NC	1.000	GL	AO	C/FC
	2599-004B-SO	E-3	NC	1.000	SO3	SO	D
	2599-005A-FCV	F-5	NC	1.000	DIA	AO	C/FC
	2599-005A-SO	F-5	NC	1.000	SO3	SO	D
	2599-005B-FCV	E-5	NC	1.000	DIA	AO	C/FC
	2599-005B-SO	E-5	NC	1.000	SO3	SO	D
	2599-008	F-8	NC	1.000	CK	SA	SYS
	2599-022	A-7	NC	1.500	CK	SA	SYS
	2599-023A	C-3	NC	1.500	CK	SA	SYS
	2599-023B	C-6	NC	1.500	CK	SA	SYS
	2599-024A	C-3	NC	1.000	CK	SA	SYS
	2599-024B	C-6	NC	1.000	CK	SA	SYS
	2599-998 -RV	A-5	NC	.001	RV	SA	C
	2599-999	A-6	NC	1.250	CK	SA	SYS
M-1056-1	1099-092A-FCV	E-5	2	1.000	DIA	AO	C/FC
	1099-092B-FCV	D-5	2	1.000	DIA	AO	C/FC
	8941-705 -XCV	C-6	2	.500	DIA	AO	C/FC
	8941-705 -XSV	C-7	NC	.001	SO3	SO	D
	8941-709 -XSV	E-5	NC	.001	SO3	SO	D
	8941-710 -XSV	D-5	NC	.001	SO3	SO	D
M-1057-1	8941-101 -XCV	C-6	NC	.500	DIA	AO	C/FC
	8941-101 -XSV	C-6	NC	.001	SO3	SO	D
M-1551	5741-306 -XCV -1/2	D-7	NC	1.000	DIA	AO	C/FC
	5741-306 -XSV -1/2	D-7	NC	.001	SO3	SO	D
	5741-319A-XCV -1/2	C-2	3	2.500	DIA	AO	O/FO
	5741-319A-XSV -1/2	C-2	NC	.001	S03	SO	D
	5741-319B-XCV -1/2	C-2	3	3.000	DIA	AO	C/FC
	5741-319B-XSV -1/2	C-2	NC	.001	SO3	SO	D
	5741-333 -FCV -1/2	C-3	3	2.500	DIA	AO	O/FO
	5741-345 -PSV -1/2	B-3	3	2.000	RV	SA	C
	5799-381 - -1/2	C-3	3	2.500	GL	M	C
	5799-386	C-2	3	2.500	CK	SA	SYS
	5799-410 - -1/2	C-2	3	3.000	CK	SA	SYS

TABLE 1.0-10
UNIT 2 VALVE LISTING
(Sorted by P&ID)

P&ID NUMBER	VALVE NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
M-0029-2	5201- -RV	D-7	NC	1.000	RV	SA	C
	5201- -SO	A-8	NC	1.000	SO2	SO	O
	5299-003	D-8	NC	1.500	CK	SA	SYS
	5299-005	D-8	NC	1.500	CK	SA	SYS
	5299-042	D-9	NC	.500	CK	SA	SYS
	5299-157	C-9	NC	1.000	CK	SA	SYS
	5299-158	D-9	NC	.750	CK	SA	SYS
M-0044	7503- -MO	D-2	NC	18.000	BTF	MO	O
M-0058-3	4399-045	A-4	NC	3.000	GA	M	C
	4399-046	A-4	NC	3.000	CK	SA	SYS
M-0060-1	0203-001A-AO	F-4	1	20.000	GL	AO	O/FC
	0203-001A-AP2	F-4	NC	.001	PLT	AO	E
	0203-001A-AP4	F-4	NC	.001	SO4	SO	E
	0203-001A-SOAC	F-4	NC	.001	SO3	SO	E
	0203-001A-SODC	F-4	NC	.001	SO3	SO	E
	0203-001B-AO	D-4	1	20.000	GL	AO	O/FC
	0203-001B-AP2	F-4	NC	.001	PLT	AO	E
	0203-001B-AP4	F-4	NC	.001	SO4	SO	E
	0203-001B-SOAC	F-4	NC	.001	SO3	SO	E
	0203-001B-SODC	F-4	NC	.001	SO3	SO	E
	0203-001C-AO	C-4	1	20.000	GL	AO	O/FC
	0203-001C-AP2	F-4	NC	.001	PLT	AO	E
	0203-001C-AP4	F-4	NC	.001	SO4	SO	E
	0203-001C-SOAC	F-4	NC	.001	SO3	SO	E
	0203-001C-SODC	F-4	NC	.001	SO3	SO	E
	0203-001D-AO	B-4	1	20.000	GL	AO	O/FC
	0203-001D-AP2	F-4	NC	.001	PLT	AO	E
	0203-001D-AP4	F-4	NC	.001	SO4	SO	E
	0203-001D-SOAC	F-4	NC	.001	SO3	SO	E
	0203-001D-SODC	F-4	NC	.001	SO3	SO	E
	0203-003A	F-7	1	6.625	SRV	SAP	C
	0203-003A-SO	F-7	NC	.001	SO3	SO	D
	0203-003B	D-6	1	6.000	RV	SO	C
	0203-003C	C-8	1	6.000	RV	SO	C
	0203-003D	B-8	1	6.000	RV	SO	C
	0203-003E	D-8	1	6.000	RV	SO	C
	0203-004A	F-8	1	6.000	SV	SA	C
	0203-004A-RPD	F-8	NS	8.000	RPD	SA	C
	0203-004B	E-5	1	6.000	SV	SA	C
	0203-004B-RPD	D-5	NS	8.000	RPD	SA	C
	0203-004C	C-5	1	6.000	SV	SA	C
	0203-004C-RPD	C-5	NS	8.000	RPD	SA	C
	0203-004D	B-8	1	6.000	SV	SA	C
	0203-004D-RPD	B-8	NS	8.000	RPD	SA	C
	0203-004E	F-8	1	6.000	SV	SA	C
	0203-004E-RPD	F-8	NS	8.000	RPD	SA	C
	0203-004F	E-5	1	8.000	SV	SA	C
	0203-004F-RPD	D-5	NS	8.000	RPD	SA	C
	0203-004G	C-5	1	6.000	SV	SA	C
	0203-004G-RPD	C-5	NS	8.000	RPD	SA	C
	0203-004H	B-8	1	6.000	SV	SA	C

TABLE 1.0-10
UNIT 2 VALVE LISTING
(Sorted by P&ID)

P&ID NUMBER	VALVE NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
M-0060-1	0203-004H-RPD	B-8	NS	8.000	RPD	SA	C
	0220-001 -MO	E-4	1	3.000	GA	MO	C
	0220-084A	F-3	NC	1.000	CK	SA	SYS
	0220-084B	F-3	NC	1.000	CK	SA	SYS
	0220-084C	F-3	NC	1.000	CK	SA	SYS
	0220-084D	F-3	NC	1.000	CK	SA	SYS
M-0060-2	0203-002A-AO	F-7	1	20.000	GL	AO	O/FC
	0203-002A-AP2	F-7	NC	.001	PLT	AO	E
	0203-002A-AP4	F-7	NC	.001	SO4	SO	E
	0203-002A-SOAC	F-7	NC	.001	SO3	SO	E
	0203-002A-SODC	F-7	NC	.001	SO3	SO	E
	0203-002B-AO	E-7	1	20.000	GL	AO	O/FC
	0203-002B-AP2	F-7	NC	.001	PLT	AO	E
	0203-002B-AP4	F-7	NC	.001	SO4	SO	E
	0203-002B-SOAC	F-7	NC	.001	SO3	SO	E
	0203-002B-SODC	F-7	NC	.001	SO3	SO	E
	0203-002C-AO	D-7	1	20.000	GL	AO	O/FC
	0203-002C-AP2	F-7	NC	.001	PLT	AO	E
	0203-002C-AP4	F-7	NC	.001	SO4	SO	E
	0203-002C-SOAC	F-7	NC	.001	SO3	SO	E
	0203-002C-SODC	F-7	NC	.001	SO3	SO	E
	0203-002D-AO	C-7	1	20.000	GL	AO	O/FC
	0203-002D-AP2	F-7	NC	.001	PLT	AO	E
	0203-002D-AP4	F-7	NC	.001	SO4	SO	E
	0203-002D-SOAC	F-7	NC	.001	SO3	SO	E
	0203-002D-SODC	F-7	NC	.001	SO3	SO	E
	0220-002 -MO	E-7	1	3.000	GA	MO	C
	0220-017A	E-8	1	1.000	XFC	SA	SYS
	0220-017B	D-8	1	1.000	XFC	SA	SYS
	0220-017C	C-8	1	1.000	XFC	SA	SYS
	0220-017D	B-8	1	1.000	XFC	SA	SYS
	0220-018A	E-8	1	1.000	XFC	SA	SYS
	0220-018B	D-8	1	1.000	XFC	SA	SYS
	0220-018C	C-8	1	1.000	XFC	SA	SYS
	0220-018D	B-8	1	1.000	XFC	SA	SYS
	0220-085A	F-7	NC	1.000	CK	SA	SYS
	0220-085B	F-7	NC	1.000	CK	SA	SYS
	0220-085C	F-7	NC	1.000	CK	SA	SYS
	0220-085D	F-7	NC	1.000	CK	SA	SYS
M-0062	0220-058A	E-2	1	18.000	CK	SA	SYS
	0220-058B	F-2	1	18.000	CK	SA	SYS
	0220-059B	F-2	2	18.000	CK	SA	SYS
	0220-062A	E-2	1	18.000	CK	SA	SYS
	0220-062B	F-2	1	18.000	CK	SA	SYS
M-0069-1	3999-560	D-8	3	2.500	CK	SA	SYS
	3999-561	D-7	3	4.000	CK	SA	SYS
M-0069-3	3999-086	C-8	3	8.000	CK	SA	SYS
	3999-088	E-6	3	6.000	CK	SA	SYS
	3999-089	D-6	3	6.000	GA	M	C
	3999-139	E-5	3	6.000	CK	SA	SYS
M-0071-2	0737-001A	F-7	NC	.375	BAL	SO	C/FC

TABLE 1.0-10
UNIT 2 VALVE LISTING
(Sorted by P&ID)

P&ID NUMBER	VALVE NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
M-0071-2	0737-001B	F-7	NC	.375	BAL	SO	C/FC
	0737-001C	F-7	NC	.375	BAL	SO	C/FC
	0737-001D	F-7	NC	.375	BAL	SO	C/FC
	0737-001E	F-7	NC	.375	BAL	SO	C/FC
	0737-002A	F-7	NC	.375	SHR	EXP	O/KL
	0737-002B	F-7	NC	.375	SHR	EXP	O/KL
	0737-002C	F-7	NC	.375	SHR	EXP	O/KL
	0737-002D	F-7	NC	.375	SHR	EXP	O/KL
	0737-002E	F-7	NC	.375	SHR	EXP	O/KL
	4720	D-3	NC	1.000	DIA	AO	O/FC
	4721	D-3	NC	1.000	DIA	AO	O/FC
	4799-155	E-2	NC	2.000	CK	SA	SYS
	4799-156	E-3	NC	2.000	CK	SA	SYS
	4799-158	F-4	NC	.500	CK	SA	SYS
	4799-159	F-4	NC	.500	CK	SA	SYS
	4799-281A	B-2	NC	.500	CK	SA	SYS
	4799-482	D-3	NC	.500	SO3	SO	E
	4799-483	D-3	NC	.500	SO3	SO	E
	743	B-7	NC	.375	CK	SA	SYS
M-0072-1	4699-046	E-6	NC	1.000	GL	M	C
	4699-047	E-6	NC	1.000	CK	SA	SYS
M-0072-2	4699-123	D-6	NC	1.500	CK	SA	SYS
	4699-196	D-5	NC	1.500	CK	SA	SYS
	4699-226	C-2	NC	1.500	DIA	AO	C
	4699-306A	D-7	NC	.750	RV	SA	C
	4699-306B	D-6	NC	.750	RV	SA	C
	4699-306C	D-5	NC	.750	RV	SA	C
	4699-306D	D-5	NC	.750	RV	SA	C
	4699-307A	C-6	NC	.500	CK	SA	SYS
	4699-307B	C-5	NC	.500	CK	SA	SYS
	4699-309	C-3	NC	.375	CK	SA	SYS
	4699-310	D-3	NC	.375	SO3	SO	D
M-0075	3702- -MO	B-3	NC	8.000	GA	MO	O
	3703- -MO	B-1	NC	8.000	GA	MO	O
	3706- -MO	B-1	NC	8.000	GA	MO	O
	3799-031	B-3	NC	8.000	CK	SA	SYS
M-0076-1	0220-081A	E-4	NC	1.000	CK	SA	SYS
	0220-081B	E-4	NC	1.000	CK	SA	SYS
	0220-081C	E-4	NC	1.000	CK	SA	SYS
	0220-081D	E-6	NC	1.000	CK	SA	SYS
	0220-081E	E-6	NC	1.000	CK	SA	SYS
	0220-105A	D-4	NC	8.000	CK	SA	SYS
	0220-105B	E-4	NC	8.000	CK	SA	SYS
	0220-105C	E-5	NC	8.000	CK	SA	SYS
	0220-105D	D-5	NC	8.000	CK	SA	SYS
	0220-105E	E-5	NC	8.000	CK	SA	SYS
	1601-020A-AO	D-9	NC	20.000	BTF	AO	C/FO
	1601-020A-SO	A-1	NC	.001	SO4	SO	E
	1601-020B-AO	E-9	NC	20.000	BTF	AO	C/FO
	1601-020B-SO	A-1	NC	.001	SO4	SO	E
	1601-021 -AO	C-6	NC	18.000	BTF	AO	C/FC

TABLE 1.0-10
UNIT 2 VALVE LISTING
(Sorted by P&ID)

P&ID NUMBER	VALVE NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
M-0076-1	1601-021 -SO	A-1	NC	.001	SO4	SO	D
	1601-022 -AO	C-6	NC	18.000	BTF	AO	C/FC
	1601-022 -SO	C-7	NC	.001	SO4	SO	D
	1601-023 -AO	B-3	NC	18.000	BTF	AO	C/FC
	1601-023 -SO	A-1	NC	.001	SO4	SO	D
	1601-024 -AO	B-2	NC	18.000	BTF	AO	C/FC
	1601-024 -SO	A-1	NC	.001	SO4	SO	D
	1601-031A	D-9	NC	20.000	CK	SA	SYS
	1601-031B	E-9	NC	20.000	CK	SA	SYS
	1601-032A	E-2	NC	.001	CK	SA	SYS
	1601-032B	E-2	NC	.001	CK	SA	SYS
	1601-032C	E-2	NC	.001	CK	SA	SYS
	1601-032D	E-2	NC	.001	CK	SA	SYS
	1601-032E	E-2	NC	.001	CK	SA	SYS
	1601-032F	E-3	NC	.001	CK	SA	SYS
	1601-033A	E-7	NC	.001	CK	SA	SYS
	1601-033B	E-7	NC	.001	CK	SA	SYS
	1601-033C	E-7	NC	.001	CK	SA	SYS
	1601-033D	E-7	NC	.001	CK	SA	SYS
	1601-033E	E-7	NC	.001	CK	SA	SYS
	1601-033F	E-7	NC	.001	CK	SA	SYS
	1601-055	A-6	NC	4.000	GA	AO	O/FC
	1601-055 -SO	A-6	NC	.001	SO3	SO	E
	1601-056 -AO	D-6	NC	18.000	BTF	AO	O/FC
	1601-056 -SO	A-1	NC	.001	SO4	SO	E
	1601-057	D-8	NC	1.000	GL	MO	O
	1601-058 -AO	D-7	NC	1.000	GL	AO	C/FC
	1601-058 -SO	D-7	NC	.001	SO3	SO	D
	1601-059 -AO	D-7	NC	1.000	GL	AO	O/FC
	1601-059 -SO	D-6	NC	.001	SO3	SO	E
	1601-060 -AO	E-1	NC	18.000	BTF	AO	C/FC
	1601-060 -SO	F-1	NC	.001	SO4	SO	D
	1601-061 -AO	F-1	NC	2.000	GL	AO	C/FC
	1601-061 -SO	F-1	NC	.001	SO3	SO	D
	1601-062 -AO	B-3	NC	2.000	GL	AO	O/FC
	1601-062 -SO	B-3	NC	.001	SO3	SO	D
	1601-063 -AO	A-2	NC	6.000	BTF	AO	C/FC
	1601-063 -SO	A-3	NC	.001	SO4	SO	D
	1699-009 -RV	D-8	NC	1.500	RV	SA	C
	8801- A-FCV	C-3	NC	.500	DIA	AO	O/FC
	8801- A-SO	C-3	NC	.001	SO3	SO	E
	8801- B-FCV	D-3	NC	.500	DIA	AO	O/FC
	8801- B-SO	D-3	NC	.001	SO3	SO	E
	8801- C-FCV	D-3	NC	.500	DIA	AO	O/FC
	8801- C-SO	D-3	NC	.001	SO3	SO	E
	8801- D-FCV	E-3	NC	.500	DIA	AO	O/FC
	8801- D-SO	E-3	NC	.001	SO3	SO	E
	8802- A-FCV	C-3	NC	.500	DIA	AO	O/FC
	8802- A-SO	C-3	NC	.001	SO3	SO	E
	8802- B-FCV	D-3	NC	.500	DIA	AO	O/FC
	8802- B-SO	D-3	NC	.001	SO3	SO	E

TABLE 1.0-10
UNIT 2 VALVE LISTING
(Sorted by P&ID)

P&ID NUMBER	VALVE NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
M-0076-1	8802- C-FCV	D-3	NC	.500	DIA	AO	O/FC
	8802- C-SO	D-3	NC	.001	SO3	SO	E
	8802- D-FCV	E-3	NC	.500	DIA	AO	O/FC
	8802- D-SO	E-3	NC	.001	SO3	SO	E
	8803	D-6	NC	.500	GL	AO	O/FC
	8803- -SO	C-6	NC	.001	SO3	SO	E
	8803- 1D	D-3	NC	.500	GA	M	C
	8803- 1E	D-3	NC	.500	GA	M	C
	8803- 1F	D-3	NC	.500	GA	M	C
	8803- 1G	D-3	NC	.500	GA	M	C
	8803- 1H	D-3	NC	.500	GA	M	C
	8803- 1I	D-3	NC	.500	GA	M	C
	8803- 1J	D-3	NC	.500	GA	M	C
	8803- 1K	D-3	NC	.500	GA	M	C
	8803- 1L	D-3	NC	.500	GA	M	C
	8803- 1M	D-3	NC	.500	GA	M	C
	8803- 1N	D-3	NC	.500	GA	M	C
	8803- 1O	D-3	NC	.500	GA	M	C
	8803- 1P	D-3	NC	.500	GA	M	C
	8803- 1Q	D-3	NC	.500	GA	M	C
	8803- 1R	D-3	NC	.500	GA	M	C
	8803- 1S	D-3	NC	.500	GA	M	C
	8803- 1T	D-3	NC	.500	GA	M	C
	8803- 1U	D-3	NC	.500	GA	M	C
	8803- 1V	D-3	NC	.500	GA	M	C
	8803- 1W	D-3	NC	.500	GA	M	C
	8803- 1X	D-3	NC	.500	GA	M	C
	8803- 1Y	D-3	NC	.500	GA	M	C
	8803- 2D	D-3	NC	.500	GA	M	C
	8803- 2E	D-3	NC	.500	GA	M	C
	8803- 2F	D-3	NC	.500	GA	M	C
	8803- 2G	D-3	NC	.500	GA	M	C
	8803- 2H	D-3	NC	.500	GA	M	C
	8803- 2I	D-3	NC	.500	GA	M	C
	8803- 2J	D-3	NC	.500	GA	M	C
	8803- 2K	D-3	NC	.500	GA	M	C
	8803- 2L	D-3	NC	.500	GA	M	C
	8803- 2M	D-3	NC	.500	GA	M	C
	8803- 2N	D-3	NC	.500	GA	M	C
	8803- 2O	D-3	NC	.500	GA	M	C
	8803- 2P	D-3	NC	.500	GA	M	C
	8803- 2Q	D-3	NC	.500	GA	M	C
	8803- 2R	D-3	NC	.500	GA	M	C
	8803- 2S	D-3	NC	.500	GA	M	C
	8803- 2T	D-3	NC	.500	GA	M	C
	8803- 2U	D-3	NC	.500	GA	M	C
	8803- 2V	D-3	NC	.500	GA	M	C
	8803- 2W	D-3	NC	.500	GA	M	C
	8803 2X	D-3	NC	.500	GA	M	C
	8803- 2Y	D-3	NC	.500	GA	M	C
	8804	C-6	NC	.500	GL	AO	O/FC

TABLE 1.0-10
UNIT 2 VALVE LISTING
(Sorted by P&ID)

P&ID NUMBER	VALVE NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
M-0076-1	8804- -SO	D-6	NC	.001	SO3	SO	E
M-0077-1	0220-051	E-5	1	.500	DLA	AO	C/FC
	0220-051 -SO	E-5	NC	.999	SO3	SO	D
	0220-054	E-6	1	1.000	XFC	SA	SYS
	0263-2-011	E-6	1	1.000	XFC	SA	SYS
	0263-2-013A	D-6	1	1.000	XFC	SA	SYS
	0263-2-013B	D-3	1	1.000	XFC	SA	SYS
	0263-2-015A	D-6	1	1.000	XFC	SA	SYS
	0263-2-015B	D-3	1	1.000	XFC	SA	SYS
	0263-2-017A	D-6	1	1.000	XFC	SA	SYS
	0263-2-017B	D-3	1	1.000	XFC	SA	SYS
	0263-2-019A	C-6	1	1.000	XFC	SA	SYS
	0263-2-019B	C-3	1	1.000	XFC	SA	SYS
	0263-2-020A	B-6	1	1.000	XFC	SA	SYS
	0263-2-020B	B-6	1	1.000	XFC	SA	SYS
	0263-2-020C	B-3	1	1.000	XFC	SA	SYS
	0263-2-020D	B-3	1	1.000	XFC	SA	SYS
	0263-2-023A	C-6	1	1.000	XFC	SA	SYS
	0263-2-023B	C-6	1	1.000	XFC	SA	SYS
	0263-2-023C	B-3	1	1.000	XFC	SA	SYS
	0263-2-023D	B-3	1	1.000	XFC	SA	SYS
	0263-2-025	B-6	1	1.000	XFC	SA	SYS
	0263-2-027	A-6	1	1.000	XFC	SA	SYS
	0263-2-031B	C-6	1	1.000	XFC	SA	SYS
	0263-2-031C	C-6	1	1.000	XFC	SA	SYS
	0263-2-031D	C-6	1	1.000	XFC	SA	SYS
	0263-2-031E	C-6	1	1.000	XFC	SA	SYS
	0263-2-031G	C-6	1	1.000	XFC	SA	SYS
	0263-2-031H	C-6	1	1.000	XFC	SA	SYS
	0263-2-031J	C-6	1	1.000	XFC	SA	SYS
	0263-2-031K	C-6	1	1.000	XFC	SA	SYS
	0263-2-031M	C-3	1	1.000	XFC	SA	SYS
	0263-2-031N	C-3	1	1.000	XFC	SA	SYS
	0263-2-031P	C-3	1	1.000	XFC	SA	SYS
	0263-2-031R	C-3	1	1.000	XFC	SA	SYS
	0263-2-031T	C-3	1	1.000	XFC	SA	SYS
	0263-2-031U	C-3	1	1.000	XFC	SA	SYS
	0263-2-031V	C-3	1	1.000	XFC	SA	SYS
	0263-2-031W	C-3	1	1.000	XFC	SA	SYS
	0263-2-033	B-3	1	1.000	XFC	SA	SYS
	0263-2-042A	C-6	1	1.000	XFC	SA	SYS
	0263-2-042B	C-3	1	1.000	XFC	SA	SYS
M-0077-2	0202-005A-MO	D-6	1	28.000	GA	MO	O
	0202-005B-MO	D-3	1	28.000	GA	MO	O
	0220-019A	B-6	1	1.000	XFC	SA	SYS
	0220-019B	B-3	1	1.000	XFC	SA	SYS
	0220-020A	B-6	1	1.000	XFC	SA	SYS
	0220-020B	B-3	1	1.000	XFC	SA	SYS
	0220-021A	D-8	1	1.000	XFC	SA	SYS
	0220-021B	D-1	1	1.000	XFC	SA	SYS
	0220-022A	D-8	1	1.000	XFC	SA	SYS

TABLE 1.0-10
UNIT 2 VALVE LISTING
(Sorted by P&ID)

P&ID NUMBER	VALVE NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
M-0077-2	0220-022B	D-1	1	1.000	XFC	SA	SYS
	0220-044	E-5	1	.750	GL	AO	O/FC
	0220-044 -SO	E-5	NC	.001	SO3	SO	E
	0220-045	E-7	1	.750	GL	AO	O/FC
	0220-045 -SO	D-7	NC	.001	SO3	SO	E
	0220-067A	F-6	1	1.000	XFC	SA	SYS
	0220-067B	F-6	1	1.000	XFC	SA	SYS
	0220-067C	F-6	1	1.000	XFC	SA	SYS
	0220-067D	F-6	1	1.000	XFC	SA	SYS
	0220-067E	E-6	1	1.000	XFC	SA	SYS
	0220-067F	F-6	1	1.000	XFC	SA	SYS
	0220-067G	E-6	1	1.000	XFC	SA	SYS
	0220-067H	F-6	1	1.000	XFC	SA	SYS
	0220-089A	E-1	1	1.000	XFC	SA	SYS
	0220-089B	E-1	1	1.000	XFC	SA	SYS
	0262-2-005A	B-7	1	1.000	XFC	SA	SYS
	0262-2-005B	B-2	1	1.000	XFC	SA	SYS
	0262-2-006A	B-7	1	1.000	XFC	SA	SYS
	0262-2-006B	B-2	1	1.000	XFC	SA	SYS
M-0078	1001-018B-MO	C-3	2	3.000	GA	MO	C
	1402-003A-MO	F-7	2	18.000	GA	MO	O
	1402-003B-MO	F-5	2	18.000	GA	MO	O
	1402-004A-MO	B-8	2	8.000	GL	MO	C
	1402-004B-MO	C-8	2	8.000	GL	MO	C
	1402-008A	E-9	2	12.000	SCK	SA	C/LO
	1402-008B	E-6	2	12.000	SCK	SA	C/LO
	1402-009A-AO	C-3	1	10.000	CK	AO	SYS
	1402-009B-AO	C-4	1	10.000	CK	AO	SYS
	1402-013A	E-10	2	1.500	SCK	SA	C/LO
	1402-013B	E-6	2	1.500	SCK	SA	C/LO
	1402-024A-MO	B-2	2	10.000	GA	MO	O
	1402-024B-MO	B-5	2	10.000	GA	MO	O
	1402-025A-MO	C-2	1	10.000	GA	MO	C
	1402-025B-MO	C-5	1	10.000	GA	MO	C
	1402-028A-RV	C-9	2	2.000	RV	SA	C
	1402-028B-RV	D-6	2	2.000	RV	SA	C
	1402-031A	D-3	1	.750	XFC	SA	SYS
	1402-031B	D-4	1	.750	XFC	SA	SYS
	1402-038A-MO	D-8	2	1.500	GA	MO	C
	1402-038B-MO	E-7	2	1.500	GA	MO	C
	1402-070	E-7	2	1.500	CK	SA	SYS
M-0079	1001-007A-MO	B-6	2	14.000	GA	MO	O/KL
	1001-007B-MO	E-6	2	14.000	GA	MO	O/KL
	1001-007C-MO	B-6	2	14.000	GA	MO	O/KL
	1001-007D-MO	E-6	2	14.000	GA	MO	O/KL
	1001-043A-MO	B-4	2	14.000	GA	MO	C/KL
	1001-043B-MO	E-4	2	14.000	GA	MO	C/KL
	1001-043C-MO	B-8	2	14.000	GA	MO	C/KL
	1001-043D-MO	D-8	2	14.000	GA	MO	C/KL
	1001-067A	B-3	2	12.000	CK	SA	SYS
	1001-067B	E-3	2	12.000	CK	SA	SYS

TABLE 1.0-10
UNIT 2 VALVE LISTING
(Sorted by P&ID)

P&ID NUMBER	VALVE NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
M-0079	1001-067C	B-9	2	12.000	CK	SA	SYS
	1001-067D	E-9	2	12.000	CK	SA	SYS
	1001-125A-RV	B-5	2	1.000	RV	SA	C
	1001-125B-RV	E-5	2	1.000	RV	SA	C
	1001-125C-RV	B-7	2	1.000	RV	SA	C
	1001-125D-RV	E-7	2	1.000	RV	SA	C
	1001-142A	B-3	2	2.000	CK	SA	SYS
	1001-142B	E-3	2	2.000	CK	SA	SYS
	1001-142C	B-9	2	2.000	CK	SA	SYS
	1001-142D	E-9	2	2.000	CK	SA	SYS
	1001-165A-RV	A-2	3	4.000	RV	SA	C
	1001-165B-RV	A-10	3	4.000	RV	SA	C
	1001-166A-RV	A-2	2	1.000	RV	SA	C
	1001-166B-RV	A-10	2	1.000	RV	SA	C
M-0081-1	1001-016A-MO	A-7	2	18.000	GL	MO	O
	1001-016B-MO	A-2	2	18.000	GL	MO	O
	1001-018A-MO	C-6	2	3.000	GA	MO	C
	1001-019A-MO	B-8	2	18.000	GA	MO	O/KL
	1001-019B-MO	B-2	2	18.000	GA	MO	O/KL
	1001-020 -MO	B-7	2	3.000	GA	MO	C
	1001-021 -MO	C-7	NC	3.000	GA	MO	C
	1001-022A-RV	E-8	2	1.000	RV	SA	C
	1001-022B-RV	E-2	2	1.000	RV	SA	C
	1001-023A-MO	E-6	2	10.000	GA	MO	C
	1001-023B-MO	E-3	2	10.000	GA	MO	C
	1001-026A-MO	E-5	2	10.000	GA	MO	C
	1001-026B-MO	E-4	2	10.000	GA	MO	C
	1001-028A-MO	E-6	2	16.000	GL	MO	O
	1001-028B-MO	E-3	2	16.000	GL	MO	O
	1001-029A-MO	E-6	1	16.000	GA	MO	C
	1001-029B-MO	E-3	1	16.000	GA	MO	C
	1001-034A-MO	E-7	2	16.000	GA	MO	C
	1001-034B-MO	E-3	2	16.000	GA	MO	C
	1001-036A-MO	E-7	2	14.000	GL	MO	C
	1001-036B-MO	D-3	2	14.000	GL	MO	C
	1001-037A-MO	E-7	2	6.000	GL	MO	C
	1001-037B-MO	D-3	2	6.000	GL	MO	C
	1001-047 -MO	C-4	1	20.000	GA	MO	C
	1001-050 -MO	D-4	1	20.000	GA	MO	C
	1001-059	F-3	2	1.000	RV	SA	C
	1001-068A-AO	E-5	1	16.000	CK	AO	SYS
	1001-068B-AO	E-4	1	16.000	CK	AO	SYS
	1001-131	B-2	2	3.000	CK	SA	SYS
	1001-136A	D-8	2	3.000	CK	SA	SYS
	1001-136B	E-2	2	3.000	CK	SA	SYS
M-0081-2	1001-002A	C-7	3	12.000	CK	SA	SYS
	1001-002B	B-7	3	12.000	CK	SA	SYS
	1001-002C	D-2	3	12.000	CK	SA	SYS
	1001-002D	B-2	3	12.000	CK	SA	SYS
	1001-005A-MO	E-6	3	12.000	GL	MO	C
	1001-005B-MO	E-3	3	12.000	GL	MO	C
M-0082	1101-015	C-3	1	1.500	CK	SA	SYS
	1101-016	C-4	1	1.500	CK	SA	SYS

TABLE 1.0-10
UNIT 2 VALVE LISTING
(Sorted by P&ID)

