SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION UNIT 1

HOUSTON LIGHTING AND PONER COMPANY

PUMP AND VALVE INSERVICE TEST PLAN

Approved by:

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Revision 5

TABLE OF CONTENTS

Rev. 5

- 1.0 INTRODUCTION
 - 1.1 Gereral
 - 1.2 Scope
 - 1.3 Effective Period
 - 1.4 Plan Revisions
- 2.0 INSERVICE TESTING OF PUMPS
 - 2.1 Requests for Relief from ASME Boiler and Pressure Vessel Code Section XI Requirements
- 3.0 INSERVICE TESTING OF VALVES
 - 3.1 Requests for Relief from ASME Boiler and Pressure Vessel Code Section XI Requirements and Clarifications of Valve Testing Methods
- 4.0 DRAWINGS

1.0 INTRODUCTION

1.1 General

This document is prepared in accordance with the requirements of the Code of Federal Regulations 10CFR50.55a(g). Regulatory wilde 1.26. Revision 3, was used for safety-related classification determination for the pumps included in this plan. Draft Regulatory Guide, Task MS 901-4, "Identification of Valves for Inclusion in Inservice Testing Programs", was used as guidance for determining the valves subject to the testing requirements of Subsection IWV of the ASME Boiler and Pressure Vessel Code.

1.2 Scope

This document provides a description of the pump and valve inservice testing plan for the South Texas Project Electric Generating Station Unit 1 prepared in accordance with the requirements of Subsections IWP and IWV of the ASME Boiler and Pressure Vessel Code Section XI, 1983 Edition through Summer 1983 Addenda. This plan is referenced by South Texas Project Electric Generating Station Unit 1 Technical Specification 4.0.5.

1.3 Effective Period

This document shall go into effect prior to fuel load and shall then remain in effect through the first 120 month interval of commercial operation.

1.4 Plan Revisions

As a minimum, this plan will be reviewed and revised as necessary for compliance with the ASME code in effect 12 months prior to the end of the the first 120 months of commercial operation. Similarly, this plan will be reviewed and revised for each subsequent 120 month interval. Houston Lighting and Power Company reserves the right to submit plan revisions which may enhance or improve this pump and valve inservice test plan at any time within the effective period.

2.0 INSERVICE TESTING OF PUMPS

The table "IST Pump List" describes the inservice test plan for pumps subject to the requirements of Subsection IWP of the ASME Boiler and Pressure Vessel Code Section XI, 1983 Edition through Summer 1983 Addenda. The table provides the following information:

- a. Identalication of the pumps to be tested,
- b. Applicable ASME code class,
- c. P&ID and P&ID grid coordinates (See Section 4.0, Drawings),
- d. Test parameters to be measured,
- e. Test interval.
- f. Relief requests,
- g. Remarks.

Relief from the requirements of Section XI is requested where full compliance with the code is not practical. In such cases, specific information is provided in Section 2.1 which identifies the applicable code requirements, justification for the relief request, and the alternate testing to be performed.

IST Pump List Auxiliary Feedwater - AF

Pump Identification	Code Class	PEID	Paid Grid Coordinates	<u> </u>	Measured Test Parameters	Test Interval	Relief Requests	Remarks
Auxiliary Feedwater	3	P00024	F7 .	1.	Inlet Pressure (Pi)	Quarterly	- 11	
Pump 11				2.	Outlet Pressure (Po)	Quarterly	- 11	
Auxiliary Feedwater Pump 12	3	F00024	D7	3.	Differential Pressure (P = Po-Pi)	 Quarterly 	-	
				4.	Flow Rate (Q)	Quarterly	-	
Auxiliary Feedwater Pump 13	3	F00024	B7	5.	Vibration Amplitude (V)	Quarterly	RR5, RR7	
				6.	Bearing Temperature (Tb)	Annually	RR8	
				7.	Lubricant Level or Pressure	Observe Quarterly	- 	
				8.	Speed (N)	Not Applicable	-	

IST Pump List Auxiliary Feedwater - AF

Page 2 of 12 Rev. 5

Pump Identification	Code Class	P&ID	P&ID Grid Coordinates		Measured Test Parameters	Test Interval	Relief Requests	Remarks
Auxiliary Feedwater Pump 14	3	P00024	H7	1.	Inlet Pressure (Pi)	Quarterly	-	
				2.	Outlet Pressure (Po)	Quarterly	i - ii	
				3.	Differential Pressure (P = Po-Pi)	Quarterly	-	
				4.	Flow Rate (Q)	Quarterly	- 1	
				5.	Vibration Amplitude (V)	Quarterly	RR5, RR7	
				6.	Bearing Temperature (Tb)	Annually	RR8	
				7.	Lubricant Level or Pressure	Observe Quarterly	-	
				8.	Speed (W)	Quarterly	-	

IST Pump List Component Cooling Water - CC

Pump Identification	ASME Code Class	PEID	P&ID Grid Coordinates	<u> </u> -	Measured Test Parameters	Test Interval	Relief	Remarks
Component Cooling	3	F05017	B7	1.	Inlet Pressure (Pi)	Quarterly	-	
Water Pump 1A				2.	Outlet Pressure (Po)	Quarterly	- ii	
Component Cooling Water Pump 1B	3	F05018	B7	3.	Differential Pressure (P = Po-Pi)	Quarterly	-	
				4.	Flow Rate (Q)	Quarterly	- 11	
Component Cooling Water Pump 1C	3	F05019	B7	5.	Vibration Amplitude (V)	Quarterly	RR5, RR7	
				6.	Bearing Temperature (Tb)	Annually	RRS	
				7.	Lubricant Level or Pressure	Observe	-	
				8.	Speed (N)	Not Applicable	-	

IST Pump List Essential Chilled Water - CH

Pump Identification	Code	PEID	P&ID Grid Coordinates	<u> </u>	Measured Test Parameters	Test Interval	Relief Requests	Remarks
Essential Chilled	3	V10001	F7	1.	Inlet Pressure (Pi)	Quarterly	-	
Water Pump 1A				1 2.	Outlet Pressure (Po)	Quarterly	- 11	
Essential Chilled Water Pump 1B	3	V10001	D7	3.	Differential Pressure (P = Po-Pi)	Quarterly	-	
				4.	Flow Rate (Q)	Quarterly	- 11	
Essential Chilled Water Pump 1C	3	V1000?	.47	5.	Vibration Amplitude (V)	Quarterly	RR5, RR7	
				6.	Bearing Temperature (Tb)	Annually	RR8	
				7.	Lubricant Level or Pressure	Observe Quarterly	-	
				8.	Speed (N)	Not Applicable	-	

IST Pump List Containment Spray - CS

Pump Identification	ASME Code Class	P&ID	P&ID Grid Coordinates		Measured Test Parameters	Test Interval	Relief Requests	Remarks
Containment Spray Pump 1A	2	F05037	G3	1	Inlet Pressure (Pi)	Quarterly	-	
Containment Spray Pump 1B	2	F05037	E3	1	Outlet Pressure (Po) Differential Pressure (P = Po-Pi)	Quarterly Quarterly	-	
Containment Spray Pump 1C	2	P05037	С3	1	Flow Rate (Q) Vibration Amplitude (V)	 Quarterly Quarterly	- - RR5, RR7	
				6.	Bearing Temperature (Tb)	Not Applicable	RR1	
				7.	Lubricant Level or Pressure	Not Applicable	RR1	
				8.	Speed (N)	Not Applicable	-	

IST Pump List Chemical and Volume Control - CV

Pump Identification	ASME Code Class	PAID	P&ID Grid Coordinates		Measured Test Parameters	Test Interval	Relief	Kemarks
Boric Acid Transfer Pump 1A	3	F05009	D5	1.	Inlet Pressure (Pi)	Quarterly	-	
runsier rump zn	į į			2.	Outlet Pressure (Po)	Quarterly	- 11	
Boric Acid Transfer Pump 1B	3	F05009	C5	3.	Differential Pressure (P = Po-Pi)	Quarterly	-	
				4.	Flow Rate (Q)	Quarte ly	-	
				5.	Vibration Amplitude (V)	Quarterly	R25, RR7	
				6.	Bearing Temperature (Tb)	Not Applicable	RR1	
				7.	Lubricant Level or Pressure	Not Applicable	RR1	
				8.	Speed (N)	Not Applicable	-	

IST Pump List Chemical and Volume Control - CV

Pump Identification	ASME Code Class	P&ID	P&ID Grid Coordinates		Measured Test Parameters	Test Interval	Relief Requests	Remarks
Centrifugal	2	F05007	D5	1.	Inlet Pressure (Pi)	Quarterly	-	
Charging Pump 1A				2.	Outlet Pressure (Po)	Quarterly	-	
Centrifugal Charging Pump 1B	2	P05007	B5	3.	Differential Pressure (P = Po-Pi)	Quarterly	-	
				4.	Flow Rate (Q)	Quarterly	- 11	
				5.	Vibration Amplitude (V)	Quarterly	RRS. RR6	
				6.	Searing Temperature (Tb)	Annually	RR8	
				7.	Lubricant Level or Pressure	Observe	-	
				8.	Speed (N)	Not Applicable	-	

IST Pump List Essential Cooling Water - EW

Pump Identification	ASME Code Class	P&ID	P&ID Grid Coordinates		Measured Test Parameters	Test Interval	Relief	Remarks
Essential Cooling Water Pump 1A	3	F05038	G3	1.	Inlet Pressure (Pi)	 Quarterly	RR2	
				1 2.	Outlet Pressure (Po)	Quarterly	- !!	
Essential Cooling Water Pump 1B	3	F05038	E3	3.	Differential Pressure (P = Po-Pi)	Quarterly	RR2	
		P05010	B3	4.	Flow Rate (Q)	Quarterly	-	
Essential Cooling Water Pump 1C	3	F05038	В3	5.	Vibration Amplitude (V)	Quarterly	RRS, RR7	
				6.	Bearing Temperature (Tb)	Not Applicable	RR1	
				7.	Lubricant Level or Pressure	Not Applicable	RR1	
				8.	Speed (N)	Not Applicable	-	

IST Pump List Essential Cooling Water - EW

Pump Identification	ASME Code Class	PEID	P&Ib Grid Coordinates		Measured Test Parameters	Test Interval	Relief	Remarks
Essential Cooling	3	F05039	D7	1.	Inlet Pressure (Pi)	Quarterly	-	
Water Screen Wash Booster Pump 1A				2.	Outlet Pressure (Po)	Quarterly	-	
Essential Cooling Water Screen Wash	3	F05039	D4	3.	Differential Pressure (P = Po-Pi)	Quarterly	-	
Booster Pump 1B				4.	Flow Rate (Q)	Quarterly	-	
Essential Cooling Water Screen Wash	3	F05039	D2	5.	Vibration Amplitude (V)	Quarterly	RR5, RR7	
Booster Pump 1C	1			6.	Bearing Temperature (Tb)	Annually	RR8	
				7.	Lubricant Level or Pressure	Observe Quarterly	-	
				8.	Speed (N)	Not Applicable	i - ii	

IST Pump List Residual Heat Removal - RH

Pump Identification	ASME Code Class	P&ID	P&ID Grid Coordinates		Measured Test Parameters	Test Interval	Relief	Remarks
Residual Heat	2	F20000	B6	1.	Inlet Pressure (Pi)	Quarterly	-	
Removal Pump 1A				2.	Outlet Pressure (Po)	Quarterly	-	
Residual Heat Removal Pump 18	2	F20000	D6	3.	Differential Pressure (P = Po-Pi)	Not Applicable	-	
Residual Heat	2	F20000	G6	4.	Flow Rate (Q)	Quarterly	-	
Removal Pump 1C	-	F20000	30	5.	Vibration Amplitude (V)	Quarterly	RR5, RR6	
				6.	Bearing Temperature (Tb)	Not Applicable	RR1	
				7.	Lubricant Level or Pressure	Not Applicable	RR1	
				8.	Speed (N)	Not Applicable	-	

IST Pump List Safety Injection - SI

Pump Identification	ASME Code Class	P&ID	P&ID Grid Coordinates	<u> </u>	Measured Test Parameters	Test Interval	Relief Requests	Remarks
High Head Safety	2	F05013	F4	11.	Inlet Pressure (Pi)	 Quarterly	- 11	
Injection Pump 1A				2.	Outlet Pressure (Po)	 Quarterly	- !!	
High Head Safety Injection Pump 1B	2	F05014	G3	3.	Differential Pressure (P = Po-Pi)	Quarterly	RR4	
			-	4.	Flow Rate (Q)	 Quarterly	RR4	
High Head Safety Injection Pump 1C	2	F05015	F3	5.	Vibration Amplitude (V)	Quarterly	RR5, RR7	
				6.	Bearing Temperature (Tb)	Not Applicable	RR1	
				7.	Lubricant Level or Pressure	Not Applicable	RR1	
				8.	Speed (N)	Not Applicable	-	

Pump Identification	ASME Code Class	PEID	P&ID Grid Coordinates	<u> </u>	Measured Test Parameters	Test Interval	Relief Requests	Remarks
Low Head Safety	2	F05013	С3	1.	Inlet Pressure (Pi)	Quarterly	- ii	
Injection Pump 1A				2.	Outlet Pressure (Po)	Quarterly	- !!	
Low Head Safety Injection Pump 18	2	F05614	D3	3.	Differential Pressure (P = Po-Pi)	 Quarterly 	RR4	
				4.	Flow Rate (Q)	Quarterly	RR4	
Low Head Safety Injection Pump 1C	2	F05015	D3	5.	Vibration Amplitude (V)	Quarterly	RRS, RR7	
				6.	Bearing Temperature (Tb)	Not Applicable	RR1	
				7.	Lubricant Level or Pressure	Not Applicable	RR1	
				8.	Speed (N)	 Wot Applicable	-	

2.1 Requests for Relief from ASME Boiler and Pressure Vessel Code Section XI Requirements

RR-1

Test Requirement

Table IWP-3100-1 requires that proper lubricant level or pressure be observed and bearing temperature be measured during each inservice test.

Basis for Relief

The bearings of the Containment Spray Pumps, the Boric Acid Transfer Pumps, the Essential Cooling Water Pumps, the Residual Heat Removal Pumps, the High Head Safety Injection Pumps, and the Low Head Safety Injection Pumps are lubricated and cooled by the pumped fluid making it impractical to verify proper lubricant level or pressure and measure bearing temperature.

Alternate Testing

Lubricant level or pressure will not be observed and bearing temperature will not be measured for these pumps.

RR-2

Test Requi: ement

IWP-4200 requires direct measurement of pressure.

Basis for Relief

The Essential Cooling Water Pumps are vertical submerged suction centrifugal pumps with no direct means to measure inlet pressure as required.

Alternate Testing

The inlet pressure will be calculated based on the water level above the pump inlet.

Rev. 5

RR-3

Deleted

RR-4

Test Requirement

IWP-3100 requires that the resistance of the system shall be varied until either the measured differential pressure or the measured flow rate equals the corresponding reference value.

Basis for Relief

Both the High Head Safety Injection Pumps and the Low Head Safety Injection Pumps have a recirculation flow path containing a restricting orifice which limits flow through the recirculation line to a specific, fixed flow rate. When these pumps are tested using their respective fixed-resistance flow paths, the flow rates will be approximately the same each time the tests are conducted.

Alternate Testing

Pump testing will be performed using the fixed-resistance flow paths. The measured differential pressure will be compared to the allowable ranges given in Table IWP-3100-2 in order to determine pump operability.

RR-5

Test Requirement

IWP-4120 requires the full scale range of each instrument to be three times the reference value or less.

Basis for Relief

Portable vibration indicators have selectable ranges in overlapping scales (multiples of 1 and 3 full scale). It is possible to have an indicated vibration which, in order to read on an available scale, will not be in the range of the instrument required by IWP-4120.

Alternate Testing

The portable vibration indicators, which provide overall readout repeatability within the accuracy limits of Table IWP-4110-1, will be used to obtain vibration data except when permanently installed instrumentation is used.

RR-6

Test Requirement

IWP-4120 requires the full scale range of each instrument to be three times the reference value or less.

Basis for Relief

The Centrifugal Charging Pumps (located in the Mechanical Auxiliary Building) and the Residual Heat Removal Pumps (located in the Reactor Containment Building) are in areas of high radiation. For ALARA considerations, the Vibration Monitoring System (located in the Control Room) is used to measure vibration amplitude. The vibration monitoring system is an online system which constantly monitors the machine and provides alarms when alert limits are reached. The full scale range of each instrument is fixed and the above requirement could be exceeded. Rescaling the instrument to meet the requirements of IWF-4120 for a low reference value would impair the ability of the system to monitor the machine up to the severity limit determined by size, speed and application.

Alternate Testing

The Vibration Monitoring System will be used to obtain vibration data for the Residual Heat Removal and Centrifugal Charging Pumps. The system provides overall readout repeatability within the accuracy limits specified in Table IWP-4110-1 with indication in increments of at least 0.2 mils. If the Vibration Monitoring System is unavailable, portable vibration indicators will be used as described in RR-5.

RR-7

Test Requirement

IWP-4510 requires at least one displacement vibration amplitude shall be read during each inservice test. Table IWP-3100-2 defines the allowable range of vibration based on displacement amplitude.

Basis for Relief

The use of a velocity standard, rather than a displacement standard, is more indicative of pump condition and is industry accepted.

Alternate Testing

At least one velocity vibration measurement (in/sec unfiltered peak) shall be read during each inservice test. The frequency response range of the vibration measuring transducers and the readout system shall be from one-half minimum pump shaft rotational speed to at least 1,000 Hertz with an accuracy of at least ± 5%. All other requirements of IWP-4510 and IWP-4520 shall be complied with. Allowable ranges of vibration velocity for pump testing shall be as follows:

	Test Quantity	Acceptable Range	Alert Range	Required Action
1.	V, when	0 to 0.075	0.075 to 0.1	>0.1
	0 <u>v</u> _{r1} <u>0</u> 0.05	in/sec	in/sec	in/sec
	in/sec			
2.	V, when	0 tc 0.15	0.15 to 0.2	>0.2
	0.05 \ v_r2 \ 0.1	in/sec	in/sec	in/sec
	in/sec			
3.	V _t when	0 to 0.2	0.2 to 0.25	>0.25
	0.14v _{r3} 40.15	in/sec	in/sec	in/sec
	in/sec			
4.	V _t when	0 to 0.285	0.285 to 0.314	>0.314
	0.15 V 4 0.25	in/sec	in/sec	in/sec
	in/sec			

Definitions: V = Reference velocity measurement (in/sec unfiltered peak)

V_t = Surveillance test velocity measurement (in/sec unfiltered peak)

RR-8

Test Requirement

IWP-3300 requires a bearing temperature measurement at least once a year.

Basis for Relief

The yearly temperature measurement will not provide significant information about pump conditions. Industry experience has shown that bearing temperature changes caused by degrading bearings occur only after major degradation has occurred at the pump. Prior to this major pump degradation, the vibration measurement would provide the necessary information to warn of an impending malfunction. Deletion of this measurement will not have a significant effect on pump evaluation since vibration amplitude is measured quarterly.

Alternate Testing

Vibration velocity, as described in RR-7, will be measured quarterly in lieu of bearing temperature measurement for all pumps which would require bearing temperature measurement per IWP-4310 except the Centrifugal Charging Pumps. The Centrifugal Charging Pumps, due to ALARA considerations, will have vibration measured quarterly using remote instrumentation which provides only vibration displacement.

3.0 INSERVICE TESTING OF VALVES

The table "IST Valve List" describes the inservice test plan for valves subject to the requirements of Subsection IWV of the ASME Boiler and Pressure Vessel Code Section XI, 1983 Edition through Summer 1983 Addenda. The table provides the following information:

- a. Identification of the valves to be tested.
- b. Description of valve function,
- c. Applicable ASME code class.
- d. PalD and PalD grid coordinates (See Section 4.0, Drawings),
- e. Section XI valve category,
- f. Valve size.
- g. Valve type,
- h. V-lve actuator type,
- i. Normal position during power operation,
- j. Failure position,
- k. Test requirements and alternate testing.
- Relief requests and/or clarification (if necessary),
- m. Stroke time limit (if applicable).

Relief from the requirements of Section XI is requested where full compliance with the code is not practical. In such cases, specific information is provided in Section 3.1 which identifies the applicable code requirements, justification for the relief request, and the alternate testing to be performed. In certain cases, relief is not requested, but the code-required testing is performed in an unusual or complicated manner. In such cases, clarifications are provided in Section 3.1 to explain the actual testing method to be used.

Some valves have a fail-safe position. Valves which fail open or fail closed are tested to their failure positions during the exercising tests. The test method used meets the requirements of IWV-3415 in every case, since remote valve control switch operation removes actuator power from each fail-safe valve.

Rev. 5

Pump and Valve Inservice Test Plan

Rapid-acting valves are valves which have very short stroke times less than or equal to 2 seconds, and are not trended in accordance with IWV-3417(a). Instead, stroke times are compared to the specified stroke time limits not to exceed 2 seconds and corrective actions (if required) are taken in accordance with IWV-3417(b).

1ST Valve List Legend

VALVE ID - Valve Identification

The alphanumeric valve designator used as a unique identifier for each valve.

