E. I. HATCH NUCLEAR PLANT

UNITS 1 AND 2

INSERVICE TESTING PROGRAM

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TABLE OF CONTENTS

See Active Page List for complete listing of document contents.

ACTIVE PAGE LIST

	Page No.	Revision No.					
		0	1	2	3	4	5
IST Program Introduction	1-1	x					
	1-2	x					
	1-3	x					
Abbreviations	2-1	x					
	2-2	x					
	2-3	x					
Pump Testing	3-1	x					
Pump Notes	4-1	x					
HNP-1 Pump Table	5-1	x					
	5-2	x					
	5-3	x					
HNP-2 Pump Table	6-1	x					
	6-2	x					
	6-3	x					
Pump Relief Requests	7-1	x					
	7-2a	x					
	7-2b	x					
	7-3	x					
	7-4	x					
	7-5a	x					
	7-5b	x					
	7-6	x					
	7-7	x					
	7-8	x					
	7-9	x					
	7-10	x					
	7-11a	x					
	7-11b	x					
	7-12	X					
Valve Testing	8-1	x					
	8-2	x					
	8-3	x					
	8-4	x					
Valve Notes	9-1	x					
	9-2	x					
	9-3	x					

HNP-1 Valve
Table 10

Page No.	Revision No.					
	0	1	2	3	4	5
1	x					
2	x					
3	x					
4	x					
5	x					
6	x					
7	x					
8	x					
9	x					
10	x					
11	x					
12	x					
13	x					
14	x					
15	x					
16	x					
17	x					
18	x					
19	x					
20	x					
21	x					
22	x					
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25	x					
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34	x					
35	x					
36	x					
37	x					
38	x					
39	x					
40	x					
41	x					
42	x					
43	x					
44	x					
44	x					
46	x					
47	x					
48	x					
49	x					
50	x					
51	x					
52	x					
53	x					
54	x					

	Page No.	Revision No.					
		0	1	2	3	4	5
	55	x					
	56	x					
	57	x					
	58	x					
HNP-2 Valve Table 11	1	x					
	2	x					
	3	x					
	4	x					
	5	x					
	6	x					
	7	x					
	8	x					
	9	x					
	10	x					
	11	x					
	12	x					
	13	x					
	14	x					
	15	x					
	16	x					
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	36	x					
	37	x					
	38	x					
	39	x					
	40	x					
	41	x					
	42	x					
	43	x					
	44	x					
	45	x					
	46	x					
	47	x					
	48	x					

	Page No.	Revision No.					
		0	1	2	3	4	5
	49	x					
	50	x					
	51	x					
	52	x					
	53	x					
	54	x					
	55	x					
	56	x					
	57	x					
	58	x					
	59	x					
	60	x					
Valve Relief Requests	12-1	x					
	12-2	x					
	12-3	x					
	12-4	x					
	12-5a	x					
	12-5b	x					
	12-6	x					
	12-7a	x					
	12-7b	x					
	12-8a	x					
	12-8b	x					
	12-9	x					
	12-10a	x					
	12-10b	x					
	12-11a	x					
	12-11b	x					
Valve Cold Shutdown Justifications	13-1	x					
	13-2	x					
	13-3	x					
	13-4	x					
	13-5	x					
	13-6	x					
	13-7	x					
	13-8a	x					
	13-8b	x					
	13-9	x					
	13-10	x					
	13-11	x					
	13-12	x					
	13-13	x					
Valve Refueling Outage Justifications	14-1	x					
	14-2	x					
	14-3	x					
	14-4	x					

	Page No.	Revision No.					
		0	1	2	3	4	5
	14-5	x					
	14-6	x					
	14-7	x					
	14-8	x					
	14-9	x					
	14-10	x					
	14-11	x					
	14-12	x					
	14-13	x					
	14-14	x					
	14-15a	x					
	14-15b	x					
	14-16	x					
	14-17	x					
	14-18	x					
	14-19	x					
	14-20	x					
	14-21	x					
	14-22	x					
	14-23	x					
	14-24	x					
	14-25	x					
	14-26	x					
	14-27	x					
	14-28a	x					
	14-28b	x					
	14-29	x					
General Relief Requests	15-1	x					
	15-2	x					
	15-3	x					
	15-4	x					
	15-5	x					

1.0 IST PROGRAM INTRODUCTION

1.1 GENERAL

This document describes the Inservice Testing (IST) Program for Edwin I. Hatch Nuclear Plant, Units 1 and 2. The below table identifies important dates associated with the Inservice Testing Program.

	HNP-1	HNP-2
Construction Permit	09-30-69	12-27-72
Commercial Operation	12-31-75	09-05-79
1st 10-Year Interval	01-01-75 to 12-31-85	09-06-79 to 12-31-85 *
2nd 10-Year Interval	01-01-86 to 12-31-95	01-01-86 to 12-31-95
3rd 10-Year Interval	01-01-96 to 12-31-06	01-01-96 to 12-31-06

* HNP-2 was optionally updated at the same time as Unit 1 for the 2nd 10-year interval in order to place both units on the same edition of the Code.

The edition of 10 CFR 50.55a current on January 1, 1995, was used to determine the applicable Code(s) for this program update. This 10 CFR 50.55a edition identified the ASME Section XI Code, 1989 Edition, as the applicable Code. The 1989 edition of ASME XI references OM Part 6 and OM Part 10 as being applicable for pump (IWP) and valve (IWV) testing respectfully. 10 CFR 50.55a(b)(2)(viii) references the OMa-1988 Addenda to OM-1987 Edition of ANSI/ASME part 6 and 10 for pump and valve testing.

ASME issued the OM Code-1990 Edition which included requirements for pump, valve, relief valve and dynamic restraint inservice testing, and subsequently issued the OMb-1992 Addenda, the OMc-1994 Addenda, and the OM-1995 Code Edition. Therefore the below listed Code versions are proposed for application through this IST Program update pursuant to 10 CFR 50.55a(a)(3)(i).

ASME OM Code-1990 Edition (all except ISTD and Appendix I)

ASME OM Code-1995 Edition, Appendix I

The OM Code-1990 Edition will be utilized for all pump and valve testing with the exception of relief valves, vacuum breaker valves, and rupture disks. The OM Code-1995 Edition will be utilized for testing relief valves, vacuum breaker valves, and rupture disks.

This document includes inservice testing requirements for pumps and valves. The inservice testing of dynamic restraints (snubbers) is not included in this program and at the present time is considered to be part of the Plant Technical Specification and/or Inservice Inspection Program.

NRC Generic Letter 89-04 and Supplement 1 (NRC NUREG-1482) were used, to the extent practical, for guidance in the development of this program.

1.2 EFFECTIVE DATE

The IST Program, for the 3rd 10-year interval will become effective on January 1, 1996 and will be utilized through December 31, 2005 unless the federal regulations are revised otherwise.

1.3 SCOPE

This document is a description of the IST Program to be implemented for Units 1 and 2 at Plant Hatch. This document describes only the IST surveillance testing applicable to pumps and valves included in the program.

1.4 COMPONENT UPGRADING

Plant components have been reviewed to determine the appropriate classification for inservice testing. Regulatory Guide 1.26 was used for guidance in determining component classifications.

Note that the classification of pumps and valves as ASME Class 1, 2, or 3 equivalent for this program does not imply that the components were designed in accordance with ASME requirements. Pump and valve design remains as stated in the FSAR.

1.5 SUBSEQUENT PROGRAM REVISIONS

It is anticipated that this Program will be reviewed again near the end of the 120 month interval and compared to a later NRC approved edition and addenda of the ASME Code applicable for IST. At that time, the program will be modified, if required, to comply to the extent practical with the later code edition. Any additional relief requests for impractical requirements will be submitted in accordance with the applicable federal regulations.

1.6 RESPONSIBILITY

Georgia Power Company, as Owner, bears the overall responsibility for the implementation of the inservice testing activities contained in this program per ASME OM Code-1990, ISTA 1.4.

1.7 RECORDS

Records and documentation of information and testing results, which provide the basis for evaluation and which facilitate comparison with results from previous and subsequent tests, will be maintained and available for the active life of the component or system in accordance with ASME OM Code-1990, ISTA 3.

1.8 METHODS OF TESTING

The method of testing applicable to pumps and valves is listed adjacent to each component identification in sections 2.0 and 3.0 of this program. The ASME OM Code does not stipulate any specific training/certification requirements for personnel involved in pump and valve testing. At Plant Hatch, all pump and valve testing is performed by operations, maintenance or engineering department personnel who have been trained to perform specific testing tasks.

1.9 STANDARDS FOR TESTING EVALUATION

The acceptance criteria applicable for each pump and valve to be tested have been developed in accordance with the ASME OM Code requirements as modified by any

applicable relief requests. Acceptance criteria are not provided in the IST Program, but are provided in the IST Plans and the applicable surveillance testing procedures which are available for review at the plant site.

ABBREVIATIONS

ABBREVIATION	DEFINITION
A	Active
A	OM Code Category "A" Valve (See OM Code)
Accum	Accumulator
Act	Actuation
ADS	Automatic Depressurization System
AP	Category A, Passive Valve (See OM Code)
AO	Air Operated
AOV	Air Operated Valve
App-J	10 CFR 50, Appendix J
Analy	Analysis
BFV	Butterfly Valve
Bldg	Building
Brker	Breaker
C	Closed
Cat	Category
CC	Code Classification
Cham	Chamber
CIV	Containment Isolation Valve
Cond	Condensate
Cnmt	Containment
Cont	Control
Coord	Coordinate
CS	Cold Shutdown
CS	Core Spray
CSJ	Cold Shutdown Justification
CV	Check Valve
ΔP	Differential Pressure
Depress	Depressurization
DG	Diesel Generator
DIME	Disassemble, Inspect and Mechanical Exercise
Disc	Discharge
Disch	Discharge
DNO	During Normal Operation
Drn	Drain
DRW	Dirty Rad Waste
DW	Drywell
EFCV	Excess Flow Check Valve
Equip	Equipment
Exh	Exhaust
Expl	Explosive
FW	Feedwater
Flr	Floor
Gen	Generator
GlV	Globe Valve
GV	Gate Valve
H2	Hydrogen
HCU	Hydraulic Control Unit
HOV	Hydraulic Operated Valve
HPCI	High Pressure Coolant Injection
HVAC	Heating, Ventilating and Air Conditioning
Hx	Heat Exchanger
ID	Identification
Inbrd	Inboard

ABBREVIATION	DEFINITION
Inj	Injection
Injec	Injection
Inst	Instrument
ISO	Isolation
LC	Locked Closed
LPCI	Low Pressure Coolant Injection
LTV	Leak Tight Valve (Other than OM Code or Appendix J)
Man	Manual
Maint	Maintenance
MCR	Main Control Room
Min	Minimum
Mon	Monitoring
MOV	Motor Operated Valve
MSIV	Main Steam Isolation Valve
MSRV	Main Steam Relief Valve
Mtr	Motor
N	Pump Speed
NA	Not Applicable
N2	Nitrogen
NIT	Non-intrusive Testing
NP	Normal Position
O	Open
O/C	Open/Closed
O2	Oxygen
Outbrd	Outboard
P	Passive
Pd	Discharge Pressure
Pi	Inlet Pressure
Po	Outlet Pressure
P&ID	Piping and Instrumentation Diagram
PASS	Post Accident Sampling System
PCV	Pressure Control Valve
PEQ	Partial Exercise Quarterly
PIV	Pressure Isolation Valve
Press	Pressure
Prod	Products
Purif	Purification
Q	Flowrate
Qtr	Quarterly
RBCCW	Reactor Building Closed Cooling Water
RCIC	Reactor Core Isolation Cooling
RCS	Reactor Coolant System
RD	Rupture Disk
Recirc	Recirculation
Recom	Recombiner
Redun	Redundant
Reqd	Required
RF	Refueling Floor
RHR	Residual Heat Removal
RHRSW	Residual Heat Removal Service Water
Rm	Room
RO	Refueling Outage
ROJ	Refueling Outage Justification
RPV	Reactor Pressure Vessel
RR	Relief Request
RW	Radwaste
RWCU	Reactor Water Clean Up

ABBREVIATION	DEFINITION
RV	Relief Valve
Rx	Reactor
SDC	Shutdown Cooling
SDV	Scram Discharge Volume
Ser	Service
SGTS	Standby Gas Treatment System
SLC	Standby Liquid Control
SOV	Solenoid Operated Valve
SP	Safety Position
SPC	Suppression Pool Cooling
ST	Stroke Time
Stg	Storage
Stm	Steam
Stor	Storage
Suc	Suction
Suct	Suction
Supp	Suppression
SW	Service Water
Sys	System
Test	Testable
TIP	Tranversing Incore Probe
Turb	Turbine
V	Vibration
Vac	Vacuum
VB	Vacuum Breaker
Vlv	Valve
Wkly	Weekly
Wtr	Water

3.0 INSERVICE TESTING OF PUMPS

3.1 GENERAL

This IST program was developed to comply with the requirements of 10 CFR 50.55a(f) which delineate the testing requirements for ASME Class 1, 2, and 3 pumps. The Code of record required by 10 CFR 50.55a for pump IST is the ASME/ANSI part 6 of the OMa-1988 Addenda to the OM 1987 Standard. However, Georgia Power Company (GPC) previously obtained approval from the NRC to use the ASME OM Code 1990 Edition for pump IST at Edwin I. Hatch Nuclear Plant. The supplemental guidance of NRC Generic Letter 89-04 and Supplement 1 (NUREG-1482) have been applied to the extent practicable. For pumps which are within the scope of IST, as stipulated in 10 CFR 50.55a, where specific Code requirements cannot be met, relief has been requested from the specific Code requirements.

3.2 SCOPE

Safety-related ASME Class 1, 2, and 3 pumps meeting the criteria of the ASME OM Code and falling under the Regulatory Position of Regulatory Guide 1.26 are included within the scope of this program. Special scope features of the Hatch IST Program are discussed below.

It is recognized that 10 CFR 50 Appendix A, GDC-1, and Appendix B, Criterion XI intend that all pumps necessary for safe operation of the plant be tested to demonstrate that they will perform satisfactorily in service. This testing is to be performed to a level commensurate with the function of the pump. This testing is generally performed per the requirements of the plant Technical Specifications or other requirements. In cases where Code requirements are impractical for certain pumps, or an alternate testing method is considered an improvement over OM Code requirements, a relief request has been developed. Pump relief requests are located under a separate tab.

No credit is taken in any of the accident analyses for the RCIC system. Therefore, the RCIC pumps have been included in this Program to provide a readily accessible, documented method of testing. This testing will be performed in a manner similar to the OM Code testing and should adequately detect degradation. Subsequently, relief requests are not considered to be required.

The Diesel Generator Fuel Oil Transfer Pumps are not ASME classed components and are not included within the scope of Regulatory Guide 1.26. These pumps have been included in this Program to provide a readily accessible, documented method of testing. This testing will be performed in a method similar to that found in the OM Code, and should adequately detect degradation in these particular pumps.

The Spent Fuel Pool Cooling Pumps have not been included in this Program because they are not safety-related. Credit is taken in the FSAR for Plant Service Water as the safety-grade makeup source to the spent fuel pool and the RHR system is used as the backup cooling source.

The Core Spray Jockey Pumps have not been included in this Program because they are not considered to be safety-related.

PUMP TEST NOTES

1. The flow rate for this pump is calculated by measuring the change in the test tank level and pump run time.

2. Differential pressure for this pump is calculated by measuring the discharge pressure and the river level and computing the required pressure. The test plan and the surveillance test procedure include the equation used to calculate the differential pressure. This measurement method is acceptable per ISTB 4.6.5 and NUREG-1482, paragraph 5.5.3.

3. As discussed in the "SCOPE" section of this program document (para. 3.2), the RCIC system is not required to be included in the IST Program. However, it is desirable to maintain the system in a documented testing program. Testing will be performed in a manner as close as practical to OM Code test requirements.

4. 1(2)E51-PI-R002 exceed the range limit of 3 times the reference value. However, the gages are calibrated to ±1% full scale accuracy which results in the final variance being within the maximum allowable tolerance of the OM Code (i.e. 1.4 psig versus 1 psig for Unit 1 and 1.8 psig versus 1 psig for Unit 2).

5. 1(2)E51-FI-R612 exceed the maximum Code allowable total loop accuracy, however, the indicator used has a full scale range less than the Code allowable. The maximum variance allowed by the Code is 24 gpm (.02 X 1200) whereas the actual maximum variance is 13 gpm (.0212 X 600). Therefore, the actual accuracy of the instrument loop is better than that required by the Code.

6. This system does not fall within the scope requirements of the ASME OM Code as implemented by 10 CFR 50.55a (i.e. not ASME Class 1, 2 or 3), is not covered by the Regulatory Position of Regulatory Guide 1.26, and was not designed to facilitate performance of OM Code type pump testing. Therefore, it is only included in this program document to provide a readily accessible, controlled mechanism for testing. As discussed in the Scope Section of this document, testing will be performed in a manner similar to that of the OM Code, and such testing should adequately detect degradation.

7. Since instrumentation was not provided to measure flow (or pressure), a portable ultrasonic type instrument will be used to measure flow. The piping basically forms a fixed resistance system; therefore, measurement of Po and Pi is not deemed necessary. If the flowrate decreases below a procedural specified value, the pump will be declared inoperable. This value will be determined taking into account the repeatability of this type of flow measuring device and the specific design parameters of the pump.

8. The Diesel Generator Fuel Oil Transfer Pumps are located inside the storage tanks with the motor and pump coupling area located above the tank. This arrangement provides inherent deficiencies for detection of degradation through vibration testing. Therefore, best effort motor vibration measurements will be taken quarterly to assist in the detection of degradation in the pumps.

HNP-1 PUMP TESTING TABLES

Pump ID	Description	P&ID/ Coord	Code Class	Test Parameters	Test Frequency	RR/Remarks
1C41-C001A	Standby Liquid Control (Positive Displacement)	H-16061 E-6	2	Pd	Qtr	RR-P-11
1C41-C001B		H-16061 F-6		Q	Qtr	Note 1 RR-P-11
				V	Qtr	RR-P-1 RR-P-11
				N	NA	NA
				ΔP	NA	NA
1E11-C002A	Residual Heat Removal (Centrifugal)	H-16330 H-9	2	Pd	NA	RR-P-2
1E11-C002B		H-16329 H-3		Q	Qtr	RR-P-3 RR-P-11
1E11-C002C		H-16330 H-11		V	Qtr	RR-P-11
1E11-C002D		H-16329 H-1		N	NA	NA
				ΔP	Qtr	RR-P-2 RR-P-11
1E11-C001A	RHR Service Water (Vertical Line Shaft)	D-11004 A-7	3	Pd	NA	NA
1E11-C001B		D-11004 D-7		Q	Qtr	RR-P-11
1E11-C001C		D-11004 C-7		V	Qtr	RR-P-4 RR-P-11
1E11-C001D		D-11004 E-7		N	NA	NA
				ΔP	Qtr	Note 2 RR-P-11

HNP-1 PUMP TESTING TABLES

Pump ID	Description	P&ID Coord	Code Class	Test Parameter	Test Frequency	RR/Remarks
1E21-C001A 1E21-C001B	Core Spray (Centrifugal)	H-16331 H-9 H-16331 H-10	2	Pd	NA	NA
				Q	Qtr	RR-P-11
				V	Qtr	RR-P-11
				N	NA	NA
				ΔP	Qtr	RR-P-5 RR-P-11
1E41-C001	High Pressure Coolant Injection (Centrifugal)	H-16333 E-8	2	Pd	NA	NA
				Q	Qtr	RR-P-7 RR-P-11
				V	Qtr	RR-P-10 RR-P-11
				N	Qtr	RR-P-11
				ΔP	Qtr	RR-P-6 RR-P-11
1E51-C001 (Note 3)	Reactor Core Isolation Cooling (Centrifugal)	H-16335 D-6	2	Pd	NA	NA
				Q	Qtr	Note 5
				V	Qtr	NA
				N	Qtr	NA
				ΔP	Qtr	Note 4

HNP-1 PUMP TESTING TABLES

Pump ID	Description	P&ID/ Coord	Code Class	Test Parameter	Test Frequency	RR/Remarks
1P41-C001A	Plant Service Water (Vertical Line Shaft)	D-11001 F-2	3	Pd	NA	NA
1P41-C001B		D-11001 F-5		Q	Qtr	RR-P-11
1P41-C001C		D-11001 F-3		V	Qtr	RR-P-4 RR-P-11
1P41-C001D		D-11001 F-6		N	NA	NA
				ΔP	Qtr	Note 2 RR-P-11
1Y52-C001A	Diesel Fuel Oil Transfer (Vertical line shaft) (Note 6)	H-11037 NA	NA	Pd	NA	NA
1Y52-C001B		H-11037 NA		Q	Qtr	Note 7
1Y52-C001C		H-11037 NA		V	Qtr	Note 8
1Y52-C101A		H-11037 NA		N	NA	NA
1Y52-C101B		H-11037 NA		ΔP	Qtr	Note 7
1Y52-C101C		H-11037 NA				

HNP-2 PUMP TESTING TABLES

Pump ID	Description	P&ID/ Coord	Code Class	Test Parameter	Test Frequency	RR/Remarks
2C41-C001A 2C41-C001B	Standby Liquid Control (Positive Displacement)	H-26009 F-5 H-26009 G-5	2	Pd Q V N ΔP	Qtr Qtr Qtr NA NA	RR-P-11 Note 1 RR-P-11 RR-P-1 RR-P-11 NA NA
2E11-C002A 2E11-C002B 2E11-C002C 2E11-C002D	Residual Heat Removal (Vertical Line Shaft)	H-26015 H-8 H-26014 H-3 H-26015 H-9 H-26014 H-2	2	Pd Q V N ΔP	NA Qtr Qtr NA Qtr	RR-P-2 RR-P-3 RR-P-11 RR-P-11 NA RR-P-2 RR-P-11
2E11-C001A 2E11-C001B 2E11-C001C 2E11-C001D	RHR Service Water (Vertical Line Shaft)	H-21039 B-4 H-21039 F-4 H-21039 D-3 H-21039 G-3	3	Pd Q V N ΔP	NA Qtr Qtr NA Qtr	NA RR-P-11 RR-P-4 RR-P-11 NA Note 2 RR-P-11

HNP-2 PUMP TESTING TABLES

Pump ID	Description	P&ID/ Coord	Code Class	Test Parameter	Test Frequency	RR/Remarks
2E21-C001A	Core Spray (Vertical Line Shaft)	H-26018 F-7	2	Pd	NA	NA
2E21-C001B		H-26018 F-9		Q	Qtr	RR-P-11
				V	Qtr	RR-P-11
				N	NA	NA
				ΔP	Qtr	RR-P-5 RR-P-11
2E41-C001	High Pressure Coolant Injection (Centrifugal)	H-26021 D-7	2	Pd	NA	NA
				Q	Qtr	RR-P-7 RR-P-11
				V	Qtr	RR-P-10 RR-P-11
				N	Qtr	RR-P-11
				ΔP	Qtr	RR-P-6 RR-P-11
2E51-C001 (Note 3)	Reactor Core Isolation Cooling (Centrifugal)	H-26024 C-6	2	Pd	NA	NA
				Q	Qtr	Note 5
				V	Qtr	NA
				N	Qtr	NA
				ΔP	Qtr	Note 4

HNP-2 PUMP TESTING TABLES

Pump ID	Description	P&ID/ Coord	Code Class	Test Parameter	Test Frequency	RR/Remarks
2P41-C001A	Plant Service Water (Vertical Line Shaft)	H-21033 B-2	3	Pd	NA	NA
2P41-C001B		H-21033 E-2		Q	Qtr	RR-P-11
2P41-C001C		H-21033 C-2		V	Qtr	RR-P-4 RR-P-11
2P41-C001D		H-21033 G-2		N	NA	NA
				ΔP	Qtr	Note 2 RR-P-11
2P41-C002	Standby Diesel Gen. Service Water (Vertical Line Shaft)	H-21033 J-2	3	Pd	NA	NA
				Q	Qtr	RR-P-11
				V	Qtr	RR-P-8 RR-P-11
				N	NA	NA
				ΔP	Qtr	Note 2 RR-P-11
2Y52-C001A	Diesel Fuel Oil Transfer (Vertical Line Shaft) (Note 6)	H-	NA	Pd	NA	NA
2Y52-C001C		H-		Q	Qtr	Note 7
2Y52-C101A		H-		V	Qtr	Note 8
2Y52-C101C		H-		N	NA	NA
				ΔP	NA	Note 7

7.0 PUMP RELIEF REQUEST LOG

Relief Request	Status *
RR-P-1	Submitted for approval
RR-P-2	Submitted for approval
RR-P-3	Submitted for approval
RR-P-4	Submitted for approval
RR-P-5	Submitted for approval
RR-P-6	Submitted for approval
RR-P-7	Submitted for approval
RR-P-8	Submitted for approval
RR-P-9	Submitted for approval
RR-P-10	Submitted for approval
RR-P-11	Submitted for approval

* Status as a result of 3rd Interval IST Program submittal, Revision 0

PUMP RELIEF REQUEST

RR-P-1

SYSTEM: Standby Liquid Control (1C41 & 2C41)

PUMPS: 1C41-C001A & B (Positive Displacement Pumps)
2C41-C001A & B (Positive Displacement Pumps)

CLASS: 2

TEST REQUIREMENT: ISTB 4.6.1(f) - The frequency response range of the vibration measuring transducers and their readout system shall be from one-third minimum pump shaft rotational speed to at least 1000 Hz.

BASIS FOR RELIEF: The Standby Liquid Control (SBLC) Pumps operate at 370 RPM (6.2 Hz), therefore the instrument frequency response range of the Plant Hatch IST Program instrumentation does not satisfy the code requirement.

In lieu of the requirements of ISTB 4.6.1(f), the vibration measuring instrument frequency response range utilized for the Standby Liquid Control Pumps will be as described below.

1. An I.R.D. Model 810 with accuracy of ±5% over a frequency response range of 5.8 - 10,000 Hz or a CSI Model 2100 analyzer with accuracy of ±5% over a frequency response range of 3 - 5000 Hz (displacement) is utilized for IST.

2. These lower frequency response limits result from high-pass filters which eliminate low-frequency elements associated with the input signal from the integration process. These filters prevent low frequency electronic noise from distorting vibration readings thus any actual vibration occurring at low frequencies is filtered out.

3. The SBLC pumps are Union Pump Company reciprocating pumps. The subject pumps utilize roller bearings instead of sleeve bearings. Sleeve bearings can exhibit vibration at subsynchronous frequencies when a condition of oil whirl is present. However, oil whirl does not occur in roller or ball bearings.

4. Roller and ball bearing degradation symptoms typically occur at 1X (6.2 Hz) shaft rotational frequency and greater. Therefore, vibration measurements at frequencies less than shaft speed would not provide meaningful data relative to degradation of the pump bearings.

5. The SBLC pumps are standby pumps only. They are only operated during Technical Specification Surveillance and Inservice Testing which results in very little run time. In the unlikely event that the system is required to perform its safety function, the pump run time would be from 19 to 74 minutes to exhaust the volume of the sodium pentaborate storage tank.

6. In addition to the IST vibration monitoring program, these pumps are included in the site maintenance department vibration program. This program has the capability to perform spectral analysis with equipment which would satisfy the frequency response range requirement of the ISTB 4.61(f). The maintenance vibration monitoring may not be performed at a frequency equivalent to that required for IST, but based on the infrequent operation of these pumps, the likelihood that a vibration problem would go undetected by both programs is minimal. The maintenance vibration program will also be utilized to analyze any IST vibration data which placed the pumps in the ALERT or ACTION Ranges. The need for any corrective actions would be based on evaluation of IST and maintenance testing program data.

7. Based on the pump bearing design, the combination of vibration monitoring implemented and the limited operation time, it seems unlikely that a vibration problem not detectable by the equipment being utilized would prevent these pumps from fulfilling their design safety function.

ALTERNATE TESTING:

None, use of the existing vibration monitoring equipment which is calibrated to at least ±5% full scale over a frequency response range of 5.8 -2000 Hz or 3 - 5000 Hz (SBLC pump nominal shaft speed = 6.2 Hz) should provide sufficient data for monitoring the mechanical condition of the SBLC pumps. This equipment will provide accurate vibration measurements over the frequency range in which typical roller bearing vibration problems occur. This monitoring program should meet the intent of the code and will relieve the utility from the burden and expense involved with procurement, calibration, training and administrative control of new testing equipment which seems unjustified for assessing the mechanical condition of the subject pumps.

PUMP RELIEF REQUEST

RR-P-2

SYSTEM: Residual Heat Removal (1E11 & 2E11)

PUMPS: 1E11-C002A,B,C,D (Centrifugal Pumps)
2E11-C002A,B,C,D (Vertical Line Shaft Pumps)

CLASS: 2

TEST REQUIREMENT: ISTB 4.6.1(1) requires that the full-scale range for each analog instrument shall not be greater than three times the reference value. RHR pump pressure indicators 1(2)E11-PI-R003A-D exceed this Code allowable range limit.

BASIS FOR RELIEF: The original installed instrumentation associated with these pumps was not designed with the instrument range limits of OM Code ISTB 4.6.1(1) taken into consideration. The actual instrument ranges are itemized below.

INSTRUMENT	RANGE	TEST RANGE	ALLOWABLE RANGE	ACCURACY
1E11-PI-R003A-D	0-600 psig	≈ 182 psig	0-546 psig	± 2%
2E11-PI-R003A-D	0-600 psig	≈ 186 psig	0-558 psig	± 2%

ALTERNATE TESTING: None, use installed instrumentation.

Even though 1(2)E11-PI-R003A-D exceed the Code allowable range limit of three times the reference value, this additional gage range only results in approximately 1 psig maximum variance form the Code allowable in the measured parameter (i.e. .02 x 546 = 11 psig versus .02 x 600 = 12 psig). Using other instrumentation to account for a 1 psig improvement in measurement accuracy is not justifiable considering the cost associated with such a requirement. These pressure indicators should provide data that is sufficiently accurate to allow assessment of pump condition and to detect degradation.

PUMP RELIEF REQUEST

RR-P-3

SYSTEM: Residual Heat Removal (1E11 & 2E11)

PUMPS: 1E11-C002A,B,C,D (Centrifugal Pumps)
2E11-C002A,B,C,D (Vertical Line Shaft Pumps)

TEST REQUIREMENT: ISTB 4.6.1(1) requires that the full-scale range for each analog instrument shall not be greater than three times the reference value. RHR pump flow indicators 1(2)E11-FI-R603A&B exceed this Code allowable range limit.

BASIS FOR RELIEF: The original installed instrumentation associated with these pumps was not designed with the instrument range limits of OM Code ISTB 4.6.1(1) taken into consideration. The actual instrument ranges and loop accuracies are itemized below.

INSTRUMENT	RANGE	TEST RANGE	ALLOWABLE RANGE	ACCURACY
1E11-FI-R603A&B	0-25000 gpm	≈ 7700 gpm	0-23100 gpm	± 1.66%
2E11-FI-R603A&B	0-25000 gpm	≈ 7850 gpm	0-23550 gpm	± 1.22%

COMPONENT/ ACCURACY	COMPONENT/ ACCURACY	COMPONENT/ ACCURACY	LOOP ACCURACY PER ISTB 1.3
1E11-FT-N015A,B 0.5 %	1E11-K600A,B 0.5 %	1E11-FI-R603A,B 1.5 %	1.66 %
2E11-FT-N015A,B 0.5 %	2E11-K600A,B 0.5 %	2E11-FI-R603A,B 1 %	1.22 %

1(2)E11-FI-R603A(B) exceed the Code allowable full scale range limit of three times the reference value. The indicator range includes consideration for LPCI flow rate (17,000 gpm for two pumps), whereas the IST pump flow rate is 7,700 gpm for Unit 1 and 7,850 for Unit 2. The Code maximum allowable variance in measured flow rate would be 462 gpm (i.e. .02 x 23,100) for Unit 1 and 471 gpm (i.e. .02 x 23,550) for Unit 2. Whereas the actual maximum variance in measured flow is 425 gpm (i.e. .017 x 25,000) for Unit 1 and 325 gpm (i.e. .013 x 25,000) for Unit 2. Therefore, the actual accuracy of the installed flow indicators is greater than allowed by the Code, thus the range of the indicator exceeding the Code limit of three times the reference value is of no consequence.

ALTERNATE TESTING: None, use installed instrumentation.

Even though 1(2)E11-FI-R603A&B exceed the Code allowable range limit of three times the reference value, the overall loop accuracy is greater than required by the Code. Therefore, the measured parameter is more accurately displayed than the Code requires.

PUMP RELIEF REQUEST

RR-P-4

SYSTEM: Residual Heat Removal Service Water (1E11 & 2E11)
Plant Service Water (1P41 & 2P41)

PUMPS: 1E11-C001A,B,C,D (Vertical Line Shaft Pumps)
2E11-C001A,B,C,D (Vertical Line Shaft Pumps)
1P41-C001A,B,C,D (Vertical Line Shaft Pumps)
2P41-C001A,B,C,D (Vertical Line Shaft Pumps)

TEST REQUIREMENT: ISTB 4.6.4(b) requires that vibration measurements on vertical line shaft pumps be taken on the upper motor-bearing housing in three orthogonal directions, one of which is in the axial direction.

BASIS FOR RELIEF: The Code required vibration measurements on the upper motor-bearing housing on these vertical line shaft pumps are impractical because of the following reasons.

1. Plant design did not include permanent scaffolding or ladders which provide access to the top of the motors for the subject pumps.

2. Physical layout of the pumps and interference with adjacent components does not allow for the installation of temporary scaffolding or ladders which are adequately safe for routine use.

3. There is a relatively thin cover plate bolted to the top-center of each motor which prevents measurements in line with the motor bearing. Measurement on the edge of the motor housing would be influenced by eccentricity and may not be representative of actual axial vibration.

4. Special tools (extension rod) for placing the vibration transducers are not practical because placement would not be sufficiently accurate for trending purposes.

5. Research within the industry has indicated that vibration monitoring of vertical line shaft pumps has been of limited benefit for detecting mechanical degradation due to problems inherent with pump design. The OM Code imposes more stringent hydraulic acceptance criteria on these pumps than for centrifugal or positive displacement pumps. These more stringent hydraulic acceptance criteria place more emphasis on detection of degradation through hydraulic test data than through mechanical test data.

ALTERNATE TESTING: Vibration measurements will be taken in three orthogonal directions, one of which is in the axial direction in the area of the pump to motor mounting flange. This is the closest accessible location to a pump bearing housing and this location is easily accessible for test personnel which should ensure repeatable vibration data and should provide readings which are at least as representative of pump mechanical condition as those required by the Code.

Therefore, application of the OM Code hydraulic testing criteria along with radial and axial vibration monitoring in the area of the pump to motor mounting flange should provide adequate data for assessing the condition of the subject pumps and for monitoring degradation.

PUMP RELIEF REQUEST

RR-P-5

SYSTEM: Core Spray (1E21 & 2E21)

PUMPS: 1E21-C001A&B (Centrifugal Pumps)
2E21-C001A&B (Vertical Line Shaft Pumps)

TEST REQUIREMENT: Table ISTB 4.6.1-1 requires a total instrument loop accuracy for pressure indicators of ± 2% of full scale.

BASIS FOR RELIEF: Pressure indicators 1(2)E21-PI-R600A(B) exceed the maximum code allowable total loop accuracy of ± 2% full scale. The actual instrument ranges and loop accuracies are itemized below.

INSTRUMENT	RANGE	TEST RANGE	ALLOWABLE RANGE	ACCURACY
1E21-PI-R600A&B	0-500 psig	≈ 290 psig	0-870 psig	± 2.06%
2E21-PI-R600A&B	0-500 psig	≈ 308 psig	0-924 psig	± 2.06%

COMPONENT/ ACCURACY	COMPONENT/ ACCURACY	COMPONENT/ ACCURACY	LOOP ACCURACY PER ISTB 1.3
1E21-PT-N001A&B 0.5 %	1E21-PI-R600A&B 2 %	NA NA	2.06 %
2E21-PT-N001A&B 0.5 %	2E21-PI-R600A&B 2 %	NA NA	2.06 %

The indicators used have full scale ranges less than that allowed by the Code. The maximum code allowable variance in measurement is 17 psig (.02 x 870) for unit 1 and 18 psig for unit 2 (.02 x 924). By using an indicator with a range less than allowed, the actual maximum variance is 11 psig (.021 x 500) which is more accurate than required by the Code. Therefore, the actual accuracy of the instruments is within the code allowable.

ALTERNATE TESTING: None, the installed instruments are more accurate than required by the Code for the range of application.

PUMP RELIEF REQUEST

RR-P-6

SYSTEM: High Pressure Coolant Injection (1E41 & 2E41)

PUMP(S): 1(2)E41-C001 (Centrifugal Pumps)

CLASS: 2

TEST REQUIREMENT: ISTB 4.6.1(1) requires that the full-scale range for each analog instrument shall not be greater than three times the reference value. HPCI pump pressure indicators 1(2)E41-PI-R004 exceed this Code allowable range limit.

BASIS FOR RELIEF: 1(2)E41-PI-R004 exceed the range limit of three times the reference value. The actual instrument ranges are itemized below. The indicators are calibrated to ± 1 % full scale accuracy which results in the final variance being within the maximum allowable by the code (i.e. 1 psig versus 1.6 psig for unit 1 and 1 psig versus 1.8 psig for unit 2).

INSTRUMENT	RANGE	TEST RANGE	ALLOWABLE RANGE	ACCURACY
1E41-PI-R004	15"Hg-100 psig	≈ 27 psig	0-81 psig	± 1 %
2E41-PI-R004	15"Hg-100 psig	≈ 30 psig	0-90 psig	± 1 %

ALTERNATE TESTING: None, the installed pressure indicators provide measurements which are within the Code allowable accuracy.

PUMP RELIEF REQUEST

RR-P-7

SYSTEM: High Pressure Coolant Injection (1E41 & 2E41)

PUMP(S): 1(2)E41-C001 (Centrifugal Pumps)

CLASS: 2

TEST REQUIREMENT: Table ISTB 4.6.1-1 requires a total instrument loop accuracy for pressure indicators of ± 2% of full scale. HPCI Flow indicators 1(2)E41-FI-R612 do not meet this requirement.

BASIS FOR RELIEF: Flow indicators 1(2)E41-FI-R612 exceed the maximum code allowable total loop accuracy. The actual instrument loop accuracies are itemized below. The indicator used has a full scale range less than that allowed. Therefore, the maximum variance allowable by the Code is 255 gpm (.02 x 12750) whereas the actual maximum variance is 106 gpm (.0212 x 5000). Therefore, the actual accuracy of the instrument loop is better than that allowable by the Code.