P&ID NUMBER	VALVE NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
M-0082	1101-043A	D-6	2	1.500	CK	SA	SYS
	1101-043B	E-6	2	1.500	CK	SA	SYS
	1105- A-RV	C-7	2	1.500	RV	SA	C
	1105- B-RV	E-6	2	1.500	RV	SA	C
	1106- A	C-4	2	1.500	SHR	EXP	C/KL
	1106- B	D-4	2	1.500	SHR	EXP	C/KL
M-0083-1	0302-020A	E-8	NC	.500	SO3	SO	E
	0302-020B	E-8	NC	.500	SO3	SO	E
	0302-021A	E-6	2	1.000	DIA	AO	C/FC
	0302-021B	E-6	NC	1.000	DIA	AO	C/FC
	0302-021C	F-1	2	1.000	DIA	AO	C/FC
	0302-021D	F-1	NC	1.000	DIA	AO	C/FC
	0302-022A	F-5	2	2.000	DIA	AO	C/FC
	0302-022B	F-5	NC	2.000	DIA	AO	C/FC
	0302-022C	F-3	2	2.000	DIA	AO	C/FC
	0302-022D	F-2	NC	2.000	DIA	AO	C/FC
	0302-025A	E-7	NC	1.000	SO3	SO	D
	0302-025B	E-7	NC	1.000	SO3	SO	D
	0302-181A	E-8	NC	1.000	SO2	SO	C/FO
	0302-181B	E-8	NC	1.000	SO2	SO	C/FO
	0302-182A	F-8	NC	1.000	SO2	SO	C/FO
	0302-182B	F-8	NC	1.000	SO2	SO	C/FO
	0305-000_-RPD	E-10	1	.250	RPD	SA	C
	0305-114	E-9	2	.750	CK	SA	SYS
	0305-115	E-10	1	.500	CK	SA	SYS
	0305-117	E-9	NC	.375	SO3	SO	E
	0305-118	E-9	NC	.375	SO3	SO	E
	0305-120 -FCV	C-10	1	1.000	SO2	SO	C/FC
	0305-121 -SO	C-9	1	.750	SO2	SO	C/FC
	0305-122 -SO	C-9	1	.750	SO2	SO	C/FC
	0305-123 -FCV	C-10	1	1.000	SO2	SO	C/FC
	0305-126 -CV	D-10	1	1.000	DIA	AO	C/FO
	0305-127 -CV	D-9	1	.750	DIA	AO	C/FO
	0305-138	C-10	1	.500	CK	SA	SYS
M-0084-1	5401- A-AO	E-8	NC	18.000	BTF	AO	O/FC
	5401- A-CK	Z-99	NC	.001	CK	SA	SYS
	5401- A-SO	E-7	NC	.001	SO4	SO	E
	5401- B-AO	E-8	NC	18.000	BTF	AO	O/FC
	5401- B-CK	Z-99	NC	.001	CK	SA	SYS
	5401- B-SO	E-7	NC	.001	SO4	SO	E
	5402- A-AO	D-3	NC	18.000	GA	AO	O/FC
	5402- A-CK	Z-99	NC	.001	CK	SA	SYS
	5402- A-SO	D-2	NC	.001	SO4	SO	E
	5402- B-AO	D-3	NC	18.000	GA	AO	O/FC
	5402- B-CK	Z-99	NC	.001	CK	SA	SYS
	5402- B-SO	D-2	NC	.001	SO4	SO	E
M-0085	2001-003 -AO	F-7	NC	3.000	PLG	AO	C/FC
	2001-003 -SO	F-7	NC	.001	SO3	SO	D
	2001-004 -AO	F-7	NC	3.000	PLG	AO	C/FC
	2001-004 -SO	F-7	NC	.001	SO3	SO	D
	2001-015 -AO	D-4	NC	3.000	PLG	AO	C/FC

TABLE 1.0-10
UNIT 2 VALVE LISTING
(Sorted by P&ID)

P&ID NUMBER	VALVE NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
M-0085	2001-015 -SO	E-4	NC	.001	SO3	SO	D
	2001-016 -AO	D-3	NC	3.000	PLG	AO	C/FC
	2001-016 -SO	E-3	NC	.001	SO3	SO	D
M-0087	2301-003 -MO	A-7	2	10.000	GA	MO	C
	2301-004 -MO	C-9	1	10.000	GA	MO	O
	2301-005 -MO	B-10	1	10.000	GA	MO	O
	2301-007 -AO	E-6	2	14.000	CK	AO	SYS
	2301-008 -MO	E-6	2	14.000	GA	MO	C
	2301-009 -MO	E-5	2	14.000	GA	MO	O
	2301-010 -MO	E-5	2	12.000	GL	MO	C
	2301-014 -MO	C-6	2	4.000	GL	MO	C
	2301-020	E-1	2	16.000	CK	SA	SYS
	2301-023 -RV	A-3	2	1.500	RV	SA	C
	2301-026	D-10	1	1.000	XFC	SA	SYS
	2301-027	D-10	1	1.000	XFC	SA	SYS
	2301-028	B-9	2	1.000	GL	AO	C/FO
	2301-028 -SO	B-9	NC	.001	SO3	SO	D
	2301-029	B-10	2	1.000	GL	AO	O/FC
	2301-029 -SO	B-10	NC	.001	SO3	SO	D
	2301-030	B-10	NC	1.000	GL	AO	O/FC
	2301-030 -SO	B-10	NC	.001	SO3	SO	D
	2301-034	C-8	2	2.000	CK	SA	SYS
	2301-035 -MO	E-7	2	16.000	GA	MO	C
	2301-036 -MO	E-9	2	16.000	GA	MO	C
	2301-039	E-8	2	16.000	CK	SA	SYS
	2301-040	D-7	2	4.000	CK	SA	SYS
	2301-045	B-8	2	24.000	CK	SA	SYS
	2301-048 -MO	B-4	2	4.000	GA	MO	O
	2301-049 -MO	E-4	2	4.000	GA	MO	C
	2301-050	C-5	2	4.000	CK	SA	SYS
	2301-051	C-5	2	4.000	CK	SA	SYS
	2301-053 -RV	C-4	2	4.000	RV	SA	C
	2301-064	A-7	2	1.000	GL	AO	O/FC
	2301-064 -SO	A-6	NC	.001	SO3	SO	D
	2301-065	A-8	NC	1.000	GL	AO	O/FC
	2301-065 -SO	A-7	NC	.001	SO3	SO	D
	2301-068	A-6	2	16.000	RPD	SA	C
	2301-069	A-6	2	16.000	RPD	SA	C
	2301-071	D-8	2	2.000	SCK	SA	C/LO
	2301-074	C-8	2	12.000	SCK	SA	C/LO
	2301-075	B-4	2	4.000	CK	SA	SYS
	2301-076	E-4	2	2.000	CK	SA	SYS
	2317	A-7	2	24.000	PLG	HO	C
	2399-040- MO	D-8	2	4.000	GA	MO	O
	2399-041- MO	C-8	2	4.000	GA	MO	O
	2399-064	C-8	2	4.000	CK	SA	SYS
	2399-065	C-8	2	4.000	CK	SA	SYS
	2399-066	C-8	2	4.000	CK	SA	SYS
	2399-067	C-8	2	4.000	CK	SA	SYS
	2901-010	D-7	2	4.000	CK	SA	SYS
M-0088	1201-002 -MO	B-6	1	6.000	GA	MO	O

TABLE 1.0-10
UNIT 2 VALVE LISTING
(Sorted by P&ID)

P&ID NUMBER	VALVE NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
M-0088	1201-005 -MO	B-7	1	6.000	GA	MO	O
M-0089	1301-015A	A-2	1	1.000	XFC	SA	SYS
	1301-015B	B-2	1	1.000	XFC	SA	SYS
	1301-016 -MO	B-2	1	3.000	GA	MO	O
	1301-017 -MO	B-3	1	3.000	GA	MO	O
	1301-040	D-3	NC	2.000	CK	SA	SYS
	1301-041	D-2	NC	8.000	CK	SA	SYS
	1301-047	D-4	NC	2.000	CK	SA	SYS
	1301-055	D-3	NC	2.000	SCK	SA	C/LO
	1301-064	D-2	NC	8.000	SCK	SA	C/LO
M-0641-2	2499-001A-SO	D-6	NC	.500	SO2	SO	C/FC
	2499-001B-SO	D-3	NC	.500	SO2	SO	C/FC
	2499-002A-SO	D-6	NC	.500	SO2	SO	C/FC
	2499-002B-SO	D-3	NC	.500	SO2	SO	C/FC
	2499-003A-SO	B-7	NC	.500	SO2	SO	C/FC
	2499-003B-SO	B-2	NC	.500	SO2	SO	C/FC
	2499-004A-SO	B-6	NC	.500	SO2	SO	C/FC
	2499-004B-SO	B-3	NC	.500	SO2	SO	C/FC
	2499-022A	C-7	NC	.500	CK	SA	SYS
	2499-022B	C-2	NC	.500	CK	SA	SYS
M-0642-2	2599-002A-AO	D-5	NC	1.500	GL	AO	C/FC
	2599-002A-SO	D-6	NC	1.000	SO3	SO	D
	2599-002B-AO	D-4	NC	1.500	GL	AO	C/FC
	2599-002B-SO	D-3	NC	1.000	SO3	SO	D
	2599-003A-AO	C-6	NC	1.000	GL	AO	C/FC
	2599-003A-SO	C-7	NC	1.000	SO3	SO	D
	2599-003B-AO	C-3	NC	1.000	GL	AO	C/FC
	2599-003B-SO	C-2	NC	1.000	SO3	SO	D
	2599-004A-AO	F-3	NC	1.000	GL	AO	C/FC
	2599-004A-SO	F-3	NC	1.000	SO3	SO	D
	2599-004B-AO	E-3	NC	1.000	GL	AO	C/FC
	2599-004B-SO	E-3	NC	1.000	SO3	SO	D
	2599-005A-FCV	F-5	NC	1.000	DIA	AO	C/FC
	2599-005A-SO	F-5	NC	1.000	SO3	SO	D
	2599-005B-FCV	E-5	NC	1.000	DIA	AO	C/FC
	2599-005B-SO	E-5	NC	1.000	SO3	SO	D
	2599-008	F-8	NC	1.000	CK	SA	SYS
	2599-022	A-7	NC	1.500	CK	SA	SYS
	2599-023A	C-6	NC	1.500	CK	SA	SYS
	2599-023B	C-3	NC	1.500	CK	SA	SYS
	2599-024A	C-6	NC	1.000	CK	SA	SYS
	2599-024B	C-3	NC	1.000	CK	SA	SYS
	2599-998 -RV	B-5	NC	.001	RV	SA	C
	2599-999	A-6	NC	1.250	CK	SA	SYS
M-1061-1	1099-092A-FCV	E-5	2	1.000	DIA	AO	C/FC
	1099-092B-FCV	D-5	2	1.000	DIA	AO	C/FC
	8941-705 -XCV	C-6	2	.500	DIA	AO	C/FC
	8941-705 -XSV	C-7	NC	.001	SO3	SO	D
	8941-709 -XSV	E-5	NC	.001	SO3	SO	D
	8941-710 -XSV	D-5	NC	.001	SO3	SO	D
M-1062	8941-101 -XCV	C-6	NC	.500	DIA	AO	C/FC
	8941-101 -XSV	C-6	NC	.001	SO3	SO	D
M-1551	5799-386	C-2	3	2.500	CK	SA	SYS

TABLE 1.0-11
UNIT 1 VALVE LISTING
(Sorted by Valve number)

VALVE NUMBER	P&ID NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
0202-005A-MO	M-0035-2	D-6	1	28.000	GA	MO	O
0202-005B-MO	M-0035-2	D-3	1	28.000	GA	MO	O
0203-001A-AO	M-0013-1	F-4	1	20.000	GL	AO	O/FC
0203-001A-AP2	M-0013-1	F-4	NC	.001	PLT	AO	E
0203-001A-AP4	M-0013-2	F-7	NC	.001	SO4	SO	E
0203-001A-SOAC	M-0013-1	F-4	NC	.001	SO3	SO	E
0203-001A-SODC	M-0013-1	F-4	NC	.001	SO3	SO	E
0203-001B-AO	M-0013-1	D-4	1	20.000	GL	AO	O/FC
0203-001B-AP2	M-0013-1	F-4	NC	.001	PLT	AO	E
0203-001B-AP4	M-0013-1	F-4	NC	.001	SO4	SO	E
0203-001B-SOAC	M-0013-1	F-4	NC	.001	SO3	SO	E
0203-001B-SODC	M-0013-1	F-4	NC	.001	SO3	SO	E
0203-001C-AO	M-0013-1	C-4	1	20.000	GL	AO	O/FC
0203-001C-AP2	M-0013-1	F-4	NC	.001	PLT	AO	E
0203-001C-AP4	M-0013-1	F-4	NC	.001	SO4	SO	E
0203-001C-SOAC	M-0013-1	F-4	NC	.001	SO3	SO	E
0203-001C-SODC	M-0013-1	F-4	NC	.001	SO3	SO	E
0203-001D-AO	M-0013-1	B-4	1	20.000	GL	AO	O/FC
0203-001D-AP2	M-0013-1	F-4	NC	.001	PLT	AO	E
0203-001D-AP4	M-0013-1	F-4	NC	.001	SO4	SO	E
0203-001D-SOAC	M-0013-1	F-4	NC	.001	SO3	SO	E
0203-001D-SODC	M-0013-1	F-4	NC	.001	SO3	SO	E
0203-002A-AO	M-0013-2	F-7	1	20.000	GL	AO	O/FC
0203-002A-AP2	M-0013-2	F-7	NC	.001	PLT	AO	E
0203-002A-AP4	M-0013-1	F-4	NC	.001	SO4	SO	E
0203-002A-SOAC	M-0013-2	F-7	NC	.001	SO3	SO	E
0203-002A-SODC	M-0013-2	F-7	NC	.001	SO3	SO	E
0203-002B-AO	M-0013-2	E-7	1	20.000	GL	AO	O/FC
0203-002B-AP2	M-0013-2	F-7	NC	.001	PLT	AO	E
0203-002B-AP4	M-0013-2	F-7	NC	.001	SO4	SO	E
0203-002B-SOAC	M-0013-2	F-7	NC	.001	SO3	SO	E
0203-002B-SODC	M-0013-2	F-7	NC	.001	SO3	SO	E
0203-002C-AO	M-0013-2	D-7	1	20.000	GL	AO	O/FC
0203-002C-AP2	M-0013-2	F-7	NC	.001	PLT	AO	E
0203-002C-AP4	M-0013-2	F-7	NC	.001	SO4	SO	E
0203-002C-SOAC	M-0013-2	F-7	NC	.001	SO3	SO	E
0203-002C-SODC	M-0013-2	F-7	NC	.001	SO3	SO	E
0203-002D-AO	M-0013-2	B-7	1	20.000	GL	AO	O/FC
0203-002D-AP2	M-0013-2	F-7	NC	.001	PLT	AO	E
0203-002D-AP4	M-0013-2	F-7	NC	.001	SO4	SO	E
0203-002D-SOAC	M-0013-2	F-7	NC	.001	SO3	SO	E
0203-002D-SODC	M-0013-2	F-7	NC	.001	SO3	SO	E
0203-003A	M-0013-1	F-7	1	6.625	SRV	SAP	C
0203-003A-SO	M-0013-1	F-7	NC	.001	SO3	SO	D
0203-003B	M-0013-1	E-6	1	6.000	RV	SO	C
0203-003C	M-0013-1	C-8	1	6.000	RV	SO	C
0203-003D	M-0013-1	B-8	1	6.000	RV	SO	C
0203-003E	M-0013-1	E-8	1	6.000	RV	SO	C
0203-004A	M-0013-1	F-8	1	6.000	SV	SA	C
0203-004A-RPD	M-0013-1	F-8	NS	8.000	RPD	SA	C
0203-004B	M-0013-1	E-5	1	6.000	SV	SA	C

TABLE 1.0-11
UNIT 1 VALVE LISTING
(Sorted by Valve number)

VALVE NUMBER	P&ID NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
0203-004B-RPD	M-0013-1	D-5	NS	8.000	RPD	SA	C
0203-004C	M-0013-1	C-5	1	6.000	SV	SA	C
0203-004C-RPD	M-0013-1	C-5	NS	8.000	RPD	SA	C
0203-004D	M-0013-1	B-5	1	6.000	SV	SA	C
0203-004D-RPD	M-0013-1	B-5	NS	8.000	RPD	SA	C
0203-004E	M-0013-1	F-8	1	6.000	SV	SA	C
0203-004E-RPD	M-0013-1	F-8	NS	8.000	RPD	SA	C
0203-004F	M-0013-1	E-5	1	6.000	SV	SA	C
0203-004F-RPD	M-0013-1	D-5	NS	8.000	RPD	SA	C
0203-004G	M-0013-1	C-5	1	6.000	SV	SA	C
0203-004G-RPD	M-0013-1	C-5	NS	8.000	RPD	SA	C
0203-004H	M-0013-1	B-5	1	6.000	SV	SA	C
0203-004H-RPD	M-0013-1	B-5	NS	8.000	RPD	SA	C
0220-001 -MO	M-0013-1	E-4	1	3.000	GA	MO	C
0220-002 -MO	M-0013-2	E-7	1	3.000	GA	MO	C
0220-017A	M-0013-2	E-8	1	1.000	XFC	SA	SYS
0220-017B	M-0013-2	D-8	1	1.000	XFC	SA	SYS
0220-017C	M-0013-2	C-8	1	1.000	XFC	SA	SYS
0220-017D	M-0013-2	B-8	1	1.000	XFC	SA	SYS
0220-018A	M-0013-2	E-8	1	1.000	XFC	SA	SYS
0220-018B	M-0013-2	D-8	1	1.000	XFC	SA	SYS
0220-018C	M-0013-2	C-8	1	1.000	XFC	SA	SYS
0220-018D	M-0013-2	B-8	1	1.000	XFC	SA	SYS
0220-019A	M-0035-2	B-6	1	1.000	XFC	SA	SYS
0220-019B	M-0035-2	B-3	1	1.000	XFC	SA	SYS
0220-020A	M-0035-2	B-6	1	1.000	XFC	SA	SYS
0220-020B	M-0035-2	B-3	1	1.000	XFC	SA	SYS
0220-021A	M-0035-2	D-8	1	1.000	XFC	SA	SYS
0220-021B	M-0035-2	D-1	1	1.000	XFC	SA	SYS
0220-022A	M-0035-2	D-8	1	1.000	XFC	SA	SYS
0220-022B	M-0035-2	D-1	1	1.000	XFC	SA	SYS
0220-044	M-0035-2	E-2	1	.750	GL	AO	O/FC
0220-044 -SO	M-0035-2	E-2	NC	.001	SO3	SO	E
0220-045	M-0035-2	E-1	1	.750	GL	AO	O/FC
0220-045 -SO	M-0035-2	E-1	NC	.001	SO3	SO	E
0220-051	M-0035-1	E-5	1	.500	DIA	AO	C/FC
0220-051 -SO	M-0035-1	E-5	NC	.999	SO3	SO	D
0220-054	M-0035-1	E-6	1	1.000	XFC	SA	SYS
0220-058A	M-0015	E-2	1	18.000	CK	SA	SYS
0220-058B	M-0015	F-2	1	18.000	CK	SA	SYS
0220-059B	M-0015	F-2	2	18.000	CK	SA	SYS
0220-062A	M-0015	E-2	1	18.000	CK	SA	SYS
0220-062B	M-0015	F-2	1	18.000	CK	SA	SYS
0220-067A	M-0035-2	E-6	1	1.000	XFC	SA	SYS
0220-067B	M-0035-2	F-6	1	1.000	XFC	SA	SYS
0220-067C	M-0035-2	E-6	1	1.000	XFC	SA	SYS
0220-067D	M-0035-2	F-6	1	1.000	XFC	SA	SYS
0220-067E	M-0035-2	E-6	1	1.000	XFC	SA	SYS
0220-067F	M-0035-2	F-6	1	1.000	XFC	SA	SYS
0220-067G	M-0035-2	E-6	1	1.000	XFC	SA	SYS
0220-067H	M-0035-2	F-6	1	1.000	XFC	SA	SYS

TABLE 1.0-11
UNIT 1 VALVE LISTING
(Sorted by Valve number)

VALVE NUMBER	P&ID NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
0220-081A	M-0034-1	E-4	NC	1.000	CK	SA	SYS
0220-081B	M-0034-1	E-4	NC	1.000	CK	SA	SYS
0220-081C	M-0034-1	E-4	NC	1.000	CK	SA	SYS
0220-081D	M-0034-1	E-6	NC	1.000	CK	SA	SYS
0220-081E	M-0034-1	E-6	NC	1.000	CK	SA	SYS
0220-084A	M-0013-1	F-3	NC	1.000	CK	SA	SYS
0220-084B	M-0013-1	F-3	NC	1.000	CK	SA	SYS
0220-084C	M-0013-1	F-3	NC	1.000	CK	SA	SYS
0220-084D	M-0013-1	F-3	NC	1.000	CK	SA	SYS
0220-085A	M-0013-2	F-7	NC	1.000	CK	SA	SYS
0220-085B	M-0013-2	F-7	NC	1.000	CK	SA	SYS
0220-085C	M-0013-2	F-7	NC	1.000	CK	SA	SYS
0220-085D	M-0013-2	F-7	NC	1.000	CK	SA	SYS
0220-089A	M-0035-2	E-1	1	1.000	XFC	SA	SYS
0220-089B	M-0035-2	E-1	1	1.000	XFC	SA	SYS
0220-105A	M-0034-1	D-4	NC	8.000	CK	SA	SYS
0220-105B	M-0034-1	E-4	NC	8.000	CK	SA	SYS
0220-105C	M-0034-1	D-5	NC	8.000	CK	SA	SYS
0220-105D	M-0034-1	D-5	NC	8.000	CK	SA	SYS
0220-105E	M-0034-1	E-5	NC	8.000	CK	SA	SYS
0262-2-005A	M-0035-2	B-7	1	1.000	XFC	SA	SYS
0262-2-005B	M-0035-2	B-2	1	1.000	XFC	SA	SYS
0262-2-006A	M-0035-2	B-7	1	1.000	XFC	SA	SYS
0262-2-006B	M-0035-2	B-2	1	1.000	XFC	SA	SYS
0263-2-011	M-0035-1	E-6	1	1.000	XFC	SA	SYS
0263-2-013A	M-0035-1	D-6	1	1.000	XFC	SA	SYS
0263-2-013B	M-0035-1	D-3	1	1.000	XFC	SA	SYS
0263-2-015A	M-0035-1	D-6	1	1.000	XFC	SA	SYS
0263-2-015B	M-0035-1	D-3	1	1.000	XFC	SA	SYS
0263-2-017A	M-0035-1	D-6	1	1.000	XFC	SA	SYS
0263-2-017B	M-0035-1	D-3	1	1.000	XFC	SA	SYS
0263-2-019A	M-0035-1	C-6	1	1.000	XFC	SA	SYS
0263-2-019B	M-0035-1	C-3	1	1.000	XFC	SA	SYS
0263-2-020A	M-0035-1	B-6	1	1.000	XFC	SA	SYS
0263-2-020B	M-0035-1	B-6	1	1.000	XFC	SA	SYS
0263-2-020C	M-0035-1	B-3	1	1.000	XFC	SA	SYS
0263-2-020D	M-0035-1	B-3	1	1.000	XFC	SA	SYS
0263-2-023A	M-0035-1	C-6	1	1.000	XFC	SA	SYS
0263-2-023B	M-0035-1	C-6	1	1.000	XFC	SA	SYS
0263-2-023C	M-0035-1	B-3	1	1.000	XFC	SA	SYS
0263-2-023D	M-0035-1	B-3	1	1.000	XFC	SA	SYS
0263-2-025	M-0035-1	B-6	1	1.000	XFC	SA	SYS
0263-2-027	M-0035-1	A-6	1	1.000	XFC	SA	SYS
0263-2-031B	M-0035-1	C-6	1	1.000	XFC	SA	SYS
0263-2-031C	M-0035-1	C-6	1	1.000	XFC	SA	SYS
0263-2-031D	M-0035-1	C-6	1	1.000	XFC	SA	SYS
0263-2-031E	M-0035-1	C-6	1	1.000	XFC	SA	SYS
0263-2-031G	M-0035-1	C-6	1	1.000	XFC	SA	SYS
0263-2-031H	M-0035-1	C-6	1	1.000	XFC	SA	SYS
0263-2-031J	M-0035-1	C-6	1	1.000	XFC	SA	SYS
0263-2-031K	M-0035-1	C-6	1	1.000	XFC	SA	SYS

TABLE 1.0-11
UNIT 1 VALVE LISTING
(Sorted by Valve number)

VALVE NUMBER	P&ID NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
0263-2-031M	M-0035-1	C-3	1	1.000	XFC	SA	SYS
0263-2-031N	M-0035-1	C-3	1	1.000	XFC	SA	SYS
0263-2-031P	M-0035-1	C-3	1	1.000	XFC	SA	SYS
0263-2-031R	M-0035-1	C-3	1	1.000	XFC	SA	SYS
0263-2-031T	M-0035-1	C-3	1	1.000	XFC	SA	SYS
0263-2-031U	M-0035-1	C-3	1	1.000	XFC	SA	SYS
0263-2-031V	M-0035-1	C-3	1	1.000	XFC	SA	SYS
0263-2-031W	M-0035-1	C-3	1	1.000	XFC	SA	SYS
0263-2-033	M-0035-1	B-3	1	1.000	XFC	SA	SYS
0263-2-042A	M-0035-1	C-6	1	1.000	XFC	SA	SYS
0263-2-042B	M-0035-1	C-3	1	1.000	XFC	SA	SYS
0302-020A	M-0041-1	E-8	NC	.500	SO3	SO	E
0302-020B	M-0041-1	E-8	NC	.500	SO3	SO	E
0302-021A	M-0041-1	E-6	2	1.000	DIA	AO	C/FC
0302-021B	M-0041-1	E-6	NC	1.000	DIA	AO	C/FC
0302-021C	M-0041-1	F-1	2	1.000	DIA	AO	C/FC
0302-021D	M-0041-1	F-1	NC	1.000	DIA	AO	C/FC
0302-022A	M-0041-1	F-5	2	2.000	DIA	AO	C/FC
0302-022B	M-0041-1	F-5	NC	2.000	DIA	AO	C/FC
0302-022C	M-0041-1	F-3	2	2.000	DIA	AO	C/FC
0302-022D	M-0041-1	F-2	NC	2.000	DIA	AO	C/FC
0302-025A	M-0041-1	E-7	NC	1.000	SO3	SO	D
0302-025B	M-0041-1	E-7	NC	1.000	SO3	SO	D
0302-181A	M-0041-1	D-8	NC	1.000	SO2	SO	C/FO
0302-181B	M-0041-1	D-8	NC	1.000	SO2	SO	C/FO
0302-182A	M-0041-1	F-8	NC	1.000	SO2	SO	C/FO
0302-182B	M-0041-1	F-8	NC	1.000	SO2	SO	C/FO
0305-000_-RPD	M-0041-1	E-10	1	.250	RPD	SA	C
0305-114	M-0041-1	E-9	2	.750	CK	SA	SYS
0305-115	M-0041-1	E-10	1	.500	CK	SA	SYS
0305-117	M-0041-1	E-9	NC	.375	SO3	SO	E
0305-118	M-0041-1	E-9	NC	.375	SO3	SO	E
0305-120 -FCV	M-0041-1	C-10	1	1.000	SO2	SO	C/FC
0305-121 -SO	M-0041-1	C-9	1	.750	SO2	SO	C/FC
0305-122 -SO	M-0041-1	C-9	1	.750	SO2	SO	C/FC
0305-123 -FCV	M-0041-1	C-10	1	1.000	SO2	SO	C/FC
0305-126 -CV	M-0041-1	D-10	1	1.000	DIA	AO	C/FO
0305-127 -CV	M-0041-1	D-9	1	.750	DIA	AO	C/FO
0305-138	M-0041-1	C-10	1	.500	CK	SA	SYS
0737-001B	M-0584	C-4	NC	.375	BAL	SO	C/FC
0737-001C	M-0584	C-3	NC	.375	BAL	SO	C/FC
0737-001D	M-0584	C-4	NC	.375	BAL	SO	C/FC
0737-001E	M-0584	C-4	NC	.375	BAL	SO	C/FC
0737-001F	M-0584	C-4	NC	.375	BAL	SO	C/FC
0737-002B	M-0584	C-4	NC	.375	SHR	EXP	O/KL
0737-002C	M-0584	C-4	NC	.375	SHR	EXP	O/KL
0737-002D	M-0584	C-4	NC	.375	SHR	EXP	O/KL
0737-002E	M-0584	C-4	NC	.375	SHR	EXP	O/KL
0737-002F	M-0584	C-4	NC	.375	SHR	EXP	O/KL
0743	M-0584	C-5	NC	.375	CK	SA	SYS
1001-002A	M-0039-2	C-7	3	12.000	CK	SA	SYS

TABLE 1.0-11
UNIT 1 VALVE LISTING
(Sorted by Valve number)

VALVE NUMBER	P&ID NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
1001-002B	M-0039-2	B-7	3	12.000	CK	SA	SYS
1001-002C	M-0039-2	D-2	3	12.000	CK	SA	SYS
1001-002D	M-0039-2	B-2	3	12.000	CK	SA	SYS
1001-005A-MO	M-0039-2	E-6	3	12.000	GL	MO	C
1001-005B-MO	M-0039-2	E-3	3	12.000	GL	MO	C
1001-007A-MO	M-0037	B-6	2	14.000	GA	MO	O/KL
1001-007B-MO	M-0037	E-6	2	14.000	GA	MO	O/KL
1001-007C-MO	M-0037	B-6	2	14.000	GA	MO	O/KL
1001-007D-MO	M-0037	E-6	2	14.000	GA	MO	O/KL
1001-016A-MO	M-0039-1	A-7	2	18.000	GL	MO	O
1001-016B-MO	M-0039-1	A-2	2	18.000	GL	MO	O
1001-018A-MO	M-0039-1	C-6	2	3.000	GA	MO	C
1001-018B-MO	M-0039-1	C-3	2	3.000	GA	MO	C
1001-019A-MO	M-0039-1	B-8	2	18.000	GA	MO	O/KL
1001-019B-MO	M-0039-1	B-2	2	18.000	GA	MO	O/KL
1001-020 -MO	M-0039-1	B-3	2	3.000	GA	MO	C
1001-021 -MO	M-0039-1	B-3	NC	3.000	GA	MO	C
1001-022A-RV	M-0039-1	E-8	2	1.000	RV	SA	C
1001-022B-RV	M-0039-1	E-2	2	1.000	RV	SA	C
1001-023A-MO	M-0039-1	E-6	2	10.000	GA	MO	C
1001-023B-MO	M-0039-1	E-3	2	10.000	GA	MO	C
1001-026A-MO	M-0039-1	E-5	2	10.000	GA	MO	C
1001-026B-MO	M-0039-1	E-4	2	10.000	GA	MO	C
1001-028A-MO	M-0039-1	E-6	2	16.000	GL	MO	O
1001-028B-MO	M-0039-1	E-3	2	16.000	GL	MO	O
1001-029A-MO	M-0039-1	E-6	1	16.000	GA	MO	C
1001-029B-MO	M-0039-1	E-3	1	16.000	GA	MO	C
1001-034A-MO	M-0039-1	E-7	2	16.000	GA	MO	C
1001-034B-MO	M-0039-1	E-3	2	16.000	GA	MO	C
1001-036A-MO	M-0039-1	E-7	2	14.000	GL	MO	C
1001-036B-MO	M-0039-1	D-3	2	14.000	GL	MO	C
1001-037A-MO	M-0039-1	E-7	2	6.000	GL	MO	C
1001-037B-MO	M-0039-1	D-3	2	6.000	GL	MO	C
1001-043A-MO	M-0037	B-1	2	14.000	GA	MO	C/KL
1001-043B-MO	M-0037	E-4	2	14.000	GA	MO	C/KL
1001-043C-MO	M-0037	B-8	2	14.000	GA	MO	C/KL
1001-043D-MO	M-0037	D-8	2	14.000	GA	MO	C/KL
1001-047 -MO	M-0039-1	C-4	1	20.000	GA	MO	C
1001-050 -MO	M-0039-1	D-4	1	20.000	GA	MO	C
1001-059	M-0039-1	F-3	2	1.000	RV	SA	C
1001-067A	M-0037	B-3	2	12.000	CK	SA	SYS
1001-067B	M-0037	E-3	2	12.000	CK	SA	SYS
1001-067C	M-0037	B-9	2	12.000	CK	SA	SYS
1001-067D	M-0037	E-9	2	12.000	CK	SA	SYS
1001-068A-AO	M-0039-1	E-5	1	16.000	CK	AO	SYS
1001-068B-AO	M-0039-1	E-4	1	16.000	CK	AO	SYS
1001-125A-RV	M-0037	B-5	2	1.000	RV	SA	C
1001-125B-RV	M-0037	E-5	2	1.000	RV	SA	C
1001-125C-RV	M-0037	B-7	2	1.000	RV	SA	C
1001-125D-RV	M-0037	E-7	2	1.000	RV	SA	C
1001-131	M-0039-1	B-7	2	3.000	CK	SA	SYS
1001-136A	M-0039-1	D-8	2	3.000	CK	SA	SYS

TABLE 1.0-11
UNIT 1 VALVE LISTING
(Sorted by Valve number)