VALVE FUNCTION - Valve Function Description

A brief description of the function of each valve.

CL - Code Class

The appropriate ASME code classification (Safety Class 1,2,3 or NS (Non-Safety Related)) for each valve.

PAID - Piping and Instrumentation Diagram

The P&ID showing the location of each valve in the system (See Section 4.0, Drawings).

GC - P. ID Grid Coordinates

The grid coordinates describing where each valve appears on each P&ID.

CAT- Section XI Category

The category applicable to each valve per IWV-2200.

SIZE - Valve Size

The size of the valve (inside diameter) in inches.

TYPE - Valve Type

The type of valve described by the following:

A = Angle

ARC= Auto Recirc Check

B = Butterfly

BL = Ball

CK = Check

D = Diaphragm

GL = Globe

GT = Gate

PR = Pressure Relief or Safety

SCK= Stop Check

Rev. 5

Pump and Valve Inservice Test Plan

ACT - Actuator Type

The type of actuator on each valve described by the following:

AO = Air Operated

HO = Hydraulic Operated

M = Manual

MO = Motor Operated

SA = Self/System Actuated

SO = Solenoid Operated

NORM. POS. - Normal Position

The normal position of each valve during power operation described by the following:

NC = Normally Closed

NO = Normally Open

NI = Normally Intermittent (Open or Closed)

NT = Normally Throttled or Controlling

FAIL POS. - Fail-safe Position

The position of each valve when actuator power or air is secured as described by the following:

FC = Fails Closed

FO = Fails Open

FAI = Fails As Is

- = Not Applicable

TEST REQUIREMENT - Test Requirements (Alternate Testing)

The test requirements (or alternate testing) required for each valve as described by the following:

- CV = Exercise check valves to the position required to fulfill their function at least once every three (3) months.
- LT = Valves are leak tested per Appendix J to 10CFR50 at each refueling outage or by alternate testing method.
- MT = Stroke time measurements are taken and compared to the stroke time limiting value per Section XI Article IWV-3410.

- Exercise valves (full stroke) for operability at least once every three (3) months except when the other train(s) of a redundant system are inoperable. Nonredundant valves in the remaining train(s) should not be cycled if their failure would cause a total loss of system function.
- R = Remote valve position indicator is used during valve stroking and must to calibrated at least once every two (2) years.
- SRV = Safety and relief valves are tested per Section XI Article
 IWV-3510.
- (CP) = Containment Purge Valves are leak tested per plant Technical Specifications.
- (CS) = Exercise valve (full stroke) for operability during each cold shutdown and at each refueling outage. In case of frequent cold shutdowns, valve testing is not required to be performed more often than once every three (3) months.

Valve testing will commence not later than 48 hours after an unscheduled cold shutdown and continue until complete or until plant is ready to return to power. Completion of all valve testing is not a prerequisite to return to power. Any testing not completed at one cold shutdown should be performed during the subsequent cold shutdowns to meet the code-specified testing frequency.

- (CSDI)= Exercise valve (partial stroke) for operability at each cold shutdown not to exceed once every three (3) months and disassemble and inspect check valve at each refueling outage.
- (CSP)= Exercise valve (partial stroke) for operability at least once every three (3) months and exercise valve (full stroke) at each cold shutdown not to exceed once every three (3) months.
- (CSR)= Exercise valve (partial stroke) for operability at each cold shutdown not to exceed once every three (3) months and exercise valve (full stroke) at each refueling outage.
- (DI) = Disassemble and inspect check valve at each refueling outage.
- (NA) = No testing required.
- (NST) = No stroke time measurements are taken.
- (NT) = Stroke time not trended due to very short stroke times (valves are classified as rapid-acting).

Rev. 5

Pump and Valve Inservice Test Plan

- (PIV)= Reactor Coolan System Pressure Isolation Valves are leak tested per plant Cachical Specifications.
- (PO) = Valve seat 1 ax tig the s is demonstrated during normal plant operation.
- (PRR)= Exercise value (% ctial stroke) for operability at least once every three (3) months and exercise valve (full stroke) at each refueling outage.
- (PRS)= Exercise valve (partial stroke) for operability at least once every three (3) months providing RCS pressure is greater than pump shutoff head and exercise valve (full stroke) at each refueling outage.
- (RR) = Exercise valve (full stroke) for operability at each refueling cutage not to exceed once every two (2) years.

RR/C - Relief Request/Clarification

The appropriate relief request for each valve when alternate testing is proposed or clarification of testing method if required (See Section 3.1).

ST - Stroke Time

The close and open stroke time limiting value for power-operated valves in seconds.

IST Valve List Auxiliary Feedwater - AF

Page 1 of 69 Rev. 5

- 4	MOTORITO COLEAN		DETD		747	2772	TABE		NORM.	FAIL	CT DELLE CC CAT SIZE TYPE ACT DOS DOS DESCRIPE BET C 0	2, 30	2	10
AP-0036	AP-0036 AFW Pump Mo.11 Auto Recirc.	- E	F00024	- P	U	*	ARC	SA	NG.		3 F00024 F6 C 4 ARC SA NC CV	-		1_1
-0058	AF-0058 AFW Pump No.12 Auto Becire.		3 700024 D6 C 4 ARC SA NC	- 90	U	4	AR	- VS	N.		5	1		
1-000-1	AF-0091 AFW Pump No.13 Auto Recirc.		3 F00024 B6 C 4 ARC SA NC	_ Be	U	*	ARC	SA	NC				- <u> </u>	
1-0011	AF-0011 AFW Pump No.14 Auto Recirc.	3	3 F00024 H5 C 4 ARC SA NC	HS	U	4	ARC	SA	NC	_ !		1		

-7517	FV-7517 AFW Pump No.11 Disch.Crosstie	3	F00024	F4	B	4	3	VO	NC	P.	3 F00024 F4 B 4 GL AO NC FC Q.R.HT 9 35	1	6	35
-7516	FV-7516 AFF Pump No.12 Disch.Crosstie	3	F00024	8		4	79	6	MC	2	3 F00024 D4 B 4 GL F0 NC FC Q.R.NT	- 7 29		23
-7515	FV-7515 AFW Pump No.13 Disch, Crosstie	3	F00024			-	75	V	MC	2	3 F00024 B4 B 4 GL A0 NC FC Q.R.HT	10 33	3	33
-7518	FV-7518 AFW Pump No.14 Disch.Crosstie	3	F00024	- 45	- B	~	GL	Ao	NC	FC	3 F00024 64 B 4 GL AO NC FC Q.R.NT 7 16		7	16

FV-7525 AFW Pump No.11 Disch.Control	3 - 700	024 F4	8	-		NO NO	LW	3 F00024 F4 B 4 GL NO NO FAI Q.R.NT 61 61	1	19	19
FV-7524 AFW Pump No.12 Disch.Control	3 700	024 D4	8	-		0	FAI	3 F00024 D4 B 4 GL NO NO FAI Q.R.NT 59 60	-	59	09
FV-7523 AFW Pump No.13 Disch.Control	1 3 500	024 B4	60	•		011	FAI	3 F00024 B4 B 4 GL NO NO FAI Q.R.NT 60 60	1	09	09
FY-7526 AFW Pump No.14 Disch.Control	3 500	024 H3	8	•	- 72	NO NO	FAI	3 F00024 H3 B 4 GL NO NO FAI Q.R.NT 58 56		1 58	56

IST Valve List Auxiliary Feedwater - AF

		1 1		1	1	1	1		NORM.	FAIL	TEST		57	
VALVE ID	VALVE FUNCTION	CL	PAID	IGC	CAT	SIZE	TYPE	ACT	POS.	Pos.	REQUIREMENT	RR/C	C	0
MOV-0048	AFW Pump No.11 Disch.Stop Ck.	2	F0G024	F2	ВС	4	SCK	NO	NC.	FAL	Q.R.MT	RR1.2	45	43
		Щ		<u>i </u>	<u> </u>	_		SA	NC	i	cv(cs)	RR1.2		
MOV-0065	AFW Pump No.12 Disch.Stop Ck.	2	F00024	DZ	BC	4	SCK	HO	NC	-	Q.R.HT	RR1.2	45	45
		Ш		<u> </u>	-	_		SA	NC		cv(cs)	RR1.2		
MOY-0085	AFW Pump No.13 Disch.Stop Ck.	2	F00024	BZ	BC	4	SCK	HO	NC	FAI	Q.R.HT	RR1.2	45	45
		H		<u> </u>	_	_		SA	BC	ļ	CV(CS)	RR1.2		
HOV-C-19	ATH PUMP No.14 Disch.Stop Ck.	2	F00024	Н2	BC	4	SCK	MO	NC	FAI	Q.R.HT	FR1.2	42	43
				<u> </u>	<u> </u>	<u>L_</u>		SA	BC	<u>!</u>	CV(CS)	RR1.2		
AF-0119	AFW to SGIA Check	2	F00024	FI	c	8	CK	SA	I IC	ļ	Cv(Cs)	RR2.3		
AF-0120	AFW to SG1B Check	2	F00024	DI	1 c	8	CK	SA	HC.	ļ	CV(CS)	RR2.3		
AF-0121	AFW to SG1C Check	1 2	F00024	cı	c	8	CK	SA	I IC	ļ	CV(CS)	RR2.3		
AF-0122	AFW to SG1D Check	1 2	F00024	HI	i c	8	CK	SA	I NC	1-	CY(CS)	RR2.3		

IST Valve List Auxiliary Feedwater - AF

Page 3 of 69 Rev. 5

	1 1		1	1		1		HORM.				57	
VALVE ID VALVE FUNCTION	CL	PEID	GC	CAT	SIZE	TYPE	ACT	POS.	POS.	REQUIREMENT	RR/C	C	0
MOV-0143 AFW Pump Turbine Stop	1 2	F00024	G8	BC	4	SCK	HO	100	FAI	Q.R.HT		41	60
	11		<u> </u>				SA	NC_		C V		ļ	
FV-0143 AFW Pump Turbine Stop Bypass	2	F00024	G8	В	1	GT	50	NC	FC	Q.R.HT (BT)	RR8	2	2
MOV-0514 AFW Pump Turbine Control	1 3	F00024	G7	B	4	GT	HO	I MC	FAI	Q.R.HT		1 17	17

Page 4 of 69 Rev. 5

Post Accident Sampling - AP

FY-2457 Gaseous PASS Return 2 Z47501 C2 A 1 GT SO NC FC Q.R.NT(NT)
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IST Valve List Breathing Air - BA

Page 5 of 69 Rev. 5

						_							NORM.	FAIL	NORM. FAIL TEST		ST	1
VALVE ID	VALVE FUNCTION	FUNCT	NOI			CL	PEID	25	CAT	SIZE	TYPE	ACT	POS.	POS.	CL PEID GC CAT SIZE TYPE ACT POS. POS. REQUIREMENT RR/C C 0	RR/C	0	0
\$000	BA-0004 Breathing Lir to CTMT 0B Isol. 2 F05044 F6 A 1 GT M MC	ir to	CTHE	08	Isol.	2	F05044	F6	4	7	15	=	MC		Q(BA)	5		
															5	1	1	
9000	Breathing A	ir to	CT	118	Check	2	F05044	99	AC	7	ğ	SA	NC.	1	BA-0006 Breathing Air to CTHT IB Check 2 F05044 G6 AC 1 CK SA NC CV(RR)	3	-	
								**							13	:		-

Component Cooling Water - CC

Page 6 of 69 Rev. 5

VALVE ID	VALVE FUNCTION	75	P&ID	- 25	CAT	SIZE	TIE	EAC	POS.	POS.	CL PAID GC CAT SIZE TYPE ACT POS. POS. REQUIREMENT RR/C C 0	RR/C	ts 3
OV-0642 C	HOY-0642 CCW HTX IA BYPASS	3	F05017	186	8	16	8) NC	FAI	3 F05017 B6 B 16 B NO NC FAI Q.R.NT 16 16	1	191
OV-0544 C	HOY-0644 CCW HTX 1B Bypass	3	F05018	186	8	16	8		NC NC	FAI	3 FOSO18 B6 B 16 B NO NC FAI Q.R.NT 17 17	1	-
OV-0646 C	HOV-0646 CCW HIN IC Bypass	3	F05019	186	8	16	8	- H	NC NC	FAI	3 F05019 B6 B 16 B NO NC FAI Q.R.NT 15 15	1	151

MOV-0643 CCW HTK 1A Outlet	3 F05017 B5 B 24 B NO NO FAI Q.R.M.	7 85	8	24	8	NO NO	2	0	R.M.		11 11
NOV-0645 CCV HTX 1B Outlet	3 F05018 B5 B 24 B NO NO FAI 0.R.MT	8 BS	8	24	10	NO NO	- 2	0	R.NT		91 91
HOV-0647 CCW HTX 1C OULlet	3 FOSO19 BS B 24 B NO NO FAI Q.R.HT	9 85	8	24	8	NO NO	- 2	0	R.KT	1	- 17/ 16

G 16 16	1 -	T 17 37		G 16 15	
9.8.	LI	0.8.	17	9.E.	:
FAI		FAI		FAI	
2 F05017 D2 A 14 B NO NC FAI Q.R.HT		2 F05018 D2 A 14 B NO NC FAI Q.R.HT		2 F05019 D2 A 14 B NO NC FAI Q.R.HT	
-	+	41	-	91	
4		4		-	
102		102		102	
2 505017		2 105018		2 505019	
MOV-0057 CCW to RCFC 11A.12A OB ISOL.		HOV-0136 CCW 'O RCFC 11B.12B 0B 1501.		NOV-0197 CCW to RCTC 11C.12C OB Isol.	
NON-C		NOV-C		NOV-C	

Component Cooling Water - CC

Page 7 of 69 Rev. 5

MOV-0059 CHW to RCFC 11A,12A OB ISO1. MOV-0137 CHW to RCFC 11B,12B OB ISO1.	3 7 7	CL P&ID GC CAT SIZE TYPE ACT POS. 2 F05017 D2 A 8 B N0 N0 2 F05018 D2 A 8 B N0 N0	20 20 20	A A	8 8 8	B B	ACT POS. NO NO NO	ACT POS. HO HO HO HO	NO FAIL NO FAI	FAIL TEST POS. REQUIREMENT RR/C FAI Q.R.NT LT FAI Q.R.NT		C C O	9 1 1 9
MOV-0199 CHW to RCFC 11C.12C OB ISO1.	- 7	2 F05019 D2		4	œ		02 02	2	<u> </u>	Q.R.NT	1 1 1	91	1 9 1
CC-0058 CCW to RCFC 11A,12A 1B CK.	7	2 F05017 D2	20	WC	4	CK SA NO	VS	2		t !s	1 1		
CC-0138 CCW to RCFC 11B,12B IB CK.	7	2 F05018 D2	70	¥.	4	8	88	2		b 5	1 1		
CC-0198 CCW to RCFC 11C.12C IB CK.	7	2 705019 D2		- WC	AC 14	8	SA.	SA NO		t !	1		

Page 8 of 69 Rev. 5

Component Cooling Water - CC

-						NORTH B								NOE	FAIL.	NORM. FAIL TEST		S	1
VALVE ID	A	ALVE	VALVE FUNCTION	10	1		13	PEID	3	CAT	15:22	TYP	EAC	L POS	POS.	CL PEID GC CATISIZE TYPE ACTIPOS. [POS. REQUIREMENT] RR/C C O	RR/C	3	0
N-0068	SCW fr	OR RC	FC 11A	A21.	118	1.105	2	F05017	M	4	14	B		NO 10	- EA	MOV-0068 CCW from RCFC 11A.12A IB ISO1. 2 F05017 D4 A 14 B NO NO FAL Q.R.HT	1	78	16 15
																177	-		1
V-0147	CCW fr	OR RC	EC 11E	8.12B	118	sol.	2	F05018	DA	4	7.4	8	*	0	- 4	NOV-0147 CCW from RCFC 11B.12B 18 Isol. 2 F05018 D4 A 14 B NO NO FAI G.R.HT	1	78	18 17
1																55	-	1	1
NOV-0208 CCV from RCFC 11C.12C IB Isol.	CCW fr	OB RC	20 110	.120	118	Sol.	2	F05019	8	4	7	B		0	- 3	2 F05019 D4 A 14 B NO NO FAL Q.R.HT	1	7	n n
																53	1	-	1

st st -		- 16 16		- 15 16	1
				-	
		-4-	-4-		
2 FUSO17 D4 A 14 B HO NC FAI Q.R.NI	17	2 FOSO18 D4 A 14 B NO NC FAI Q.R.HT	177	2 FOSO19 D4 A 14 B NO NC FAI G.R.NT	5
181		TW.		ZVI	
)		NG.)	
M		OM		0	
B		8		8	
=		2		2	
4		4		4	
8		8		8	
F05017		F05018		F05019	
-2-		7		7	
Isol.		Isol.		Isol.	
A 08		B 0B		C OB	
14.12		18.12		C.12	
TC T		1 24		72	
OR RC		OR RC		OR RC	
N CE		N CE		N to	
20163		18100		oloc	-
MOV-0069 CCW from RCFC 11A.12A OB ISOL.		MOV-0148 CCW from RCFC 11B.12B OB Isol.		NOV-0210 CCM from RCFC 11C,12C OB ISOL.	

Component Cooling Water - CC

Page 9 of 69 Rev. 5

CL PEID GC CAT SIZE IYPE ACT POS. POS. REQUIREMENT RE/C C O	21 01 13		1 01 10		10 19	
NORH. FAIL TEST	Q.R.W.	7.5	Q.R.W.	15	U.R.W.	
PATE POS.	2		- E	4	2	. 0
ACT POS.	NO NO	-	NO NO		0	
SIZE TYPE	00		8		8	
CCAT	4		4	-	V	
Pain IG	F05017 C		F05018 C		F05019 C	
병	2		7		2	
VALVE FUNCTION	MOV-0070 CHW from RCFC 11A.12A OB ISO1. 2 F05017 C4 A 8 B HO NO FAL Q.R.NT		MOV-0149 CHW from 6.12B OB ISO1. 2 F05018 C4 A 8 B HO NO FAI Q.R.HT		MOV-0209 CHW from RCFC 11C.12C OB ISO1. 2 F05019 C4 A B B NO BF FAI Q.R.HT	
VALVE ID VALVE	-0070 CHW from 5		-0149 CHW from		-0209 CHW from 5	

91 91		- 11 11		16 16	
			-		
2 F05017 E2 A 16 B NO NO FAI Q.R.HT	17	2 F05018 E2 A 16 B NO NO FAI Q.R.HT	17	2 F05019 E2 A 16 B NO NO FAI Q.R.HT	51
18		FAI		FAI	
9		10		9	
2		0		M	
100		8		10	
16		16		16	
4		4		4	
13		E2		23	
F05017		F05018		F05019	
2		2		2	_
NOV-0012 CCM to RHR 1A HTX OB ISOL.		MOV-0122 CCW to RHR 1B HTX OB ISOL.		NOV-0182 CCW to RHR IC HTK OB ISOL.	
MOV-0012		ZZ10-VCH		NOV-0182	

Page 10 of 69 Rev. 5

Component Cooling Water - CC

VALVE ID	VALVE FUNCTION	77	P&ID	3	CAT	SIZE	TYPE	ACT	POS.	PATE.	CL PGID GC CAT SIZE TYPE ACT POS. POS. REQUIREMENT RR/C C O	RR/C	C	0
C-0013	CC-0013 CCW to RHR 1A HIX IB Check	2	2 F05017 E2 AC 16 CK SA KC	E2	VC	16	8	SA	KC	1	b	1	1	_ U_
											15	1		1
-0123	CC-0123 CCW to RHR 1B STX 1B Check	77	2 F05018 EZ AC 16 CK SA NC	EZ	WC.	16	ŏ	38	NC.	1	b	1	1	_ 1
											5	1	1	
-0183	CC-0183 CCM to RHR IC HIX IB Check	2	2 F05019 EZ AC 16 CK SA BC	<u>E2</u>	- Dec	16	8	SA	NC.	1	b	1	1	_ 1
											15	1		1

FY-4531 RHR 1A HTX Outlet	3 F05017 GZ B 16 B AO WC FO Q.R.HT	8 16	8	NO NC	2	Q.R.NT	22	-	22
FV-4548 RHE 1B HTK Outlet	3 F05018 G2 B 16 B A0 NC F0 Q.R.NT	B 16	80	AO F	2	Q.R.MT		21	77
FY-4565 PHE 1C HTK Outlet	3 F05019 GZ B 16 B A0 RC F0 0.8.NT 22	8 16	8	Ao Mc		O.R.NT		1	22

HOV-0049 CCW from RHR 1A IB Isol.	2 F05017 G4 6 16 B NO NO FAI Q.R.NT			 0	IW.	Q.R.NT		- -	- 2
		-				13	1	1	I
HOV-0129 CCW from RHR 1B IB Isol.	2 F0501C C4 A 16 B NO NO FAI Q.R.NT	7		 2	Z.	0.R.MT		- 11 11	
		1				Lī	-		I
NOV-0189 CCW from RHR 1C IB Isol.	2 F05019 H4 A 16 B H0 H0 FAI Q.R.HT	7	_]_	 0	Z	Q.R.HT	1	- 16 16	79
						17		-	Ī