INSTRUMENT	RANGE	TEST RANGE	ALLOWABLE RANGE	ACCURACY
1E41-FI-R612	0-5000 gpm	≈ 4250 gpm	0-12750 gpm	± 2.12 %
2E41-FI-R612	0-5000 gpm	≈ 4250 gpm	0-12750 gpm	± 2.12 %

COMPONENT/ ACCURACY	COMPONENT/ ACCURACY	COMPONENT/ ACCURACY	LOOP ACCURACY PER ISTB 1.3
1E41-FT-N008 0.5 %	1E41-K601 0.5 %	1E41-FI-R612 2 %	2.12 %
2E41-FT-N008 0.5 %	2E41-K601 0.5 %	2E41-FI-R612 2 %	2.12 %

ALTERNATE TESTING: None, the installed flow indicators provide measurements which are within the Code allowable accuracy.

PUMP RELIEF REQUEST

RR-P-8

SYSTEM: Standby Plant Service Water (2P41)

PUMP: 2P41-C002 (Vertical Line Shaft Pump)

TEST REQUIREMENT: ISTB 4.6.4(b) requires that vibration measurements on vertical line shaft pumps be taken on the upper motor-bearing housing in three orthogonal directions, one of which is in the axial direction.

BASIS FOR RELIEF: The Code required vibration measurements on the upper motor-bearing housing on this vertical line shaft pump are impractical because of the following reasons.

1. The motor has a cooling fan mounted at the top which is attached to the rotating shaft. The fan is protected by a relatively thin cover plate which prevents access to the motor housing for vibration measurements. Removing the cover does not provide for transducer placement since the rotating fan would still be in the way.

2. Research within the industry has indicated that vibration monitoring of vertical line shaft pumps has been of limited benefit for detecting mechanical degradation due to problems inherent with pump design. The OM Code imposes more stringent hydraulic acceptance criteria on these pumps than for centrifugal or positive displacement pumps. These more stringent hydraulic acceptance criteria place more emphasis on detection of degradation through hydraulic test data than through mechanical test data.

ALTERNATE TESTING: Vibration measurements will be taken in three orthogonal directions, one of which is in the axial direction in the area of the pump to motor mounting flange. This is the closest accessible location to a pump bearing housing and this location is easily accessible for test personnel which should ensure repeatable vibration data and should provide readings which are at least as representative of pump mechanical condition as those required by the Code.

Therefore, application of the OM Code hydraulic testing criteria along with radial and axial vibration monitoring in the area of the pump to motor mounting flange should provide adequate data for assessing the condition of the subject pumps and for monitoring degradation.

PUMP RELIEF REQUEST

RR-P-9

SYSTEM: All system pumps included in IST Program

PUMPS: All included in IST Program

CLASS: 2 and 3

TEST REQUIREMENT: Table ISTB 5.2-2a requires the vibration measurements (V) be compared to a multiple of the initial reference value (Vr) to determine in the pump is acceptable or is in the ALERT Range (2.5Vr) or ACTION Range (6Vr).

BASIS FOR RELIEF: Small absolute changes in vibration for a smooth running pump (i.e. a reference value ≤.075 in./sec or 2 mils) would potentially result in ALERT and Required ACTION Ranges being declared for exceeding the 2.5Vr or 6Vr limits even though the pump is still operating satisfactorily. Pumps with very small reference values may experience some degradation and yet still be operating acceptably. Therefore, it is unwarranted to place such pumps in the ALERT or ACTION Range based on this very small increase in measured vibration magnitude.

ALTERNATE TESTING: In lieu of the requirements of TABLE ISTB 5.2-2a, ranges for vibration acceptance criteria for pumps with reference values ≤.075 in/sec or 2 mils (smooth running pumps) will be as outlined below.

The ALERT Range for smooth running pumps will be > 0.19 in/sec to 0.45 in./sec. or 6 mils to 14 mils, and the Required ACTION Range starts at any value above 0.45 in./sec or 14 mils.

PUMP RELIEF REQUEST

RR-P-10

SYSTEM: HPCI (1E41 and 2E41)

PUMPS: 1E41-C001
2E41-C001

CLASS: 2

TEST REQUIREMENT: Table ISTB 5.2-2 establishes the vibration alert range for centrifugal pumps that operate at ≥ 600 rpm at > 2.5Vr to 6Vr or >0.325 in./sec.

BASIS FOR RELIEF: The HPCI pump design resulted in a structural casing resonance at very near the recommended running speed. This results in a peak vibration value on the main pump inboard bearing housing in the vertical direction that routinely exceeds the 0.325 in./sec maximum value thus placing the HPCI pump in the Alert Range.

Review of spectral data for the pumps results in the largest peak vibration values at 1X (usually unbalance), 2X (usually misalignment), 5X (vane pass) and 7X (vane pass). Of these peaks, the highest occurs at 1X. This 1X peak also fluctuates as the speed of the HPCI pump is varied.

The HPCI pump IST is performed by setting the flow and the turbine speed at the reference values and then monitoring the differential pressure. The turbine speed and flow rate are set as close as can be read on the instrumentation, however, the HPCI flow controller varies the turbine speed within some range to maintain the selected flow rate. Thus some change in speed does occur.

The nominal turbine speed for the HPCI pump IST is 3,800 rpm (63.3 Hz). A dead blow hammer test of the HPCI pump casing resulted in a natural frequency of 65.9 Hz. During a trial test, the vibration magnitude of the inboard bearing doubled (0.11 in./sec to 0.22 in./sec) when the turbine speed was increased from 62.94 Hz (3,776 rpm) to 64.8 Hz (3,880 rpm). While this amplitude is not sufficient to place the pump in the Alert Range, when added to that of some nominal unbalance (1X) or amplitudes occurring at frequencies from other sources, the vibration data sometimes exceeds the 0.325 in./sec allowable by the Code resulting in an increase in test frequency for the pump. This phenomenon occurs randomly which indicates that it is not indicative of mechanical degradation.

Spectral vibration analysis by the maintenance engineering department indicates that there are no mechanical concerns with HPCI pump operation. Shaft vibration data obtained from proximity probes revealed very low amplitudes at the 1X operating speed with vibration being 0.4 mils. This shaft data did not detect any natural frequencies associated with the shaft which indicates that the natural frequencies identified for the bearing housing are structural related with no participation from the shaft.

Based on testing data taken to date, and evaluation by the maintenance engineering department, there is no apparent trend for mechanical degradation and no apparent justification for increasing the HPCI pump test frequency when the vibration level randomly exceeds the 0.325 in./sec Code allowable value.

ALTERNATE TESTING:

The Alert Range for the HPCI Pump will be set at 2.5Vr to 6Vr or 0.4 in./sec to 0.7 in//sec. In addition to the normal HPCI pump IST, the maintenance engineering department will routinely perform spectral analysis of the vibration data to ensure that no trend to mechanical degradation goes undetected. This nominal increase in the lower limit for the Alert Range should not affect the overall operability of the HPCI pump and the maximum allowable vibration limits for the Required Action Range are being maintained.

PUMP RELIEF REQUEST

RR-P-11

SYSTEM: All included in IST Program

PUMPS: All included in IST Program

CLASS: 2 and 3

TEST REQUIREMENT: ISTB 6.1 - If deviations fall within the required action range of Table ISTB 5.2-2, the pump shall be declared inoperable until the cause of the deviation has been determined and the condition corrected.

BASIS FOR RELIEF: The ASME Section XI Code, subsection IWP-3230(c) stated that;

> "Corrective action shall be either replacement or repair per IWP-3111, or shall be an analysis to demonstrate that the condition does not impair pump operability and that the pump will still fulfill its function. A new set of reference values shall be established after such analysis."

The OMc-1994 Addenda (ISTB 6.2.2) and the OM 1995 Edition (ISTB 6.2.2) both state that;

> "If the measured test parameter values fall within the required action range of Table 5.2.1-1, Table 5.2.1-2, Table 5.2.2-1, or Table 5.2.3-1, as applicable, the pump shall be declared inoperable until either the cause of the deviation has been determined and the condition is corrected, or an analysis of the pump is performed and new reference values are established in accordance with ISTB 4.6."

The Code applicable for the second interval IST Program and the latest issued Code both provide for analysis of pump test data in lieu of repair or replacement of the pump if the test parameters fall within the required action range. The OM Code-1990 Edition did not include such provisions. Communications with members of the OM Code Committee indicate that this was an oversight and that it was never intended to delete the ability to analyze the test data and determine if the pump is still capable of performing its intended safety function.

ALTERNATE TESTING: Should pump test parameters fall within the required action range of Table ISTB 5.2-2 (OM Code 1990 Edition), then the OM Code 1995 Edition, subsection ISTB 6.2.2 will be utilized. Since subsection ISTB 4.6 in the 1995 Code Edition references ISTB 6.2.2, subsection ISTB 4.6 form the OM Code 1995 Edition will also be applied.

8.0 INSERVICE TESTING OF VALVES

8.1 GENERAL

This IST Program was developed to comply with the testing provisions of 10 CFR 50.55a(f) which delineate the testing requirements for ASME Class 1, 2, and 3 valves. The Code of record applicable to meet these provisions is the ASME OM Code 1990 Edition with the exception of Appendix I. Appendix I of the ASME OM Code 1995 Edition was utilized instead of the 1990 version. The supplemental guidance of NRC Generic Letter 89-04 and Supplement 1 (NUREG-1482) have been applied to the extent practicable. In cases where specific Code requirements cannot be met, relief has been requested from these requirements.

Valves in the program are listed by MPL Number in Tables 10 and 11 for Units 1 and 2, respectively, and will be tested in accordance with the Code unless otherwise specified in this program.

8.2 SCOPE

Safety-related ASME Class 1, 2, and 3 valves covered by the Regulatory Position of Regulatory Guide 1.26 are included within the scope of this program and are tested using the provisions of the ASME OM Code. Containment isolation valves located in non-safety related systems are considered safety-related for containment purposes and are, therefore, tested under the provisions of the OM Code and 10 CFR 50, Appendix J as applicable. In cases where Code requirements are impractical or an alternate testing method is considered an improvement over OM Code requirements, a relief request has been developed. Valve relief requests are located under a separate tab.

It is recognized that 10 CFR 50 Appendix A, GDC-1, and Appendix B, Criterion XI intend that all valves necessary for safe operation of the plant be tested to demonstrate that they will perform satisfactorily in service. This testing is required to be performed at a level commensurate with the safety function of the valve, and is generally performed per the requirements of the plant Technical Specifications or other regulatory requirements.

RCIC System (1E51 and 2E51)

No credit is taken in any of the accident analyses for the RCIC system. RCIC System valves that do not perform a containment isolation function are still considered to be important and thus require a certain level of testing and have, therefore, been included in this program. This testing will be performed in a manner similar to the OM Code testing and should adequately detect degradation. The testing of these valves is included in this program only to provide a readily accessible, documented method of testing. Subsequently, relief requests are not considered to be required.

Diesel Generator Fuel Oil Transfer System (1R43 and 2R43)

The Diesel Generator Fuel Oil Transfer and Air Start System valves are considered to be essential valves requiring a high level of testing and have, therefore, been included in this program. However, these valves are not ASME Class components and are not included in the scope as defined in Regulatory Guide 1.26. Testing of these valves will be performed in a manner similar to that found in the OM Code, which should adequately detect degradation in these particular valves. While similar to OM Code testing requirements, the testing of these valves is included in this program only to provide a readily accessible, documented method of testing. Subsequently, relief requests are not considered to be required.

Spent Fuel Pool Cooling (1G51 and 2G51)

The Spent Fuel Pool Cooling System valves have not been included in this Program because they are not considered to be safety-related. Credit is taken in the FSAR for Plant Service Water as the safety-grade makeup source for the spent fuel pool, and the RHR system is utilized as the backup cooling source.

Jockey Pump System (1E21 and 2E21)

The Core Spray Jockey Pump System valves have not been included in this Program because they are not considered to be safety-related. Safety related instrumentation provides an alarm in the main control room if water inventory is depleted in the RHR and core spray system piping. Therefore, testing of the jockey pump system valves is not warranted.

Control Rod Drive System (CRD 1C11 and 2C11)

As described in Position 7 of Generic Letter 89-04, certain individual CRD Valves will be tested to the extent practical. All subject valves except the scram discharge volume vent and drain valves will be tested using the technical specification frequency. Specific frequencies for each valve and the bases for the frequency are given in each referenced relief request.

The scram discharge volume vent and drain valves do not operate independently of one another. One switch operates all six valves and the valves are required to operate in a particular sequence to provide closure of all valves within a Technical Specification allowable time. Therefore individual stroke time testing of these valves is not practical. As an alternative test, these valves will be exercised quarterly but not timed. The total valve sequence response time will be verified to be within Technical Specification requirements each refueling outage. See Relief Request RR-V-3.

The scram insert and withdraw valves are solenoid valves that full-stroke rapidly. Measuring the full-stroke required by the code is impractical for these valves; therefore, verification that the associated control rod meets the required scram insertion time will be used as the alternate method to detect degradation of these valves.

The scram discharge volume check valves are required to open to fulfill their safety function. Required flow is achieved through these valves during the technical specification control rod drive insertion tests.

The charging water HCU check valves are required to open and to close to fulfill their safety function. Forward flow operability is proven during Technical Specification testing and reverse flow closure will be proven by a leakage/ pressure decay test.

The cooling water header HCU check valves and the drive water insert and withdraw valves are exercised to their safety-related position (closed) during weekly CRD exercise testing.

Nitrogen Inerting System (1T48 and 2T48)

The only portions of the 1(2)T48 system (Nitrogen Inerting System) which are considered to be within the scope of inservice testing are those associated with primary containment and vacuum relief. The HNP-1 primary containment is inerted during normal operation to minimize the potential of a hydrogen combustion for a LOCA, where hydrogen is produced due to the zirconium and steam reaction. However,

this function is considered to be outside the scope of consideration for inservice testing.

An evaluation is included in this IST Plan for certain components which do not provide a containment isolation or vacuum relief function due to the nature of the particular component. These evaluations are included for convenience and information.

Architect Engineer (SCS) review of the boundaries for ASME Section XI scope resulted in inclusion of components only associated with containment isolation. Therefore, since components associated with nitrogen purge, venting, and nitrogen makeup were not included in the ASME XI ISI boundaries, containment isolation and vacuum relief are considered to be the only safety related functions for IST.

8.3 PRESSURE ISOLATION VALVES (PIV)

Pressure isolation valves (PIVs) are defined as two normally closed valves in series that isolate the Reactor Coolant System (RCS) from the attached low pressure system. Event V pressure isolation valves (Wash 1400) are defined by Generic Letter 89-04 as "two check valves in series at a low pressure/RCS interface whose failure may result in a LOCA that bypasses containment." At Plant Hatch, there are no normal operating conditions in which two check valves function as the RCS/low pressure interface, therefore, Event V PIVs are not applicable.

Pressure isolation valves are not listed in the Technical Specifications, therefore, they were selected using the above definition. Each pressure isolation valve is designated "PIV" in the "Leakage" column. Some valves function as both pressure and containment isolation valves, and are designated as "PIV/CIV."

Instrumentation to monitor the leakage downstream of each pressure isolation valve during power operation was not a design requirement of Plant Hatch. Also, while it is practical to test several of the valves individually, the ability to isolate and test each valve separately was not a design consideration. Subsequently, all valves cannot be practically tested on an individual basis. A pressure test will be performed each refueling outage as follows.

a. A valve that serves only as a pressure isolation valve is tested at operating differential pressure or at a reduced pressure as allowed by ISTC 4.3.3(b)(4), using water as a test medium. The leakage observed during a reduced pressure test is then adjusted to a "function maximum pressure differential value" as required by ISTC 4.3.3(b)(4). The allowable leakage at operating differential pressure for RCS/low pressure piping interface valves is 0.5 gpm (1892 cc/min) per inch of valve size up to a maximum of 5 gpm. The allowable leakage for the Feedwater interface valves, optionally included as PIVs, is specified by GPC for each specific valve.

b. An RCS/low pressure piping interface valve that also functions as a containment isolation valve (CIV) is Appendix J, Type C tested using CIV acceptance criteria since these criteria are more stringent. Acceptable leakage for these valve is always less than the PIV criterion of 1892 cc/min per inch of valve size, even when the adjustment to the "function maximum pressure differential value" is performed. A Feedwater/low pressure piping interface valve that also functions as a containment isolation valve (CIV) is Appendix J, Type C tested using CIV acceptance criteria.

8.4 CONTAINMENT ISOLATION VALVES (CIV)

All containment isolation valves that receive a Type C, Appendix J test are included in this Program and are identified as "CIV" under Leakage in Tables 10 and 11. Any changes in the Appendix J, Type C testing scope will be reflected in this document with appropriate changes to the tables.

Georgia Power Company conforms to the requirements of ISTC 4.3.3(e) to the extent practical by assigning a specific leakage limit to each valve or penetration assembly. Limits are based on the type and size of each valve, the number of valves within the test boundary, and historical leakage data.

As a rule, test configurations have the least number of boundary valves practical to perform the Type C test; however, the piping arrangement at Plant Hatch generally requires the pressurization of a combination of CIVs and block valves simultaneously. In these cases a leakage limit is applied to each penetration test configuration. During the testing of the penetration, if the measured leakage exceeds the limit for the penetration, causes are investigated and repairs made to specific valves as necessary. The intent of OM Code to detect degradation (and repair if necessary) of each valve due to service related conditions is therefore met.

8.5 LEAK TIGHT VALVES (LTV)

These excess flow check valves have been categorized by Georgia Power Company as needing testing to ensure adequate closure to prevent gross amounts of leakage. They do not have a specific leakage rate assigned to them and as a result are not required to be Category A or AC valves; however, per 1987 commitment with the NRC the excess flow check valves are categorized as AC.

8.6 FAIL-SAFE VALVES

Unless otherwise specified in the program tables, additional fail-safe testing will not be performed. Stroking the valve full cycle during normal testing causes loss of power to the actuator as required by ISTC 4.2.6. Therefore, additional testing to provide the fail-safe capability is not required.

8.7 PASSIVE POWER OPERATED VALVES

A passive power operated valve does not perform a mechanical motion during the course of accomplishing a system safety function. These valves are identified as such in the "Function Description" in Tables 10 and 11. Per Table ISTC 3.6-1, passive Category B valves do not require any exercise testing and verification that actual valve position is indicated by remote position indication lights every two years is the only testing required.

VALVE NOTES

1. Exercise frequency is per Technical Specifications and is described in Refueling Outage Justification ROJ-V-7.

2. Typical of 137 Control Rod Drive mechanisms.

3. The CRD cooling water check valves are exercised to their safety-related position (closed) during weekly CRD exercise tests (notch in/notch out). Insertion of the CRD verifies that the required pressure boundary is intact and the check valve is closed.

4. This containment isolation valve is not leak rate tested due to the line it is on terminating below the water level of the torus. No leakage test is necessary to satisfy Appendix J requirements as the torus is postulated to always remain water filled.

5. Relief valve testing is performed in accordance with the OM Code-1995 Edition, Appendix I.

6. Closure of this pump discharge check valve is proven during pump surveillance testing. There are two pumps on each train; therefore, when one pump is being tested the other is not operating. For the pump being tested to pass the required hydraulic parameters, the discharge check valve on the non-operating pump must close to prevent diverted flow. If the valve remained open, the pump test would be unsuccessful.

7. This check valve is exercised to the position required to perform its safety function in the open direction during quarterly surveillance testing or during normal operation of the associated pump.

8. This is a passive valve which does not require quarterly exercise testing. At least once every two years, the actual valve position is confirmed to agree with the remote position indicating lights.

9. Full-stroke exercising of this check valve cannot be proven during normal surveillance testing; therefore, valves will be disassembled in accordance with G.L. 89-04, Position 2. Valve will be full or partial exercised with flow after reassembly where practical.

10. Valve is equipped with a counter weighted lever arm which is used to partial exercise the valve disc after re-assembly.

11. The hand wheel on this stop check valve will be exercised once per quarter to verify closure of the valve. The open position is not safety-related.

12. This check valve is verified to be in the closed position at least every 31 days by the technical specification requirement to confirm that the pump discharge piping is completely filled.

13. There are no test connections provided to facilitate any measurements during pump testing. Therefore, partial flow exercising after re-assembly will be confirmed by indirect means such as monitoring pipe wall temperature changes, using acoustic monitoring equipment or observing flow induced vibration and noise.

Valve Notes (cont)

14. Non-reclosing pressure relief devices (ruputre disks) are visually inspected and periodically replaced in accordance with the OM Code-1995 Edition, Appendix I.

15. Forward flow operability is proven quarterly during pump surveillance testing. Closure is proven each refueling outage by leakrate testing.

16. This component is not within the required scope of ASME OM Code testing. This component has been included in the IST Program to provide a readily accessible, documented method of testing.

17. This stop check valve is locked open during normal operation and is not provided with any remote indicating lights. Therefore due to the possibility of a mispositioned valve, it will not be exercised quarterly with the manual handwheel. Closure will be proven as defined in applicable Refueling Outage Justification.

18. Valve closure is confirmed during quarterly HPCI pump surveillance testing by monitoring the barometric condenser level.

19. This valve will be disassembled and inspected on a frequency determined to provide adequate assurance that the valve is operable.

20. These RCIC valves will be tested in a comparable manner to the test required by ROJ-V-25 for comparable function HPCI valves.

21. These valves are air operated valves without indicating lights or control switches. Measurement of stroke times will be performed by observation of the stem movement when the RCIC room cooler is placed into service.

22. Forward flow operability of this check valve will be verified quarterly during pump testing by observation of free flow through the sight glass located downstream of the check valve. The closed position is not safety-related.

23. Each diesel fuel oil transfer pump is tested quarterly using an ultrasonic flow instrument to monitor flow. The flow rate required for the valve to fulfill its safety-related open function will be verified during quarterly pump testing. The discharge piping from each Diesel Fuel Oil Transfer Pump is supplied with two check valves in series. There are two pumps located in each 40,000 gallon storage tank which discharge into a single line to the associated Day Tank. Satisfactory performance of a fuel oil transfer pump test also proves closure of at least one of the in-series check valves on the associated idle transfer pump.

24. Stroke times cannot be measured for these valves because there are no position indicators and visual observation is not possible due to the valve design. These valves will be tested as part of the Diesel Generator Air Start Test. Acceptable diesel generator start during monthly manual start tests will be used to verify valve operability. Stroke time will be verified to be acceptable semi-annually and each refueling outage by system timing during diesel generator auto start testing.

25. The air receiver inlet check valves are tested quarterly for reverse flow closure using a gross leakage test and each refueling outage using a pressure decay test.

Valve Notes (cont)

26. This testable check valve is exercised quarterly to the open position using the test switch. Each refueling outage the valve is visually inspected and the force required to open the disk is measured to ensure operability and monitor degradation.

27. This is a passive containment isolation valve, Category AP. This valve is never opened except for quarterly exercising of the associated torus to drywell vacuum breaker (1(2)T48-F323s). Therefore quarterly exercising and stroke timing of these solenoid valves is not required.

28. At least one of these valves (1P52-F261, 1P52-F262) will be leak rate tested each refueling outage to ensure that its leakage rate is ≤ 0.4 SCFH.

29. At least one-third (1/3) of these valves (1P52-F263, 1P52-F264, 1P52-F265, 1P52-F266 and 1P52-F267) will be tested each refueling outage to prove that the valves close and maintain their associated accumulator air pressure for a minimum of ten (10) minutes.

30. These valves are not within the scope of valves required to be tested by the ASME OM Code. These valves are included in the IST Program to provide a method of tracking the testing commitment. Valves were included in the IST Program per HNEL commitment to NRC Generic Letter 88-14. (Letter Reference HL-1187)

31. At least one of these valves (2P52-F346, 2P52-F349) will be leak rate tested each refueling outage to ensure that its leak rate is ≤ 0.4 SCFH.

32. At least one-third (1/3) of these valves (2P52-F416, 2P52-F419, 2P52-F458, 2P52-F461, 2P52-F681 and 2P52-F971) will be tested each refueling outage to prove that the valves close and maintain their associated accumulator air pressure for a minimum of ten (10) minutes.

33. Vacuum breaker testing is performed in accordance with the ASME OM Code, 1995 Edition, Appendix I.

34. Since this relief valve is not within the required scope of the IST Program, the ASME OM Code-1995 Edition, Appendix I, will be used to the extent practical for guidance.

35. Reverse flow closure is confirmed by monitoring the SBDG service water pump (2P41-C002) discharge pressure (1P41-PI-R613 or 2P41-PI-R613) when the pump is idle. The discharge piping is provided with aa keep-fill line and if the check valve is not closed the discharge pressure will decrease to zero.

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1B21-F010A	1	AC	18" CV	A	H-16062 E-3	FW Inbrd CIV	O	O/C	DNO/RO	CIV	NA	ROJ-V-1
1B21-F010B	1	AC	18" CV	A	H-16062 D-3	FW Inbrd CIV	O	O/C	DNO/RO	CIV	NA	ROJ-V-1
1B21-F013A	1	C	6" RV	A	H-16062 C-6	Main Steam Safety/Relief	C	O/C	Note 5	NA	No	NA
1B21-F013B	1	BC	6" RV	A	H-16062 C-6	Main Steam ADS	C	O/C	Note 5	NA	Yes	ROJ-V-2
1B21-F013C	1	C	6" RV	A	H-16062 F-6	Main Steam Safety/Relief	C	O/C	Note 5	NA	No	NA
1B21-F013D	1	BC	6" RV	A	H-16062 F-6	Main Steam ADS	C	O/C	Note 5	NA	Yes	ROJ-V-2
1B21-F013E	1	BC	6" RV	A	H-16062 F-6	Main Steam ADS	C	O/C	Note 5	NA	Yes	ROJ-V-2
1B21-F013F	1	BC	6" RV	A	H-16062 F-6	Main Steam ADS	C	O/C	Note 5	NA	Yes	ROJ-V-2
1B21-F013G	1	C	6" RV	A	H-16062 F-6	Main Steam Safety/Relief	C	O/C	Note 5	NA	No	NA
1B21-F013H	1	C	6" RV	A	H-16062 G-6	Main Steam Safety/Relief	C	O/C	Note 5	NA	No	NA
1B21-F013J	1	BC	6" RV	A	H-16062 G-6	Main Steam ADS	C	O/C	Note 5	NA	Yes	ROJ-V-2
1B21-F013K	1	BC	6" RV	A	H-16062 F-6	Main Steam ADS	C	O/C	Note 5	NA	Yes	ROJ-V-2

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1B21-F013L	1	BC	6" RV	A	H-16062 F-6	Main Steam ADS	C	O/C	Note 5	NA	Yes	ROJ-V-2
1B21-F015A	1	AC	1" EFCV	A	H-16062 D-8	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F015B	1	AC	1" EFCV	A	H-16062 C-8	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F015C	1	AC	1" EFCV	A	H-16062 D-8	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F015D	1	AC	1" EFCV	A	H-16062 C-8	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F015E	1	AC	1" EFCV	A	H-16062 D-8	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F015F	1	AC	1" EFCV	A	H-16062 C-8	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F015G	1	AC	1" EFCV	A	H-16062 D-8	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F015H	1	AC	1" EFCV	A	H-16062 C-8	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F015J	1	AC	1" EFCV	A	H-16062 D-8	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F015K	1	AC	1" EFCV	A	H-16062 C-8	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F015L	1	AC	1" EFCV	A	H-16062 D-8	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1B21-F015M	1	AC	1" EFCV	A	H-16062 C-8	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F015N	1	AC	1" EFCV	A	H-16062 D-8	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F015P	1	AC	1" EFCV	A	H-16062 C-8	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F015R	1	AC	1" EFCV	A	H-16062 D-8	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F015S	1	AC	1" EFCV	A	H-16062 C-8	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F016	1	A	3" MO GV	A	H-16062 E-8	Main Steam Line Drn Inbrd CIV	C	C	Qtr	CIV	Yes	RR-V-1
1B21-F019	1	A	3" MO GV	A	H-16062 E-9	Main Steam Line Drn Outbrd CIV	C	C	Qtr	CIV	Yes	NA
1B21-F022A	1	A	24" AO GLV	A	H-16062 C-7	MSIV	O	C	CS	CIV	Yes	RR-V-2 CSJ-V-1
1B21-F022B	1	A	24" AO GLV	A	H-16062 E-7	MSIV	O	C	CS	CIV	Yes	RR-V-2 CSJ-V-1
1B21-F022C	1	A	24" AO GLV	A	H-16062 F-7	MSIV	O	C	CS	CIV	Yes	RR-V-2 CSJ-V-1
1B21-F022D	1	A	24" AO GLV	A	H-16062 G-7	MSIV	O	C	CS	CIV	Yes	RR-V-2 CSJ-V-1
1B21-F028A	1	A	24" AO GLV	A	H-16062 C-9	MSIV	O	C	CS	CIV	Yes	RR-V-2 CSJ-V-1

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1B21-F028B	1	A	24" AO GLV	A	H-16062 E-9	MSIV	O	C	CS	CIV	Yes	RR-V-2 CSJ-V-1
1B21-F028C	1	A	24" AO GLV	A	H-16062 F-9	MSIV	O	C	CS	CIV	Yes	RR-V-2 CSJ-V-1
1B21-F028D	1	A	24" AO GLV	A	H-16062 G-9	MSIV	O	C	CS	CIV	Yes	RR-V-2 CSJ-V-1
1B21-F032A	1	AC	18" CV	A	H-16062 F-2	FW Outbrd CIV	O	C	RO	CIV	NA	ROJ-V-4
1B21-F032B	1	AC	18" CV	A	H-16062 F-1	FW Outbrd CIV	O	C	RO	CIV	NA	ROJ-V-4
1B21-F036A	2	C	1" CV	A	H-16299 H-16062 D-3	MSRV Accum Air Supply CV	O/C	C	RO	NA	NA	ROJ-V-5
1B21-F036B	2	C	1" CV	A	H-16299 H-16062 D-3	MSRV Accum Air Supply CV	O/C	C	RO	NA	NA	ROJ-V-5
1B21-F036C	2	C	1" CV	A	H-16299 H-16062 D-3	MSRV Accum Air Supply CV	O/C	C	RO	NA	NA	ROJ-V-5
1B21-F036D	2	C	1" CV	A	H-16299 H-16062 D-3	MSRV Accum Air Supply CV	O/C	C	RO	NA	NA	ROJ-V-5
1B21-F036E	2	C	1" CV	A	H-16299 H-16062 D-3	MSRV Accum Air Supply CV	O/C	C	RO	NA	NA	ROJ-V-5

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1B21-F036F	2	C	1" CV	A	H-16299 H-16062 E-4	MSRV Accum Air Supply CV	O/C	C	RO	NA	NA	ROJ-V-5
1B21-F036G	2	C	1" CV	A	H-16299 H-16062 E-4	MSRV Accum Air Supply CV	O/C	C	RO	NA	NA	ROJ-V-5
1B21-F036H	2	C	1" CV	A	H-16299 H-16062 E-4	MSRV Accum Air Supply CV	O/C	C	RO	NA	NA	ROJ-V-5
1B21-F036J	2	C	1" CV	A	H-16299 H-16062 E-4	MSRV Accum Air Supply CV	O/C	C	RO	NA	NA	ROJ-V-5
1B21-F036K	2	C	1" CV	A	H-16299 H-16062 D-3	MSRV Accum Air Supply CV	O/C	C	RO	NA	NA	ROJ-V-5
1B21-F036L	2	C	1" CV	A	H-16299 H-16062 E-4	MSRV Accum Air Supply CV	O/C	C	RO	NA	NA	ROJ-V-5
1B21-F037A	3	C	6" VB	A	H-16062 H-6	VB MSRV Disch	C	O/C	RO	NA	NA	Note 33
1B21-F037B	3	C	6" VB	A	H-16062 H-6	VB MSRV Disch	C	O/C	RO	NA	NA	Note 33
1B21-F037C	3	C	6" VB	A	H-16062 H-6	VB MSRV Disch	C	O/C	RO	NA	NA	Note 33
1B21-F037D	3	C	6" VB	A	H-16062 H-6	VB MSRV Disch	C	O/C	RO	NA	NA	Note 33

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1B21-F037E	3	C	6" VB	A	H-16062 H-6	VB MSRV Disch	C	O/C	RO	NA	NA	Note 33
1B21-F037F	3	C	6" VB	A	H-16062 H-6	VB MSRV Disch	C	O/C	RO	NA	NA	Note 33
1B21-F037G	3	C	6" VB	A	H-16062 H-6	VB MSRV Disch	C	O/C	RO	NA	NA	Note 33
1B21-F037H	3	C	6" VB	A	H-16062 H-6	VB MSRV Disch	C	O/C	RO	NA	NA	Note 33
1B21-F037J	3	C	6" VB	A	H-16062 H-6	VB MSRV Disch	C	O/C	RO	NA	NA	Note 33
1B21-F037K	3	C	6" VB	A	H-16062 H-6	VB MSRV Disch	C	O/C	RO	NA	NA	Note 33
1B21-F037L	3	C	6" VB	A	H-16062 H-6	VB MSRV Disch	C	O/C	RO	NA	NA	Note 33
1B21-F041	1	AC	1" EFCV	A	H-16063 B-5	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F043A	1	AC	1" EFCV	A	H-16063 C-5	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F043B	1	AC	1" EFCV	A	H-16063 C-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F045A	1	AC	1" EFCV	A	H-16063 C-5	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F045B	1	AC	1" EFCV	A	H-16063 C-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1B21-F047A	1	AC	1" EFCV	A	H-16063 F-5	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F047B	1	AC	1" EFCV	A	H-16063 F-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F049A	1	AC	1" EFCV	A	H-16063 F-5	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F049B	1	AC	1" EFCV	A	H-16063 F-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F051A	1	AC	1" EFCV	A	H-16063 H-16145 H-5	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F051B	1	AC	1" EFCV	A	H-16063 H-16145 H-5	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F051C	1	AC	1" EFCV	A	H-16063 H-16145 H-5	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F051D	1	AC	1" EFCV	A	H-16063 H-16145 H-5	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F053A	1	AC	1" EFCV	A	H-16063 H-16145 J-5	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F053B	1	AC	1" EFCV	A	H-16063 H-16145 J-5	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1B21-F053C	1	AC	1" EFCV	A	H-16063 H-16145 J-5	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F053D	1	AC	1" EFCV	A	H-16063 H-16145 J-5	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F055	1	AC	1" EFCV	A	H-16063 J-5	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F057	1	AC	1" EFCV	A	H-16063 J-5	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F059A	1	AC	1" EFCV	A	H-16063 H-16145 H-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F059B	1	AC	1" EFCV	A	H-16063 H-16145 H-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F059C	1	AC	1" EFCV	A	H-16063 H-16145 H-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F059D	1	AC	1" EFCV	A	H-16063 H-16145 H-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F059E	1	AC	1" EFCV	A	H-16063 H-16145 H-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F059F	1	AC	1" EFCV	A	H-16063 H-16145 H-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1B21-F059G	1	AC	1" EFCV	A	H-16063 H-16145 H-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F059H	1	AC	1" EFCV	A	H-16063 H-16145 H-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F059L	1	AC	1" EFCV	A	H-16063 H-16145 H-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F059M	1	AC	1" EFCV	A	H-16063 H-16145 H-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F059N	1	AC	1" EFCV	A	H-16063 H-16145 H-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F059P	1	AC	1" EFCV	A	H-16063 H-16145 H-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F059R	1	AC	1" EFCV	A	H-16063 H-16145 H-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F059S	1	AC	1" EFCV	A	H-16063 H-16145 H-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F059T	1	AC	1" EFCV	A	H-16063 H-16145 H-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1B21-F059U	1	AC	1" EFCV	A	H-16063 H-16145 H-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F061	1	AC	1" EFCV	A	H-16063 J-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B21-F110A	3	C	10" VB	A	H-16062 H-7	VB MSRV Disch	C	O/C	RO	NA	NA	Note 33
1B21-F110C	3	C	10" VB	A	H-16062 H-7	VB MSRV Disch	C	O/C	RO	NA	NA	Note 33
1B21-F110G	3	C	10" VB	A	H-16062 H-7	VB MSRV Disch	C	O/C	RO	NA	NA	Note 33
1B21-F110H	3	C	10" VB	A	H-16062 H-7	VB MSRV Disch	C	O/C	RO	NA	NA	Note 33
1B21-F111	2	A	1" AO GV	A	H-26384 E-2	PASS Sample Vlv	C	C	Qtr	CIV	Yes	NA
1B21-F112	2	A	1" AO GV	A	H-26384 E-2	PASS Sample Vlv	C	C	Qtr	CIV	Yes	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1B31-F003A	1	AC	1" EFCV	A	H-16066 G-2	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B31-F003B	1	AC	1" EFCV	A	H-16066 G-2	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B31-F004A	1	AC	1" EFCV	A	H-16066 G-2	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B31-F004B	1	AC	1" EFCV	A	H-16066 G-2	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B31-F009A	1	AC	1" EFCV	A	H-16066 C-10	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B31-F009B	1	AC	1" EFCV	A	H-16066 E-10	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B31-F009C	1	AC	1" EFCV	A	H-16066 D-10	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B31-F009D	1	AC	1" EFCV	A	H-16066 F-10	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B31-F010A	1	AC	1" EFCV	A	H-16066 D-10	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B31-F010B	1	AC	1" EFCV	A	H-16066 E-10	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B31-F010C	1	AC	1" EFCV	A	H-16066 D-10	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B31-F010D	1	AC	1" EFCV	A	H-16066 F-10	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1B31-F011A	1	AC	1" EFCV	A	H-16066 D-10	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B31-F011B	1	AC	1" EFCV	A	H-16066 E-10	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B31-F011C	1	AC	1" EFCV	A	H-16066 E-10	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B31-F011D	1	AC	1" EFCV	A	H-16066 F-10	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B31-F012A	1	AC	1" EFCV	A	H-16066 D-10	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B31-F012B	1	AC	1" EFCV	A	H-16066 F-10	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B31-F012C	1	AC	1" EFCV	A	H-16066 E-10	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B31-F012D	1	AC	1" EFCV	A	H-16066 F-10	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B31-F013A	1	AC	3/4" CV	A	H-16066 F-3	Recir Pump Seal Wtr CIV	O	C	RO	CIV	NA	ROJ-V-6
1B31-F013B	1	AC	3/4" CV	A	H-16066 F-3	Recir Pump Seal Wtr CIV	O	C	RO	CIV	NA	ROJ-V-6
1B31-F017A	1	AC	3/4" CV	A	H-16066 F-2	Recir Pump Seal Wtr CIV	O	C	RO	CIV	NA	ROJ-V-6
1B31-F017B	1	AC	3/4" CV	A	H-16066 F-2	Recir Pump Seal Wtr CIV	O	C	RO	CIV	NA	ROJ-V-6