VALVE NUMBER	P&ID NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
1001-176B	M-0039-1	E-2	2	3.000	CK	SA	SYS
1001-142A	M-0037	B-3	2	2.000	CK	SA	SYS
1001-142B	M-0037	D-3	2	2.000	CK	SA	SYS
1001-142C	M-0037	B-9	2	2.000	CK	SA	SYS
1001-142D	M-0037	E-9	2	2.000	CK	SA	SYS
1001-165A-RV	M-0037	A-2	3	4.000	RV	SA	C
1001-165B-RV	M-0037	A-10	3	4.000	RV	SA	C
1001-166A-RV	M-0037	A-2	2	1.000	RV	SA	C
1001-166B-RV	M-0037	A-10	2	1.000	RV	SA	C
1099-092A-FCV	M-1056-1	E-5	2	1.000	DIA	AO	C/FC
1099-092B-FCV	M-1056-1	D-5	2	1.000	DIA	AO	C/FC
1101-015	M-0040	C-3	1	1.500	CK	SA	SYS
1101-016	M-0040	C-3	1	1.500	CK	SA	SYS
1101-043A	M-0040	D-6	2	1.500	CK	SA	SYS
1101-043B	M-0040	D-6	2	1.500	CK	SA	SYS
1105- A-RV	M-0040	C-7	2	1.500	RV	SA	C
1105- B-RV	M-0040	E-6	2	1.500	RV	SA	C
1106- A	M-0040	C-4	2	1.500	SHR	EXP	C/KL
1106- B	M-0040	D-4	2	1.500	SHR	EXP	C/KL
1201-002 -MO	M-0047	B-6	1	6.000	GA	MO	O
1201-005 -MO	M-0047	B-7	1	6.000	GA	MO	O
1301-015A	M-0050	A-2	1	1.000	XFC	SA	SYS
1301-015B	M-0050	B-2	1	1.000	XFC	SA	SYS
1301-016 -MO	M-0050	B-2	1	3.000	GA	MO	O
1301-017 -MO	M-0050	B-3	1	3.000	GA	MO	O
1301-040	M-0050	D-4	NC	2.000	CK	SA	SYS
1301-041	M-0050	D-2	NC	8.000	CK	SA	SYS
1301-047	M-0050	D-4	NC	2.000	CK	SA	SYS
1301-055	M-0050	D-3	NC	2.000	SCK	SA	C/LO
1301-064	M-0050	D-2	NC	8.000	SCK	SA	C/LO
1402-003A-MO	M-0036	F-7	2	18.000	GA	MO	O
1402-003B-MO	M-0036	F-5	2	18.000	GA	MO	O
1402-004A-MO	M-0036	B-8	2	8.000	GL	MO	C
1402-004B-MO	M-0036	C-8	2	8.000	GL	MO	C
1402-008A	M-0036	E-9	2	12.000	SCK	SA	C/LO
1402-008B	M-0036	E-6	2	12.000	SCK	SA	C/LO
1402-009A-AO	M-0036	C-3	1	10.000	CK	AO	SYS
1402-009B-AO	M-0036	C-3	1	10.000	CK	AO	SYS
1402-013A	M-0036	E-9	2	1.500	SCK	SA	C/LO
1402-013B	M-0036	E-6	2	1.500	SCK	SA	C/LO
1402-024A-MO	M-0036	B-2	2	10.000	GA	MO	O
1402-024B-MO	M-0036	B-5	2	10.000	GA	MO	O
1402-025A-MO	M-0036	C-2	1	10.000	GA	MO	C
1402-025B-MO	M-0036	C-5	1	10.000	GA	MO	C
1402-028A-RV	M-0036	C-9	2	2.000	RV	SA	C
1402-028B-RV	M-0036	D-6	2	2.000	RV	SA	C
1402-031A	M-0036	D-3	1	.750	XFC	SA	SYS
1402-031B	M-0036	D-4	1	.750	XFC	SA	SYS
1402-038A-MO	M-0036	E-8	2	1.500	GA	MO	C
1402-038B-MO	M-0036	E-7	2	1.500	GA	MO	C
1402-071	M-0036	D-7	2	1.500	CK	SA	SYS
1601-020A-AO	M-0034-1	D-9	NC	20.000	BTF	AO	C/FO

TABLE 1.0-11
UNIT 1 VALVE LISTING
(Sorted by Valve number)

VALVE NUMBER	P&ID NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTUATOR	NORMAL POSITION
1601-020A-SO	M-0034-1	A-1	NC	.001	SO4	SO	E
1601-020B-AO	M-0034-1	E-9	NC	20.000	BTF	AO	C/FO
1601-020B-SO	M-0034-1	A-1	NC	.001	SO4	SO	E
1601-021 -AO	M-0034-1	C-6	NC	18.000	BTF	AO	C/FC
1601-021 -SO	M-0034-1	A-1	NC	.001	SO4	SO	D
1601-022 -AO	M-0034-1	C-6	NC	18.000	BTF	AO	C/FC
1601-022 -SO	M-0034-1	A-1	NC	.001	SO4	SO	D
1601-023 -AO	M-0034-1	B-3	NC	18.000	BTF	AO	C/FC
1601-023 -SO	M-0034-1	A-1	NC	.001	SO4	SO	D
1601-024 -AO	M-0034-1	B-2	NC	18.000	BTF	AO	C/FC
1601-024 -SO	M-0034-1	A-1	NC	.001	SO4	SO	D
1601-031A	M-0034-1	D-9	NC	20.000	CK	SA	SYS
1601-031B	M-0034-1	E-9	NC	20.000	CK	SA	SYS
1601-032A	M-0034-1	E-2	NC	.001	CK	SA	SYS
1601-032B	M-0034-1	E-2	NC	.001	CK	SA	SYS
1601-032C	M-0034-1	E-2	NC	.001	CK	SA	SYS
1601-032D	M-0034-1	E-2	NC	.001	CK	SA	SYS
1601-032E	M-0034-1	E-2	NC	.001	CK	SA	SYS
1601-032F	M-0034-1	E-2	NC	.001	CK	SA	SYS
1601-033A	M-0034-1	E-7	NC	.001	CK	SA	SYS
1601-033B	M-0034-1	E-7	NC	.001	CK	SA	SYS
1601-033C	M-0034-1	E-7	NC	.001	CK	SA	SYS
1601-033D	M-0034-1	E-7	NC	.001	CK	SA	SYS
1601-033E	M-0034-1	E-7	NC	.001	CK	SA	SYS
1601-033F	M-0034-1	E-7	NC	.001	CK	SA	SYS
1601-055	M-0034-1	A-6	NC	4.000	GA	AO	O/FC
1601-055 -SO	M-0034-1	A-6	NC	.001	SO3	SO	E
1601-056 -AO	M-0034-1	D-6	NC	18.000	BTF	AO	O/FC
1601-056 -SO	M-0034-1	A-1	NC	.001	SO4	SO	E
1601-057	M-0034-1	D-8	NC	1.000	GL	MO	O
1601-058 -AO	M-0034-1	D-7	NC	1.000	GL	AO	C/FC
1601-058 -SO	M-0034-1	D-7	NC	.001	SO3	SO	D
1601-059 -AO	M-0034-1	D-7	NC	1.000	GL	AO	O/FC
1601-059 -SO	M-0034-1	D-6	NC	.001	SO3	SO	E
1601-060 -AO	M-0034-1	E-1	NC	18.000	BTF	AO	C/FC
1601-060 -SO	M-0034-1	A-1	NC	.001	SO4	SO	D
1601-061 -AO	M-0034-1	F-1	NC	2.000	GL	AO	C/FC
1601-061 -SO	M-0034-1	F-1	NC	.001	SO3	SO	D
1601-062 -AO	M-0034-1	B-3	NC	2.000	GL	AO	O/FC
1601-062 -SO	M-0034-1	B-3	NC	.001	SO3	SO	D
1601-063 -AO	M-0034-1	A-2	NC	6.000	BTF	AO	C/FC
1601-063 -SO	M-0034-1	A-3	NC	.001	SO4	SO	D
1699-009 -RV	M-0034-1	D-8	NC	1.500	RV	SA	C
2001-003 -AO	M-0043	F-7	NC	3.000	PLG	AO	C/FC
2001-003 -SO	M-0043	F-7	NC	.001	SO3	SO	D
2001-004 -AO	M-0043	F-7	NC	3.000	PLG	AO	C/FC
2001-004 -SO	M-0043	F-7	NC	.001	SO3	SO	D
2001-015 -AO	M-0043	E-4	NC	3.000	PLG	AO	C/FC
2001-015 -SO	M-0043	E-4	NC	.001	SO3	SO	D
2001-016 -AO	M-0043	E-3	NC	3.000	PLG	AO	C/FC
2001-016 -SO	M-0043	E-3	NC	.001	SO3	SO	D

TABLE 1.0-11
UNIT 1 VALVE LISTING
(Sorted by Valve number)

VALVE NUMBER	P&ID NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
2301-003 -MO	M-0046	A-7	2	10.000	GA	MO	C
2301-004 -MO	M-0046	C-9	1	10.000	GA	MO	O
2301-005 -MO	M-0046	B-10	1	10.000	GA	MO	O
2301-007 -AO	M-0046	E-6	2	14.000	CK	AO	SYS
2301-008 -MO	M-0046	E-6	2	14.000	GA	MO	C
2301-009 -MO	M-0046	E-5	2	14.000	GA	MO	O
2301-010 -MO	M-0046	E-5	2	12.000	GL	MO	C
2301-014 -MO	M-0046	C-6	2	4.000	GL	MO	C
2301-020	M-0046	E-1	2	16.000	CK	SA	SYS
2301-023 -RV	M-0046	B-3	2	1.500	RV	SA	C
2301-026	M-0046	D-10	1	1.000	XFC	SA	SYS
2301-027	M-0046	D-10	1	1.000	XFC	SA	SYS
2301-028	M-0046	B-9	2	1.000	GL	AO	C/FO
2301-028 -SO	M-0046	B-9	NC	.001	SO3	SO	D
2301-029	M-0046	B-10	2	1.000	GL	AO	O/FC
2301-029 -SO	M-0046	B-10	NC	.001	SO3	SO	D
2301-030	M-0046	B-10	NC	1 000	GL	AO	O/FC
2301-030 -SO	M-0046	B-10	NC	.001	SO3	SO	D
2301-034	M-0046	C-8	2	2.000	CK	SA	SYS
2301-035 -MO	M-0046	E-7	2	16.000	GA	MO	C
2301-036 -MO	M-0046	E-9	2	16.000	GA	MO	C
2301-039	M-0046	E-8	2	16.000	CK	SA	SYS
2301-040	M-0046	D-7	2	4.000	CK	SA	SYS
2301-045	M-0046	B-8	2	24.000	CK	SA	SYS
2301-048 -MO	M-0046	B-4	2	4.000	GA	MO	O
2301-049 -MO	M-0046	E-4	2	4.000	GA	MO	C
2301-050	M-0046	C-5	2	4.000	CK	SA	SYS
2301-051	M-0046	C-5	2	4.000	CK	SA	SYS
2301-053 -RV	M-0046	C-4	2	4.000	RV	SA	C
2301-064	M-0046	A-7	2	1.000	GL	AO	O/FC
2301-064 -SO	M-0046	A-6	NC	.001	SO3	SO	D
2301-065	M-0046	A-8	NC	1.000	GL	AO	O/FC
2301-065 -SO	M-0046	A-7	NC	.001	SO3	SO	D
2301-068	M-0046	A-6	2	16.000	RPD	SA	C
2301-069	M-0046	A-6	2	16.000	RPD	SA	C
2301-071	M-0046	D-8	2	2.000	SCK	SA	C/LO
2301-074	M-0046	C-8	2	12.000	SCK	SA	C/LO
2301-075	M-0046	B-4	2	4.000	CK	SA	SYS
2301-076	M-0046	E-4	2	2.000	CK	SA	SYS
2317	M-0046	A-7	2	24.000	PLG	HO	C
2399-040- MO	M-0046	D-8	2	4.000	GA	MO	O
2399-041- MO	M-0046	C-8	2	4.000	GA	MO	O
2399-064	M-0046	C-8	2	4.000	CK	SA	SYS
2399-065	M-0046	C-8	2	4.000	CK	SA	SYS
2399-066	M-0046	C-8	2	4.000	CK	SA	SYS
2399-067	M-0046	C-8	2	4.000	CK	SA	SYS
2499-001A-SO	M-0641-1	D-6	NC	.500	SO2	SO	C/FC
2499-001B-SO	M-0641-1	D-3	NC	.500	SO2	SO	C/FC
2499-002A-SO	M-0641-1	D-6	NC	.500	SO2	SO	C/FC
2499-002B-SO	M-0641-1	D-3	NC	.500	SO2	SO	C/FC
2499-003A-SO	M-0641-1	B-7	NC	.500	SO2	SO	C/FC

TABLE 1.0-11
UNIT 1 VALVE LISTING
(Sorted by Valve number)

VALVE NUMBER	P&ID NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
2499-003B-SO	M-0641-1	B-2	NC	.500	SO2	SO	C/FC
2499-004A-SO	M-0641-1	B-6	NC	.500	SO2	SO	C/FC
2499-004B-SO	M-0641-1	B-3	NC	.500	SO2	SO	C/FC
2499-022A	M-0641-1	C-7	NC	.500	CK	SA	SYS
2499-022B	M-0641-1	C-2	NC	.500	CK	SA	SYS
2599-002A-AO	M-0642-1	C-4	NC	1.500	GL	AO	C/FC
2599-002A-SO	M-0642-1	D-3	NC	1.000	SO3	SO	D
2599-002B-AO	M-0642-1	C-5	NC	1.500	GL	AO	C/FC
2599-002B-SO	M-0642-1	D-6	NC	1.000	SO3	SO	D
2599-003A-AO	M-0642-1	C-3	NC	1.000	GL	AO	C/FC
2599-003A-SO	M-0642-1	C-2	NC	1.000	SO3	SO	D
2599-003B-AO	M-0642-1	C-6	NC	1.000	GL	AO	C/FC
2599-003B-SO	M-0642-1	C-7	NC	1.000	SO3	SO	D
2599-004A-AO	M-0642-1	F-3	NC	1.000	GL	AO	C/FC
2599-004A-SO	M-0642-1	F-3	NC	1.000	SO3	SO	D
2599-004B-AO	M-0642-1	E-3	NC	1.000	GL	AO	C/FC
2599-004B-SO	M-0642-1	E-3	NC	1.000	SO3	SO	D
2599-005A-FCV	M-0642-1	F-5	NC	1.000	DIA	AO	C/FC
2599-005A-SO	M-0642-1	F-5	NC	1.000	SO3	SO	D
2599-005B-FCV	M-0642-1	E-5	NC	1.000	DIA	AO	C/FC
2599-005B-SO	M-0642-1	E-5	NC	1.000	SO3	SO	D
2599-008	M-0642-1	F-8	NC	1.000	CK	SA	SYS
2599-022	M-0642-1	A-7	NC	1.500	CK	SA	SYS
2599-023A	M-0642-1	C-3	NC	1.500	CK	SA	SYS
2599-023B	M-0642-1	C-6	NC	1.500	CK	SA	SYS
2599-024A	M-0642-1	C-3	NC	1.000	CK	SA	SYS
2599-024B	M-0642-1	C-6	NC	1.000	CK	SA	SYS
2599-998 -RV	M-0642-1	A-5	NC	.001	RV	SA	C
2599-999	M-0642-1	A-6	NC	1.250	CK	SA	SYS
2901-010	M-0046	D-7	2	4.000	CK	SA	SYS
3702- -MO	M-0033	B-3	NC	8.000	GA	MO	O
3703- -MO	M-0033	B-1	NC	8.000	GA	MO	O
3706- -MO	M-0033	B-1	NC	8.000	GA	MO	O
3799-031	M-0033	B-3	NC	8.000	CK	SA	SYS
3999-085 - -1/2	M-0022-3	B-8	3	8.000	CK	SA	SYS
3999-086	M-0022-3	F-8	3	8.000	CK	SA	SYS
3999-088	M-0022-3	D-6	3	6.000	CK	SA	SYS
3999-089	M-0022-3	D-6	3	6.000	GA	M	C
3999-560	M-0022-1	C-4	3	2.500	CK	SA	SYS
3999-561	M-0022-1	C-4	3	4.000	CK	SA	SYS
4399-045	M-0058-3	D-5	NC	3.000	GA	M	C
4399-046	M-0058-3	D-5	NC	3.000	CK	SA	SYS
4699-046	M-0025-1	E-3	NC	1.000	GL	M	C
4699-047	M-0025-1	E-4	NC	1.000	CK	SA	SYS
4699-048 - -1/2	M-0025-2	C-7	NC	1.500	CK	SA	SYS
4699-123	M-0025-2	E-6	NC	1.500	CK	SA	SYS
4699-196	M-0025-2	E-6	NC	1.500	CK	SA	SYS
4699-196 - -1/2	M-0025-2	C-6	NC	1.500	CK	SA	SYS
4699-226	M-0025-2	E-3	NC	1.500	DIA	AO	C
4699-226 - -1/2	M-0025-2	B-3	NC	1.500	GL	AO	C
4699-306A	M-0025-2	E-8	NC	.750	RV	SA	C

TABLE 1.0-11
UNIT 1 VALVE LISTING
(Sorted by Valve number)

VALVE NUMBER	P&ID NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
4699-306A- -1/2	M-0025-2	B-8	NC	.750	RV	SA	C
4699-306B	M-0025-2	E-7	NC	.750	RV	SA	C
4699-306B- -1/2	M-0025-2	B-7	NC	.750	RV	SA	C
4699-306C	M-0025-2	E-6	NC	.750	RV	SA	C
4699-306C- -1/2	M-0025-2	B-6	NC	.750	RV	SA	C
4699-306D	M-0025-2	E-5	NC	.750	RV	SA	C
4699-306D- -1/2	M-0025-2	B-5	NC	.750	RV	SA	C
4699-307A	M-0025-2	D-7	NC	.500	CK	SA	SYS
4699-307A- -1/2	M-0025-2	A-7	NC	.500	CK	SA	SYS
4699-307B	M-0025-2	D-5	NC	.500	CK	SA	SYS
4699-307B- -1/2	M-0025-2	A-5	NC	.500	CK	SA	SYS
4699-309	M-0025-2	E-3	NC	.375	CK	SA	SYS
4699-309 - -1/2	M-0025-2	B-3	NC	.375	CK	SA	SYS
4699-310	M-0025-2	E-4	NC	.375	SO3	SO	D
4699-310 - -1/2	M-0025-2	B-4	NC	.375	SO3	SO	D
4720	M-0024-2	D-3	NC	1.000	DIA	AO	O/FC
4721	M-0024-2	D-3	NC	1.000	DIA	AO	O/FC
4799-155	M-0024-2	E-2	NC	2.000	CK	SA	SYS
4799-156	M-0024-2	E-3	NC	2.000	CK	SA	SYS
4799-158	M-0024-2	F-4	NC	.500	CK	SA	SYS
4799-159	M-0024-2	F-4	NC	.500	CK	SA	SYS
4799-281A	M-0024-2	B-2	NC	.500	CK	SA	SYS
4799-485	M-0024-2	D-3	NC	.500	SO3	SO	E
4799-486	M-0024-2	D-3	NC	.500	SO3	SO	E
5201- -RV	M-0029-2	D-2	NC	1.000	RV	SA	C
5201- -RV -1/2	M-0029-2	D-5	NC	1.000	RV	SA	C
5201- -SO	M-0029-2	A-2	NC	1.000	SO2	SO	O
5201- -SO -1/2	M-0029-2	A-6	NC	1.000	SO2	SO	C
5299-003	M-0029-2	D-2	NC	1.500	CK	SA	SYS
5299-003 - -1/2	M-0029-2	D-5	NC	1.500	CK	SA	SYS
5299-005	M-0029-2	D-2	NC	1.500	CK	SA	SYS
5299-005 - -1/2	M-0029-2	D-5	NC	1.500	CK	SA	SYS
5299-042	M-0029-2	D-4	NC	.500	CK	SA	SYS
5299-042 - -1/2	M-0029-2	D-6	NC	.500	CK	SA	SYS
5299-157	M-0029-2	C-3	NC	1.000	CK	SA	SYS
5299-157 - -1/2	M-0029-2	C-6	NC	1.000	CK	SA	SYS
5299-158	M-0029-2	D-3	NC	.750	CK	SA	SYS
5299-158 - -1/2	M-0029-2	D-6	NC	.750	CK	SA	SYS
5401- A-AO	M-0042-1	E-8	NC	18.000	BTF	AO	O/FC
5401- A-CK	M-0042-1	Z-99	NC	.001	CK	SA	SYS
5401- A-SO	M-0042-1	E-7	NC	.001	SO4	SO	E
5401- B-AO	M-0042-1	E-8	NC	18.000	BTF	AO	O/FC
5401- B-CK	M-0042-1	Z-99	NC	.001	CK	SA	SYS
5401- B-SO	M-0042-1	E-7	NC	.001	SO4	SO	E
5402- A-AO	M-0042-1	D-3	NC	18.000	GA	AO	O/FC
5402- A-CK	M-0042-1	Z-99	NC	.001	CK	SA	SYS
5402- A-SO	M-0042-1	D-2	NC	.001	SO4	SO	E
5402- B-AO	M-0042-1	D-3	NC	18.000	GA	AO	O/FC
5402- B-CK	M-0042-1	Z-99	NC	.001	CK	SA	SYS
5402- B-SO	M-0042-1	D-2	NC	.001	SO4	SO	E
5741-306 -XCV -1/2	M-1551	D-7	NC	1.000	DIA	AO	C/FC

TABLE 1.0-11
UNIT 1 VALVE LISTING
(Sorted by Valve number)

VALVE NUMBER	P&ID NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
5741-306 -XSV -1/2	M-1551	D-7	NC	.001	SO3	SO	D
5741-319A-XCV -1/2	M-1551	C-2	3	2.500	DIA	AO	O/FO
5741-319A-XSV -1/2	M-1551	C-2	NC	.001	SO3	SO	O
5741-319B-XCV -1/2	M-1551	C-2	3	3.000	DIA	AO	C/FC
5741-319B-XSV -1/2	M-1551	C-2	NC	.001	SO3	SO	D
5741-333 -FCV -1/2	M-1551	C-3	B	2.500	DIA	AO	O/FO
5741-345 -PSV -1/2	M-1551	B-3	3	2.000	RV	SA	C
5794-381 - -1/2	M-1551	C-3	B	2.500	GL	M	C
5799-386	M-1551	C-2	3	2.500	CK	SA	SYS
5799-410 - -1/2	M-1551	C-2	3	3.000	CK	SA	SYS
7503- -MO	M-0044	B-2	NC	18.000	BTF	MO	O
7504- A-MO -1/2	M-0044	D-3	NC	6.000	BTF	MO	O
7504- B-MO -1/2	M-0044	A-3	NC	6.000	BTF	MO	O
7505- A-MO -1/2	M-0044	D-3	NC	24.000	BTF	MO	C
7505- B-MO -1/2	M-0044	B-3	NC	24.000	BTF	MO	C
7507- A-MO -1/2	M-0044	D-9	NC	24.000	BTF	MO	C
7507- B-MO -1/2	M-0044	B-9	NC	24.000	BTF	MO	C
8801- A-FCV	M-0034-1	C-3	NC	.500	DIA	AO	O/FC
8801- A-SO	M-0034-1	C-3	NC	.001	SO3	SO	E
8801- B-FCV	M-0034-1	D-3	NC	.500	DIA	AO	O/FC
8801- B-SO	M-0034-1	D-3	NC	.001	SO3	SO	E
8801- C-FCV	M-0034-1	D-3	NC	.500	DIA	AO	O/FC
8801- C-SO	M-0034-1	D-3	NC	.001	SO3	SO	E
8801- D-FCV	M-0034-1	E-3	NC	.500	DIA	AO	O/FC
8801- D-SO	M-0034-1	D-3	NC	.001	SO3	SO	E
8802- A-FCV	M-0034-1	C-3	NC	.500	DIA	AO	O/FC
8802- A-SO	M-0034-1	C-3	NC	.001	SO3	SO	E
8802- B-FCV	M-0034-1	D-3	NC	.500	DIA	AO	O/FC
8802- B-SO	M-0034-1	D-3	NC	.001	SO3	SO	E
8802- C-FCV	M-0034-1	D-3	NC	.500	DIA	AO	O/FC
8802- C-SO	M-0034-1	D-3	NC	.001	SO3	SO	E
8802- D-FCV	M-0034-1	E-3	NC	.500	DIA	AO	O/FC
8802- D-SO	M-0034-1	E-3	NC	.001	SO3	SO	E
8803	M-0034-1	C-6	NC	.500	GL	AO	O/FC
8803- -SO	M-0034-1	C-6	NC	.001	SO3	SO	E
8803- 1D	M-0034-1	D-3	NC	.500	GA	M	C
8803- 1E	M-0034-1	D-3	NC	.500	GA	M	C
8803- 1F	M-0034-1	D-3	NC	.500	GA	M	C
8803- 1G	M-0034-1	D-3	NC	.500	GA	M	C
8803- 1H	M-0034-1	D-3	NC	.500	GA	M	C
8803- 1I	M-0034-1	D-3	NC	.500	GA	M	C
8803- 1J	M-0034-1	D-3	NC	.500	GA	M	C
8803- 1K	M-0034-1	D-3	NC	.500	GA	M	C
8803- 1L	M-0034-1	D-3	NC	.500	GA	M	C
8803- 1M	M-0034-1	D-3	NC	.500	GA	M	C
8803- 1N	M-0034-1	D-3	NC	.500	GA	M	C
8803- 1O	M-0034-1	D-3	NC	.500	GA	M	C
8803- 1P	M-0034-1	D-3	NC	.500	GA	M	C
8803- 1Q	M-0034-1	D-3	NC	.500	GA	M	C
8803- 1R	M-0034-1	D-3	NC	.500	GA	M	C
8803- 1S	M-0034-1	D-3	NC	.500	GA	M	C
8803- 1T	M-0034-1	D-3	NC	.500	GA	M	C
8803- 1U	M-0034-1	D-3	NC	.500	GA	M	C
8803- 1V	M-0034-1	D-3	NC	.500	GA	M	C
8803- 1W	M-0034-1	D-3	NC	.500	GA	M	C

TABLE 1.0-11
UNIT 1 VALVE LISTING
(Sorted by Valve number)

VALVE NUMBER	P&ID NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
8803- 1X	M-0034-1	D-3	NC	.500	GA	M	C
8803- 1Y	M-0034-1	D-3	NC	.500	GA	M	C
8803- 2D	M-0034-1	D-3	NC	.500	GA	M	C
8803- 2E	M-0034-1	D-3	NC	.500	GA	M	C
8803- 2F	M-0034-1	D-3	NC	.500	GA	M	C
8803- 2G	M-0034-1	D-3	NC	.500	GA	M	C
8803- 2H	M-0034-1	D-3	NC	.500	GA	M	C
8803- 2I	M-0034-1	D-3	NC	.500	GA	M	C
8803- 2J	M-0034-1	D-3	NC	.500	GA	M	C
8803- 2K	M-0034-1	D-3	NC	.500	GA	M	C
8803- 2L	M-0034-1	D-3	NC	.500	GA	M	C
8803- 2M	M-0034-1	D-3	NC	.500	GA	M	C
8803- 2N	M-0034-1	D-3	NC	.500	GA	M	C
8803- 2O	M-0034-1	D-3	NC	.500	GA	M	C
8803- 2P	M-0034-1	D-3	NC	.500	GA	M	C
8803- 2Q	M-0034-1	D-3	NC	.500	GA	M	C
8803- 2R	M-0034-1	D-3	NC	.500	GA	M	C
8803- 2S	M-0034-1	D-3	NC	.500	GA	M	C
8803- 2T	M-0034-1	D-3	NC	.500	GA	M	C
8803- 2U	M-0034-1	D-3	NC	.500	GA	M	C
8803- 2V	M-0034-1	D-3	NC	.500	GA	M	C
8803- 2W	M-0034-1	D-3	NC	.500	GA	M	C
8803- 2X	M-0034-1	D-3	NC	.500	GA	M	C
8803- 2Y	M-0034-1	D-3	NC	.500	GA	M	C
8804	M-0034-1	D-6	NC	.500	GL	AO	O/FC
8804- -SO	M-0034-1	D-6	NC	.001	SO3	SO	E
8941-101 -XCV	M-1057-1	C-6	NC	.500	DIA	AO	C/FC
8941-101 -XSV	M-1057-1	C-6	NC	.001	SO3	SO	D
8941-705 -XCV	M-1056-1	C-6	2	.500	DIA	AO	C/FC
8941-705 -XSV	M-1056-1	C-7	NC	.001	SO3	SO	D
8941-709 -XSV	M-1056-1	E-5	NC	.001	SO3	SO	D
8941-710 -XSV	M-1056-1	D-5	NC	.001	SO3	SO	D

TABLE 1.0-12
UNIT 2 VALVE LISTING
(Sorted by Valve number)

VALVE NUMBER	P&ID NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
0202-005A-MO	M-0077-2	D-6	1	28.000	GA	MO	O
0202-005B-MO	M-0077-2	D-3	1	28.000	GA	MO	O
0203-001A-AO	M-0060-1	F-4	1	20.000	GL	AO	O/FC
0203-001A-AP2	M-0060-1	F-4	NC	.001	PLT	AO	E
0203-001A-AP4	M-0060-1	F-4	NC	.001	SO4	SO	E
0203-001A-SOAC	M-0060-1	F-4	NC	.001	SO3	SO	E
0203-001A-SODC	M-0060-1	F-4	NC	.001	SO3	SO	E
0203-001B-AO	M-0060-1	D-4	1	20.000	GL	AO	O/FC
0203-001B-AP2	M-0060-1	F-4	NC	.001	PLT	AO	E
0203-001B-AP4	M-0060-1	F-4	NC	.001	SO4	SO	E
0203-001B-SOAC	M-0060-1	F-4	NC	.001	SO3	SO	E
0203-001B-SODC	M-0060-1	F-4	NC	.001	SO3	SO	E
0203-001C-AO	M-0060-1	C-4	1	20.000	GL	AO	O/FC
0203-001C-AP2	M-0060-1	F-4	NC	.001	PLT	AO	E
0203-001C-AP4	M-0060-1	F-4	NC	.001	SO4	SO	E
0203-001C-SOAC	M-0060-1	F-4	NC	.001	SO3	SO	E
0203-001C-SODC	M-0060-1	F-4	NC	.001	SO3	SO	E
0203-001D-AO	M-0060-1	B-4	1	20.000	GL	AO	O/FC
0203-001D-AP2	M-0060-1	F-4	NC	.001	PLT	AO	E
0203-001D-AP4	M-0060-1	F-4	NC	.001	SO4	SO	E
0203-001D-SOAC	M-0060-1	F-4	NC	.001	SO3	SO	E
0203-001D-SODC	M-0060-1	F-4	NC	.001	SO3	SO	E
0203-002A-AO	M-0060-2	F-7	1	20.000	GL	AO	O/FC
0203-002A-AP2	M-0060-2	F-7	NC	.001	PLT	AO	E
0203-002A-AP4	M-0060-2	F-7	NC	.001	SO4	SO	E
0203-002A-SOAC	M-0060-2	F-7	NC	.001	SO3	SO	E
0203-002A-SODC	M-0060-2	F-7	NC	.001	SO3	SO	E
0203-002B-AO	M-0060-2	E-7	1	20.000	GL	AO	O/FC
0203-002B-AP2	M-0060-2	F-7	NC	.001	PLT	AO	E
0203-002B-AP4	M-0060-2	F-7	NC	.001	SO4	SO	E
0203-002B-SOAC	M-0060-2	F-7	NC	.001	SO3	SO	E
0203-002B-SODC	M-0060-2	F-7	NC	.001	SO3	SO	E
0203-002C-AO	M-0060-2	D-7	1	20.000	GL	AO	O/FC
0203-002C-AP2	M-0060-2	F-7	NC	.001	PLT	AO	E
0203-002C-AP4	M-0060-2	F-7	NC	.001	SO4	SO	E
0203-002C-SOAC	M-0060-2	F-7	NC	.001	SO3	SO	E
0203-002C-SODC	M-0060-2	F-7	NC	.001	SO3	SO	E
0203-002D-AO	M-0060-2	C-7	1	20.000	GL	AO	O/FC
0203-002D-AP2	M-0060-2	F-7	NC	.001	PLT	AO	E
0203-002D-AP4	M-0060-2	F-7	NC	.001	SO4	SO	E
0203-002D-SOAC	M-0060-2	F-7	NC	.001	SO3	SO	E
0203-002D-SODC	M-0060-2	F-7	NC	.001	SO3	SO	E
0203-003A	M-0060-1	F-7	1	6.625	SRV	SAP	C
0203-003A-SO	M-0060-1	F-7	NC	.001	SO3	SO	D
0203-003B	M-0060-1	D-6	1	6.000	RV	SO	C
0203-003C	M-0060-1	C-8	1	6.000	RV	SO	C
0203-003D	M-0060-1	B-8	1	6.000	RV	SO	C
0203-003E	M-0060-1	D-8	1	6.000	RV	SO	C
0203-004A	M-0060-1	F-8	1	6.000	SV	SA	C
0203-004A-RPD	M-0060-1	F-8	NS	8.000	RPD	SA	C
0203-004B	M-0060-1	E-5	1	6.000	SV	SA	C

TABLE 1.0-12
UNIT 2 VALVE LISTING
(Sorted by Valve number)