Component Cooling Water - CC

Page 11 of 69 Rev. 5

VALVE ID	VALVE FUNCTION	_ 2	PEID	3	CAT	SIZE	TTPE	ACT	POS.	POS.	CL PEID GC CAT SIZE TYPE ACT POS. POS. REQUIREMENT RR/C C O	RR/C	2	0
0x-00501	MOY-0050 CCW from RHE IA OB Isol.	2	F05017	3	4	16	10	HO	No	FAI	2 F05017 G4 A 16 B HO NO FAI Q.R.HT	1	91 17	7
											13	1		
OV-0130	MOV-0130 CCM from RHR 1B OB Isol.	2	F05018	- 5	4	16	m	OK.	0	FAI	2 FOSO18 G4 A 16 B NO NO FAI Q.E.HT	1	11 11	11
											13	1		
00-010-AC	NOV-0190 CCW from RHE 1C OB ISO1.	2	F05019	· H	٧	16	83	0	00	FAI	2 FOSO19 H4 A 16 B HO BO FAI Q.R.HT	.1	16 16	16
												1	-	

CC-0315 CCW A Supply Hdr. Check	3 F05020 F7 C 24 CK SA BO	0	24	8	SA NO	1	5	-		1
CC-0313 CCW B Supply Hdr. Check	3 F05020 E7 C 24 CK SA 80	U	24	5	SA NO	1	5	-	1	I
or care from Carron by Berry	3 F05020 E7 C 24 CK SA B0 CV		24	- -	SA NO	1	5	-	1	Ī

A Supply to car. Pap. car.	3 805020 G7 B 6 B RO RO RAI Q.E.HT.	1 67	8	9	8 1	08 0	M	Q.R.HT	-	- 17 17
OCCV 3 Supply to Chir. Pap. Clr.	3 F05020 G7 B 6 B BO BO FAI Q.R.HT	1		9	8	0 80	LWI	Q.R.HT	-	17 16
	3 705020					ol lo	FALL	0.E.HT	1	1 15

IST Valve List Component Cooling Water - CC

1		1 1		1	1	1				FAIL			ST
VALVE ID	VALVE FUNCTION	CL	PEID	GC	CAT	SIZE	TYPE	ACT	POS.	POS.	REQUIREMENT	RR/C	CO
rv-4656 cc	W Supply to Chg. Pmp. Clrs.	3	F05020	ig7	B	6	В	i AO	NO	i rc	Q.R.HT	<u></u> .	15
10V-0447 CC	W to Spent Fuel Pool HTX	3	F05020	I E7	B	18	В	l no	NO	FAI	Q.R.HT		17
NOV-0032 CC	W to Spent Fuel Pool HTX	3	F05020	E6	B	18	В	No	NO	FAI	Q.R.HT	<u> </u>	16
nov-0235 cc	W to MMS Loop Isol.		F05020	 D7	B	1 18	В	l mo	NO	FAI	Q(CS).R.HT	 RRZ.38	15
10V-0236 CC	W to NNS Loop Isol.	3	F05020	D6	В	18	В	НО	NO	PAI	Q(CS).R.HT	RR2.38	15
FV-4540 CC	W to PASS Isol.		P05020	ID8	B	1.5	GT	So	B O	FC	Q.R.HT(HT)	RR8	2
FV-4541 CC	W to PASS Isol.	131	F05020	D8	B	1.5	GI	so	NO	FC	Q.R.NT(ST)	ER8	2
10V-0772 CC	W A Ret. from Chg. Pp. Clr.		P05020	127	B	6	В	HO	NO	FAI	Q.R.HT		16 1
10V-0774 CC	W B Ret. from Chg. Pp. Clr.	3	F05020	B7	В	6	В	HO	NO	FAI	Q.R.HT		16 1
10V-0775 CC	W C Ret. from Chg. Pp. Clr.	3	F05020	B7	B	6	В	HO	10	FAI	Q.R.HT	L J	17/1
W-4657 ICC	W Ret. from Chg. Pp. Clr.		2 05020		1.	١.		10	-	1		_	12

Component Cooling Water - CC

-		-							NORH.	FAIL	I I I I I I I I I I I I I I I I I I I	-	ST
VALVE ID	VALVE FUNCTION	Ct	PLID	3	CAT	SIZE	TYPE	ACT	POS.	Pos.	RECUIRENENT	KKAC	2
OW-0297,CC	MOV-0297 CCW to CTHT HIX OB ISOl.	- 8	F05021	89	8	9	8	9	No	FAI	3 705021 G8 B 6 B RO FAI Q.R.HT 115	1	
OV-0392 CC	HOW-0392 CCW to RCDT HIX IB ISOL.	3	F05021	63	8	*	15	9	0	FAI	3 F05021 G3 B 4 GT HO BO FAI Q.E.HT	1	11
	CCW to Excess		F05021	_ 5	B	9	8	NO	98	FAI	3 F05021 G3 B 6 B NO BO FAI Q.R.HT 15	1	21

HOV-0052 CCW A Return Isolation	3 FOSGZO D7 B 24 B NO NO FAI Q.R.RT	101	10	54		ON T	0	FAI	Q.R.HT	1	- 11 11
MOV-0132 CCW B Return Isolation	3 F05020 C7 B 24 B R0 R0 FAI Q.R.HT.	12	10	24	80	0	20	FAI	Q.R.HT	1	16 16
	3 F05020 C7 B 24 B WO BO FAI 9.R.HT	101	8	28	8	Rol	No	FAI	Q.R.HT	-	16 16

MOV-0316 CCW A Supply Isolation	3 F05020 E7 B 24 B NO NO FAI Q.R.HT	8	24	8	NO	108	FAI	O.R.RT	1	- 17 17	11
MCV-0314 CCW B Supply Isolation	3 FONOZO ET B 24 B NO NO FAL O.R.HT	8	24	60	10	0	FAL	O.R.HT		- 16 16	16
more and of the formal of the state of the s	3 F05020 F7 B 24 B NO FAL Q.R.HT 17 16		24		O	100	FALL	O.R.HI	1	117	16

Component Cooling Water - CC

	CL	PEID	8	CAT	SIZE	TYPE	V	POS.	POS.	CL PEID GC CAT SIZE TYPE ACT POS. POS. REQUIREMENT RR/C C 0	RR/C	3	0
MOV-0291 CCV to RCP OB Isolation	2	Z F05021 HB	HB	<	77		B 30		NO FAI	Q.R.NT	1	10	11
										5	1		
NOV-0318 CCV to RCP OB Isolation	2	2 гозогі нв	HB	the second second	A 12		B NO	0	FAI	Q.R.NT	1	10	T
										13	1	1	I
CC-0319 CCW to RCP IB Check	2	2 F05021 G8 AC	85	VC.		12 CK	S.	0	1	CV(RR)	RF.10		I
										13			T
MOY-0403 CCW from RCP IB Isolation		2 705021 81	18	-	77	-	- OH	2	FAI	Q.R.HT	1	101	1 11
										13	1		1
HOV-0542 CCW from RCP IB Isolation	2	2 F05021 B1	8	4	77	8	9	9	ra.	Q.R.HT	1	01	T
										13	1		I

5

-- | CV(ER)

2 F05021 B1 AC 1 CK SA RC

CC-0446 CCW from RCP IB Check

17

Component Cooling Water - CC

	_					-	-	NOEH.	FAIL	NORM. FAIL TEST		ST
VALVE ID VALVE FUNCTION	CI	PEID	3	CAT	SIZE	TYPE	VCT.	POS.	POS.	CL PRID GC CAT SIZE TYPE ACT POS. POS. REQUIREMENT RR/C C 0	KK/C	5
NOV-0404 CCW from RCP OB Isolation	2	F0502	==	4	77	8	9	M .	FAI	2 FUSSO21 HI A 12 B NO NO FAI Q.R.NT	1	10
	-									13	1	1
FV-4493 CCW from RCP OB Isolation	2	F0502	- =	4	77	8	NO.	N	72	2 F05021 H1 A 12 B A0 NO FC Q.R.MT	1	100
										5		
HOV-0060 CCW to RCFC 12A ISOl.	3	F0501	_ i D2		07	8	9	2	- N	3 F05017 [DZ B 10 B NO FAI Q.R.HT		85 84
MOV-0139 CCW to RCFC 12B ISOL.	3	3 F05018 D2 B 10	1 02	8	10	8	8	9	FAI	B NO NO FAI Q.R.NT		87 87
MOV-0200 CCW to RCFC 12C Isol.	3	P05019	102	В	10	8	MO	0	FAI	3 POSO19 DZ B 10 B NO NO FAI Q.R.MT	1	82 81

MOV-0063 CCW from RCFC 12A Isol.	3 F05017 C4 B 10 B NO FAI Q.R.NT	8	10	80	NO.	2	FAI	Q.R.NT	1	81 81	18
HOV-0142 CCW from RCFC 12B Isol.	3 F05018 C4 B 10 B NO NO FAI Q.R.NT	80	10		MO	10	FAI	Q.R.HT		83 82	82
NOV-0203 CCW from RCFC 12C Isol.	3 F05019 C4 B 10 B NO FAI Q.R.HT	B	10	8	MO	100	FAI	Q.R.HT	81 80	81	80

			1	5	
	-4-		-4-		- 1
_!	1	1		1	1
Q.R.HT	13	Q.R.NT	LT	2 FOSO18 C4 A 8 B AO NO FC Q.R.HT	17
22		2		2	
0		0		10	
- OV		No.		- 04	
10		B		8	
- 80	7	80	-	00	-
~		4	-	4	-
8		5		8	
F05019		F05017		F05018	
7		7		2	
FV-0864 CHW from RCFC 11C. 12C OB ISO1 2 F05019 C4 A 8 B A0 NO FC Q.R.NT		FV 862 CHW from RCFC 11A. 12A OB ISO1 2 F05017 C4 A 8 B AO NO FC Q.R.NT		FV-0863 CHW from RCFC 11B, 12B 0B Isol	
FC 11C.		FC 11A.		FC 11B.	
HW from R		BN from R		HW from R	
864	7	362 10		363 10	
F7-0		7		FV-0	

Component Cooling Water - CC

I TALINE ID	VALVE FUNCTION		PEID	35	CAT	SIZE	TIPE	ACT	POS.	FAIL POS.	ST	RR/C	C
1 10v-0064 CC	HOY-0064 CCW to RCFC 11A ISOl.	3	F05017	D2	m	10	B	0	08	FAI	3 FOSO17 DZ B 10 B NO NO FAI Q.R.MI	1	106 105
10v-0143 CC	MOV-0143 CCW to RCFC 11B ISOL.	3	F05018	20	8	30	8	MO	9	FAL	3 FOSO18 DZ B 10 B NO NO FAL Q.R.HT	1	82 80
1 100-0204		3	F05019	102	В	10	B	HO	NO	FAI	3 FOSO19 DZ B 10 B NO NO FAL Q.R.HT	1	80 78

MOV-0067 CCW from RCFC 11A ISOL.	3 FOSO17 E4 R 10 B RO BO FAL Q.R.HT	B 10	8	- 0	FAL	Q.R.HT		81 80
NOV-C146 CCW from ACFC 11B ISOL.	3 FOSO18 EA B 10 B NO BO FAL Q.R.HT	B 10	8	100	FAL	Q.R.HT	1	85 84
mov-0207 CCW from PCFC 11C Isol.	3 FOSO19 E4 B 10 B NO FAI Q.R.HT	B 10	8	0	FAI	Q.R.HT		81 81

Page 17 of 69 Rev. 5

IST Valve List Essential Chilled Water - CH

VALVE ID VALVE FUNCTION	_ 5	P&ID	ુ	CAT	SIZE	TYPE	- V	NOEM.	PATE.		ER./ C	ST C O
IV-9476A EAB COBt. Rm. ARU TCV	3	v10002	F6	m	7	m	AO	E	2	3 VIO002 F6 B 2 B AO NT FO [Q.R.HT(HT) RR8	RRB	
TY-9476B EAB Cont. Rs. AHU Bypass	- 6	V10002	F6	8	2	2	AO	E	2	3 V10002 F6 B 2 E AO NT FC Q.R.NT(NT) ER8	RRS	2
TV-9477A EAB Hain AHU TCV	-	3 V.	9	80	,	8	V	E	2	B AO NT FO Q.R.HT(NT) RES	RRS	2
TV-9477B EAB Bain AHU Bypass	3	3 V10002 C6 B	93	В	*		9	=	2	4 B AO NT FC Q.R.NT(NT) ERB	KK8	2
TV-9486A EAB Cont. Rm. AHU TCV	3	3 V10002 F4 B	7.4	8	7	8	W	E	2	B AO FT FO Q.R.HT(HT) RES	RR8	7
TV-9486B EAB Cont. Rm. AHU BYPASS	3	3 V10002 F4 B	7.	8	2		Wo.	=	2	2 B AO FT FC Q.R.HT(FT) ERB	KK8	
TV-9487A EAB Hain AHU TCV	3	3 V10002 C4 B	8	80	*	-	8	E	2	4 B AO BT FO Q.R.HT(BT) RR8	RR8	7
TV-9487B EAB Nain AHU Bypass	3	V10002	5	10	*	-	V	E	2	3 V10002 C4 B 4 B AO NT FC Q.R.HT(NT) ER8	KK8	2
TV-9496A EAB Cont. Rm. AHU TCV	3	V10002	1	80	7	10	No.	E	2	3 VICODZ FI B Z B AO ST FO G.R.HT(NT) ERR	RE8	7
TV-9496B EAB Cont. Rm. AHU Bypass	3	V10002	2	B	2	8	Ao	E	2	3 V10002 F1 B 2 B AO BT FC Q.R.HT(BT) RES	RK8	2
TV-9497A KAB Hain AHU TCV	3	V10002	D	8	•	-	V	E	2	3 VIO002 CI B 4 B AO NT FO Q.R.NT(NT) PER	886	
TV-9497B EAB Nain AHU BYDESS	3	V10002	3	100		8	No	H	7.	3 V10002 CI B 4 B AO NY FC Q.R.HI(NY) ERS Z	KR8	2

CH-0286 CHW Pump 1A Disch. Check	3 V10001 F7 C 8 CK SA NO	F7 C	8	SA NO	1	5		
CH-0295 CHW Pump 13 Disch. Check	3 V10001 D7 C 8 CK SA NO	D7 C	8	SA NO		5	-4	
CH-0304 CHW Pump IC Disch. Check	3 V10001 A7 C 8 CK SA NO	A7 C	8 CK	SA NO		45	-	

Page 18 of 69 Rev. 5

Containment Hydrogen Monitoring - CM

VALVE ID	VALVE FURCTION	벙	0194	<u> </u>	CAT SIZE TYPE ACT POS.	SIZE	TYPE	Ų	POS. POS.	POS	FAIL TEST POS. REQUIREMENT RR/C	T KR/C	C	0
74-4135	FV-4135 CIMI Sample IB Isol.	7	200046	2	<	-	15	8	SO MC	2	Q.R.HT(HT)	888	2	7
											17	-	1	
V-4101	FY-4101 CTHI Sample OB Isol.	7	200046	2	4	7	15	80	2	2	Q.R.NT(FT)	ER8	2	2
											17	1	1	
V-4127	FV-4127 CTMT Sample Return OB Isol.	2	9\$000Z	2	3	-	15	8	NC.	2	Q.P. NT(NT)	ER8	2	7
											15		1	11
V-4128	FY-4128 CTMT Sample Return IB Isol.	7	9\$000Z	13	4	4	19	8	2	2	Q.R.HT(BT)	888	2	7
											15		1	
V-4136	FV-4136 CTMT Sample IB Isol.	2	200046	62	4	7	15	So)	2	Q.R.HT(BT)	RK8	2	7
											5		1	1
V-4104	FV-4104 CTHI Sample OB Isol.	2	200046	8	3	7	15	02)	2	Q.R.HT(BT)	RRS	2	N
											5			
7-4133	FV-4133 CTHI Sample Return OB Isol.	7	200046	5	3	-	15	So) MC	2	Q.R.NT(NT)	828	2	7
		-									5		1	1
7-4134	FV-4134 CTHT Sample Return IB Isol.	7	200046	3	3	7	15	80	N.	2	Q.R.NT(NT)	RE8	7	2
											13	-	1	

Containment Hydrogen Monitoring - CM

Page 19 of 69 Rev. 5

VALVE ID	VALVE FUNCTION	_ 5	PEID	35	ATISI	ZETT	PELA	NOR!	POS		TI RR/C	ST	0
2 0018-V3	FV-4100 CTMT Sample Pt. 1	2	200046	199		- 1		SO MC	- 2	2 Z00046 G6 B 1 GT S0 NC FC Q.R.HT(NT) RR8	EFE 8	2	2
FY-4124 C	FV-4124 CTMT Sample Pt. 3	2	200046	- F6		- 1		SO NC	- 2	2 Z00046 F6 B 1 GT SO NC FC Q.R.NT(NT) RRS	RES .	2	7
rv-4125 C	FV-4125 CTHT Sample Pt. 5	7	200046	F6		- 1		So MC	- 2	2 Z00046 F6 B 1 GT SO NC FC Q.R.NT(NY) FRE	FRE	2	7
FY-4126 C	FV-4126 CTHT Sample Pt. 6	2	200046	93		- 1	-	SO MC	- 2	2 Z00046 E6 B 1 GT SO NC FC Q.R.MT(NT) RRB	REE 8	2	7
FV-4103 C	FV-4103 CTMT Sample Pt. 2	2	200046	. E6		-1		SO NC		2 Z00046 E6 B 1 GT SO NC PC Q.R.NT(NT) RRB	ER.8	2	7
FY-4129 C	FV-4129 CTMT Sample Pt. 4	2	200046	90	8			SO RC	- 2	2 Z00046 D6 B 1 GT SO RC PC Q.R.HT(NT) RR8	ER8	2	2
FV-4130 C	FV-4130 CTMT Sample Pt. 7	2	200046	90		- 1	15	So NC	- 2	2 Z00046 D6 B 1 GT S0 NC FC Q.R.NT(NT) RR8	ER8	2	2
FV-4131 C	FV-4131 CTMT Sample Pt. 8	2	950002	195	8	1 6		SO NC	- 22	2 Z00046 C6 B 1 GT S0 NC FC Q.R.NT(NT) RR8	RES	2	2

Containment Spray - CS

Page 20 of 69 Rev. 5

VALVE ID	A	VALVE FUNCTION	CTION			_ 5	PEID	- 129	CAT	SIZE	TYP	_ V	POS.	POS.	NORM. FAIL TEST ST ST ST ST ST ST	2/44	ST	10
N-0015A	Spray	Additive	Tank	18	Jutlet		F05037	95	10	2	_ 0		X	FAI	NOV-0015A Spray Additive Tank lA Outlet 3 F05037 G6 B 2 D NO NC FAI Q.R.NT	- 13 15	7	1
W-0015B	Spray	Additive	ank	18	outlet	3	F05037	E6	8	2	9	-	BC .	FAL	NOV-0015B Spray Additive Lank 18 Outlet 3 F05037 E6 B 2 D NO BC FAI Q.R.HT	15 17	15	F
V-0015C	Spray	Additive	Tank	10	Jutlet	3	F05037	193	10	7	O	#C	NC.	FAI	MOV-0015C Spray Additive Tank 1C Outlet 3 F05037 C6 B 2 D HG NC FAI 0.R.NT 13 14	1	13	14

CS-0018A Spray Additive Tank IA Outlet	Additive Is	DE IA	Outlet	-	2 F05037 G4 C 2 CK SA FC	3	5	7	8	SA	MC		b	-	1	I
0018B Spray	CS-0018B Spray Additive Tank 1B Outlet	DK 18	Outlet	-	2 F05037 E4 C 2 CK SA NC	EA	U	2	5	SA	2		t		_4	1
0018C Spray	CS-0018C Spray Additive Tank 1C Outlet	nk 1C	Outlet	200	2 F05037 C4 C 2 CK SA NC	CA	- 5	2	8	SA	2	1	5	!	<u> </u>	1

70	I	97	I	15 10	Ī
01 21		- 15 10	1	9	
1	1		1		1
2 F05037 GS A 8 GT NO NC FAI Q.R.NT	13	2 F05037 ES A 8 GT NO NC FAI Q.R.HT	LT	2 F05037 C5 A 8 GT NO NC FAI Q.R.HT	
Z.		FAI		ZVI	
2		2		MC	
9		0		No.	
5		15		5	
00				00	
4		4		4	
5		-13-		-C3	_
F05037		F05037		F05037	
7		2	-	2	-
. tos Isol.		. 08 Isol.		. OB Isol.	
HOV-0001A CS Pump 1A Disch. OB Isol.		NOV-0001B CS Pump 1B Disch. OB Isol.		MOV-0001C CS Pump 1C Disch. OB Isol.	
NOV-0001A CS		NOV-0001B CS		NOV-DODIC CS	