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1B31-F019	1	A	3/4" AO GLV	A	H-16066 D-3	Rx Sample Sys Inbrd CIV	O	C	Qtr	CIV	Yes	NA
1B31-F020	1	A	3/4" AO GLV	A	H-16066 D-1	Rx Sample Sys Outbrd CIV	O	C	Qtr	CIV	Yes	NA
1B31-F031A	1	B	28" MO GV	A	H-16066 G-7	Recirc Pump Disch Iso	O	C	CS	NA	Yes	CSJ-V-2
1B31-F031B	1	B	28" MO GV	A	H-16066 H-7	Recirc Pump Disch Iso	O	C	CS	NA	Yes	CSJ-V-2
1B31-F040A	1	AC	1" EFCV	A	H-16066 G-8	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B31-F040B	1	AC	1" EFCV	A	H-16066 H-8	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B31-F040C	1	AC	1" EFCV	A	H-16066 G-8	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1B31-F040D	1	AC	1" EFCV	A	H-16066 H-8	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1C11-F010A	2	B	1" AO GLV	A	H-16065 A-5	SDV Vent Vlv	O	O/C	Qtr/RO	NA	Yes	RR-V-3
1C11-F010B	2	B	1" AO GLV	A	H-16065 A-6	SDV Vent Vlv	O	O/C	Qtr/RO	NA	Yes	RR-V-3
1C11-F011	2	B	2" AO GLV	A	H-16065 D-8	SDV Drain Vlv	O	O/C	Qtr/RO	NA	Yes	RR-V-3
1C11-F035A	2	B	1" AO GLV	A	H-16065 A-5	SDV Vent Vlv	O	O/C	Qtr/RO	NA	Yes	RR-V-3
1C11-F035B	2	B	1" AO GLV	A	H-16065 A-6	SDV Vent Vlv	O	O/C	Qtr/RO	NA	Yes	RR-V-3
1C11-F037	2	B	2" AO GLV	A	H-16065 C-4	SDV Drain Vlv	O	O/C	Qtr/RO	NA	Yes	RR-V-3
1C11-HCU-114	2	C	3/4" CV	A	H-16064 A-6	SDV HCU CV	C	O	RO	NA	NA	ROJ-V-7 Note 1,2
1C11-HCU-115	2	C	1/2" CV	A	H-16064 C-6	Charging Water HCU CV	C	C	RO	NA	NA	ROJ-V-8 Note 2
1C11-HCU-126	1	B	1" AO GLV	A	H-16064 B-4	Scram Insert HCU Control Vlv	C	O	RO	NA	No	ROJ-V-9 Note 1,2
1C11-HCU-127	1	B	3/4" AO GLV	A	H-16064 A-4	Scram Disch HCU Control Vlv	C	O	RO	NA	NA	ROJ-V-9 Note 1,2
1C11-HCU-138	1	C	1/2" CV	A	H-16064 C-4	Cooling Water Header HCU CV	C	C	Wkly	NA	No	Notes 2,3

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1C41-F004A	2	D	1-1/2" Expl Act	A	H-16061 D-3	SLC Expl Act	C	O	ISTC 4.6	NA	NA	NA
1C41-F004B	2	D	1-1/2" Expl Act	A	H-16061 F-3	SLC Expl Act	C	O	ISTC 4.6	NA	NA	NA
1C41-F006	1	AC	1-1/2" CV	A	H-16061 E-2	SLC Outbrd CIV	C	O/C	RO	CIV	NA	ROJ-V-10
1C41-F007	1	AC	1-1/2" CV	A	H-16061 E-2	SLC Inbrd CIV	C	O/C	RO	CIV	NA	ROJ-V-10
1C41-F029A	2	C	1" RV	A	H-16061 D-6	SLC Pump Disch RV	C	O/C	Note 5	NA	NA	NA
1C41-F029B	2	C	1" RV	A	H-16061 G-6	SLC Pump Disch RV	C	O/C	Note 5	NA	NA	NA
1C41-F033A	2	C	1-1/2" CV	A	H-16061 E-5	SLC Pump Disch	C	O	Qtr	NA	NA	NA
1C41-F033B	2	C	1-1/2" CV	A	H-16061 G-5	SLC Pump Disch	C	O	Qtr	NA	NA	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1C51-Ball A	2	A	Ball SOV	A	H-16070 C-3	TIP Inbrd CIV	O	C	Qtr	CIV	Yes	NA
1C51-Ball B	2	A	Ball SOV	A	H-16070 C-3	TIP Inbrd CIV	O	C	Qtr	CIV	Yes	NA
1C51-Ball C	2	A	Ball SOV	A	H-16070 C-3	TIP Inbrd CIV	O	C	Qtr	CIV	Yes	NA
1C51-Ball D	2	A	Ball SOV	A	H-16070 C-3	TIP Inbrd CIV	O	C	Qtr	CIV	Yes	NA
1C51-F3012	2	A	SOV	A	H-16561 C-8	TIP N2 Purge CIV	O	C	Qtr/RO	CIV	NA	RR-V-4
1C51-F3017	2	AC	CV	A	H-16561 C-8	TIP N2 Purge CIV	O	C	RO	CIV	NA	ROJ-V-11
1C51-Shear A	2	AD	Expl Shear	A	H-16070 C-3	TIP Outbrd CIV	O	C	ISTC 4.6	NA	NA	RR-V-5
1C51-Shear B	2	AD	Expl Shear	A	H-16070 C-3	TIP Outbrd CIV	O	C	ISTC 4.6	NA	NA	RR-V-5
1C51-Shear C	2	AD	Expl Shear	A	H-16070 C-3	TIP Outbrd CIV	O	C	ISTC 4.6	NA	NA	RR-V-5
1C51-Shear D	2	AD	Expl Shear	A	H-16070 C-3	TIP Outbrd CIV	O	C	ISTC 4.6	NA	NA	RR-V-5

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1D11-F050	2	A	1" SOV	A	H-16173 E-4	Fission Prod Mon CIV	O	C	Qtr	CIV	Yes	NA
1D11-F051	2	A	1" SOV	A	H-16173 C-5	Fission Prod Mon CIV	O	C	Qtr	CIV	Yes	NA
1D11-F052	2	A	1" SOV	A	H-16173 E-5	Fission Prod Mon CIV	O	C	Qtr	CIV	Yes	NA
1D11-F053	2	A	1" SOV	A	H-16173 C-6	Fission Prod Mon CIV	O	C	Qtr	CIV	Yes	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1E11-F003A	2	B	16" MO GV	A	H-16330 D-4	RHR Hx Shell Side Outlet	O	O	Qtr	NA	Yes	NA
1E11-F003B	2	B	16" MO GV	A	H-16329 D-9	RHR Hx Shell Side Outlet	O	O	Qtr	NA	Yes	NA
1E11-F004A	2	B	24" MO GV	A	H-16330 F-10	RHR Pump Suct Torus Iso	O	O/C	Qtr	NA	Yes	Note 4
1E11-F004B	2	B	24" MO GV	A	H-16329 F-3	RHR Pump Suct Torus Iso	O	O/C	Qtr	NA	Yes	Note 4
1E11-F004C	2	B	24" MO GV	A	H-16330 F-10	RHR Pump Suct Torus Iso	O	O/C	Qtr	NA	Yes	Note 4
1E11-F004D	2	B	24" MO GV	A	H-16329 F-3	RHR Pump Suct Torus Iso	O	O/C	Qtr	NA	Yes	Note 4
1E11-F005A	3	C	14" CV	A	D-11004 A-7	RHRSW Pump Disch CV	C	O/C	Qtr	NA	NA	Notes 6,7
1E11-F005B	3	C	14" CV	A	D-11004 D-7	RHRSW Pump Disch CV	C	O/C	Qtr	NA	NA	Notes 6,7
1E11-F005C	3	C	14" CV	A	D-11004 C-7	RHRSW Pump Disch CV	C	O/C	Qtr	NA	NA	Notes 6,7
1E11-F005D	3	C	14" CV	A	D-11004 E-7	RHRSW Pump Disch CV	C	O/C	Qtr	NA	NA	Notes 6,7
1E11-F006A	2	B	20" MO GV	A	H-16330 F-8	RHR SDC Suct	C	O	Qtr	NA	Yes	NA
1E11-F006B	2	B	20" MO GV	A	H-16329 F-4	RHR SDC Suct	C	O	Qtr	NA	Yes	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1E11-F006C	2	B	20" MO GV	A	H-16330 F-11	RHR SDC Suct	C	O	Qtr	NA	Yes	NA
1E11-F006D	2	B	20" MO GV	A	H-16329 F-2	RHR SDC Suct	C	O	Qtr	NA	Yes	NA
1E11-F007A	2	B	4" MO GV	A	H-16330 E-7	RHR Pump Min Flow Torus Iso	O	O/C	Qtr	NA	Yes	Note 4
1E11-F007B	2	B	4" MO GV	A	H-16329 D-6	RHR Pump Min Flow Torus Iso	O	O/C	Qtr	NA	Yes	Note 4
1E11-F008	1	A	20" MO GV	A	H-16329 D-2	RHR SDC Outbrd CIV	C	O/C	CS	PIV/CIV	Yes	CSJ-V-3
1E11-F009	1	A	20" MO GV	A	H-16329 D-2	RHR SDC Inbrd PIV	C	O/C	CS	PIV	Yes	CSJ-V-3
1E11-F011A	2	B	4" MO GV	A	H-16330 D-3	RHR Cond Disch to Torus	C	C	Qtr	NA	Yes	Note 4
1E11-F011B	2	B	4" MO GV	A	H-16329 D-10	RHR Cond Disch to Torus	C	C	Qtr	NA	Yes	Note 4
1E11-F015A	1	A	24" MO GV	A	H-16330 C-8	LPCI Outbrd CIV	C	O/C	CS	PIV/CIV	Yes	CSJ-V-4
1E11-F015B	1	A	24" MO GV	A	H-16329 C-5	LPCI Outbrd CIV	C	O/C	CS	PIV/CIV	Yes	CSJ-V-4
1E11-F016A	2	A	16" MO GLV	A	H-16330 B-9	Cnmt Spray Outbrd CIV	C	O/C	Qtr	CIV	Yes	NA
1E11-F016B	2	A	16" MO GLV	A	H-16329 B-5	Cnmt Spray Outbrd CIV	C	O/C	Qtr	CIV	Yes	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1E11-F017A	1	B	24" MO GLV	A	H-16330 C-8	LPCI	O	O	Qtr	NA	Yes	NA
1E11-F017B	1	B	24" MO GLV	A	H-16329 C-5	LPCI	O	O	Qtr	NA	Yes	NA
1E11-F021A	2	B	16" MO GV	A	H-16330 B-11	Cnmt Spray	C	O/C	Qtr	NA	Yes	NA
1E11-F021B	2	B	16" MO GV	A	H-16329 B-3	Cnmt Spray	C	O/C	Qtr	NA	Yes	NA
1E11-F024A	2	B	16" MO GLV	A	H-16330 C-7	SPC	C	O/C	Qtr	NA	Yes	Note 4
1E11-F024B	2	B	16" MO GLV	A	H-16329 C-7	SPC	C	O/C	Qtr	NA	Yes	Note 4
1E11-F025A	2	C	1" RV	A	H-16330 C-8	LPCI RV	C	O/C	Note 5	NA	NA	Note 4
1E11-F025B	2	C	1" RV	A	H-16329 B-5	LPCI RV	C	O/C	Note 5	NA	NA	Note 4
1E11-F026A	2	B	4" MO GV	A	H-16330 D-3	Cond Disch to RCIC	C	C	Qtr	NA	Yes	Note 4
1E11-F026B	2	B	4" MO GV	A	H-16329 D-11	Cond Disch to RCIC	C	C	Qtr	NA	Yes	Note 4
1E11-F027A	2	B	6" MO GLV	A	H-16330 C-8	Supp Pool Spray	C	O/C	Qtr	NA	Yes	NA
1E11-F027B	2	B	6" MO GLV	A	H-16329 C-5	Supp Pool Spray	C	O/C	Qtr	NA	Yes	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1E11-F028A	2	A	16" MO GV	A	H-16330 B-8	Supp Pool Spray Outbrd CIV	C	O/C	Qtr	CIV	Yes	NA
1E11-F028B	2	A	16" MO GV	A	H-16329 B-6	Supp Pool Spray Outbrd CIV	C	O/C	Qtr	CIV	Yes	NA
1E11-F029	2	C	1" RV	A	H-16329 E-1	RHR Pump Suc RV	C	O/C	Note 5	NA	NA	Note 4
1E11-F030A	2	C	1" RV	A	H-16330 F-9	RHR Pump Suc RV	C	O/C	Note 5	NA	NA	Note 4
1E11-F030B	2	C	1" RV	A	H-16329 F-4	RHR Pump Suc RV	C	O/C	Note 5	NA	NA	Note 4
1E11-F030C	2	C	1" RV	A	H-16330 F-11	RHR Pump Suc RV	C	O/C	Note 5	NA	NA	Note 4
1E11-F030D	2	C	1" RV	A	H-16329 F-2	RHR Pump Suc RV	C	O/C	Note 5	NA	NA	Note 4
1E11-F031A	2	C	20" CV	A	H-16330 N-6	RHR Pump Disch	C	O/C	Qtr	NA	NA	Notes 6,7
1E11-F031B	2	C	20" CV	A	H-16329 H-7	RHR Pump Disch	C	O/C	Qtr	NA	NA	Notes 6,7
1E11-F031C	2	C	20" CV	A	H-16330 H-10	RHR Pump Disch	C	O/C	Qtr	NA	NA	Notes 6,7
1E11-F031D	2	C	20" CV	A	H-16329 H-3	RHR Pump Disch	C	O/C	Qtr	NA	NA	Notes 6,7
1E11-F040	2	B	4" MO GLV	P	H-16329 E-5	RHR to RW Drain	C	C	NA	NA	No	Note 8

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1E11-F046A	2	C	3" CV	A	H-16330 H-7	RHR Min Flow Line	C	O/C	DIME	NA	NA	Notes 9,13 ROJ-V-12
1E11-F046B	2	C	3" CV	A	H-16329 H-6	RHR Min Flow Line	C	O/C	DIME	NA	NA	Notes 9,13 ROJ-V-12
1E11-F046C	2	C	3" CV	A	H-16330 H-11	RHR Min Flow Line	C	O/C	DIME	NA	NA	Note 9 ROJ-V-12
1E11-F046D	2	C	3" CV	A	H-16329 H-3	RHR Min Flow Line	C	O/C	DIME	NA	NA	Note 9 ROJ-V-12
1E11-F047A	2	B	16" MO GV	A	H-16330 E-6	RHR Hx Shell Side Inlet	O	O	Qtr	NA	Yes	NA
1E11-F047B	2	B	16" MO GV	A	H-16329 E-7	RHR Hx Shell Side Inlet	O	O	Qtr	NA	Yes	NA
1E11-F048A	2	B	24" MO GLV	A	H-16330 D-6	RHR Hx Shell Side Bypass	O	O/C	Qtr	NA	Yes	NA
1E11-F048B	2	B	24" MO GLV	A	H-16329 D-7	RHR Hx Shell Side Bypass	O	O/C	Qtr	NA	Yes	NA
1E11-F049	2	B	4" MO GLV	P	H-16329 E-5	RHR to RW Drn	C	C	NA	NA	No	Note 8
1E11-F050A	1	AC	24" CV	A	H-16330 C-10	LPCI PIV	C	O/C	See RR-V-6	PIV	NA	RR-V-6
1E11-F050B	1	AC	18" CV	A	H-16329 C-4	LPCI PIV	C	O/C	See RR-V-6	PIV	NA	RR-V-6
1E11-F055A	2	C	4" RV	A	H-16330 F-5	RHR Hx Shell RV	C	O/C	Note 5	NA	NA	Note 4

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1E11-F055B	2	C	4" RV	A	H-16329 E-9	RHR Hx Shell RV	C	O/C	Note 5	NA	NA	Note 4
1E11-F065A	2	B	24" AO BFV	P	H-16330 E-10	RHR Pump Suct Maint	O	O	NA	NA	No	Note 8
1E11-F065B	2	B	24" AO BFV	P	H-16329 F-3	RHR Pump Suct Maint	O	O	NA	NA	No	Note 8
1E11-F065C	2	B	24" AO BFV	P	H-16330 E-10	RHR Pump Suct Maint	O	O	NA	NA	No	Note 8
1E11-F065D	2	B	24" AO BFV	P	H-16329 F-3	RHR Pump Suct Maint	O	O	NA	NA	No	Note 8
1E11-F068A	3	B	10" MO Ball Vlv	A	H-16330 H-6	RHR Hx Ser Wtr Disc	C	O/C	Qtr	NA	Yes	NA
1E11-F068B	3	B	10" MO Ball Vlv	A	H-16329 H-8	RHR Hx Ser Wtr Disc	C	O/C	Qtr	NA	Yes	NA
1E11-F073A	2	C	10" MO GV	A	H-16330 G-2	RHRSW to RHR Crosstie	C	O/C	Qtr	NA	Yes	NA
1E11-F073B	2	B	10" MO GV	A	H-16329 G-9	RHRSW to RHR Crosstie	C	O/C	Qtr	NA	Yes	NA
1E11-F075A	2	B	10" MO GV	A	H-16330 G-4	RHRSW to RHR Crosstie	C	O/C	Qtr	NA	Yes	NA
1E11-F075B	2	B	10" MO GV	A	H-16329 G-9	RHRSW to RHR Crosstie	C	O/C	Qtr	NA	Yes	NA
1E11-F078A	2	C	10" Test CV	A	H-16330 D-4	RHRSW to RHR Crosstie	C	O/C	DIME	NA	NA	Note 9,10

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1E11-F078B	2	C	10" Test CV	A	H-16329 D-9	RHRSW to RHR Crosstie	C	O/C	DIME	NA	NA	Note 9,10
1E11-F091A	2	B	6" MO GLV	P	H-16330 E-2	Steam Line to RHR Hx Shutdown	C	C	NA	NA	No	Note 8
1E11-F091B	2	B	6" MO GLV	P	H-16329 E-11	Steam Line to RHR Hx Shutdown	C	C	NA	NA	No	Note 8
1E11-F097	2	C	3" RV	A	H-16329 D-11	Steam Line RV	C	O/C	Note 5	NA	NA	Note 4
1E11-F103A	2	B	1" MO GLV	A	H-16330 E-5	RHR Hx Vent Iso	C	C	Qtr	NA	Yes	Note 4
1E11-F103B	2	B	1" MO GLV	A	H-16329 E-9	RHR Hx Vent Iso	C	C	Qtr	KA	Yes	Note 4
1E11-F122A	1	A	1" AO Plug	P	H-16330 D-10	Passive PIV	C	C	NA	PIV	No	Note 8
1E11-F122B	1	A	1" AO Plug	P	H-16329 D-4	Passive PIV	C	C	NA	PIV	No	Note 8
1E11-F126A	2	C	2" Stop CV	A	H-16328 E-6	Maintain RHR Water Level	O/C	C	Qtr	NA	NA	Note 11
1E11-F126B	2	C	2" Stop CV	A	H-16328 E-4	Maintain RHR Water Level	O/C	C	Qtr	NA	NA	Note 11

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1E21-F001A	2	B	16" MO GV	A	H-16331 H-8	CS Pump Suct Iso	O	O/C	Qtr	NA	Yes	Note 4
1E21-F001B	2	B	16" MO GV	A	H-16331 J-8	CS Pump Suct Iso	O	O/C	Qtr	NA	Yes	Note 4
1E21-F003A	2	C	12" CV	A	H-16331 F-9	CS Pump Disch	C	O/C	Qtr	NA	NA	Note 7,12
1E21-F003B	2	C	12" CV	A	H-16331 F-11	CS Pump Disch	C	O/C	Qtr	NA	NA	Note 7,12
1E21-F004A	1	B	10" MO GV	A	H-16331 E-7	CS Outbrd Injection	O	O	Qtr	NA	Yes	NA
1E21-F004B	1	B	10" MO GV	A	H-16331 B-7	CS Outbrd Injection	O	O	Qtr	NA	Yes	NA
1E21-F005A	1	A	10" MO GV	A	H-16331 E-6	CS Inbrd Injection	C	O/C	CS	PIV/CIV	Yes	CSJ-V-5
1E21-F005B	1	A	10" MO GV	A	H-16331 B-6	CS Inbrd Injection	C	O/C	CS	PIV/CIV	Yes	CSJ-V-5
1E21-F006A	1	AC	10" CV	A	H-16331 D-4	CS Injection	C	O/C	RO	PIV	NA	ROJ-V-13
1E21-F006B	1	AC	10" CV	A	H-16331 C-4	CS Injection	C	O/C	RO	PIV	NA	ROJ-V-13
1E21-F012A	2	C	2" RV	A	H-16331 D-9	CS Pump Disch RV	C	O/C	Note 5	NA	NA	NA
1E21-F012B	2	C	2" RV	A	H-16331 E-10	CS Pump Disch RV	C	O/C	Note 5	NA	NA	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1E21-F015A	2	B	10" MO GLV	A	H-16331 D-8	Core Spray Test Bypass Iso	C	C	Qtr	NA	Yes	Note 4
1E21-F015B	2	B	10" MO GLV	A	H-16331 C-8	Core Spray Test Bypass Iso	C	C	Qtr	NA	Yes	Note 4
1E21-F018A	1	AC	1" EFCV	A	H-16331 A-4	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1E21-F018B	1	AC	1" EFCV	A	H-16331 A-4	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1E21-F018C	1	AC	1" EFCV	A	H-16331 A-4	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1E21-F019A	2	B	16" AO BFV	P	H-16331 H-6	CS Suct	O	O	NA	NA	No	Note 8
1E21-F019B	2	B	16" AO BFV	P	H-16331 J-6	CS Suct	O	O	NA	NA	No	Note 8
1E21-F031A	2	B	3" MO GV	A	H-16331 F-9	CS Pump Min Flow	O	O/C	Qtr	NA	Yes	NA
1E21-F031B	2	B	3" MO GV	A	H-16331 F-10	CS Pump Min Flow	O	O/C	Qtr	NA	Yes	NA
1E21-F032A	2	C	1" RV	A	H-16331 H-9	CS Suct RV	C	O/C	Note 5	NA	NA	NA
1E21-F032B	2	C	1" RV	A	H-16331 H-11	CS Suct RV	C	O/C	Note 5	NA	NA	NA
1E21-F036A	2	C	3" CV	A	H-16331 E-9	CS Min Flow Iso	C	O/C	DIME	NA	NA	Notes 4,9,13 ROJ-V-28

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1E21-F036B	2	C	3" CV	A	H-16331 E-10	CS Min Flow Iso	C	O/C	DIME	NA	NA	Notes 4,9,13 ROJ-V-28
1E21-F037A	1	A	1" AO Plug Vlv	P	H-16331 D-4	Passive Isolation	C	C	NA	PIV	No	Note 8
1E21-F037B	1	A	1" AO Plug Vlv	P	H-16331 B-4	Passive Isolation	C	C	NA	PIV	No	Note 8
1E21-F040A	2	C	1-1/2" Stop CV	A	H-16328 E-6	Maintain CS Water Level	O/C	C	Qtr	NA	NA	Note 11
1E21-F040B	2	C	1-1/2" Stop CV	A	H-16328 E-4	Maintain CS Water Level	O/C	C	Qtr	NA	NA	Note 11
1E21-F044A	2	C	2" Stop CV	A	H-16328 F-5	Jockey Pump Bypass Iso	O	C	RO	NA	NA	ROJ-V-14 Note 4
1E21-F044B	2	C	2" Stop CV	A	H-16328 F-5	Jockey Pump Bypass Iso	O	C	RO	NA	NA	ROJ-V-14 Note 4

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1E41-D003	2	D	16" RD	A	H-16333 F-7	Turbine Exhaust RD	C	O/C	Note 14	NA	NA	NA
1E41-D004	2	D	16" RD	A	H-16333 G-7	Turbine Exhaust RD	C	O/C	Note 14	NA	NA	NA
1E41-F001	2	B	10" MO GV	A	H-16332 E-12	Steam Supply Shutoff	C	O	Qtr	NA	Yes	NA
1E41-F002	1	A	10" MO GV	A	H-16332 C-3	Steam Supply Inbrd CIV	O	O/C	CS	CIV	Yes	RR-V-1 CSJ-V-6
1E41-F003	1	A	10" MO GV	A	H-16332 C-4	Steam Supply Outbrd CIV	O	O/C	Qtr	CIV	Yes	NA
1E41-F004	2	B	16" MO GV	A	H-16332 D-9	Pump Suc from Cond Stor	O	O/C	Qtr	NA	Yes	NA
1E41-F005	2	AC	14" CV	A	H-16332 E-6	Pump Disch	C	O/C	Qtr	PIV	NA	Note 15
1E41-F006	2	A	14" MO GV	A	H-16332 E-5	Pump Inbrd Disch Iso	C	O/C	Qtr	PIV/CIV	Yes	NA
1E41-F007	2	B	14" MO GV	A	H-16332 E-5	Pump Outbrd Disch	O	O	Qtr	NA	Yes	NA
1E41-F008	2	B	10" MO GLV	A	H-16332 D-7	Pump Test Bypass	C	C	Qtr	NA	Yes	NA
1E41-F011	2	B	10" MO GV	A	H-16332 C-7	Pump Test Bypass	C	C	Qtr	NA	Yes	Note 16
1E41-F012	2	B	4" MO GLV	A	H-16332 F-7	Pump Min Flow Inbrd Iso	C	O/C	Qtr	NA	Yes	Note 4

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1E41-F019	2	C	16" CV	A	H-16332 D-9	Pump Suc Cond Stg	C	O	Qtr	NA	NA	Note 7
1E41-F020	2	C	2x1" RV	A	H-16332 D-8	Pump Suct RV	C	O/C	Note 5	NA	NA	NA
1E41-F021	2	C	12" Stop CV	A	H-16332 G-3	Turb Exh Inbrd Iso	C	O/C	Note 15	NA	NA	ROJ-V-15 Notes 4,17
1E41-F022	2	C	2" Stop CV	A	H-16332 G-4	Turb Exh Drn Iso	C	O/C	DIME	NA	NA	ROJ-V-16 Notes 4,9,17
1E41-F024A	1	AC	1" EFCV	A	H-16332 C-4	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1E41-F024B	1	AC	1" EFCV	A	H-16332 D-4	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1E41-F024C	1	AC	1" EFCV	A	H-16332 C-4	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1E41-F024D	1	AC	1" EFCV	A	H-16332 D-4	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1E41-F028	2	B	1" AO GLV	P	H-16332 G-13	Drain Pot Drain	O	O	NA	NA	No	Note 8
1E41-F029	2	B	1" AO GLV	P	H-16332 G-13	Drain Pot Drain	O	O	NA	NA	No	Note 8
1E41-F040	2	C	2" CV	A	H-16332 G-5	Turb Exh Drn Iso	C	O/C	DIME	NA	NA	ROJ-V-17 Notes 4,9,15
1E41-F041	2	B	16" MO GV	A	H-16332 D-8	Pump Suc Supply	C	O	Qtr	NA	Yes	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1E41-F042	2	B	16" MO GV	A	H-16332 J-5	Pump Suc Torus Outbrd Iso	C	O/C	Qtr	NA	Yes	Note 4
1E41-F045	2	C	16" CV	A	H-16332 J-7	Pump Suct	C	O	DIME	NA	NA	RR-V-7 Note 9
1E41-F046	2	C	4" CV	A	H-16332 F-8	Pump Min Flow Outbrd Iso	C	O/C	DIME	NA	NA	ROJ-V-18 Notes 4,9
1E41-F048	2	C	2" CV	A	H-16333 H-9	Lube Oil Cooling Wtr Return CV	C	O	DIME	NA	NA	Note 9
1E41-F049	2	C	20" CV	A	H-16332 G-4	Turb Exh Outbrd Iso	C	O/C	Note 15	NA	NA	ROJ-V-19 Note 4
1E41-F050	2	C	2" RV	A	H-16333 H-8	Lube Oil Cooler RV	C	O/C	Note 5	NA	NA	NA
1E41-F051	2	B	16" AO BFV	A	H-16332 J-4	Pump Suc Torus Inbrd Iso	O	O/C	Qtr	NA	Yes	Note 4
1E41-F052	2	C	2" CV	A	H-16333 H-10	Barometric Cond Pump Disch	C	C	Qtr	NA	NA	Note 18
1E41-F057	2	C	2" CV	A	H-16333 H-10	Lube Oil Cooling Wtr Return CV	C	O	DIME	NA	NA	Note 9
1E41-F059	2	B	2" MO GLV	A	H-16333 F-8	Turb Lube Oil Cooling	C	O	Qtr	NA	Yes	NA
1E41-F102	2	C	1" CV	A	H-16332 G-2	Vacuum RV	C	O/C	RO	NA	NA	ROJ-V-25
1E41-F103	2	C	1" CV	A	H-16332 G-2	Vacuum RV	C	O/C	RO	NA	NA	ROJ-V-25

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1E41-F104	2	A	2" MO GV	A	H-16332 G-3	Vac Relief Outbrd Torus CIV	O	C	Qtr	CIV	Yes	NA
1E41-F111	2	A	2" MO GV	A	H-16332 G-2	Vac Relief Inbrd Torus CIV	O	C	Qtr	CIV	Yes	NA
1E41-F121	2	A	3/8" SOV	A	H-26384 H-3	Pass Sample Return	C	C	Qtr	CIV	Yes	NA
1E41-F122	2	A	3/8" SOV	A	H-26384 H-3	Pass Sample Return	C	C	Qtr	CIV	Yes	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	SY Reqd	Remarks RR/CSJ/ROJ
1E51-F001	2	C	10" Stop CV	A	H-16334 G-5	Turb Exh Inbrd Iso	C	O/C	Note 15	NA	NA	ROJ-V-20 Notes 4,17
1E51-F002	2	C	2" Stop CV	A	H-16334 G-6	Turb Exh Drn Torus Iso	C	O/C	RO	NA	NA	ROJ-V-21 Notes 4,17
1E51-F003	2	B	6" AO BFV	A	H-16334 J-6	Pump Suct Torus Inbrd Iso	O	O/C	Qtr	NA	Yes	Note 4
1E51-F007	1	A	4" MO GV	A	H-16334 C-5	Steam Supply Inbrd CIV	O	C	CS	CIV	Yes	RR-V-1 CSJ-V-6
1E51-F008	1	A	4" MO GV	A	H-16334 C-6	Steam Supply Outbrd CIV	O	C	Qtr	CIV	Yes	NA
1E51-F010	2	B	6" MO GV	A	H-16334 C-8	Pump Suc from Cond Stor	O	O/C	Qtr	NA	Yes	Note 16
1E51-F011	2	C	6" CV	A	H-16334 D-8	Pump Suc from Cond Stor	C	O	Qtr	NA	NA	Note 16
1E51-F012	2	B	4" MO GV	A	H-16334 E-8	Pump Outbrd Disch	O	O	Qtr	NA	Yes	Note 16
1E51-F013	2	A	4" MO GV	A	H-16334 E-6	Pump Inbrd Disch Iso	C	O/C	Qtr	PIV/CIV	Yes	NA
1E51-F014	2	AC	4" CV	A	H-16334 E-7	Pump Disch	C	O/C	Qtr	PIV	NA	Note 15
1E51-F017	2	C	1" RV	A	H-16335 C-6	Pump Suct RV	C	O/C	Note 5	NA	NA	Note 16
1E51-F019	2	B	2" MO GLV	A	H-16334 F-7	Pump Min Flow Inbrd Iso	C	O/C	Qtr	NA	Yes	Note 4

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1E51-F021	2	C	2" CV	A	H-16334 F-8	Pump Min Flow Outbrd Iso	C	O/C	DIME	NA	NA	ROJ-V-22 Notes 4,9
1E51-F022	2	B	4" MO GLV	A	H-16334 C-6	Pump Test Bypass	C	C	Qtr	NA	Yes	Note 16
1E51-F028	2	C	2" CV	A	H-16334 G-7	Turb Exh Drn	C	C	RO	NA	NA	ROJ-V-23 Note 4
1E51-F029	2	B	6" MO GV	A	H-16334 D-8	Pump Suc Shutoff	C	O/C	Qtr	NA	Yes	Note 16
1E51-F030	2	C	6" CV	A	H-16334 J-7	Pump Suct	C	O	DIME	NA	NA	Notes 16, 19
1E51-F031	2	B	6" MO GV	A	H-16334 J-6	Pump Suct Torus Outboard Iso	C	O/C	Qtr	NA	Yes	Note 4
1E51-F040	2	C	10" CV	A	H-16334 G-5	Turb Exh Outbrd Iso	C	O/C	Note 15	NA	NA	ROJ-V-24 Note 4
1E51-F044A	1	AC	1" EFCV	A	H-16334 B-5	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1E51-F044B	1	AC	1" EFCV	A	H-16334 D-5	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1E51-F044C	1	AC	1" EFCV	A	H-16334 B-5	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1E51-F044D	1	AC	1" EFCV	A	H-16334 D-5	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
1E51-F045	2	B	4" MO GLV	A	H-16335 D-11	Steam Supply Shutoff	C	O/C	Qtr	NA	Yes	Note 16

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1E51-F046	2	B	2" MO GLV	A	H-16335 E-6	Turb Lube Oil Cooling	C	O	Qtr	NA	Yes	Note 16
1E51-F047	2	C	2" CV	A	H-16335 G-8	Lube Oil Cooling Wtr Return CV	C	C	DIME	NA	NA	Notes 16, 19
1E51-F102	2	C	1 1/2" CV	A	H-16334 F-5	Vacuum RV	C	O/C	RO	NA	NA	Notes 16, 20
1E51-F103	2	C	1 1/2" CV	A	H-16334 F-5	Vacuum RV	C	O/C	RO	NA	NA	Notes 16, 20
1E51-F104	2	A	1 1/2" MO GV	A	H-16334 G-5	Vac RV Outbrd Torus CIV	O	O/C	Qtr	CIV	Yes	NA
1E51-F105	2	A	1 1/2" MO GV	A	H-16334 G-5	Vac RV Inbrd Torus CIV	O	O/C	Qtr	CIV	Yes	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1G11-F003	2	A	3" AO GV	A	H-16176 B-3	DW Flr Drns CIV	O	C	Qtr	CIV	Yes	NA
1G11-F004	2	A	3" AO GV	A	H-16176 B-3	DW Flr Drns CIV	O	C	Qtr	CIV	Yes	NA
1G11-F019	2	A	3" AO GV	A	H-16176 E-3	DW Equip Drns CIV	O	C	Qtr	CIV	Yes	NA
1G11-F020	2	A	3" AO GV	A	H-16176 E-4	DW Equip Drns CIV	O	C	Qtr	CIV	Yes	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1G31-F001	1	A	6" MO GV	A	H-16188 B-2	RWCU Pump Suc Inbrd CIV	O	C	CS	CIV	Yes	CSJ-V-7
1G31-F004	1	A	6" MO GV	A	H-16188 B-3	RWCU Pump Suc Outbrd CIV	O	C	CS	CIV	Yes	CSJ-V-7
1G31-F039	1	AC	4" CV	A	H-16188 A-4	RWCU Disch CIV	O	C	RO	CIV	No	ROJ-V-26
1G31-F203	1	AC	3" CV	A	H-16188 A-4	RWCU Disch CIV	O	C	RO	CIV	No	ROJ-V-26

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1G51-F011	2	B	3" AO Cont Vlv	P	H-16135 C-5	Passive Cont Bndy	C	C	NA	NA	No	Note 4,8
1G51-F012	2	B	3" AO Cont Vlv	P	H-16135 C-5	Passive Cont Bndy	C	C	NA	NA	No	Note 4,8
1G51-F013	2	B	3" AO Cont Vlv	P	H-16135 C-2	Passive Cont Bndy	C	C	NA	NA	No	Note 4,8
1G51-F021	2	B	3" AO Cont VlV	P	H-16135 C-1	Passive Cont Bndy	C	C	NA	NA	No	Note 4,8

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1P21-F353	2	A	2" Man GV	P	H-16015 F-7	Passive CIV	LC	C	NA	CIV	No	NA
1P21-F420	2	A	1-1/2" Man GV	P	H-16015 F-8	Passive CIV	LC	C	NA	CIV	No	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	WP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1P33-F002	2	A	1" AO GLV	A	H-16276 B-4	H2 & O2 Analy CIV	O	O/C	Qtr	CIV	Yes	NA
1P33-F003	2	A	1" AO GLV	A	H-16276 D-4	H2 & O2 Analy CIV	C	O/C	Qtr	CIV	Yes	NA
1P33-F004	2	A	1" AO GLV	A	H-16276 E-4	H2 & O2 Analy CIV	O	O/C	Qtr	CIV	Yes	NA
1P33-F005	2	A	1/2" SO GLV	A	H-16276 C-4	H2 & O2 Analy CIV	O	O/C	Qtr	CIV	Yes	NA
1P33-F006	2	A	1" AO GLV	A	H-16276 G-4	H2 & O2 Analy CIV	C	O/C	Qtr	CIV	Yes	NA
1P33-F007	2	A	1" AO GLV	A	H-16276 H-4	H2 & O2 Analy CIV	O	O/C	Qtr	CIV	Yes	NA
1P33-F010	2	A	1" AO GLV	A	H-16276 B-5	H2 & O2 Analy CIV	O	O/C	Qtr	CIV	Yes	NA
1P33-F011	2	A	1" AO GLV	A	H-16276 D-5	H2 & O2 Analy CIV	C	O/C	Qtr	CIV	Yes	NA
1P33-F012	2	A	1" AO GLV	A	H-16276 E-5	H2 & O2 Analy CIV	O	O/C	Qtr	CIV	Yes	NA
1P33-F013	2	A	1/2" SO GLV	A	H-16276 C-4	H2 & O2 Analy CIV	O	O/C	Qtr	CIV	Yes	NA
1P33-F014	2	A	1" AO GLV	A	H-16276 G-5	H2 & O2 Analy CIV	C	O/C	Qtr	CIV	Yes	NA
1P33-F015	2	A	1" AO GLV	A	H-16276 H-5	H2 & O2 Analy CIV	O	O/C	Qtr	CIV	Yes	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1P41-F035A	3	B	2" AO GLV	A	H-16011 B-9	HPCI Pump Rm Cooler	C	O	Qtr	NA	Yes	RR-V-8
1P41-F035B	3	B	2" AO GLV	A	H-16011 C-9	HPCI Pump Rm Cooler	C	O	Qtr	NA	Yes	RR-V-8
1P41-F036A	3	B	3" AO GLV	A	H-16011 D-9	RHR & CS Pump Rm Cooler	C	O	Qtr	NA	Yes	RR-V-8
1P41-F036B	3	B	3" AO GLV	A	H-16011 D-9	RHR & CS Pump Rm Cooler	C	O	Qtr	NA	Yes	RR-V-8
1P41-F037A	3	B	1-1/2" AO GLV	A	H-16011 H-8	RHR Pump Cooler	C	O	Qtr	NA	Yes	RR-V-8
1P41-F037B	3	B	1-1/2" AO GLV	A	H-16011 E-9	RHR Pump Cooler	C	O	Qtr	NA	Yes	RR-V-8
1P41-F037C	3	B	1-1/2" AO GLV	A	H-16011 J-8	RHR Pump Cooler	C	O	Qtr	NA	Yes	RR-V-8
1P41-F037D	3	B	1-1/2" AO GLV	A	H-16011 E-9	RHR Pump Cooler	C	O	Qtr	NA	Yes	RR-V-8
1P41-F039A	3	B	3" AO GLV	A	H-16011 G-8	RHR & CS Pump Rm Cooler	C	O	Qtr	NA	Yes	RR-V-8
1P41-F039B	3	B	3" AO GLV	A	H-16011 G-8	RHR & CS Pump Rm Cooler	C	O	Qtr	NA	Yes	RR-V-8
1P41-F040A	3	B	1 1/2" AO GLV	A	H-16011 H-2	RCIC Pump Rm Cooler Cont	C	O	Qtr	NA	Yes	Notes 16, 21
1P41-F040B	3	B	1 1/2" AO GLV	A	H-16011 H-2	RCIC Pump Rm Cooler Cont	C	O	Qtr	NA	Yes	Notes 16, 21