VALVE NUMBER	P&ID NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
0203-004B-RPD	M-0060-1	D-5	NS	8.000	RPD	SA	C
0203-004C	M-0060-1	C-5	1	6.000	SV	SA	C
0203-004C-RPD	M-0060-1	C-5	NS	8.000	RPD	SA	C
0203-004D	M-0060-1	B-8	1	6.000	SV	SA	C
0203-004D-RPD	M-0060-1	B-8	NS	8.000	RPD	SA	C
0203-004E	M-0060-1	F-8	1	6.000	SV	SA	C
0203-004E-RPD	M-0060-1	F-8	NS	8.000	RPD	SA	C
0203-004F	M-0060-1	E-5	1	8.000	SV	SA	C
0203-004F-RPD	M-0060-1	D-5	NS	8.000	RPD	SA	C
0203-004G	M-0060-1	C-5	1	6.000	SV	SA	C
0203-004G-RPD	M-0060-1	C-5	NS	8.000	RPD	SA	C
0203-004H	M-0060-1	B-8	1	6.000	SV	SA	C
0203-004H-RPD	M-0060-1	B-8	NS	8.000	RPD	SA	C
0220-001 -MO	M-0060-1	E-4	1	3.000	GA	MO	C
0220-002 -MO	M-0060-2	E-7	1	3.000	GA	MO	C
0220-017A	M-0060-2	E-8	1	1.000	XFC	SA	SYS
0220-017B	M-0060-2	D-8	1	1.000	XFC	SA	SYS
0220-017C	M-0060-2	C-8	1	1.000	XFC	SA	SYS
0220-017D	M-0060-2	B-8	1	1.000	XFC	SA	SYS
0220-018A	M-0060-2	E-8	1	1.000	XFC	SA	SYS
0220-018B	M-0060-2	D-8	1	1.000	XFC	SA	SYS
0220-018C	M-0060-2	C-8	1	1.000	XFC	SA	SYS
0220-018D	M-0060-2	B-8	1	1.000	XFC	SA	SYS
0220-019A	M-0077-2	B-6	1	1.000	XFC	SA	SYS
0220-019B	M-0077-2	B-3	1	1.000	XFC	SA	SYS
0220-020A	M-0077-2	B-6	1	1.000	XFC	SA	SYS
0220-020B	M-0077-2	B-3	1	1.000	XFC	SA	SYS
0220-021A	M-0077-2	D-8	1	1.000	XFC	SA	SYS
0220-021B	M-0077-2	D-1	1	1.000	XFC	SA	SYS
0220-022A	M-0077-2	D-8	1	1.000	XFC	SA	SYS
0220-022B	M-0077-2	D-1	1	1.000	XFC	SA	SYS
0220-044	M-0077-2	E-5	1	.750	GL	AO	O/FC
0220-044 -SO	M-0077-2	E-5	NC	.001	SO3	SO	E
0220-045	M-0077-2	E-7	1	.750	GL	AO	O/FC
0220-045 -SO	M-0077-2	D-7	NC	.001	SO3	SO	E
0220-051	M-0077-1	E-5	1	.500	DIA	AO	C/FC
0220-051 -SO	M-0077-1	E-5	NC	.999	SO3	SO	D
0220-054	M-0077-1	E-6	1	1.000	XFC	SA	SYS
0220-058A	M-0062	E-2	1	18.000	CK	SA	SYS
0220-058B	M-0062	F-2	1	18.000	CK	SA	SYS
0220-059B	M-0062	F-2	2	18.000	CK	SA	SYS
0220-062A	M-0062	E-2	1	18.000	CK	SA	SYS
0220-062B	M-0062	F-2	1	18.000	CK	SA	SYS
0220-067A	M-0077-2	F-6	1	1.000	XFC	SA	SYS
0220-067B	M-0077-2	F-6	1	1.000	XFC	SA	SYS
0220-067C	M-0077-2	F-6	1	1.000	XFC	SA	SYS
0220-067D	M-0077-2	F-6	1	1.000	XFC	SA	SYS
0220-067E	M-0077-2	E-6	1	1.000	XFC	SA	SYS
0220-067F	M-0077-2	F-6	1	1.000	XFC	SA	SYS
0220-067G	M-0077-2	E-6	1	1.000	XFC	SA	SYS
0220-067H	M-0077-2	F-6	1	1.000	XFC	SA	SYS

TABLE 1.0-12
UNIT 2 VALVE LISTING
(Sorted by Valve number)

VALVE NUMBER	P&ID NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
0220-081A	M-0076-1	E-4	NC	1.000	CK	SA	SYS
0220-081B	M-0076-1	E-4	NC	1.000	CK	SA	SYS
0220-081C	M-0076-1	E-4	NC	1.000	CK	SA	SYS
0220-081D	M-0076-1	E-6	NC	1.000	CK	SA	SYS
0220-081E	M-0076-1	E-6	NC	1.000	CK	SA	SYS
0220-084A	M-0060-1	F-3	NC	1.000	CK	SA	SYS
0220-084B	M-0060-1	F-3	NC	1.000	CK	SA	SYS
0220-084C	M-0060-1	F-3	NC	1.000	CK	SA	SYS
0220-084D	M-0060-1	F-3	NC	1.000	CK	SA	SYS
0220-085A	M-0060-2	F-7	NC	1.000	CK	SA	SYS
0220-085B	M-0060-2	F-7	NC	1.000	CK	SA	SYS
0220-085C	M-0060-2	F-7	NC	1.000	CK	SA	SYS
0220-085D	M-0060-2	F-7	NC	1.000	CK	SA	SYS
0220-089A	M-0077-2	E-1	1	1.000	XFC	SA	SYS
0220-089B	M-0077-2	E-1	1	1.000	XFC	SA	SYS
0220-105A	M-0076-1	D-4	NC	8.000	CK	SA	SYS
0220-105B	M-0076-1	E-4	NC	8.000	CK	SA	SYS
0220-105C	M-0076-1	E-5	NC	8.000	CK	SA	SYS
0220-105D	M-0076-1	D-5	NC	8.000	CK	SA	SYS
0220-105E	M-0076-1	E-5	NC	8.000	CK	SA	SYS
0262-2-005A	M-0077-2	B-7	1	1.000	XFC	SA	SYS
0262-2-005B	M-0077-2	B-2	1	1.000	XFC	SA	SYS
0262-2-006A	M-0077-2	B-7	1	1.000	XFC	SA	SYS
0262-2-006B	M-0077-2	B-2	1	1.000	XFC	SA	SYS
0263-2-011	M-0077-1	E-6	1	1.000	XFC	SA	SYS
0263-2-013A	M-0077-1	D-6	1	1.000	XFC	SA	SYS
0263-2-013B	M-0077-1	D-3	1	1.000	XFC	SA	SYS
0263-2-015A	M-0077-1	D-6	1	1.000	XFC	SA	SYS
0263-2-015B	M-0077-1	D-3	1	1.000	XFC	SA	SYS
0263-2-017A	M-0077-1	D-6	1	1.000	XFC	SA	SYS
0263-2-017B	M-0077-1	D-3	1	1.000	XFC	SA	SYS
0263-2-019A	M-0077-1	C-6	1	1.000	XFC	SA	SYS
0263-2-019B	M-0077-1	C-3	1	1.000	XFC	SA	SYS
0263-2-020A	M-0077-1	B-6	1	1.000	XFC	SA	SYS
0263-2-020B	M-0077-1	B-6	1	1.000	XFC	SA	SYS
0263-2-020C	M-0077-1	B-3	1	1.000	XFC	SA	SYS
0263-2-020D	M-0077-1	B-3	1	1.000	XFC	SA	SYS
0263-2-023A	M-0077-1	C-6	1	1.000	XFC	SA	SYS
0263-2-023B	M-0077-1	C-6	1	1.000	XFC	SA	SYS
0263-2-023C	M-0077-1	B-3	1	1.000	XFC	SA	SYS
0263-2-023D	M-0077-1	B-3	1	1.000	XFC	SA	SYS
0263-2-025	M-0077-1	B-6	1	1.000	XFC	SA	SYS
0263-2-027	M-0077-1	A-6	1	1.000	XFC	SA	SYS
0263-2-031B	M-0077-1	C-6	1	1.000	XFC	SA	SYS
0263-2-031C	M-0077-1	C-6	1	1.000	XFC	SA	SYS
0263-2-031D	M-0077-1	C-6	1	1.000	XFC	SA	SYS
0263-2-031E	M-0077-1	C-6	1	1.000	XFC	SA	SYS
0263-2-031G	M-0077-1	C-6	1	1.000	XFC	SA	SYS
0263-2-031H	M-0077-1	C-6	1	1.000	XFC	SA	SYS
0263-2-031J	M-0077-1	C-6	1	1.000	XFC	SA	SYS
0263-2-031K	M-0077-1	C-6	1	1.000	XFC	SA	SYS

TABLE 1.0-12
UNIT 2 VALVE LISTING
(Sorted by Valve number)

VALVE NUMBER	P&ID NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
0263-2-031M	M-0077-1	C-3	1	1.000	XFC	SA	SYS
0263-2-031N	M-0077-1	C-3	1	1.000	XFC	SA	SYS
0263-2-031P	M-0077-1	C-3	1	1.000	XFC	SA	SYS
0263-2-031R	M-0077-1	C-3	1	1.000	XFC	SA	SYS
0263-2-031T	M-0077-1	C-3	1	1.000	XFC	SA	SYS
0263-2-031U	M-0077-1	C-3	1	1.000	XFC	SA	SYS
0263-2-031V	M-0077-1	C-3	1	1.000	XFC	SA	SYS
0263-2-031W	M-0077-1	C-3	1	1.000	XFC	SA	SYS
0263-2-033	M-0077-1	B-3	1	1.000	XFC	SA	SYS
0263-2-042A	M-0077-1	C-6	1	1.000	XFC	SA	SYS
0263-2-042B	M-0077-1	C-3	1	1.000	XFC	SA	SYS
0302-020A	M-0083-1	E-8	NC	.500	SO3	SO	E
0302-020B	M-0083-1	E-8	NC	.500	SO3	SO	E
0302-021A	M-0083-1	E-6	2	1.000	DIA	AO	C/FC
0302-021B	M-0083-1	E-6	NC	1.000	DIA	AO	C/FC
0302-021C	M-0083-1	F-1	2	1.000	DIA	AO	C/FC
0302-021D	M-0083-1	F-1	NC	1.000	DIA	AO	C/FC
0302-022A	M-0083-1	F-5	2	2.000	DIA	AO	C/FC
0302-022B	M-0083-1	F-5	NC	2.000	DIA	AO	C/FC
0302-022C	M-0083-1	F-3	2	2.000	DIA	AO	C/FC
0302-022D	M-0083-1	F-2	NC	2.000	DIA	AO	C/FC
0302-025A	M-0083-1	E-7	NC	1.000	SO3	SO	D
0302-025B	M-0083-1	E-7	NC	1.000	SO3	SO	D
0302-181A	M-0083-1	E-8	NC	1.000	SO2	SO	C/FO
0302-181B	M-0083-1	E-8	NC	1.000	SO2	SO	C/FO
0302-182A	M-0083-1	F-8	NC	1.000	SO2	SO	C/FO
0302-182B	M-0083-1	F-8	NC	1.000	SO2	SO	C/FO
0305-000_-RPD	M-0083-1	E-10	1	.250	RPD	SA	C
0305-114	M-0083-1	E-9	2	.750	CK	SA	SYS
0305-115	M-0083-1	E-10	1	.500	CK	SA	SYS
0305-117	M-0083-1	E-9	NC	.375	SO3	SO	E
0305-118	M-0083-1	E-9	NC	.375	SO3	SO	E
0305-120 -FCV	M-0083-1	C-10	1	1.000	SO2	SO	C/FC
0305-121 -SO	M-0083-1	C-9	1	.750	SO2	SO	C/FC
0305-122 -SO	M-0083-1	C-9	1	.750	SO2	SO	C/FC
0305-123 -FCV	M-0083-1	C-10	1	1.000	SO2	SO	C/FC
0305-126 -CV	M-0083-1	D-10	1	1.000	DIA	AO	C/FO
0305-127 -CV	M-0083-1	D-9	1	.750	DIA	AO	C/FO
0305-138	M-0083-1	C-10	1	.500	CK	SA	SYS
0737-001A	M-0071-2	F-7	NC	.375	BAL	SO	C/FC
0737-001B	M-0071-2	F-7	NC	.375	BAL	SO	C/FC
0737-001C	M-0071-2	F-7	NC	.375	BAL	SO	C/FC
0737-001D	M-0071-2	F-7	NC	.375	BAL	SO	C/FC
0737-001E	M-0071-2	F-7	NC	.375	BAL	SO	C/FC
0737-002A	M-0071-2	F-7	NC	.375	SHR	EXP	O/KL
0737-002B	M-0071-2	F-7	NC	.375	SHR	EXP	O/KL
0737-002C	M-0071-2	F-7	NC	.375	SHR	EXP	O/KL
0737-002D	M-0071-2	F-7	NC	.375	SHR	EXP	O/KL
0737-002E	M-0071-2	F-7	NC	.375	SHR	EXP	O/KL
1001-002A	M-0081-2	C-7	3	12.000	CK	SA	SYS
1001-002B	M-0081-2	B-7	3	12.000	CK	SA	SYS

TABLE 1.0-12
UNIT 2 VALVE LISTING
(Sorted by Valve number)

VALVE NUMBER	P&ID NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
1001-002C	M-0081-2	D-2	3	12.000	CK	SA	SYS
1001-002D	M-0081-2	B-2	3	12.000	CK	SA	SYS
1001-005A-MO	M-0081-2	E-6	3	12.000	GL	MO	C
1001-005B-MO	M-0081-2	E-3	3	12.000	GL	MO	C
1001-007A-MO	M-0079	B-6	2	14.000	GA	MO	O/KL
1001-007B-MO	M-0079	E-6	2	14.000	GA	MO	O/KL
1001-007C-MO	M-0079	B-6	2	14.000	GA	MO	O/KL
1001-007D-MO	M-0079	E-6	2	14.000	GA	MO	O/KL
1001-016A-MO	M-0081-1	A-7	2	18.000	GL	MO	O
1001-016B-MO	M-0081-1	A-2	2	18.000	GL	MO	O
1001-018A-MO	M-0081-1	C-6	2	3.000	GA	MO	C
1001-018B-MO	M-0078	C-3	2	3.000	GA	MO	C
1001-019A-MO	M-0081-1	B-8	2	18.000	GA	MO	O/KL
1001-019B-MO	M-0081-1	B-2	2	18.000	GA	MO	O/KL
1001-020 -MO	M-0081-1	B-7	2	3.000	GA	MO	C
1001-021 -MO	M-0081-1	C-7	NC	3.000	GA	MO	C
1001-022A-RV	M-0081-1	E-8	2	1.000	RV	SA	C
1001-022B-RV	M-0081-1	E-2	2	1.000	RV	SA	C
1001-023A-MO	M-0081-1	E-6	2	10.000	GA	MO	C
1001-023B-MO	M-0081-1	E-3	2	10.000	GA	MO	C
1001-026A-MO	M-0081-1	E-5	2	10.000	GA	MO	C
1001-026B-MO	M-0081-1	E-4	2	10.000	GA	MO	C
1001-028A-MO	M-0081-1	E-6	2	16.000	GL	MO	O
1001-028B-MO	M-0081-1	E-3	2	16.000	GL	MO	O
1001-029A-MO	M-0081-1	E-6	1	16.000	GA	MO	C
1001-029B-MO	M-0081-1	E-3	1	16.000	GA	MO	C
1001-034A-MO	M-0081-1	E-7	2	16.000	GA	MO	C
1001-034B-MO	M-0081-1	E-3	2	16.000	GA	MO	C
1001-036A-MO	M-0081-1	E-7	2	14.000	GL	MO	C
1001-036B-MO	M-0081-1	D-3	2	14.000	GL	MO	C
1001-037A-MO	M-0081-1	E-7	2	6.000	GL	MO	C
1001-037B-MO	M-0081-1	D-3	2	6.000	GL	MO	C
1001-043A-MO	M-0079	B-4	2	14.000	GA	MO	C/KL
1001-043B-MO	M-0079	E-4	2	14.000	GA	MO	C/KL
1001-043C-MO	M-0079	B-8	2	14.000	GA	MO	C/KL
1001-043D-MO	M-0079	D-8	2	14.000	GA	MO	C/KL
1001-047 -MO	M-0081-1	C-4	1	20.000	GA	MO	C
1001-050 -MO	M-0081-1	D-4	1	20.000	GA	MO	C
1001-059	M-0081-1	F-3	2	1.000	RV	SA	C
1001-067A	M-0079	B-3	2	12.000	CK	SA	SYS
1001-067B	M-0079	E-3	2	12.000	CK	SA	SYS
1001-067C	M-0079	B-9	2	12.000	CK	SA	SYS
1001-067D	M-0079	E-9	2	12.000	CK	SA	SYS
1001-068A-AO	M-0081-1	E-5	1	16.000	CK	AO	SYS
1001-068B-AO	M-0081-1	E-4	1	16.000	CK	AO	SYS
1001-125A-RV	M-0079	B-5	2	1.000	RV	SA	C
1001-125B-RV	M-0079	E-5	2	1.000	RV	SA	C
1001-125C-RV	M-0079	B-7	2	1.000	RV	SA	C
1001-125D-RV	M-0079	E-7	2	1.000	RV	SA	C
1001-131	M-0081-1	B-2	2	3.000	CK	SA	SYS
1001-136A	M-0081-1	D-8	2	3.000	CK	SA	SYS
1001-136B	M-0081-1	E-2	2	3.000	CK	SA	SYS

TABLE 1.0-12
UNIT 2 VALVE LISTING
(Sorted by Valve number)

VALVE NUMBER	P&ID NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTUATOR	NORMAL POSITION
1001-142A	M-0079	B-3	2	2.000	CK	SA	SYS
1001-142B	M-0079	E-3	2	2.000	CK	SA	SYS
1001-142C	M-0079	B-9	2	2.000	CK	SA	SYS
1001-142D	M-0079	E-9	2	2.000	CK	SA	SYS
1001-165A-RV	M-0079	A-2	3	4.000	RV	SA	C
1001-165B-RV	M-0079	A-10	3	4.000	RV	SA	C
1001-166A-RV	M-0079	A-2	2	1.000	RV	SA	C
1001-166B-RV	M-0079	A-10	2	1.000	RV	SA	C
1099-092A-FCV	M-1061-1	E-5	2	1.000	DIA	AO	C/FC
1099-092B-FCV	M-1061-1	D-5	2	1.000	DIA	AO	C/FC
1101-015	M-0082	C-3	1	1.500	CK	SA	SYS
1101-016	M-0082	C-4	1	1.500	CK	SA	SYS
1101-043A	M-0082	D-6	2	1.500	CK	SA	SYS
1101-043B	M-0082	E-6	2	1.500	CK	SA	SYS
1105- A-RV	M-0082	C-7	2	1.500	RV	SA	C
1105- B-RV	M-0082	E-6	2	1.500	RV	SA	C
1106- A	M-0082	C-4	2	1.500	SHR	EXP	C/KL
1106- B	M-0082	D-4	2	1.500	SHR	EXP	C/KL
1201-002 -MO	M-0088	B-6	1	6.000	GA	MO	O
1201-005 -MO	M-0088	B-7	1	6.000	GA	MO	O
1301-015A	M-0089	A-2	1	1.000	XFC	SA	SYS
1301-015B	M-0089	B-2	1	1.000	XFC	SA	SYS
1301-016 -MO	M-0089	B-2	1	3.000	GA	MO	O
1301-017 -MO	M-0089	B-3	1	3.000	GA	MO	O
1301-040	M-0089	D-3	NC	2.000	CK	SA	SYS
1301-041	M-0089	D-2	NC	8.000	CK	SA	SYS
1301-047	M-0089	D-4	NC	2.000	CK	SA	SYS
1301-055	M-0089	D-3	NC	2.000	SCK	SA	C/LO
1301-064	M-0089	D-2	NC	8.000	SCK	SA	C/LO
1402-003A-MO	M-0078	F-7	2	18.000	GA	MO	O
1402-003B-MO	M-0078	F-5	2	18.000	GA	MO	O
1402-004A-MO	M-0078	B-8	2	8.000	GL	MO	C
1402-004B-MO	M-0078	C-8	2	8.000	GL	MO	C
1402-008A	M-0078	E-9	2	12.000	SCK	SA	C/LO
1402-008B	M-0078	E-6	2	12.000	SCK	SA	C/LO
1402-009A-AO	M-0078	C-3	1	10.000	CK	AO	SYS
1402-009B-AO	M-0078	C-4	1	10.000	CK	AO	SYS
1402-013A	M-0078	E-10	2	1.500	SCK	SA	C/LO
1402-013B	M-0078	E-6	2	1.500	SCK	SA	C/LO
1402-024A-MO	M-0078	B-2	2	10.000	GA	MO	O
1402-024B-MO	M-0078	B-5	2	10.000	GA	MO	O
1402-025A-MO	M-0078	C-2	1	10.000	GA	MO	C
1402-025B-MO	M-0078	C-5	1	10.000	GA	MO	C
1402-028A-RV	M-0078	C-9	2	2.000	RV	SA	C
1402-028B-RV	M-0078	D-6	2	2.000	RV	SA	C
1402-031A	M-0078	D-3	1	.750	XFC	SA	SYS
1402-031B	M-0078	D-4	1	.750	XFC	SA	SYS
1402-038A-MO	M-0078	D-8	2	1.500	GA	MO	C
1402-038B-MO	M-0078	E-7	2	1.500	GA	MO	C
1402-070	M-0078	E-7	2	1.500	CK	SA	SYS
1601-020A-AO	M-0076-1	D-9	NC	20.000	BTF	AO	C/FO
1601-020A-SO	M-0076-1	A-1	NC	.001	SO4	SO	E

TABLE 1.0-12
UNIT 2 VALVE LISTING
(Sorted by Valve number)

VALVE NUMBER	P&ID NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
1601-020B-AO	M-0076-1	E-9	NC	20.000	BTF	AO	C/FO
1601-020B-SO	M-0076-1	A-1	NC	.001	SO4	SO	E
1601-021 -AO	M-0076-1	C-6	NC	18.000	BTF	AO	C/FC
1601-021 -SO	M-0076-1	A-1	NC	.001	SO4	SO	D
1601-022 -AO	M-0076-1	C-6	NC	18.000	BTF	AO	C/FC
1601-022 -SO	M-0076-1	C-7	NC	.001	SO4	SO	D
1601-023 -AO	M-0076-1	B-3	NC	18.000	BTF	AO	C/FC
1601-023 -SO	M-0076-1	A-1	NC	.001	SO4	SO	D
1601-024 -AO	M-0076-1	B-2	NC	18.000	BTF	AO	C/FC
1601-024 -SO	M-0076-1	A-1	NC	.001	SO4	SO	D
1601-031A	M-0076-1	D-9	NC	20.000	CK	SA	SYS
1601-031B	M-0076-1	E-9	NC	20.000	CK	SA	SYS
1601-032A	M-0076-1	E-2	NC	.001	CK	SA	SYS
1601-032B	M-0076-1	E-2	NC	.001	CK	SA	SYS
1601-032C	M-0076-1	E-2	NC	.001	CK	SA	SYS
1601-032D	M-0076-1	E-2	NC	.001	CK	SA	SYS
1601-032E	M-0076-1	E-2	NC	.001	CK	SA	SYS
1601-032F	M-0076-1	E-3	NC	.001	CK	SA	SYS
1601-033A	M-0076-1	E-7	NC	.001	CK	SA	SYS
1601-033B	M-0076-1	E-7	NC	.001	CK	SA	SYS
1601-033C	M-0076-1	E-7	NC	.001	CK	SA	SYS
1601-033D	M-0076-1	E-7	NC	.001	CK	SA	SYS
1601-033E	M-0076-1	E-7	NC	.001	CK	SA	SYS
1601-033F	M-0076-1	E-7	NC	.001	CK	SA	SYS
1601-055	M-0076-1	A-6	NC	4.000	GA	AO	O/FC
1601-055 -SO	M-0076-1	A-6	NC	.001	SO3	SO	E
1601-056 -AO	M-0076-1	D-6	NC	18.000	BTF	AO	O/FC
1601-056 -SO	M-0076-1	A-1	NC	.001	SO4	SO	E
1601-057	M-0076-1	D-8	NC	1.000	GL	MO	O
1601-058 -AO	M-0076-1	D-7	NC	1.000	GL	AO	C/FC
1601-058 -SO	M-0076-1	D-7	NC	.001	SO3	SO	D
1601-059 -AO	M-0076-1	D-7	NC	1.000	GL	AO	O/FC
1601-059 -SO	M-0076-1	D-6	NC	.001	SO3	SO	E
1601-060 -AO	M-0076-1	E-1	NC	18.000	BTF	AO	C/FC
1601-060 -SO	M-0076-1	F-1	NC	.001	SO4	SO	D
1601-061 -AO	M-0076-1	F-1	NC	2.000	GL	AO	C/FC
1601-061 -SO	M-0076-1	F-1	NC	.001	SO3	SO	D
1601-062 -AO	M-0076-1	B-3	NC	2.000	GL	AO	O/FC
1601-062 -SO	M-0076-1	B-3	NC	.001	SO3	SO	D
1601-063 -AO	M-0076-1	A-2	NC	6.000	BTF	AO	C/FC
1601-063 -SO	M-0076-1	A-3	NC	.001	SO4	SO	D
1699-009 -RV	M-0076-1	D-8	NC	1.500	PV	SA	C
2001-003 -AO	M-0085	F-7	NC	3.000	PLG	AO	C/FC
2001-003 -SO	M-0085	F-7	NC	.001	SO3	SO	D
2001-004 -AO	M-0085	F-7	NC	3.000	PLG	AO	C/FC
2001-004 -SO	M-0085	F-7	NC	.001	SO3	SO	D
2001-015 -AO	M-0085	D-4	NC	3.000	PLG	AO	C/FC
2001-015 -SO	M-0085	E-4	NC	.001	SO3	SO	D
2001-016 -AO	M-0085	D-3	NC	3.000	PLG	AO	C/FC
2001-016 -SO	M-0085	E-3	NC	.001	SO3	SO	D
2301-003 -MO	M-0087	A-7	2	10.000	GA	MO	C

TABLE 1.0-
UNIT 2 VALVE LISTING
(Sorted by Valve number)

VALVE NUMBER	P&ID NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTUATOR	NORMAL POSITION
2301-004 -MO	M-0087	C-9	1	10.000	GA	MO	O
2301-005 -MO	M-0087	B-10	1	10.000	GA	MO	O
2301-007 -AO	M-0087	E-6	2	14.000	CK	AO	SYS
2301-008 -MO	M-0087	E-6	2	14.000	GA	MO	C
2301-009 -MO	M-0087	E-5	2	14.000	GA	MO	O
2301-010 -MO	M-0087	E-5	2	12.000	GL	MO	C
2301-014 -MO	M-0087	C-6	2	4.000	GL	MO	C
2301-020	M-0087	E-1	2	16.000	CK	SA	SYS
2301-023 -RV	M-0087	A-3	2	1.500	RV	SA	C
2301-026	M-0087	D-10	1	1.000	XFC	SA	SYS
2301-027	M-0087	D-10	1	1.000	XFC	SA	SYS
2301-028	M-0087	B-9	2	1.000	GL	AO	C/FO
2301-028 -SO	M-0087	B-9	NC	.001	SO3	SO	D
2301-029	M-0087	B-10	2	1.000	GL	AO	O/FC
2301-029 -SO	M-0087	B-10	NC	.001	SO3	SO	D
2301-030	M-0087	B-10	NC	1.000	GL	AO	O/FC
2301-030 -SO	M-0087	B-10	NC	.001	SO3	SO	D
2301-034	M-0087	C-8	2	2.000	CK	SA	SYS
2301-035 -MO	M-0087	E-7	2	16.000	GA	MO	C
2301-036 -MO	M-0087	E-9	2	16.000	GA	MO	C
2301-039	M-0087	E-8	2	16.000	CK	SA	SYS
2301-040	M-0087	D-7	2	4.000	CK	SA	SYS
2301-045	M-0087	B-8	2	24.000	CK	SA	SYS
2301-048 -MO	M-0087	B-4	2	4.000	GA	MO	O
2301-049 -MO	M-0087	E-4	2	4.000	GA	MO	C
2301-050	M-0087	C-5	2	4.000	CK	SA	SYS
2301-051	M-0087	C-5	2	4.000	CK	SA	SYS
2301-053 -RV	M-0087	C-4	2	4.000	RV	SA	C
2301-064	M-0087	A-7	2	1.000	GL	AO	O/FC
2301-064 -SO	M-0087	A-6	NC	.001	SO3	SO	D
2301-065	M-0087	A-8	NC	1.000	GL	AO	O/FC
2301-065 -SO	M-0087	A-7	NC	.001	SO3	SO	D
2301-068	M-0087	A-6	2	16.000	RPD	SA	C
2301-069	M-0087	A-6	2	16.000	RPD	SA	C
2301-071	M-0087	D-8	2	2.000	SCK	SA	C/LO
2301-074	M-0087	C-8	2	12.000	SCK	SA	C/LO
2301-075	M-0087	B-4	2	4.000	CK	SA	SYS
2301-076	M-0087	E-4	2	2.000	CK	SA	SYS
2317	M-0087	A-7	2	24.000	PLG	HO	C
2399-040- MO	M-0087	D-8	2	4.000	GA	MO	O
2399-041- MO	M-0087	C-8	2	4.000	GA	MO	O
2399-064	M-0087	C-8	2	4.000	CK	SA	SYS
2399-065	M-0087	C-8	2	4.000	CK	SA	SYS
2399-066	M-0087	C-8	2	4.000	CK	SA	SYS
2399-067	M-0087	C-8	2	4.000	CK	SA	SYS
2499-001A-SO	M-0641-2	D-6	NC	.500	SO2	SO	C/FC
2499-001B-SO	M-0641-2	D-3	NC	.500	SO2	SO	C/FC
2499-002A-SO	M-0641-2	D-6	NC	.500	SO2	SO	C/FC
2499-002B-SO	M-0641-2	D-3	NC	.500	SO2	SO	C/FC
2499-003A-SO	M-0641-2	B-7	NC	.500	SO2	SO	C/FC
2499-003B-SO	M-0641-2	B-2	NC	.500	SO2	SO	C/FC

TABLE 1.0-12
UNIT 2 VALVE LISTING
(Sorted by Valve number)

VALVE NUMBER	P&ID NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
2499-004A-SO	M-0641-2	B-6	NC	.500	SO2	SO	C/FC
2499-004B-SO	M-0641-2	B-3	NC	.500	SO2	SO	C/FC
2499-022A	M-0641-2	C-7	NC	.500	CK	SA	SYS
2499-022B	M-0641-2	C-2	NC	.500	CK	SA	SYS
2599-002A-AO	M-0642-2	D-5	NC	1.500	GL	AO	C/FC
2599-002A-SO	M-0642-2	D-6	NC	1.000	SO3	SO	D
2599-002B-AO	M-0642-2	D-4	NC	1.500	GL	AO	C/FC
2599-002B-SO	M-0642-2	D-3	NC	1.000	SO3	SO	D
2599-003A-AO	M-0642-2	C-6	NC	1.000	GL	AO	C/FC
2599-003A-SO	M-0642-2	C-7	NC	1.000	SO3	SO	D
2599-003B-AO	M-0642-2	C-3	NC	1.000	GL	AO	C/FC
2599-003B-SO	M-0642-2	C-2	NC	1.000	SO3	SO	D
2599-004A-AO	M-0642-2	F-3	NC	1.000	GL	AO	C/FC
2599-004A-SO	M-0642-2	F-3	NC	1.000	SO3	SO	D
2599-004B-AO	M-0642-2	E-3	NC	1.000	GL	AO	C/FC
2599-004B-SO	M-0642-2	E-3	NC	1.000	SO3	SO	D
2599-005A-FCV	M-0642-2	F-5	NC	1.000	DIA	AO	C/FC
2599-005A-SO	M-0642-2	F-5	NC	1.000	SO3	SO	D
2599-005B-FCV	M-0642-2	E-5	NC	1.000	DIA	AO	C/FC
2599-005B-SO	M-0642-2	E-5	NC	1.000	SO3	SO	D
2599-008	M-0642-2	F-8	NC	1.000	CK	SA	SYS
2599-022	M-0642-2	A-7	NC	1.500	CK	SA	SYS
2599-023A	M-0642-2	C-6	NC	1.500	CK	SA	SYS
2599-023B	M-0642-2	C-3	NC	1.500	CK	SA	SYS
2599-024A	M-0642-2	C-6	NC	1.000	CK	SA	SYS
2599-024B	M-0642-2	C-3	NC	1.000	CK	SA	SYS
2599-998 -RV	M-0642-2	B-5	NC	.001	RV	SA	C
2599-999	M-0642-2	A-6	NC	1.250	CK	SA	SYS
2901-010	M-0087	D-7	2	4.000	CK	SA	SYS
3702- -MO	M-0075	B-3	NC	8.000	GA	MO	O
3703- -MO	M-0075	B-1	NC	8.000	GA	MO	O
3706- -MO	M-0075	B-1	NC	8.000	GA	MO	O
3799-031	M-0075	B-3	NC	8.000	CK	SA	SYS
3999-086	M-0069-3	C-8	3	8.000	CK	SA	SYS
3999-088	M-0069-3	E-6	3	6.000	CK	SA	SYS
3999-089	M-0069-3	D-6	3	6.000	GA	M	C
3999-139	M-0069-3	[illegible]-5	3	6.000	CK	SA	SYS
3999-560	M-0069-1	D-8	3	2.500	CK	SA	SYS
3999-561	M-0069-1	D-7	3	4.000	CK	SA	SYS
4399-045	M-0058-3	A-4	NC	3.000	GA	M	C
4399-046	M-0058-3	A-4	NC	3.000	CK	SA	SYS
4699-046	M-0072-1	E-6	NC	1.000	GL	M	C
4699-047	M-0072-1	E-6	NC	1.000	CK	SA	SYS
4699-123	M-0072-2	D-6	NC	1.500	CK	SA	SYS
4699-196	M-0072-2	D-5	NC	1.500	CK	SA	SYS
4699-226	M-0072-2	C-2	NC	1.500	DIA	AO	C
4699-306A	M-0072-2	D-7	NC	.750	RV	SA	C
4699-306B	M-0072-2	D-6	NC	.750	RV	SA	C
4699-306C	M-0072-2	D-5	NC	.750	RV	SA	C
4699-306D	M-0072-2	D-5	NC	.750	RV	SA	C
4699-307A	M-0072-2	C-6	NC	.500	CK	SA	SYS

TABLE 1.0-12
UNIT 2 VALVE LISTING
(Sorted by Valve number)