IST Valve List Containment Spray - CS

AN TAN	VALVE PURCTION			PEID	2	CATISI	ZELTYP	EAC	NORH	POS.	CL PAID GC CAT SIZE TYPE ACT POS. REGUIREMENT RR/C C 0	RR/C	ST	0
S-0002	CS Pu	IB Check	2	2 F05037 G7 AC 8 CK SA RC	167	AC 8	- 5	- 3	N RC	_4	CV(DI) PR12	PR12		
											17	1	-	
\$0000-5	CS-0004 CS Pump 1B Disch. IB Check	IB Check	7	2 F05037 E8 AC 8	E8	AC 8	m 258 1	- 1	CK SA FC	1	CV(DI) RR12	ER12	- -	
											13		1	1
\$-0005	CS-0005 CS Pump 1B Disch. IB Check	IB Check	2	2 F05037 D8 AC 8 CK SA NC	108	AC 8	- 5	- 3	A RC		CV(DI) RR12	2812	- -	1
											17	1	1	
9000-5	CS-0006 CS Pump 1C Disch. IB Check	IB Check	2	2 F05037 C7 AC 8 CK SA NC	12	AC B	5		N NC	1	CV(DI) RR12	ER12		1
											:	-		

Fage 22 of 69 Rev. 5

Chemical and Volume Control - CV

VALVE ID	VALVE	VALVE FUNCTION		- T	PEID	25	CAT	SIZE	TYPE	- Ity	POS.	POS. POS. RE	GC CAT SIZE TYPE ACT POS. POS. REQUIREMENT RR/C	ER/C	C 0
OV-0033A	MOV-D033A RCP 1A Seal Injection OB Isol.	Injection	OB ISO		F05005	108	-	2	a	- OH	No	FAI	2 F05005 C8 A 2 D NO NO FAIQ(CS).R.NT RR2.13	RR2.13	
													17	-	- -
CV-0033B	MCV-00338 RCP 18 Seal Injection OB Isol.	Injection	OB ISO		F05005	8	4	2	Q	MO	0	FAI	2 F05005 C8 A 2 D NO NO FALQ(CS).R.HT RR2.13	RR2.13	01
										7			LT	-	1
OV-0033C	HOV-0033C RCP 1C Seal Injection OB Isol. 2 F05005 C8 A	Injection	OB ISO	1. 2	F05005	89		2	a	OH I	No	FAI	2 D NO NO FAI Q(CS).R.NT PR2.13	1002.13	01
										7			15	1	4
OV-0033D	MOY-0033D RCP 1D Seal Injection OB Isol. 2 F05005 C8 A 2 D NO NO FAIG(CS).R.NT RR2.13	Injection	OB ISO	1. 2	F05005	8	4	2	a	MC	0	FAI	Q(CS).R.HT	R#2.13	
													:		

CV-0034A RCP 1A Seal Injection 1B Check	niection			- 7	2 F05005 C8 AC 2 CK SA FO	- 8	- J	7	8	SA	0		CY(RR)	BR10	_4	
				1									17	-	1	
CV-0034B RCP 1B Seal Injection IB Check	Injection IB Check	B check	1000	- 7	2 F05005 C8 AC 2 CK SA NO	8	- V	2	B	SA	0	1	CV(RR)	RRID	1	1
													13		-1	
CV-0034C RCP 1C Seal Injection IB Check	Injection IB Check	B Check	and the same of the same	- 7	2 F05005 C8 AC 2 CK SA NO	89	WC.	7	8	SA	980	1	CV(ER)	ER10	-4-	1
										7			177	-	1	
CV-0034D RCP 1D Seal Injection IB Check	njection IB Check	B Check		- 7	2 F050; 5 C8 AC 2 CK SA NO	8	- V	7	8	SA	0	1	CV(RR)	ER10	1	1
			-				-						17	-	-	

IST Valve List Chemical and Volume Control - CV

Page 23 of 69 Rev. 5

									NORM.	FAIL	TEST		S	T
ANTAE ID	VALVE FUNCTION	CL	P&ID	GC	CAT	SIZE	TYPE	ACT	POS.	POS.	REQUIREMENT	R RC	C	1
CV-0078	RCP Seal Inj. Return IB Ck.	2	F05005	F3	AC	. 75	CK	SA	NC		CV(RR)	C5	ļ	L
											LT			Ŀ
MOV-00: 7	RCP Seal Inj. Return IB Isol.	2	F05005	F3	A	2	D	MO	NO	FAI	Q(CS),R,MT	RR2,13	10	-
				-						_	LT		ļ	-
MOV-0079	RCP Seal Inj. Return OB Isol.	2	F05005	F3	A	2	D	МО	NO	FAI	Q(CS),R,MT	RR2,13	10	-
											LT			_
LCV-0465 LCV-0468	Letdown Isolation	1	F05005	H8		4	GT		NO NO	1999	Q(CS),R,MT	RR2,39	15	Г
										1	((co), K, H1	RR2,39	T	Г
CV-0022	Letdown IB Check	2	F05005	Н3	AC	.75	CK	SA	NC		CV(RR)	C5		-
		Н									LT			Ŀ
MOV-0023	Letdown IB Isolation	2	F05005	Н3	A	4	GT	MO	NO	FAI	Q(CS),R,MT	RR2,40	9	E
		H									LT			-
10V-0024	Letdown OB Isolation	2	F05005	н3	A	4	GT	MO	NO	FAI	Q(CS),R,MT	RR2,40	15	Ŀ
		1 1			1000		58500				LT			1

IST Valve List Chemical and Volume Control - CV

Page 24 of 69 Rev. 5

									NORM.	FAIL	TEST		S	1
ANTAE ID	VALVE FUNCTION	CL	P&ID	GC	CAT	SIZE	TYPE	ACT	POS.	POS.	REQUIREMENT	RR/C	С	0
CV-0157	RC Purification OB Isolation	2	F05006	F2	A	4	GT	M	NC		Q(NA)	C4		
		\sqcup		L						<u></u>	LT			<u></u>
CV-0158	RC Purification IB Check	2	F05006	F2	AC	4	CK	SA	NC		CV(RR)	C5		
		Ш		L							LT			
				_										
MOV-0113A	VCT Outlet Valve	2	F05007	E4	В	6	GT	MO	NO	FAI	Q(CS),R,MT	RR2,14	15	
MOV-0112B	VCT Outlet Valve	2	F05007	E4	В	6	GT	MO	NO	FAI	Q(CS),R,MT	RR2,14	16	
										_				
CV-0224	RWST to Chg. Pump Suction	2	F05007	C3	С	6	CK	SA	NC		CV(CS)	RR2,15		
MOV-0113B	RWST to Chg. Pumy Suction	2	F05007	C4	В	6	GT	MO	NC	FAI	Q(CS),R,MT	RR2,15		1
MOV-0112C	RWST to Chg. Pump Suction	2	F05007	C4	В	6	GT	MO	NC	FAI	Q(CS),R,MT	RR2,15		1
	拉斯里拉斯斯里斯斯斯斯													
CV-235A	Cent. Chg. Py. 1A Disch. Ck.	2	F05007	86	С	3	СК	SA	NC		CV			
CV-235B	Cent. Chg. Py. 1B Disch. Ck.	2	F05007	D6	c	3	СК	SA	NC		CV			

Chemical and Volume Control - CV

VALVE ID		VALVE FUNCTION	FUNC	CTION		ß	P&ID	ည	CAT	SIZE	GC CAT SIZE TYPE ACT POS.	ACT		FAIL POS.	REQUIREMENT	RR/C	C	0
-234A	Cent.	Chg.	Py.	CV-234A Cent. Chg. Pp. 1A Recirc. Ck	c. Ck.	2	F05007	90	υ	2	×	SA	SA NC	1	5	1	1	1
2348	Cent.	Chg.	P.	CV-234B Cent. Chg. Pp. 1B Recirc. Ck	c. Ck.	2	2 F05007	90	υ	2	8	SA	SA VC	1	S	-	-	-

0201	FCV-0201 Cent.	Chg.	Pp.	1.8	Chg. Pp. 1A Recirc.	2	F0500	90	m	2	13	AO	NC	2	Q.R.MT	1	1	14
0202	FCV-0202 Cont	9	4	-	Che Pu in Recirc	2	F0500	90	**	2	g.	AO	NC	02	O.R.MT	1	1	12

	T
-	9
	2,1
	RR2
	TH.
	R.
	CS
_	0
	2
	T.
-	0
	-
	GL
	3
	8
	E7
H	100
	F050
-	2
_	-
	Flow Control Valve
	rol
	ont
	200
	FIG
	ing
	SIE
L	5
	05
	FCV-0205 Charging F

90V-0025	MOV-0025 Charging OB Isolation	2	2 F05005 G3 A	63	A	4	55	-	084 084	FAI	FAI Q(CS), R, HT RR2, 17 15	RR2,17	15	
		-		_							LT	:	1	1
V-0026	CV-0026 Charging IB Check	2	2 F05005 G3 AC 4 CK	8	AC	4	ð		S.A. NO	1	CV(RR)	RR10	1	
											17	1	-	-

1000	Normal Charging C	Check	1	F05005	68	U	4	Š	SA	NO	1	CV(CS)	RR2,41	1
-0002	Normal Charging Check	Check	-	F05005	88	υ	4	£	SA	SA NO	١	CV(CS)	RR2,41	-

Chemical and Volume Control - CV

Page 26 of 69 Rev. 5

										FAIL	TEST	E GAN	S	Г
VALVE ID	VALVE FUNCTION	CL	P&ID	GC	CAT	SIZE	TYPE	ACT	POS.	POS.	REQUIREMENT	RR/C	C	0
CV-0004	Alternate Charging Check	1	F05005	F8	С	4	СК	SA	NC		cv(cs)	RR2,41		
CV-0005	Alternate Charging Check	1	F05005	F8	c	4	CK	SA	NC	<u> </u>	cv(cs)	RR2,41		
LV-3119	Aux. Press. Spray Control Vlv.	1	F05005	F7	В	2	GL	AO	NC	FC	Q(CS),R,MT	RR2,18	4	T 1
CV-0009	Aux. Press. Spray Check	1	F05005	F8	с	2	СК	SA	NC		cv(cs)	RR2,18		
CV-0334	Boric Acid Gravity Feed Check	3	F05009	D3	с	3	ск	SA	NC	I	CV(CS)	RR2,19		
cv-0338	Boric Acid Trans. Pump IA Disch. Check	3	F05009	D6	c	4	СК	SA	NC	Ι	CV(CS)	RR2,19		
CV-0349	Boric Acid Trans. Pump 1B Disch. Check	3	F05009	C6	с	4	СК	SA			CA(C2)	RR2,19		
CV-0351	Boric Acid Trans. Pump 1A Recirc. Check	3	F05009	E6	c	.75	СК	SA	NC	Ι	CV			
CV-0346	Boric Acid Trans. Pump 1B Recirc. Check	3		D5		.75		SA			cv			
MOV-0218	Boric Acid Trans. To Chg. Pump Suction	2	F05007	В3	В	4	GT	мо	NC	FAJ	Q,R,MT			1
CV-0217	Boric Acid Trans. To Chg. Pump Suction	2	F05007	В3	С	4	СК		NC		CV(CS)	RR2,19		

Chemical and Volume Control - CV

Page 27 of 69 Rev. 5

								100	NORM.	FAIL	TEST		57	
NALVE ID	VALVE FUNCTION	CL	P&ID	GC	CAT	SIZE	TYPE	ACT	POS.	POS.	REQUIREMENT	RR/C	С	0
CV-0679	Chg. Pump Disch. Check	2	F05007	D6	С	4	СК	SA	NO	l	cv			
MOV-0003	Normal Charging Isolation	2	F05005	G7	В	4	GT	мо	NO	FAI	Q(CS),R,MT	RR2.41	11	
MOV-0006	Alcernate Charging Isolation	2	F05005	G7	В	4	GT	MO	NC		Q(CS),R,MT			
FV-0011	Letdown Flow Orifice Header Isolation	2	F05005	G5	В	3	GL	AO	NO	FC	Q,(CS),R MT, (NT)	RR2, 8, 39	2	
MOV-0082	Excess Letdown Isolation	1	F05005	F5	В	2	D	мо	NC	FAI	Q,R,MT		15	
MOV-0083	Excess Letdown Isolation	1	F05005	F5	В	2	D	MO	NC	FAI	Q,R,MT		14	
	·	_										, ,		
العافالية الكيدا	CCP IA Discharge Isolation	2	F05007	D6	В	3	GT	MO	NO	FAI	Q,R,MT		16	2
MOV-8377A														
	CCP 1B Discharge Isolation	2	F05007	[C6]	В	3	GT	MO	NO	FAI	Q,R,MT		15	1

IST Valve List Demineralized Water - DW

Page 28 of 69 Rev. 5

									NORM.	FAIL	TEST		S	Г
VALVE ID	VALVE FUNCTION	CL	P&ID	GC	CAT	SIZE	TYPE	ACT	POS.	POS.	REQUIREMENT	RR/C	С	0
DW-0501	DW To CTMT OB Isolation	2	F05034	F4	A	2	D	M	NC		Q(NA)	C4		
				L							LT			
DW-0502	DW To CIMT IB Check	2	F05034	F3	AC	2	CK	SA	NC		CV(RR)	C5		
											LT			

Radioactive Vents and Drains - ED

Page 29 of 69 Rev. 5

		_		-	-		-	HOR	FAIL.	NORM. FAIL TEST		ST
VALVE ID	VALVE FUNCTION	Ct	PEID	GC C	ATIS	IZEIT	TPELA	CT POS.	POS.	CL PAID GCCATSIZE TYPE ACT POS. POS. REQUIREMENT RR/C C O	RR/C	0 0
P-0064	MOV-0064 CIMI Sump Disch. IB Isol.	2	F05030	67	A	-	15	10 80	FAI	Z FOSO30 G7 A 3 GT NO RO FAI Q.R.HT	1	or
										13	1	
-7800	FV-7800 CIMI Sump Disch. OB Isol.	2	F05030	199	-		- 15	NO NO	7	2 F05030 G6 A 3 GT AO NO FC Q.R.NT	1	10
										13	1	

IST Valve List Essential Cooling Water - EW

		1 ;		1	1	1	1	1	NORM .	FAIL	TEST		S	1
VALVE ID	VALVE FUNCTION	CL	PEID	IGC	CAT	SIZE	TYPE	LACT	POS.	POS.	REQUIREMENT	RR/C	1 c	0
EW-0006	ECW Pump 1A Disch. Check	3	F05038	H4	c	30	ск	SA	NO		CV			-
W-0042	ECW Pump 1B Disch. Check	3	F05038	E4	C	30	CK	SA	NO		CA		ļ	-
W-0079	ECW Pump 1C Disch. Check	3	F05038	C4	اد	30	CK	SA	NO	<u> </u>	су		i	<u>_</u>
MOV-0121	 ECW Pump lA Disch. Isolation		205038	 H4	l l B	1 30	i B	 Mo	l NO	 FAI	Q.R.MT		1	
	ECW Pump 1B Disch. Isolation	1	F05038	1	1	1	1	NO	NO	FAL			<u> </u>	L
NOV-0151	ECW Pump 1C Disch. Isolation	3	F05038	IC4	B	30	_B_	MO	МО	FAI	Q.R.MT		<u> </u>	L
	ECW Screen Wash Pump	1 1		1	ı	1	ı	1	ı	1	<u> </u>		ī	1
W-0253	11A Discharge Check	1 3	F05039	ID7	C	1 3	CK	I SA	NO	i	l cv	L	1	1-
	ECW Screen Wash Pump	1 1		1	1	1	1	1	1	1	1		1	1
W-0254	1B Discharge Check	13	F05039	ID5	1 c	1 3	CK	SA	NO	1	CV		1	1-
	ECW Screen Wash Pump			!	!	!	!	!		!			!	!
W-0255	1C Discharge Check	1 3	F05039	102	I C	1 3	CK	I SA	NO	1=	L CV	L	1	1-
	ECW Screen Wash Pump	1 1		1	1	1	1	1	1	1	1		1	1
FV-6914	la Discharge Isolation	3	F05039	127	B	3	GL	AO	NO	FO	Q.R.HT	<u> </u>	1	L
PV_6024	ECW Screen Wash Pump	1 2	F05039	Inc	1 0	! ,	GL	1 40	=0	FO	Q.R.NT			1
FV-6924	ECW Screen Wash Pump	1 3	203039	I	1	1	1	I	1	1	l d.K.MI		1	1
V-6934	IC Discharge Isolation	1 3	F05039	Ina	I R	1 3	GL	I AO	1 10	1 70	Q.R.HT		1	1

IST Valve List Essential Cooling Water - EW

VALVE ID	VALVE FUNCTION		PEID	lgc	CAT	SIZE	TYPE				TEST REQUIREMENT	RR/C	_S	
	ECW Loop A to Essential		F05038	 H6	C	1 14	l ck	SA	NO	1	CV			! !
	ECW Loop B to Essential	1 1	F05C38	1 1		1	1	1 1		1			1	ļ
EW-0264	ECW Loop C to Essential CHW Chillers	1!	F05038	1 1		1	1			1			1	<u> </u>

FV-6935	ECW 1000 A Drain to ECW Sump	3	F05038	B	4 GT	AO NO	FC	Q.R.HT	<u> </u>	111
FV-6936	ECW Loop B Drain to ECW Sump	3	F05038	C7 B	4 GT	AO NO	FC	Q.R.HT	<u> </u>	12
FV-6937	ECW Loop C Drain to ECW Sump	3	F05038	A7 B	4 GT	AO NO	FC	Q.R.NT	<u> </u>	8

1	Essen. CHW Chiller 122 Orclet	1 1		1 1	1			1 1		1 1		1	1 1 1
PV-6904	Pressure Control Valve	1 31	F05038	IF6	BI	8	B	HO	NT	I FC	Q.R.HT	1	1 101 101
	Essen. CHW Chiller 12B Outlet	1 1		1 1				1 1		1 1		1	1 1 1
PV-6905	Pressure Control Valve	131	F05038	D6	BL	8	B	HO!	NT	FC	Q.R.HT	1	1 10 10
	Essen. CHW Chiller 12C Outlet	1 1		1 1		T.		1 1		1 1		1	1 1 !
PV-6906	Pressure Control Valve	1 31	F05038	IA6	BI	8	B	HOL	NT	I FC	Q.R.HT	1	1 10 10

1	Essen. CHW Chiller 11A Outlet	1 1		11	1			1 1		1 1		1	111
PV-6854	Pressure Control Valve	13	F05038	IF7	BI	6	B	HO	NT	FC	Q.R.MT	1	1 101 101
1	Essen. CHW Chiller 11B Outlet	1 1		1 1	1		1	1 1		1 1		1	1 1 1
PV-6864	Pressure Control Valve	131	F05038	D7	B	6	3	HO	MI	FC	Q.R.MT	1	1 10 10
1	Essen. CHW Chiller 11C Outlet	1 1		1 1	- 1			1 1		1 1		1	1 1 1
PV-6874	Pressure Control Valve	131	F05038	IA7	BI	6	B	1 HOL	NT	I FC I	Q.R.HT	1	1 101 101

Spent Fuel Pool Cooling and Cleanup System - FC

Page 32 of 69

Rev. 5

		11		1					NORM.	FAIL	TEST		I S	Г
ALVE ID	VALVE FUNCTION	IC.	PEID	GC	CAT	SIZE	TYPE	ACT	POS.	POS.	REQUIREMENT	RR/C	LC	
	In CTMT Spent Fuel	1 1		1 1									1	1
rc-0006C	Cooling IB Isolation	2	F05028	B5	A	10	GT	H	NC	<u> </u>	Q(NA)	C4	ļ	Ŀ
		ننـــــــــــــــــــــــــــــــــــــ									LT		i	Ŀ
	In CTMT Spent Fuel													1
FC-0007C	Cooling OB Isolation	1 2	F05028	B4	_A_	10	GT	M	NC		Q(NA)	C4	<u> </u>	Ŀ
		ii		i						i	LT		i	i.
	In CTMT Spent Fuel	1 1		1 1					1	ı			1	Ī
	In CTMT Spent Fuel Cooling OB Isolation	2	F05028	 B6	A	10	GT	H	NC		Q(#A)	C4	 	1 1 .
(FC-0013E	Cooling OB Isolation 	2	F05028	 B6	A	10	GT	H	I NC	 	Q(#A)	C4	 	11111
(FC-0013E		2					GT			 			 	
(PC-0013E	Cooling OB Isolation 									 	LT	-	 	
KFC-0013E	Cooling OB Isolation 			 B6	A		G T	H	NC	 	LT Q(MA)	 C4	 	

IST Valve List Fire Protection - FP

Page 33 of 69 Rev. 5

		_			_	-	NOR	H. FAII	NORM. FAIL TEST		IST
VALVE ID	VALVE FURCTION	Ct	PEID	GC CA	TSIZE	TYPE	ACT POS	. POS.	CL PAID GC CAT SIZE TYPE ACT POS. POS. REQUIREMENT RR/C C O	RR/C	0 0
10v-0756	MOV-0756 Fire Prot. to CTMT OB Isol.	2	F05047	E8 A	9	15	NO NC	FA	2 F05047 E8 A 6 GT NO NC FAI Q.R.HT		01
									13	1	- -
P-0943	PP-0943 Fire Prot. to CIMI IB Isol.	2	F05047	E8 A	9	8	2 F05047 E8 AC 6 CK SA NC		CV(RR)	S	
									13	1	