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1P41-F049	2	A	8" MO GV	A	H-16011 F-6	Drywell Air Cooler CIV	O	C	CS	CIV	Yes	CSJ-V-8
1P41-F050	2	A	8" MO GV	A	H-16011 D-2	Drywell Air Cooler CIV	O	C	CS	CIV	Yes	CSJ-V-8
1P41-F064	3	C	6" CV	A	H-16011 F-10	Division 2 SW Supply	O	O	DIME	NA	NA	Note 9
1P41-F065	3	C	8" CV	A	H-16011 G-10	Division 1 SW Supply	O	O	DIME	NA	NA	Note 9
1P41-F066	3	B	6" AO BFV	P	H-16011 F-10	SW to ESF Cooler Iso	O	O	NA	NA	No	Note 8
1P41-F067	3	B	8" AO BFV	P	H-16011 G-10	SW to ESF Cooler Iso	O	O	NA	NA	No	Note 8
1P41-F1074	3	C	4" CV	A	H-11609 E-1	Cont Rm HVAC	O	O/C	DIME	NA	NA	Note 9
1P41-F1075	3	C	4" CV	A	H-11609 E-1	Cont Rm HVAC	O	O/C	DIME	NA	NA	Note 9
1P41-F310A	3	B	30" MO BFV	A	H-11600 D-6	SW to Turbine Bldg Shutoff	O	C	CS	NA	Yes	CSJ-V-9
1P41-F310B	3	B	30" MO BFV	A	H-11600 F-5	SW to Turbine Bldg Shutoff	O	C	CS	NA	Yes	CSJ-V-9
1P41-F310C	3	B	30" MO BFV	A	H-11600 D-6	SW to Turbine Bldg Shutoff	O	C	CS	NA	Yes	CSJ-V-9
1P41-F310D	3	B	30" MO BFV	A	H-11600 F-5	SW to Turbine Bldg Shutoff	O	C	CS	NA	Yes	CSJ-V-9

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1P41-F311A	3	C	18" CV	A	D-11001 D-2	SW Pump Discharge	O/C	O/C	Qtr	NA	NA	Note 6
1P41-F311B	3	C	18" CV	A	D-11001 D-5	SW Pump Discharge	O/C	O/C	Qtr	NA	NA	Note 6
1P41-F311C	3	C	18" CV	A	D-11001 D-3	SW Pump Discharge	O/C	O/C	Qtr	NA	NA	Note 6
1P41-F311D	3	C	18" CV	A	D-11001 D-6	SW Pump Discharge	O/C	O/C	Qtr	NA	NA	Note 6
1P41-F312	3	B	30" MO BFV	P	D-11001 A-3	SW Dilution Iso	C	C	NA	NA	No	Note 8
1P41-F401A	3	B	8" MO BFV	P	H-11600 C-5	SW to DG Iso	C	C	NA	NA	No	Note 8
1P41-F402A	3	B	8" MO BFV	P	H-11600 C-5	SW to DG Iso	C	C	NA	NA	No	Note 8
1P41-F402B	3	B	6" MO BFV	P	H-11600 C-4	SW to DG Iso	C	C	NA	NA	No	Note 8
1P41-F403B	3	B	6" MO BFV	P	H-11600 C-4	SW to DG Iso	C	C	NA	NA	No	Note 8
1P41-F420A	3	B	2 1/2" MO GV	P	H-11609 C-1	Cont Rm HVAC Iso	O	O	NA	NA	No	Note 8
1P41-F420B	3	B	2 1/2" MO GV	P	H-11609 B-2	Cont Rm HVAC Cross-tie	C	C	NA	NA	No	Note 8
1P41-F421A	3	B	2 1/2" MO GV	P	H-11609 C-2	Cont Rm HVAC Iso	O	O	NA	NA	No	Note 8

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1P41-F421B	3	B	2 1/2" MO GV	P	H-11609 C-2	Cont Rm HVAC Cross-tie	C	C	NA	NA	No	Note 8
1P41-F422A	3	B	2 1/2" MO GV	P	H-11609 B-2	Cont Rm HVAC Iso	O	O	NA	NA	No	Note 8
1P41-F422B	3	B	2 1/2" MO GV	P	H-11609 B-3	Cont Rm HVAC Iso	O	O	NA	NA	No	Note 8
1P41-F438A	3	C	1 1/2" CV	A	D-11001 B-3	SW Mtr Cooling Wtr CV	O	O	Qtr	NA	NA	Note 22
1P41-F438B	3	C	1 1/2" CV	A	D-11001 A-6	SW Mtr Cooling Wtr CV	O	O	Qtr	NA	NA	Note 22
1P41-F552A	3	C	6" CV	A	H-11600 B-7	DG 1A SW Discharge	O	O	PEQ/DIME	NA	NA	ROJ-V-27 Note 9
1P41-F552C	3	C	6" CV	A	H-11600 B-2	DG 1C SW Discharge	O	O	PEQ/DIME	NA	NA	ROJ-V-27 Note 9

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1P42-F051	2	A	4" MO GV	A	H-16009 B-9	RBCCW to Recir CIV	O	C	CS	CIV	Yes	CSJ-V-10
1P42-F052	2	A	4" MO GV	A	H-16009 E-9	RBCCW to Recir CIV	O	C	CS	CIV	Yes	CSJ-V-10
1P42-F083	2	C	3/4" RV	A	H-16009 D-6	Thermal RV	C	O/C	Note 5	NA	No	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1P51-F513	2	A	2" Man GLV	P	H-16013 F-3	Passive CIV	LC	C	None	CIV	No	NA
1P51-F514	2	A	2" Man GLV	P	H-16013 F-3	Passive CIV	LC	C	None	CIV	No	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1P52-F261	-	C	1" CV	A	H-11667 C-7	Accum A014 Inlet CV	O/C	C	NA	Note 28	NA	Note 30
1P52-F262	-	C	1" CV	A	H-11667 C-7	Accum A015 Inlet CV	O/C	C	NA	Note 28	NA	Note 30
1P52-F263	-	C	1" CV	A	H-11667 C-4	Accum A032 Inlet CV	O/C	C	NA	Note 29	NA	Note 30
1P52-F264	-	C	1" CV	A	H-11667 C-4	Accum A033 Inlet CV	O/C	C	NA	Note 29	NA	Note 30
1P52-F265	-	C	1" CV	A	H-11667 C-4	Accum A035 Inlet CV	O/C	C	NA	Note 29	NA	Note 30
1P52-F266	-	C	1" CV	A	H-11667 C-4	Accum A034 Inlet CV	O/C	C	NA	Note 29	NA	Note 30
1P52-F267	-	C	1" CV	A	H-11667 C-4	Accum A036 Inlet CV	O/C	C	NA	Note 29	NA	Note 30

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1P70-F002	2	A	1" AO GLV	P	H-16286 F-8	DW Pneumatic CIV	C	C	NA	CIV	Yes	Note 8
1P70-F003	2	A	1" AO GLV	P	H-16286 F-8	DW Pneumatic CIV	C	C	NA	CIV	Yes	Note 8
1P70-F004	2	A	2" SOV	A	H-16286 B-8	DW Pneumatic CIV	O	C	Qtr	CIV	Yes	NA
1P70-F005	2	A	2" SOV	A	H-16286 B-8	DW Pneumatic CIV	O	C	Qtr	CIV	Yes	NA
1P70-F066	2	A	2" SOV	A	H-16286 D-8	DW Pneumatic CIV	O	C	Qtr	CIV	Yes	NA
1P70-F067	2	A	2" SOV	A	H-16286 D-8	DW Pneumatic CIV	O	C	Qtr	CIV	Yes	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1R43-F009A	-	C	2" CV	A	H-11037 C-2	DG Fuel Oil Pump Disch CV	C	O/C	Qtr	NA	NA	Notes 16,23
1R43-F009B	-	C	2" CV	A	H-11037 C-2	DG Fuel Oil Pump Disch CV	C	O/C	Qtr	NA	NA	Notes 16,23
1R43-F009C	-	C	2" CV	A	H-11037 A-10	DG Fuel Oil Day Tank Inlet CV	C	O/C	Qtr	NA	NA	Notes 16,23
1R43-F009D	-	C	2" CV	A	H-11037 A-9	DG Fuel Oil Day Tank Inlet CV	C	O/C	Qtr	NA	NA	Notes 16,23
1R43-F010A	-	C	2" CV	A	H-11037 D-2	DG Fuel Oil Pump Disch CV	C	O/C	Qtr	NA	NA	Notes 16,23
1R43-F010B	-	C	2" CV	A	H-11037 D-2	DG Fuel Oil Pump Disch CV	C	O/C	Qtr	NA	NA	Notes 16,23
1R43-F010C	-	C	2" CV	A	H-11037 A-8	DG Fuel Oil Day Tank Inlet CV	C	O/C	Qtr	NA	NA	Notes 16,23
1R43-F010D	-	C	2" CV	A	H-11037 A-8	DG Fuel Oil Day Tank Inlet CV	C	O/C	Qtr	NA	NA	Notes 16,23
1R43-F011A	-	C	2" CV	A	H-11037 B-2	DG Fuel Oil Pump Disch CV	C	O/C	Qtr	NA	NA	Notes 16,23
1R43-F011B	-	C	2" CV	A	H-11037 B-2	DG Fuel Oil Pump Disch CV	C	O/C	Qtr	NA	NA	Notes 16,23
1R43-F011C	-	C	2" CV	A	H-11037 A-11	DG Fuel Oil Day Tank Inlet CV	C	O/C	Qtr	NA	NA	Notes 16,23
1R43-F011D	-	C	2" CV	A	H-11037 A-11	DG Fuel Oil Day Tank Inlet CV	C	O/C	Qtr	NA	NA	Notes 16,23

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1R43-F015A	-	B	1 1/2" SOV	A	H-11631 H-11	DG Air Start Vlv	C	O/C	Qtr	NA	Yes	Notes 16,24
1R43-F015B	-	B	1 1/2" SOV	A	H-11638 H-11	DG Air Start Vlv	C	O/C	Qtr	NA	Yes	Notes 16,24
1R43-F015C	-	B	1 1/2" SOV	A	H-11631 H-11	DG Air Start Vlv	C	O/C	Qtr	NA	Yes	Notes 16,24
1R43-F016A	-	B	1 1/2" SOV	A	H-11631 H-11	DG Air Start Vlv	C	O/C	Qtr	NA	Yes	Notes 16, 24
1R43-F016B	-	B	1 1/2" SOV	A	H-11638 J-11	DG Air Start Vlv	C	O/C	Qtr	NA	Yes	Notes 16, 24
1R43-F016C	-	B	1 1/2" SOV	A	H-11631 H-11	DG Air Start Vlv	C	O/C	Qtr	NA	Yes	Notes 16, 24
1R43-F3034A	-	C	3/4" CV	A	H-11631 E-11	Air Receiver Inlet CV	C	C	Note 25	NA	NA	Note 16
1R43-F3034B	-	C	3/4" CV	A	H-11638 E-11	Air Receiver Inlet CV	C	C	Note 25	NA	NA	Note 16
1R43-F3034C	-	C	3/4" CV	A	H-11631 F-11	Air Receiver Inlet CV	C	C	Note 25	NA	NA	Note 16
1R43-F3035A	-	C	3/4" CV	A	H-11631 E-10	Air Receiver Inlet CV	C	C	Note 25	NA	NA	Note 16
1R43-F3035B	-	C	3/4" CV	A	H-11638 E-10	Air Receiver Inlet CV	C	C	Note 25	NA	NA	Note 16
1R43-F3035C	-	C	3/4" CV	A	H-11631 E-10	Air Receiver Inlet CV	C	C	Note 25	NA	NA	Note 16

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1R43-F3036A	-	C	1/2" RV	A	H-11631 E-12	Air Receiver RV	C	O/C	Note 34	NA	NA	Note 16
1R43-F3036B	-	C	1/2" RV	A	H-11638 F-12	Air Receiver RV	C	O/C	Note 34	NA	NA	Note 16
1R43-F3036C	-	C	1/2" RV	A	H-11631 E-12	Air Receiver RV	C	O/C	Note 34	NA	NA	Note 16
1R43-F3037A	-	C	1/2" RV	A	H-11631 E-8	Air Receiver RV	C	O/C	Note 34	NA	NA	Note 16
1R43-F3037B	-	C	1/2" RV	A	H-11638 F-9	Air Receiver RV	C	O/C	Note 34	NA	NA	Note 16
1R43-F3037C	-	C	1/2" RV	A	H-11631 E-8	Air Receiver RV	C	O/C	Note 34	NA	NA	Note 16

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1T23-F004	2	A	3/4" Man GLV	P	H-16060 D-3	Passive CIV	C	C	NA	CIV	No	NA
1T23-F005	2	A	3/4" Man GLV	P	H-16060 D-3	Passive CIV	C	C	NA	CIV	No	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Rem&rks RR/CSJ/ROJ
1T46-F001A	3	B	18" AO BFV	A	H-16020 C-1	Filter Bed Inlet from Rx Bldg	C	O	Qtr	NA	Yes	Note 16
1T46-F001B	3	B	18" AO BFV	A	H-16020 G-1	Filter Bed Inlet from Rx Bldg	C	O	Qtr	NA	Yes	Note 16
1T46-F002A	3	B	18" AO BFV	A	H-16174 C-6	SGTS Filter Outlet from Rx Bldg	C	O	Qtr	NA	Yes	Note 16
1T46-F002B	3	B	18" AO BFV	A	H-16174 F-6	SGTS Filter Outlet from Rx Bldg	C	O	Qtr	NA	Yes	Note 16

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1T48-F103	2	A	6" AO BFV	A	H-16000 F-2	DW & Torus CIV	C	C	Qtr	CIV	Yes	NA
1T48-F104	2	A	1" AO GLV	A	K-16000 G-4	DW & Torus CIV	C	C	Qtr	CIV	Yes	NA
1T48-F113	2	A	2" AO GLV	A	H-16000 F-7	DW Inerting Outbrd CIV	C	C	Qtr	CIV	Yes	NA
1T48-F114	2	A	2" AO GLV	A	H-16000 F-8	DW Inerting Inbrd CIV	C	C	Qtr	CIV	Yes	NA
1T48-F115	2	A	2" AO GLV	A	H-16000 G-7	DW Inerting Outbrd CIV	C	C	Qtr	CIV	Yes	NA
1T48-F116	2	A	2" AO GLV	A	H-16000 G-8	DW Inerting Inbrd CIV	C	C	Qtr	CIV	Yes	NA
1T48-F118A	2	A	1" SOV	A	H-16000 G-5	DW Makeup Inbrd CIV	C	C	Qtr	CIV	Yes	NA
1T48-F118B	2	A	1" SOV	A	H-16000 G-5	Torus Makeup Inbrd CIV	C	C	Qtr	CIV	Yes	NA
1T48-F307	2	A	18" AO BFV	A	H-16024 C-9	DW Purge Inlet Inbrd CIV	C	C	Qtr	CIV	Yes	NA
1T48-F308	2	A	18" AO BFV	A	H-16024 C-10	DW Purge Inlet Inbrd CIV	C	C	Qtr	CIV	Yes	NA
1T48-F309	2	A	18" AO BFV	A	H-16024 E-10	Torus Purge Inlet Inbrd CIV	C	C	Qtr	CIV	Yes	NA
1T48-F310	2	A	20" AO BFV	A	H-16024 F-10	Torus Purge Vac Brker CIV	C	O/C	Qtr	CIV	Yes	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1T48-F311	2	A	20" AO BFV	A	H-16024 F-9	Torus Purge Vac Brker CIV	C	O/C	Qtr	CIV	Yes	NA
1T48-F318	2	A	18" AO BFV	A	H-16024 G-4	Torus Purge Outlet Inbrd CIV	C	C	Qtr	CIV	Yes	NA
1T48-F319	2	A	18" AO BFV	A	H-16024 D-4	DW Purge Outlet Inbrd CIV	C	C	Qtr	CIV	Yes	NA
1T48-F320	2	A	18" AO BFV	A	H-16024 D-3	DW Purge Outlet Outbrd CIV	C	C	Qtr	CIV	Yes	NA
1T48-F321	2	A	2" AO GLV	A	H-16000 J-7	DW Inerting Outbrd CIV	C	C	Qtr	CIV	Yes	NA
1T48-F322	2	A	2" AO GLV	A	H-16000 J-8	DW Inerting Inbrd CIV	C	C	Qtr	CIV	Yes	NA
1T48-F323A	2	C	20" AO Test CV	A	H-16024 H-8	DW to Torus VB	C	O/C	Qtr/RO	NA	NA	Notes 16, 26, 33
1T48-F323B	2	C	20" AO Test CV	A	H-16024 H-8	DW to Torus VB	C	O/C	Qtr/RO	NA	NA	Notes 16, 26, 33
1T48-F323C	2	C	20" AO Test CV	A	H-16024 H-8	DW to Torus VB	C	O/C	Qtr/RO	NA	NA	Notes 16, 26, 33
1T48-F323D	2	C	20" AO Test CV	A	H-16024 H-8	DW to Torus VB	C	O/C	Qtr/RO	NA	NA	Notes 16, 26, 33
1T48-F323E	2	C	20" AO Test CV	A	H-16024 H-8	DW to Torus VB	C	O/C	Qtr/RO	NA	NA	Notes 16, 26, 33
1T48-F323F	2	C	20" AO Test CV	A	H-16024 H-8	DW to Torus VB	C	O/C	Qtr/RO	NA	NA	Notes 16, 26, 33

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	MP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1T48-F323G	2	C	20" AO Test CV	A	H-16024 H-8	DW to Torus VB	C	O/C	Qtr/RO	NA	NA	Notes 16, 26, 33
1T48-F323H	2	C	20" AO Test CV	A	H-16024 H-8	DW to Torus VB	C	O/C	Qtr/RO	NA	NA	Notes 16, 26, 33
1T48-F323I	2	C	20" AO Test CV	A	H-16024 H-8	DW to Torus VB	C	O/C	Qtr/RO	NA	NA	Notes 16, 26, 33
1T48-F323J	2	C	20" AO Test CV	A	H-16024 H-8	DW to Torus VB	C	O/C	Qtr/RO	NA	NA	Notes 16, 26, 33
1T48-F323K	2	C	20" AO Test CV	A	H-16024 H-8	DW to Torus VB	C	O/C	Qtr/RO	NA	NA	Notes 16, 26, 33
1T48-F323L	2	C	20" AO Test CV	A	H-16024 H-8	DW to Torus VB	C	O/C	Qtr/RO	NA	NA	Notes 16, 26, 33
1T48-F324	2	A	18" AO BFV	A	H-16024 D-10	Torus Purge Inlet Outbrd CIV	C	C	Qtr	CIV	Yes	NA
1T48-F325	2	A	2" AO GLV	A	H-16000 H-7	Torus Inerting Outbrd CIV	C	C	Qtr	CIV	Yes	NA
1T48-F326	2	A	18" AO BFV	A	H-16024 G-3	Torus Purge Outlet Outbrd CIV	C	C	Qtr	CIV	Yes	NA
1T48-F327	2	A	2" AO GLV	A	H-16000 H-8	Torus Inerting Inbrd CIV	C	C	Qtr	CIV	Yes	NA
1T48-F328A	2	AC	20" AO Test CV	A	H-16024 G-10	Rx Bldg to Supp Cham VB CIV	C	O/C	Qtr/RO	CIV	NA	Note 26, 33
1T48-F328B	2	AC	20" AO Test CV	A	H-16024 G-9	Rx Bldg to Supp Cham VB CIV	C	O/C	Qtr/RO	CIV	NA	Note 26, 33

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1T48-F332A	2	A	2" AO GLV	A	H-16024 E-3	Torus Purge Outlet Outbrd CIV	C	C	Qtr	CIV	Yes	NA
1T48-F332B	2	A	2" AO GLV	A	H-16024 F-3	Torus Purge Outlet Outbrd CIV	C	C	Qtr	CIV	Yes	NA
1T48-F333A	2	A	2" AO GLV	A	H-16024 E-4	Torus Purge Outlet Inbrd CIV	C	C	Qtr	CIV	Yes	NA
1T48-F333B	2	A	2" AO GLV	A	H-16024 F-4	Torus Purge Outlet Inbrd CIV	C	C	Qtr	CIV	Yes	NA
1T48-F334A	2	A	2" AO GLV	A	H-16024 B-3	DW Purge Outlet Outbrd CIV	C	C	Qtr	CIV	Yes	NA
1T48-F334B	2	A	2" AO GLV	A	H-16024 C-3	DW Purge Outlet Outbrd CIV	C	C	Qtr	CIV	Yes	NA
1T48-F335A	2	A	2" AO GLV	A	H-16024 B-4	DW Purge Outlet Inbrd CIV	C	C	Qtr	CIV	Yes	NA
1T48-F335B	2	A	2" AO GLV	A	H-16024 C-4	DW Purge Outlet Inbrd CIV	C	C	Qtr	CIV	Yes	NA
1T48-F338	2	A	2" SOV	A	H-16024 H-2	Bypass-Outbrd CIV	C	C	Qtr	CIV	Yes	NA
1T48-F339	2	A	2" SOV	A	H-16024 H-3	Bypass-Inbrd CIV	C	C	Qtr	CIV	Yes	NA
1T48-F340	2	A	2" SOV	A	H-16024 D-4	Bypass-Outbrd CIV	C	C	Qtr	CIV	Yes	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1T48-F341	2	A	2" SOV	A	H-16024 D-4	Bypass-Inbrd CIV	C	C	Qtr	CIV	Yes	NA
1T48-F342A	2	AP	1/2" SOV	P	H-16024 H-8	Torus to DW VB Test CIV	C	C	NA	CIV	No	Note 27
1T48-F342B	2	AP	1/2" SOV	P	H-16024 H-8	Torus to DW VB Test CIV	C	C	NA	CIV	No	Note 27
1T48-F342C	2	AP	1/2" SOV	P	H-16024 H-8	Torus to DW VB Test CIV	C	C	NA	CIV	No	Note 27
1T48-F342D	2	AP	1/2" SOV	P	H-16024 H-8	Torus to DW VB Test CIV	C	C	NA	CIV	No	Note 27
1T48-F342E	2	AP	1/2" SOV	P	H-16024 H-8	Torus to DW VB Test CIV	C	C	NA	CIV	No	Note 27
1T48-F342F	2	AP	1/2" SOV	P	H-16024 H-8	Torus to DW VB Test CIV	C	C	NA	CIV	No	Note 27
1T48-F342G	2	AP	1/2" SOV	P	H-16024 H-8	Torus to DW VB Test CIV	C	C	NA	CIV	No	Note 27
1T48-F342H	2	AP	1/2" SOV	P	H-16024 H-8	Torus to DW VB Test CIV	C	C	NA	CIV	No	Note 27
1T48-F342I	2	AP	1/2" SOV	P	H-16024 H-8	Torus to DW VB Test CIV	C	C	NA	CIV	No	Note 27
1T48-F342J	2	AP	1/2" SOV	P	H-16024 H-8	Torus to DW VB Test CIV	C	C	NA	CIV	No	Note 27
1T48-F342K	2	AP	1/2" SOV	P	H-16024 H-8	Torus to DW VB Test CIV	C	C	NA	CIV	No	Note 27

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
1T48-F342L	2	AP	1/2" SOV	P	H-16024 H-8	Torus to DW VB Test CIV	C	C	NA	CIV	No	Note 27

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2B21-F010A	1	AC	18" CV	A	H-26000 E-3	FW Inbrd CIV	O	O/C	DMO/RO	CIV	NA	ROJ-V-1
2B21-F010B	1	AC	18" CV	A	H-26000 F-3	FW Inbrd CIV	O	O/C	DMO/RO	CIV	NA	ROJ-V-1
2B21-F013A	1	BC	6" RV	A	H-26000 D-6	Main Steam ADS	C	O/C	Note 5	NA	Yes	ROJ-V-2
2B21-F013B	1	C	6" RV	A	H-26000 D-6	Main Steam Safety/Relief	C	O/C	Note 5	NA	No	NA
2B21-F013C	1	BC	6" RV	A	H-26000 D-6	Main Steam ADS	C	O/C	Note 5	NA	Yes	ROJ-V-2
2B21-F013D	1	C	6" RV	A	H-26000 D-6	Main Steam Safety/Relief	C	O/C	Note 5	NA	No	NA
2B21-F013E	1	BC	6" RV	A	H-26000 D-6	Main Steam ADS	C	O/C	Note 5	NA	Yes	ROJ-V-2
2B21-F013F	1	C	6" RV	A	H-26000 D-6	Main Steam Safety/Relief	C	O/C	Note 5	NA	No	NA
2B21-F013G	1	C	6" RV	A	H-26000 D-6	Main Steam Safety/Relief	C	O/C	Note 5	NA	No	NA
2B21-F013H	1	BC	6" RV	A	H-26000 D-6	Main Steam ADS	C	O/C	Note 5	NA	Yes	ROJ-V-2
2B21-F013K	1	BC	6" RV	A	H-26000 D-6	Main Steam ADS	C	O/C	Note 5	NA	Yes	ROJ-V-2
2B21-F013L	1	BC	6" RV	A	H-26000 D-6	Main Steam ADS	C	O/C	Note 5	NA	Yes	ROJ-V-2

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2B21-F013M	1	BC	6" RV	A	H-26000 D-6	Main Steam ADS	C	O/C	Note 5	NA	Yes	ROJ-V-2
2B21-F016	1	A	3" MO GV	A	H-26000 E-8	Main Steam Line DRN Inbrd CIV	C	C	Qtr	CIV	Yes	RR-V-1
2B21-F019	1	A	3" MO GV	A	H-26000 E-9	Main Steam Line DRN Outbrd CIV	C	C	Qtr	CIV	Yes	NA
2B21-F021	2	B	3" MO GLV	A	H-26000 E-10	MS Line Drain Vlv	C	O	Qtr	NA	Yes	NA
2B21-F022A	1	A	24" AO GLV	A	H-26000 D-8	MSIV	O	C	CS	CIV	Yes	RR-V-2 CSJ-V-1
2B21-F022B	1	A	24" AO GLV	A	H-26000 D-8	MSIV	O	C	CS	CIV	Yes	RR-V-2 CSJ-V-1
2B21-F022C	1	A	24" AO GLV	A	H-26000 D-8	MSIV	O	C	CS	CIV	Yes	RR-V-2 CSJ-V-1
2B21-F022D	1	A	24" AO GLV	A	H-26000 D-8	MSIV	O	C	CS	CIV	Yes	RR-V-2 CSJ-V-1
2B21-F028A	1	A	24" AO GLV	A	H-26000 D-9	MSIV	O	C	CS	CIV	Yes	RR-V-2 CSJ-V-1
2B21-F028B	1	A	24" AO GLV	A	H-26000 D-9	MSIV	O	C	CS	CIV	Yes	RR-V-2 CSJ-V-1
2B21-F028C	1	A	24" AO GLV	A	H-26000 D-9	MSIV	O	C	CS	CIV	Yes	RR-V-2 CSJ-V-1
2B21-F028D	1	A	24" AO GLV	A	H-26000 D-9	MSIV	O	C	CS	CIV	Yes	RR-V-2 CSJ-V-1

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2B21-F036A	2	C	1" CV	A	H-28023 D-3	MSRV Accum Air Supply CV	O/C	C	RO	NA	NA	ROJ-V-5
2B21-F036B	2	C	1" CV	A	H-28023 D-3	MSRV Accum Air Supply CV	O/C	C	RO	NA	NA	ROJ-V-5
2B21-F036C	2	C	1" CV	A	H-28023 E-4	MSRV Accum Air Supply CV	O/C	C	RO	NA	NA	ROJ-V-5
2B21-F036D	2	C	1" CV	A	H-28023 E-4	MSRV Accum Air Supply CV	O/C	C	RO	NA	NA	ROJ-V-5
2B21-F036E	2	C	1" CV	A	H-28023 D-3	MSRV Accum Air Supply CV	O/C	C	RO	NA	NA	ROJ-V-5
2B21-F036F	2	C	1" CV	A	H-28023 D-3	MSRV Accum Air Supply CV	O/C	C	RO	NA	NA	ROJ-V-5
2B21-F036G	2	C	1" CV	A	H-28023 E-4	MSRV Accum Air Supply CV	O/C	C	RO	NA	NA	ROJ-V-5
2B21-F036H	2	C	1" CV	A	H-28023 E-4	MSRV Accum Air Supply CV	O/C	C	RO	NA	NA	ROJ-V-5
2B21-F036K	2	C	1" CV	A	H-28023 D-3	MSRV Accum Air Supply CV	O/C	C	RO	NA	NA	ROJ-V-5
2B21-F036L	2	C	1" CV	A	H-28023 D-3	MSRV Accum Air Supply CV	O/C	C	RO	NA	NA	ROJ-V-5
2B21-F036M	2	C	1" CV	A	H-28023 E-4	MSRV Accum Air Supply CV	O/C	C	RO	NA	NA	ROJ-V-5
2B21-F037A	3	C	6" VB	A	H-26000 H-7	VB MSRV Disch	C	O/C	RO	NA	NA	Note 33

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2B21-F037B	3	C	6" VB	A	H-26000 H-7	VB MSRV Disch	C	O/C	RO	NA	NA	Note 33
2B21-F037C	3	C	6" VB	A	H-26000 H-7	VB MSRV Disch	C	O/C	RO	NA	NA	Note 33
2B21-F037D	3	C	6" VB	A	H-26000 H-7	VB MSRV Disch	C	O/C	RO	NA	NA	Note 33
2B21-F037E	3	C	6" VB	A	H-26000 H-7	VB MSRV Disch	C	O/C	RO	NA	NA	Note 33
2B21-F037F	3	C	6" VB	A	H-26000 H-7	VB MSRV Disch	C	O/C	RO	NA	NA	Note 33
2B21-F037G	3	C	6" VB	A	H-26000 H-7	VB MSRV Disch	C	O/C	RO	NA	NA	Note 33
2B21-F037H	3	C	6" VB	A	H-26000 H-7	VB MSRV Disch	C	O/C	RO	NA	NA	Note 33
2B21-F037K	3	C	6" VB	A	H-26000 H-7	VB MSRV Disch	C	O/C	RO	NA	NA	Note 33
2B21-F037L	3	C	6" VB	A	H-26000 H-7	VB MSRV Disch	C	O/C	RO	NA	NA	Note 33
2B21-F037M	3	C	6" VB	A	H-26000 H-7	VB MSRV Disch	C	O/C	RO	NA	NA	Note 33
2B21-F041	1	AC	1" EFCV	A	H-26001 B-5	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F043A	1	AC	1" EFCV	A	H-26001 C-5	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2B21-F043B	1	AC	1" EFCV	A	H-26001 C-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F045A	1	AC	1" EFCV	A	H-26001 C-5	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F045B	1	AC	1" EFCV	A	H-26001 C-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F047A	1	AC	1" EFCV	A	H-26001 F-5	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F047B	1	AC	1" EFCV	A	H-26001 F-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F049A	1	AC	1" EFCV	A	H-26001 F-5	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F049B	1	AC	1" EFCV	A	H-26001 F-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F051A	1	AC	1" EFCV	A	H-26001 H-5	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F051B	1	AC	1" EFCV	A	H-26001 H-5	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F051C	1	AC	1" EFCV	A	H-26001 H-5	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F051D	1	AC	1" EFCV	A	H-26001 H-5	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F053A	1	AC	1" EFCV	A	H-26001 H-5	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2B21-F053B	1	AC	1" EFCV	A	H-26001 H-5	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F053C	1	AC	1" EFCV	A	H-26001 H-5	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F053D	1	AC	1" EFCV	A	H-26001 H-5	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F055	1	AC	1" EFCV	A	H-26001 J-5	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F057	1	AC	1" EFCV	A	H-26001 J-5	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F059A	1	AC	1" EFCV	A	H-26001 H-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F059B	1	AC	1" EFCV	A	H-26001 H-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F059C	1	AC	1" EFCV	A	H-26001 H-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F059D	1	AC	1" EFCV	A	H-26001 H-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F059E	1	AC	1" EFCV	A	H-26001 H-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F059F	1	AC	1" EFCV	A	H-26001 H-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F059G	1	AC	1" EFCV	A	H-26001 H-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2B21-F059H	1	AC	1" EFCV	A	H-26001 H-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F059L	1	AC	1" EFCV	A	H-26001 H-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F059M	1	AC	1" EFCV	A	H-26001 H-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F059N	1	AC	1" EFCV	A	H-26001 H-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F059P	1	AC	1" EFCV	A	H-26001 H-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F059R	1	AC	1" EFCV	A	H-26001 H-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F059S	1	AC	1" EFCV	A	H-26001 H-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F059T	1	AC	1" EFCV	A	H-26001 H-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F059U	1	AC	1" EFCV	A	H-26001 H-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F061	1	AC	1" EFCV	A	H-26001 J-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F070A	1	AC	1" EFCV	A	H-26000 D-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F070B	1	AC	1" EFCV	A	H-26000 D-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	HP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2B21-F070C	1	AC	1" EFCV	A	H-26000 D-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F070D	1	AC	1" EFCV	A	H-26000 D-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F071A	1	AC	1" EFCV	A	H-26000 B-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F071B	1	AC	1" EFCV	A	H-26000 B-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F071C	1	AC	1" EFCV	A	H-26000 B-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F071D	1	AC	1" EFCV	A	H-26000 B-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F072A	1	AC	1" EFCV	A	H-26000 B-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F072B	1	AC	1" EFCV	A	H-26000 B-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F072C	1	AC	1" EFCV	A	H-26000 B-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F072D	1	AC	1" EFCV	A	H-26000 B-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F073A	1	AC	1" EFCV	A	H-26000 B-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F073B	1	AC	1" EFCV	A	H-26000 B-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2B21-F073C	1	AC	1" EFCV	A	H-26000 B-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F073D	1	AC	1" EFCV	A	H-26000 B-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B21-F076A	2	C	18" AO CV	A	H-26000 E-2	FW CV	O	C	CS	NA	NA	CSJ-V-11
2B21-F076B	2	C	18" AO CV	A	H-26000 E-2	FW CV	O	C	CS	NA	NA	CSJ-V-11
2B21-F077A	1	AC	18" AO CV	A	H-26000 E-3	FW Outbrd CIV	O	O/C	DNO/CS	CIV	NA	CSJ-V-12
2B21-F077B	1	AC	18" AO CV	A	H-26000 E-3	FW Outbrd CIV	O	O/C	DNO/CS	CIV	NA	CSJ-V-12
2B21-F110B	3	C	10" VB	A	H-26000 H-7	VB MSRV Disch	C	O/C	RO	NA	NA	Note 33
2B21-F110D	3	C	10" VB	A	H-26000 H-7	VB MSRV Disch	C	O/C	RO	NA	NA	Note 33
2B21-F110F	3	C	10" VB	A	H-26000 H-7	VB MSRV Disch	C	O/C	RO	NA	NA	Note 33
2B21-F110G	3	C	10" VB	A	H-26000 H-7	VB MSRV Disch	C	O/C	RO	NA	NA	Note 33
2B21-F111	2	A	1" AO GV	A	H-26384 E-10	Pass Sample Vlv	C	C	Qtr	CIV	Yes	NA
2B21-F112	2	A	1" AO GV	A	H-26384 E-10	Pass Sample Vlv	C	C	Qtr	CIV	Yes	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2831-F003A	1	AC	1" EFCV	A	H-26003 G-2	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2831-F003B	1	AC	1" EFCV	A	H-26003 G-2	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2831-F004A	1	AC	1" EFCV	A	H-26003 G-2	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2831-F004B	1	AC	1" EFCV	A	H-26003 G-2	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2831-F009A	1	AC	1" EFCV	A	H-26003 D-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2831-F009B	1	AC	1" EFCV	A	H-26003 E-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2831-F009C	1	AC	1" EFCV	A	H-26003 E-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2831-F009D	1	AC	1" EFCV	A	H-26003 F-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2831-F010A	1	AC	1" EFCV	A	H-26003 D-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2831-F010B	1	AC	1" EFCV	A	H-26003 F-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2831-F010C	1	AC	1" EFCV	A	H-26003 E-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2831-F010D	1	AC	1" EFCV	A	H-26003 F-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2B31-F011A	1	AC	1" EFCV	A	H-26003 D-9	Inst EFCV	C	C	RO	LTV	NA	ROJ-V-3
2B31-F011B	1	AC	1" EFCV	A	H-26003 F-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B31-F011C	1	AC	1" EFCV	A	H-26003 E-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B31-F011D	1	AC	1" EFCV	A	H-26003 G-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B31-F012A	1	AC	1" EFCV	A	H-26003 E-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B31-F012B	1	AC	1" EFCV	A	H-26003 F-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B31-F012C	1	AC	1" EFCV	A	H-26003 E-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B31-F012D	1	AC	1" EFCV	A	H-26003 G-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2B31-F013A	1	AC	3/4" CV	A	H-26003 G-3	Recir Pump Seal Wtr CIV	O	C	RO	CIV	NA	ROJ-V-6
2B31-F013B	1	AC	3/4" CV	A	H-26003 G-3	Recir Pump Seal Wtr CIV	O	C	RO	CIV	NA	ROJ-V-6
2B31-F017A	1	AC	3/4" CV	A	H-26003 G-2	Recir Pump Seal Wtr CIV	O	C	RO	CIV	NA	ROJ-V-6
2B31-F017B	1	AC	3/4" CV	A	H-26003 G-2	Recir Pump Seal Wtr CIV	O	C	RO	CIV	NA	ROJ-V-6