VALVE NUMBER	P&ID NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
4699-307B	M-0072-2	C-5	NC	.500	CK	SA	SYS
4699-309	M-0072-2	C-3	NC	.375	CK	SA	SYS
4699-310	M-0072-2	D-3	NC	.375	SO3	SO	D
4720	M-0071-2	D-3	NC	1.000	DIA	AO	O/FC
4721	M-0071-2	D-3	NC	1.000	DIA	AO	O/FC
4799-155	M-0071-2	E-2	NC	2.000	CK	SA	SYS
4799-156	M-0071-2	E-3	NC	2.000	CK	SA	SYS
4799-158	M-0071-2	F-4	NC	.500	CK	SA	SYS
4799-159	M-0071-2	F-4	NC	.500	CK	SA	SYS
4799-281A	M-0071-2	B-2	NC	.500	CK	SA	SYS
4799-482	M-0071-2	D-3	NC	.500	SO3	SO	E
4799-483	M-0071-2	D-3	NC	.500	SO3	SO	E
5201- -RV	M-0029-2	D-7	NC	1.000	RV	SA	C
5201- -SO	M-0029-2	A-8	NC	1.000	SO2	SO	O
5299-003	M-0029-2	D-8	NC	1.500	CK	SA	SYS
5299-005	M-0029-2	D-8	NC	1.500	CK	SA	SYS
5299-042	M-0029-2	D-9	NC	.500	CK	SA	SYS
5299-157	M-0029-2	C-9	NC	1.000	CK	SA	SYS
5299-158	M-0029-2	D-9	NC	.750	CK	SA	SYS
5401- A-AO	M-0084-1	E-8	NC	18.000	BTF	AO	O/FC
5401- A-CK	M-0084-1	Z-99	NC	.001	CK	SA	SYS
5401- A-SO	M-0084-1	E-7	NC	.001	SO4	SO	E
5401- B-AO	M-0084-1	E-8	NC	18.000	BTF	AO	O/FC
5401- B-CK	M-0084-1	Z-99	NC	.001	CK	SA	SYS
5401- B-SO	M-0084-1	E-7	NC	.001	SO4	SO	E
5402- A-AO	M-0084-1	D-3	NC	18.000	GA	AO	O/FC
5402- A-CK	M-0084-1	Z-99	NC	.001	CK	SA	SYS
5402- A-SO	M-0084-1	D-2	NC	.001	SO4	SO	E
5402- B-AO	M-0084-1	D-3	NC	18.000	GA	AO	O/FC
5402- B-CK	M-0084-1	Z-99	NC	.001	CK	SA	SYS
5402- B-SO	M-0084-1	D-2	NC	.001	SO4	SO	E
5799-386	M-1551	C-2	3	2.500	CK	SA	SYS
743	M-0071-2	B-7	NC	.375	CK	SA	SYS
7503- -MO	M-0044	D-2	NC	18.000	BTF	MO	O
8801- A-FCV	M-0076-1	C-3	NC	.500	DIA	AO	O/FC
8801- A-SO	M-0076-1	C-3	NC	.001	SO3	SO	E
8801- B-FCV	M-0076-1	D-3	NC	.500	DIA	AO	O/FC
8801- B-SO	M-0076-1	D-3	NC	.001	SO3	SO	E
8801- C-FCV	M-0076-1	D-3	NC	.500	DIA	AO	O/FC
8801- C-SO	M-0076-1	D-3	NC	.001	SO3	SO	E
8801- D-FCV	M-0076-1	E-3	NC	.500	DIA	AO	O/FC
8801- D-SO	M-0076-1	E-3	NC	.001	SO3	SO	E
8802- A-FCV	M-0076-1	C-3	NC	.500	DIA	AO	O/FC
8802- A-SO	M-0076-1	C-3	NC	.001	SO3	SO	E
8802- B-FCV	M-0076-1	D-3	NC	.500	DIA	AO	O/FC
8802- B-SO	M-0076-1	D-3	NC	.001	SO3	SO	E
8802- C-FCV	M-0076-1	D-3	NC	.500	DIA	AO	O/FC
8802- C-SO	M-0076-1	D-3	NC	.001	SO3	SO	E
8802- D-FCV	M-0076-1	E-3	NC	.500	DIA	AO	O/FC
8802- D-SO	M-0076-1	E-3	NC	.001	SO3	SO	E
8803	M-0076-1	D-6	NC	.500	GL	AO	O/FC

TABLE 1.0-12
UNIT 2 VALVE LISTING
(Sorted by Valve number)

VALVE NUMBER	P&ID NUMBER	DWG COOR	IST CLASS	SIZE (INCH)	BODY STYLE	ACTU-ATOR	NORMAL POSI-TION
8803- -SO	M-0076-1	C-6	NC	.001	SO3	SO	E
8803- 1D	M-0076-1	D-3	NC	.500	GA	M	C
8803- 1E	M-0076-1	D-3	NC	.500	GA	M	C
8803- 1F	M-0076-1	D-3	NC	.500	GA	M	C
8803- 1G	M-0076-1	D-3	NC	.500	GA	M	C
8803- 1H	M-0076-1	D-3	NC	.500	GA	M	C
8803- 1I	M-0076-1	D-3	NC	.500	GA	M	C
8803- 1J	M-0076-1	D-3	NC	.500	GA	M	C
8803- 1K	M-0076-1	D-3	NC	.500	GA	M	C
8803- 1L	M-0076-1	D-3	NC	.500	GA	M	C
8803- 1M	M-0076-1	D-3	NC	.500	GA	M	C
8803- 1N	M-0076-1	D-3	NC	.500	GA	M	C
8803- 1O	M-0076-1	D-3	NC	.500	GA	M	C
8803- 1P	M-0076-1	D-3	NC	.500	GA	M	C
8803- 1Q	M-0076-1	D-3	NC	.500	GA	M	C
8803- 1R	M-0076-1	D-3	NC	.500	GA	M	C
8803- 1S	M-0076-1	D-3	NC	.500	GA	M	C
8803- 1T	M-0076-1	D-3	NC	.500	GA	M	C
8803- 1U	M-0076-1	D-3	NC	.500	GA	M	C
8803- 1V	M-0076-1	D-3	NC	.500	GA	M	C
8803- 1W	M-0076-1	D-3	NC	.500	GA	M	C
8803- 1X	M-0076-1	D-3	NC	.500	GA	M	C
8803- 1Y	M-0076-1	D-3	NC	.500	GA	M	C
8803- 2D	M-0076-1	D-3	NC	.500	GA	M	C
8803- 2E	M-0076-1	D-3	NC	.500	GA	M	C
8803- 2F	M-0076-1	D-3	NC	.500	GA	M	C
8803- 2G	M-0076-1	D-3	NC	.500	GA	M	C
8803- 2H	M-0076-1	D-3	NC	.500	GA	M	C
8803- 2I	M-0076-1	D-3	NC	.500	GA	M	C
8803- 2J	M-0076-1	D-3	NC	.500	GA	M	C
8803- 2K	M-0076-1	D-3	NC	.500	GA	M	C
8803- 2L	M-0076-1	D-3	NC	.500	GA	M	C
8803- 2M	M-0076-1	D-3	NC	.500	GA	M	C
8803- 2N	M-0076-1	D-3	NC	.500	GA	M	C
8803- 2O	M-0076-1	D-3	NC	.500	GA	M	C
8803- 2P	M-0076-1	D-3	NC	.500	GA	M	C
8803- 2Q	M-0076-1	D-3	NC	.500	GA	M	C
8803- 2R	M-0076-1	D-3	NC	.500	GA	M	C
8803- 2S	M-0076-1	D-3	NC	.500	GA	M	C
8803- 2T	M-0076-1	D-3	NC	.500	GA	M	C
8803- 2U	M-0076-1	D-3	NC	.500	GA	M	C
8803- 2V	M-0076-1	D-3	NC	.500	GA	M	C
8803- 2W	M-0076-1	D-3	NC	.500	GA	M	C
8803- 2X	M-0076-1	D-3	NC	.500	GA	M	C
8803- 2Y	M-0076-1	D-3	NC	.500	GA	M	C
8804	M-0076-1	C-6	NC	.500	GL	AO	O/FC
8804- -SO	M-0076-1	D-6	NC	.001	SO3	SO	E
8941-101 -XCV	M-1062	C-6	NC	.500	DIA	AO	C/FC
8941-101 -XSV	M-1062	C-6	NC	.001	SO3	SO	D
8941-705 -XCV	M-1061-1	C-6	2	.500	DIA	AO	C/FC
8941-705 -XSV	M-1061-1	C-7	NC	.001	SO3	SO	D
8941-709 -XSV	M-1061-1	E-5	NC	.001	SO3	SO	D
8941-710 -XSV	M-1061-1	D-5	NC	.001	SO3	SO	D

VALVE RELIEF REQUESTS

2.0 RELIEF REQUESTS

Pursuant to 10CFR50.55a (g)(5)(iv), Relief Requests have been included when specific requirements in the Code are considered impractical. The enclosed Relief Requests are subject to change throughout the inspection interval. If testing requirements are determined to be impractical during the course of the interval, additional or modified Relief Requests will be submitted in accordance with 10CFR50.55a (g,(4)(iv) and NRC Generic Letter 89-04.

Relief Request numbers are in RV-NNA format, where;

RV: Relief Request for Valve Inservice Testing
(RP - Pump Inservice Testing)

NN: 00 for general issues

The first two characters of the Equipment Piece Number (system identifier) is used for system dependent Relief Requests.

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02 Reactor Recirculation and Nuclear Boiler
03 Control Rod Drive
07 Traversing In-Core Probe
10 Residual Heat Removal
11 Standby Liquid Control
12 Reactor Water Cleanup
13 Reactor Core Isolation Cooling
14 Core Spray
16 Containment and Pressure Suppression
19 Fuel Pool Cooling and Cleanup
20 Radwaste (Drywell Sump)
23 High Pressure Coolant Injection
24 Containment Atmosphere Monitor
25 Atmospheric Containment Atmosphere Dilution
30 Main Steam
32 Reactor Feedwater
33 Condensate (Clean and Contaminated)
37 Reactor Building Closed Cooling Water
39 Service Water
41 Fire Protection (Turbine and Diesel Oil)
46 Service Air
47 Instrument Air
48 Reactor Building Equipment Drains
49 Turbine Building Equipment Drains
52 Diesel Oil
54 Off Gas
57 Heating and Ventilating (Reactor Building Ventilation)
75 Standby Gas Treatment
89 High Radiation Sampling System

A: A unique, sequential, alphabetical character (e.g., RV-00A would address Primary Containment Isolation Valves, RV-00D would address the reference value stroke time concept, and RV-14A would address the Core Spray check valves inside containment)

A summary of Relief Requests is provided in Table 2.0-1.

Table 2.0-1

RELIEF REQUEST SUMMARIES

RELIEF REQUEST	SUMMARY
RV-00A	IWV-3421 through 3425, and 3427(b) Primary Containment Isolation Valve Local Leak Rate Tests Will Be Conducted in Accordance With 10CFR50, Appendix J
RV-00B	IWV-3521 Excess Flow Check Valve Exercise Test Frequency - These valves cannot be exercised during normal operation or Cold Shutdown since safety related instruments would be taken out of service. These valves will be tested in accordance with Technical Specification 4.7.D (page 3.7/4.7-32) and Updated Final Safety Analysis Report Section 5.2.2 (page 28)
RV-00C	IWV-3417(a) Fast Acting Valves (Maximum Stroke Time = 2.000 Seconds) Will Not Be Subject to More Frequent Testing When The Stroke Time Changes By More Than 50% - These valves will be declared inoperable if the measured stroke time exceeds 2.000 seconds.
RV-00D	IWV-3417(a) Reference Value Stroke Time vs. Previous Stroke Time - Rather than using the results of the previous test to establish more frequent testing limits for the next test, a reference value stroke time concept will be implemented.
RV-00E	IWV-3521 and IWV-3522 Check Valve Disassembly - If a valve cannot be exercised with system flow, disassembly to verify that the valve will stroke open is a last resort. A sample plan (as outlined in the Relief Request) will be used to perform disassembly tests. Partial stroke open testing of the valve will be performed if possible.

Table 2.0-1

RELIEF REQUEST SUMMARIES

RELIEF REQUEST	SUMMARY
RV-00F	IWV-3521 and IWV-3522 Check Valve Disassembly - If a valve cannot be excercised with system flow, disassembly to verify that the valve will stroke closed is a last resort. A sample plan (as outlined in the relief request) will be used to perform disassembly tests.
RV-00G	IWV-3417(b) and IWV-3523 Corrective Actions Will Be Governed By Technical Specification LCOs vs. Section XI - Especially for Cold Shutdown testing, corrective actions will be performed in accordance with the Limiting Conditions for Operation. A test failure will not necessarily require repair/replacement prior to startup/continued operation.
RV-02A	IWV-3415 MSIV Fail Safe Test Frequency - Fail safe testing of the MSIVs requires the accumulators to be bled. Because the accumulators and valves are in the drywell, which is inerted during operation and cold shutdown, this test can only be performed at reactor refueling.
RV-03A	IWV-3411, 3417(a), and 3521 Control Rod Drive Scram Inlet and Outlet Valve Exercise Test Frequency - These valves cannot be tested during normal operation because a CRD would be inserted. Cold Shutdown testing would result in more frequent testing than required. These valves will be tested in accordance with Technical Specification 3/4.3.C
RV-07A	IWV-3521 Traversing In-Core Probe Purge Check Valve Exercise Test Frequency - This Primary Containment Isolation Valve cannot be isolated during normal operation or Cold Shutdown because continuous purge flow is required.

Table 2.0-1

RELIEF REQUEST SUMMARIES

RELIEF REQUEST	SUMMARY
RV-11A	IWV-3521 Standby Liquid Control Primary Containment Isolation Check Valve Exercise Test Frequency - These valves cannot be exercised during normal operation because the SBLC poison must be separated from reactor coolant. The test performed during Cold Shutdown will only partial stroke the valves.
RV-13A	IWV-3521 RCIC Turbine Exhaust and RCIC Vacuum Pump Check Valve Exercise Test Frequency - There is no means to confirm that these valves closed following system operation, although there are indicators that the valves closed. The PCIV leak test at reactor refueling will be used to confirm valve closure.
RV-16A	IWV-3427(a) Drywell/Wetwell Vacuum Breakers Individual leak rates for the drywell/wetwell vacuum breakers cannot be measured. Therefore, a "decay rate less than a one inch orifice" acceptance criteria is applied collectively to all twelve vacuum breakers. Justification can be found in the Appendix J program. Ref: TS 4.7.A.4.b.4
RV-24A	IWV-3521 Containment Atmosphere Monitor (CAM) H2/O2 Analyzer Discharge Check Valve Exercise Test - This simple check valve (without position indication) is impractical to test during normal operation or Cold Shutdown.
RV-25A	IWV-3521 Atmospheric Containment Atmosphere Dilution (ACAD) PCIV/ Discharge Check Valve Exercise Test Frequency - These simple check valves (without position indication) are impractical test during normal operation and Cold Shutdown.

Table 2.0-1

RELIEF REQUEST SUMMARIES

RELIEF REQUEST	SUMMARY
RV-30A	IWV-3411, IWV-3417(a) Main Steam Target Rock and Electromatic Relief Valve Exercise Test Frequency and No Position Indication - Proper response by the discharge line temperature and acoustic monitors, and the Turbine Bypass valve will be used to confirm valve operability.
RV-30B	O&M-1, Section 1.3.3.1.e Main Steam Safety Valve Setpoint Testing, Additional Testing Requirements - Based on the special maintenance schedule applied to these valves (cleaned and re-built every other refueling outage), there is no need to perform additional testing of these valves if only one valve fails the setpoint test. See Technical Specification 4.6.E.
RV-30C	IWV-3521 Main Steam Safety/Relief Valve Discharge Line Vacuum Breaker Exercise Test Frequency - These simple check valves inside containment probably work properly after each SRV actuation, but there is no means of confirming their operability. A manual exercise test will be performed during Reactor Refueling to confirm their operability.
RV-30D	IWV-3411 Main Steam Isolation Valve AC, DC, and 2-Way Air Pilot Actuated Solenoid Exercise Test Frequency - Due the special tests that are performed (pulling fuses and simulating a loss-of-air test) these valves cannot be tested during normal operation or at Cold Shutdown.
RV-30E	O&M-1, Section 1.3.3.1.e Main Steam Safety Valve Setpoint Testing, Additional Testing Requirements - additional valves will be tested if the as-found setpoint is outside ± 3% of the design set pressure. However, in acoordance with current Technical Specifications, the setpoint will be ± 1% of the design set pressure prior to installation.

Table 2.0-1

RELIEF REQUEST SUMMARIES

RELIEF REQUEST	SUMMARY
RV-32A	IWV-3521 Feedwater Primary Containment Isolation Check Valves Exercise Test Frequency - The feedwater check valves cannot be closed during normal operation or the unit will scram on low water level. During Cold Shutdown, RWCU is required to prevent thermal stratification in the reactor vessel and to maintain reactor water quality.
RV-37A	IWV-3521 Reactor Building Closed Cooling Water (RBCCW) Supply to the Drywell Check Valve, Exercise Test Frequency. This valve cannot be closed during normal operation or Cold Shutdown because the Reactor Recirculation pump and motor bearing coolers, and the drywell coolers would be isolated.
RV-43A	IWV-3521 Clean Condensate Supply to the Drywell, Check Valve Exercise Test - This simple check valve (without position indication) is inaccessible during normal operation and Cold Shutdown. Since it is normally isolated by two closed valves, it will be tested closed during the 10CFR50, Appendix J seat leak test.
RV-46A	IWV-3417(a) Diesel Generator Starting Air Solenoid Valves Do Not Have Position Indication; Therefore, No Maximum Stroke Time, No Criteria for More Frequent Testing - Operability of the subject valves will be determined by the Diesel Engine start time test.
RV-46B	IWV-3521 Service Air to the Drywell Isolation Valve Exercise Test Frequency - Since the valve is a simple check valve without position indication, a reverse flow/leak test must be performed. This is impractical to do at any time other than reactor refueling.

Table 2.0-1

RELIEF REQUEST SUMMARIES

RELIEF REQUEST	SUMMARY
RV-47A	IWV-3521 Main Steam Isolation Valve and Target Rock Safety/Relief Valve Air Actuator Accumulator Check Valve Exercise Test Frequency - These simple check valves inside containment cannot be exercised during normal operation or Cold Shutdown because they are not accessible. These valves will be exercised during the accumulator check leak test (AT-06)
RV-47B	IWV-3521 Instrument Air Primary Containment Isolation Valve Exercise Test Frequency - The air supply to the MSIV, SRV, and Torus/Drywell vacuum breaker air actuators is required to prevent MSIV closure and other plant transients. It is impractical to test these simple check valves (without position indication) at any time other than Reactor Refueling.
RV-52A	IWV-3417(a) and IWV-3417(b) Diesel Generator Fuel Oil Transfer Pump Discharge Line Solenoid Valves Do Not Have Position Indication; Therefore, No Maximum Stroke Time, No Criteria for More Frequent Testing

RELIEF REQUEST NUMBER: RV-00A (Sheet 1 of 2)

COMPONENT IDENTIFICATION

VALVE NUMBER	IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR
All Primary Containment Isolation Valves (PCIVs)				

FUNCTION(S)

Not Applicable.

CODE REQUIREMENT

Article IWV-3421,	"Scope"
Article IWV-3422,	"Frequency"
Article IWV-3423,	"Differential Test Pressure"
Article IWV-3424,	"Seat Leakage Measurement"
Article IWV-3425,	"Test Medium"
Article IWV-3427(b),	"Corrective Action for valves 6 inch nominal pipe size and larger"

BASIS FOR RELIEF

The intent of Articles IWV-3421 through IWV-3425 is met by a primary containment isolation valve surveillance program that complies with the requirements of 10CFR50, Appendix J for Type C Local Leak Rate Testing. NRC Generic Letter 89-04, Attachment 1, Position 10 states that the usefulness of IWV-3427(b) does not justify the burden of complying with the requirement.

PROPOSED ALTERNATE TESTING

10CFR50.55a(a)(3)(i), "acceptable level of quality and safety".

Primary containment isolation valve seat leak rate testing will be performed in accordance with the requirements of 10CFR50, Appendix J for Type C testing. The requirements of IWV-3426 and IWV-3427(a) will continue to be met as required by Generic Letter 89-04, Position 10.

RELIEF REQUEST NUMBER: RV-00A (Sheet 2 of 2)

The results of primary containment isolation valve seat leak rate testing will be analyzed in accordance with the requirements of:

- o 10CFR50, Appendix J for Type C leak rate tests, and
- o Technical Specification Section 3.7

Corrective actions will be taken in accordance with Technical Specification Section 3.7.

APPLICABLE TIME PERIOD

Relief is requested for the 3rd ten (10) year interval.

RELIEF REQUEST NUMBER: RV-00B (Sheet 1 of 1)

COMPONENT IDENTIFICATION

VALVE NUMBER	IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR
All Excess Flow Check Valves				

FUNCTION(S)

An excess flow check valve limits flow (leakage) from a failed instrument line connected to the Reactor Coolant Pressure Boundary (RCPB). If an instrument line fails outside primary containment, downstream of the excess flow check valve, the amount of reactor coolant discharged into secondary containment will be minimized.

CODE REQUIREMENT

Article IWV-3521, "Frequency," Check valves shall be exercised at least once every 3 months, except as provided by IWV-3522.

BASIS FOR RELIEF

10CFR50.55a(g)(6)(i), "impractical"

These valves are tested in accordance with the Technical Specifications and Updated Final Safety Analysis Report. It is impractical to perform a stroke test during normal operation or Cold Shutdown because safety related instrument channel(s) would have to be taken out-of-service to perform the test.

PROPOSED ALTERNATE TESTING

Excess flow check valves will be exercised closed with the reactor vessel at normal operating pressure (1000 psi) at the end of each reactor refueling outage, in accordance with Technical Specification 4.7.D (page 3.7/4.7-32, the last paragraph) and Updated Final Safety Analysis Report Section 5.2.2 (page 28).

APPLICABLE TIME PERIOD

Relief is requested for the 3rd ten (10) year interval.

RELIEF REQUEST NUMBER: RV-00C (Sheet 1 of 1)

COMPONENT IDENTIFICATION

VALVE NUMBER	IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR

All Category A and B valves with a reference stroke time of ≤1.000 second (i.e., fast acting valves). This Relief Request deals with general requirements.

FUNCTION(S)

Not Applicable.

CODE REQUIREMENT

Article IWV-3417(a), "Corrective Action," Power operated valves that normally exercise in less than or equal to 10 seconds require more frequent testing if the comparison between the previous test and the current test indicates that the stroke time has increased by 50% or more.

BASIS FOR RELIEF

10CFR50.55a(g)(6)(i), "impractical"

For valves with a maximum stroke time of ≤1.000 second, operator and timing device inconsistency is the most significant contributor to the difference in stroke time from one test to the next. Given the problems with obtaining an accurate test measurement, it is impractical to compare the results of the current and previous test, and determine whether more frequent (monthly) testing is required.

In accordance with IWV-3417(b), the valve will be declared inoperable and appropriate corrective action will be taken if the test result exceeds the limiting value of full-stroke time.

PROPOSED ALTERNATE TESTING

Since test results for power operated valves with a reference stroke time of ≤1.000 seconds are impractical to trend, a maximum stroke time of 2.000 seconds will be assigned. Those power operated valves with a reference stroke time of ≤1.000 second, which exceed 2.000 seconds, will be delared inoperable. This approach has been endorsed by the NRC in Generic Letter 89-04, Position 6.

APPLICABLE TIME PERIOD

Relief is requested for the 3rd ten (10) year interval.

RELIEF REQUEST NUMBER: RV-00D (Sheet 1 of 3)

COMPONENT IDENTIFICATION

VALVE NUMBER	IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR

All Category A and B power operated valves, this Relief Request deals with general requirements.

FUNCTION(S)

Not Applicable.

CODE REQUIREMENT

Article IWV-3417(a), "Corrective Action," Power operated valves that normally exercise in less than or equal to 10 seconds require more frequent testing if the comparison between the previous test and the current test indicates that the stroke time has increased by 50% or more. Power operated valves that normally exercise in more than 10 seconds require more frequent testing if the comparison between the previous test and the current test indicates that the stroke time has increased by 25% or more.

BASIS FOR RELIEF

10CFR50.55a(a)(3)(i), "acceptable level of quality and safety"

The Code requirement for more frequent testing is based on a comparison between the current stroke time and the previous stroke time. This approach allows the threshold for more frequent testing to slowly creep up over time, if there are small changes between the current stroke time and the previous stroke time. A variable limit based on the previous stroke time is difficult to administer because the limit is not a permanent entry in the test procedure.

Conversely, a fixed limit based on a reference value stroke time will yield a tighter band of acceptable stroke times and is easy to administer. It is more conservative because it is not subject to creep due to gradual degredation and requires the valve to be continually assessed against limits established when the valve is performing acceptability.

RELIEF REQUEST NUMBER: RV-00D (Sheet 2 of 3)

PROPOSED ALTERNATE TESTING

Quad Cities Station will establish a reference value stroke time when the valve is known to be operating acceptably. When a reference value may have been affected by repair or routine servicing of the valve, a new reference value will be determined or the previous reference value will be reconfirmed.

The limiting value for full-stroke (T_m) are established using multipliers and the reference stroke time value (T_r). For power operated valves with a $T_r \leq 1s$, $T_m=2s$ per relief request RV-00C. For power operated valves with a $T_r > 1s$, but $\leq 10s$, then $T_m=2.0T_r$. For power operated valves with a $T_r > 10s$, $T_m = 1.75s$. In all cases, if a limiting value for full-stroke as defined by Technical Specifications, FSAR, or Design Basis Documents is less than the value calculated using the multipliers, then the limiting value will be used.

The following terms have been defined:

T_r : Reference value stroke time

T_{fs} : Full stroke time as measured during the exercise test

T_m : Maximum stroke time (limiting value for full-stroke as defined by Technical Specification, FSAR, Design Base Documents)

The test frequency will be increased to monthly if T_{fs} is in the Alert Range, and the valve will be declared inoperable if T_{fs} is in the Required Action Range in accordance with Table 1.

RELIEF REQUEST NUMBER: RV-00D (Sheet 3 of 3)

Table 1
POWER OPERATED VALVE
STROKE TIME LIMITS

Ref. Stroke Time (secs)	Acceptable Range (seconds)	Alert Range (seconds)	Req'd Action Range (seconds)
$T_r \leq 1$	$T_{fs} \leq 2.0$	Not defined, see Relief Request RV-00C	$T_{fs} > 2.0$
$T_r > 1$ and $T_r \leq 10$	$0.5T_r \leq T_{fs} \leq 1.5T_r$	$T_{fs} < 0.5T_r$ $1.5T_r < T_{fs} \leq 2.0T_r$	$T_{fs} > 2.0T_r$ or $> T_m$ whichever is less
$T_r > 10$	$0.75T_r \leq T_{fs} \leq 1.25T_r$	$T_{fs} < 0.75T_r$ $1.25T_r < T_{fs} \leq 1.75T_r$	$T_{fs} > 1.75T_r$ or $> T_m$ whichever is less

MSIV's only

Ref. Stroke Time (secs)	Acceptable Range (seconds)	Alert Range (seconds)	Req'd Action Range (seconds)
any	$3.0 \leq T_{fs} < 5.0$	Not Defined	$T_{fs} \geq 5.0$ or < 3.0

This approach is consistent with NRC Generic Letter 89-04, Attachment 1, Position 5. Also, see the October 25, 1989, Minutes of Public Meetings on Generic Letter 89-04, response to Questions 40, page 26.

APPLICABLE TIME PERIOD

Relief is requested for the 3rd ten (10) year interval.

RELIEF REQUEST NUMBER: RV-00E (Sheet 1 of 3)

COMPONENT IDENTIFICATION

VALVE NUMBER	IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR
Unit 1				
2301-034	A/C	2	M-0046	C-8
2301-039	C	2	M-0046	E-8
2301-050	C	2	M-0046	C-5
2301-071	A/C	2	M-0046	D-8
2301-075	C	2	M-0046	B-4
2499-022A	A/C	NC	M-0641-1	C-7
2499-022B	A/C	NC	M-0641-1	C-2
5299-003	C	NS	M-0029-2	D-2
Unit 1/2				
5299-003 - -1/2	C	NS	M-0029-2	D-5
Unit 2				
2301-034	A/C	2	M-0087	C-8
2301-039		2	M-0087	E-8
2301-050	C	2	M-0087	C-5
2301-071	A/C	2	M-0087	D-8
2301-075	C	2	M-0087	B-4
2499-022A	A/C	NC	M-0641-2	C-7
2499-022B	A/C	NC	M-0641-2	C-2
5299-003	C	NS	M-0029	D-8

Note that only ten of these valves are Code Class valves.

FUNCTION(S)

These check valves must open and pass the maximum required accident flow.

RELIEF REQUEST NUMBER: RV-00E (Sheet 2 of 3)

CODE REQUIREMENT

Article IWV-3521, "Test Frequency," Check valves shall be exercised at least once every 3 months, except as provided by IWV-3522.

Article IWV-3522, "Exercising Procedure," Check valves shall be exercised to the position required to fulfill their safety function. Confirmation shall be obtained by visual observation, position indication, appropriate pressure or flow indications, or other positive (quantitative) means.

BASIS FOR RELIEF

10CFR50.55a(g)(6)(i), "impractical"

Quad Cities has conducted a detailed evaluation of the testability of each of the subject valves. We have concluded that there is no direct or reliable indirect means of verifying that the subject check valves have been exercised to the open position by passing the maximum required accident flow through the valve.

PROPOSED ALTERNATE TESTING

The operability of the subject check valves will be verified by disassembly. Due to the scope of this testing (specifically, the personnel hazards involved and system operating restrictions), disassembly and inspection will be performed during reactor refueling outages. Since it would be burdensome to disassemble and inspect all of the subject check valves during each refueling outage, a sample disassembly and inspection plan for groups of identical valves in similar applications will be employed.

Non-intrusive methods (such as acoustic indication) are being explored in conjunction with the efforts in progress in response to SOER 86-03 to enable quantative evaluation of check valve disk exercising. Until such suitable methods are developed, **qualified**, and implemented, the operability of the subject check valves will be verified by diassembly.

Check valves will be disassembled to the extent necessary to assess the condition of the valve and to allow manual exercising of the disk. During the visual examination, full stroke capability will be verified. Any loose or corroded parts will be evaluated and appropriate corrective action will be taken, if required.