IST Valve List Feedwater - FW

Page 34 of 69 Rev. 5

VALUE TO	NATUR PHROMION	ler!	De Th	Icc					NORM.			!	ST
ALVE ID	VALVE FUNCTION	ICLI	PEID	IGC	CAT	SIZE	TYPE	ACT	POS.	POS.	REQUIREMENT	RR/C	CIO
FV-7141	FWIV	2	F00063	G8	В	18	GT	но	NO	PC	Q(CSP).R.MT	RR2.20	10:
FV-7142	PWIV	2	F00063	G6	В	18	GT	НО	NO	FC	Q(CSP).R.HT	RR2.20	201
PV-7143	FWIV	2	F00063	G4	В	18	GT	но	NO	FC	Q(CSP).R.HT	RR2.20	10
PV-7144	FWIV	2	F00063	 G2	В	18	GT	HO	NO	FC	Q(CSP).R.MT	RR2.20	10
FV-7148A	FWIV Bypass	2	F00063	G7	В	3	GL	AO	NC.	FC	Q.R.HT		5
FV-7147A	PWIV Bypass		F00063	GS	В	3	GL	AO	NC	FC	Q.R.HT		5
PV-7146A	FWIV Bypass	2	F00063	G3	В	3	GL	AO	NC	FC	Q.R.HT		_5
FV-7145A	FWIV Bypass	1 2	F00063	GI	B	3	GL	AO	NC NC	PC	Q.R.H.		5
FV-7189	FW to AF Warm-up	2	F00063	 F8	В	3	GL	AO	NC	PC	Q(CS).R.MT	RR2,42	5
FV-7190	FW to AF Warm-up	2	F00063	F6	В	3	GL	AO	NC	PC	Q(CS).R.HT	RR2.42	5
V-7191	PW to AF Warm-up		F00063	F4	В	3	GL	AO	NC	FC	Q(CS).R.HT	RR2.42	5
V-7192	FW to AF Warm-up	1 21	F00063	F2	B	1 3	GI.	I AO	l MC	PC	Q(CS).R.HT	 PP2 42	51

IST Valve List Feedwater - FW

				1			-	Mary Committee of the	NORM.		TEST REQUIREMENT	PP/C	ST
VALVE ID	VALVE FUNCTION	1 1	PEID	160	CAT	SILE	TIPE	ACI	PUS.	IPUS.	KEUUIKERENI	I ROC/C	1
PCV-0551	FW Regulator Valve	INS	F00063	D8	В	16	A	AO	NT	FC	Q(CS).R.HT	RR2.21	51
FCV-0552	FW Regulator Valve	INS	F00063	D6	В	16		AO	NT	FC	Q(CS) .R.HT	RR2.21	5
FCY-0553	FW Regulator Valve	NS	F00063	D4	В	16	A_	AO	NT	FC	Q(CS).R.HT	RR2.21	5
PCV-0554	FW Regulator Valve	INS	F00063	DZ	В	16	A	AO	NT	FC	Q(CS) .R.HT	RR2.21	51

PV-7151	FW Regulator Bypass	INS FOO	0063 D7	B 4	GL	AO NC	FC Q(CS).R.HT	 RR2,22	4
FV-7152	FW Regulator Bypass	INS FOO	0063 D5	B 4	GL	AO NC	FC Q(CS).R.HT	RR2,22	4
FV-7153	FW Regulator Bypass	NS FOO	0063 D3	B 4	GL	AO NC	PC Q(CS).R.HT	RR2.22	4
FV-7154	FW Regulator Bypass	INS FOO	0063 DI	B 4	GL	AO NC	FC Q(CS).R.HT	RR2.22	41

Page 36 of 69 Rev. 5

Reactor Containment Building Purge - HC IST Valve List

VALVE ID	VALVE FUNCTION	TION		_ 5	PEID	- 3	ATIS	SIZE	TYPE	ACT	POS.	POS.	CL PGID GC CAT SIZE TYPE ACT POS. POS. REQUIREMENT RR/C C O	RR/C	15 3
7000-VG	MOV-0007 Normal Purge Supply OB Isol.	pply 0	B Isol.	7	V00018	63		48	В	MO	MC	FAI	2 V00018 G3 A 48 B HO NC FALO(CS).R.NT RR2.23 60	RR2.23	09
													LT(CP)	1	- -
8000-AC	NOV-0008 Purge Supply IB Isol.	pply 1	B Isol.	7	N00018	62	-	48	8	MO	MC	FAI	2 V00018 G2 A 48 B NO NC FAI G(CS).R.NT RR2.23 60	RR2.23	- 09
													LT(CP)		-
0000-AC	MOV-0009 Normal Purge Exhaust IB Isol.	haust I	B Isol.	7	2 V00018 C7 A 48 B	- 12		8	8	MO	MC	FAI	NO NC FAI Q(CS).R.NT RR2,23 60	RR2.23	- 09
0100-40	MOV-0010 Mormal Purpe Exhaust OR Isol.	heust	B Isol.	7-7	W00018	- 5		84		C	1	144	2 VOCO18 CG A A8 B WO WE FAILO(CS) P.WT DE2 22 60	1	1 9

FV-9776 Supplementary Purge	2 2	000019	F4 -	-13	- 80	- O) MC	2	2 V00019 F4 A 18 B AO NC FC Q(CS).R.MT RR2.24 S	RR2.24	- 5
									LT(CP)	-	- <u> </u>
Supplementary Purge NOV-0003 Supply IB Isol.		00000	F3 A	18		0)	FAI	2 V00019 [F3] A 18 B NO NC FAI 0(CS).R.NT RR2.24 10	RR2.24	10
									LT(CP)	1	

LT(CP)

IST Valve List
Reactor Containment Building Purge - HC

Page 37 of 69 Rev. 5

VALVE ID	VALVE FUNCTION	cr	PEID	l lgc	CAT	SIZE	TYPE	70 - 0		POS.	TEST REQUIREMENT	RR/C	C O
NOV-0005	Supplementary Purge Exhaust IB Isol.	2	V00019	IC7	A	18	В	MO	NC	FAI	Q(CS).R.MT	RRZ.24	10
				<u> </u>					<u> </u>	<u> </u>	LT(CP)	<u> </u>	
FV-9777	Supplementary Purge Exhaust OB Isol.	2	V00019	C6	A	13	В	AO	NC	FC	Q(CS).R.HT	RR2.24	5
				1					<u> </u>	<u> </u>	LT(CP)	<u> </u>	ll

IST Valve List Instrument Air - IA Page 38 of 69 Rev. 5

# VE ID	VALVE FUNCTION	CL	P&ID	lec	CAT	SIZE	TYPE		NORM.		TEST REQUIREMENT	RR/C	ST C O
In-0541	Inst. Air to CTMT IB Check	2	F05040	D4	AC	2	CK	SA	NO		CV(R2)	RR10	
		4								-	LT Q(CS),R,HT	 PP2 0	<u> </u>
FV-8565	Inst. Air to CTMT OB Isol.	2	F05040	D4	A	2	BL	AO	NO			25	2
								_		<u> </u>	LT	i	ll

IST Valve List Main Steam - MS

		-		_					HORH.	FAIL	NORM. FAIL TEST		2	1
VALVE ID	VALVE FUNCTON	CF	PEID	35	CAT	SIZE	TYPE	ACT	POS.	POS.	CL PAID GC CAT SIZE TYPE ACT POS. POS. REQUIREMENT RR/C C O	RR/C	0	0
PV-7411	PV-7411 Main Steam Line 1 Porv	2	F00016	H6	8	70	5	HO	NC	22	2 F00016 H6 B 10 GT H0 NC FC Q(CS) . R. MT RR2, 26 36 37	RR2.26	34	37
PV-7421	PV-7421 Main Steam Line 2 Porv	2	F00016	186	B	10	15	НО	NC N	2	2 F00016 F6 B 10 GT HO MC FC Q(CS).R.MT RR2.26 29 30	RR2.26	52	30
PV-7431	PV-7431 Main Steam Line 3 Porv	2	F00016	E6	100	10	5	HO	J.	2	2 F00016 E6 B 10 GT HO SC FC Q(CS).R.MT RR2.26 37 41	RR2.26	37	41
PV-7441	PV-7441 Mein Steam Line 4 Porv	2	F00016	9	8	91	5	HO	MC	2	2 F00016 C6 B 10 GT HO MC FC Q(CS).R.MT RR2.26 33 35	RR2.26	33	35

PSV-7410 Main Steam Line 1 Safety	2	2 F00016 H6 C 6x10 PR SA MC	He	9 3	X OLX	8	A MC	4	SEV	-	1-
PSV-7910A Main Steam Line 1 Safety	7	2 F00016 H6 C WA10 PR SA HC	H6	- 3	X10 F		A IC	-4-	SEV	-4-	4-
PSV-7410B Main Steam Line 1 Safety	2	2 F00016 HS C 6810 PR SA NC	HIS	- 9	K10 P	- 8	N NC	-4	AMS		4
PSV-7410C Main Steam Line 1 Safety	2	2 F00016 HS C 6x10 PR SA RC	HE	- 2	X10 P	- 3	A BC	-4-	AZS	·	
	2	2 F00016 H5 C 6x10 PR SA BC	HS	- o	X10 P		A BC	-	SEV	-	-

PSV-7420 Moin Steam Line 2 Safety	_7	2 FOOONS FE C SENO PR SA MC	- 29	- 0	01X9		SA RC			V.S.	1	<u> </u>
PSV-7420A Main Steam Line 2 Safety	2	2 FOGOLG F6 C 6X10 PR SA BC	F6	U	6x10 P	-	SA BC			SRV	1	1
PSV-7420B Main Steem Line 2 Sefety	2	2 F00016 F5 C 6x10 FE 5A WC	2	0	ex10 P]-	SA MC	-4-		SRV	1	4
PSV-7420C Hain Steem Line 2 Safety	2	2 F00016 F5 C 6x10 PR SA NC	23	U	6x10 P		SAL MC		+	SRV	1	1
PSV-7420D Main Steam Line 2 Safety	2	2 FOOOLS FEST C SENIOS PR I SAL MC	182	- 0	SK10 F		A BC	-4		SRV		

IST Valve List Main Steam - MS

		11		1		1		1	NORM.				_s	
VALVE ID	VALVE FUNCTION	ICL	PEID	GC	CAT	SIZE	TYPE	ACT	POS.	POS.	REQUIREMENT	RR/C	C	0
PSV-7430	Main Steam Line 3 Safety	2	F00016	E6	c	6x10	PR	SA	NC		SRV		ļ	
PSV-7430A	Main Steam Line 3 Safety	2	F00016	E6	c	6x10	PR	SA	NC		SRV			
PSV-7430B	Main Steam Line 3 Safety	2	F00016	ES	c	6x10	PR	SA	NC	<u> </u>	SRY		<u> </u>	
PSV-7430C	Main Steam Line 3 Safety	2	F00016	25	c	6x10	PR	SA	NC	ļ	SRV		<u> </u>	
PSV-7430D	Main Steam Line 3 Safety	2	F00016	ES	c	6x10	PR	SA	ис	i	SRV	i	i	<u></u>
PSV-7440	 Main Steam Line 4 Safety	2	F00016	l Ice	l c	 6x10	PR	 SA	l NC	<u> </u>	l srv	<u> </u>	<u> </u>	
PSV-7440A	Hain Steam Line 4 Safety	2	F00016	c6	c	6x10	PR	SA	HC.	ļ	SRV		ļ	
PSV-7440B	Main Steam Line 4 Safety	_ 2	F00016	cs	c	6x10	PR	SA	NC	ļ	SRV		ļ	
PSV-7440C	Main Steam Line 4 Safety	2	F00016	cs	c	6x10	PR	SA	IIC.	ļ	SRV		ļ	ļ
PSV-7440D	Main Steam Line 4 Safety	_ 2	F00016	cs	l c	6x10	PR	SA	BC	i	SRV	Ŀ <u> </u>	i	İ
FY-7900A	 Main Steam Line 1 Drain		F00016	I IG4	 B	2	GT	l l so	l no	 FC	 Q.R.HT(FT)	I IRR8	1 2	
	 Nain Steam Line 2 Drain	1 1	F00016	i	1	1	1	1	1	1	Q.R.NT(NT)	1	2	
PV-7902A	 Main Steam Line 3 Drain	2	F00016	D4	В	2	GT	so	NO	FC	Q.R.MT(NT)	RR8	1 2	ļ
V-7903A	Main Steam Line 4 Drain	1 2	F00016	B4	B	1 2	GT	i so	i mo	PC	Q.R.HT(HT)	RES	1 2	i

IST valve List Main Steam - HS

VALVE ID	VALVE FUNCTION	_ 5	P610	_ 3	CAT	SIZE	TYPE	₽¢.	POS.	PATE POS.	CL PAID GC CAT SIZE TYPE ACT POS. REQUIREMENT RR/C C O	0 3
FSV-7414 MSIV	MSIV	2	F00016	85	m	30	15	Ao	MO	2	2 F00016 G4 B 30 GT A0 NO FC Q(CSP).R.HT RR2.27 5	8
FSV-7424 IMSIV	MSIV	2	F00016	FA	8	30	5	No	NO	2	2 F00016 F4 B 30 GT AO NO FC 0(CSP). R.MT RR2.27 S	3
FSV-7434 MS.IV	MSIV	2	F00016	_ &	8	30	5	AO	No	2	2 FOODIG DA B 30 GT AO NO FC Q(CSP) . R. MT R. R. 2. 27 5	
PSV-7444 MSIV	SIV	2	F00016	్ర	B	30	5	No.	NO	72	2 F00016 C4 B 30 GT A0 WO FC Q(CSP).R.MI RRZ.27 5	3

W-7412	FV-7412 HSIV BYDASS	2 F00016 G4 B 9 GT AO NC FC Q.R.MT 110	8		- 6	- N	2	DŽ.	Q.R.MI	4-	01
W-7422	FV-7422 HSIV BYPESS	2 FOOD16 FG B & GT AO NC FC Q.R.HT	8.4	- 8	5	- V	MC	22	Q.R.HI	4	01
W-7432	FV-7432 MSIV BYDESS	2 F00016 D4 B 4 GT A0 WC FC Q.R.MT	Š		- 6		DE C	22	0.R.MT		10
V-7842	FV-7442 HSIV BYDASS	2 F00016 Ce B 4 GT Ao #C FC 0.8.MT 10	85	B	9	S S	SC.	2	0.8.11	-	1 10

Page 42 of 69 Rev. 5

Reactor Coolant Pump Oil Changing System - PO

VALVE ID	VALVE FUNCTION	75	PEID	-33	ATIST	ZE	ELAC	L POS.	POS.	CL PRID GC CAT SIZE TYPE ACT POS. POS. REQUIREMENT RR/C C 0	RR/C	15 0
0-0203	PO-0203 RCP 011 Supply 0B Isol.	2	2 F05042 E3 A	<u> </u>			X	NC -	-4-	Q(NA)	53	1
		-		-				4	4	171	1	1
0-0204	PO-0204 RCP 011 Supply IB Isol.	2	2 F05042 E3	- 23	-		N C	2	-4-	0(86)	2	- -
							-4			13	1	
2-0217	PO-0217 RCP Oil Drain IB Isol.	-7	2 F05042 B3	- B3				<u> </u>	4	Q(RA)	5	
										13	1	- -
8120-0	PO-0218 RCP Oil Drain OB Isol.	2	2 F05042 B3	B3	-}-	-]-	=	2	-4-	(AN)	5	
										13	1	- -

Page 43 of 69 Rev. 5

IST Valve List Primary Plant Sampling - PS

VALVE ID		ALVE FI	VALVE FUNCTION			Ct	PEID	- 33	CAT	SIZE	17.25	- IACT	POS	POS.	CL Paid GC CAT SIZE TX PE ACT POS POS REQUIREMENT RR/C C O	RR/C	18 3
FV-4450 Press. Vapor Sample IB Isol.	Press.	Vapor	Sample	13	Isol.	2	200045	168	<	-	5	S	NC	2	2 Z00045 G8 A 1 GT S0 NC FC Q.R.NT(NT) RRS	RRS	2
															177	1	- -
FV-4452 Press. Vapor Sample CB Isol.	Press.	Vapor	Sample	63	Isol.	2	2 Z00045 G7 A	167	4	4	19	90) I	2	GL AO NC FC Q.R.NT	1	-15
															17	1	- 1
FV-4451 Press. Liquid Sample IB Isol.	Press.	Liquic	d Sample	e IB	Isol.	2	2 Z00045 G8 A	168	4	4	5	S	IIC.	2	1 GT SO NC FC Q.R.NT(NT) RR8	RRB	2
															15	1	1
FY-4451B Press. Liquid Sample OB Isol.	Press.	Liquic	d Sample	e 0B	Isol.	2	200045	167	4	4	19	¥	NC NC	2	2 Z00045 G7 A 1 GL AO NC FC Q.R.NT(NT) RR8	RRB	2
															5	1	1

Page 44 of 69 Rev. 5

IST Valve List Primery Plant Sampling - PS

WALVE ID	VALVE FUNCTION	_ 5	FEID	ည	CAT	SIZE	TYPE	ACT	POS. POS.	POS	CL FEID GC CAT SIZE TYPE ACT POS. POS. REQUIREMENT RR/C C O	RR/C	0
-4454	FY-4454 RC HOL Leg #1 Sample IB Isol.	7	2 Z00045 F8 A	- 88	V	4	15	so	1 GT SO HC		FC Q.R.MI(WI) RR8	RK8	2
											LT		1
9455	FV-9455 RC Not Leg #3 Sample IB Isol.	7	2 200045 E8 A 1 GT SO NC	E8	-	7	5	80	NC.		FC [Q.R.MI(BT) RES	RRB	2
											LT	1	
4456	FV-4456 RC Hot Leg Sample OB Isol.	7	2 Z00045 F7 A 1 GL 80 BC	12	-	7	35	08	MC	2	Q.R.HT	1	
											177	1	

FV-4823 EMR Sample IB ASOL.	IT		- - -
FV-9461 EME Sample OB ISOl.	2 200045 D7 A 1 GL AO FC Q.R.FIT	III. W. B.T.	