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2831-F019	1	A	1" AO GLV	A	H-26003 E-4	Rx Sample Sys Inbrd CIV	O	C	Qtr	CIV	Yes	NA
2831-F020	1	A	1" AO GLV	A	H-26003 E-2	Rx Sample Sys Outbrd CIV	O	C	Qtr	CIV	Yes	NA
2831-F031A	1	B	28" MO GV	A	H-26003 G-7	Recirc Pump Disch Iso	O	C	CS	NA	Yes	CSJ-V-2
2831-F031B	1	B	28" MO GV	A	H-26003 G-7	Recirc Pump Disch Iso	O	C	CS	NA	Yes	CSJ-V-2
2831-F040A	1	AC	1" EFCV	A	H-26003 G-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2831-F040B	1	AC	1" EFCV	A	H-26003 G-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2831-F040C	1	AC	1" EFCV	A	H-26003 G-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2831-F040D	1	AC	1" EFCV	A	H-26003 H-9	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2C11-F010A	2	B	1" AO GLV	A	H-26007 A-5	SDV Vent Vlv	O	O/C	Qtr/RO	NA	Yes	RR-V-3
2C11-F010B	2	B	1" AO GLV	A	H-26007 A-5	SDV Vent Vlv	O	O/C	Qtr/RO	NA	Yes	RR-V-3
2C11-F011	2	B	2" AO GLV	A	H-26007 B-3	SDV Drain Vlv	O	O/C	Qtr/RO	NA	Yes	RR-V-3
2C11-F035A	2	B	1" AO GLV	A	H-26007 A-5	SDV Vent Vlv	O	O/C	Qtr/RO	NA	Yes	RR-V-3
2C11-F035B	2	B	1" AO GLV	A	H-26007 A-5	SDV Vent Vlv	O	O/C	Qtr/RO	NA	Yes	RR-V-3
2C11-F037	2	B	2" AO GLV	A	H-26007 B-3	SDV Drain Vlv	O	O/C	Qtr/RO	NA	Yes	RR-V-3
2C11-HCU-114	2	C	3/4" CV	A	H-26006 A-6	SDV HCU CV	C	O	RO	NA	NA	ROJ-V-7 Note 2
2C11-HCU-115	2	C	1/2" CV	A	H-26006 C-6	Charging Water HCU CV	C	C	RO	NA	NA	ROJ-V-8 Note 2
2C11-HCU-126	1	B	1" AO GLV	A	H-26006 C-5	Scram Insert HCU CV	C	O	RO	NA	No	ROJ-V-9 Note 2
2C11-HCU-127	1	B	3/4" AO GLV	A	H-26006 B-5	Scram Disch HCU CV	C	O	RO	NA	No	ROJ-V-9 Note 2
2C11-HCU-138	1	C	1/2" CV	A	H-26006 C-4	Cooling Water Header HCU CV	C	C	Wkly	NA	NA	Notes 2,3

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2C41-F004A	2	D	1-1/2" Expl Act	A	H-26009 E-2	SLC Expl Act	C	O	ISTC 4.6	NA	NA	NA
2C41-F004B	2	D	1-1/2" Expl Act	A	H-26009 F-2	SLC Expl Act	C	O	ISTC 4.6	NA	NA	NA
2C41-F006	1	AC	1-1/2" CV	A	H-26009 E-2	SLC Outbrd CIV	C	O/C	RO	CIV	NA	ROJ-V-10
2C41-F007	1	AC	1-1/2" CV	A	H-26009 F-2	SLC Inbrd CIV	C	O/C	RO	CIV	NA	ROJ-V-10
2C41-F029A	2	C	1" RV	A	H-26009 E-5	SLC Pump Disch RV	C	O/C	Note 5	NA	NA	NA
2C41-F029B	2	C	1" RV	A	H-26009 H-5	SLC Pump Disch RV	C	O/C	Note 5	NA	NA	NA
2C41-F033A	2	C	1-1/2" CV	A	H-26009 F-4	SLC Pump Disch	C	O	Qtr	NA	NA	NA
2C41-F033B	2	C	1-1/2" CV	A	H-26009 G-4	SLC Pump Disch	C	O	Qtr	NA	NA	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	HP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2C51-Ball A	2	A	Ball SOV	A	H-26993 C-3	TIP Inbrd CIV	O	C	Qtr	CIV	Yes	NA
2C51-Ball B	2	A	Ball SOV	A	H-26993 C-3	TIP Inbrd CIV	O	C	Qtr	CIV	Yes	NA
2C51-Ball C	2	A	Ball SOV	A	H-26993 C-3	TIP Inbrd CIV	O	C	Qtr	CIV	Yes	NA
2C51-Ball D	2	A	Ball SOV	A	H-26993 C-3	TIP Inbrd CIV	O	C	Qtr	CIV	Yes	NA
2C51-F3012	2	A	SOV	A	H-26993 F-13	TIP N2 Purge CIV	O	C	Qtr/RO	CIV	Yes	RR-V-9
2C51-F3017	2	AC	CV	A	H-26993 E-13	TIP N2 Purge CIV	O	C	RO	CIV	NA	ROJ-V-11
2C51-Shear A	2	AD	Expl Shear	A	H-26993 C-3	TIP Outbrd CIV	O	C	ISTC 4.6	NA	NA	RR-V-5
2C51-Shear B	2	AD	Expl Shear	A	H-26993 C-3	TIP Outbrd CIV	O	C	ISTC 4.6	NA	NA	RR-V-5
2C51-Shear C	2	AD	Expl Shear	A	H-26993 C-3	TIP Outbrd CIV	O	C	ISTC 4.6	NA	NA	RR-V-5
2C51-Shear D	2	AD	Expl Shear	A	H-26993 C-3	TIP Outbrd CIV	O	C	ISTC 4.6	NA	NA	RR-V-5

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2D11-F050	2	A	1" AO Control	A	H-26016 D-5	Fission Prod Mon CIV	O	C	Qtr	CIV	Yes	NA
2D11-F051	2	A	1" AO Control	A	H-26016 F-5	Fission Prod Mon CIV	O	C	Qtr	CIV	Yes	NA
2D11-F052	2	A	1" AO Control	A	H-26016 D-6	Fission Prod Mon CIV	O	C	Qtr	CIV	Yes	NA
2D11-F053	2	A	1" AO Control	A	H-26016 F-6	Fission Prod Mon CIV	O	C	Qtr	CIV	Yes	NA
2D11-F058	2	A	1" Man GLV	P	H-26016 G-4	Passive CIV	LC	C	NA	CIV	No	NA
2D11-F065	2	A	1" Man GLV	P	H-26016 G-3	Passive CIV	LC	C	NA	CIV	No	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2E11-F003A	2	B	16" MO GV	A	H-26015 D-4	RHR Hx Shell Side Outlet	O	O	Qtr	NA	Yes	NA
2E11-F003B	2	B	16" MO GV	A	H-26014 E-8	RHR Hx Shell Side Outlet	O	O	Qtr	NA	Yes	NA
2E11-F004A	2	B	24" MO GV	A	H-26015 F-8	RHR Pump Suct Torus Iso	O	O/C	Qtr	NA	Yes	Note 4
2E11-F004B	2	B	24" MO GV	A	H-26014 F-3	RHR Pump Suct Torus Iso	O	O/C	Qtr	NA	Yes	Note 4
2E11-F004C	2	B	24" MO GV	A	H-26015 E-9	RHR Pump Suct Torus Iso	O	O/C	Qtr	NA	Yes	Note 4
2E11-F004D	2	B	24" MO GV	A	H-26014 F-2	RHR Pump Suct Torus Iso	O	O/C	Qtr	NA	Yes	Note 4
2E11-F005A	3	C	14" CV	A	H-21039 C-5	RHRSW Pump Disch CV	C	O/C	Qtr	NA	NA	Notes 6,7
2E11-F005B	3	C	14" CV	A	H-21039 F-5	RHRSW Pump Disch CV	C	O/C	Qtr	NA	NA	Notes 6,7
2E11-F005C	3	C	14" CV	A	H-21039 D-4	RHRSW Pump Disch CV	C	O/C	Qtr	NA	NA	Notes 6,7
2E11-F005D	3	C	14" CV	A	H-21039 G-4	RHRSW Pump Disch CV	C	O/C	Qtr	NA	NA	Notes 6,7
2E11-F006A	2	B	20" MO GV	A	H-26015 F-8	RHR SDC Suct	C	O	Qtr	NA	Yes	NA
2E11-F006B	2	B	20" MO GV	A	H-26014 F-3	RHR SDC Suct	C	O	Qtr	NA	Yes	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2E11-F006C	2	B	20" MO GV	A	H-26015 F-10	RHR SDC Suct	C	O	Qtr	NA	Yes	NA
2E11-F006D	2	B	20" MO GV	A	H-26014 F-2	RHR SDC Suct	C	O	Qtr	NA	Yes	NA
2E11-F007A	2	B	4" MO GV	A	H-26015 D-5	RHR Pump Min Flow Torus Iso	O	O/C	Qtr	NA	Yes	Note 4
2E11-F007B	2	B	4" MO GV	A	H-26014 D-6	RHR Pump Min Flow Torus Iso	O	O/C	Qtr	NA	Yes	Note 4
2E11-F008	1	A	20" MO GV	A	H-26015 D-10	RHR SDC Outbrd CIV	C	O/C	CS	PIV/CIV	Yes	CSJ-V-3
2E11-F009	1	A	20" MO GV	A	H-26015 D-10	RHR SDC Inbrd PIV	C	O/C	CS	PIV	Yes	CSJ-V-3
2E11-F011A	2	B	4" MO GV	A	H-26015 D-3	RHR Cond Disch to Torus	C	C	Qtr	NA	Yes	Note 4
2E11-F011B	2	B	4" MO GV	A	H-26014 D-8	RHR Cond Disch to Torus	C	C	Qtr	NA	Yes	Note 4
2E11-F015A	1	A	24" MO GV	A	H-26015 D-7	LPCI Outbrd CIV	C	O/C	Qtr	PIV/CIV	Yes	NA
2E11-F015B	1	A	24" MO GV	A	H-26014 D-4	LPCI Outbrd CIV	C	O/C	Qtr	PIV/CIV	Yes	NA
2E11-F016A	2	A	16" MO GLV	A	H-26015 B-7	Cont Spray Outbrd CIV	C	O/C	Qtr	CIV	Yes	NA
2E11-F016B	2	A	16" MO GLV	A	H-26014 B-4	Cont Spray Outbrd CIV	C	O/C	Qtr	CIV	Yes	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2E11-F017A	1	B	24" MO GLV	A	H-26015 D-7	LPCI	O	O	Qtr	NA	Yes	NA
2E11-F017B	1	B	24" MO GLV	A	H-26014 D-4	LPCI	O	O	Qtr	NA	Yes	NA
2E11-F021A	2	B	16" MO GV	A	H-26015 B-9	Cnmt Spray	C	O/C	Qtr	NA	Yes	NA
2E11-F021B	2	B	16" MO GV	A	H-26014 C-2	Cnmt Spray	C	O/C	Qtr	NA	Yes	NA
2E11-F023	2	A	4" MO GLV	P	H-26014 B-3	Passive CIV	C	C	NA	CIV	No	NA
2E11-F024A	2	B	16" MO GLV	A	H-26015 C-6	SPC	C	O/C	Qtr	NA	Yes	Note 4
2E11-F024B	2	B	16" MO GLV	A	H-26014 D-6	SPC	C	O/C	Qtr	NA	Yes	Note 4
2E11-F025A	2	C	1" RV	A	H-26015 C-7	LPCI RV	C	O/C	Note 5	NA	NA	Note 4
2E11-F025B	2	C	1" RV	A	H-26014 C-4	LPCI RV	C	O/C	Note 5	NA	NA	Note 4
2E11-F026A	2	B	4" MO GV	A	H-26015 D-2	Cond Disch to RCIC	C	C	Qtr	NA	Yes	Note 4
2E11-F026B	2	B	4" MO GV	A	H-26014 E-9	Cond Disch to RCIC	C	C	Qtr	NA	Yes	Note 4
2E11-F027A	2	B	6" MO GLV	A	H-26015 C-7	Supp Pool Spray	C	O/C	Qtr	NA	Yes	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2E11-F027B	2	B	6" MO GLV	A	H-26014 D-5	Supp Pool Spray	C	O/C	Qtr	NA	Yes	NA
2E11-F028A	2	A	16" MO GV	A	H-26015 C-6	Supp Pool Spray Outbrd CIV	C	O/C	Qtr	CIV	Yes	NA
2E11-F028B	2	A	16" MO GV	A	H-26014 C-7	Supp Pool Spray Outbrd CIV	C	O/C	Qtr	CIV	Yes	NA
2E11-F029	2	C	1" RV	A	H-26015 E-9	RHR Pump Suc RV	C	O/C	Note 5	NA	NA	Note 4
2E11-F030A	2	C	1" RV	A	H-26015 F-8	RHR Pump Suc RV	C	O/C	Note 5	NA	NA	Note 4
2E11-F030B	2	C	1" RV	A	H-26014 F-4	RHR Pump Suc RV	C	O/C	Note 5	NA	NA	Note 4
2E11-F030C	2	C	1" RV	A	H-26015 F-10	RHR Pump Suc RV	C	O/C	Note 5	NA	NA	Note 4
2E11-F030D	2	C	1" RV	A	H-26014 F-2	RHR Pump Suc RV	C	O/C	Note 5	NA	NA	Note 4
2E11-F031A	2	C	20" CV	A	H-26015 H-6	RHR Pump Disch	C	O/C	Qtr	NA	NA	Notes 6,7
2E11-F031B	2	C	20" CV	A	H-26014 H-6	RHR Pump Disch	C	O/C	Qtr	NA	NA	Notes 6,7
2E11-F031C	2	C	20" CV	A	H-26015 H-9	RHR Pump Disch	C	O/C	Qtr	NA	NA	Notes 6,7
2E11-F031D	2	C	20" CV	A	H-26014 H-3	RHR Pump Disch	C	O/C	Qtr	NA	NA	Notes 6,7

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2E11-F040	2	B	4" MO GLV	P	H-26014 B-6	RHR to RW Drain	C	C	NA	NA	No	Note 8
2E11-F041A	2	A	1" AO Control	A	H-26015 A-4	RHR Inst CIV	O	O/C	Qtr	CIV	Yes	NA
2E11-F041B	2	A	1" AO Control	A	H-26014 A-6	RHR Inst CIV	O	O/C	Qtr	CIV	Yes	NA
2E11-F041C	2	A	1" AO Control	A	H-26015 A-8	RHR Inst CIV	O	O/C	Qtr	CIV	Yes	NA
2E11-F041D	2	A	1" AO Control	A	H-26014 A-3	RHR Inst CIV	O	O/C	Qtr	CIV	Yes	NA
2E11-F046A	2	C	3" CV	A	H-26015 G-6	RHR Min Flow Line	C	O/C	DIME	NA	NA	ROJ-V-12 Note 9
2E11-F046B	2	C	3" CV	A	H-26014 H-5	RHR Min Flow Line	C	O/C	DIME	NA	NA	ROJ-V-12 Note 9
2E11-F046C	2	C	3" CV	A	H-26015 G-9	RHR Min Flow Line	C	O/C	DIME	NA	NA	ROJ-V-12 Note 9
2E11-F046D	2	C	3" CV	A	H-26014 G-2	RHR Min Flow Line	C	O/C	DIME	NA	NA	ROJ-V-12 Note 9
2E11-F047A	2	B	16" MO GV	A	H-26015 E-5	RHR Hx Shell Side Inlet	O	O	Qtr	NA	Yes	NA
2E11-F047B	2	B	16" MO GV	A	H-26014 E-6	RHR Hx Shell Side Inlet	O	O	Qtr	NA	Yes	NA
2E11-F048A	2	B	24" MO GLV	A	H-26015 D-5	RHR Hx Shell Side Bypass	O	O/C	Qtr	NA	Yes	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2E11-F048B	2	B	24" MO GLV	A	H-26014 E-6	RHR Hx Shell Side Bypass	O	O/C	Qtr	NA	Yes	NA
2E11-F049	2	B	4" MO GV	P	H-26014 B-5	RHR to RW Drain	C	C	NA	NA	No	Note 8
2E11-F050A	1	AC	18" CV	A	H-26015 D-9	LPCI PIV	C	O/C	RR-V-10	PIV	NA	RR-V-10
2E11-F050B	1	AC	18" CV	A	H-26014 D-3	LPCI PIV	C	O/C	RR-V-10	PIV	NA	RR-V-10
2E11-F055A	2	C	4" RV	A	H-26015 F-4	RHR Hx Shell RV	C	O/C	Note 5	NA	NA	Note 4
2E11-F055B	2	C	4" RV	A	H-26014 F-7	RHR Hx Shell RV	C	O/C	Note 5	NA	NA	Note 4
2E11-F065A	2	B	24" AO BFV	P	H-26015 F-8	RHR Pump Suct Maint	O	O	NA	NA	No	Note 8
2E11-F065B	2	B	24" AO BFV	P	H-26014 F-3	RHR Pump Suct Maint	O	O	NA	NA	No	Note 8
2E11-F065C	2	B	24" AO BFV	P	H-26015 F-9	RHR Pump Suct Maint	O	O	NA	NA	No	Note 8
2E11-F065D	2	B	24" AO BFV	P	H-26014 F-2	RHR Pump Suct Maint	O	O	NA	NA	No	Note 8
2E11-F068A	3	B	10" MO Ball	A	H-21039 C-10	RHR Hx Ser Wtr Disc	C	O/C	Qtr	NA	Yes	NA
2E11-F068B	3	B	10" MO Ball	A	H-21039 G-10	RHR Hx Ser Wtr Disc	C	O/C	Qtr	NA	Yes	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2E11-F073A	2	B	10" MO GV	A	H-26015 G-4	RHRSW to RHR Crosstie	C	O/C	Qtr	NA	Yes	NA
2E11-F073B	2	B	10" MO GV	A	H-26014 G-7	RHRSW to RHR Crosstie	C	O/C	Qtr	NA	Yes	NA
2E11-F075A	2	B	10" MO GV	A	H-26015 G-4	RHRSW to RHR Crosstie	C	O/C	Qtr	NA	Yes	NA
2E11-F075B	2	B	10" MO GV	A	H-26014 G-7	RHRSW to RHR Crosstie	C	O/C	Qtr	NA	Yes	NA
2E11-F078A	2	C	10" Test CV	A	H-26015 E-4	RHRSW to RHR Crosstie	C	O/C	DIME	NA	NA	Notes 9,10
2E11-F078B	2	C	10" Test CV	A	H-26014 E-7	RHRSW to RHR Crosstie	C	O/C	DIME	NA	NA	Notes 9,10
2E11-F091A	2	B	6" MO GLV	P	H-26015 E-2	Steam Line to RHR Hx Shutdown	C	C	NA	NA	No	Note 8
2E11-F091B	2	B	6" MO GLV	P	H-26014 E-9	Steam Line to RHR Hx Shutdown	C	C	NA	NA	No	Note 8
2E11-F097	2	C	3" RV	A	H-26014 E-9	Steam Line RV	C	O/C	Note 5	NA	NA	Note 4
2E11-F103A	2	B	1" MO GLV	A	H-26015 E-4	RHR Hx Vent Iso	C	C	Qtr	NA	Yes	Note 4
2E11-F103B	2	B	1" MO GLV	A	H-26014 E-7	RHR Hx Vent Iso	C	C	Qtr	NA	Yes	Note 4
2E11-F122A	1	A	1" AO Plug	P	H-26015 D-8	Passive PIV	C	C	NA	PIV	No	Note 8

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2E11-F122B	1	A	1" AO Plug	P	H-26014 D-3	Passive PIV	C	C	NA	PIV	No	Note 8
2E11-F124A	2	C	2" Stop CV	A	H-26019 D-4	Maintain RHR Water Level	O/C	C	Qtr	NA	NA	Note 11
2E11-F124B	2	C	2" Stop CV	A	H-26019 D-6	Maintain RHR Water Level	O/C	C	Qtr	NA	NA	Note 11

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2E21-F001A	2	B	20" MO GV	A	H-26018 G-7	CS Pump Suct Iso	O	O/C	Qtr	NA	Yes	Note 4
2E21-F001B	2	B	20" MO GV	A	H-26018 H-7	CS Pump Suct Iso	O	O/C	Qtr	NA	Yes	Note 4
2E21-F003A	2	C	12" CV	A	H-26018 F-7	CS Pump Disch	C	O/C	Qtr	NA	NA	Notes 7,12
2E21-F003B	2	C	12" CV	A	H-26018 F-9	CS Pump Disch	C	O/C	Qtr	NA	NA	Notes 7,12
2E21-F004A	1	B	10" MO GV	A	H-26018 E-6	CS Outbrd Inject	O	O	Qtr	NA	Yes	NA
2E21-F004B	1	B	10" MO GV	A	H-26018 C-6	CS Outbrd Inject	O	O	Qtr	NA	Yes	NA
2E21-F005A	1	A	10" MO GV	A	H-26018 E-5	CS Inbrd Inject	C	O/C	Qtr	PIV/CIV	Yes	NA
2E21-F005B	1	A	10" MO GV	A	H-26018 C-5	CS Inbrd Inject	C	O/C	Qtr	PIV/CIV	Yes	NA
2E21-F006A	1	AC	10" CV	A	H-26018 D-4	CS Inject	C	O/C	RO	PIV	NA	ROJ-V-13
2E21-F006B	1	AC	10" CV	A	H-26018 D-4	CS Inject	C	O/C	RO	PIV	NA	ROJ-V-13
2E21-F012A	2	C	2" RV	A	H-26018 E-7	CS Pump Disch RV	C	O/C	Note 5	NA	NA	NA
2E21-F012B	2	C	2" RV	A	H-26018 B-7	CS Pump Disch RV	C	O/C	Note 5	NA	NA	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2E21-F015A	2	B	10" MO GLV	A	H-26018 D-7	CS Test Bypass Iso	C	C	Qtr	NA	Yes	Note 4
2E21-F015B	2	B	10" MO GLV	A	H-26018 D-7	CS Test Bypass Iso	C	C	Qtr	NA	Yes	Note 4
2E21-F018A	1	AC	1" EFCV	A	H-26018 B-3	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2E21-F018B	1	AC	1" EFCV	A	H-26018 B-3	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2E21-F018C	1	AC	1" EFCV	A	H-26018 B-4	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2E21-F019A	2	B	16" AO BFV	P	H-26018 H-5	CS Suct	O	O	NA	NA	No	Note 8
2E21-F019B	2	B	16" AO BFV	P	H-26018 G-5	CS Suct	O	O	NA	NA	No	Note 8
2E21-F031A	2	B	3" MO GV	A	H-26018 F-8	CS Pump Min Flow	O	O/C	Qtr	NA	Yes	NA
2E21-F031B	2	B	3" MO GV	A	H-26018 F-9	CS Pump Min Flow	O	O/C	Qtr	NA	Yes	NA
2E21-F032A	2	C	1" RV	A	H-26018 G-8	CS Suct RV	C	O/C	Note 5	NA	NA	NA
2E21-F032B	2	C	1" RV	A	H-26019 G-9	CS Suct RV	C	O/C	Note 5	NA	NA	NA
2E21-F036A	2	C	3" CV	A	H-26018 E-8	Min Flow Line Iso	C	O/C	DIME	NA	NA	Notes 4,9,13 ROJ-V-28

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2E21-F036B	2	C	3" CV	A	H-26018 E-9	Min Flow Line Iso	C	O/C	DIME	NA	NA	Notes 4,9,13 ROJ-V-28
2E21-F037A	1	A	1" AO Plug Vlv	P	H-26018 D-4	Passive Iso	C	C	NA	PIV	No	Note 8
2E21-F037B	1	A	1" AO Plug Vlv	P	H-26018 C-4	Passive Iso	C	C	NA	PIV	No	Note 8
2E21-F040A	2	C	1-1/2" Stop CV	A	H-26019 D-5	Maintain CS Water Level	O/C	C	Qtr	NA	NA	Note 11
2E21-F040B	2	C	1-1/2" Stop CV	A	H-26019 D-6	Maintain CS Water Level	O/C	C	Qtr	NA	NA	Note 11
2E21-F044A	2	C	1-1/2" Stop CV	A	H-26019 E-1	Jockey Pump Bypass Iso	O	C	RO	NA	NA	ROJ-V-14 Note 4
2E21-F044B	2	C	1-1/2" Stop CV	A	H-26019 E-9	Jockey Pump Bypass Iso	O	C	RO	NA	NA	ROJ-V-14 Note 4

Valve ID	CC	Cat	Description	A/P	PEID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2E41-D003	2	D	16" RD	A	H-26021 D-6	Turbine Exhaust RD	C	O/C	Note 14	NA	NA	NA
2E41-D004	2	D	16" RD	A	H-26021 E-6	Turbine Exhaust RD	C	O/C	Note 14	NA	NA	NA
2E41-F001	2	B	10" MO GV	A	H-26020 E-10	Steam Supply Shutoff	C	O	Qtr	NA	Yes	NA
2E41-F002	1	A	10" MO GV	A	H-26020 C-3	Steam Supply Inbrd CIV	O	O/C	CS	CIV	Yes	RR-V-1 CSJ-V-6
2E41-F003	1	A	10" MO GV	A	H-26020 C-4	Steam Supply Outbrd CIV	O	O/C	Qtr	CIV	Yes	NA
2E41-F004	2	B	16" MO GV	A	H-26020 D-7	Pump Suc from Cond Stor	O	O/C	Qtr	NA	Yes	NA
2E41-F005	2	AC	14" CV	A	H-26020 E-5	Pump Disch	C	O/C	Qtr	PIV	NA	Note 15
2E41-F006	2	A	14" MO GV	A	H-26020 E-4	Pump Inbrd Disch Iso	C	O/C	Qtr	PIV	Yes	NA
2E41-F007	2	B	14" MO GV	A	H-26020 E-5	Pump Outbrd Disch	O	O	Qtr	NA	Yes	NA
2E41-F008	2	B	10" MO GLV	A	H-26020 D-6	Pump Test Bypass	C	C	Qtr	NA	Yes	NA
2E41-F011	2	B	10" MO GV	A	H-26020 C-6	Pump Test Bypass	C	C	Qtr	NA	Yes	Note 16
2E41-F012	2	B	4" MO GLV	A	H-26020 F-6	Pump Min Flow Inbrd Iso	C	O/C	Qtr	NA	Yes	Note 4

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2E41-F019	2	C	16" CV	A	H-26020 D-7	Pump Suc Cond Stg	C	O	Qtr	NA	NA	Note 7
2E41-F020	2	C	1 1/2" RV	A	H-26021 B-6	Pump Suction RV	C	O/C	Note 5	NA	NA	NA
2E41-F021	2	C	12" Stop CV	A	H-26020 G-3	Turb Exh Inbrd Iso	C	O/C	Note 15	NA	NA	ROJ-V-15 Notes 4,17
2E41-F022	2	C	2" Stop CV	A	H-26020 G-3	Turb Exh Drn Torus Iso	C	O/C	DIME	NA	NA	Notes 4,9,17 ROJ-V-16
2E41-F024A	1	AC	1" EFCV	A	H-26020 C-4	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2E41-F024B	1	AC	1" EFCV	A	H-26020 D-4	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2E41-F024C	1	AC	1" EFCV	A	H-26020 C-4	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2E41-F024D	1	AC	1" EFCV	A	H-26020 E-4	Instr EFCV	O	C	RO	LTV	NA	ROJ-V-3
2E41-F028	2	B	1" AO GLV	P	H-26020 G-10	Drain Pot Drain	O	O	NA	NA	No	Note 8
2E41-F029	2	B	1" AO GLV	P	H-26020 F-10	Drain Pot Drain	O	O	NA	NA	No	Note 8
2E41-F040	2	C	2" CV	A	H-26020 G-4	Turb Exh Drn Torus Iso	C	O/C	DIME	NA	NA	ROJ-V-17 Notes 4,9,15
2E41-F041	2	B	16" MO GV	A	H-26020 D-7	Pump Suc Supply	C	O	Qtr	NA	Yes	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2E41-F042	2	B	16" MO GV	A	H-26020 H-4	Pump Suc Torus Outbrd Iso	C	O/C	Qtr	NA	Yes	Note 4
2E41-F045	2	C	16" CV	A	H-26020 H-5	Pump Suc	C	O	DIME	NA	NA	RR-V-7 Note 9
2E41-F046	2	C	4" CV	A	H-26020 F-6	Pump Min Flow Outbrd Iso	C	O/C	DIME	NA	NA	ROJ-V-18 Notes 4,9
2E41-F048	2	C	2" CV	A	H-26021 G-8	Lube Oil Cooling Wtr Return CV	C	O	DIME	NA	NA	Note 9
2E41-F049	2	C	20" CV	A	H-26020 G-4	Turb Exh Outbrd Iso	C	O/C	Note 15	NA	NA	ROJ-V-19 Note 4
2E41-F050	2	C	2" RV	A	H-26021 G-8	Lube Oil Cooler RV	C	O/C	Note 5	NA	NA	NA
2E41-F051	2	B	16" AO BFV	A	H-26020 H-4	Pump Suc Torus Inbrd Iso	O	O/C	Qtr	NA	Yes	Note 4
2E41-F052	2	C	2" CV	A	H-26021 G-9	Barometric Cond Pump Disch	C	C	Qtr	NA	NA	Note 18
2E41-F057	2	C	2" CV	A	H-26021 G-9	Lube Oil Cooling Wtr Return CV	C	O	DIME	NA	NA	Note 9
2E41-F059	2	B	2" MO GLV	A	H-26021 F-7	Turb Lube Oil Cooling	C	O	Qtr	NA	Yes	NA
2E41-F102	2	C	1" CV	A	H-26020 F-2	Vacuum RV	C	O/C	RO	NA	NA	ROJ-V-25
2E41-F103	2	C	1" CV	A	H-26020 F-2	Vacuum RV	C	O/C	RO	NA	NA	ROJ-V-25

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2E41-F104	2	A	2" MO GV	A	H-26020 F-2	Vac Relief Outbrd Torus CIV	O	C	Qtr	CIV	Yes	NA
2E41-F111	2	A	2" MO GV	A	H-26020 G-1	Vac Relief Inbrd Torus CIV	O	C	Qtr	CIV	Yes	NA
2E41-F121	2	A	3/8" SOV	A	H-26384 H-9	Pass Sample Return	C	C	Qtr	CIV	Yes	NA
2E41-F122	2	A	3/8" SOV	A	H-26384 H-9	Pass Sample Return	C	C	Qtr	CIV	Yes	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2E51-F001	2	C	10" Stop CV	A	H-26023 G-5	Turb Exh Inbrd Iso	C	O/C	Note 15	NA	NA	ROJ-V-20 Notes 4,17
2E51-F002	2	C	2" Stop CV	A	H-26023 F-5	Turb Exh Drn Torus Iso	C	O/C	RO	NA	NA	ROJ-V-21 Notes 4,17
2E51-F003	2	B	6" AO BFV	A	H-26023 H-7	Pump Suct Torus Inbrd Iso	O	O/C	Qtr	NA	Yes	Note 4
2E51-F007	1	A	4" MO GV	A	H-26023 C-5	Steam Supply Inbrd CIV	O	C	CS	CIV	Yes	RR-V-1 CSJ-V-6
2E51-F008	1	A	4" MO GV	A	H-26023 C-6	Steam Supply Outbrd CIV	O	C	Qtr	CIV	Yes	NA
2E51-F010	2	B	6" MO GV	A	H-26023 C-8	Pump Suc from Cond Stor	O	O/C	Qtr	NA	Yes	Note 16
2E51-F011	2	C	6" CV	A	H-26023 C-8	Pump Suc Cond Stor	C	O	Qtr	NA	NA	Note 16
2E51-F012	2	B	4" MO GV	A	H-26023 D-6	Pump Outbrd Disch	O	O	Qtr	NA	Yes	Note 16
2E51-F013	2	A	4" MO GV	A	H-26023 D-6	Pump Inbrd Disch PIV	C	O/C	Qtr	PIV	Yes	NA
2E51-F014	2	AC	4" CV	A	H-26023 D-6	Pump Disch	C	O/C	Qtr	PIV	NA	Note 15
2E51-F017	2	C	1" RV	A	H-26024 B-6	Pump Suct RV	C	O/C	Note 5	NA	NA	Note 16
2E51-F019	2	B	2" MO GLV	A	H-26023 E-7	Pump Min Flow Inbrd Iso	C	O/C	Qtr	NA	Yes	Note 4

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2E51-F021	2	C	2" CV	A	H-26023 E-7	Pump Min Flow Outbrd Iso	C	O/C	DIME	NA	NA	ROJ-V-22 Notes 4,9
2E51-F022	2	B	4" MO GLV	A	H-26023 C-6	Pump Test Bypass	C	C	Qtr	NA	Yes	Note 16
2E51-F028	2	C	2" CV	A	H-26023 F-7	Turb Exh Drn	C	C	RO	NA	NA	ROJ-V-23 Note 4
2E51-F029	2	B	6" MO GV	A	H-26023 C-8	Pump Suc Shutoff	C	O/C	Qtr	NA	Yes	Note 16
2E51-F030	2	C	6" CV	A	H-26023 H-8	Pump Suct	C	O	DIME	NA	NA	Notes 16, 19
2E51-F031	2	B	6" MO GV	A	H-26023 H-7	Pump Suct Torus Outbrd Iso	C	O/C	Qtr	NA	Yes	Note 4
2E51-F040	2	C	10" CV	A	H-26023 F-5	Turb Exh Outbrd Iso	C	O/C	Note 15	NA	NA	ROJ-V-24 Note 4
2E51-F044A	1	AC	1" EFCV	A	H-26023 A-5	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2E51-F044B	1	AC	1" EFCV	A	H-26023 B-5	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2E51-F044C	1	AC	1" EFCV	A	H-26023 B-5	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2E51-F044D	1	AC	1" EFCV	A	H-26023 B-5	Inst EFCV	O	C	RO	LTV	NA	ROJ-V-3
2E51-F045	2	B	4" MO GLV	A	H-26024 C-10	Steam Supply Shutoff	C	O/C	Qtr	NA	Yes	Note 16

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2E51-F046	2	B	2" MO GLV	A	H-26024 D-6	Turb Lube Oil Cooling	C	O	Qtr	NA	Yes	Note 16
2E51-F047	2	C	2" CV	A	H-26024 G-7	Lube Oil Cooling Wtr Return CV	C	C	DIME	NA	NA	Notes 16, 19
2E51-F102	2	C	1 1/2" CV	A	H-26023 F-5	Vacuum Relief	C	O/C	RO	NA	NA	Notes 16, 20
2E51-F103	2	C	1 1/2" CV	A	H-26023 F-5	Vacuum Relief	C	O/C	RO	NA	NA	Notes 16, 20
2E51-F104	2	A	1 1/2" MO GV	A	H-26023 F-5	Vac Relief Outbrd Torus CIV	O	O/C	Qtr	CIV	Yes	NA
2E51-F105	2	A	1 1/2" MO GV	A	H-26023 F-4	Vac Relief Inbrd Torus CIV	O	O/C	Qtr	CIV	Yes	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2G11-F003	2	A	4" AO GV	A	H-26026 B-3	DW Flr Drns CIV	O	C	Qtr	CIV	Yes	NA
2G11-F004	2	A	4" AO GV	A	H-26026 B-4	DW Flr Drns CIV	O	C	Qtr	CIV	Yes	NA
2G11-F019	2	A	4" AO GV	A	H-26026 E-4	DW Equip Drns CIV	O	C	Qtr	CIV	Yes	NA
2G11-F020	2	A	4" AO GV	A	H-26026 E-4	DW Equip Drns CIV	O	C	Qtr	CIV	Yes	NA
2G11-F852	2	A	1-1/2" Man GV	P	H-26026 E-11	Passive CIV	LC	C	NA	CIV	No	NA
2G11-F853	2	A	1-1/2" Man GV	P	H-26026 D-11	Passive CIV	LC	C	NA	CIV	No	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2G31-F001	1	A	6" MO GV	A	H-26036 C-2	RWCU Pump Suc Inbrd CIV	O	C	CS	CIV	Yes	CSJ-V-7
2G31-F004	1	A	6" MO GV	A	H-26036 C-3	RWCU Pump Suc Outbrd CIV	O	C	CS	CIV	Yes	CSJ-V-7

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	HP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks BR/CSJ/ROJ
2G51-F011	2	B	3" AO Control	P	H-26042 C-5	Passive Cont Bndy	C	C	NA	NA	Yes	Notes 4,8
2G51-F012	2	B	3" AO Control	P	H-26042 C-5	Passive Cont Bndy	C	C	NA	NA	Yes	Notes 4,8
2G51-F013	2	B	3" AO Control	P	H-26042 C-2	Passive Cont Bndy	C	C	NA	NA	Yes	Notes 4,8
2G51-F017	2	B	3" AO Control	P	H-26042 C-2	Passive Cont Bndy	C	C	NA	NA	Yes	Notes 4,8