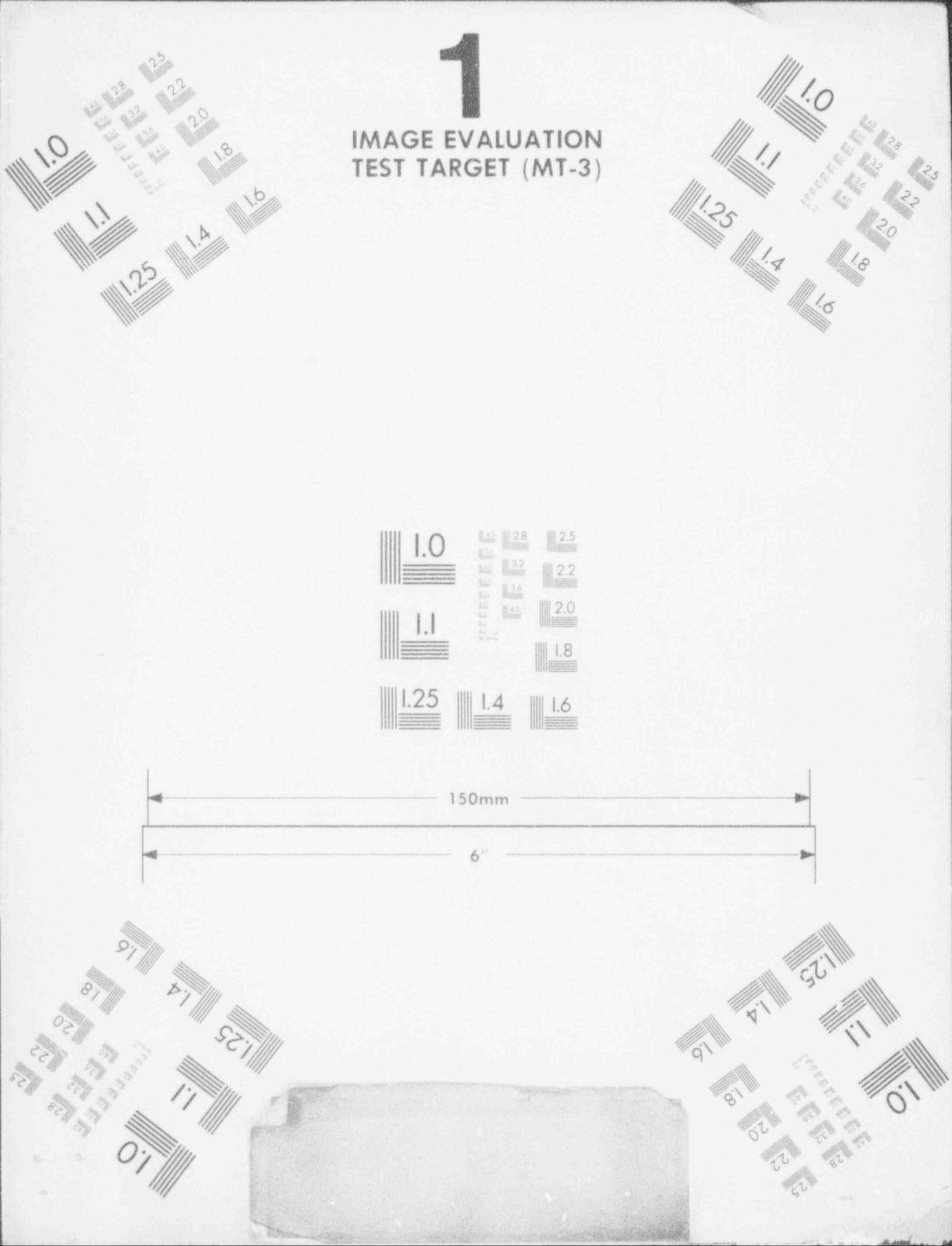
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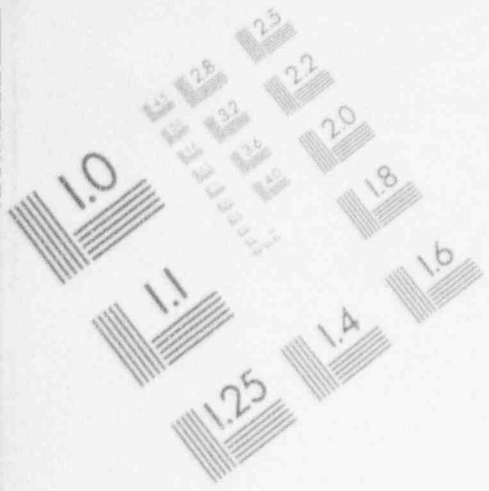
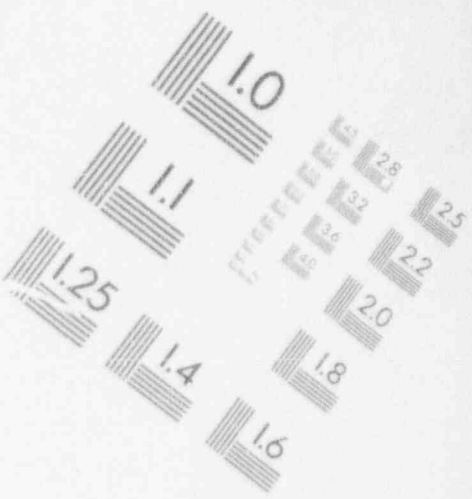
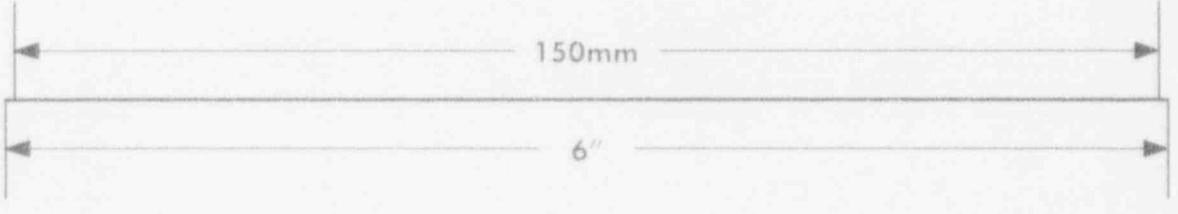
IMAGE EVALUATION
TEST TARGET (MT-3)
1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0
4.5
150mm
6"

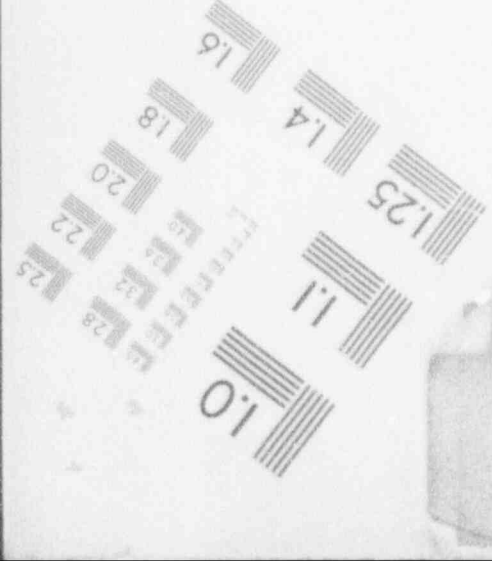
1

IMAGE EVALUATION TEST TARGET (MT-3)









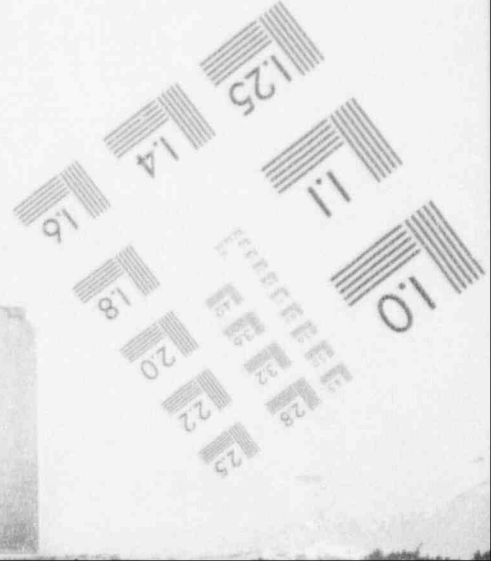


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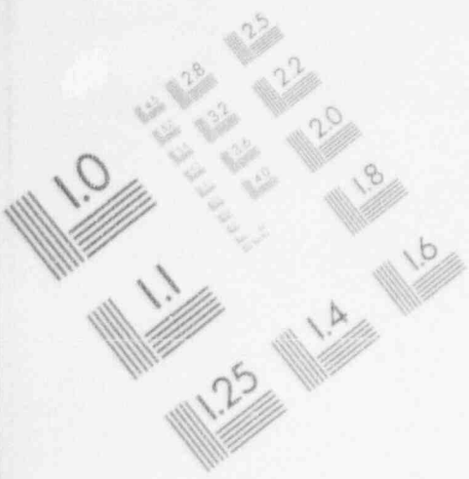
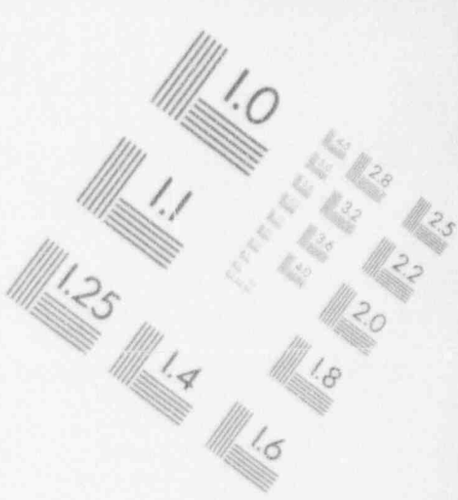
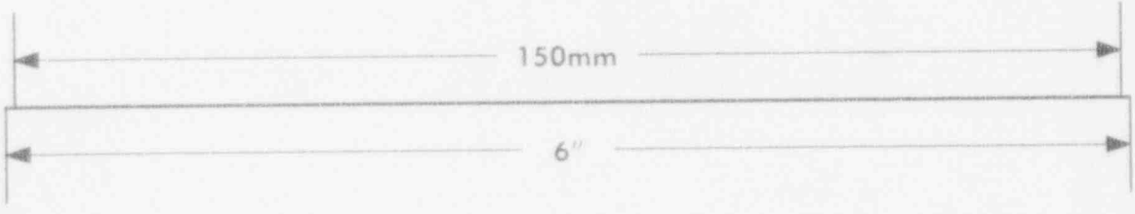
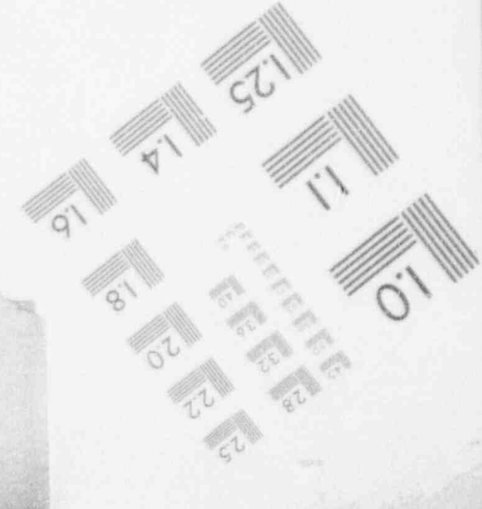
IMAGE EVALUATION TEST TARGET (MT-3)









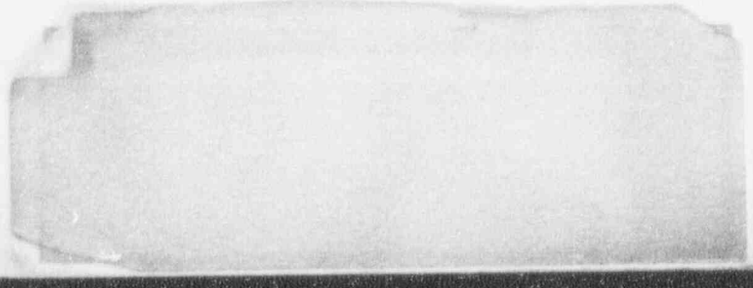


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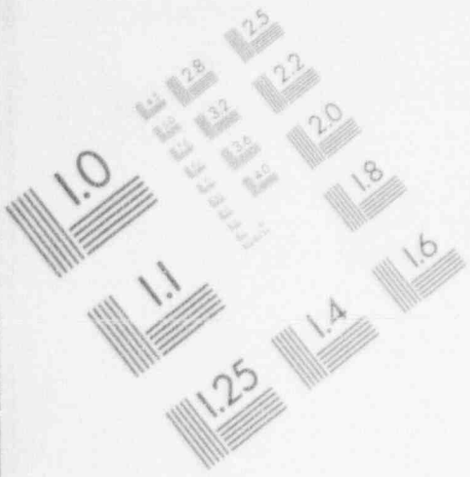
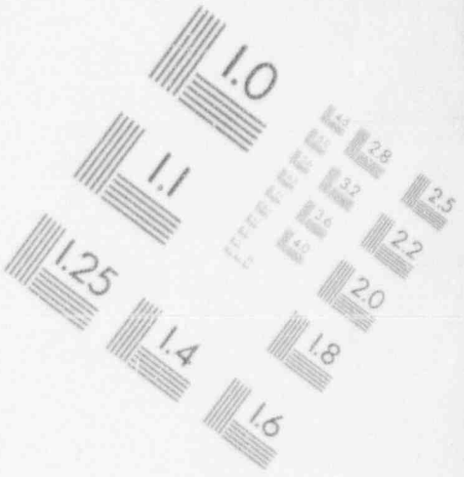
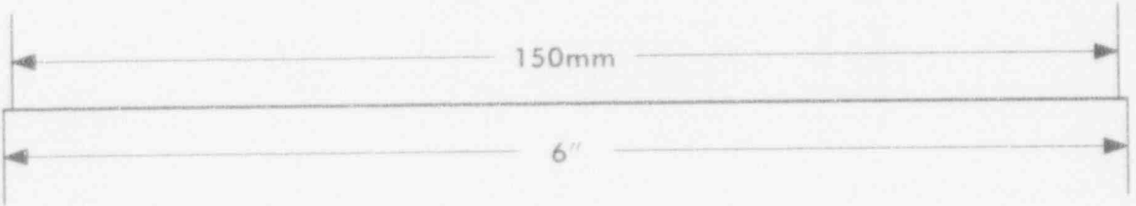
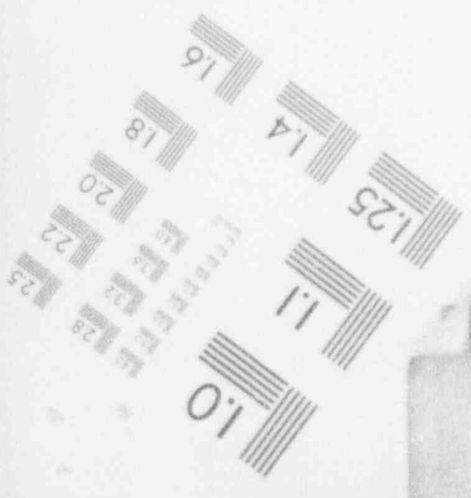
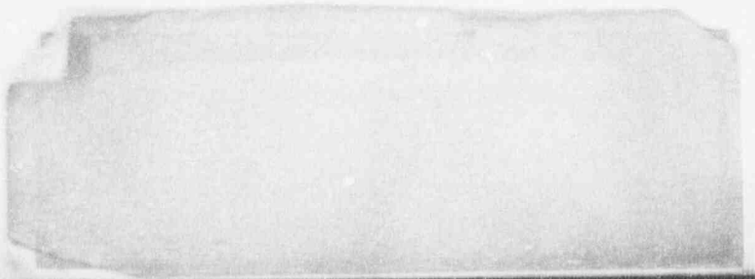
IMAGE EVALUATION TEST TARGET (MT-3)











RELIEF REQUEST NUMBER: RV-00E (Sheet 3 of 3)

If possible a partial stroke test will be performed after disassembly and inspection. Each check valve will be stroke exercised partially open quarterly if possible. If system conditions do not permit partial stroke exercising quarterly, it will be performed during Cold Shutdown or Reactor Refueling if possible.

The population of check valves listed in this Relief Request has been broken down into sample groups that contain no more than four (4) valves. All of the valves in a given sample group are of identical design (manufacturer, size, model number, and materials of construction) and have the same service conditions including valve orientation. All valves within each group will be disassembled and inspected at least once every six years.

This Relief Request complies with NRC Generic Letter 89-04, Attachment 1, Position 2. See the October 25, 1989, Minutes of Public Meetings on Generic Letter 89-04, responses to questions concerning Position 2, Questions 9 through 20, pages 11 through 20.

APPLICABLE TIME PERIOD

Relief is requested for the 3rd ten (10) year interval.

RELIEF REQUEST NUMBER: RV-00F (Sheet 1 of 3)

COMPONENT IDENTIFICATION

VALVE NUMBER	IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR
Unit 1				
1001-131	C	2	M-0039-1	B-7
1001-136A	C	2	M-0039-1	D-8
1001-136B	C	2	M-0039-1	E-2
1301-047	C	2	M-0050	D-4
1301-055	A/C	NC	M-0050	D-3
1301-064	A/C	NC	M-0050	D-2
1402-071	C	2	M-0036	D-7
2301-020	C	2	M-0046	E-1
2301-051	C	2	M-0046	C-5
2301-071	A/C	2	M-0046	D-8
2301-076	C	2	M-0046	E-4
2901-010	C	2	M-0046	D-7
3999-086	C	3	M-0022-3	F-8
5199-158	C	NC	M-0029-2	D-3
Unit 1/2				
3999-085 - -1/2	C	3	M-0022-3	B-8
5199-158 - -1/2	C	NC	M-0029-2	D-6
Unit 2				
1001-131	C	2	M-0081-1	B-2
1001-136A	C	2	M-0081-1	D-8
1001-136B	C	2	M-0081-1	E-2
1301-047	C	NC	M-0089	D-4
1301-055	A/C	NC	M-0089	D-3
1301-064	A/C	NC	M-0089	D-2
1402-070	C	2	M-0078	E-7
2301-020	C	2	M-0087	E-1
2301-051	C	2	M-0087	C-5
2301-071	A/C	2	M-0087	D-8
2301-076	C	2	M-0087	E-4
2901-010	C	2	M-0087	D-7
3999-088	C	3	M-0069-3	E-6
5199-158	C	NC	M-0029-2	D-9

Note that only twenty two of these valves are Code Class valves.

FUNCTION(S)

These check valves must close.

RELIEF REQUEST NUMBER: RV-00F (Sheet 2 of 3)

CODE REQUIREMENT

Article IWV-3521,	"Test Frequency," Check valves shall be exercised at least once every 3 months, except as provided by IWV-3522.
Article IWV-3522,	"Exercising Procedure," Check valves shall be exercised to the position required to fulfill their safety function. Confirmation shall be obtained by visual observation, position indication, appropriate pressure or flow indications, or other positive (quantitative) means.

BASIS FOR RELIEF

10CFR50.55a(g)(6)(i), "impractical"

Quad Cities has conducted a detailed evaluation of the testability of each of the subject valves. We have concluded that there is no direct or indirect means of verifying that the subject check valves have been exercised to the closed position by either a reverse flow or "seat leakage" type test. A variety of pressure tests, vacuum tests, special system alignments, monitoring of other system parameters, etc. were evaluated, and no conclusive test is possible.

PROPOSED ALTERNATE TESTING

The operability of the subject check valves will be verified by disassembly. Due to the scope of this testing (specifically, the personnel hazards involved and system operating restrictions), disassembly and inspection will be performed during reactor refueling outages. Since it would be burdensome to disassemble and inspect all of the subject check valves during each refueling outage, a sample disassembly and inspection plan for groups of identical valves in similar applications will be employed.

Non-intrusive methods (such as acoustic indication) are being explored in conjunction with the efforts in progress in response to SOER 86-03 to enable quantative evaluation of check valve disk exercising. Until such suitable methods are developed, qualified, and implemented, the operability of the subject check valves will be verified by disassembly.

RELIEF REQUEST NUMBER: RV-00F (Sheet 3 of 3)

Check valves will be disassembled to the extent necessary to assess the condition of the valve and to allow manual exercising of the disk. During the visual examination, full stroke capability will be verified. Any loose or corroded parts will be evaluated and appropriate corrective action will be taken, if required.

The population of check valves listed in this Relief Request has been broken down into sample groups that contain no more than four (4) valves. All of the valves in a given sample group are of identical design (manufacturer, size, model number, and materials of construction) and have the same service conditions including valve orientation. All valves within each group will be disassembled and inspected once every six years.

This Relief Request complies with NRC Generic Letter 89-04, Attachment 1, Position 3. See the October 25, 1989, Minutes of Public Meetings on Generic Letter 89-04, response to Question 17, page 15.

APPLICABLE TIME PERIOD

Relief is requested for the 3rd ten (10) year interval.

RELIEF REQUEST NUMBER: RV-00G (Sheet 1 of 2)

COMPONENT IDENTIFICATION

VALVE NUMBER	IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR

All valves, this Relief Request deals with general requirements.

FUNCTION(S)

Not Applicable.

CODE REQUIREMENT

Article IWV-3417(b), "Corrective Action," shall be initiated immediately if a valve fails to exhibit the required change in valve stem or disk position or exceeds its limiting value of full-stroke time. When corrective action is required as a result of tests made during Cold Shutdown, the condition shall be corrected before startup.

Article IWV-3523 "Corrective Action," shall be initiated immediately if a valve fails to exhibit the required change of disk position. When corrective action is required as a result of tests made during Cold Shutdown, the condition shall be corrected before startup.

BASIS FOR RELIEF

10CFR50.55a(a)(3)(i), "acceptable level of quality and safety"

The Technical Specifications provide Limiting Conditions for Operation which state the minimum conditions necessary for safe operation of the plant. The failure of an individual valve may not necessarily prevent a startup.

RELIEF REQUEST NUMBER: RV-00G (Sheet 2 of 2)

PROPOSED ALTERNATE TESTING

Quad Cities Station will evaluate the condition of each individual valve with respect to its safety function(s) and impact on system operability. Appropriate corrective actions would then be taken in accordance with the applicable Technical Specification - Limiting Condition for Operation.

APPLICABLE TIME PERIOD

Relief is requested for the 3rd ten (10) year interval.

RELIEF REQUEST NUMBER: RV-02A (Sheet 1 of 1)

COMPONENT IDENTIFICATION

VALVE NUMBER	IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR
Unit 1				
0203-0001A-A0	A	1	M-0013-1	F-4
0203-0001B-A0	A	1	M-0013-1	D-4
0203-0001C-A0	A	1	M-0013-1	C-4
0203-0001D-A0	A	1	M-0013-1	B-4
Unit 2				
0203-0001A-A0	A	1	M-0060-1	F-4
0203-0001B-A0	A	1	M-0060-1	D-4
0203-0001C-A0	A	1	M-0060-1	C-4
0203-0001D-A0	A	1	M-0060-1	B-4

FUNCTION(S)

The main steam isolation valves open to admit reactor steam to the turbine. They close to provide containment and reactor isolation.

CODE REQUIREMENT

Article IWV-3415, "Fail Safe Valves," If these valves cannot be tested every three months, they shall be tested during each Cold Shutdown.

BASIS FOR RELIEF

10CFR50.55a(g)(6)(i), "impractical"

A true fail safe test of these valves can only be performed by locally venting the MSIV accumulator and watching the valve change position. Because these accumulators and valves are located in the drywell, which is inerted with nitrogen during power operation and cold shutdown, it is impractical to perform the fail safe test except at reactor refueling.

PROPOSED ALTERNATE TESTING

Fail safe testing of these valves will be performed at reactor refueling.

APPLICABLE TIME PERIOD

Relief is requested for the 3rd ten (10) year interval.

RELIEF REQUEST NUMBER: RV-03A (Sheet 1 of 3)

COMPONENT IDENTIFICATION

VALVE NUMBER	IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR
Unit 1				
0305-114	C	2	M-0041-1	E-9
0305-117	B	NC	M-0041-1	E-9
0305-118	B	NC	M-0041-1	E-9
0305-126 -CV	B	1	M-0041-1	D-10
0305-127 -CV	B	1	M-0041-1	D-9
Unit 2				
0305-114	C	2	M-0083-1	E-9
0305-117	B	NC	M-0083-1	E-9
0305-118	B	NC	M-0083-1	E-9
0305-126 -CV	B	1	M-0083-1	D-10
0305-127 -CV	B	1	M-0083-1	D-9

FUNCTION(S)

The scram discharge check valve (0305-114) opens to discharge reactor coolant from the Control Rod Drive (CRD) above-piston area to the Scram Discharge Volume (SDV). The scram inlet valve 0305-126-CV opens to discharge the CRD Hydraulic Control Unit (HCU) accumulator into the CRD below-piston area. The scram outlet valve 0305-127-CV opens to vent the CRD above-piston area and discharge reactor coolant to the SDV. The scram pilot solenoid valves (0305-117 and 305-118) de-energize to stroke the scram inlet and outlet valve to the positions described above.

A CRD is inserted by creating a dP across the CRD piston with "high" pressure in the below-piston volume and "low" pressure in the above-piston volume. At low reactor pressure (≤ 600 psig), the CRD HCU accumulator is required to insert a CRD within safety analysis time limits.

CODE REQUIREMENT

Article IWV-3411, "Frequency," Category B valves shall be exercised at least once every 3 months, except as provided by IWV-3412(a), IWV-3415, and IWV-3416.

Article IWV-3417(a), "Corrective Action," Power operated valves that normally exercise in less than or equal to 10 seconds require more frequent testing if the comparison between the previous test and the current test indicates that the stroke time has increased by 50% or more.

RELIEF REQUEST NUMBER: RV-03A (Sheet 2 of 3)

CODE REQUIREMENT (cont'd)

Article IWV-3521, "Frequency," Check valves shall be exercised at least once every 3 months, except as provided by IWV-3522.

BASIS FOR RELIEF

10CFR50.55a(g)(6)(i,, "impractical"

As noted in TV-03A, the valve listed in the IST Plan is typical of 177 valves, i.e., one for each of the Control Rod Drives. The scram inlet and outlet valves are power operated valves that full stroke in milliseconds. The scram pilot solenoid valves also stroke in milliseconds. These valves are not equipped with close and open position indicators.

Quarterly exercising of the subject valves would result in the rapid insertion of one or more Control Rod Drives. Quarterly testing would result in more frequent testing than is required to verify operability. Proper operation of each of these valves (3 x 177) is demonstrated during Technical Specification 3.3.C scram testing. The acceptance criteria for these tests is based on each CRD's scram insertion time. If the CRD is inserted within the time limits in Technical Specification 3.3.C.1, these valves are functioning properly.

Trending the stroke times of the scram inlet and outlet valves, and the scram pilot solenoid valves is impractical and unnecessary because these valves are indirectly stroke timed and no meaningful correlation between the scram insertion time and the stroke time can be obtained. Based on the conservative limits established for CRD scram insertion times, it is unnecessary to trend the stroke times.

PROPOSED ALTERNATE TESTING

The operability of the subject valves will be verified by an indirect test. If the CRD scram insertion time is less than the limits in Technical Specifications 3.3.C.1 and 3.3.C.2, then the associated scram inlet and outlet valves are operable.

The test frequency for the subject valves will be based on the frequency of scram insertion time testing, as specified in Technical Specifications 4.3.C.1 and 4.3.C.2:

RELIEF REQUEST NUMBER: RV-03A (Sheet 3 of 3)

PROPOSED ALTERNATE TESTING (cont'd)

a. All control rod drives shall be tested after each refueling outage prior to operation above 30% power with the reactor pressure above 800 psig,

b. All control rod drives shall be tested annually, and

c. 50% of the control rod drives in each quadrant of the reactor shall be tested at an interval no more frequently than 16 weeks nor less frequently than 32 weeks.

This Relief Request complies with NRC Generic Letter 89-04, Attachment 1, Position 7.

APPLICABLE TIME PERIOD

Relief is requested for the 3rd ten (10) year interval.

RELIEF REQUEST NUMBER: RV-07A (Sheet 1 of 1)

COMPONENT IDENTIFICATION

VALVE NUMBER	IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR
Unit 1				
0743	A/C	NC	M-0584	C-5
Unit 2				
0743	A/C	NC	M-0071-2	B-7

NOTE THAT THESE ARE NOT CODE CLASS VALVES.

FUNCTION(S)

This valve is the Primary Containment Isolation Valve (PCIV) for the Traversing In-Core Probe (TIP) system nitrogen purge line.

CODE REQUIREMENT

Article IWV-3521, "Frequency," Check valves shall be exercised at least once every 3 months, except as provided by IWV-3522.

BASIS FOR RELIEF

10CFR50.55a(g)(6)(i), "impractical"
10CFR50.55a(a)(3)(ii), "hardship"

These valves cannot be tested during normal (power) operation because the TIP system must be purged continuously.

These valves cannot be tested during Cold Shutdown because there are no external means of determining disk position and there are no test connections available to pressurize the valve in the reverse direction. The system must be taken out-of-service and tubing joints must be disconnected to perform a close exercise test.

PROPOSED ALTERNATE TESTING

The subject valves will be exercised closed during each reactor refueling outage.

APPLICABLE TIME PERIOD

Relief is requested for the 3rd ten (10) year interval.

RELIEF REQUEST NUMBER: RV-11A (Sheet 1 of 2)

COMPONENT IDENTIFICATION

VALVE NUMBER	IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR
Unit 1				
1101-015	A/C	1	M-0040	C-3
1101-016	A/C	1	M-0040	C-3
Unit 2				
1101-015	A/C	1	M-0082	C-3
1101-016	A/C	1	M-0082	C-4

FUNCTION(S)

These valves are Primary Containment Isolation Valves (PCIVs) for the Standby Liquid Control (SBLC) system. These valves must open for the SBLC pumps to inject poison (sodium pentaborate) into the reactor. The SBLC system is a backup to the Control Rod Drive Hydraulic system. The SBLC system uses a poison (neutron absorber) to control reactivity.

CODE REQUIREMENT

Article IWV-3521, "Frequency," Check valves shall be exercised at least once every 3 months, except as provided by IWV-3522.

BASIS FOR RELIEF

10CFR50.55a(g)(6)(i), "impractical"

Any exercise test of these valves is complicated because they are isolated from the main part of the SBLC system by explosive actuated valves (1106A and 1106B). The explosive actuated valves maintain a leak tight physical barrier between the poison in the SBLC system and reactor water.

An exercise test to the open position (using demineralized water) cannot be performed during normal operation because the resulting cold water injection would produce undesirable thermal stresses in the complex SBLC piping inside the reactor vessel. The test connection downstream of the explosive actuated valves can be used during Cold Shutdown to part stroke open the subject valves. The test connection is not large enough for a full flow test; a full stroke test can only be performed during Reactor Refueling using the SBLC pumps.

RELIEF REQUEST NUMBER: RV-11A (Sheet 2 of 2)

These simple check valves do not have position indication, and valve 1101-015 is inside the drywell so it is normally inaccessible. These valves cannot be tested to the close position without performing some type of reverse flow/leak test, which is impractical to perform during normal operation or Cold Shutdown.

PROPOSED ALTERNATE TESTING

These valves will be exercised partially open during Cold Shutdown.

These valves will be full stroke exercised closed and open during Reactor Refueling.

These valves will be exercised open during the SBLC reactor vessel injection surveillance. After the explosive actuated valves are detonated, the SBLC pumps will be aligned to pump demineralized water from the SBLC Test Tank to the reactor vessel. The flowrate during this special test will exceed 40 gpm, the maximum required accident flowrate.

APPLICABLE TIME PERIOD

Relief is requested for the 3rd ten (10) year interval.

RELIEF REQUEST NUMBER: RV-13A (Sheet 1 of 2)

COMPONENT IDENTIFICATION

VALVE NUMBER	IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR
Unit 1				
1301-040	A/C	NC	M-0050	D-4
1301-041	A/C	NC	M-0050	D-2
Unit 2				
1301-040	A/C	NC	M-0089	D-3
1301-041	A/C	NC	M-0089	D-2

NOTE THAT THESE ARE NOT CODE CLASS VALVES.

FUNCTION(S)

Valve 1301-040 is a Primary Containment Isolation Valve (PCIV) on the RCIC vacuum pump discharge line to the Suppression Pool (Torus).

Valve 1301-041 is a Primary Containment Isolation Valve (PCIV) on the RCIC turbine (1303) exhaust line to the Torus.

CODE REQUIREMENT

Article IWV-3521, "Frequency," Check valves shall be exercised at least once every 3 months, except as provided by IWV-3522.

BASIS FOR RELIEF

10CFR50.55a(g)(6)(i), "impractical"

It would be impractical to unlock and close stop check valves 1301-055 and 1301-064 for the purpose of pressurizing the volume between the stop check valves and the subject check valves to verify valve closure. If this test were performed during normal plant operation, the system would have to be declared inoperable for the sole purpose of confirming a valve position. It is impractical to perform such complicated tests during Cold Shutdown.

RELIEF REQUEST NUMBER: RV-13A (Sheet 2 of 2)

PROPOSED ALTERNATE TESTING

The subject check valves will be exercised closed during each reactor refueling outage.

APPLICABLE TIME PERIOD

Relief is requested for the 3rd ten (10) year interval.

RELIEF REQUEST NUMBER: RV-16A (Sheet 1 of 2)

COMPONENT IDENTIFICATION

VALVE NUMBER	IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR
Unit 1				
1601-032A	A/C	NC	M-0034-1	E-2
1601-032B	A/C	NC	M-0034-1	E-2
1601-032C	A/C	NC	M-0034-1	E-2
1601-032D	A/C	NC	M-0034-1	E-2
1601-032E	A/C	NC	M-0034-1	E-2
1601-032F	A/C	NC	M-0034-1	E-2
1601-033A	A/C	NC	M-0034-1	E-7
1601-033B	A/C	NC	M-0034-1	E-7
1601-033C	A/C	NC	M-0034-1	E-7
1601-033D	A/C	NC	M-0034-1	E-7
1601-033E	A/C	NC	M-0034-1	E-7
1601-033F	A/C	NC	M-0034-1	E-7
Unit 2				
1601-032A	A/C	NC	M-0076-1	E-2
1601-32B	A/C	NC	M-0076-1	E-2
1601-32C	A/C	NC	M-0076-1	E-2
1601-32D	A/C	NC	M-0076-1	E-2
1601-32E	A/C	NC	M-0076-1	E-2
1601-32F	A/C	NC	M-0076-1	E-2
1601-33A	A/C	NC	M-0076-1	E-7
1601-33B	A/C	NC	M-0076-1	E-7
1601-33C	A/C	NC	M-0076-1	E-7
1601-33D	A/C	NC	M-0076-1	E-7
1601-33E	A/C	NC	M-0076-1	E-7
1601-33F	A/C	NC	M-0076-1	E-7

FUNCTION(S)

These valves open to relieve a drywell vacuum caused by the initiation of the drywell spray mode of RHR. They close to prevent drywell pressure from venting into the torus.

CODE REQUIREMENT

Article IWV-3426, "Analysis of Leakage Rates". Leakage rate measurements shall be compared with previous measurements and with the permissible leakage rates specified by the Owner for a specific valve.

RELIEF REQUEST NUMBER: RV-16A (Sheet 2 of 2)

BASIS FOR RELIEF

10CFR50.55a(g)(6)(i), "impractical"

Individual leak rates for the drywell/wetwell vacuum breakers cannot be measured. One end of the valve is open directly to the torus atmosphere. The other is connected to the torus downcomer vent header which is submerged in the torus water volume (See P&ID M-34-1). There is no means to isolate these valves individually for individual leak rate testing. They can only be tested by pressurizing the torus and measuring the pressure decay rate. The impracticality of individual testing was previously recognized by the NRC when it approved a collective test of all of the valves in Quad Cities Technical Specification 4.7.A.4.b.4.

ALTERNATE TESTING

A "decay rate less than a one inch orifice" acceptance criteria will be applied collectively to all twelve vacuum breakers in accordance with Quad Cities Technical Specification 4.7.A.4.6.4.

APPLICABLE TIME PERIOD

Relief is requested for the 3rd ten (10) year interval.

RELIEF REQUEST NUMBER: RV-23A (Sheet 1 of 2)

COMPONENT IDENTIFICATION

VALVE NUMBER	IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR
Unit 1				
2301-034	A/C	2	M-0046	D-7
2301-045	C	2	M-0046	B-8
Unit 2				
2301-034	A/C	2	M-0087	C-8
2301-045	C	2	M-0087	B-8

FUNCTION(S)

Valve 2301-034 is a Primary Containment Isolation Valve (PCIV) on the HPCI drain pot (2301-97) discharge line to the Suppression Pool (Torus). This valve must open to discharge condensate from the drain pot, and ensure that condensate does not back-up into the steam lines or turbine.