IST Valve List Primary Plant Sampling - PS

Page 45 of 69 Rev. 5

			_							HOEM.	FAIL	HORM. FAIL TEST		ST
VALVE ID	VALVE FUNCTION	NCTION	CE	DEID	190	CATIS	IZE	TYPE	ACT	POS.	POS.	CL PAID GC CAT SIZE TYPE ACT POS. POS. REQUIREMENT RR/C C O	RR/C	0
1-4824	FV-4824 SI Accum. Sample IB Isol.	ple IB Isol.	2	200002	88	-	-	15	So	MC	7.	2 Z00045 B8 A 1 GT SO NC FC Q.R.NT(NT) RR8	RK8	
							7					17		- -
9986-	FV-4466 SI Accum. Sample OB Isol.	ple oB Isol.	2	200045	B7		7	75	AO	NC.	P.C	2 Z00045 B7 A 1 GL AO NC FC Q.K.MT	-	5
									-				1	

Reactor Containment Building HVAC Radiation Monitoring - RA

Page 46 of 69 Rev. 5

VALVE ID		VALVE FUNCTION	NOI		- 13	PLID	35	CATIS	IZE	TYPE	- TJ	NORM.	FAIL POS.	CL PAID GC CAT SIZE TYPE ACT POS. REQUIREMENT RR/C C O	RR/C	ST C O
HOV-0001	MOV-0001 CTM, ad. Mon. Inlet IB Isol.	Hon. I	nlet I	B Isol.	2	2 V00017 G3 A	63	<	1 BL NO NO	BL	0	NO	FAI	FAI Q.R.HT	1	01
											7			15		-#
10v-0003	MOV-0003 CTHT Rad. Non. Return IB ISOL. 2 V00017 F3 A 1 BL NO NO FAI 2.R.HT	Non. R	eturn	IB Isol.	2	V00017	F3	•	7	BL	MO	NO	FAL	O.R.HT	1	01
									1					5	1	- -
10v-0004	MOV-0004 CTHT Rad. Non. Inlet OB Isol.	Non. I	nlet o	B Isol.	2	V00017	63	~	7	BE	MO	NO	FAI	2 VOOD17 G3 A 1 BL NO NO FAI Q.R.NT	1	01
											7			17	1	- -
9000-noi	NOV-0006 CINT Rad. Non. Return OB Isol	Hon. R	eturn	OB Isol.	7	V00017	F3		7	BL	MO	10	FAI	2 VOO017 F3 A 1 BL NO NO FAI G.R.HT	1	01
														- 5	1	

IST Valve List Reactor Coolant - RC

PSV-3450 Pressurizer Safety	1 F05003 F7 C 6x8 PR SA NC	_=	- Sx8	_ Z	SA	MC	 SRV	_: -	- - -
PSV-3451 Pressurizer Safety	1 F05003 F6 C 6x8 PR SA NC	- 10	C 6x8	2	SA	MC	 SRV	-4-	
PSV-3452 Pressurizer Safety	1 1 705003 F4 C 6x8 PR SA NC	F4	C 6x8	PR	SA	MC	 SRV	-	

IST Valve List Reactor Coolant - RC

VALVE ID VALVE FUNCTION	3	Paid	ec c	TISIZ	ETYPE	ACT	POS.	FAIL	CL PAID GC CAT SIZE TYPE ACT POS. FAIL REQUIREMENT RR/C C O	RR/C	# J	0
NOV-0001A PORV Block Valve	7	F05003	80	- 2	15	0	MO	FAI	1 F05003 D8 B 3 GT NO NO FAI Q.R.NT 14 15	1	3	75
HOV-0001B PORV Block Valve	-	F05003	E8	3	- 5	0	NO	FAI	1 FOSO03 E8 B 3 GT NO NO FAI Q.R.NT 15 14	1	15	14

PCV-0655A PORV	7	F05003	108	4	3	75	Sol	NC	r.	1 F05003 D8 A 3 GL S0 NC FC Q(CS) . R.MT RR2, 29	RR2,2		2
										LT(PO) C28	C28	- 1	
PCV-0656A PORV	-1	F05003	83	~	3	35	So	MC	3	1 F05003 E8 A 3 GL SO NC FC Q(CS).R.NT RR2.29 2	RR2.2		
										1.7(P0) C28	IC28	-	1

-3652	FV-3652 Mitrogen to PRT OB Isol.	7	F05004	F3	4	-	BL	AO	NC.	2	2 FOSO04 F3 A 1 BL AO NC FC Q.R.HT(NT) ERB	RRB	2
											13		- 4
3653	FV-3653 Mitrogen to PRT IB Isol.	2	F05004	74	~	-	57	So	MC	FC	2 FOSO04 F4 A 1 GT SO NC FC Q.R.NI(NI) RR8	RRB	2

Reactor Makeup Water	FV-3651 to PRT OB Isol.	2 F05004 E2 A 3 BL AO NC FC Q.K.MT	- 2		 - N	2	2	Q.E.MT	-4	3
					 			17		
	Reactor Makeup Water XRC-0046 to PRT IB Check	2 F05004	E4	AC 3	 - 54	01		CV(RR)	 RR10	- _ <u> </u>

IST Valve List Reactor Head Degassing - RD

Page 49 of 69 Rev. 5

VALVE ID	VALVE FUNCTION	CL	PEID	GC	CAT	SIZE	TYPE		POS.		TEST REQUIREMENT	RR/C	_s	-
RD-0008	Degassing Line IB Isol.	2	F05046	E7	A	3	BL	H	NC		Q(MA)	C4	ļ	
		_ -								<u> </u>	LT			
RD-0010	Degassing Line OB Isol,	2	F05046	E7	A	3	BL	H	NC	ļ	Q(NA)	C4	ļ	
											LT		i	l

	!!		!	!				NORM.					Constitution
VALVE ID VALVE FUNCTION	CL	PAID	IGC	CAT	SIZE	TYPE	ACT	POS.	POS.	REQUIREMENT	RR/C	C	0
HOV-0060A POR Pump 1A IB Suction Isol.	1	F20000	B8	A	12	GT	HO	NC	FAI	Q(CS).R.HT	RR2.30	113	114
	1		-	<u> </u>	<u> </u>	<u> </u>	<u> </u>	_	<u> </u>	LT(PIV)			
MOV-0060B RHR Pump 1B IB Suction Isol.	1	F20000	D8	A	12	GT	MO	NC	FAI	Q(CS).R.HT	RR2.30	113	11:
			-	<u> </u>	<u>i </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	LT(PIV)			
MOV-006(C RHR Pump 1C IB Suction Isol.	ja	F20000	G8	A	12	GT	MO	NC	FAI	Q(CS).R.HT	RR2.30	114	1115
<u>i</u>	نن		<u>i</u>	<u>i_</u>	<u> </u>	<u>i_</u>	<u>i_</u>	<u>i</u>	<u>i_</u>	LT(PIV)	i	i	i
MOV-0061A RHR Pump 1A OB Suction Isol.	11	F20000	IB8	A	12	GT	HO	I NC	FAI	Q(CS).R.HT	RR2.30	115	11
			<u> </u>	_	<u> </u>		<u> </u>	<u> </u>	<u> </u>	LT(PIV)			ļ
MOV-0061B RHR Pump 1B OB Suction Isol.	11	F20063	D8	LA	12	GT	HO	NC.	PAI	Q(CS).R.HT	RR2.30	111	111
	Ш		<u></u>	L	<u> </u>			<u> </u>	<u> </u>	LT(PIV)	<u> </u>		
MOV-0061C RHR Pump 1C OB Suction Isol.	1	F20000	G8	1	12	GT	HO	I IC	PAI	Q(CS).R.MT	RR2.30	ııı	111
i	لل		<u> </u>	<u></u>	<u> </u>	<u> </u>	<u></u>	<u> </u>	<u>L</u>	LT(PIV)	<u> </u>	l	i
			1	1	1								
KRH-0065A RHR Pump 1A Disch. Check	12	F20000	B6	c	8	CK	SA	NC		CV(CSP)	RR2.31		ļ
KRH-0065B RHR Pump 1B Disch. Check	2	F20000	D6	c	8	CK	SA	NC.	ļ	CV(CSP)	RR2.31		ļ
KRH-0065C RHR Pump 1C Disch. Check	1 2	F20000	G6	c	8	CK	SA	I NC	1	CV(CSP)	RR2.31		i

IST Valve List Residual Heat Removal - RH

VALVE ID VALVE FUNCTION	- 5	Pali	_ 25	CAT	SIZE	GC CAT SIZE TYPE ACT POS.	NCT.	POS.	POS. POS.	POS. REQUIREMENT RR/C C	RR/C	C 0
XRH-0063B RHR Pump 1B to RWST IB Isol.	- -	F20000 D6	190	4	80	15	=	NC.	1	Q(NA)	5	
										5	1	<u> </u>
XRH-0064B RHR Pump 1B to RWST OB ISOL.	2	F20000 DS	102	4	8	15	=	NC.	1	Q(8A)	*	
										5	1	- -
XRH-0063C RHR Pump 1C to RWST IB Isol.		2 F20000 F6	F6	V	8	5	×	MC.		Q(KA)	5	- -
										17	1	<u> </u>
XRH-0064C RHR Pump IC to RWST OB ISOL.		2 F20000 F5	2	<	80	# 15	_=_)	1	Q(FA)	5	- -
										13	1	
HOV-0067A RHR Pump la Recirc.	- 2	2 F20000 A6		80	4	5	0	N.	FAI	Q.R.MT		01 01
MOV-0067B RHR Pump 1B Recirc.	2	2 F20000 C6	95	-	+	5	0)	FAI	Q.R.MT	. 1	- 司
MOV-0067C RHR Pump 1C Recarc.	2	2 F20000 F6 B	F6	8		15	2	GT NO NC	FAI	O.R.HT	1	10 10

- -		
		-+
		-4
ò	2	5
-		
JEC -	MC	MC
NS.	SA	SA
ğ	ğ	¥
4	4	
U	2	U
V	3	92
2 F20000 A6 C 4 CK SA NC	2 F20000 C6 C 4 CK SA NC	2 F20000 76 C 4 CK SA NC
- 7	2	12
Check	Check	check
XEH-0068A RHR Pump la Recirc. Check	XRH-0068B RHR Pump 1B Recirc. Check	XRH-0068C RHR Pump AC Recirc. Check
7 0	11 0	77 d
R Pu	R Pu	R Pu
-KH	BIRH	ERH
8900	8900	8900
XRH-	XRH-	XRH-

IST Valve List
Residual Heat Removal - RH

VALVE ID	VALVE PUNCTION	_ [P£110	- 1	- TA-	- 421	-	- Ko	RM. F	AIL	CT. PEID GC CAT SIZE TYPE ACT DOS DOS DEGILIDEMENT DE CO O	2/ 40	ST	
OV-0019A RHR	MOV-0019A RHR 1A to Hot Leg Injection		F20000	_ 5	B - B			0		FAL	2 F20000 C3 B 8 GT NO NC FAI Q.R.NT	12 12	77	77
OV-0019B RHR	MOV-0019B RHR 1B to Hot Leg Injection		F20000	E3	- 8		- 15	- 0		FAL	2 F20000 E3 B 8 GT NO NC FAL Q.R.NT	- 12 13	77	- 2
OV-0019C RHR	NOV-0019C RHR 1C to Hot Leg Injection		F20000	E3	8	8	- 15	HO		FAI	2 F20000 H3 B 8 GT NO NC FAI Q.R.NT 13 13	1	13	13

		-1	-		- -
RR2.32	- -	RR2,32 -		RRZ. 32 -	-
CV(CS) RR2.32	LT(PIV)	1 F20000 E2 AC 8 CK SA MC CV(CS) RR2.32	LT(PIV)	CV(CS) RR2,32	LT(PIV)
				1	
MC MC)		MC	
SA		SA		VS.	
8		R		ğ	
AC 8		AC 8		8 JV	
_ 2		E2		25	
1 F20000 C2 AC 8 CK SA NC		F20000		1 F20000 G2 AC 8 CK SA NC	
		7	-		
XRH-0020A RHR 1A to Hot Leg Check		XRH-0020B RHR 1B to Hot Leg Check		XRH-0020C RHR IC to Hot Leg Check	
XRH-0020A		XRH-0020B		XRH-0020C	

MOV-0031A RHR 1A to Cold Leg Injection	7	F20000	B3	8	80	5	₽	0	787	2 F20000 B3 B 8 GT NO NO ZAI Q.R.NT	-4-	- 11 12
MOV-0031B RHR 1B to Cold Leg Injection	2	F20000	103	8	80	15	NO.	9	FAI	2 F20000 D3 B 8 GT NO NO FAI Q.R.NT		- 12 13
MOV-0031C RHR 1C to Cold Leg Injection	7	F20000	63	- 8	8	15	₩	1	FAI	2 F20000 G3 B GT NO WO FAI Q.R.MT 12 12		121

IST Valve List Residual Heat Removal - RH

di anian	VALVE PURCTION	_ = = = = = = = = = = = = = = = = = = =	PEID	1 20	ATISIZ	TYPE	GC CAT SIZE TYPE ACT POS.		FAIL TEST RE/C POS. REQUIRERENT RE/C	-	C O
KEH-0032A			-		AC 8		CK SA NC		cv(cs)	RR2,32 -	- -
									LT(PIV)		-4-
XRH-0032E	XRH-0032B RHR 1B to Cold Leg Check		F20000	102	- B	8	SA NC	-	(v)(cs)	882.32	
									LT(PIV)		-4-
 XRH-0032C	XEH-0032C AHR 1C to Cold Leg Check	_=	F20000		AC 8	8	CK SA BC	- -	CV(CS)	ERZ .32	- 4-
									LI(PIV)	-	4
HCV-864	 RMR AA HTW Outlet	2	2 F20000 B4 B	- \$8	8	8	AO BC		FO [O(CS), R.MT [ERZ, 33]	RRZ,33 -	1-7
HCV-865	RME 18 HTM Outlet	- 7	F20000 D4 B	-	8 8		NO NC	ortunes, Ltd.	PO Q(CS).R.NT RR2.33	RR2,33]-	
HCV-866	RHE IC HIN Outlet	- 7	2 F20000 G4 B	- 3	80	_ 🕰	AO WC		FO O(CS).R.MT RR2.33	RR2,33	ET -
FCV-851	RHE LA HTE BYPESS	-2	2 720000 C5 8	20	89	-	90 %C		FC [Q(CS) . R. ST RR2.33 13		1-1-1-
FCV-852	RHE IB HTK BYDASS	2	2 F20000 E5 B	53	80	8	AO MC	10000	FC [Q(CS).R.MT [RR2,33] 15	RR2,33	
PCV-853	RHE IC HTE BYPRISS	7	2 FZ0000 H5 B	HIS	8 8	60	AO BC		P (CS) . R. WT PR2 . 33 13	1882,33	3
 MOV-0066A	MCV-0066A RMR 14 to CVCS Letdown	-7	2 820000	2	-	5	MO MC	Fai	I 9.R.EI		01 01
 MOV-0066B	MOV-00668 RHE 18 0 CVCS Letdown	7	F200000 D2	102	8	15	MO MC	FAIL	I Q.R.HT		10 10

IST Valve List Residual Heat Removal - RH

Page 54 of 69 Rev. 5

VALVE ID		VALV	VALVE FUNCTION		- 3	PLID	30	CAT	SIZE	GC CAT SIZE TYPE ACT POS.	ACT		POS. POS.	POS. REQUIREMENT RR/C C O	RR/C	C C
RH-0166	-	RCP Seal St	RCP Seal Standpipe 1A to RHR Loop 1A	to	- 7	2 F20000 C5 AC	25	And the same of the same of	.75	.75 CK	SA NC	NC		CV(NA)	C#S	-
														LT(PO)	545	-
RH-0174 RHR LOOP 1A	RCP	Seal	RCP Seal Standpipe 1A to RHR LOOD 1A	to	2	2 F20000 CS	5	- Q	127.	8	SA NC	MC		CV(MA)	C&S	-\ -
														LT(PO)	542	-
RH-0168		RCP Seal St.	RCP Seal Standpipe 1B to RHR Loop 1B	to	- 7	2 F20000 F5	- 22	- Q	.75	8) I		CA(NA)	283	-#
														LT(PO)	545	
RH-0167 RHR LOOP 1B	RCP	Seal	RCP Seal Standpipe 1B to RHR Loop 1B	2	2	2 F20000 F5	13	- Q	-75	5	SA	NC.		CV(KA)	\$	_ <u> </u> _ -
														LT(P0)	CAS	- -
RH-0170 RHR LOOP 1C	RCP	Seal	RCP Seal Standpipe IC to RHR LOOP IC	2	7	2 F20000 H5	HS	VC	100000000000000000000000000000000000000	.75 CK	SA	MC		CV(KA)	CAS	<u>- </u> -
														LT(PO)	545	-
RH-0169	ACA.	Seal Sta	PCP Seal Standpipe IC to	2	7	F20000	HE	¥	.75	8	SA) MC	1	CV(RA)	545	-#
														LT(PO)	CAS	<u> </u>

IST Valve List Reactor Makeup Water - RM Page 55 of 69 Rev. 5

VALVE ID	VALVE FUNCTION	CL	PEID		SIZE	TYPE	NORM.		TEST REQUIREMENT	RR/C	ST CO
PV-7659	RM to CVCS Blend Isol.	3	F05033	F7 B	14	GL	AO NO	FC	Q.R.MT		17
FV-7663	IRM to CVCS Blend Isol.	3	F05033	F7 B	14	GL	AO NO	FC	Q.R.HT		18

IST Valve List Service Air - SA

Page 56 of 69 Rev. 5

		_		_	_	-	_	NORM.	FAIL	NORM. FAIL TEST		SI	
VALVE ID	VALVE FUNCTION	CL	PEID	loc lo	TISIZ	ELTYPE	ACT	POS.	Pos.	CL PGID GC CAT SIZE TYPE ACT POS. POS. REQUIRENENT RR/C C O	KK/C	0	0
A-0504	SA-0504 Service Air to CTNT 08 Isol.	2	F05041	8	2	H	=	MC		2 F05041 C4 A 2 BL M NC Q(NA)	85		
										13	1	- -	
A-0505	SA-0505 Service Air to CINT IB Check	7	F05041	104	2 2	8	SA	N.	1	2 F05041 D4 AC 2 CK SA NC CY(RR)			
						_				177	1		1

IST Valve List Steam Generator Blowdown - SB

VALVE ID	VALVE FUNCTION	CL	PEID	IGC	CAT	SIZE	TYPE	Million Services		POS.	TEST REQUIREMENT	RR/C	ST C O
FV-4189	SG 1A to Sec. Sampling Isol.	2	F20001	HS	B	1	GT	so	NO	FC	Q.R.FT(NT)	PR8	2
PV-4189A	SG 1A to Sec. Sampling Isol.	2	F20001	HS	В	1	GT	so	10	FC	O.R.HT(HT)	RR8	2
FV-4188	SG 1B to Sec. Sampling Isol.	2	F20001	HI	В	1	GT	so	NO	PC	Q.R.HT(HT)	RR8	2
FV-4188A	SG 1B to Sec. Sampling Isol.	2	F20001	H1	В	1	GT	so	NO	FC	Q.R.HT(HT)	RR8	2
FV-4187	SG 1C to Sec. Sampling Isol.	2	F20001	DI	В	1	GT	so	NO	FC	Q.R.HT(HT)	RR8	2
FV-4187A	SG 1C to Sec. Sampling Isol.	2	F200C1	DI	В	1	GT	so	No	FC .	Q.R.HT(HT)	IRR8	2
PV-4186	SG 1D to Sec. Sampling Isol.	2	F20001	DS	В	1	GT	so	NO	PC	Q.R.HT(BT)	RR8	2
PV-4186A	SG 1D to Sec. Sampling Isol.	2	F20001	DS	B	ـــــــــــــــــــــــــــــــــــــــ	GT	so	NO	PC	Q.R.HT(FT)	RR8	2
	!	1.1		1_	!_	!	!	!	!	!		!	! .!
FV-4153	SG 14 to Flash Tank Isol.	1 = 1	F20001	IGS	B	4	GT	AO	NO	FC	Q.R.HT		35]
7V-4152	SG 1B to Flash Tank Isol.	1 21	F20001	IG1	B	14	GT	AO	NO	FC	Q.R.MT		35
V-4151	SG 1C to Flash Tank Isol.	1 2	F20001	ica	В	4	GT	AO	NG	PC	Q.R.HT	ļ	35
V-4150	SG 1D to Flash Tank Isol.	1 2	F20001	ics	B	14	GT	I AO	NO	FC	Q.R.NT		35

IST Valve List Standby Diesel Generator Starting Air - SD

Page 58 of 69 Rev. 5

VALVE ID	VALVE FUNCTION	CF	PEID	lec	CAT	SIZE	TYPE	ACT	NORM.		REQUIREMENT	RR/C	ST C O
TALTE ID	DG 11 Right Bank	1	4041-	1		-	-	1	1	1			1 1
FV-5435	Cranking Air Valve	. 31	00136	IF2	В	3	GT	AO	l MC	FC	Q.HT(HST)	RR44	II
	DG 11 Left Bank	11	4041-	1					1	1		THE REAL PROPERTY.	1 1
FV-5434	Cranking Air Valve	3	00136	IF3	В	3	GT	AO	I RC	1 FC	Q.NT(BST)	RE44	11
	Inc. 12 Block days		4041-	_							•		1 1
FV-5535	Cranking Air Valve	1 31		1			67			. pc	Q.HT(MST)	DDAA	lone
	DG 12 Left Bank	11	4041-	1			1		1	I			II
FV-5534	Cranking Air Valve	j 3j	00136	IF3	В	3	GT	AO	I BC	I PC	Q.HT(HST)	RR44	11
	DG 13 Right Bank	11	4041-	1		1			1	1			1 1
FY-5635	Cranking Air Valve	1 31	00136	IF2	B	3	GT	AO	I HC	1 PC	Q.MT(EST)	RR44	11
	DG 13 Left Bank	11	4041-	1				1	1	1			1 1
FV-5634	Cranking Air Valve	1 31	00136	IF3	B	1 3	GT	I AO	I MC	I FC	Q.HT(HST)	RR44	1

IST Valve List Safety Injection - SI

VALVE ID	VALVE FUNCTION	CL Paid GC CAT SIZE TYPE ACT POS. POS. REQUIREMENT RR/C C 0	1 000	AT SI	ZE TYP	EACTE	OEM.	FAIL POS.	ACT POS. POS. REQUIREMENT	RR/C	CCS	0
MCV-COOLA!	MCV-COOLA RWST ISOLATION	2 F05013 G3 B 16 GT HO HO FAI Q.R.NT	3 63	B 1	- 5	Wo	10	FAI	Q.R.NT		9 1	9
NOV-0001B	MOV-0001B RWST Isolation	2 705014 H2 B 16 GT NO NO FAI G.R.NT 19 19	4 HZ	-1	- 5	NO.	10	FAI	Q.R.RT		18	13
NOV-0001C	MOV-0001C RWST ISOLATION	2 F05015 H2 B 16 GT M0 W0 FAI Q.R.HT	S HZ	- 1	- 5		0	781	O.R.MT		G G -	a
XSI-0002A	XSI-0002A RWST OUTLET Check	2 Fr5013 G3 C 16 CK SA NC CV(PRR) RR34	3 - 2	- 3	- 5	- 85	2		CV(PER)	283		
XSI-0002B	ASI-0002B RWST OUTLET Check	2 5. 4 HZ C 16 CK SA NC CV(PUR) RR34	4 HZ	0 1	2	SA	NC.	i	CV (PER)	RR34	1	-

XSI-00020	KSI-0002C RWST OUTLET Check	2 F05015 H2 C 16 CK SA RC CV(PRE) "0014	IRZ C	91	8	SA RC		CV(PRR)	10014	
FY-3936	EV-3936 RMST to SPECCS RMPP	2 F05013 F2 B 3 GL A0 NC FC Q.R.NT 28	F2 B	-	15	AO FC	22	Q.R.MT		28
EV-3937	FV-3937 RWST to SFPCCS RMPP	2 F05013 F2 B 3 GL AO RC FC Q.R.HT 30	F2 B	~	15	AO NC	2	Q.R.HT		30[