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2P21-F032	2	A	2" Man GV	P	H-26047 F-2	Passive CIV	LC	C	NA	CIV	No	NA
2P21-F034	2	A	2" Man GV	P	H-26047 E-2	Passive CIV	LC	C	NA	CIV	No	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	HP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2P33-F002	2	A	1" AO GLV	A	H-26048 B-4	H2 & O2 Analy CIV	0	O/C	Qtr	CIV	Yes	NA
2P33-F003	2	A	1" AO GLV	A	H-26048 C-4	H2 & O2 Analy CIV	C	O/C	Qtr	CIV	Yes	NA
2P33-F004	2	A	1" AO GLV	A	H-26048 D-4	H2 & O2 Analy CIV	0	O/C	Qtr	CIV	Yes	NA
2P33-F005	2	A	1" AO GLV	A	H-26048 E-4	H2 & O2 Analy CIV	0	O/C	Qtr	CIV	Yes	NA
2P33-F006	2	A	1" AO GLV	A	H-26048 F-4	H2 & O2 Analy CIV	C	O/C	Qtr	CIV	Yes	NA
2P33-F007	2	A	1" AO GLV	A	H-26048 H-4	H2 & O2 Analy CIV	0	O/C	Qtr	CIV	Yes	NA
2P33-F010	2	A	1" AO GLV	A	H-26048 B-5	H2 & O2 Analy CIV	0	O/C	Qtr	CIV	Yes	NA
2P33-F011	2	A	1" AO GLV	A	H-26048 C-5	H2 & O2 Analy CIV	C	O/C	Qtr	CIV	Yes	NA
2P33-F012	2	A	1" AO GLV	A	H-26048 D-5	H2 & O2 Analy CIV	0	O/C	Qtr	CIV	Yes	NA
2P33-F013	2	A	1" AO GLV	A	H-26048 E-5	H2 & O2 Analy CIV	0	O/C	Qtr	CIV	Yes	NA
2P33-F014	2	A	1" AO GLV	A	H-26048 F-5	H2 & O2 Analy CIV	C	O/C	Qtr	CIV	Yes	NA
2P33-F015	2	A	1" AO GLV	A	H-26048 H-5	H2 & O2 Analy CIV	0	O/C	Qtr	CIV	Yes	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2P41-F035A	3	B	2" AO GLV	A	H-26051 C-4	HPCI Pump Rm Cooler	C	O	Qtr	NA	Yes	RR-V-8
2P41-F035B	3	B	2" AO GLV	A	H-26051 C-5	HPCI Pump Rm Cooler	C	O	Qtr	NA	Yes	RR-V-8
2P41-F036A	3	B	3" AO GLV	A	H-26051 C-5	RHR & CS Pump Rm Cooler	C	O	Qtr	NA	Yes	RR-V-8
2P41-F036B	3	B	3" AO GLV	A	H-26051 C-6	RHR & CS Pump Rm Cooler	C	O	Qtr	NA	Yes	RR-V-8
2P41-F037A	3	B	1-1/2" AO GLV	A	H-26050 D-7	RHR Pump Cooler	C	O	Qtr	NA	Yes	RR-V-8
2P41-F037B	3	B	1-1/2" AO GLV	A	H-26051 C-9	RHR Pump Cooler	C	O	Qtr	NA	Yes	RR-V-8
2P41-F037C	3	B	1-1/2" AO GLV	A	H-26050 D-8	RHR Pump Cooler	C	O	Qtr	NA	Yes	RR-V-8
2P41-F037D	3	B	1-1/2" AO GLV	A	H-26051 C-8	RHR Pump Cooler	C	O	Qtr	NA	Yes	RR-V-8
2P41-F039A	3	B	3" AO GLV	A	H-26050 D-9	RHR Pump Rm Cooler	C	O	Qtr	NA	Yes	RR-V-8
2P41-F039B	3	B	3" AO GLV	A	H-26050 D-9	RHR Pump Rm Cooler	C	O	Qtr	NA	Yes	RR-V-8
2P41-F040A	3	B	2" AO GLV	A	H-26050 D-5	RCIC Pump Rm Cooler Control	C	O	Qtr	NA	Yes	Notes 16,21
2P41-F040B	3	B	2" AO GLV	A	H-26050 D-5	RCIC Pump Rm Cooler Control	C	O	Qtr	NA	Yes	Notes 16,21

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2P41-F064	3	C	10" CV	A	H-26050 E-10	Division 1 SW Supply	O	O	DIME	NA	NA	Note 9
2P41-F065	3	C	10" CV	A	H-26051 B-10	Division 2 SW Supply	O	O	DIME	NA	NA	Note 9
2P41-F066	3	B	10" AO BFV	P	H-26050 E-10	SW to ESF Coolers Iso	O	O	NA	NA	No	Note 8
2P41-F067	3	B	10" AO BFV	P	H-26051 B-10	SW to ESF Coolers Iso	O	O	NA	NA	No	Note 8
2P41-F098	3	C	4" CV	A	H-26051 B-3	Control Rm HVAC	O	O/C	DIME	NA	NA	Note 9
2P41-F105	3	C	3" CV	A	H-26050 F-4	Control Rm HVAC	O	O/C	DIME	NA	NA	Note 9
2P41-F115A	3	B	4" MO GV	A	H-26050 F-6	Ess LPCI Inv Inlet Iso	C	O/C	Qtr	NA	Yes	NA
2P41-F115B	3	B	4" MO GV	A	H-26051 A-3	Ess LPCI Inv Inlet Iso	C	O/C	Qtr	NA	Yes	NA
2P41-F306A	3	C	1-1/2" CV	A	H-21033 B-7	Service Wtr Motor Cooling	O	O	Qtr	NA	NA	Note 22
2P41-F306B	3	C	1-1/2" CV	A	H-21033 G-7	Service Wtr Motor Cooling	O	O	Qtr	NA	NA	Note 22
2P41-F310	3	C	30" MO BFV	P	H-21033 F-8	SW Dilution Line Iso	C	C	NA	NA	No	Note 8
2P41-F311A	3	C	18" CV	A	H-21033 B-3	SW Pump Disch	O/C	O/C	Qtr	NA	NA	Note 6

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2P41-F311B	3	C	18" CV	A	H-21033 E-3	SW Pump Disch	O/C	O/C	Qtr	NA	NA	Note 6
2P41-F311C	3	C	18" CV	A	H-21033 C-3	SW Pump Disch	O/C	O/C	Qtr	NA	NA	Note 6
2P41-F311D	3	C	18" CV	A	H-21033 F-3	SW Pump Disch	O/C	O/C	Qtr	NA	NA	Note 6
2P41-F312A	3	B	8" MO BFV	P	H-21033 B-9	SW to DG 2A	O	O	NA	NA	No	Note 8
2P41-F312B	3	A	8" MO BFV	P	H-21033 G-8	SW to DG 2C	O	O	NA	NA	No	Note 8
2P41-F315A	3	B	10" MO BFV	P	H-21033 A-9	SW to Rx Bldg Iso	O	O	NA	NA	No	Note 8
2P41-F315B	3	B	10" MO BFV	P	H-21033 F-9	SW to Rx Bldg Iso	O	O	NA	NA	No	Note 8
2P41-F316A	3	B	30" MO BFV	A	H-21033 A-9	SW to Turbine Bldg Shutoff	O	C	CS	NA	Yes	CSJ-V-9
2P41-F316B	3	B	30" MO BFV	A	H-21033 F-9	SW to Turbine Bldg Shutoff	O	C	CS	NA	Yes	CSJ-V-9
2P41-F316C	3	B	30" MO BFV	A	H-21033 A-10	SW to Turbine Bldg Shutoff	O	C	CS	NA	Yes	CSJ-V-9
2P41-F316D	3	B	30" MO BFV	A	H-21033 F-10	SW to Turbine Bldg Shutoff	O	C	CS	NA	Yes	CSJ-V-9
2P41-F321	3	C	6" CV	A	H-21033 J-2	Stby Diesel SW Pump Disch	C	O/C	Qtr	NA	NA	Notes 7,35

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2P41-F339A	3	B	6" AO BFV	A	H-21033 H-9	Diesel Gen Cooling	C	O	Qtr	NA	Yes	RR-V-8
2P41-F339B	3	B	6" AO BFV	A	H-21033 H-7	Diesel Gen Cooling	C	O	Qtr	NA	Yes	RR-V-8
2P41-F340	3	B	6" AO BFV	A	H-11600 B-5	Diesel Gen Cooling	C	O	Qtr	NA	Yes	RR-V-8

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2P42-F051	2	A	6" MO GV	A	H-26055 B-5	RBCCW to Recir CIV	O	C	CS	CIV	Yes	CSJ-V-10
2P42-F052	2	A	6" MO GV	A	H-26055 C-5	RBCCW to Recir CIV	O	C	CS	CIV	Yes	CSJ-V-10
2P42-F083	2	C	1 1/4" RV	A	H-26055 C-4	Thermal RV	C	O/C	Note 5	NA	NA	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	MP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2P51-F513	2	A	2" Man GLV	P	H-26058 F-3	Passive CIV	LC	C	NA	CIV	No	NA
2P51-F651	2	A	2" Man GLV	P	H-26058 F-3	Passive CIV	LC	C	NA	CIV	No	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2P52-F346	-	C	1" CV	A	H-26064 G-9	Accum A003 Inlet CV	O/C	C	NA	Note 31	NA	Note 30
2P52-F349	-	C	1" CV	A	H-26064 F-9	Accum A004 Inlet CV	O/C	C	NA	Note 31	NA	Note 30
2P52-F416	-	C	1" CV	A	H-26070 H-7	Accum A015 Inlet CV	O/C	C	NA	Note 32	NA	Note 30
2P52-F419	-	C	1" CV	A	H-26070 F-7	Accum A016 Inlet CV	O/C	C	NA	Note 32	NA	Note 30
2P52-F458	-	C	1" CV	A	H-26070 H-5	Accum A013 Inlet CV	O/C	C	NA	Note 32	NA	Note 30
2P52-F461	-	C	1" CV	A	H-26070 H-5	Accum A014 Inlet CV	O/C	C	NA	Note 32	NA	Note 30
2P52-F681	-	C	1" CV	A	H-26064 F-3	Accum A017 Inlet CV	O/C	C	NA	Note 32	NA	Note 30
2P52-F971	-	C	1" CV	A	H-26070 I-7	Accum A018 Inlet CV	O/C	C	NA	Note 32	NA	Note 30

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2P64-F045	2	A	6" MO GLV	A	M-26081 M-2	Chilled Water CIV	O	C	CS	CIV	Yes	CSJ-V-8
2P64-F047	2	A	6" MO GLV	A	M-26081 G-11	Chilled Water CIV	O	C	CS	CIV	Yes	CSJ-V-8

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2P70-F002	2	A	1" AO GLV	P	H-26066 F-8	DW Pneumatic CIV	C	C	NA	CIV	NA	Note 8
2P70-F003	2	A	1" AO GLV	P	H-26066 F-8	DW Pneumatic CIV	C	C	NA	CIV	NA	Note 8
2P70-F004	2	A	2" SOV	A	H-26066 B-9	DW Pneumatic CIV	O	C	Qtr	CIV	Yes	NA
2P70-F005	2	A	2" SOV	A	H-26066 B-9	DW Pneumatic CIV	O	C	Qtr	CIV	Yes	NA
2P70-F066	2	A	2" SOV	A	H-26066 D-9	DW Pneumatic CIV	O	C	Qtr	CIV	Yes	NA
2P70-F067	2	A	2" SOV	A	H-26066 D-9	DW Pneumatic CIV	O	C	Qtr	CIV	Yes	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2R43-F012A	-	C	2" CV	A	H-21074 H-10	DG Fuel Oil Pump Disch CV	C	O/C	Qtr	NA	NA	Notes 16,23
2R43-F012B	-	C	2" CV	A	H-21074 H-9	DG Fuel Oil Pump Disch CV	C	O/C	Qtr	NA	NA	Notes 16,23
2R43-F012C	-	C	2" CV	A	H-21074 H-8	DG Fuel Oil Day Tank Inlet CV	C	O/C	Qtr	NA	NA	Notes 16,23
2R43-F012D	-	C	2" CV	A	H-21074 H-7	DG Fuel Oil Day Tank Inlet CV	C	O/C	Qtr	NA	NA	Notes 16,23
2R43-F013A	-	C	2" CV	A	H-21074 F-10	DG Fuel Oil Pump Disch CV	C	O/C	Qtr	NA	NA	Notes 16,23
2R43-F013B	-	C	2" CV	A	H-21074 F-10	DG Fuel Oil Pump Disch CV	C	O/C	Qtr	NA	NA	Notes 16,23
2R43-F013C	-	C	2" CV	A	H-21074 F-8	DG Fuel Oil Day Tank Inlet CV	C	O/C	Qtr	NA	NA	Notes 16,23
2R43-F013D	-	C	2" CV	A	H-21074 F-8	DG Fuel Oil Day Tank Inlet CV	C	O/C	Qtr	NA	NA	Notes 16,23
2R43-F029A	-	C	3/4" CV	A	H-21074 C-10	Air Receiver Inlet CV	C	C	Note 25	NA	NA	Note 16
2R43-F029C	-	C	3/4" CV	A	H-21074 C-10	Air Receiver Inlet CV	C	C	Note 25	NA	NA	Note 16
2R43-F032A	-	C	1/2" RV	A	H-21074 B-9	Air Receiver RV	C	O/C	Note 34	NA	NA	Note 16
2R43-F032C	-	C	1/2" RV	A	H-21074 B-9	Air Receiver RV	C	O/C	Note 34	NA	NA	Note 16

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2R43-F033A	-	C	1/2" RV	A	H-21074 B-11	Air Receiver RV	C	O/C	Note 34	NA	NA	Note 16
2R43-F033C	-	C	1/2" RV	A	H-21074 B-11	Air Receiver RV	C	O/C	Note 34	NA	NA	Note 16
2R43-F042A	-	B	1 1/2" SOV	A	H-21074 B-7	DG Air Start Valve	C	O/C	Qtr	NA	Yes	Notes 16,24
2R43-F042C	-	B	1 1/2" SOV	A	H-21074 B-7	DG Air Start Valve	C	O/C	Qtr	NA	Yes	Notes 16,24
2R43-F044A	-	B	1 1/2" SOV	A	H-21074 A-7	DG Air Start Valve	C	O/C	Qtr	NA	Yes	Notes 16,24
2R43-F044C	-	B	1 1/2" SOV	A	H-21074 A-7	DG Air Start Valve	C	O/C	Qtr	NA	Yes	Notes 16,24
2R43-F095A	-	C	3/4" CV	A	H-21074 C-10	Air Reciever Inlet CV	C	C	Note 25	NA	NA	Note 16
2R43-F095C	-	C	3/4" CV	A	H-21074 C-10	Air Reciever Inlet CV	C	C	Note 25	NA	NA	Note 16

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2123-F004	2	A	1" Man GLV	P	H-26057 D-3	Passive CIV	C	C	NA	CIV	No	NA
2123-F005	2	A	1" Man GLV	P	H-26057 D-3	Passive CIV	C	C	NA	CIV	No	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2T46-F001A	3	B	18" AO BFV	A	H-26078 C-2	Filter Bed Inlet from Rx Bldg	C	O	Qtr	NA	Yes	Note 16
2T46-F001B	3	B	18" AO BFV	A	H-26078 G-2	Filter Bed Inlet from Rx Bldg	C	O	Qtr	NA	Yes	Note 16
2T46-F002A	3	B	18" AO BFV	A	H-26078 C-5	SGTS Filter Outlet from Rx Bldg	C	O	Qtr	NA	Yes	Note 16
2T46-F002B	3	B	18" AO BFV	A	H-26078 G-5	SGTS Filter Outlet from Rx Bldg	C	O	Qtr	NA	Yes	Note 16
2T46-F003A	3	B	18" AO BFV	A	H-26078 C-2	SGTS Fltr Bed Inlet from RF	C	O	Qtr	NA	Yes	Note 16
2T46-F003B	3	B	18" AO BFV	A	H-26078 G-2	SGTS Fltr Bed Inlet from RF	C	O	Qtr	NA	Yes	Note 16

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	HP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2T48-F103	2	A	6" AO BFV	A	H-26083 D-10	DW & Torus Supply CIV	C	C	Qtr	CIV	Yes	NA
2T48-F104	2	A	2" AO GLV	A	H-26083 G-4	DW & Torus Outbrd CIV	C	C	Qtr	CIV	Yes	NA
2T48-F113	2	A	2" AO GLV	A	H-26083 G-9	DW Inerting Outbrd CIV	C	C	Qtr	CIV	Yes	NA
2T48-F114	2	A	2" AO GLV	A	H-26083 H-9	DW Inerting Inbrd CIV	C	C	Qtr	CIV	Yes	NA
2T48-F115	2	A	2" AO GLV	A	H-26083 G-10	DW Inerting Outbrd CIV	C	C	Qtr	CIV	Yes	NA
2T48-F116	2	A	2" AO GLV	A	H-26083 H-10	DW Inerting Inbrd CIV	C	C	Qtr	CIV	Yes	NA
2T48-F118A	2	A	1" AO GLV	A	H-26083 J-4	DW Makeup Inbrd CIV	C	C	Qtr	CIV	Yes	NA
2T48-F118B	2	A	1" AO GLV	A	H-26083 J-5	Torus Makeup Inbrd CIV	C	C	Qtr	CIV	Yes	NA
2T48-F209	2	A	4" AO GV	A	H-26079 C-9	Inboard CIV	C	C	Qtr	CIV	Yes	NA
2T48-F210	2	A	4" AO GV	A	H-26079 C-9	Outboard CIV	C	C	Qtr	CIV	Yes	NA
2T48-F211	2	A	4" AO GV	A	H-26079 E-8	Inboard CIV	C	C	Qtr	CIV	Yes	NA
2T48-F212	2	A	4" AO GV	A	H-26079 E-8	Outboard CIV	C	C	Qtr	CIV	Yes	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2T48-F307	2	A	18" AO BFV	A	H-26084 C-9	DW Purge Inlet Inbrd CIV	C	C	Qtr	CIV	Yes	NA
2T48-F308	2	A	18" AO BFV	A	H-26084 C-10	DW Purge Inlet Outbrd CIV	C	C	Qtr	CIV	Yes	NA
2T48-F309	2	A	18" AO BFV	A	H-26084 E-10	Torus Purge Inlet Outbrd CIV	C	C	Qtr	CIV	Yes	NA
2T48-F310	2	A	20" AO BFV	A	H-26084 F-10	Torus Purge Vac Brker CIV	C	O/C	Qtr	CIV	Yes	NA
2T48-F311	2	A	20" AO BFV	A	H-26084 F-9	Torus Purge Vac Brker CIV	C	O/C	Qtr	CIV	Yes	NA
2T48-F318	2	A	18" AO BFV	A	H-26084 G-4	Torus Purge Outlet Inbrd CIV	C	C	Qtr	CIV	Yes	NA
2T48-F319	2	A	18" AO BFV	A	H-26084 C-4	DW Purge Outlet Inbrd CIV	C	C	Qtr	CIV	Yes	NA
2T48-F320	2	A	18" AO BFV	A	H-26084 C-3	DW Purge Outlet Outbrd CIV	C	C	Qtr	CIV	Yes	NA
2T48-F321	2	A	2" AO GLV	A	H-26083 G-7	DW Inerting Outbrd CIV	C	C	Qtr	CIV	Yes	NA
2T48-F322	2	A	2" AO GLV	A	H-26083 H-7	DW Inerting Inbrd CIV	C	C	Qtr	CIV	Yes	NA
2T48-F323A	2	C	18" AO Test CV	A	H-26084 G-8	DW to Torus VB	C	O/C	Qtr/RO	NA	NA	Notes 16,26,33
2T48-F323B	2	C	18" AO Test CV	A	H-26084 G-8	DW to Torus VB	C	O/C	Qtr/RO	NA	NA	Notes 16,26,33

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/COJ
2T48-F323C	2	C	18" AO Test CV	A	H-26084 G-8	DW to Torus VB	C	O/C	Qtr/RO	NA	NA	Notes 16,26,33
2T48-F323D	2	C	18" AO Test CV	A	H-26084 G-8	DW to Torus VB	C	O/C	Qtr/RO	NA	NA	Notes 16,26,33
2T48-F323E	2	C	18" AO Test CV	A	H-26084 G-8	DW to Torus VB	C	O/C	Qtr/RO	NA	NA	Notes 16,26,33
2T48-F323F	2	C	18" AO Test CV	A	H-26084 G-8	DW to Torus VB	C	O/C	Qtr/RO	NA	NA	Notes 16,26,33
2T48-F323G	2	C	18" AO Test CV	A	H-26084 G-8	DW to Torus VB	C	O/C	Qtr/RO	NA	NA	Notes 16,26,33
2T48-F323H	2	C	18" AO Test CV	A	H-26084 G-8	DW to Torus VB	C	O/C	Qtr/RO	NA	NA	Notes 16,26,33
2T48-F323I	2	C	18" AO Test CV	A	H-26084 G-8	DW to Torus VB	C	O/C	Qtr/RO	NA	NA	Notes 16,26,33
2T48-F323J	2	C	18" AO Test CV	A	H-26084 G-8	DW to Torus VB	C	O/C	Qtr/RO	NA	NA	Notes 16,26,33
2T48-F323K	2	C	18" AO Test CV	A	H-26084 G-8	DW to Torus VB	C	O/C	Qtr/RO	NA	NA	Notes 16,26,33
2T48-F323L	2	C	18" AO Test CV	A	H-26084 G-8	DW to Torus VB	C	O/C	Qtr/RO	NA	NA	Notes 16,26,33
2T48-F324	2	A	18" AO BFV	A	H-26084 D-10	Torus Purge Inlet Outbrd CIV	C	C	Qtr	CIV	Yes	NA
2T48-F325	2	A	2" AO GLV	A	H-26083 G-8	Torus Inerting Outbrd CIV	C	C	Qtr	CIV	Yes	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2T48-F326	2	A	18" AO BFV	A	H-26084 G-3	Torus Purge Outlet Outbrd CIV	C	C	Qtr	CIV	Yes	NA
2T48-F327	2	A	2" AO GLV	A	H-26083 H-8	Torus Inerting Inbrd CIV	C	C	Qtr	CIV	Yes	NA
2T48-F328A	2	AC	20" AO Test CV	A	H-26084 G-10	Rx Bldg to Supp Chem VB	C	O/C	Qtr/RO	CIV	NA	Notes 26,33
2T48-F328B	2	AC	20" AO Test CV	A	H-26084 G-10	Rx Bldg to Supp Chem VB	C	O/C	Qtr/RO	CIV	NA	Notes 26,33
2T48-F332A	2	A	2" AO GLV	A	H-26084 E-3	Torus Purge Outlet Outbrd CIV	C	C	Qtr	CIV	Yes	NA
2T48-F332B	2	A	2" AO GLV	A	H-26084 G-3	Torus Purge Outlet Outbrd CIV	C	C	Qtr	CIV	Yes	NA
2T48-F333A	2	A	2" AO GLV	A	H-26084 E-4	Torus Purge Outlet Inbrd CIV	C	C	Qtr	CIV	Yes	NA
2T48-F333B	2	A	2" AO GLV	A	H-26084 G-4	Torus Purge Outlet Inbrd CIV	C	C	Qtr	CIV	Yes	NA
2T48-F334A	2	A	2" AO GLV	A	H-26084 B-3	DW Purge Outlet Outbrd CIV	C	C	Qtr	CIV	Yes	NA
2T48-F334B	2	A	2" AO GLV	A	H-26084 C-3	DW Purge Outlet Outbrd CIV	C	C	Qtr	CIV	Yes	NA
2T48-F335A	2	A	2" AO GLV	A	H-26084 B-4	DW Purge Outlet Inbrd CIV	C	C	Qtr	CIV	Yes	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2T48-F335B	2	A	2" AO GLV	A	H-26084 C-4	DW Purge Outlet Inbrd CIV	C	C	Qtr	CIV	Yes	NA
2T48-F338	2	A	2" AO GLV	A	H-26084 H-2	Bypass-Outbrd CIV	C	C	Qtr	CIV	Yes	NA
2T48-F339	2	A	2" AO GLV	A	H-26084 H-3	Bypass-Inbrd CIV	C	C	Qtr	CIV	Yes	NA
2T48-F340	2	A	2" AO GLV	A	H-26084 D-2	Bypass-Outbrd CIV	C	C	Qtr	CIV	Yes	NA
2T48-F341	2	A	2" AO GLV	A	H-26084 E-4	Bypass-Inbrd CIV	C	C	Qtr	CIV	Yes	NA
2T48-F342A	2	AP	1/2" SOV	P	H-26084 H-8	Torus to DW VB Test CIV	C	C	NA	CIV	No	Note 27
2T48-F342B	2	AP	1/2" SOV	P	H-26084 H-8	Torus to DW VB Test CIV	C	C	NA	CIV	No	Note 27
2T48-F342C	2	AP	1/2" SOV	P	H-26084 H-8	Torus to DW VB Test CIV	C	C	NA	CIV	No	Note 27
2T48-F342D	2	AP	1/2" SOV	P	H-26084 H-8	Torus to DW VB Test CIV	C	C	NA	CIV	No	Note 27
2T48-F342E	2	AP	1/2" SOV	P	H-26084 H-8	Torus to DW VB Test CIV	C	C	NA	CIV	No	Note 27
2T48-F342F	2	AP	1/2" SOV	P	H-26084 H-8	Torus to DW VB Test CIV	C	C	NA	CIV	No	Note 27
2T48-F342G	2	AP	1/2" SOV	P	H-26084 H-8	Torus to DW VB Test CIV	C	C	NA	CIV	No	Note 27

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	HP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2T48-F342H	2	AP	1/2" SOV	P	H-26084 H-8	Torus to DW VB Test CIV	C	C	NA	CIV	No	Note 27
2T48-F342J	2	AP	1/2" SOV	P	H-26084 H-8	Torus to DW VB Test CIV	C	C	NA	CIV	No	Note 27
2T48-F342J	2	AP	1/2" SOV	P	H-26084 H-8	Torus to DW VB Test CIV	C	C	NA	CIV	No	Note 27
2T48-F342K	2	AP	1/2" SOV	P	H-26084 H-8	Torus to DW VB Test CIV	C	C	NA	CIV	No	Note 27
2T48-F342L	2	AP	1/2" SOV	P	H-26084 H-8	Torus to DW VB Test CIV	C	C	NA	CIV	No	Note 27
2T48-F361A	2	A	1" AO GLV	A	H-26084 G-9	Torus Water Level CIV	O	O/C	Qtr	CIV	Yes	NA
2T48-F361B	2	A	1" AO GLV	A	H-26084 G-5	Torus Water Level CIV	O	O/C	Qtr	CIV	Yes	NA
2T48-F362A	2	B	1" AO GLV	A	H-26084 H-9	Torus Water Level Iso	O	O/C	Qtr	NA	Yes	Note 4
2T48-F362B	2	B	1" AO GLV	A	H-26084 H-5	Torus Water Level Iso	O	O/C	Qtr	NA	Yes	Note 4
2T48-F363A	2	A	1" AO GLV	A	H-26084 E-8	Press Transmitter CIV	O	O/C	Qtr	CIV	Yes	NA
2T48-F363B	2	A	1" AO GLV	A	H-26084 D-6	Press Transmitter CIV	O	O/C	Qtr	CIV	Yes	NA
2T48-F364A	2	A	1" AO GLV	A	H-26084 G-5	Press Transmitter CIV	O	O/C	Qtr	CIV	Yes	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	NP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/ROJ
2T48-F364B	2	A	1" AO GLV	A	H-26084 G-8	Press Transmitter CIV	0	O/C	Qtr	CIV	Yes	NA

Valve ID	CC	Cat	Description	A/P	P&ID/ Coord	Function	MP	SP	Exercise Freq	Leakage Test	ST Reqd	Remarks RR/CSJ/POJ
2T49-F001A	2	B	4" MO GV	A	H-26068 C-3	Hydrogen Recom DW Shutoff	C	O/C	Qtr	NA	Yes	Note 16
2T49-F001B	2	B	4" MO GV	A	H-26068 C-3	Hydrogen Recom DW Shutoff	C	O/C	Qtr	NA	Yes	Note 16
2T49-F002A	2	A	4" MO GV	A	H-26068 C-4	Hydrogen Recom DW CIV	C	O/C	Qtr	CIV	Yes	NA
2T49-F002B	2	A	4" MO GV	A	H-26068 C-4	Hydrogen Recom DW CIV	C	O/C	Qtr	CIV	Yes	NA
2T49-F004A	2	A	4" MO GV	A	H-26068 F-5	Hydrogen Recom Gas & Water CIV	C	O/C	Qtr	CIV	Yes	NA
2T49-F004B	2	A	4" MO GV	A	H-26068 F-5	Hydrogen Recom Gas & Water CIV	C	O/C	Qtr	CIV	Yes	NA
2T49-F005A	2	B	4" MO GV	A	H-26068 F-4	Gas & Water Return	C	O/C	Qtr	NA	Yes	Note 16
2T49-F005B	2	B	4" MO GV	A	H-26068 F-4	Gas & Water Return	C	O/C	Qtr	NA	Yes	Note 16
2T49-F006A	2	B	3/4" MO GLV	A	H-26068 H-5	Water Feed from RHR	C	O/C	Qtr	NA	Yes	NA
2T49-F006B	2	B	3/4" MO GLV	A	H-26068 H-5	Water Feed from RHR	C	O/C	Qtr	NA	Yes	NA
2T49-F009A	2	C	1" RV	A	H-26068 F-4	Relief/Cont Bndy Valve	C	O/C	Note 5	NA	NA	Note 4
2T49-F009B	2	C	1" RV	A	H-26068 F-4	Relief/Cont Bndy Valve	C	O/C	Note 5	NA	NA	Note 4

12.0 VALVE RELIEF REQUEST LOG

Relief Request	Status *
RR-V-1	Submitted for NRC approval
RR-V-2	Submitted for NRC approval
RR-V-3	Submitted for NRC approval
RR-V-4	Submitted for NRC approval
RR-V-5	Submitted for NRC approval
RR-V-6	Submitted for NRC approval
RR-V-7	Submitted for NRC approval
RR-V-8	Submitted for NRC approval
RR-V-9	Submitted for NRC approval
RR-V-10	Submitted for NRC approval

RELIEF REQUEST

RR-V-1

SYSTEM: NA

VALVE(S): 1B21-F016 1E41-F002 1E51-F007
2B21-F016 2E41-F002 2E51-F007

CATEGORY: A

CLASS: 1 and 2

FUNCTION: NA

TEST REQUIREMENT: ISTC 4.3.2 requires that containment isolation valves be tested for leakage in accordance with 10 CFR 50, Appendix J. 10 CFR 50, Appendix J requires valves to be tested in the same direction as when the valve is performing its safety-related containment isolation function.

BASIS FOR RELIEF: The correct test direction is to pressurize from the inboard side of the valve; however, the piping on the inboard side connects directly to the reactor vessel and cannot be pressurized for testing.

ALTERNATE TESTING: These containment isolation valves will be leak rate tested in the reverse direction as addressed in the Edwin I. Hatch, 10 CFR 50, Appendix J containment leak rate test program for Type C leakage tests. Additionally, these valves are tested in the correct direction during the performance of each 10 CFR 50, Appendix J, Type A integrated leakrate test.

RELIEF REQUEST

RR-V-2

SYSTEM: Mainsteam 1B21 and 2B21

VALVES: 1B21-F022A,B,C,D and 1B21-F028A,B,C,D
2B21-F022A,B,C,D and 2B21-F028A,B,C,D

CATEGORY: A

CLASS: 1

FUNCTION: Main Steam Isolation Valves (MSIVs)

TEST REQUIREMENT: Relief is requested from applying the requirements of ISTC 4.2.8(d) and ISTC 4.2.9(b) to the main steam isolation valves.

BASIS FOR RELIEF: ISTC 4.2.4(a) requires that the Owner specify the limiting value of full-stroke time for each power operated valve. For all valves which require stroke timing, except the MSIVs, this limiting value is a maximum allowable stroke time. However, the design basis for the MSIVs imposes a minimum and a maximum allowable stroke time of 3 to 5 seconds respectively. Therefore the MSIVs have a 2 second window of acceptable operating time. Applying a 50% increase limit per ITSC 4.2.8(d) from the reference value to a valve which must stroke in a 2 second window is impractical. When the criteria of ISTC 4.2.4(b) are also applied, the stroke time of all power operated valves shall be measured to the nearest second, then the requirements of ISTC 4.2.8(d) become even more impractical.

ALTERNATE TESTING: The MSIVs will be stroke timed during cold shutdown per Cold Shutdown Justification CSJ-V-1 and their closing time will be confirmed to be between 3 and 5 seconds. As soon as it is recognized that an MSIV does not meet this criteria, it will be declared inoperable and the applicable Technical Specification Action Statement entered.

RELIEF REQUEST

RR-V-3

SYSTEM: CRD

VALVE(S): 1C11-F010A&B, 1C11-F011, 1C11-F035A&B, 1C11-F037
2C11-F010A&B, 2C11-F011, 2C11-F035A&B, 2C11-F037

CATEGORY: B

CLASS: 2

FUNCTION: Scram discharge volume vent and drain valves

TEST REQUIREMENT: Establish limiting values of valve stroke time and measure individual valve stroke time per ISTC 4.2.4(a).

BASIS FOR RELIEF: A limiting value of stroke time cannot be specified for the scram discharge volume vent and drain valves and they cannot be individually stroked and timed. In order to prevent water hammer induced damage to the system during a full CRD scram, plant Technical Specifications require that system valve operation is adjusted so that the outboard vent and drain valves (F035A&B, F037) fully close at least five seconds after each respective inboard vent and drain valve (F010A&B, F011). All valves must be fully closed in less than forty-five (45) seconds for Unit 1 and sixty (60) seconds for Unit 2. Additionally, the system is adjusted so that the inboard vent and drain valves (F010A&B, F011) start to open at least five seconds after each respective outboard vent and drain valve (F035A&B, F037) upon reset of a full core scram. The valves are not equipped with individual valve control switches and cannot be individually stroke timed. Because of the adjustable nature of the valve control system, individual valve stroke timing would not provide any meaningful information for monitoring valve degradation.

System design prevents stroke timing these valves during normal operation without disabling the Reactor Protection System Scram Signal to the valves. Disabling this signal requires the installation of electrical jumpers and the opening of links in energized control circuits which increase the potential for a Reactor Scram.

ALTERNATE TESTING: The valves will be exercised quarterly but not timed. Additionally, the total valve sequence response time will be verified to be less than Technical Specifications requirements during each refueling outage when a complete stroke time test is performed.

RELIEF REQUEST

RR-V-4

SYSTEM: Traversing Incore Probe (TIP)

VALVE: 1C51-F3012

CATEGORY: A

CLASS: 2

FUNCTION: Containment Isolation

TEST REQUIREMENT: ISTC 4.2.1 and ISTC 4.2.4(a) require power operated valves to be stroke timed quarterly and ISTC 4.2.8 requires comparison testing to the reference stroke time value.

BASIS FOR RELIEF: The safety position of this valve is CLOSED to provide containment isolation which is initiated by a LOCA signal and results in isolation of TIP purge and the TIP probes. The Technical Specifications nor the FSAR have any specific requirements for isolation stroke time for this valve.

This is a normally open, normally energized solenoid operated valve which strokes in milliseconds. The valve was not provided with remote indicating lights and its design does not provide for observation of actual stem movement.

A simple check valve is located upstream of this solenoid valve which provides outboard containment isolation of the penetration. Nitrogen purge is at a steady flow and pressure which does not impose any harsh operating conditions on this check valve. Therefore, additional assurance is provided for isolation of the associated penetration.

The purge line is small (3/8") and the FSAR evaluation indicates that even in the event of a TIP dry tube failure and non-isolation of the purge line, the radioactive release would remain within the allowable limits.

Since this valve strokes in milliseconds, it is classified as a rapid acting valve per GL 89-04, Position 6. Therefore, if indicating lights or valve stem movement were observable, comparison time testing of valves with stroke times of less than or equal to 2 seconds is not required per ISTC 4.2.8(e).

Industry history indicates that solenoid valves either operate properly or not at all. It has not been established that stroke time testing of solenoid valves provides data applicable for evaluation of degradation. The application of some type of electronic monitoring would be on a trial and error basis since no such equipment has been proven to provide useful test data to date. Considering the safety function of the valve (containment isolation) and the redundancy of this function provided by a simple check valve, stroke time testing to monitor degradation will not provide

a significant increase in assurance that the valve is capable of performing its intended function.

ALTERNATE TESTING: The valve will be exercised closed quarterly, and observation of a decrease in nitrogen pressure in the associated tubing will be utilized as confirmation that the valve is in the safety related closed position.

This valve is exercised closed and local leak rate tested (LLRT) at each refueling outage in accordance with 10 CFR 50, Appendix J. LLRT provides assurance that the valve is in the closed position and thus is capable of providing its safety function of containment isolation.

RELIEF REQUEST

RR-V-5

SYSTEM: 1C51, 2C51

VALVES: 1C51-Shear A,B,C,D
2C51-Shear A,B,C,D

CATEGORY: AD

CLASS: 2

FUNCTION: TIP System Outboard CIV

TEST REQUIREMENT: ISTC 4.3.2 requires Category A, which are containment isolation valves, to be leak tested at a frequency of at least every 2 years.

BASIS FOR RELIEF: These valves are explosive actuated shear valves. The shear valve isolates the TIP tubing by shearing the tube and TIP drive cable, and by jamming the sheared ends of the tubing into a teflon coating on the shear valve disc. Thus the shear valves cannot be local leak rate tested without destroying the drive tube.

ALTERNATE TESTING: Each lot of shear valves is sample leakage tested by the manufacturer prior to delivery. This sample leakrate testing satisfies the requirements of the Plant Hatch 10 CFR 50, Appendix J Leakrate Program.

These valves are also tested in accordance with ISTC 4.6 as explosive actuated valves.

RELIEF REQUEST

RR-V-6

SYSTEM: RHR

VALVE(S): 1E11-F050A,B

CATEGORY: AC

CLASS: 1

FUNCTION: LPCI and Pressure Isolation

TEST REQUIREMENT: Verify forward flow operability quarterly or at cold shutdown per ISTC 4.5.1 and 4.5.2.

BASIS FOR RELIEF: The plant and system configuration does not provide for full or partial flow exercising during normal operation. LPCI injection during normal operation is impossible because reactor pressure is significantly greater than LPCI injection pressure. Therefore full or partial exercising with flow is impossible quarterly.

During operation in the cold shutdown mode, it has been determined that the subject valve for the loop in operation is only partially stroked to the open position. To fully open the valve in this mode would require the use of two RHR pumps in combination; however, net positive suction head requirements would not be met in this alignment.

The only way to full flow exercise these valves would be to align the RHR pump suction to the suppression pool and inject to the RPV at cold shutdown or refueling outage. This would result in a significant degradation of reactor coolant quality which would require an extensive amount of time to restore the Technical Specification required coolant quality. Therefore full flow exercising at cold shutdown or refueling is impractical.

It is normal plant practice to utilize only one loop of RHR in shutdown cooling for any unscheduled shutdown due to the efforts involved in system alignment, flushing, pipe warm-up and swapping of loops. Requiring both loops of RHR shutdown cooling to be placed in operation during an unplanned shutdown for the sole purpose of exercising each check valve places undue hardship on operation's personnel involved with other shutdown activities and could extend shutdown duration. Therefore partial exercising each valve with RHR shutdown cooling flow during each cold shutdown is impractical.

These valves are located inside the primary containment and are therefore inaccessible during normal operation or at cold shutdown unless the containment is de-inerted. The containment is never de-inerted during an unplanned shutdown unless containment entry is absolutely necessary. Therefore mechanical exercising quarterly or at cold shutdown is impractical.