Valve 2301-045 is on the HPCI turbine (2303) exhaust line to the Torus. This valve must open to exhaust "low" pressure steam, and ensure that the HPCI turbine does not trip on excessive backpressure. If the HPCI system trips, the steam in the exhaust line will start to condense and create a vacuum. This valve must close to prevent Torus water from entering the discharge line/turbine, while the vacuum breakers relieve the vacuum. If Torus water enters the exhaust line/turbine, the system may be damaged when the operator resets the trip and attempts to re-start the system.

CODE REQUIREMENT

Article IWV-3521, "Frequency," Check valves shall be exercised at least once every 3 months, except as provided by IWV-3522.

RELIEF REQUEST NUMBER: RV-23A (Sheet 2 of 2)

BASIS FOR RELIEF

10CFR50.55a(g)(6)(i), "impractical"

The HPCI valves will be exercised open quarterly during the HPCI system pump test. There are no position indicators on these valves and there is no conclusive, indirect means of determining that these valves were exercised closed during the quarterly pump test. These valves have probably closed since the discharge line pressure returns to atmospheric pressure at the conclusion of the test. An elevated pressure would indicate that the line was flooded when the vacuum created by condensing steam sucked Torus water into the line (which is at a lower elevation than the connection to the Torus).

It would be impractical to unlock and close stop check valves 2301-071 and 2301-074 for the purpc e of pressurizing the volume between the stop check valves and the subject check valves to verify valve closure. If this test were performed during normal plant operation, the system would have to be declared inoperable for the sole purpose of confirming a valve position. It is impractical to perform such complicated tests during Cold Shutdown.

PROPOSED ALTERNATE TESTING

The subject check valves will be exercised closed during each reactor refueling outage.

APPLICABLE TIME PERIOD

Relief is requested for the 3rd ten (10) year interval.

RELIEF REQUEST NUMBER: RV-24A (Sheet 1 of 1)

COMPONENT IDENTIFICATION

VALVE NUMBER	IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR
Unit 1				
2499-022A	A/C	NC	M-0641-1	C-7
2499-022B	A/C	NC	M-0641-1	C-2
Unit 2				
2499-022A	A/C	NC	M-0641-2	C-7
2499-022B	A/C	NC	M-0641-2	C-2

NOTE THAT THESE ARE NOT CODE CLASS VALVES.

FUNCTION(S)

The subject valves are in the return lines from the Containment Atmosphere Monitoring system H_2/O_2 analyzer to the drywell. These valves are Primary Containment Isolation Valves (PCIVs) outside containment. They must open for the H_2/O_2 analyzer to function properly.

CODE REQUIREMENT

Article IWV-3521, "Frequency," Check valves shall be exercised at least once every 3 months, except as provided by IWV-3522.

BASIS FOR RELIEF

10CFR50.55a(g)(6)(i), "impractical"

Since the subject valves are simple check valves with no position indication, they cannot be tested without performing some type of reverse flow/leak test. This type of test is impractical to perform during normal operation and Cold Shutdown because it is a complicated test and it would require declaring the system inoperable.

PROPOSED ALTERNATE TESTING

The subject valves will be exercised closed during each reactor refueling outage.

APPLICABLE TIME PERIOD

Relief is requested for the 3rd ten (10) year interval.

RELIEF REQUEST NUMBER: RV-25A (Sheet 1 of 2)

COMPONENT IDENTIFICATION

VALVE NUMBER	IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR
Unit 1				
2599-023A	A/C	NC	M-0642-1	C-3
2599-023B	A/C	NC	M-0642-1	C-6
2599-024A	A/C	NC	M-0642-1	C-3
2599-024B	A/C	NC	M-0642-1	C-6
Unit 2				
2599-023A	A/C	NC	M-0642-2	C-6
2599-023B	A/C	NC	M-0642-2	C-3
2599-024A	A/C	NC	M-0642-2	C-6
2599-024B	A/C	NC	M-0642-2	C-3

NOTE THAT THESE ARE NOT CODE CLASS VALVES.

FUNCTION(S)

Valves 2599-023A and 2599-023B are Primary Containment Isolation Valves (PCIVs) on the Atmospheric Containment Atmosphere Dilution (ACAD) supply to the drywell. Valves 2599-024A and 2599-024B are PCIVs on the ACAD supply to the Suppression Pool (Torus). If the containment atmosphere contains excess hydrogen, these valves open to supply dilution air.

CODE REQUIREMENT

Article IWV-3521, "Frequency," Check valves shall be exercised at least once every 3 months, except as provided by IWV-3522.

BASIS FOR RELIEF

10CFR50.55a(g)(6)(i), "impractical

Since the subject valves are simple check valves with no position indication, they cannot be tested without performing some type of reverse flow/leak test. This type of test is impractical to perform during normal operation or Cold Shutdown because it is a complicated test and it would require declaring the system inoperable.

RELIEF REQUEST NUMBER: RV-25A (Sheet 2 of 2)

PROPOSED ALTERNATE TESTING

The subject valves will be exercised closed during each reactor refueling outage.

APPLICABLE TIME PERIOD

Relief is requested for the 3rd ten (10) year interval.

RELIEF REQUEST NUMBER: RV-30A (Sheet 1 of 3)

COMPONENT IDENTIFICATION

VALVE NUMBER	IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR
Unit 1				
0203-003A	B/C	1	M-0013-1	F-7
0203-003A-SO	B	NC	M-0013-1	F-7
0203-003B	B	1	M-0013-1	E-6
0203-003C	B	1	M-0013-1	C-8
0203-003D	B	1	M-0013-1	B-8
0203-003E	B	1	M-0013-1	E-8
Unit 2				
0203-003A	B/C	1	M-0060-1	F-7
0203-003A-SO	B	NC	M-0060-1	F-7
0203-003B	B	1	M-0060-1	D-6
0203-003C	B	1	M-0060-1	C-8
0203-003D	B	1	M-0060-1	B-8
0203-003E	B	1	M-0060-1	D-8

FUNCTION(S)

Valve 0203-003A is a dual function Safety/Relief valve manufactured by Target Rock. Valve 0203-003A-SO is the solenoid valve that controls the air supply to the Target Rock valve's diaphragm operator. Valves 0203-003B through E are Electromatic Relief valves manufactured by Dresser.

The Target Rock and Electromatic relief valves open upon receipt of an Automatic Depressurization System (ADS) signal to reduce reactor pressure. Target Rock valve (0203-003A) also functions as a safety valve which actuates on high system pressure.

CODE REQUIREMENT

Article IWV-3411, "Frequency," Category B valves shall be exercised at least once every 3 months, except as provided by IWV-3412(a), IWV-3415, and IWV-3416.

Article IWV-3417(a), "Corrective Action," Power operated valves that normally exercise in less than or equal to 10 seconds require more frequent testing if the comparison between the previous test and the current test indicates that the stroke time has increased by 50% or more.

RELIEF REQUEST NUMBER: RV-30A (Sheet 2 of 3)

BASIS FOR RELIEF

10CFR50.55a(g)(6)(i), "impractical"

These valves can only be tested with primary system pressure greater than 150 psig. The test sequence requires an Operator to:

a. Open at least one turbine bypass valve and discharge main steam directly to the condenser,

b. Actuate the relief valve and observe the corresponding closure of the turbine bypass valve (pressure control on the turbine bypass valve is fairly quick to respond, ~1½ seconds),

c. Close the relief valve and observe the corresponding opening of the turbine bypass valve.

Each relief valve actuation produces hydrodynamic loads which are transmitted to the Suppression Pool (Torus). The Quad Cities Mark I Containment, Plant Unique Analysis Report (PUAR) fatigue evaluation is based on 300 relief valve actuations with normal operating conditions (i.e., 300 actuations for testing purposes). Quarterly testing of the subject valves would result in 4 (quarters) x 40 (years) x 5 (valves) = 800 test actuations, which would exceed the approved design basis.

Finally, the failure of any relief valve to close would cause an uncontrolled rapid depressurization of the primary system (stuck open relief valve transient). The resulting severe thermal gradients in the reactor vessel are not desirable, and should be minimized.

These valves cannot be tested at Cold Shutdown or Reactor Refueling since the primary system pressure must be greater than 150 psig to actuate these valves.

The subject valves are fast acting valves (normally exercise in less than 2 seconds) and they do not have stem/disk position indicators. Stroke timing of these valves is performed indirectly via turbine bypass valve position and relief valve discharge line temperature and acoustic alarms.

RELIEF REQUEST NUMBER: RV-30A (Sheet 3 of 3)

PROPOSED ALTERNATE TESTING

The subject valves will be exercised (open and closed) once every six (6) months during plant operation. Relief Request RV-00F contains additional Alternate Testing information for 0203-003A-SO. Relief Request RV-00C contains additional Alternate Testing information for 0203-003A through E.

Stroke times will not be measured, and increased test frequency based on change in stroke time will not be implemented. As described in the Basis for Relief, Quad Cities will verify the operability of the subject valves.

APPLICABLE TIME PERIOD

Relief is requested for the 3rd ten (10) year interval.

RELIEF REQUEST NUMBER: RV-30B (Sheet 1 of 2)

COMPONENT IDENTIFICATION

VALVE NUMBER	IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR
Unit 1				
0203-003A	B/C	1	M-0013-1	F-7
0203-004A	C	1	M-0013-1	F-8
0203-004B	C	1	M-0013-1	E-5
0203-004C	C	1	M-0013-1	C-5
0203-004D	C	1	M-0013-1	B-5
0203-004E	C	1	M-0013-1	F-8
0203-004F	C	1	M-0013-1	E-5
0203-004G	C	1	M-0013-1	C-5
0203-004H	C	1	M-0013-1	B-5
Unit 2				
0203-003A	B/C	1	M-0060-1	F-7
0203-004A	C	1	M-0060-1	F-8
0203-004B	C	1	M-0060-1	E-5
0203-004C	C	1	M-0060-1	C-5
0203-004D	C	1	M-0060-1	B-8
0203-004E	C	1	M-0060-1	F-8
0203-004F	C	1	M-0060-1	E-5
0203-004G	C	1	M-0060-1	C-5
0203-004H	C	1	M-0060-1	B-8

FUNCTION(S)

Valve 0203-003A is a dual function Safety/Relief valve manufactured by Target Rock. The remaining valves are simple safety valves. These Main Steam Safety Valves are used to terminate an abnormal pressure increase in the Reactor Vessel and the Reactor Coolant Pressure Boundary (i.e., they provide overpressure protection).

CODE REQUIREMENT

0&M-1, Section 1.3.3.1.e, "Valves Not Meeting Acceptance Criteria", For valves which fail ..., additional valves shall be set pressure tested on the basis of two additional valves to be tested for each valve failure ...

RELIEF REQUEST NUMBER: RV-30B (Sheet 2 of 2)

BASIS FOR RELIEF

10CFR50.55a(a)(3)(ii), "hardship"

In accordance with Technical Specification 4.6.E (Basis) and FSAR 4.4.8, at least half of the subject valves are tested and rebuilt during each refueling outage. This accelerated maintenance schedule provides a high level of assurance that these safety valves will perform their safety function.

Quad Cities does not have the facilities required to perform setpoint tests on large relief and safety valves. These valves are unbolted from their mounting flanges, decontaminated, and shipped to an off-site test facility. Because of the lengthy period required for removal, transportation, testing and re-installation, the removal and testing of additional valves due to sample expansion would delay unit start-up from refueling outages by at least several days. This represents a significant hardship.

The sample expansion requirements of O&M-1 would require two additional valves be tested if one valve failed its setpoint test. Since the dual function safety/relief valve is tested each outage, and no less than four of the remaining valves are tested during each outage, the valves already being tested represent an increased sample expansion. Therefore, based on the sample expansion requirements already being met for one valve, and the hardship associated with pulling additional valves, no additional valves will be tested if only one valve fails the setpoint test.

PROPOSED ALTERNATE TESTING

The dual function safety/relief valve, and at least half of the eight (8) safety valves, will be tested, rebuilt and reset in accordance with Technical Specification 4.6.E during each reactor refueling outage. If only one of the eight (8) safety valves fails its setpoint test, additional safety valves will not be tested. If more than one safety valve fails, the sample expansion criteria of O&M-1, Section 1.3.3.1.5 will be implemented for every additional failed valve.

APPLICABLE TIME PERIOD

Relief is requested for the 3rd ten (10) year interval.

RELIEF REQUEST NUMBER: RV-30C (Sheet 1 of 2)

COMPONENT IDENTIFICATION

VALVE NUMBER	IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR
Unit 1				
0220-081A	C	NC	M-0034-1	E-4
0220-081B	C	NC	M-0034-1	E-4
0220-081C	C	NC	M-0034-1	E-4
0220-081D	C	NC	M-0034-1	E-6
0220-081E	C	NC	M-0034-1	E-6
0220-105A	C	NC	M-0034-1	D-4
0220-105B	C	NC	M-0034-1	E-4
0220-105C	C	NC	M-0034-1	D-5
0220-105D	C	NC	M-0034-1	D-5
0220-105E	C	NC	M-0034-1	E-5
Unit 2				
0220-081A	C	NC	M-0076-1	E-4
0220-081B	C	NC	M-0076-1	E-4
0220-081C	C	NC	M-0076-1	E-4
0220-081D	C	NC	M-0076-1	E-6
0220-081E	C	NC	M-0076-1	E-6
0220-105A	C	NC	M-0076-1	D-4
0220-105B	C	NC	M-0076-1	E-4
0220-105C	C	NC	M-0076-1	E-5
0220-105D	C	NC	M-0076-1	D-5
0220-105E	C	NC	M-0076-1	E-5

NOTE THAT THESE ARE NOT CODE CLASS VALVES.

FUNCTION(S)

These Main Steam Safety/Relief Valve Discharge Line (MS S/RVDL) vacuum breakers must open to admit drywell atmosphere into the MS S/RVDLs. Suppression Pool (Torus) water would be sucked into the MS S/RVDL after a relief valve actuation (as the steam in the line condenses) if these valves do not open. A subsequent relief valve actuation with an elevated water leg in the MS S/RVDL would result in large water clearing transient loads that could damage the MS S/RVDLs. These valves are required to open for the Automatic Depressurization System (ADS) to perform its safety function.

CODE REQUIREMENT

Article IWV-3521, "Frequency," Check valves shall be exercised at least once every 3 months, except as provided by IWV-3522.

RELIEF REQUEST NUMBER: RV-30C (Sheet 2 of 2)

BASIS FOR RELIEF

10CFR50.55a(g)(6)(i), "impractical"

These vacuum breakers (simple check valves) do not have remote position indication so there is no means available to verify that these valves are normally closed, and then open following a relief valve actuation. Since these valves are located inside the drywell, they are only accessible when the containment is deinerted during a Cold Shutdown or Reactor Refueling.

PROPOSED ALTERNATE TESTING

These check valves are at the end of the vacuum breaker line, and the disc is readily accessible for examination/testing. These check valves will be exercised open during reactor refueling outages by manually pushing the disk away from its seat. After exercising the valve open, a visual examination will be performed to verify that the disc returns to the closed position. These valves are also subject to a preventive maintenance program which includes disassembly, refurbishment, adjustments and force measurements prior to their return to service.

APPLICABLE TIME PERIOD

Relief is requested for the 3rd ten (10) year interval.

RELIEF REQUEST NUMBER: RV-30D (Sheet 1 of 3)

COMPONENT IDENTIFICATION

VALVE NUMBER	IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR
Unit 1				
0203-001A-SO2	B	NC	M-0013-2	F-7
0203-001B-SO2	B	NC	M-0013-2	F-7
0203-001C-SO2	B	NC	M-0013-2	F-7
0203-001D-SO2	B	NC	M-0013-2	F-7
0203-001A-SOAC	B	NC	M-0013-2	F-7
0203-001B-SOAC	B	NC	M-0013-2	F-7
0203-001C-SOAC	B	NC	M-0013-2	F-7
0203-001D-SOAC	B	NC	M-0013-2	F-7
0203-001A-SODC	B	NC	M-0013-2	F-7
0203-001B-SODC	B	NC	M-0013-2	F-7
0203-001C-SODC	B	NC	M-0013-2	F-7
0203-001D-SODC	B	NC	M-0013-2	F-7
0203-002A-SO2	B	NC	M-0013-1	F-4
0203-002B-SO2	B	NC	M-0013-1	F-4
0203-002C-SO2	B	NC	M-0013-1	F-4
0203-002D-SO2	B	NC	M-0013-1	F-4
0203-002A-SOAC	B	NC	M-0013-1	F-4
0203-002B-SOAC	B	NC	M-0013-1	F-4
0203-002C-SOAC	B	NC	M-0013-1	F-4
0203-002D-SOAC	B	NC	M-0013-1	F-4
0203-002A-SODC	B	NC	M-0013-1	F-4
0203-002B-SODC	B	NC	M-0013-1	F-4
0203-002C-SODC	B	NC	M-0013-1	F-4
0203-002D-SODC	B	NC	M-0013-1	F-4
Unit 2				
0203-001A-AP2	B	NC	M-0060-1	F-4
0203-001A-SOAC	B	NC	M-0060-1	F-4
0203-001A-SODC	B	NC	M-0060-1	F-4
0203-001B-AP2	B	NC	M-0060-1	F-4
0203-001B-SOAC	B	NC	M-0060-1	F-4
0203-001B-SODC	B	NC	M-0060-1	F-4
0203-001C-AP2	B	NC	M-0060-1	F-4
0203-001C-SOAC	B	NC	M-0060-1	F-4
0203-001C-SODC	B	NC	M-0060-1	F-4
0203-001D-AP2	B	NC	M-0060-1	F-4
0203-001D-SOAC	B	NC	M-0060-1	F-4
0203-001D-SODC	B	NC	M-0060-1	F-4
0203-002A-AP2	B	NC	M-0060-2	F-7
0203-002A-AP4	B	NC	M-0060-2	F-7
0203-002A-SOAC	B	NC	M-0060-2	F-7
0203-002A-SODC	B	NC	M-0060-2	F-7
0203-002B-AP2	B	NC	M-0060-2	F-7
0203-002B-SOAC	B	NC	M-0060-2	F-7

RELIEF REQUEST NUMBER: RV-30D (Sheet 2 of 3)

Unit 2 (cont'd)				
0203-002B-SODC	B	NC	M-0060-2	F-7
0203-002C-AP2	B	NC	M-0060-2	F-7
0203-002C-SOAC	B	NC	M-0060-2	F-7
0203-002C-SODC	B	NC	M-0060-2	F-7
0203-002D-AP2	B	NC	M-0060-2	F-7
0203-002D-SOAC	B	NC	M-0060-2	F-7
0203-002D-SODC	B	NC	M-0060-2	F-7

NOTE THAT THESE ARE NOT CODE CLASS VALVES.

FUNCTION(S)

Valves in the 0203-001_-S02 and 0203-002_-S02 series are 2-Way Valves with air pilot operators that must open during a loss-of-instrument air event. When these valves open, the Main Steam Isolation valve will close.

Valves in the 0203-001_-SODC and 0203-002_-SODC series are the DC solenoids. The DC solenoids must exercise to the de-energized position to close the Main Steam Isolation Valves.

Valves in the 0203-001_-SOAC and 0203-002_-SOAC series are the AC solenoids adjacent to the DC solenoids (not to be confused with the AC test solenoids). The AC solenoids must exercise to the de-energized position to close the Main Steam Isolation Valves.

CODE REQUIREMENT

Article IWV-3411, "Frequency," Category B valves shall be exercised at least once every 3 months, except as provided by IWV-3412(a), IWV-3415, and IWV-3416.

BASIS FOR RELIEF

10CFR50.55a(g)(6)(i), "impractical"

The 2-Way valves with air pilot operators are probably exercised each time the associated Main Steam Isolation Valve (MSIV) is closed. Since these valves provide a second vent path independent of the 4-Way solenoid, it is extremely difficult to determine whether the MSIV closed via both the 4-Way solenoid and the subject 2-Way solenoid, or the 4-Way solenoid alone. A loss-of-instrument air event must be simulated via a special test to provide conclusive evidence that the subject valve was exercised open. Relief Request RV-02A and Cold Shutdown Justification CS-02C define the basis for not performing this test quarterly. Valves associated with the inboard MSIVs can only be tested at each reactor refueling. Those associated with the outboard MSIVs can only be tested at Cold Shutdown.

RELIEF REQUEST NUMBER: RV-30D (Sheet 3 of 3)

The AC and DC solenoids are probably exercised each time the associated MSIV is closed. Since the MSIV can be opened with one of these two valves in the de-energized position, a routine exercise of the MSIV will not confirm that both of these valves were exercised from the energized to the de-energized position. Closure of the MSIV does confirm that both valves were either exercised from energized to de-energized, or that the solenoid remained in the fail safe (de-energized) position. A conclusive test of these solenoid valves can be performed by alternately pulling the fuses for the AC and DC power supplies to these solenoids. Since this is a complicated test and MSIV position indication is temporarily lost when the DC power supply fuse is pulled, it is impractical to perform this test during either normal operation or Cold Shutdown.

PROPOSED ALTERNATE TESTING

The 2-way valves and air pilot operators will be tested as follows:

Inboard MSIV 2-way and air pilot valves: Reactor Refueling
Outboard MSIV 2-way and air pilot valves: Cold Shutdown

The AC and DC solenoid valves will be exercised during each reactor refueling outage.

APPLICABLE TIME PERIOD

Relief is requested for the 3rd ten (10) year interval.

RELIEF REQUEST NUMBER: RV-30E (Sheet 1 of 2)

COMPONENT IDENTIFICATION

VALVE NUMBER	IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR
Unit 1				
0203-003A	B/C	1	M-0013-1	F-7
0203-004A	C	1	M-0013-1	F-8
0203-004B	C	1	M-0013-1	E-5
0203-004C	C	1	M-0013-1	C-5
0203-004D	C	1	M-0013-1	B-5
0203-004E	C	1	M-0013-1	F-8
0203-004F	C	1	M-0013-1	E-5
0203-004G	C	1	M-0013-1	C-5
0203-004H	C	1	M-0013-1	B-5
Unit 2				
0203-003A	B/C	1	M-0060-1	F-7
0203-004A	C	1	M-0060-1	F-8
0203-004B	C	1	M-0060-1	E-5
0203-004C	C	1	M-0060-1	C-5
0203-004D	C	1	M-0060-1	B-8
0203-004E	C	1	M-0060-1	F-8
0203-004F	C	1	M-0060-1	E-5
0203-004G	C	1	M-0060-1	C-5
0203-004H	C	1	M-0060-1	B-8

FUNCTION(S)

Valve 0203-003A is a dual function Safety/Relief valve manufactured by Target Rock. The remaining valves are simple safety valves. These Main Steam Safety Valves are used to terminate an abnormal pressure increase in the Reactor Vessel and the Reactor Coolant Pressure Boundary (i.e., they provide overpressure protection).

CODE REQUIREMENT

O&M-1, Section 1.3.3.1.e,	"Valves Not Meeting Acceptance Criteria", For valves which fail ..., additional valves shall be set pressure tested on the basis of two additional valves to be tested for each valve failure ...

RELIEF REQUEST NUMBER: RV-30E (Sheet 2 of 2)

BASIS FOR RELIEF

10CFR50.55a(a)(3)(i), "acceptable level of quality and safety"

For Main Steam safety valve setpoint testing ("as-found" setpoint testing), the O&M code provides a setpoint acceptance criteria of three percent (3%) greater than the design set pressure. Experience with safety valves currently used in nuclear power plants indicates that normal expected setpoint drift is within plus or minus three percent (± 3%). Setpoint drift outside of this range is generally indicative of mechanical or human error problems that need to be addressed. Since O&M-1 does not provide guidance for sample expansion when the "as-found" setpoint pressure test results are found to be lower than the design set pressure, a lower limit of minus (-) 3% is considered appropriate.

PROPOSED ALTERNATE TESTING

For Main Steam safety valve setpoint testing ("as-found" setpoint testing), additional valves will be tested if the as-found setpoint is outside ± 3% of the design set pressure. Sample expansion of the safety valves will be consistent with Relief Request RV-30B. In accordance with the current Technical Specifications, the setpoint of the Main Steam safety valves will be ± 1% of the design set pressure prior to installation.

APPLICABLE TIME PERIOD

Relief is requested for the 3rd ten (10) year interval.

RELIEF REQUEST NUMBER: RV-32A (Sheet 1 of 2)

COMPONENT IDENTIFICATION

VALVE NUMBER	IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR
Unit 1				
0220-058A	A/C	1	M-0015	E-3
0220-058B	A/C	1	M-0015	F-3
0220-059B	C	2	M-0015	F-3
0220-062A	A/C	1	M-0015	E-3
0220-062B	A/C	1	M-0015	F-3
Unit 2				
0220-058A	A/C	1	M-0062	E-2
0220-058B	A/C	1	M-0062	F-3
0220-059B	C	2	M-0062	F-2
0220-062A	A/C	1	M-0062	E-2
0220-062B	A/C	1	M-0062	F-2

FUNCTION(S)

Valves 0220-058A, 0220-058B, 0220-062A, and 0220-062B are Primary Containment Isolation Valves (PCIVs) for the Reactor Feedwater system.

Valves 0220-058B and 0220-062B must open, and valve 0220-059B must close, when High Pressure Coolant Injection (HPCI) performs its safety function.

CODE REQUIREMENT

Article IWV-3521, "Frequency," Check valves shall be exercised at least once every 3 months, except as provided by IWV-3522.

BASIS FOR RELIEF

10CFR50.55a(g)(6)(i), "impractical"

These valves cannot be tested closed during normal (power) operation because the Feedwater system is required to maintain reactor vessel/primary coolant level. A scram on low water level would occur if one of the subject valves was closed to perform an exercise test.

RELIEF REQUEST NUMBER: RV-32A (Sheet 2 of 2)

BASIS FOR RELIEF (cont'd)
Valves 0220-058A and 0220-062A cannot be tested closed during Cold Shutdown because the Reactor Water Clean-Up (RWCU) system is required to be operable during Cold Shutdown to maintain reactor water chemistry and minimize thermal stratification in the reactor vessel. All of these valves would be extremely difficult to test during Cold Shutdown (even if RWCU was isolated).

Demineralized water service connections are not available in the X-Area, which is a special extension of Secondary Containment. Demineralized water would be required to perform some type of reverse flow test while the rest of the feedwater header was drained. It is impractical to perform such complicated tests during Cold Shutdown.

PROPOSED ALTERNATE TESTING

The subject valves will be exercised closed during each reactor refueling outage.

APPLICABLE TIME PERIOD

Relief is requested for the 3rd ten (10) year interval.

RELIEF REQUEST NUMBER: RV-37A (Sheet 1 of 1)

COMPONENT IDENTIFICATION

VALVE NUMBER	IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR
Unit 1				
3799-031	A/C	NC	M-0033	B-3
Unit 2				
3799-031	A/C	NC	M-0075	B-3

NOTE THAT THESE ARE NOT CODE CLASS VALVES.

FUNCTION(S)

The subject valve is in the Reactor Building Closed Cooling Water (RBCCW) supply line to the drywell. It is the Primary Containment Isolation Valve (PCIV) inside containment.

CODE REQUIREMENT

Article IWV-3521, "Frequency," Check valves shall be exercised at least once every 3 months, except as provided by IWV-3522.

BASIS FOR RELIEF

10CFR50.55a(g)(6)(i), "impractical"

The subject valves cannot be closed during normal operation because the RBCCW system supplies cooling water to the Reactor Recirculation pump and motor bearings, and the drywell coolers. The Reactor Recirculation pump and motor bearings would be damaged, and drywell temperature would increase if the subject check valve was closed.

Since the subject valve is a simple check valve with no position indication, it cannot be tested without performing some type of reverse flow/leak test. This type of test is impractical to perform during Cold Shutdown.

PROPOSED ALTERNATE TESTING

The subject valves will be exercised closed during each reactor refueling outage.

APPLICABLE TIME PERIOD

Relief is requested for the 3rd ten (10) year interval.

RELIEF REQUEST NUMBER: RV-42A (Sheet 1 of 1)

COMPONENT IDENTIFICATION

VALVE NUMBER	IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR
Unit 1				
4399-046	A	NC	M-0058-3	D-5
Unit 2				
4399-046	A	NC	M-0058-3	A-4

NOTE THAT THESE ARE NOT CODE CLASS VALVES.

FUNCTION(S)

The subject valve is in the Clean Condensate supply line to the drywell. It is the Primary Containment Isolation Valve (PCIV) outside containment.

CODE REQUIREMENT

Article IWV-3521, "Frequency," Check valves shall be exercised at least once every 3 months, except as provided by IWV-3522.

BASIS FOR RELIEF

10CFR50.55a(g)(6)(i), "impractical"

Since the subject valve is a simple check valve with no position indication, it cannot be tested without performing some type of reverse flow/leak test. This type of test is impractical to perform during normal operation and Cold Shutdown.

PROPOSED ALTERNATE TESTING

The subject valve will be exercised closed during each reactor refueling outage.

APPLICABLE TIME PERIOD

Relief is requested for the 3rd ten (10) year interval.

RELIEF REQUEST NUMBER: RV-46A (Sheet 1 of 2)

COMPONENT IDENTIFICATION

VALVE NUMBER	IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR
Unit 1 4699-226	B	NC	M-0025-2	E-3
Unit 1/2 4699-226 - -1/2	B	NC	M-0025-2	B-3
Unit 2 4699-226	B	NC	M-0072-2	C-2

NOTE THAT THESE ARE NOT CODE CLASS VALVES.

FUNCTION(S)

These solenoid valves must open for the diesel starting air motors to engage with the diesel engine flywheel, and then air is admitted to the diesel starting air motors. The diesel starting air motors crank the diesel to starting speed. Once the diesel speed reaches 200 rpm, these solenoid valves close to disengage the starting air motors (and stop the starting air motors).

CODE REQUIREMENT

Article IWV-3417(a), "Corrective Action," Power operated valves that normally exercise in less than or equal to 10 seconds require more frequent testing if the comparison between the previous test and the current test indicates that the stroke time has increased by 50% or more.

BASIS FOR RELIEF

10CFR50.55a(g)(6)(i), "impractical"

The diesel generator start solenoid valves full stroke in milliseconds. These valve are not equipped with close and open position indicators.

The acceptance criteria for these tests is based on each diesel's start time. If the diesel starts within ten (10) seconds in accordance with UFSAR Section 8.2.3.1, these valves are functioning properly.

RELIEF REQUEST NUMBER: RV-46A (Sheet 2 of 2)

Trending the stroke times of the diesel start solenoids is unnecessary because these valves are indirectly stroke timed and no meaningful correlation between the diesel start time and the stroke time can be obtained. Based on the conservative limits established for diesel start time, it is unnecessary to trend the stroke times.

PROPOSED ALTERNATE TESTING

Stroke times will not be measured, and increased test frequency based on change in stroke time will not be implemented. As described in the Basis for Relief, Quad Cities will verify that the subject valves are operable by verifying that the associated diesel meets the starting time limits in UFSAR Section 8.2.3.1.

APPLICABLE TIME PERIOD

Relief is requested for the 3rd ten (10) year interval.

RELIEF REQUEST NUMBER: RV-46B (Sheet 1 of 1)

COMPONENT IDENTIFICATION

VALVE NUMBER	IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR
Unit 1				
4699-047	A/C	NC	M-0025-1	E-4
Unit 2				
4699-047	A/C	NC	M-0072-1	E-6

NOTE THAT THESE ARE NOT CODE CLASS VALVES.

FUNCTION(S)

The subject valve is in the Service Air supply line to the drywell. It is the Primary Containment Isolation Valve (PCIV) outside containment.

CODE REQUIREMENT

Article IWV-3521, "Frequency," Check valves shall be exercised at least once every 3 months, except as provided by IWV-3522.

BASIS FOR RELIEF

10CFR50.55a(g)(6)(i), "impractical"

Since the subject valve is a simple check valve with no position indication, it cannot be tested without performing some type of reverse flow/leak test. This type of test is impractical to perform during normal operation and Cold Shutdown.

PROPOSED ALTERNATE TESTING

The subject valve will be exercised closed during each reactor refueling outage.

APPLICABLE TIME PERIOD

Relief is requested for the 3rd ten (10) year interval.

RELIEF REQUEST NUMBER: RV-47A (Sheet 1 of 2)

COMPONENT IDENTIFICATION

VALVE NUMBER	IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR
Unit 1				
0220-084A	A/C	NC	M-0013-1	F-3
0220-084B	A/C	NC	M-0013-1	F-3
0220-084C	A/C	NC	M-0013-1	F-3
0220-084D	A/C	NC	M-0013-1	F-3
4799-281A	A/C	NC	M-0024-2	B-2
Unit 2				
0220-084A	A/C	NC	M-0060-1	F-3
0220-084B	A/C	NC	M-0060-1	F-3
0220-084C	A/C	NC	M-0060-1	F-3
0220-084D	A/C	NC	M-0060-1	F-3
4799-281A	A/C	NC	M-0071-2	B-2

NOTE THAT THESE ARE NOT CODE CLASS VALVES.

FUNCTION(S)

These check valves are installed on the Main Steam Isolation Valve (MSIV) air actuator accumulators (0220-084A to D) and the Target Rock Safety/Relief Valve (SRV) air actuator accumulator (4799-281A). Since the Instrument Air system is not safety related, these check valves must close to retain compressed nitrogen in the local accumulator, and preserve sufficient "power" to actuate the MSIV or SRV.

CODE REQUIREMENT

Article IWV-3521, "Frequency," Check valves shall be exercised at least once every 3 months, except as provided by IWV-3522.