MOV-0016A Emergency Sump 1A Outlet		F05013	BS		91		0 10	- IN	2 POSO13 BS A 16 GT NO NC FAI Q.R.HT		61 61	13
	+		4		-	+			17			1
MOV-0016B Emergency Sump 18 Outlet	7	F05014	8	4	- 9	- 1	NO NC	T.	2 F05014 B4 A 16 GT NO NC FAI Q.R.NT		ध ध	13
	-		7	-	+				17	4		1
HOV-0016C Emergency Sump 1C Outlet	7	F05015	8	-	9	- 1	NO NC	ra!	2 F05015 B4 A 16 GT NO NC FAI Q.R.HT	1	1 ST	13
							-		13			1

IST Valve List Safety Injection - SI

Page 60 ot 69 Rev. 5

		11		1	1	1	1	1 1		FAIL	THE PERSON NAMED IN COLUMN TWO IS NOT THE OWNER.		ST	
VALVE ID	VALVE FUNCTION	CL	PEID	IGC	CAT	SIZE	TYPE	ACT	POS.	POS.	REQUIREMENT	RR/C	C	0
MOV-0014A LI	HSI Pp. 1A Recirc.	2	F05013	D3	В	2	D	но	NC	FAI	Q.R.HT		12	1
HOV-0013A	ISI Pp. 1A Recirc.	2	F05013	D3	В	2	D	но	NO	FAI	Q.R.NT		12	1
10V-0014B	HSI Pp. 1B Recirc.		F05014	E3	В	2	D	MO	HC.	FAI	Q.R.MT		13	,
MOV-0013B	HSI Pp. 1B Recirc.	2	F05014	E3	В	2	D	HO	NO.	FAI	Q.R.NT		14	ر
HOV-0014C	HSI Pp. 1C Recirc.	2	F05015	D3	В	2	12	HO	HC.	PAI	Q.R.HT		12	_1
MOV-COLICIL	HSI Pp. 1C Recirc.	j 21	F05015	İD3	B	2	ip	i no	NO	FAI	Q.R.MT		<u>L12</u> j	_1
MOA-0018V FI	HSI Pp. 1A Disch.	12	F05013	IC4		8	GT	I NO	I IIO	PAI	Q.R.NT		1 15	
<u> </u>				-	_	_	<u> </u>			<u> </u>	LT			-
MOA-0018B [T	HSI Pr. 1B Disch.	2	F05014	D4	-	8	GT	HO	во	FAZ	Q.R.HT		15	,
				i-	<u> </u>	<u> </u>	<u>i </u>	1		<u> </u>	LT			
10A-0078C T	HSI Pp. 1C Disch.	2	F05015	D4	A	8	GT	HO	NC	FAI	Q.R.HT		15	1
		1		1	1	1	1	1	1	i	1.7		ii	

IST Valve List Safety Injection - SI

HOV-COLLA HHSI PP. LA RECLIC.	2	F05013	_ 5	-	7	9		2	FAL	2 F05013 G4 B 2 D NO NC FAL Q.R.HT		18	- 51
MOY-0012A HUSI Pp. 1A Recirc.	2	£05013	5	10	7	-9	- N	0	FAI	2 FOSO13 G4 B 2 D NO NO FAI Q.R.NT	_4	12 13	7
MOY-DOLLB HHSI PD. 1B Recirc.	2	F0501	H3	-	7	-9	-	2	FAI	Z FOSO1. H3 B Z D NO NC FAI Q.R.NT		12 13	=
MOV-0012B HUSI Pp. 1B Recirc.	2	F05014	H3	4	7	9	-	0	FAI	2 FOSO14 H3 B 2 D NO NO FAI Q.R.NT	-1	14 15	2
MOV-0011C HHSI Pp. 1C Recirc.	2	F05015	5	-	7	9	6)	FAI	2 F05015 G4 B 2 D HO NC FAI Q.R.NT	4	12 13	7
NOV-0012C HHSI Pp. 1C Recirc.	1 2	F05015	63	10	2	9	- 0	0	FAI	2 F05015 G3 B 2 D NO NO FAI Q.R.NT		12 19	-

Page 62 of 69 Rev. 5

IST Valve List Safety Injection - SI

VALVE ID	VALVE FUNCTION	23	PEID	200	AT SI	ZEITTE	ELAC	POS.	POS.	CC. PAID GC CAT SIZE TYPE ACT POS. REQUIREMENT RR/C C 0	RR/C	C 0
JOY-0004A HHSI Pp. 1A Disch.	Pp. 1A Disch.	2	F05013	2	A 6	-5		MO	FAI	2 FOSO13 FS A 6 GT NO NO FAI Q.R.HT	1	21 21
		-								13	1	
MOY-0004B HHSI Pp. 1B Disch.	Pp. 18 Disch.	2	F05014	8	4	5	-	0	FAI	2 FOSO14 G4 A & GT NO NO FAI Q.R.NT	1	12 12
		-								13	1	1
MOY-0004C HHSI PP. IC Disch.	rp. 1C Disch.	7	F05015	2	A 6	5	-	0 10	FAI	2 FOSO15 F4 A 6 GT NO NO FAI Q.R.KT	1	21 21
							-				1	

-	1	1		1	
	-4-	-4-	-4-	-4-	
ER48		RR46	1	RR48	1
CV(PRS) RR48	17	2 F05014 G4 AC 6 CK SA BC CV(PRS) RR46	17	2 F05015 F5 AC 6 CK SA NC CV(PRS) RR48	13
		1			
NC.		2)	
SA		8		VS.	
5		8		8	
9		9		9	
V 92		4		- 8	-
2 F05013 F6 AC 6 CK SA NC		\$1050		51050	
2 6		7 2		2 - 2	
Check		Check		Check	
A Disch.		B Disch.		C Disch.	
PP.		Pp. 1		PP.	
HHST		HHSI		HHST	
XSI-0005A HHSI Pp. 1A Disch. Check		XSI-0005B HHSI Pp. 1B Disch. Check		XSI-0005C HHSI Pp. 1C Disch. Check	

MOV-0008A HHSI Pp. 1A Hot Leg Ini.	2 -	05013	- 12	- 9	-5	- OH	2	LVI	2 FOSO13 F7 B 6 GT NO BC FAL Q.R.NT	_4	12 12
NOV-0008B HHSI Pp. 1B Hot Leg Ini.	2 5	91050	129	- 9	- 15	- N	2	FAI	2 F05014 G7 B 6 GT NO NC FAI Q.R.NT		13 14
NOV-0008C HHSI Pp. 1C Hot Leg Inj.	2 5	05015	12	9 8	- 15	MO	MC	FAI	2 F05015 F7 B 6 GT NO NC FAI Q.R.HT		131 13

Page 63 of 69 Rev. 5

IST Valve List Safety Injection - SI

VALVE ID VALVE FUNCTION	_ 13	PEID	- 5	- STA	IZE	TYPE	- E	OEM.	FAIL POS.	CL PAID GC CAT SIZE TYPE ACT POS. POS. REQUIREMENT RR/C C 0	RR/C	50	C O
NOV-0006A HHSI Pp. 1A Cold Leg Ini.	2	F05013	E7		9	15	0	No	FAI	2 F05013 E7 B 6 GT NO NO FAI Q.R.NT 12 12	1	77	77
NOV-0006B HHSI Pp. 1B Cold Leg Ini.	2	F05014	14	- E	9	5	0	RO	FAI	2 F05014 F7 B 6 GT NO RO FAI Q.R.HT	- 9 9	6	
HOV-DODEC HHSI PP. IC COLD LEE IN !.	1 2	F05015	E7	8	- 9	15	10	NO	FAI	2 F05015 E7 B 6 GT MO NO FAI Q.R.HT 12 12	1	1 12	12

	1	RR35	1		1
	-		-	-	
CV(RR) RR35	LT(PIV)	CV (RR)	LT(PIV)	1 F05015 F7 AC 6 CK SA NC CV(RR) RR35	(T(PIV)
OCRAFIC PROPERTY SEE					
1 F05013 F7 AC 6 CK SA NC		1 F05014 G7 AC 6 CK SA NC)	
SA		SA		SA	
- 5		8		8	
_ 4		9		٥	
- 1 -		7 AC		7 40	
		9 6		S . F	
F0501		F0501		F0501	
_=		3		3	
OB Check		OB Check		OB Check	
A Hot Leg		B Hot Leg		C Hot Leg	
Pp.		20.		Pp.	
HHSI		HHSI		HHSI	
XSI-0009A MHSI Pp. 1A Hot Leg OB Check		KSI-0009B HHSI Pp. 1B Hot Leg OB Check		XSI-0009C HHSI Pp. 1C Hot Leg OB Check	

XSI-0010A HHSI PP. 1A Hot Leg IB Check		05013	2	AC 8		 NG -	_	CV(CS)	1 F05013 F8 AC 8 CK SA BC CV(CS) RR2.32
	+					 		LT(PIV)	
ASI-0010B HHSI PP. 1B Hot Leg IB Check	7	\$1050	68	AC 8	-	 1 F05014 G8 AC 8 CK SA MC	1	CV(CS)	CV(CS) RR2.32
	-			-+-		 		LT(PIV)	
MSI-0010C HHSI Pp. 1C Bot Leg IB Check		21050	18	WC - 8		 A FC		1 F05015 F8 AC 8 CK SA MC CV(CS) RRZ.32	RRZ.32
	-			-				LI(PIV)	

Page 64 of 69 Rev. 5

IST Valve List Safety Injection - SI

-					_		-	-	-			HORM.	FAIL	NORM. FAIL TEST	_	5	1
VALVE ID	AAL	VALVE FUNCTION	NO		CL	PEID	30	CATIS	SIZE	TYPE	ACT	POS.	POS.	CL PEID GC CAT SIZE TYPE ACT POS. POS. REQUIREMENT RE/C C O	RR/C	2	0
XSI-0007A HHSI Pp. 1A Cold Leg UB Check	SI Pp.	IA Cold	Zez C	B Check		1 F05013 E7 AC 6 CK SA MC	12	AC	9	8	8	MC	1	CV(RR)	ER35	1	1
														LT(PIV)	1	1	1
XSI-0007B HHSI Pp. 1B Cold Leg OB Check	SI Pp.	1B Cold	Leg	B check		1 F05014 F7 AC 6 CK SA NC	FT	AC	7 9	8	SA	MC.	1	CV(ER)	RR35	1	
														LT(PIV)	1	1	1
XSI-0007C HHSI Pp. 1C Cold Leg OB Check	SI Pp.	1C Cold	Leg	B Check		1 F05015 E7 AC 6 CK SA NC	E7	AC	9	8	SA)	1	CV(RR)	ER35	1	1
														LI(PIV)	1		-

FY-3983 SIS Accum. N2 Supply OB Isol. 2 FUSCI6 G2 A 1 GL AO RC FC Q.R.NT
2 F05016 G2 AC 1 CK SA FC CV(ER)

Page 65 of 69 Rev. 5

IST Valve List Safety Injection - SI

R/C C 0	37		37		37	
CL PAID GC CAT SIZE TYPE ACT POS. POS. REQUIREMENT RR/C C 0	CV(DI) RR37	LT(PIV)	CV(DI) RR37	LT(PIV)	CV(DI) RR37	(110/2)
FAIL POS.	me week an					
POS.	N.		MC		MC	
- It	SA		SA		SA	
TYPE	8		8		8	
SIZE	77		7.7		77	
CAT	2		VC.		AC	
_8	-4-		10		181	
PEID	1 F05916 Ft AC 12 CK SA MC		1 F05016 D7 AC 12 CK SA NC		1 F05016 B7 AC 12 CK SA NC	
_ 5		-		-	==	
VALVE FUNCTION	XSI-0046A SIS Accum. 1A OB Check		XSI-00468 SIS Accum. 18 08 Check		XSI-0046C SIS Accum. 1C 0B Check	
VALVE	ccum.		ccm.		ccm.	
	SIS		SIS		SIS	
VALVE ID	XSI-0046A		XSI-0046B		XSI-0046C	

KSI-0038A SI Cold Leg 1 IB Check		F05016	14	- JV	77	8	SA	U	1	1 F05016 F7 AC 12 CK SA NC CY(CSDI) RR2.43	RR2.43		1
					-1	7				LT(PIV)	-4-		1
XSI-0038B SI Cold Leg 2 IB Check	===	F05016	10	VC	77	8	SA	U.	1	1 F05016 D7 AC 12 CK SA NC CV(CSDI) KR2.43	ER2.43		1
				-	7	1				LT(PIV)	-4-	- -	1
XSI-0038C SI Cold Leg 3 IB Check	-=	F05016	187	VC	77	8	SA	D.	1	1 F05016 B7 AC 12 CK SA NC CY(CSDI) RR2.43	RRZ.43		
										LI(PIV)	-	-	-

VALVE ID	VALVE FUNCTION	_ 5	PEID	1000	- I	ZE TT	PEIAC	GC CAT SIZE TYPE ACT POS.		FAIL TEST POS. REQUIREMENT	FR/C	57
FY-3970	SIS Test Line IB Isol.	==	F05016	-12		.75 GL		No RC	2	Q.R.HT	1	9
										53	1	
FV-3971	SIS Test Line OB Isol.	3	F05016 F7	-11		.75 GL		AO NC	7	Q.R.HI(HI) RES	888	7 2
								4		15	1	
MOV-0039A	Accumulator Discharge		2 F05016 F5 B	- 2		12 GT NO		0	FAI	FAL Q(CS).R HT	RR2	181
MOV-0039B	Accumulator Discharge NOV-0039B Isolation Valve	2	F05016	 DS B		12 61		NO RO	- FAI	PALICS R NT	2882	
NOV-0039C	Accumulator Discharge MOV-0039C Isolation Valve	7	2 F05016 B5 B	185		12 6		12 GT NO NO	FAI	FAL Q(CS) .R HT	882	18
PV 3928	PV 3928 Accumulator Vent Valve		F05016	- B		1 61		SO NC		lo(cs)	RR2	
PV 3929	PV 3929 Accumulator Vent Valve	2	F05016	EA B		1 61		SO NC	2	IQ(CS)	RR2	
PV 3930	PV 3930 Accumulator Vent Valve	7	2 F05016 G4	- 5	- B	5 - 1	-	So MC	- 2	FC R HT(FT)	RR2	
ну 899	Accumulator Vent Backup Valve	7	2 1 705016			1 61		SO NC		FC R RT(RT)	RR2	
нсу 900	HCV 900 Bleed Valve	2	2 F05016 F2 B	23		1 67	-	SO NC	_ <u> </u>	Q(CS) R N2	RRZ	

Page 67 of 69 Rev. 5

Steam Generator Sludge Lancing - SL

VALVE ID		VALVE FUNCTION	UNCTI	**	_ =		PEID	25	ATIS	TIZE	TYPE	ACT	GC CAT SIZE TYPE ACT POS.	POS. POS.	POS. REQUIREMENT	ER/C	C O
SL-0002 Hi Pressure OB Isol.	Hi Pr	essure	OB IS	.10	7		F05057	BS	4	2	15	5	MC MC	1	Q(BA)	5	1
															13	1	1
SL-0004	HI Pr	Hi Pressure IB Isol.	IB IS	.10	2	2 5	F05057	196	4	7	5	=) I	1	Q(MA)	5	1
															13		
SL-0012 Low Pressure OB Isol.	Low P	ressure	08 1	.705		2-1	F05057	- 3		9	5	-	2	1	Q(EA)	5	-
					+										13	1	-
SL-0014 Low Pressure OB Isol.	Low P	ressure	0B I	.Tos	7		2 F05057	E6	~	9	15	=	2	1	Q(BA)	5	<u> </u>
					-										5	1	1
SL-0027	Ches.	Chem. Clng. Ret. IB Isol.	Ret.	IB Isol	-	-3-	2 105057	- 95		9	6	-	2	1	Q(BA)	5	-
									-						17	-	1
SL-0029	Chem.	Chem. Clng. Ret. OB Isol.	Ret.	IOSI BO	-	2 5	F05057	65	-	9	5	=	2	1	Q(EA)	5	1
															:		

IST Valve List Containment System - XC

Page 68 of 69 Rev. 5

	2 F05060 G4 A .5 GL SO NO FC Q.R. NT(NT) RR8 2	 2 F05050 G4 A .5 GL S0 N FC Q.R.NT(NT) RR8 21-	 2 F05060 C4 A .5 GL S0 NO FC Q.R.HT(HT) RR8 2	 2 805060 104 4 5 5 5 60 80 100 100 100 100 100
ICT PE	2 505	2 505	2 505	2 505
VALVE FUNCTION	FY-1025 PAL AIR SUPPLY ISOL	FV-1026 PAL AIR SUPPLY ISOL	FY-1627 PAL AUTO LEAK RATE HOWIT ISOL	FV-1028 PAL AUTO LEAK RATE HOWIT ISOL.
VALVE ID	FY-1025	FV-1026	FY-1627	FV-1028

Page 69 of 69 Rev. 5

Liquid Waste Processing - WL

1	EOLECTION OF THE PARTY OF THE P	_ 5	PEID	cic	ATISE	E TYP	EACT	POS.	POS.	CL PAID GCCATSIZE TYPE ACTIPOS. POS. REQUIREMENT RE/C C O	ER/C	0 0
FY-4919	RCDT W2 Supply/Went OB Isol.		F05022	99	-1	- 5	90	2	2	2 F05022 G6 A 1 GL AO FC Q.R.FT		07
										15	1	
000	ar Anna lacter at Supply/Went IB Isol.		F05022	- 9	- 7	- 15	- 8	_ Z	2	2 F05022 J6 A 1 GL SO NC FC Q.R.NI(NI) RES	RES	2
20.40										53	1	

HOY-0312 ECDT PUED DISCh. IB ISOL.	o Disch.	IB Isol.	2	F05022	E3	3	15	HO	180	FAIL	2 FOSO22 E3 & 3 GT NO NO FALL Q.R.MT	1	01
-											LI	1	
		100.0		F05022	- 2			- W	NO.	22	2 FOSO22 F3 A 3 GL AO FC Q.R.MT	1	01
FV-4913 RCIT PURD JASCH. US ASUA.	P MASCB.	VD 4504.		- Hanne							1.0	1	

3.1 Requests for Relief from ASME Boiler and Pressure Vessel Code Section XI Requirements and Clarifications of Valve Testing Nethods

RR-1

Test Requirement

The stroke time of all power-operated valves shall be measured, and check valves shall be exercised for operability at least once every three (3) months.

Basis for Relief

This valve is a stop check valve with a motor operator. The motor operator may be safely stroked at power; however, the stop check valve can only be exercised (full-stroke) by directing Auxiliary Feedwater Flow into the Steam Generators. The initiation of Auxiliary Feedwater during power operation would result in unwanted thermal shock to the secondary portions of the Steam Generators. An introduction of cold water would also cause unwanted power transients.

Alternate Testing

The valve motor operator will be stroked and timed at least once every three (3) months as required; however, after leaving cold shutdown and prior to entering Mode 2 (Startup) Auxiliary Feedwater will be directed through the valve using one pump flow rate. Verification of flow through the valve will provide assurance that the valve has opened sufficiently to perform its function (full-stroke).

RR-2

Test Requirement

IWV-3417(b) and IWV-3523 state that when corrective action is required as a result of tests made during cold shutdown, the condition shall be corrected before startup. A retest showing acceptable operation shall be run following any corrective action before returning valve to service.

Basis for Relief

The plant Technical Specifications provide the requirements and plant conditions necessary for plant startup (i.e. mode changes).

Alternate Testing

The test requirement will be satisfied before the valve is required to be operable in accordance with the plant Technical Specifications.

RR-3

Test Requirement

Exercise check valves for operability at least once every three (3) months.

Basis for Relief

This check valve is normally closed during normal power operation and can only be exercised (full-stroke) by directing Auxiliary Feedwater flow into the Steam Generators. The initiation of Auxiliary Feedwater during normal power operation would result in unwanted thermal shock and power transients. Flow from the Main Feedwater System cannot be used to exercise this check valve during normal power operation since thermal shock to the Auxiliary Feedwater nozzles would occur by injecting the cooler, stagnant water in the connecting piping and no flow instrumentation is available in this configuration to verify valve full-stroke.

Alternate Testing

After leaving cold shutdown and prior to entering Mode 2 (Startup), Auxiliary Feedwater will be directed through the valve using one pump flow rate. Verification of flow through the valve will provide assurance that the valve has opened sufficiently to perform its function (full-stroke).

C-4

Test Requirement

Exercise valves for operability at least once every three (3) months.

Testing Kethod

This value is a normally closed containment isolation value and is passive. The operability testing (full or partial stroke) during either power operation or cold shutdown provides no added assurance of an increase in safety. This value will be verified closed and leak-tight each refueling outage during performance of LLRT activities in accordance with locfR50 Appendix J.

Rev. 5

Pump and Valve Inservice Test Plan

C-5

Test Requirement

Exercise check valves for operability at least once every three (3) months.

Testing Method

This valve is a normally closed containment isolation check valve and is passive. The operability testing (full or partial stroke) during either power operation or cold shutdown provides no added assurance of an increase in safety. This valve will be verified closed and leak-tight each refueling outage during performance of LLRT activities in accordance with 10CFR50 Appendix J.