ALTERNATE TESTING: The loop of RHR utilized for shutdown cooling will be alternated each shutdown. Therefore one of these valves will be partial exercised each cold shutdown and valves will be alternated for each shutdown.

During each refueling outage, both loops of RHR shutdown cooling are utilized in support of normal shutdown and fuel handling activities. Therefore each check valve will be partially exercised at each refueling outage.

Additionally, each valve will be mechanically exercised in accordance with ISTC 4.5.4(b) at each refueling outage. Partial exercising with flow at the described frequency along with mechanical exercising and leak rate testing during each refueling outage provides sufficient confirmation of valve operability.

RELIEF REQUEST

RR-V-7

SYSTEM: HPCI

VALVE: 1E41-F045
2E41-F045

CATEGORY: C

CLASS: 2

FUNCTION: HPCI Pump Suction (Alternate source from suppression pool)

TEST REQUIREMENT: Verify forward flow operability quarterly per ISTC 4.5.1 and ISTC 4.5.2.

BASIS FOR RELIEF: This normally closed check valve is located on the HPCI pump suction line from the suppression pool. The valve does not experience flow during any normal mode of reactor operation or shutdown conditions or during HPCI pump surveillance testing. The normal suction source for the HPCI pump is the condensate storage tank (CST) for periodic surveillance testing and ECCS injection. The pump suction transfers to the suppression pool upon indication of a low water level in the CST which would only occur during an extended HPCI injection because 100,000 gallons of water are always maintained in the CST for ECCS usage.

Forward flow exercising this valve would require aligning the HPCI pump suction to the suppression pool and discharging to the CST. This flow path would significantly degrade the water quality in the CST.

ALTERNATE TESTING: Every second refueling outage the valve will be disassembled, manually exercised and visually inspected to confirm that the valve is capable of full stroking and that its internals are structurally sound (no loose or excessively corroded parts). This frequency is considered adequate to detect degradation which would prevent the valve from meeting its safety function. The valve remains in the closed position in a torus water environment and does not experience flow which could cause wear. Additionally, past inspections have shown little, if any, degradation other than the expected minor corrosion.

Generic Letter 89-04 requires that a partial flow test be performed on check valves that are disassembled prior to their return to service. There is no possible flow path available for partial flow testing this check valve that would not introduce suppression pool water into the HPCI system piping or back to the CST. This is a simple swing check valve (Powell Fig. 1561-WE) which does not require removal of the valve internals to perform a manual stroke test or visual inspection. Even if exercising/inspection resulted in valve repairs, the valve could still be manually stroked after the internals were reinstalled in the valve.

Therefore, full stroke capability of the valve is ensured prior to installation of the bonnet cover.

This relief request is required because all of the requirements (partial exercise after reassembly and frequency of disassembly) of GL 89-04, Position 2, are not practicable.

RELIEF REQUEST

RR-V-8

SYSTEM: Plant Service Water

VALVE(S): 1P41-F035A&B, 1P41-F036A&B, 1P41-F037A-D, 1P41-F039A&B, 2P41-F035A&B 2P41-F036A&B, 2P41-F037A-D, 2P41-F039A&B, 2P41-F339A&B, 2P41-F340

CATEGORY: B

CLASS: 3

FUNCTION: Equipment Cooling Water Supply Valves

TEST REQUIREMENT: ISTC 4.2.3 requires verification of valve obturator movement by observing an appropriate indicator, such as indicator lights, or by observing other evidence, such as changes in system pressure, flow rate, level, or temperature, that reflects changes in obturator movement.

BASIS FOR RELIEF: These valves are normally closed, fail open air operated valves which have a safety function to open and provide cooling water flow to the associated safety related equipment. System design did not provide indicating lights, instrumentation or direct valve control switches.

The valves receive an open signal upon initiation of the associated equipment and a close signal upon termination of operation of the associated equipment. Therefore, verification of obturator movement and measurement of valve stroke time and can only be performed by observation of the actual valve stem movement when the associated equipment is placed into service.

ALTERNATE TESTING: Verification of obturator movement and measurement of valve stroke time will be performed by observing actual valve stem movement. Stroke time will be considered to be the time from start to stop of valve stem movement. The requirements of ISTC 4.2.8 will be applied to monitor valve degradation.

RELIEF REQUEST

RR-V-9

SYSTEM: Traversing Incore Probe (TIP)

VALVE: 2C51-F3012

CATEGORY: A

CLASS: 2

FUNCTION: Containment Isolation

TEST REQUIREMENT: ISTC 4.2.1 and ISTC 4.2.4(a) require power operated valves to be stroke timed quarterly and ISTC 4.2.8 requires comparison testing to the reference stroke time value.

BASIS FOR RELIEF: The safety position of this valve is CLOSED to provide containment isolation which is initiated by a LOCA signal and results in isolation of TIP purge and the TIP probes. Neither the Technical Specifications or the FSAR have any specific requirements for isolation stroke time for this valve.

This is a normally open, normally energized solenoid operated valve which strokes in milliseconds. The valve was not provided with remote indicating lights and its design does not provide for observation of actual stem movement (stem is fully enclosed).

A simple check valve is located upstream of this solenoid valve which provides outboard containment isolation of the penetration. Nitrogen purge is at a steady flow and pressure which does not impose any harsh operating conditions on this check valve. Therefore, this upstream check valve provides additional assurance for isolation of the associated penetration.

The purge line is small (3/8") and the FSAR evaluation indicates that even in the event of a TIP dry tube failure and non-isolation of the purge line, the radioactive release would remain within the allowable limits.

Since this valve strokes in milliseconds, it is classified as a rapid acting valve per GL 89-04, Position 6. Therefore, if indicating lights or valve stem movement were observable, comparison time testing of valves with stroke times of less than or equal to 2 seconds is not required.

Industry history indicates that solenoid valves either operate properly or not at all. It has not been established that stroke time testing of solenoid valves provides data applicable for evaluation of degradation. The application of some type of electronic monitoring would be on a trial and error basis since no such equipment has been proven to provide useful test data to date. Considering the safety

function of the valve (containment isolation only) and the redundancy of this function provided by a simple check valve, testing to monitor degradation will not provide a significant increase in assurance that the valve is capable of performing its intended function.

ALTERNATE TESTING: This valve will be exercised closed quarterly, and observation that nitrogen flow in the asscciated tubing has stopped will be utilized as confirmation that the valve is in the safety related closed position.

This valve is local leak rate tested (LLRT) at each refueling outage in accordance with 10 CFR 50, Appendix J. LLRT provides assurance that the valve is in the closed position and thus is capable of providing its safety function of containment isolation.

RELIEF REQUEST

RR-V-10

SYSTEM: RHR

VALVE(S): 2E11-F050A,B

CATEGORY: AC

CLASS: 1

FUNCTION: LPCI and Pressure Isolation

TEST REQUIREMENT: Verify forward flow operability quarterly or at cold shutdown per ISTC 4.5.1 and 4.5.2.

BASIS FOR RELIEF: The plant and RHR system configuration does not provide for full or partial flow exercising during normal operation. LPCI injection during normal operation is impossible because reactor pressure is significantly greater than LPCI injection pressure. Therefore, full or partial exercising with flow quarterly is impossible.

During the shutdown cooling mode of RHR operation, the normal flow rate is between 7700 and 8200 gpm. At 7700 gpm the flow velocity is approximately 14 fps. Valve vendor information indicates that a flow velocity of $\geq$ 10 fps is sufficient to fully open the valve disk if the valve is in good operating condition. Therefore, normal shutdown cooling flow rates are sufficient to fully open the disk of a valve in good operating condition.

Valve design incorporates a two piece (outside hollow cylinder and inside solid cylinder) hinge pin because the valve was initially provided with an operator which was used to minimally exercise the valve disk. The operator is no longer utilized for disk exercising, but the two piece hinge pin allows for external visual determination of the disk position by observing the inside hinge pin position.

It is normal plant practice to utilize only one loop of RHR in shutdown cooling for any unscheduled shutdown due to the extra efforts involved in system alignment, flushing, pipe warm-up and swapping of loops. To require both loops of RHR shutdown cooling to be placed in operation during an unplanned shutdown for the sole purpose of exercising each check valve seems unwarranted. Therefore, exercising both valves at each shutdown is impractical.

ALTERNATE TESTING: At least one of these check valves receives shutdown cooling flow (7700 - 8200 gpm), therefore is at least partially exercised, each cold shutdown. The loop of RHR shutdown cooling placed into service will be alternated for each unplanned shutdown. Therefore, a different valve will be at least partially exercised each time shutdown cooling is utilized.

During each refueling outage, both loops of RHR shutdown cooling are utilized in support of normal shutdown and fuel handling activities. Therefore both valves are exercised during each refueling outage.

In conjunction with RHR shutdown cooling operation each refueling outage, external visual observation of rotation of the inside hinge pin will be utilized to confirm that the valve disk is fully open. Scribe marks, angular measurements or some other positive means will be used to ensure that the flow actually moves the valve disk to the full open position. If visual observation does not confirm that the flow has fully exercised the valve disk, then appropriate additional actions will be taken (e.g. mechanically exercising the valve per ISTC-4.5.4(b), disassemble, exercise and visually inspect, etc.).

13.0 COLD SHUTDOWN JUSTIFICATION (CSJ) LOG

CSJ	Status
CSJ-V-1	Submitted for NRC Concurrence
CSJ-V-2	Submitted for NRC Concurrence
CSJ-V-3	Submitted for NRC Concurrence
CSJ-V-4	Submitted for NRC Concurrence
CSJ-V-5	Submitted for NRC Concurrence
CSJ-V-6	Submitted for NRC Concurrence
CSJ-V-7	Submitted for NRC Concurrence
CSJ-V-8	Submitted for NRC Concurrence
CSJ-V-9	Submitted for NRC Concurrence
CSJ-V-10	Submitted for NRC Concurrence
CSJ-V-11	Submitted for NRC Concurrence
CSJ-V-12	Submitted for NRC Concurrence

COLD SHUTDOWN JUSTIFICATION

CSJ-V-1

SYSTEM: Main Steam

VALVE(S): 1B21-F022A-D, 1B21-F028A-D
2B21-F022A-D, 2B21-F028A-D

CATEGORY: A

CLASS: 1

FUNCTION: Main Steam Isolation Valves

QUARTERLY TEST REQUIREMENT: Exercise and Stroke Time per ISTC 4.2.1

COLD SHUTDOWN TEST JUSTIFICATION: Full stroke testing these valves during normal reactor operation requires isolating one of the four main steam lines. Isolation of these lines results in primary system pressure spikes, reactor power fluctuations, and increased flow in the unisolated steam lines. This unstable operation can lead to a reactor scram, and as discussed in NUREG-0626. Pressure transients resulting from full stroke testing MSIVs increase the chances of actuating primary system safety/relief valves. Also, stroking these valves during power operation requires decreasing the unit to 75% power, therefore, resulting in a substantial capacity factor loss prior to, during, and after the test.

PARTIAL QUARTERLY STROKE TESTING: Yes

COLD SHUTDOWN TESTING: Exercise and stroke time each cold shutdown, with the test frequency not to exceed testing once every quarter.

COLD SHUTDOWN JUSTIFICATION

CSJ-V-2

SYSTEM: Reactor Recirculation System

VALVE(S): 1B31-F031A,B
2B31-F031A,B

CATEGORY: B

CLASS: 1

FUNCTION: Valves close to provide loop isolation

QUARTERLY TEST REQUIREMENT: Exercise and Stroke Time

COLD SHUTDOWN TEST JUSTIFICATION: Closure during normal operation requires a reduction in power to trip the associated recirculation pump. If the associated pump is tripped, it also creates a potential for exceeding the permissible temperature differential between the recirculation loops for pump re-start. In addition, the valves are located inside the primary containment and are inaccessible during normal operation, which precludes an operator from manually re-opening the valve in case of actuator failure.

QUARTERLY PARTIAL STROKE TESTING: None. The valve operating circuitry does not allow for partial closure of the valve.

COLD SHUTDOWN TESTING: Exercise and stroke time each cold shutdown, with the test frequency not to exceed testing once every quarter.

COLD SHUTDOWN JUSTIFICATION

CSJ-V-3

SYSTEM: Residual Heat Removal

VALVE(S): 1E11-F008, 1E11-F009
2E11-F008, 2E11-F009

CATEGORY: A

CLASS: 1

FUNCTION: RHR Shutdown Cooling Pressure Isolation

QUARTERLY TEST REQUIREMENT: Exercise and Stroke Time

COLD SHUTDOWN TEST JUSTIFICATION: These pressure isolation valves are interlocked to prevent valve opening during power operation or when reactor pressure is > 145 psig. Defeating the interlock and opening one of the in-line valves during normal operation could result in the over-pressurization of the low pressure design RHR pump suction piping.

QUARTERLY PARTIAL STROKE TESTING: None

COLD SHUTDOWN TESTING: Exercise and stroke time each cold shutdown, with the test frequency not to exceed testing once every quarter.

COLD SHUTDOWN JUSTIFICATION

CSJ-V-4

SYSTEM: RHR

VALVE(S): 1E11-F015A & B

CATEGORY: A

CLASS: 1

FUNCTION: LPCI Outboard CIV/PIV

QUARTERLY TEST REQUIREMENT: Exercise and stroke time per ISTC 4.2.1

COLD SHUTDOWN TEST JUSTIFICATION: These are normally closed valves which must open to permit LPCI and must close to provide containment isolation and pressure isolation. The valves are interlocked to prevent opening unless the corresponding downstream 1E11-F017A(B) valve is closed or reactor pressure is below a predetermined design value. The NRC GL 89-10 evaluation for these valves indicates that the valve motor operators were not required to be designed to ensure valve opening against the possible differential pressure that might be encountered if exercising during normal operation.

QUARTERLY PARTIAL STROKE TESTING: None

COLD SHUTDOWN TESTING: These normally closed motor operated valves will be full stroke exercised and stroke timed each cold shutdown, with the test frequency not to exceed testing once every quarter.

COLD SHUTDOWN JUSTIFICATION

CSJ-V-5

SYSTEM: Core Spray

VALVE(S): 1E21-F005A & B

CATEGORY: A

CLASS: 1

FUNCTION: Core Spray Injection Outboard CIV/PIV

QUARTERLY TEST REQUIREMENT: Exercise and stroke time per ISTC 4.2.1

COLD SHUTDOWN TEST JUSTIFICATION: These are normally closed valves which must open to permit core spray injection and must close to provide containment isolation and pressure isolation. The valves are interlocked to prevent opening unless the corresponding downstream 1E21-F004A(B) valve is closed or reactor pressure is below a predetermined design value. The NRC GL 89-10 evaluation for these valves indicates that the valve motor operators were not required to be designed to ensure valve opening against the possible differential pressure that might be encountered if exercising during normal operation. The GL 89-10 evaluation also indicated that leakage past the corresponding downstream 1E21-F004A(B) valve with the 1E21-F005A(B) valve open could result in over-pressurization of the core spray pump discharge piping and a LOCA outside of containment.

QUARTERLY PARTIAL STROKE TESTING: None

COLD SHUTDOWN TESTING: These normally closed motor operated valves will be full stroke exercised and stroke timed each cold shutdown, with the test frequency not to exceed testing once every quarter.

COLD SHUTDOWN JUSTIFICATION

CSJ-V-6

SYSTEM: HPCI, RCIC

VALVE(S): 1E41-F002, 2E41-F002
1E51-F007, 2E51-F007

CATEGORY: A

CLASS: 1

FUNCTION: HPCI/RCIC Steam Supply CIV

QUARTERLY TEST REQUIREMENT: Exercise and Stroke Time per ISTC 4.2.1

COLD SHUTDOWN TEST JUSTIFICATION: These are normally open, motor operated valves located inside the primary containment. If the valve is exercised closed during normal operation and fails to re-open, the entire system safety function would be rendered inoperable. The primary containment is inerted during normal operation and a plant shutdown would be required to repair the valve and restore the system safety function.

QUARTERLY PARTIAL STROKE TESTING: None

COLD SHUTDOWN TESTING: Exercise and stroke time each cold shutdown, with the test frequency not to exceed testing once per quarter.

COLD SHUTDOWN JUSTIFICATION

CSJ-V-7

SYSTEM: Reactor Water Cleanup System (RWCU)

VALVE(S): 1G31-F001, 1G31-F004
2G31-F001, 2G31-F004

CATEGORY: A

CLASS: 1

FUNCTION: RWCU Pump Suction CIV

QUARTERLY TEST REQUIREMENT: Exercise and stroke time per ISTC 4.2.1

COLD SHUTDOWN TEST JUSTIFICATION: The RWCU System is in operation during normal plant operation in order to maintain reactor coolant chemistry within Technical Specifications limits. The isolation valves are open whenever RWCU System is in operation supplying reactor coolant as pump suction source for processing and eventual return to the reactor coolant inventory. Exercising and stroke timing these valves closed quarterly requires the entire RWCU System to be taken out of service which could result in the degraded chemical makeup of reactor coolant and subjects the entire RWCU System to unnecessary transients. These unnecessary transients could lead to degradation and failure of other related system components (e.g., pumps, valves, demineralizers) and the potential loss of the system availability which could cause required shutdown.

Exercising and stroke timing these valves also results in undue hardships and exposure limits to personnel involved in the actual surveillance activity. The steps necessary to exercise and stroke time these valves are briefly described below.

1. Take RWCU Demineralizers out of service.

2. Trip operating RWCU Pump.

3. Exercise and stroke time valves closed.

4. Align system valves to required position for system to be placed inservice with reactor at operating conditions.

5. Restart RWCU Pump. (Standard plant practice is to position operator in pump room to monitor start. RWCU pumps are located in a High Radiation Area and Health Physics escort is required.)

6. After pump is restarted and system flow stabilizes, the demineralizers are returned to service.

NOTE: RWCU System is normally put into service prior to reactor startup. Returning the system to service with reactor at normal operating conditions poses the potential for a system auto isolation which results in additional work of having to backwash the demineralizers before returning them to service.

QUARTERLY PARTIAL STROKE TESTING: None. The system logic does not allow partial closure of these valves.

COLD SHUTDOWN TESTING: Exercise and stroke time each cold shutdown, with the test frequency not to exceed testing once each quarter.

COLD SHUTDOWN JUSTIFICATION

CSJ-V-8

SYSTEM: Plant Service Water (1(2)P41) and Chilled Water System (1(2)P64)

VALVE(S): 1P41-F049, 1P41-F050
2P64-F045, 2P64-F047

CATEGORY: A

CLASS: 2

FUNCTION: Drywell Air Cooler CIV

QUARTERLY TEST REQUIREMENT: Exercise and stroke time per ISTC 4.2.1

COLD SHUTDOWN TEST JUSTIFICATION: Closure of this valve would totally interrupt flow to the drywell coolers (Unit 1) or the drywell cooler condensers (Unit 2). This interruption of cooling water flow could result in an increase in the drywell temperatures which could require shutting the plant down because of Technical Specification requirements.

QUARTERLY PARTIAL STROKE TESTING: None. The valve circuitry does not allow partial closure of this valve.

COLD SHUTDOWN TESTING: Exercise and stroke time each cold shutdown, with the test frequency not to exceed testing once per quarter.

COLD SHUTDOWN JUSTIFICATION

CSJ-V-9

SYSTEM: Plant Service Water

VALVE(S): 1P41-F310A-D
2P41-F316A-D

CATEGORY: B

CLASS: 3

FUNCTION: Turbine Building Supply Shutoff

QUARTERLY TEST REQUIREMENT: Exercise and stroke time per ITSC 4.2.1

COLD SHUTDOWN TEST JUSTIFICATION: The individual service water supply trains combine into a common header prior to entry into the turbine building. During normal operation at least three service water pumps are required to provide cooling water to the safety and non-safety related loads.

Closure of one of these normally open valves in any sequence during normal operation would decrease flow to the turbine building equipment by a minimum factor of one-third and a maximum factor of two-thirds. A decrease in cooling water flow of this magnitude could cause increased temperatures for components necessary for power operation and result in a required power reduction, forced shutdown or plant trip.

If one of these valves was to fail in its safety related position (Closed) during exercising, increased temperatures and a resultant plant shutdown would most certainly occur.

QUARTERLY PARTIAL STROKE TESTING: None. The valve circuity does not allow partial closure of this valve.

COLD SHUTDOWN TESTING: Exercise and stroke time each cold shutdown, with the test frequency not to exceed testing once each quarter.

COLD SHUTDOWN JUSTIFICATION

CSJ-V-10

SYSTEM: Reactor Building Closed Cooling Water (RBCCW)

VALVE(S): 1P42-F051, 1P42-F052
2P42-F051, 2P42-F052

CATEGORY: A

CLASS: 2

FUNCTION: RBCCW to Recirculation Pumps CIV

QUARTERLY TEST REQUIREMENT: Exercise and stroke time per ISTC 4.2.1

COLD SHUTDOWN TEST JUSTIFICATION: Closure of these normally open valves would result in a loss of the cooling water flow to the reactor recirculation pumps which could result in possible damage to the pumps.

QUARTERLY PARTIAL STROKE TESTING: None, valve operating circuitry does not provide for partial exercising.

COLD SHUTDOWN TESTING: Exercise and stroke time each cold shutdown, with the test frequency not to exceed testing once each quarter.

COLD SHUTDOWN JUSTIFICATION

CSJ-V-11

SYSTEM: Nuclear Boiler (Feedwater)

VALVE(S): 2B21-F076A&B

CATEGORY: C

CLASS: 2

FUNCTION: Feedwater Isolation

QUARTERLY TEST REQUIREMENT: Exercise quarterly or at cold shutdown per ISTC 4.5.1

COLD SHUTDOWN TEST JUSTIFICATION: Feedwater injection is required during normal operation. Isolating one of the feedwater lines to perform a closure test would require reducing reactor power by approximately 50% and would introduce main feedwater flow transients into the reactor due to an unsymmetrical injection pattern. This could affect other safety systems and potentially trip the reactor. Closure testing consists of a leakrate type test and entry into the required areas, drywell and mainsteam chase, during power operation is not allowed due the drywell being inerted and to high radiation levels in both areas. Performing this leakrate type test requires a significant amount of time to setup, isolate portions of the system, and perform valve alignments. Attempting to perform such testing during a cold shutdown could delay the startup of the unit.

QUARTERLY PARTIAL STROKE TESTING: None

COLD SHUTDOWN TESTING: These normally-open feedwater check valves have an air assist operator to ensure tight closure and are provided with remote position indicating lights. Closure will be confirmed each cold shutdown, but not more frequently than once per 3 months, by actuating the closure mechanism and observing the indicating lights.

COLD SHUTDOWN JUSTIFICATION

CSJ-V-12

SYSTEM: Nuclear Boiler (Feedwater)

VALVE(S): 2B21-F077A&B

CATEGORY: AC

CLASS: 1

FUNCTION: Feedwater Containment Isolation

QUARTERLY TEST REQUIREMENT: Exercise quarterly or at cold shutdown per ISTC 4.5.1

COLD SHUTDOWN TEST JUSTIFICATION:

(Close exercise) Feedwater injection is required during normal operation. Isolating one of the feedwater lines to perform a closure test would require reducing reactor power by approximately 50% and would introduce main feedwater flow transients into the reactor due to an unsymmetrical injection pattern. This could affect other safety systems and potentially trip the reactor. Closure testing consists of a leakrate type test and entry into the required areas, drywell and mainsteam chase, during power operation is not allowed due the drywell being inerted and to high radiation levels in both areas. Performing this leakrate type test requires a significant amount of time to setup, isolate portions of the system, and perform valve alignments. Attempting to perform such testing during a cold shutdown could delay the startup of the unit.

(Open Exercise) Normal feedwater flow is significantly greater than the flowrate required for the open safety function (HPCI or RCIC injection). Therefore, the valve is proven capable of opening to the required position with normal feedwater injection during power operation.

QUARTERLY PARTIAL STROKE TESTING: None

COLD SHUTDOWN TESTING: These normally-open feedwater check valves have an air assist operator to ensure tight closure and are provided with remote position indicating lights. Closure will be confirmed each cold shutdown, but not more frequently than once per 3 months, by actuating the closure mechanism and observing the indicating lights.

The valves are maintained in the open position during normal operation by feedwater injection.

ADDITIONAL TESTING: LLRT in accordance with 10 CFR 50, Appendix J.

14.0 VALVE REFUELING OUTAGE JUSTIFICATION LOG

Justification	Status
ROJ-V-1	Submitted for NRC Review
ROJ-V-2	Submitted for NRC Review
ROJ-V-3	Submitted for NRC Review
ROJ-V-4	Submitted for NRC Review
ROJ-V-5	Submitted for NRC Review
ROJ-V-6	Submitted for NRC Review
ROJ-V-7	Submitted for NRC Review
ROJ-V-8	Submitted for NRC Review
ROJ-V-9	Submitted for NRC Review
ROJ-V-10	Submitted for NRC Review
ROJ-V-11	Submitted for NRC Review
ROJ-V-12	Submitted for NRC Review
ROJ-V-13	Submitted for NRC Review
ROJ-V-14	Submitted for NRC Review
ROJ-V-15	Submitted for NRC Review
ROJ-V-16	Submitted for NRC Review
ROJ-V-17	Submitted for NRC Review
ROJ-V-18	Submitted for NRC Review
ROJ-V-19	Submitted for NRC Review
ROJ-V-20	Submitted for NRC Review
ROJ-V-21	Submitted for NRC Review
ROJ-V-22	Submitted for NRC Review
ROJ-V-23	Submitted for NRC Review
ROJ-V-24	Submitted for NRC Review
ROJ-V-25	Submitted for NRC Review
ROJ-V-26	Submitted for NRC Review
ROJ-V-27	Submitted for NRC Review
ROJ-V-28	Submitted for NRC Review

REFUELING OUTAGE JUSTIFICATION

ROJ-V-1

SYSTEM: Feedwater (1B21 and 2B21)

VALVE(S): 1B21-F010A&B
2B21-F010A&B

CATEGORY: AC

CLASS: 1

FUNCTION: Feedwater Line Injection and CIV

TEST REQUIREMENT: Exercise quarterly or at cold shutdown per ISTC 4.5.1

BASIS FOR JUSTIFICATION:
(Close exercise) Feedwater injection is required during normal operation. Isolating one of the feedwater lines to perform a closure test would require reducing reactor power by approximately 50% and would introduce main feedwater flow transients into the reactor due to an unsymmetrical injection pattern. This could affect other safety systems and potentially trip the reactor. Closure testing consists of a leakrate type test and entry into the required areas, drywell and mainsteam chase, during power operation is not allowed due the drywell being inerted and to high radiation levels in both areas. Performing this leakrate type test requires a significant amount of time to setup, isolate portions of the system, and perform valve alignments. Attempting to perform such testing during a cold shutdown could delay the startup of the unit.

(Open Exercise) Normal feedwater flow is significantly greater than the flowrate required for the open safety function (HPCI or RCIC injection). Therefore, the valve is proven capable of opening to the required position with normal feedwater injection during power operation.

ALTERNATE TESTING: Open exercising is performed with normal feedwater injection to the reactor and closure exercising will be proven each refueling outage during Appendix J, local leakrate testing.

REFUELING OUTAGE JUSTIFICATION

ROJ-V-2

SYSTEM: Nuclear Boiler System (1B21 and 2B21)

VALVE(S): 1B21-F013B, D, E, F, J, K, L
2B21-F013A, C, E, H, K, L, M

CATEGORY: BC

CLASS: 1

FUNCTION: Nuclear Boiler System Over-Pressure Protection (Automatic De-pressurization)

TEST REQUIREMENT: Exercise and stroke time quarterly or at cold shutdown per ISTC 4.2.4

BASIS FOR JUSTIFICATION: Failure of these valves to close after exercising during power operation would result in a loss of reactor coolant. Additionally, these valves cannot be exercised at a pressure below 100 psig and the position of the main stage of this 2 stage relief valve can only be determined by indirect means.

ALTERNATE TESTING: Each pilot operating assembly is removed and sent to an independent testing laboratory each refueling outage. The pilot assemblies are inspected and set-point tested in accordance with ASME OMc Code, 1994 Addenda, Appendix I to determine their operating condition. Each pilot assembly is also stroke timed to monitor degradation and ensure that it actuates within an acceptable time range. Each pilot assembly is repaired and/or adjusted to ensure its operability prior to re-installation.

Additionally, each valve is exercised using the manual control switch at least once every 18 months.

This bench testing, pilot stroke timing, maintenance/ adjustments, and inspection performed each refueling outage should ensure that the valves are maintained in a state of operational readiness.

REFUELING OUTAGE JUSTIFICATION

ROJ-V-3

SYSTEM: Nuclear Boiler, Reactor Recirculation, CS, HPCI, and RCIC

VALVE(S): 1B21-F015A-H, 1B21-F015J-N, 1B21-F015P, 1B21-F015R&S, 1B21-F041, 1B21-F043A&B, 1B21-F045A&B, 1B21-F047A&B, 1B21-F049A&B, 1B21-F051A-D, 1B21-F053A-D, 1B21-F055, 1B21-F057, 1B21-F059A-H, 1B21-F059L-N, 1B21-F059P, 1B21-F059R-U, 1B21-F061, 1B31-F003A&B, 1B31-F004A&B, 1B31-F009A-D, 1B31-F010A-D, 1B31-F011A-D, 1B31-F012A-D, 1B31-F040A-D, 1E21-F018A-C, 1E41-F024A-D, 1E51-F044A-D,

2B21-F041, 2B21-F043A&B, 2B21-F045A&B, 2B21-F047A&B, 2B21-F049A&B, 2B21-F051A-D, 2B21-F053A-D, 2B21-F055, 2B21-F057, 2B21-F059A-H, 2B21-F059L-N, 2B21-F059P, 2B21-F059R-U, 2B21-F061, 2B21-F070A-D, 2B21-F071A-D, 2B21-F072A-D, 2B21-F073A-D, 2B31-F003A&B, 2B31-F004A&B, 2B31-F009A-D, 2B31-F010A-D, 2B31-F011A-D, 2B31-F012A-D, 2B31-F040A-D, 2E21-F018A-C, 2E41-F024A-D, 2E51-F044A-D

CATEGORY: AC

CLASS: 1

FUNCTION: Active CIV

TEST REQUIREMENT: ISTC 4.5.1 requires quarterly or cold shutdown exercise testing of check valves and ISTC 4.5.2 describes the required testing.

BASIS FOR JUSTIFICATION: The test requirements for check valves in the ASME OM Code are intended for testing simple check valves. The excess flow check valves are designed to actuate and limit flow in the case of an instrument line break downstream of the valve and installation of these valves meets the provisions of NRC Safety Guide 11 (Unit 1) or Reg. Guide 1.11 (Unit 2). The valves limit the leakage in the event of an instrument line break to within the capacity of the reactor coolant makeup system. The more critical requirement for the valves is to remain open when a fault does not exist to guarantee the reactor protection function of the instruments. The instruments served by these valves are critical during both plant operation and cold shutdown. Testing of these valves requires the removal from service of portions of the reactor protection instrumentation for an extensive period of time.

ALTERNATE TESTING: Section 3.6.1.3.8 (Unit 1 and Unit 2) of the Plant Technical Specifications specifies the frequency (at least once per 18 months) of testing to verify operability and flow limiting capability of all excess flow check valves. Testing will be performed in accordance with the Technical Specification requirements.

REFUELING OUTAGE JUSTIFICATION

ROJ-V-4

SYSTEM: Main Feedwater (1B21)

VALVE(S): 1B21-F032A and B

CATEGORY: AC

CLASS: 1

FUNCTION: Feedwater Outboard CIV

TEST REQUIREMENT: Exercise quarterly or at cold shutdown per ISTC 4.5.1

BASIS FOR JUSTIFICATION: Feedwater injection is required during normal operation. Isolating one of the feedwater lines to perform a closure test would require reducing reactor power by approximately 50% and would introduce main feedwater flow transients into the reactor due to an unsymmetrical injection pattern. This could affect other safety systems and potentially trip the reactor. Closure testing consists of a leakrate type test and entry into the required areas, drywell and mainsteam chase, during power operation is not allowed due the drywell being inerted and to high radiation levels in both areas. Performing this leakrate type test requires a significant amount of time to setup, isolate portions of the system, and perform valve alignments. Attempting to perform such testing during a cold shutdown could delay the startup of the unit.

ALTERNATE TESTING: The valves will be confirmed to be exercised to the closed position each refueling outage by performing an Appendix J, type C local leakrate or similar type test. The acceptance criteria of such testing should ensure that even slight valve degradation will be detected and corrected each refueling outage.

REFUELING OUTAGE JUSTIFICATION

ROJ-V-5

SYSTEM: Mainsteam (1B21 and 2B21)

VALVE(S): 1B21-F036A, B, C, D, E, F, G, H, J, K, L
2B21-F036A, B, C, D, E, F, G, H, K, L, M

CATEGORY: C

CLASS: 2

FUNCTION: MSRV Accumulator Check valves

TEST REQUIREMENT: Verify reverse flow closure quarterly or at cold shutdown per ISTC 4.5.1

BASIS FOR JUSTIFICATION: These valves cannot be tested during power operation because entry into the drywell is required. The drywell in inerted during normal operation. Because of the setup time, valve alignments and complexity of the test, attempting to perform these tests during cold shutdowns would potentially delay the startup of the unit.

ALTERNATE TESTING: Reverse flow closure of these valves is verified each refueling outage by a leak test procedure similar to Appendix J, Type C, leakrate testing.

REFUELING OUTAGE JUSTIFICATION

ROJ-V-6

SYSTEM: Reactor Recirculation (1B31 AND 2B31)

VALVE(S): 1B31-F013A&B, 1B31-F017A&B
2B31-F013A&B, 2B31-F017A&B

CATEGORY: AC

CLASS: 1

FUNCTION: Recirculation Pump Seal Water

TEST REQUIREMENT: Verify reverse flow closure quarterly or at cold shutdown per ISTC 4.5.1

BASIS FOR JUSTIFICATION: These valves are located in the Recirculation Pump Seal Water injection lines which require continuous flow during power operation in accordance with the pump manufacturer's recommendations. Quarterly testing could damage the seals. Also, to attempt to perform this test during a cold shutdown could delay the startup of the unit.

ALTERNATE TESTING: Closure of these valves will be proven each refueling outage by performing an Appendix J, type C local leakrate or similar type test.

REFUELING OUTAGE JUSTIFICATION

ROJ-V-7

SYSTEM: CRD (1C11 and 2C11)

VALVE(S): 1C11-HCU-114
2C11-HCU-114

CATEGORY: C

CLASS: 2

FUNCTION: Scram Discharge Volume HCU Check Valve

TEST REQUIREMENT: Verify forward flow operability quarterly or at cold shutdown per ISTC 4.5.1

BASIS FOR JUSTIFICATION: These valves are located on the scram discharge line of each CRD. Flow through each check valve is experienced only during the scram of the associated CRD unit.

ALTERNATE TESTING: The required flow is achieved through the valves during the Technical Specification Control Rod Scram Insertion tests.

(1) As a minimum, 10% of the CRDs are scram timed on a rotating basis every 120 days.

(2) After each refueling outage or reactor shutdown $\geq$ 120 days, all control rods are scram tested from the fully withdrawn position.

THE ALTERNATE TESTING DESCRIBED IN THIS REFUELING OUTAGE JUSTIFICATION AGREES WITH THAT DESCRIBED IN NRC GENERIC LETTER 89-04, POSITION 7.

REFUELING OUTAGE JUSTIFICATION

ROJ-V-8

SYSTEM: CRD (1C11 and 2C11)

VALVE(S): 1C11-HCU-115
2C11-HCU-115

CATEGORY: C

CLASS: 2

FUNCTION: Charging Water Header Check Valves

TEST REQUIREMENT: Verify reverse flow closure quarterly or at cold shutdown per ISTC 4.5.1

BASIS FOR JUSTIFICATION: Reverse flow closure verification of the charging water header check valves requires that the CRD pumps be stopped in order to depressurize the charging water header. This test cannot be performed during normal operation because stopping the pumps results in loss of cooling water to all CRD mechanisms and seal damage could result. Additionally, it is impractical to perform this testing during cold shutdown because the CRD pumps supply seal and motor purge water to the RWCU system pumps. RWCU is normally maintained in operation during shutdowns to maintain reactor coolant chemistry in accordance with Technical Specification requirements.

ALTERNATE TESTING: Reverse flow closure will be confirmed at each refueling outage by performance of a HCU accumulator pressure decay test.

THE ALTERNATE TESTING DESCRIBED IN THIS REFUELING OUTAGE JUSTIFICATION AGREES WITH THAT DESCRIBED IN NRC GENERIC LETTER 89-04, POSITION 7.

REFUELING OUTAGE JUSTIFICATION

ROJ-V-9

SYSTEM: CRD (1C11 AND 2C11)

VALVE(S): 1C11-HCU-126, 1C11-HCU-127
2C11-HCU-126, 2C11-HCU-127

CATEGORY: B

CLASS: 2

FUNCTION: Scram Inlet and Outlet Valves

TEST REQUIREMENT: Exercise quarterly or at cold shutdown per ITSC 4.5.1

BASIS FOR JUSTIFICATION: The Hydraulic Control Units (HCU) are integrally designed systems for controlling rod drive movements. Individual valve testing is not possible without causing a control rod scram with a resulting change in core reactivity. Quarterly testing of these valves increases the potential to violate plant Technical Specifications which govern the methods and frequency of reactivity changes. In addition, these are power operated valves that full-stroke in milliseconds and are not equipped with remote position indicators. Therefore, measuring their full-stroke time is impractical. Verifying that the associated control rod meets the scram insertion time limits defined in the Technical Specifications provides an alternate method of detecting valve degradation. Trending the stroke times of these valves is impractical and unnecessary since they are indirectly stroke timed and no meaningful correlation between the scram time and valve stroke time can be obtained.

ALTERNATE TESTING: Technical Specification Control Rod Scram Insertion Time testing serves to verify proper operation of each of these valves.

(1) As a minimum, 10% of the CRDs are scram timed on a rotating basis every 120 days.

(2) After each refueling outage or reactor shutdown $\geq$ 120 days all control rods are scram tested from the fully withdrawn position.

THE ALTERNATE TESTING DESCRIBED IN THIS REFUELING OUTAGE JUSTIFICATION AGREES WITH THAT DESCRIBED IN NRC GENERIC LETTER 89-04, POSITION 7.