RELIEF REQUEST NUMBER: RV-47A (Sheet 2 of 2)

BASIS FOR RELIEF

10CFR50.55a(g)(6)(i), "impractical"

These check valves do not have remote position indication and there is no indirect means of determining that these check valves are closed. Since these valves are located inside the drywell, they are only accessible when the containment is de-inerted during Reactor Refueling.

PROPOSED ALTERNATE TESTING

These valves will be verified closed during the special accumulator check valve leak test (AT-06) that is performed during each reactor refueling outage.

APPLICABLE TIME PERIOD

Relief is requested for the 3rd ten (10) year interval.

RELIEF REQUEST NUMBER: RV-47B (Sheet 1 of 2)

COMPONENT IDENTIFICATION

VALVE NUMBER	IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR
Unit 1				
4799-155	A/C	NC	M-0024-2	E-2
4799-156	A/C	NC	M-0024-2	E-3
4799-158	A/C	NC	M-0024-2	F-4
4799-159	A/C	NC	M-0024-2	F-4
Unit 2				
4799-155	A/C	NC	M-0071-2	E-2
4799-156	A/C	NC	M-0071-2	E-3
4799-158	A/C	NC	M-0071-2	F-4
4799-159	A/C	NC	M-0071-2	F-4

NOTE THAT THESE ARE NOT CODE CLASS VALVES.

FUNCTION(S)

Valves 4799-155 and 4799-156 are Primary Containment Isolation Valves (PCIVs) on the Instrument Air supply to the drywell. The Main Steam Isolation Valve (MSIV) and Target Rock Safety/Relief Valve (SRV) receive their air supply via this line.

Valves 4799-158 and 4799-159 are PCIVs on the Instrument Air supply to the Suppression Pool (Torus). The Torus/Drywell vacuum breakers receive their air supply via this line.

CODE REQUIREMENT

Article IWV-3521, "Frequency," Check valves shall be exercised at least once every 3 months, except as provided by IWV-3522.

BASIS FOR RELIEF

10CFR50.55a(g)(6)(i), "impractical"

The drywell air supply check valves (4799-155 and 4799-156) cannot be closed during normal operation because the MSIVs might close when Instrument Air is isolated. Since all of these valves are simple check valves with no position indication, they cannot be tested without performing some type of reverse flow/leak test. This type of test is impractical to perform during normal operation or Cold Shutdown.

RELIEF REQUEST NUMBER: RV-47B (Sheet 2 of 2)

PROPOSED ALTERNATE TESTING

The subject valves will be exercised closed during each reactor refueling outage.

APPLICABLE TIME PERIOD

Relief is requested for the 3rd ten (10) year interval.

RELIEF REQUEST NUMBER: RV-52A (Sheet 1 of 2)

COMPONENT IDENTIFICATION

VALVE NUMBER			IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR
Unit 1						
5201-	-SO		B	NC	M-0029-2	A-2
Unit 1/2						
5201-	-SO	-1/2	B	NC	M-0029-2	A-6
Unit 2						
5201-	-SO		B	NC	M-0029-2	A-8

NOTE THAT THESE ARE NOT CODE CLASS VALVES.

FUNCTION(S)

These solenoid valves must open for the Diesel Fuel Oil Transfer Pumps (5203) to replenish the fuel oil supply in the Diesel Oil Day Tank (5202).

CODE REQUIREMENT

Article IWV-3417(a), "Corrective Action," Power operated valves that normally exercise in less than or equal to 10 seconds require more frequent testing if the comparison between the previous test and the current test indicates that the stroke time has increased by 50% or more.

Article IWV-3417(b), "Corrective Action," Power operated valve limiting value of full stroke time.

BASIS FOR RELIEF

10CFR50.55a(g)(6)(i), "impractical"

The diesel fuel oil transfer pump discharge solenoid valves full stroke in milliseconds. These valves are not equipped with close and open position indicators.

RELIEF REQUEST NUMBER: RV-52A (Sheet 2 of 2)

PROPOSED ALTERNATE TESTING

Stroke times will not be measured, and increased test frequency based on change in stroke time will not be implemented. Quad Cities will verify that the subject valves are open by verifying that the associated Diesel Fuel Oil Day Tank can be re-filled following a diesel operability test.

APPLICABLE TIME PERIOD

Relief is requested for the 3rd ten (10) year interval.

VALVE TECHNICAL APPROACH AND POSITIONS

3.0 TECHNICAL APPROACH AND POSITION

When the requirements of the Code are not easily interpreted, Quad Cities has reviewed general licensing/regulatory requirements and industry practice to determine a practical method of implementing each Code requirement. The Technical Approach and Position documents in this section of the Plan have been provided to clarify Quad Cities' implementation of the Code.

A summary of Technical Approach and Positions is provided in Table 3.0-1.

Table 3.0-1

TECHNICAL APPROACH AND POSITION SUMMARIES

TECHNICAL APPROACH & POSITION NUMBER	SUMMARY
TV-00B	The 10CFR50, Appendix J, Type C Local Leak Rate Test (LLRT) of some valves are performed in the reverse direction. Testing in the reverse direction is justified in the Appendix J Program.
TV-00D	Stroke times for power operated valves will be measured as the time interval between placing the valve control switch in the open, close, etc. position and an indication (usually a light) that the valve has reached the intended position.
TV-00E	Air Pilot and Solenoid Valves that Control a "Main" Valve Do Not Have Position Indication; Therefore, No Maximum Stroke Time and No Criteria for More Frequent Testing - The operability of air pilot and solenoid control valves will be based on the performance of the "main" valve.
TV-00G	During valve position indication testing, only the remote position indicator used during ASME Section XI valve excercising and stroke timing will be verified to be operable.
TV-00I	Technical Approach for Fail Safe Testing 2-way, 3-way, or 4-way Air Pilot and Electric Solenoid Valves - Most air pilot and electric solenoid valves do not require any additional fail safe testing. In most cases, a stroke excercise test and a fail safe test are equivalent.

Table 3.0-1

TECHNICAL APPROACH AND POSITION SUMMARIES

TECHNICAL APPROACH & POSITION NUMBER	SUMMARY
TV-03A	There are 177 CRD Hydraulic Control Units (CRD HCUs). Each CRD HCU contains one of these valves. The valve number listed in Table 4.0-1, "Valve Listing" is typical of 177. All 177 valves will be tested as specified for the typical valve.
TV-07A	The TIP shear valves cannot be seat leak tested due to their design/operating characteristics. The assembly would have to be replaced if the TIP shear valve explosive actuator was detonated to crush the TIP guide tube and perform a seat leak test. This position is justified in the Appendix J Program.
TV-30B	Main Steam Electromatic Relief Valves - The pressure switches will be calibrated to verify setpoints and an excercise test will verify valve operability. The requirement to verify relief and safety valve setpoints in accordance with OM-1 is not applicable to these valves.
TV-30C	The preferred stroke times for the main steam isolation valves are as follows: 3.75 to < 5.00 secs. - Hot Stand-by with no Steam Flow 3.50 to < 5.00 secs. - 200 MWe or greater 3.00 to < 5.00 secs. - 500 MWe or greater Reference: QOS 0250-S02, page 1 The Technical Specification limit is $3 \leq t < 5$.
TV-39A	The subject valves are manually operated and therefore not subject to the stroke timing requirements of IWV-3413. IWV-3412 is interpreted to require only an exercise test of manual valves.
TV-57A	The subject valves are manually operated and therefore not subject to the stroke timing requirements of IWV-3413. IWV-3412 is interpreted to require only an exercise test of manual valves.

Table 3.0-1

TECHNICAL APPROACH AND POSITION SUMMARIES

TECHNICAL APPROACH & POSITION NUMBER	SUMMARY
TV-57B	The subject valves have a closed safety function to prevent water from injecting into the Control Room HVAC Air Filtration Unit (AFU) which would cause damage to the charcoal adsorbers. The open function of the valves is regulatory related for fire protection only and is not considered to be a function important to safety. The valves can perform their safety function only by remaining closed at all times. Any situation where these valves are to be opened would result in a reduction in the plant's margin of safety due to the loss of Control Room HVAC because of water and/or fire damage. The fail safe closed function of the valves and the exercise closed test would only prove that the valves could be closed after water had already been injected into the AFU. For the above reason, these valves are considered to be passive and will not be exercised, failsafe tested, or position indication verified.

VALVE

COLD SHUTDOWN JUSTIFICATIONS

4.0 COLD SHUTDOWN JUSTIFICATIONS

In accordance with Article IWV-3412 or IWV-3522 of the Code, Quad Cities will full stroke exercise certain valves during Cold Shutdown if the valve cannot be exercised during Normal Operation. The technical justification for exercising a valve during Cold Shutdown rather than Normal Operation is provided in a Cold Shutdown Justification.

4.1 Cold Shutdown Test Frequency

Inservice valve testing at cold shutdown is valve testing which commences within two hours after the plant reaches a cold shutdown condition but in no case later than 48 hours after cold shutdown is reached. This testing continues until all valves are tested or the unit is ready for start-up. Completion of all testing is not a prerequisite to plant start-up. Valve testing which is not completed during a cold shutdown shall be completed during subsequent cold shutdowns that may occur before refueling to meet the Code specified testing frequency. In the case of frequent cold shutdowns, valve testing need not be performed more often than once every three months.

In the case of longer planned cold shutdowns, the testing need not be started within the 48 hour limitation. However, in these instances, all valve testing must be completed prior to startup.

NOTE

It is expected that the required testing will normally be completed in 96 hours following cold shutdown. However, completion of all valve testing during cold shutdown is not required if plant operating conditions will not permit the testing of specific valves.

4.2 Cold Shutdown Justification(s)

A summary of Cold Shutdown Justifications is provided in Table 4.0-1.

Cold Shutdown Justification numbers are in CS-NNA format, where;

CS: Cold Shutdown Justification for Valve Inservice Testing

NN: 00 for general issues

The first two characters of the Equipment Piece Number (system identifier) is used for system dependent Cold Shutdown Justifications.

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02 Reactor Recirculation and Nuclear Boiler
03 Control Rod Drive
07 Traversing In-Core Probe
10 Residual Heat Removal
11 Standby Liquid Control
12 Reactor Water Cleanup
13 Reactor Core Isolation Cooling
14 Core Spray
16 Containment and Pressure Suppression
19 Fuel Pool Cooling and Cleanup
20 Radwaste (Drywell Sump)
23 High Pressure Coolant Injection
24 Containment Atmosphere Monitor
25 Atmospheric Containment Atmosphere Dilution
30 Main Steam
32 Reactor Feedwater
33 Condensate (Clean and Contaminated)
37 Reactor Building Closed Cooling Water
39 Service Water
41 Fire Protection (Turbine and Diesel Oil)
46 Service Air
47 Instrument Air
48 Reactor Building Equipment Drains
49 Turbine Building Equipment Drains
52 Diesel Oil
54 Off Gas
57 Heating and Ventilating (Reactor Building Ventilation)
75 Standby Gas Treatment
89 High Radiation Sampling System

A: A unique, sequential alphabetical character (e.g., CS-02A would address the Reactor Recirculation pump isolation valves).

Table 4.0-1

COLD SHUTDOWN JUSTIFICATION SUMMARIES

COLD SHUTDOWN JUSTI-CATION	SUMMARY
CS-00A	These valves cannot be excercised during normal operation because of differential pressure against their valve seat, because they perform a pressure isolation safety function, and because of reactor thermal shock considerations. They will be stroked at cold shutdown.
CS-02A	These valves cannot be stroked during power operation because to do so would require the isolation of one reactor recirculation loop, which is to be avoided because of potential neutron flux oscillation considerations. They will be stroked at cold shutdown.
CS-02B	This valve cannot be stroked during power operation because it is interlocked with the 0220-052 valve, and when they are stroked, there is a significant pressure differential exerted on the inner reactor head seal. Any slight leak or defect in the seal would be compounded by the pressure differential and would cause an inner seal leak.
CS-02C	IWV-3415 MSIV Fail Safe Test Frequency - Fail safe testing of the MSIVs requires the accumulators to be bled. Because the accumulators and valves are located in the MISV Room, which is a high radiation area during power operation, this test can only be performed at cold shutdown.
CS-03A	These valves cannot be tested during normal operation because the testing procedure requires the securing of the CRD pumps. This would result in the interuption of cooling water to the CRD seals, which could damage them. They will be tested at cold shutdown.

Table 4.0-1

COLD SHUTDOWN JUSTIFICATION SUMMARIES

COLD SHU DOWN JUSTI-CATION	SUMMARY
CS-03B	IWV-3411, 3413(a), 3417(a), and 3517(b) Control Rod Drive ARI and Scram Dump Valves Exercise Test Frequency - These valves cannot be tested during normal operation because all CRDs would be inserted.
CS-10A	These valves cannot be stroked during operation because they isolate high pressure piping from low pressure piping. They will be stroked at cold shutdown.
CS-10B	These valves cannot be stroked during normal operation because they are required to remain open to link the two divisions of the RHR system for maximum core cooling flow. They will be stroked at cold shutdown.
CS-23A	These valves cannot be tested during normal operation because they must remain open for the HPCI system to remain operable. They will be stroked at cold shutdown.

Table 4.0-1

COLD SHUTDOWN JUSTIFICATION SUMMARIES

COLD SHUTDOWN JUSTI-CATION	SUMMARY
CS-23B	Due to a redundency inherent in the valve arrangement, a single active failure of any one of the subject check valves would not result in a failure of the valve arrangment in meeting its intended safety function. Testing these valves on a quarterly basis vice cold shutdown would not result in a corresponding increase in safety.
CS-37A	These valves cannot be tested to the closed position during normal operation as they isolate water to the equipment in the drywell. Equipment affected by the stroking of these valves must be secured prior to testing, which could result in damage to pump bearings, etc. They will be tested at cold shutdown.
CS-47A	Testing these valves at power requires isolating the instrument air header from the actuator. This could result in an inadvertent closure of an MSIV, which would result in a reactor trip.
CS-54A	These valves can only be tested in the closed direction by performing a leak-type test. This requires the isolation of instrument air, which could cause the main valves to inadvertently close thereby possibly causing a unit trip due to a loss of condenser vacuum.

COLD SHUTDOWN JUSTIFICATION
NUMBER: CS-00A (Sheet 1 of 2)

COMPONENT IDENTIFICATION

VALVE NUMBER	IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR
Unit 1				
1001-068A-AO	A/C	1	M-0039-1	E-5
1001-068B-AO	A/C	1	M-0039-1	E-4
1402-009A-AO	A/C	1	M-0036	C-3
1402-009B-AO	A/C	1	M-0036	C-3
2301-007 -AO	C	2	M-0046	E-6
Unit 2				
1001-068A-AO	A/C	1	M-0081-1	E-5
1001-068B-AO	A/C	1	M-0081-1	E-4
1402-009A-AO	A/C	1	M-0078	C-3
1402-009B-AO	A/C	1	M-0078	C-4
2301-007 -AO	C	2	M-0087	E-6

FUNCTION(S)

Valves 1001-068A, 1001-068B, 1402-009A, and 1402-009B must close to isolate the Reactor Coolant Pressure Boundary. All of the subject valves must open when the associated Emergency Core Cooling System (ECCS) is required to inject water into the reactor vessel. The ECCS number prefixes are 1001 - Residual Heat Removal (RHR), 1402 - Core Spray (CS), and 2301 - High Pressure Coolant Injection (HPCI).

JUSTIFICATION

These check valves cannot be opened during normal operation using the air actuator because there is a 1000 psi differential pressure across the valve disk. The air operators on these valves cannot overcome a differential pressure of 1000 psi. The air operators are capable of exercising the check valve when the differential pressure across the disk is < 5 psi. Since these valves are located in the drywell (CS and RHR) and the X-Area or MSIV Room (HPCI), it is impractical to enter these areas during normal operation to equalize the pressure across the valve obturator. Exercising these valves during normal operation would expose personnel to the following hazards: the drywell is inerted during normal operation, the ambient temperature near these valves is between 120 and 140° F, and an accumulated radiation dose of ~1.5 man-Rem.

COLD SHUTDOWN JUSTIFICATION
NUMBER: CS-00A (Sheet 2 of 2)

These check valves cannot be exercised during normal operation via a full flow test because the resulting cold water injection would produce reactivity excursions that would be extremely difficult to control. The thermal shock to various Class 1 piping systems, reactor vessel nozzles, and reactor vessel internals would also be unacceptable. Finally, the CS pump discharge pressure (~350 psig) and RHR pump discharge pressure (~400 psig) are too low to overcome normal reactor pressure and open the respective injection check valves.

COLD SHUTDOWN JUSTIFICATION
NUMBER: CS-02A (Sheet 1 of 1)

COMPONENT IDENTIFICATION

VALVE NUMBER	IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR
Unit 1				
0202-005A-MO	B	1	M-0035-2	D-6
0202-005B-MO	B	1	M-0035-2	D-3
Unit 2				
0202-005A-MO	B	1	M-0077-2	D-6
0202-005B-MO	B	1	M-0077-2	D-3

FUNCTION(S)

Valves 0202-005A and 0202-005B are the RR pump discharge isolation valves. The RR pump suction and discharge isolation valves must close if there is a leak between the RR pump suction and discharge isolation valves. The RR pump discharge isolation valve must close upon receipt of a Low Pressure Coolant Injection (LPCI) mode, Residual Heat Removal LPCI Loop Selection logic signal. Closure of the RR pump discharge isolation valve ensures that LPCI flow is directed to the reactor core, rather than being diverted out a RR system line break.

JUSTIFICATION

These valves cannot be closed during normal operation because one loop of the Reactor Recirculation system would have to be secured prior to performing the test. Single loop operation is limited by Technical Specifications and should be avoided because coolant flow imbalances will lead to neutron flux oscillations. In addition, it is impractical to reduce power as required for single loop operation for the sole purpose of performing an exercise test.

COLD SHUTDOWN JUSTIFICATION
NUMBER: CS-02B (Sheet 1 of 1)

COMPONENT IDENTIFICATION

VALVE NUMBER	IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR
Unit 1				
0220-051	B	1	M-0035-1	E-5
0220-051 -S0	B	NC	M-0035-1	E-5
Unit 2				
0220-051	B	1	M-0077-1	E-5
0220-051 -S0	B	NC	M-0077-1	E-5

FUNCTION(S)

Valve 0220-051 is the Reactor Head Flange Leak detector outboard isolation valve. This valve must remain closed to isolate any leakage from the inner head seal. This valve is interlocked with the 0220-052 valve such that one valve is always closed. Valve 0220-051 -S0 is the solenoid control valve for 0220-051.

JUSTIFICATION

These valves cannot be fail safe tested during normal operation because of the interlock with the inboard isolation valve. If these valves were stroked during power operation, a high differential pressure would be induced across the reactor inner head seal during the period that both valves were open. The resulting high differential pressure would cause additional damage to the inner head seal if a small leak or any imperfection existed on the seal prior to the test.

COLD SHUTDOWN JUSTIFICATION
NUMBER: CS-02C (Sheet 1 of 1)

COMPONENT IDENTIFICATION

VALVE NUMBER	IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR
Unit 1				
0203-002A-A0	A	1	M-0013-2	F-7
0203-002B-A0	A	1	M-0013-2	E-7
0203-002C-A0	A	1	M-0013-2	D-7
0203-002D-A0	A	1	M-0013-2	B-7
Unit 2				
0203-002A-A0	A	1	M-0060-2	F-7
0203-002B-A0	A	1	M-0060-2	E-7
0203-002C-A0	A	1	M-0060-2	D-7
0203-002D-A0	A	1	M-0060-2	C-7

FUNCTION(S)

The main steam isolation valves open to admit reactor steam to the turbine. They close to provide containment and reactor containment and reactor coolant system isolation.

JUSTIFICATION

A true fail safe test of these valves can only be performed by locally venting the MSIV accumulator and observing the valve change position. This cannot be performed without significantly reducing reactor power. Also, the accumulators are located in the MSIV room, which is a high temperature, high humidity, and high radiation area. The ALARA and personnel safety aspects make it impractical to perform during power operation.

COLD SHUTDOWN JUSTIFICATION
NUMBER: CS-03A (Sheet 1 of 1)

COMPONENT IDENTIFICATION

VALVE NUMBER	IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR
Unit 2 0305-115	C	1	M-0041-1	E-10
Unit 2 0305-115	C	1	M-0083-1	E-10

FUNCTION(S)

The Control Rod Drive (CRD) charging water header check valves (typical of 177) must close when each CRD scram inlet valve (0305-126 -FCV) opens and discharges the CRD Hydraulic Control Unit (HCU) accumulator into the CRD under-piston area to insert a control rod. If this CRD charging water header check valve does not close, CRD HCU scram drive flow may be diverted to the charging water header.

JUSTIFICATION

These valves cannot be closed during normal operation because the CRD pumps would have to be secured, and accumulator pressure monitored, to verify valve closure. If the CRD pumps are secured, cooling water to the CRD seals would be interrupted and the seals may be damaged.

COLD SHUTDOWN JUSTIFICATION
NUMBER: CS-03B (Sheet 1 of 1)

COMPONENT IDENTIFICATION

VALVE NUMBER	IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR
Unit 1				
0302-020A	B	NC	M-0041-1	E-8
0302-020B	B	NC	M-0041-1	E-8
0302-025A	B	NC	M-0041-1	E-7
0302-025B	B	NC	M-0041-1	E-7
0302-181A	B	NC	M-0041-1	D-8
0302-181B	B	NC	M-0041-1	D-8
0302-182A	B	NC	M-0041-1	F-8
0302-182B	B	NC	M-0041-1	F-8
Unit 2				
0302-020A	B	NC	M-0083-1	E-8
0302-020B	B	NC	M-0083-1	E-8
0302-025A	B	NC	M-0083-1	E-7
0302-025B	B	NC	M-0083-1	E-7
0302-181A	B	NC	M-0083-1	E-8
0302-181B	B	NC	M-0083-1	E-8
0302-182A	B	NC	M-0083-1	F-8
0302-182B	B	NC	M-0083-1	F-8

FUNCTION(S)

The Control Rod Drive Scram Air Header has multiple vent paths to ensure reliability in case scram action is necessary. The 0302-020A and 0302-020B valves are the Scram Dump Valves. The remaining valves (0302-125A, 0302-25B, 0302-181A, 0302-181B, 0302-182A and 0302-182B) are vent valves for the Anticipated Transient Without Scram/Alternate Rod Injection (ATWS/ARI) system. These valves must energized to provide a vent path to depressurize the Scram Air Header.

JUSTIFICATION

These valves cannot be exercised or fail safe tested during normal operation because their actuation could lead to an unplanned rapid insertion of all control rods and the closure of the scram discharge volume vent and drain valves. Because the 0302-020A and 0302-020B valves are in series and do not have individual position indication, the only positive method of determining that these valves open is to actuate both the A and B scram logic. The actuation of a single ARI/ATWS valve would result in the depressurization of the entire scram air header.

COLD SHUTDOWN JUSTIFICATION
NUMBER: CS-10A (Sheet 1 of 1)

COMPONENT IDENTIFICATION

VALVE NUMBER	IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR
Unit 1				
1001-047 -MO	A	1	M-0039-1	C-4
1001-050 -MO	A	1	M-0039-1	D-4
Unit 2				
1001-047 -MO	A	1	M-0081-1	C-4
1001-050 -MO	A	1	M-0081-1	D-4

FUNCTION(S)

These valves are Primary Containment Isolation Valves (PCIVs) and Pressure Isolation Valves (PIVs) for the Residual Heat Removal (RHR) Shutdown Cooling mode suction line. Since Shutdown Cooling mode is not a safety related mode of RHR, the only safety function these valve perform is closure for containment and pressure isolation.

JUSTIFICATION

These valves cannot be exercised during normal operation. These valves isolate the low pressure design RHR Shutdown Cooling suction piping from the reactor coolant pressure boundary. The RHR Shutdown Cooling suction piping is protected by an interlock that ensures that these valves cannot be opened when reactor pressure is greater than 100 psig.

COLD SHUTDOWN JUSTIFICATION
NUMBER: CS-10B (Sheet 1 of 2)

COMPONENT IDENTIFICATION

VALVE NUMBER	IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR
Unit 1				
1001-019A-MO	B	2	M-0039-1	B-8
1001-019B-MO	B	2	M-0039-1	B-2
1001-043A-MO	B	2	M-0037	B-4
1001-043B-MO	B	2	M-0037	E-4
1001-043C-MO	B	2	M-0037	B-8
1001-043D-MO	B	2	M-0037	D-8
Unit 2				
1001-019A-MO	B	2	M-0081-1	B-8
1001-019B-MO	B	2	M-0081-1	B-2
1001-043A-MO	B	2	M-0079	B-4
1001-043B-MO	B	2	M-0079	E-4
1001-043C-MO	B	2	M-0079	B-8
1001-043D-MO	B	2	M-0079	D-8

FUNCTION(S)

RHR division cross-tie isolation valves, MO 1001-19A and MO 1001-19B are normally open to provide an alternative LPCI path in the event that there is a pipe break in one of the two divisions of RHR AND a loss of one or both of the undamaged division's RHR pumps. The cross-tie allows the pumps of one division of RHR to inject through the opposite division.

Shutdown Cooling Suction isolation valves, MO 1001-43A, MO 1001-43B, MO 1001-43C, and MO 1001-43D are opened to provide a suction path for the RHR pumps in the Shutdown Cooling mode. Valves 1001-43A and MO 1001-43B are interlocked with valve MO 1001-19A and valves MO 1001-43C and MO 1001-43D are interlocked with valve MO 1001-19B. These interlocks are provided to reduce the possibility for inadvertent draining of the reactor vessel due to the possible establishment of a high flow drain path. Valves MO 1001-43A and MO 1001-43B cannot be opened if the MO 1001-19A valve is open and valves MO 1001-43C and MO 1001-43D cannot be opened if valve MO 1001-19B is open.

COLD SHUTDOWN JUSTIFICATION
NUMBER: CS-10B (Sheet 2 of 2)

JUSTIFICATION

The MO 1001-19A and MO 1001-19B valves should remain in the open position to ensure that the cross-tie is available to link both divisions of RHR for maximum core cooling flow. The closure of the MO 1001-19A and MO 1001-19B valves prevents the use of the cross-tie in the event of a pipe break in one of the two divisions of RHR AND a loss of one or both of the undamaged division's RHR pumps.

In order to stroke and time the Shutdown Cooling Suction Isolation valves, MO 1001-43A, MO 1001-43B, MO 1001-43C, and MO 1001-43D, the interlocks to valves 1001-19A and 1001-19B would have to be defeated. By defeating these interlocks there is an increased possibility for the inadvertent draining of the reactor vessel due to the possible establishment of a high flow drain path.

COLD SHUTDOWN JUSTIFICATION
NUMBER: CS-23A (Sheet 1 Of 1)

COMPONENT IDENTIFICATION

VALVE NUMBER	IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR
Unit 1				
2301-004 -MO	A	1	M-0046	C-9
2301-005 -MO	A	1	M-0046	B-10
Unit 2				
2301-004 -MO	A	1	M-0087	C-9
2301-005 -MO	A	1	M-0087	B-10

FUNCTION(S)

These valves are Primary Containment Isolation Valves (PCIVs) on the High Pressure Coolant Injection (HPCI) steam supply line from the reactor vessel to the HPCI turbine. These valves must open (remain open) to supply steam to the HPCI turbine. These valves are normally open so reactor steam will pre-heat the HPCI steam line and ensure that HPCI can start-up quickly.

JUSTIFICATION

These valves should remain in the open position to ensure that steam will be supplied to the HPCI turbine, which drives the HPCI booster and main pumps. Closing these valves during normal operation places the system in an uncertain situation. If either of the subject valves were to fail closed during the test, the HPCI system would have to be declared inoperable.

COLD SHUTDOWN JUSTIFICATION
NUMBER: CS-23B (Sheet 1 Of 1)

COMPONENT IDENTIFICATION

VALVE NUMBER	IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR
Unit 1				
2301-064	C	2	M-0046	C-8
2301-065	C	2	M-0046	C-8
2301-066	C	2	M-0046	C-8
2301-067	C	2	M-0046	C-8
Unit 2				
2301-064	C	2	M-0087	C-8
2301-065	C	2	M-0087	C-8
2301-066	C	2	M-0087	C-8
2301-067	C	2	M-0087	C-8

FUNCTION(S)

These check valves work in combination as vacuum breakers on the High Pressure Coolant Injection (HPCI) steam exhaust vacuum breaker line. These valves must close to prevent HPCI steam exhaust from injecting into the suppression chamber atmosphere and thereby increasing pressure in the suppression chamber

JUSTIFICATION

Any three out of the four valves in combination must close in order for this valve arrangement to fulfill its intended safety function. A minimum of two valves would have to fail open in order for the valve arrangement to fail. The redundency inherent in the design of the valve arrangement prevents a single active valve failure from resulting in a failure of the whole valve arrangement. The testing of these check valves on a quarterly frequency vice a cold shutdown frequency will not result in a corresponding increase in safety.

COLD SHUTDOWN JUSTIFICATION
NUMBER: CS-37A (Sheet 1 of 1)

COMPONENT IDENTIFICATION

VALVE NUMBER		IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR
Unit 1					
3702-	-MO	A	NC	M-0033	B-3
3703-	-MO	A	NC	M-0033	B-1
3706-	-MO	A	NC	M-0033	B-1
Unit 2					
3702-	-MO	A	NC	M-0075	B-3
3703-	-MO	A	NC	M-0075	B-1
3706-	-MO	A	NC	M-0075	B-1

FUNCTION(S)

These valves are Primary Containment Isolation Valves (PCIVs) on the Reactor Building Closed Cooling Water (RBCCW) supply and return lines to the drywell.

JUSTIFICATION

These valves cannot be closed during normal operation because the RBCCW system supplies cooling water to the Reactor Recirculation (RR) pump and motor bearing coolers and the drywell air coolers. Interrupting the cooling water supply to the RR pump or motor bearings for even a short time could result in damage to the pump bearings.

COLD SHUTDOWN JUSTIFICATION
NUMBER: CS-47A (Sheet 1 of 1)

COMPONENT IDENTIFICATION

VALVE NUMBER	IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR
Unit 1				
0220-085A	A/C	NC	M-0013-2	F-7
0220-085B	A/C	NC	M-0013-2	F-7
0220-085C	A/C	NC	M-0013-2	F-7
0220-085D	A/C	NC	M-0013-2	F-7
Unit 2				
0220-085A	A/C	NC	M-0060-1	F-7
0220-085B	A/C	NC	M-0060-1	F-7
0220-085C	A/C	NC	M-0060-1	F-7
0220-085D	A/C	NC	M-0060-1	F-7

NOTE THAT THESE ARE NOT CODE CLASS VALVES.

FUNCTION(S)

These check valves are installed on the Main Steam Isolation Valve (MSIV) air actuator accumulators (0220-085A to D). Since the Instrument Air System is not safety related, these check valves must close to retain compressed nitrogen in the local accumulator, and preserve sufficient "power" to actuate the MSIV.

JUSTIFICATION

Testing these valves at power requires isolating the instrument air header from the actuator. This could result in an inadvertent closure of an MSIV, which would result in a reactor trip.

COLD SHUTDOWN JUSTIFICATION
NUMBER: CS-54A (Sheet 1 of 1)

COMPONENT IDENTIFICATION

VALVE NUMBER	IWV-2200 CATEGORY	CODE CLASS	DRAWING NUMBER	DWG COOR
Unit 1				
5401- A-CK	C	NC	M-0042-1	Z-99
5401- B-CK	C	NC	M-0042-1	Z-99
5402- A-CK	C	NC	M-0042-1	Z-99
5402- B-CK	C	NC	M-0042-1	Z-99
Unit 2				
5401- A-CK	C	NC	M-0042-1	Z-99
5401- B-CK	C	NC	M-0042-1	Z-99
5402- A-CK	C	NC	M-0042-1	Z-99
5402- B-CK	C	NC	M-0042-1	Z-99

NOTE THAT THESE ARE NOT CODE CLASS VALVES.

FUNCTION(S)

These check valves maintain instrument air in the actuator accumulators for valves 5401A, 5401B, 5402A, and 5402B should the (non-safety related) instrument air system fail. (The main valves stroke closed to provide secondary containment isolation on the steam jet air ejector lines.)

JUSTIFICATION

These valves can only be stroke tested to the closed direction by performing a leak-type test. This test requires the isolation of instrument air, which could cause the main valves to inadvertently close. Inadvertent closure of the main valves could cause the unit to trip due to a loss of condenser vacuum. Also, this test requires entry into the heater bay, which is a high radiation area during operation.

VALVE AUGMENTED INSERVICE TESTING REQUIREMENTS

5.0 AUGMENTED INSERVICE TESTING REQUIREMENTS

The following augmented inservice testing requirements are being implemented at Quad Cities:

a. Reactor Core Isolation Cooling (RCIC) does not perform a safety function, and no credit is taken for the RCIC system in any UFSAR accident analyses. Certain RCIC valves have been included in the IST Plan at the NRC's request.

VALVE REFERENCES

6.0 REFERENCES

The references used to develop this Inservice Testing Program for valves include:

a. ASME Boiler and Pressure Vessel Code, Section XI, Division I, "Inservice Inspection of Nuclear Power Plant Components", the 1986 Edition.

b. ASME/ANSI OM, "Operation and Maintenance of Nuclear Power Plants", including the 1988 Addenda.

Part 10 - "Inservice Testing of Valves in Light-Water Reactor Power Plants"

c. Final Safety Analysis Report, Revision 1, Quad Cities Nuclear Power Station, Units 1 and 2

d. Technical Specifications, Amendment 136, Quad Cities Nuclear Power Station, Unit 1

e. Technical Specifications, Amendment 127, Quad Cities Nuclear Power Station, Unit 2