RR-6

Deleted per ST-HL-AE-2021, dated March 31, 1987.

RR-7

Deleted per Rev. 5 of I.S.T. Plan

RR-B

Test Requirement

INV-3413(b) requires that the stroke time of all power-operated valves shall be measured to the nearest second for stroke times of 10 seconds or less. INV-3417 requires that on any one test of power-operated valves, an increase in stroke time of 50% or more from the previous test for valves with stroke times of 10 seconds or less, the test frequency shall be increased to once each month until corrective action is taken.

Basis for Relief

These solenoid-operated valves have very short stroke times and are classified as "rapid-acting" valves. Accurate measurement of stroke time is not practical. In addition, stroke times may vary significantly due to system pressure and/or temperature changes from one test to another.

Alternate Testing

These valves will be required to be full stroked and timed to the nearest second quarterly. Acceptance of the test will be based only on the stroke time limit (not to exceed 2 seconds) and not on the "50%" criteria of TWV-3417.

RR-9

MOV-0254, MOV-0268, and MOV-0269 in the Essential Chilled Water System were deleted from plant design. Therefore, this relief request is no longer required and has been deleted.

RR-10

Test Requirement

Exercise check valves for operability at least once every three (3) months.

Basis for Relief

Due to plant design, it is not practical to verify by any positive means, either directly or indirectly, the operability of these normally open check valves per the requirements of IWV-3522(a).

Alternate Testing

Valve closure will be verified during LLRT activities performed each refueling outage in accordance with 10CFR50 Appendix J.

RR-11

Deleted during NRC meeting on June 10, 1986.

RR-12

Test Requirement

Exercise check valves for operability at least once every three (3) months.

Basis for Relief

Operability testing (full or partia) stroke) of these normally closed check valves is impractical during power operation or cold shutdown. Stroking these valves with flow would require the spraying of containment which is impractical and may cause equipment damage.

Alternate Testing

The check valves will be verified operable by disassembly of one check valve each refueling outage on a rotating basis for inspection to ensure no degradation has occurred. If the check valve selected during any refueling outage shows signs of unacceptable degradation, all other applicable check valves will be disassembled and inspected during that refueling outage.

RR-13

Test Requirement

Exercise valves for operability at least once every three (3) months.

Basis for Relief

These normally open valves supply clean, cool water for the RCP seals providing lubrication, cooling and pressurization of the pump seals. Failure of these valves in the closed position during stroking could significantly reduce seal life and possibly cause a plant outage.

Alternate Testing

These valves will be required to be exercised (full stroke) each cold shutdown not to exceed once every three months.

RR-14

Test Requirement

Exercise valves for operability at least once every three (3) months.

Basis for Relief

The operability testing (full stroke) of these valves would cause a loss of system function (loss of charging pump normal suction from VCT). Utilizing other suction sources (RWST or Boric Acid Transfer System) would affect reactivity control possibly requiring a plant shutdown. Valves have no partial stroke provisions.

Alternate Testing

These valves will be required to be tested for operability (full stroke) each cold shutdown not to exceed once every three (3) months.

RR-15

Test Requirement

Exercise valves and check valves for operability at least once every three (3) months.

Basis for Relief

Exercising of these normally closed valves and check valves at power would connect the suction of the Charging Pumps to the RWST resulting in concentrated boric acid injection into the RCS, causing a resultant power change which is undesired.

Alternate Testing

These valves and check valves will be required to be exercised (full stroke) each cold shutdown not to exceed once every three (3) months.

RR-16

Test Requirement

Exercise valves for operability at least once every three (3) months.

Basis for Relief

This valve normally is throttled to control charging flow by a flow controller. The valve cannot be full stroked at power without isolating charging flow to the RCS which could cause a loss of normal pressurizer level control possibly causing a plant shutdown.

Alternate Testing

This valve will be required to be exercised (full stroke) each cold shutdown not to exceed once every three (3) months.

RR-17

Test Requirement

Exercise valves for operability at least once every three (3) months.

Basis for Relief

This normally open valve supplies charging water to the RCS. Isolation of charging during normal power operation could cause a loss of normal pressurizer level control possibly causing a plant shutdown.

Alternate Testing

This valve will be required to be exercised (full stroke) each cold shutdown not to exceed once every three (3) months.

RR-18

Test Requirement

Exercise valves and check valves for operability at least once every three (3) months.

Basis for Relief

Exercising of this normally closed valve and check valve would require introduction of cold (\leq 140 F) spray water into the pressurizer at power creating an undesired transient.

Alternate Testing

This valve and check valve will be required to be exercised for operability (full stroke) at each cold shutdown not to exceed once every three (3) months.

RR-19

Test Requirement

Exercise check valves for operability at least once every three (3) months.

Basis for Relief

Exercising of this normally closed check valve at power would result in injection of concentrated boric acid into the RCS via the operating charging pump(s) creating an undesired power transient and possible plant shutdown.

Alternate Testing

This check valve will be required to be exercised (full stroke) each cold shutdown not to exceed once every three (3) months.

RR-20

Test Requirement

Exercise valves for operability at least once every three (3) months.

Basis for Relief

This valve is normally open during power operations and cannot be full stroke tested without isolating Feedwater from the Steam Generators. Isolation of Feedwater would cause an undesirable power transient and possible turbine and reactor trip.

Alternate Testing

This valve will be required to be partial-stroke tested at least once every three (3) months and full-stroke tested each cold shutdown not to exceed once every three (3) months.

RR-21

Test Requirement

Exercise valves for operability at least once every three (3) months.

Basis for Relief

This valve is normally throttled open during power operations to maintain Steam Generator level by controlling feedwater flow. This valve cannot be tested without isolating Feedwater from the Steam Generators causing undesirable power transients and possible turbine and reactor trip.

Alternate Testing

This valve will be exercised (partial stroke) during the course of normal plant operations by automatically stroking to maintain programmed Steam Generator level. Abnormal valve operations will be detected by Steam Generator level abnormalities. This valve will also be exercised (full stroke) each cold shutdown, not to exceed once every three (3) months.

RR-22

Test Requirement

Exercise valves for operability at least once every three (3) months.

Basis for Relief

This valve is normally closed above approximately 20% power and controls Feedwater flow to the Steam Generators below 20% power during start-up. This valve cannot be tested without isolating or perturbing Feedwater flow to the Steam Generators causing undesirable power transients and possible turbine and reactor trip.

Alternate Testing

This valve will be required to be exercised (full stroke) each cold shutdown not to exceed once every three (3) months.

RR-23

Test Requirement

Exercise valves for operability at least once every three (3) months.

Basis for Relief

These 48 inch Containment Purge Valves are required by the Technical Specifications to be sealed closed during normal power operation.

Alternate Testing

These valves will be required to be exercised (full stroke) each cold shutdown not to exceed once every three (3) months.

RR-24

Test Requirement

Exercise valves for operability at least once every three (3) months.

Basis for Relief

These 18 inch Containment Purge Valves are allowed by the Technical Specifications to be opened only for essential operational and personnel protection reasons minimizing the total time open during normal power operation. Failure of these valves during operation in the open position would cause a loss of primary containment integrity and necessitate a plant shutdown.

Alternate Testing

These valves will be required to be exercised (full stroke) each cold shutdown not to exceed once every three (3) months.

RR-25

Test Requirement

Exercise valves for operability at least once every three (3) months.

Basis for Relief

This valve supplies Instrument Air to containment to operate various valves. Isolation of Instrument Air (and if valve fails closed and cannot be reopened) would cause a plant shutdown.

Alternate Testing

This valve will be required to be exercised (full stroke) each cold shutdown not to exceed once every three (3) months.

RR-26

Test Requirement

Exercise valves for operability at least once every three (3) months.

Basis for Relief

The operability testing of these normally closed valves during power operation would result in undesirable power transients and could cause a plant shutdown if valves fail to close. Closing the manual block valve upstream would require personnel entry into the Isolation Valve Cubicle area, which also contains the Main Steam Safety Valves in close proximity (approximately eight feet) to the manual block valve. Egress from this area requires personnel to pass by the Main Steam Safety Valves. Inadvertent operation of a Main Steam Safety Valve would result in significant steam release to the immediate area from the safety valve discharge drip lines causing possible personnel injury.

Alternate Testing

This valve will be required to be exercised (full strcke) each cold shutdown not to exceed once every three (3) months.

RR-27

Test Requiremen.

Exercise valves for operability at least once every three (3) months.

Basis for Relief

The operability testing (full stroke) of these normally open valves at power is not practical and will cause a plant shutdown.

Alternate Testing

These valves will be required to be partial-stroke exercised quarterly and full-stroke exercised each cold shutdown not to exceed once every three (3) months.

C-28

Test Requirement

IWV-3421 requires that Category A valves shall be leak tested except valves which function in the course of plant operation in a manner which demonstrates functionally adequate leak tightness need not be leak tested.

Testing Method

The leak tightness of these valves is demonstrated to be functionally adequate during normal plant operation. RCS is monitored for leakage per Technical Specification 3.4.6.2.

RR-29

Test Requirement

Exercise valves for operability at least cace every three (3) months.

Basis for Relief

These valves are line-pressure-actuated valves and therefore require their block valves to be open to allow reactor pressure to stroke the valve. This is not feasible at power to stroke these valves as an unwanted RCS pressure and pressurizer level transient would occur possibly tripping the reactor. Acceptable maximum RCS pressure has been determined to be between 300 and 400 psig, with initial pressurizer water level at 25%, to allow for full stroking of these valves without causing an uncontrollable transient.

Alternate Testing

These valves will be required to be exercised (full stroke) each cold shutdown not to exceed once every three months.

RR-30

Test Requirement

Exercise valves for operability at least once every three (3) months.

Basis for Relief

These valves cannot be stroked at a RCS pressure greater than or equal to 350 psig due to an RCS pressure interlock.

Alternate Testing

These valves will be required to be exercised (full stroke) each cold shutdown not to exceed once every three (3) months.

RR-31

Test Requirement

Exercise check valves for operability at least once every three (3) months.

Basis for Relief

These valves cannot be exercised (full stroke) at power as the RHR Pumps have no provision for full flow testing except during cold shutdown conditions.

Alternate Testing

These valves will be required to be exercised (partial stroke) at least once every three (3) months using RHR Pump recirculation flow, and exercised (full stroke) each cold shutdown not to exceed once every three (3) months with the RHR Pumps aligned for normal shutdown cooling flows.

RR-32

Test Requirement

Exercise check valves for operability at least once every three (3) months.

Basis for Relief

These valves cannot be tested for operability (full stake) at power because the RHR and LHSI pumps candot overcome RCS pressure to allow flow through these check valves

Alternate Testing

These valves will be required to be exercised (full stroke) each cold shutdown not to exceed once every three (3) months.

RR-33

Test Requirement

Exercise valves for operability at least once every three (3) months.

Basis for Relief

These valves are normally inaccessible during power operation. Exercising and stroke timing these valves will require lifting electrical leads to ensure repeatable stroke times since valve is normally controlled by a controller and not a handswitch.

Alternate Testing

These valves will be required to be exercised (full stroke) at each cold shutdown not to exceed once every three (3) months.

RR-34

Test Requirement

Exercise check valves for operability at least once every three (3) months.

Basis for Relief

These check valves can only be exercised (full stroke) by simulating LCCA conditions (pumping into the RCS with RCS at zero or very low pressure) in order to get full pump flows.

Alternate Testing

These check valves will be required to be exercised (partial stroke) at least once every three (3) months by running pumps at normal recirculation flows, and exercised (full stroke) each refueling or tage by injecting into the RCS with the vessel head off using the appropriate pump(s) at full flow.

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RR-35

Test Requirement

Exercise check valves for operability at least once every three (3) months.

Basis for Relief

These check valves cannot be exercised (full stroke or partial stroke) at power as the HHSI pumps cannot develop discharge pressure greater than normal RCS pressure. These check valves cannot be exercised (full stroke or partial stroke) during cold shutdown as the HHSI pumps would overpressurize the RCS.

Alternate Testing

These valves will be required to be exercised (full stroke) each refueling outage by injecting HHSI flow into the open and vented RCS.

RR-36

Deleted per correspondence ST-HL-AE-2465.

RR-37

Test Requirement

Exercise check valves for operability at least once every three (3) months.

Basis for Relief

These check valves cannot be exercised (full or partial stroke) at power since the SIS Accumulator pressure is lower than the RCS pressure, cannot be exercised (full or partial stroke) during cold shutdown without the possibility of overpressurizing the RCS, and cannot be exercised (full stroke) during a refueling outage as the high flow rate of a full discharge with the SIS Accumulators at normal pressure may cause internal damage to the core.

Alternate Testing

These check valves will be verified operable by disassembly of one check valve each refueling outage on a rotating basis for inspection to ensure no degradation has occurred. If the check valve selected during any refueling outage shows signs of unacceptable degradation, all other applicable check valves will be disassembled and inspected during that refueling outage.

RR-38

Test Requirement

Exercise valves for operability at least once every three (3) months.

Basis for Relief

The operability testing (full stroke) of these valves during normal power operation requires isolating normal letdown in order to prevent thermal shock and possible damage to the Letdown Heat Exchanger. Isolating normal letdown during power operation requires closing either LCV-0465 or LCV-0466 (both inaccessible during normal power operation). Failure of either LCV-0465 or LCV-0468 in the closed position could result in plant shutdown due to loss of normal pressurizer level control.

Alternate Testing

These valves will be required to be exercised (full stroke) at each cold shutdown not to exceed once every three (3) months.

RR-39

Test Requirement

Exercise valves for operability at least once every three (3) months.

Basis for Relief

The operability insting (full stroke) of these valves during normal power operation would result in thermal shock and possible damage to the Regenerative Heat Exchanger and Letdown Heat Exchanger. This valve is inaccessible during formal plant operation and failure of this valve in the closed position could result in plant shutdown due to loss of normal pressurizer level control.

Alternate Testing

These valves will be required to be exercised (full stroke) at each cold shutdown not be exceed once every three (3) months.

RR-40

Test Requirement

Exercise valves for operability at least once every three (?) months.

Basis for Relief

The operability testing (full stroke) of these valves during normal power operation requires closing of other valves, normally inaccessible, inside reactor containment to protect a portion of the letdown line from overpressurization and lifting of relief valve PSV-3100. Failure of these valves in the closed position or the other valves closed for the test could result in a plant shutdown due to loss of normal pressurizer level control. Also, isolation of letdown during normal power operation would result in thermal shock and possible damage to the Regenerative Heat Exchanger and the Letdown Heat Exchanger.

Alternate Testing

These valves will be required to be exercised (full stroke) at each cold shutdown not to exceed once every three (3) months.

RR-41

Test Requirement

Exercise valves and check valves for operability at least once every three (3) months.

Basis for Relief

The operability testing (full strow) of these valves during normal power operation requires alternating when the normal and alternate charging headers. Alternating tiging headers at power would cause thermal shock and possible damage to the charging nozzles at the Reactor Coolant System boundary.

Alternate Testing

These valves and check valves will be required to be exercised (full stroke) each cold shutdown not to exceed once every three (3) months.

RR-42

Test Requirement

Exercise valves for operability at least once every three (3) months.

Basis for Relief

The operability testing (full stroke) of these valves during normal power operation requires injecting Main Feedwater through the cooler Auxiliary Feedwater lines into the Steam Generator. Injecting the cooler water in the Auxiliary Feedwater lines followed by the hotter Main Feedwater would cause thermal shock and possible damage to the Auxiliary Feedwater nozzles at the Steam Generator boundary.

Alternate Testing

These valves will be required to be exercised (full stroke) at each cold shutdown not to exceed once every three (3) months.

RR-43

Test Requirement

Exercise check valves for operability at least once every three (3) months.

Basis for Relief

These check valves cannot be exercised at power (full or partial stroke) since neither the HHSI pumps, LHSI pumps, RHR pumps, nor the SIS Accumulators can overcome RCS pressure. These check valves cannot be exercised (full stroke) during cold shutdown without the possibility of overpressurizing the RCS. These check valves cannot be exercised (full stroke) during a refueling outage as the high flow rate required may cause internal damage to the core.

Alternate Testing

These check valves will be required to be exercised (partial stroke) each cold shutdown not to exceed once every three (3) months using RHR flow, and these check valves will be verified operable (full stroke capable) by disassembly of one check valve each refueling outage on a rotating basis for inspection to ensure no degradation has occurred. If the check valve selected during any refueling outage shows signs of unacceptable degradation, all other applicable check valves will be disassembled and inspected during that refueling outage.

RR-44

Test Requirement

The stroke time of all power-operated valves shall be measured.

Basis for Relief

These valves supply air to the Standby Diesel Generator aring the starting sequence establishing initial starting compression. Downstream of each redundant valve is a pressure switch that controls the alarm logic. The failure of either valve to open sufficiently within one second of a start signal will result in a Starting Air System Malfunction alarm. Normal testing of the Diesel Generator in accordance with Technical Specification will exercise both of these valves and verify stroke time less than one second by absence of alarms. This testing is performed at least once every 31 days on a staggered test basis.

Alternate Testing

These valves will be required to be verified operable during normal Diesel Generator testing by verifying absence of the Starting Air System Malfunction alarm. We stroke times will be taken.

C45

Test Requirement

Exercise check valves for operability at least once every three (3) months, and category A valves shall be leak tested except valves which function in the course of plant operation in a manner which demonstrates functionally adequate leak tightness need not be leak tested.

Testing Method

These valves are normally closed unless the Residual Heat Removal System experiences an external leak or a net intersystem leakage causing makeup from the RCP Seal Standpipe which would be detectable by a low level alarm on the RCP Seal Standpipe servicing the affected train, and are therefore passive or proven passive by lack of a low level alarm. Leakage, however, is important to the valve's function to prevent diversion of Low Head Safety Injection or Residual Heat Removal System flow. Leakage during normal operation (if intersystem leakage into the Residual Heat Removal System is positive) and during Residual Heat Removal Pump operation (during heatup, cooldown, and pump testing) will be detected by a high level alarm in the corresponding RCP Seal Standpipe. No additional testing will be perfor. other than normal operations monitoring of the RCP Seal Standpipe clarms.

RR-46

Test Requirement

IWV-3300 states that valves with remote position indication shall be observed at least once every 2 years to verify that valve operation is accurately indicated.

Basis for Relief

These valves, AP-FV-2455 and AP-FV-2455A, are solenoid valves for which stem movement cannot be directly observed. These are redundant valves in series and operate simultaneously from a single switch with one set of indicating lights.

Alternate Testing

The valves are stroked and timed during normal inservice testing using the remote indicating lights. Open and closed indication is actuated by the limit switches of each valve wired in series. Therefore remote position indication is based on the slowest valve. Since these redundant valves cannot be exercised separately (unless leads are lifted, temporary 125 VDC power is supplied to the disabled valve to maintain it in the open position and jumpers are placed across the disabled valve's limit switches) the valves will be stroked simultaneously and remote position indication verified by observing system flow is initiated and then recured.

RR-47

Withdrawn per ST-H.-AE-2465

RR-48

Test Requirement

Exercise check valves for operability at least once every three (3) months.

Basis for Relief

These check valves can only be exercised (full stroke) by simulating LOCA conditions (pumping into the RCS with RCS at zero or very low pressure) in order to get full pump flows.

Alternate Testing

These check valves will be required to be exercised (partial stroke) at least once every three (3) months, provided RCS pressure is above pump shutoff head, by running pumps at normal recirculation flows, and exercised (full stroke) each refueling outage by injecting into the RCS with the vessel head off using the appropriate pump(s) at full flow.

CSJ-1 (Cold Shutdown Justification)

These valves are required to be exercised for operability at least every three (3) months. These head vent valves (hydraulic assisted, pilot-operated) and head vent block valves are normally closed during plant operations. When exercised, these valves exhibit a phenomenon called "burping" which occurs when the inboard valve is stroked open and then the downstream "alves give indications of opening. This "burping" can occur for a period of up to 40 seconds thereby over pressurizing the downstream piping. The resulting overpressurization could create unwanted pipe stresses which could result in damaged piping. For this reason these valves will be exercised (full stroke) each cold shutdown not to exceed once every three months.

RR-47

Withdrawn per ST-HL-AE-2465

RR-48

Test Requirement

Exercise check valves for operability at least once every three (3) months.

Basis for Relief

These check valves can only be exercised (full stroke) by simulating LOCA conditions (pumping into the RCS with RCS at zero or very low pressure) in order to get full pump flows.

Alternate Testing

These sheck valves will be required to be exercised (partial stroke) at least once every three (3) months, provided RCS pressure is above pump shutoff head, by running pumps at normal recirculation flows, and exercised (full stroke) each refueling outage by injecting into the RCS with the vessel head off using the appropriate pump(s) at full flow.

4.0 DRAWINGS

F00016

F00020

F00024

F00063

F20000

F20001

F05001

F05003

F05004

F05005

F05006

F05007

F05009

F05013

F05014

F05015

F05016

F05017

F05018

F05019

F05020

F05021

F05022

F05028

4.0 DRAWINGS (CONT.)

F05030

F05033

F05034

F05037

F05038

F05039

F05040

F05041

F05042

F05044

F05046

F05047

F05057

Y00017

V00018

V00019

V00021

V10001

V10002

200045

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