REFUELING OUTAGE JUSTIFICATION

ROJ-V-10

SYSTEM: Standby Liquid Control (1C41 and 2C41)

VALVE(S): 1C41-F006, 1C41-F007
2C41-F006, 2C41-F007

CATEGORY: AC

CLASS: 1

FUNCTION: SBLC Injection Line Isolation

TEST REQUIREMENT: Verify forward flow operability and closure quarterly or at cold shutdown per ISTC 4.5.1

BASIS FOR JUSTIFICATION: Forward flow exercising can only be performed by injecting into the reactor vessel using the SBLC pumps. The pumps are normally aligned to a sodium pentaborate storage tank and they would have to be aligned to demineralized water for exercise testing of the check valves. The associated piping would have to be flushed prior to the test and refilled with sodium pentaborate after the open exercise test. Closure testing can only be performed by a leakrate type test. Testing of these normally closed valves quarterly or during cold shutdown would require:

(1) actuation and restoration of the explosive squib valves, 1(2)C41-F004A(B), to allow injection into the RPV (open exercise)

(2) personnel entry into the primary containment to operate the manual test boundary valve 1(2)C41-F008 (close exercise) and,

(3) disablement of the entire SBLC system (close exercise).

Due to the time required to setup the testing, the complexity of the test, and the time required for associated valve alignments, attempting to perform this testing at cold shutdown could potentially delay startup of the unit.

ALTERNATE TESTING: These valves are full flow exercised once each refueling outage during Technical Specifications surveillance testing. Closure is verified each refueling outage by performing an Appendix J, type C local leakrate or similar type test.

REFUELING OUTAGE JUSTIFICATION

ROJ-V-11

SYSTEM: TIP System (1C51 and 2C51)

VALVE(S): 1C51-F3017
2C51-F3017

CATEGORY: AC

CLASS: 2

FUNCTION: CIV

TEST REQUIREMENT: Verify reverse closure quarterly or at cold shutdown per ISTC 4.5.1

BASIS FOR JUSTIFICATION: The only way to verify reverse closure is by performing a leakrate type test. These normally open check valves are located inside the primary containment and therefore are inaccessible during power operation. The primary containment is inerted during normal operation and personnel entry is prohibited. Therefore, testing during normal operation is impracticable.

Performing a leakrate type test requires a significant amount of time to setup the test and align the associated valves. To attempt to perform these tests during an unscheduled cold shutdown could delay the startup of the unit.

ALTERNATE TESTING: Reverse flow closure of these valves will be proven each refueling outage by performing an Appendix J, type C local leakrate or similar type test.

REFUELING OUTAGE JUSTIFICATION

ROJ-V-12

SYSTEM: RHR (1E11 and 2E11)

VALVE(S): 1E11-F046A-D
2E11-F046A-D

CATEGORY: C

CLASS: 2

FUNCTION: RHR pump minimum flow line check valve

TEST REQUIREMENT: Verify forward flow operability quarterly or at cold shutdown per ISTC 4.5.1

BASIS FOR JUSTIFICATION: These valves are located in the RHR pump minimum flow line. The minimum flow line was not provided with installed instrumentation to allow confirmation of full flow exercising of the check valves in conjunction with RHR pump surveillance testing.

ALTERNATE TESTING: Partial flow is achieved through the check valves during quarterly RHR pump surveillance testing. Additionally, one valve from each unit will be disassembled, visually inspected and manually full stroke exercised each refueling outage. Disassembly of the valves requires that the associated loop of RHR be declared inoperable, therefore performing this valve disassembly during an unplanned cold shutdown could potentially delay startup of the unit.

THE ALTERNATE TESTING DESCRIBED IN THIS REFUELING OUTAGE JUSTIFICATION AGREES WITH THAT DESCRIBED IN NRC GENERIC LETTER 89-04, POSITION 2.

REFUELING OUTAGE JUSTIFICATION

ROJ-V-13

SYSTEM: Core Spray (1E21 and 2E21)

VALVE(S): 1E21-F006A,B
2E21-F006A,B

CATEGORY: AC

CLASS: 1

FUNCTION: Core Spray Injection and PIV

TEST REQUIREMENT: Verify forward flow operability quarterly or at cold shutdown per ISTC 4.5.1

BASIS FOR RELIEF: System configuration does not provide for full or partial flow exercise testing during normal operation. Core spray injection during normal operation is impossible because reactor pressure is significantly greater than core spray injection pressure.

Power is removed from the equalization valve (1(2)E21-F037A(B)) during normal operation making partial exercising impractical because these valves function as simple check valves. These valves are inaccessible, located inside the primary containment, PIVs and erroneous signal indications caused by exercising could not be readily distinguished from actual valve problems without shutting down the plant, de-inerting the containment, and performing a containment entry.

The only possible way to flow test these valves is by injecting suppression pool water or condensate storage tank (CST) water into the RPV. Utilizing either suction source results in a significant degradation of the reactor coolant quality due to the relatively poor quality of the suppression pool water or the relatively poor quality of stagnant water in the core spray piping. A significant amount of time would be required to restore reactor coolant to the Technical Specification required quality. Therefore exercising with flow at cold shutdown or refueling is impractical.

These valves are located inside the primary containment and are therefore inaccessible during normal operation or at cold shutdown unless the containment is de-inerted. The containment is not de-inerted during an unplanned shutdown unless containment entry is necessary. Therefore mechanical exercising quarterly or at cold shutdown is impractical.

ALTERNATE TESTING: Each check valve will be mechanically exercised per ISTC 4.5.4(b) during each refueling outage. This mechanical exercising, in conjunction with OM Code local leakrate testing each refueling outage should provide sufficient confirmation of valve operability.

REFUELING OUTAGE JUSTIFICATION

ROJ-V-14

SYSTEM: Core Spray (1E21 and 2E21)

VALVE(S): 1E21-F044A,B
2E21-F044A,B

CATEGORY: C

CLASS: 2

FUNCTION: Containment Isolation Barrier

TEST REQUIREMENT: Reverse flow closure quarterly or at cold shutdown per ISTC 4.5.1

BASIS FOR JUSTIFICATION: These valves function as containment isolation barriers. The only viable means of proving closure is by performing a leak rate or pressure test. To perform this test quarterly would require removing the associated systems from operation. This type testing requires a significant amount of time setup, align valves and perform the test and testing at cold shutdown could potentially delay startup of the unit.

Since these valves only provide a containment barrier function and allowable leakage limits are significantly greater than allowed for containment isolation valves, and the fact that these valves are not exposed to severe operating conditions which would promote rapid degradation; leak rate or pressure testing at a refueling outage frequency will provide sufficient test results to ensure a margin of safe component operability.

Appendix J local leakrate testing requirements are not applicable to these valves. Review of previous testing and maintenance history does not indicate any abnormal failure rate or maintenance requirements for these valves.

These valves are located in the jockey pump recirculation line back to the suppression pool. Performing the pressure test quarterly would require removing the associated jockey pump(s) from service and would likely result in not maintaining the associated train of RHR and Core Spray piping full of water as required by Technical Specifications. This would result in unnecessary ECCS unavailability and potential entries into Technical Specification 3.0.3. Per Technical Specifications the RHR and Core Spray Systems are normally required to be operable during brief periods of cold shutdown. This testing can be more safely and efficiently performed during refueling outages.

ALTERNATE TESTING: Valves will be reverse flow closure tested each refueling outage by performance of a leakrate test similar to an Appendix J, type C test. The equipment utilized for this testing allows measurement of the leakage rate from the test

boundary and trending of any significant changes in leakage characteristics.

REFUELING OUTAGE JUSTIFICATION

ROJ-V-15

SYSTEM: HPCI (1E41 and 2E41)

VALVE(S): 1E41-F021
2E41-F021

CATEGORY: C

CLASS: 2

FUNCTION: Containment Isolation Barrier

TEST REQUIREMENT: Reverse flow closure quarterly or at cold shutdown per ISTC 4.5.1

BASIS FOR JUSTIFICATION: These valves function as containment isolation barriers. The only viable means of proving closure is by performing a leak rate or pressure test. To perform this test quarterly would require removing the associated systems from operation.

Since these valves only provide a containment barrier function and allowable leakage limits are significantly greater than allowed for containment isolation valves, and the fact that these valves are not exposed to severe operating conditions which would promote rapid degradation; leak rate or pressure testing at a refueling outage frequency will provide sufficient test results to ensure a margin of safe component operability.

The valves are located in the HPCI turbine exhaust to suppression pool line. Testing these valves quarterly during power operation results in removing the HPCI system from the operable condition and causes unnecessary safety system unavailability. To perform the required valve line ups, equipment setup and perform the test takes a significant amount of time for each test. Therefore, performing the tests at cold shutdown could delay the startup of the unit. Because HPCI is a standby system which is normally only operated during surveillance testing, these valves do not experience service conditions which would promote rapid degradation.

ALTERNATE TESTING: Valves will be reverse flow closure tested each refueling outage by performance of a local leakrate test similar to an Appendix J, type C test. The equipment utilized for this testing allows measurement of the leakage rate from the test boundary and trending of any significant changes in leakage characteristics.

REFUELING OUTAGE JUSTIFICATION

ROJ-V-16

SYSTEM: HPCI (1E41 and 2E41)

VALVE(S): 1E41-F022
2E41-F022

CATEGORY: C

CLASS: 2

FUNCTION: Containment Isolation Barrier

TEST REQUIREMENT: Reverse flow closure quarterly or at cold shutdown per ISTC 4.5.1

BASIS FOR JUSTIFICATION: These valves function as containment isolation barriers. The only viable means of proving closure is by performing a leak rate or pressure test. To perform this test quarterly would require removing the associated systems from operation.

Since these valves only provide a containment barrier function and allowable leakage limits are significantly greater than allowed for containment isolation valves, and the fact that these valves are not exposed to severe operating conditions which would promote rapid degradation; leak rate or pressure testing at a refueling outage frequency will provide sufficient test results to ensure a margin of safe component operability.

These valves are located in the HPCI turbine exhaust drain to suppression pool line. Testing these valves quarterly during power operation will result in removing the HPCI system from the operable condition and would cause unnecessary safety system unavailability. To perform the required valve line ups, equipment setup and perform the test takes a significant amount of time for each test. Therefore, performing the tests at cold shutdown could delay the startup of the unit. Because HPCI is a standby system which is normally only operated during surveillance testing, these valves do not experience service conditions which would promote rapid degradation.

ALTERNATE TESTING: Valves will be reverse flow closure tested each refueling outage by performance of a local leakrate test similar to an Appendix J, type C test. Additionally, these valves are disassembled, visually inspected, and full stroke exercised in accordance with NRC GL 89-04, Position 2. The inspection during disassembly should adequately detect any degradation in sufficient time to take corrective actions prior to the valve becoming inoperable.

REFUELING OUTAGE JUSTIFICATION

ROJ-V-17

SYSTEM: HPCI (1E41 and 2E41)

VALVE(S): 1E41-F040
2E41-F040

CATEGORY: C

CLASS: 2

FUNCTION: Containment Isolation Barrier

TEST REQUIREMENT: Reverse flow closure quarterly or at cold shutdown per ISTC 4.5.1

BASIS FOR JUSTIFICATION: These valves function as containment isolation barriers. The only viable means of proving closure is by performing a leak rate or pressure test. To perform this test quarterly would require removing the associated systems from operation.

Since these valves only provide a containment barrier function and allowable leakage limits are significantly greater than allowed for containment isolation valves, and the fact that these valves are not exposed to severe operating conditions which would promote rapid degradation; leak rate or pressure testing at a refueling outage frequency will provide sufficient test results to ensure a margin of safe component operability.

These valves are located in the HPCI turbine exhaust to suppression pool line. Testing these valves quarterly during power operation will result in removing the HPCI system from the operable condition and would cause unnecessary system unavailability. To perform the required valve line ups, equipment setup and perform the test takes a significant amount of time for each test. Therefore, performing the tests at cold shutdown could delay the startup of the unit. Because HPCI is a standby system which is normally only operated during surveillance testing, these valves do not experience service conditions which would promote rapid degradation.

ALTERNATE TESTING: Valves will be reverse flow closure tested each refueling outage by performance of a local leakrate test similar to an Appendix J, type C test. Additionally, these valves are disassembled, visually inspected, and full stroke exercised in accordance with NRC GL 89-04, Position 2. The inspection during disassembly should adequately detect any degradation in sufficient time to take corrective actions prior to the valve becoming inoperable.

REFUELING OUTAGE JUSTIFICATION

ROJ-V-18

SYSTEM: HPCI (1E41 and 2E41)

VALVE(S): 1E41-F046
2E41-F046

CATEGORY: C

CLASS: 2

FUNCTION: Containment Isolation Barrier

TEST REQUIREMENT: Reverse flow closure quarterly or at cold shutdown per ISTC 4.5.1

BASIS FOR JUSTIFICATION: These valves function as containment isolation barriers. The only viable means of proving closure is by performing a leak rate or pressure test. To perform this test quarterly would require removing the associated systems from operation.

Since these valves only provide a containment barrier function and allowable leakage limits are significantly greater than allowed for containment isolation valves, and the fact that these valves are not exposed to severe operating conditions which would promote rapid degradation; leak rate or pressure testing at a refueling outage frequency will provide sufficient test results to ensure a margin of safe component operability.

These valves are located in the HPCI minimum flow line to suppression pool. Testing any of these valves quarterly during power operation will result in removing the HPCI system from the operable condition and would cause unnecessary safety system unavailability. Testing these valves quarterly during power operation will result in removing the HPCI system from the operable condition and would cause unnecessary system unavailability. To perform the required valve line ups, equipment setup and perform the test takes a significant amount of time for each test. Therefore, performing the tests at cold shutdown could delay the startup of the unit. Because HPCI is a standby system which is normally only operated during surveillance testing, these valves do not experience service conditions which would promote rapid degradation.

ALTERNATE TESTING: Valves will be reverse flow closure tested each refueling outage by performance of a leakrate test similar to an Appendix J, type C test. Additionally, these valves are disassembled, visually inspected, and full stroke exercised in accordance with NRC GL 89-04, Position 2. The inspection during disassembly should adequately detect any degradation in sufficient time to take corrective actions prior to the valve becoming inoperable.

REFUELING OUTAGE JUSTIFICATION

ROJ-V-19

SYSTEM: HPCI (1E41 and 2E41)

VALVE(S): 1E41-F049
2E41-F049

CATEGORY: C

CLASS: 2

FUNCTION: Containment Isolation Barrier

TEST REQUIREMENT: Reverse flow closure quarterly or at cold shutdown per ISTC 4.5.1

BASIS FOR JUSTIFICATION: These valves function as containment isolation barriers. The only viable means of proving closure is by performing a leak rate or pressure test. To perform this test quarterly would require removing the associated systems from operation.

Since these valves only provide a containment barrier function and allowable leakage limits are significantly greater than allowed for containment isolation valves, and the fact that these valves are not exposed to severe operating conditions which would promote rapid degradation; leak rate or pressure testing at a refueling outage frequency will provide sufficient test results to ensure a margin of safe component operability.

The valves are located in the HPCI turbine exhaust to suppression pool line. Testing these valves quarterly during power operation results in removing the HPCI system from the operable condition and causes unnecessary safety system unavailability. To perform the required valve line ups, equipment setup and perform the test takes a significant amount of time for each test. Therefore, performing the tests at cold shutdown could delay the startup of the unit. Because HPCI is a standby system which is normally only operated during surveillance testing, these valves do not experience service conditions which would promote rapid degradation.

ALTERNATE TESTING: Valves will be reverse flow closure tested each refueling outage by performance of a local leakrate test similar to an Appendix J, type C test. The equipment utilized for this testing allows measurement of the leakage rate from the test boundary and trending of any significant changes in leakage characteristics.

REFUELING OUTAGE JUSTIFICATION

ROJ-V-20

SYSTEM: RCIC (1E51 and 2E51)

VALVE(S): 1E51-F001
2E51-F001

CATEGORY: C

CLASS: 2

FUNCTION: Containment Isolation Barrier

TEST REQUIREMENT: Reverse flow closure quarterly or at cold shutdown per ISTC 4.5.1

BASIS FOR JUSTIFICATION: These valves function as containment isolation barriers. The only viable means of proving closure is by performing a leak rate or pressure test. To perform this test quarterly would require removing the associated systems from operation.

Since these valves only provide a containment barrier function and allowable leakage limits are significantly greater than allowed for containment isolation valves, and the fact that these valves are not exposed to severe operating conditions which would promote rapid degradation; leak rate or pressure testing at a refueling outage frequency will provide sufficient test results to ensure a margin of safe component operability.

These valves are located in the RCIC turbine exhaust drain line to suppression pool. Testing these valves quarterly during power operation will result in removing the RCIC system from the operable condition and would cause unnecessary system unavailability. To perform the required valve line ups, equipment setup and perform the test takes a significant amount of time for each test. Therefore, performing the tests at cold shutdown could delay the startup of the unit. Because RCIC is a standby system which is normally only operated during surveillance testing, these valves do not experience service conditions which would promote rapid degradation.

ALTERNATE TESTING: Valves will be reverse flow closure at each refueling outage by performance of a local leakrate test similar to an Appendix J type C test. The equipment utilized for this testing allows measurement of the leakage rate from the test boundary and trending of any significant changes in leakage characteristics.

REFUELING OUTAGE JUSTIFICATION

ROJ-V-21

SYSTEM: RCIC (1E51 and 2E51)

VALVE(S): 1E51-F002
2E51-F002

CATEGORY: C

CLASS: 2

FUNCTION: Containment Isolation Barrier

TEST REQUIREMENT: Reverse flow closure quarterly or at cold shutdown per ISTC 4.5.1

BASIS FOR JUSTIFICATION: These valves function as containment isolation barriers. The only viable means of proving closure is by performing a leak rate or pressure test. To perform this test quarterly would require removing the associated systems from operation.

Since these valves only provide a containment barrier function and allowable leakage limits are significantly greater than allowed for containment isolation valves, and the fact that these valves are not exposed to severe operating conditions which would promote rapid degradation; leak rate or pressure testing at a refueling outage frequency will provide sufficient test results to ensure a margin of safe component operability.

These valves are located in the RCIC barometric condenser vacuum pump discharge line to the suppression pool. Testing these valves quarterly during power operation will result in removing the RCIC system from the operable condition and would cause unnecessary system unavailability. To perform the required valve line ups, equipment setup and perform the test takes a significant amount of time for each test. Therefore, performing the tests at cold shutdown could delay the startup of the unit. Because RCIC is a standby system which is normally only operated during surveillance testing, these valves do not experience service conditions which would promote rapid degradation.

ALTERNATE TESTING: Valves will be reverse flow closure at each refueling outage by performance of a local leakrate test similar to an Appendix J type C test. The equipment utilized for this testing allows measurement of the leakage rate from the test boundary and trending of any significant changes in leakage characteristics.

REFUELING OUTAGE JUSTIFICATION

ROJ-V-22

SYSTEM: RCIC (1E51 and 2E51)

VALVE(S): 1E51-F021
2E51-F021

CATEGORY: C

CLASS: 2

FUNCTION: Containment Isolation Barrier

TEST REQUIREMENT: Reverse flow closure quarterly or at cold shutdown per ISTC 4.5.1

BASIS FOR JUSTIFICATION: These valves function as containment isolation barriers. The only viable means of proving closure is by performing a leak rate or pressure test. To perform this test quarterly would require removing the associated systems from operation.

Since these valves only provide a containment barrier function and allowable leakage limits are significantly greater than allowed for containment isolation valves, and the fact that these valves are not exposed to severe operating conditions which would promote rapid degradation; leak rate or pressure testing at a refueling outage frequency will provide sufficient test results to ensure a margin of safe component operability.

These valves are located in the RCIC minimum flow line to suppression pool. Testing these valves quarterly during power operation will result in removing the RCIC system from the operable condition and would cause unnecessary system unavailability. To perform the required valve line ups, equipment setup and perform the test takes a significant amount of time for each test. Therefore, performing the tests at cold shutdown could delay the startup of the unit. Because RCIC is a standby system which is normally only operated during surveillance testing, these valves do not experience service conditions which would promote rapid degradation.

ALTERNATE TESTING: Valves will be reverse flow closure at each refueling outage by performance of a leak rate test similar to an Appendix J type C test. Additionally, these valves are disassembled, visually inspected, and full stroke exercised in accordance with NRC GL 89-04, Position 2. The inspection during disassembly should adequately detect any degradation in sufficient time to take corrective actions prior to the valve becoming inoperable.

REFUELING OUTAGE JUSTIFICATION

ROJ-V-23

SYSTEM: RCIC (1E51 and 2E51)

VALVE(S): 1E51-F028
2E51-F028

CATEGORY: C

CLASS: 2

FUNCTION: Containment Isolation Barrier

TEST REQUIREMENT: Reverse flow closure quarterly or at cold shutdown per ISTC 4.5.1

BASIS FOR JUSTIFICATION: These valves function as containment isolation barriers. The only viable means of proving closure is by performing a leak rate or pressure test. To perform this test quarterly would require removing the associated systems from operation.

Since these valves only provide a containment barrier function and allowable leakage limits are significantly greater than allowed for containment isolation valves, and the fact that these valves are not exposed to severe operating conditions which would promote rapid degradation; leak rate or pressure testing at a refueling outage frequency will provide sufficient test results to ensure a margin of safe component operability.

These valves are located in the RCIC turbine exhaust drain line to the suppression pool. Testing these valves quarterly during power operation will result in removing the RCIC system from the operable condition and would cause unnecessary system unavailability. To perform the required valve line ups, equipment setup and perform the test takes a significant amount of time for each test. Therefore, performing the tests at cold shutdown could delay the startup of the unit. Because RCIC is a standby system which is normally only operated during surveillance testing, these valves do not experience service conditions which would promote rapid degradation.

ALTERNATE TESTING: Valves will be reverse flow closure at each refueling outage by performance of a local leakrate test similar to an Appendix J type C test. The equipment utilized for this testing allows measurement of the leakage rate from the test boundary and trending of any significant changes in leakage characteristics.

REFUELING OUTAGE JUSTIFICATION

ROJ-V-24

SYSTEM: RCIC (1E51 and 2E51)

VALVE(S): 1E51-F040
2E51-F040

CATEGORY: C

CLASS: 2

FUNCTION: Containment Isolation Barrier

TEST REQUIREMENT: Reverse flow closure quarterly or at cold shutdown per ISTC 4.5.1

BASIS FOR JUSTIFICATION: These valves function as containment isolation barriers. The only viable means of proving closure is by performing a leak rate or pressure test. To perform this test quarterly would require removing the associated systems from operation.

Since these valves only provide a containment barrier function and allowable leakage limits are significantly greater than allowed for containment isolation valves, and the fact that these valves are not exposed to severe operating conditions which would promote rapid degradation; leak rate or pressure testing at a refueling outage frequency will provide sufficient test results to ensure a margin of safe component operability.

These valves are located in the RCIC turbine exhaust line to the suppression pool. Testing these valves quarterly during power operation will result in removing the RCIC system from the operable condition and would cause unnecessary system unavailability. To perform the required valve line ups, equipment setup and perform the test takes a significant amount of time for each test. Therefore, performing the tests at cold shutdown could delay the startup of the unit. Because RCIC is a standby system which is normally only operated during surveillance testing, these valves do not experience service conditions which would promote rapid degradation.

ALTERNATE TESTING: Valves will be reverse flow closure at each refueling outage by performance of a local leakrate test similar to an Appendix J type C test. The equipment utilized for this testing allows measurement of the leakage rate from the test boundary and trending of any significant changes in leakage characteristics.

REFUELING OUTAGE JUSTIFICATION

ROJ-V-25

SYSTEM: HPCI (1E41 and 2E41)

VALVE(S): 1E41-F102, 1E41-F103
2E41-F102, 2E41-F103

CATEGORY: C

CLASS: 2

FUNCTION: Steam Exhaust Line Vacuum Breakers

TEST REQUIREMENT: Verify forward flow exercise and reverse flow closure quarterly or at cold shutdown per ISTC 4.5.1

BASIS FOR JUSTIFICATION: Operability of these simple check valves cannot be proven by normal process flow since they are acting as vacuum relief valves. If a vacuum forms in the turbine exhaust line due to steam condensation, the disc will lift from the seat sufficiently to allow air into the line. Otherwise, there is no movement of the disc.

ALTERNATE TESTING: During the local leakrate test for valves 1(2)E41-F104 and 1(2)E41-F111 the piping is pressurized between valves 1(2)E41-F111 and 1(2)E41-F104. Valve 1(2)E41-F103 will then be vented as part of the test to ensure that flow passes through the check valves thus ensuring their vacuum breaker function since this flow rate will be greater than that required for vacuum relief.

Closure of the valves is proven during quarterly HPCI pump surveillance testing. If the valve did not close, steam would bypass the suppression pool into the torus bay air space and cause a resultant temperature increase.

Reverse flow closure is also proven in conjunction with LLRT of valves 1(2)E41-F104 and 1(2)E41-F111. With the boundary between valves 1(2)E41-F104 and 1(2)E41-F111 pressurized, the 1(2)E41-F111 valve is opened and each valve, 1(2)E41-F102 and 1(2)E41-F103, is confirmed to be closed.

The Appendix J, type C LLRT or a similar type test for valves 1(2)E41-F104 and 1(2) E41-F111 will be performed each refueling outage to confirm open and close exercisng of valves 1(2)E41-F102 and 1(2)E41-F103.

REFUELING OUTAGE JUSTIFICATION

ROJ-V-26

SYSTEM: Reactor Water Cleanup (1G31)

VALVE(S): 1G31-F039 and 1G31-F203

CATEGORY: AC

CLASS: 1

FUNCTION: RWCU Return Line CIV

TEST REQUIREMENT: Verify reverse flow closure quarterly or at cold shutdown per ISTC 4.5.1

BASIS FOR JUSTIFICATION: These normally open check valves are located in the RWCU return line to the reactor vessel thru each feedwater line. To establish the necessary test boundary for each of these valves will require closure of the manual feedwater valve, 1B21-F011A(B), which is located inside primary containment. Entry into primary containment is not possible during normal operation due to the nitrogen inerted atmosphere.

To perform the test during cold shutdown would require the same test boundary as above. Therefore, performing the test would require; de-inertion of the primary containment, multiple personnel entries into a potential high radiation exposure area, valve manipulations, setup of test equipment, actual test performance, evaluation of test results, re-establishment of normal system alignments and Technical Specification required nitrogen inertion of the containment upon startup. Performimg these activities would require a significant amount of time and could delay the startup of the unit from an unplanned cold shutdown. Therefore, due to the problems associated with an inerted containment, multiple personnel containment entries to support the tests, ALARA concerns and the actual test duration, performance during cold shutdown seems unwarranted.

ALTERNATE TESTING: These check valves will be confirmed to close each refueling outage during an Appendix J, type C local leak rate test.

REFUELING OUTAGE JUSTIFICATION

ROJ-V-27

SYSTEM: Plant Service Water (1P41)

VALVE(S): 1P41-F552A & C

CATEGORY: C

CLASS: 3

FUNCTION: Diesel Generator Cooling Water Discharge Line Check Valve

TEST REQUIREMENT: Verify forward flow exercise quarterly or at cold shutdown per ISTC 4.5.1

BASIS FOR JUSTIFICATION:

These normally open check valves are located in the cooling water discharge lines from diesel generators 1A and 1C. There are no system design provisions to measure cooling water flow and thus verify forward flow operability.

Each diesel generator is operated for a minimum of one hour at 1710 - 2000 kW (approx. 60 percent of continuous rated load) during testing once each month. Partial forward flow operability is verified during this test by monitoring diesel generator oil and jacket cooling water temperatures. If sufficient cooling water flow was not provided to the diesel generator, elevated oil and jacket cooling water temperatures would be evident.

Each diesel generator is also operated for a minimum of one hour at 2250 - 2400 kW (approx. 80 percent of continuous rated load) semi-annually. Partial flow operability is again verified during this test by monitoring diesel generator oil and jacket cooling water temperatures.

During each refueling outage (at least once per 18 months) each diesel generator is operated for a minimum of 24 hours. During the first two hours of this test, the diesel is loaded to $\geq$ 3000 kW (approx. 105 percent of continuous rated load) and during the remaining 22 hours of this test, the diesel is loaded to 2775 - 2825 kW (approx. 90 percent of continuous rated load). Diesel generator oil and jacket cooling water temperatures are monitored during this test to ensure that sufficient cooling water is provided.

Acceptable operation of the diesel generators during the monthly and semi-annual tests verifies that the valves are not stuck in the closed position. Acceptable operation of the diesel generators during each refueling outage test verifies that the check valves have opened sufficiently to perform their design function. The diesel generator oil and jacket cooling water temperatures for each test are trended to ensure no significant changes occur from test to test.

The Architect Engineer (AE) performed an evaluation of these valves associated with INPO SOER 86-03 in 1987. This evaluation considered valve type, operating conditions and environment, and past valve maintenance history. The AE recommended periodic disassembly and inspection of the valve internals with at least one of the two valves being inspected every third refueling outage. The AE also recommended that the frequency of inspection be adjusted depending on inspection results.

ALTERNATE TESTING: Existing monthly and semi-annual diesel surveillance testing will be utilized to prove at least partial check valve exercising. The existing refueling outage frequency diesel testing will be utilized to confirm that the valves will open sufficiently to perform their design safety function.

Additionally, at least one of the two valves will be disassembled, manually exercised and visually inspected each refueling outage on a rotating frequency in accordance with NRC GL 89-04, Position 2. This disassembly frequency should be adequate to detect any valve degradation in sufficient time to take corrective action and prevent the valve from being unable to performing its safety function. Inspection results will be reviewed, and the disassembly frequency will be adjusted if warranted.

The valves are flanged into the system piping and are completely removed when inspected. The valve is visually inspected and manually full stroke exercised prior to being reinstalled in the pipe line. The valve disassembly is performed prior to the 24 hour diesel surveillance test, thus the safety function of the valve is confirmed after reassembly by monitoring diesel generator cooling during testing. This diesel testing confirms at least partial valve exercising after reinstallation in the system.

Existing diesel generator surveillance testing in conjunction with the periodic disassembly and inspection should confirm the capability of the valves to perform their intended safety function and should identify any degradation concerns prior to the valves becoming inoperable.

REFUELING OUTAGE JUSTIFICATION

ROJ-V-28

SYSTEM: Core Spray

VALVE(S): 1E21-F036A,B
2E21-F036A,B,

CATEGORY: C

CLASS: 2

FUNCTION: Core Spray Pump Minimum Flow Line Containment Boundary

TEST REQUIREMENT: Forward flow operability and reverse flow closure quarterly per ISTC 4.5.1

BASIS FOR JUSTIFICATION: These valves are located in the core spray pump minimum flow lines discharging to the suppression pool. Valves must open to provide minimum flow protection for the core spray pumps and close to provide containment boundary. Since there is no valve between the check valve and the suppression pool the line cannot be pressurized to ensure closure of the valve. This valve is sealed from the primary containment atmosphere because the test line terminates below the water level of the torus and the leakage is not included in the Type C local leak rate testing.

PARTIAL EXERCISING: Each valve is partial exercised open quarterly during core spray pump surveillance testing.

ALTERNATE TESTING: One valve for each unit will be disassembled, manually exercised and visually inspected each refueling outage per the guidance of GL 89-04. The valve internals will be confirmed as structurally sound (no loose or corroded parts) and the disk manually exercised to confirm full stroke capability.

If the disassembled valve is not capable of being manually full stroke exercised or there is binding or failure of valve internals, the remaining valve will also be disassembled, inspected and manually full stroke exercised during the same outage.

There are no test connections provided to facilitate any measurements during pump testing. Therefore, partial flow exercising after re-assembly will be confirmed by indirect means such as monitoring pipe wall temperature changes, using acoustic monitoring equipment or observing flow induced vibration and noise.

4.0 GENERAL RELIEF REQUEST LOG

Relief Request	Status *
RR-G-1	Submitted for NRC approval
RR-G-2	Submitted for NRC approval
RR-G-3	Submitted for NRC approval

GENERAL RELIEF REQUEST

RR-G-1

SYSTEMS: All in Scope of IST Program

VALVES: All in Scope of IST Program

PUMPS: All in Scope of IST Program

CLASS: 1, 2 and 3

TEST REQUIREMENT: The version of 10 CFR 50 in effect on January 1, 1995, paragraph 50.55a(b)(2) specifies the applicable Code to be the ASME XI, 1988 Addenda through 1989 Edition. The 1989 Edition of ASME XI references OM part 6 and 10 for inservice pump and valve testing respectfully. Paragraph 50.55a(b)(2)(viii) specifies the Code applicable inservice pump and valve testing to be the ASME/ANSI part 6 and ASME/ANSI part 10 of the OMa-1988 Addenda to the OM-1987 Edition

BASIS FOR RELIEF: The ASME/ANSI OM document was issued as a Code with the ASME OM Code 1990 Edition. This edition was amended with the OMa Code 1991 Addenda, the OMb Code 1992 Addenda, and the OMc Code 1994 Addenda. The ASME OM Code 1995 Edition was issued in early 1995. With each addenda and edition of the ASME OM Code, the ASME OM Code Committee has included updated inservice testing requirements based on improved knowledge, operating history and experience and changes in testing technology. Beginning with the ASME OM Code 1990 Edition, the format of the document was also changed to read like a Code instead of a standard as it was initially drafted. Therefore, application of later versions of the ASME OM Code, than specified in 10 CFR 50, should enhance the quality of the IST Program.

ALTERNATE TESTING: The versions of the ASME OM Code utilized for the updated E. I. Hatch, Unit 1 and 2, Inservice Testing Program shall be as specified below.

Inservice Testing of Valves (all except safety/relief valves) - ASME OM Code 1990 Edition

Inservice Testing of Pumps - ASME OM Code 1990 Edition

Inservice Testing of Safety/Relief Valves - ASME OM Code 1995 Edition

GENERAL RELIEF REQUEST

RR-G-2

SYSTEMS: All in Scope of Unit 2 IST Program

VALVES: All in Scope of Unit 2 IST Program

PUMPS: All in Scope of Unit 2 IST Program

CLASS: 1, 2 and 3

TEST REQUIREMENT: The version of 10 CFR 50 in effect on January 1, 1995, paragraph 50.55a(f)(4)(ii), specifies that inservice testing to verify operational readiness of pumps and valves required for safety, conducted during successive 120-month intervals must comply with the requirements of the latest edition and addenda of the Code incorporated by reference in paragraph 10 CFR 50.55a(b) 12 months prior to the start of the 120-month interval.

BASIS FOR RELIEF: The ISI Program submittal for the second 10-year interval for E. I. Hatch Unit 2 included Relief Request 6.1.2 which requested approval to allow start of the second 10-year interval on January 1, 1986. This relief request was granted and subsequently both Hatch Units ISI and IST Programs were updated to the same edition of the ASME XI Code applicable at that time. The ISI and IST Program intervals for both units have been implemented concurrently since that date.

The commercial operation date for Hatch Unit 1 was December 31, 1976. The commercial operation date for Hatch Unit 2 was September 5, 1979. Therefore, the Hatch Unit 2 ISI/IST Programs for the second 10-year interval were updated approximately forty months early.

Maintaining both units on the same interval schedule allows both IST programs to be developed utilizing the same edition of the Code, will make it easier for involved personnel to become familiar with the Code requirements, will ensure a greater degree of consistency for IST between the units, and will reduce the cost associated with surveillance procedure revisions for the program update and for maintenance of the program documents.

ALTERNATE TESTING: Update the E. I. Hatch Nuclear Plant Unit 2 IST Program concurrent with the Unit 1 third 10-year interval IST Program update due on December 31, 1995. The Unit 2 IST Program will be updated concurrent with the Unit 1 IST Program in accordance with the applicable regulations for the remainder of the plant life.

GENERAL RELIEF REQUEST

RR-G-3

SYSTEMS: All in Scope of IST Program

VALVES: All in Scope of IST Program

PUMPS: All in Scope of IST Program

CLASS: 1, 2 and 3

TEST REQUIREMENT: The OM Code 1990 and 1995 Editions, paragraph ISTA 2.2.3(c), require that the initial inservice test interval be 10 years following commercial operation and each successive interval be 10 years following the previous interval.

ISTA 2.2.3(c), as applied to Plant Hatch, would require the 3rd 10-year IST interval to start on January 1, 1996. Therefore, GPC assumes that this would mean compliance with the 3rd 10-year IST Program testing requirements on January 1, 1996, which would mean that all surveillance procedures must be in place to implement the surveillance testing requirements included in the IST Program update.

BASIS FOR RELIEF: The surveillance testing requirements of the 3rd interval IST Program are not significantly different from those included in the existing 2nd interval IST Program. The ASME Section XI Code, 1980 Edition with the Winter 1981 Addenda was utilized for the 2nd interval program, whereas the OM Code 1990 and 1995 Editions have been utilized for development of the 3rd interval program (See RR-G-1).

The 2nd interval program was revised in 1990 to address NRC GL 89-04 at which time the testing requirements of the OM Code were applied for pumps. Pump testing at Hatch presently utilizes the OM Code 1990 Edition.

Power operated valve exercising and stroke timing requirements of the 1990 OM Code require the use of a reference stroke time as opposed to comparison to the previous stroke time required by the ASME XI Code. The actual testing is the same, acceptance limits and evaluation requirements are different between ASME XI and the OM Code.

Safety and relief valve testing is more clearly defined in OM Code Appendix I, and is defined for each type and class of valve, but the required testing is not significantly different from that of the ASME XI Code which references ANSI/ASME PTC 25.3-1976.

NRC NUREG-1482, paragraph 3.3.3, recommends that if a timely implementation of the updated IST Program requirements is not possible, that the licensee submit a schedule which identifies the proposed schedule for implementation. This schedule should be submitted prior to the beginning of the new interval.

Revision of approximately one-hundred IST surveillance procedures within a short (3 month) time period would place undue hardship on plant personnel who are also responsible for plant operation and support of a fall 1995 Unit 2 outage, and a spring Unit 1 1996 outage.

NRC review and approval of IST Program updates has historically required a significant amount of time. The licensee is at the mercy of the regulators when coordinating and scheduling surveillance procedure revisions to implement an IST Program update while still maintaining and existing program's testing requirements.

ALTERNATE TESTING: GPC will implement a transition from the existing IST Program to the 3rd Interval IST Program in accordance with the below described schedule.

- 3rd Interval IST Program effective on January 1, 1996. Any program revisions required as a result of NRC review and issue of SER will occur in accordance with schedule included in SER. Existing IST Program will also remain in effect until October 1, 1996.

- GPC administrative control procedures applicable to the 3rd Interval IST Program update to be revised and effective on January 1, 1996.

- GPC to begin revision of IST surveillance procedures on a system by system basis in January, 1996. System by system surveillance procedure revisions to continue until September 30, 1996.

- All surveillance procedures to be revised and effective and IST implementation to be in compliance with 3rd Interval IST Program by September 30, 1996. Any procedure revisions required as a result of NRC review and issue of SER will occur in accordance with schedule included in SER.

- 2nd Interval IST Program to be voided effective October 1, 1996.