VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

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U.S. NUCLEAR REGULATORY COMMISSION

R. H. LEASBURG
VICE PRESIDENT
NUCLEAR OPERATIONS

October 6, 1981

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
Attn: Mr. Robert A. Clark, Chief
Operating Reactors Branch 3
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Serial No. 578
NO/RMT:acm
Docket No. 50-338
License No. NPF-4

Gentlemen:

Technical Specification 4.0.5 for North Anna Unit 1 requires ASME Code Class 1, 2, and 3 pumps and valves to be tested in accordance with Section XI of the ASME Boiler and Pressure Code (1974 Edition with Addenda through the Summer 1975) except where specific written relief has been granted by the Nuclear Regulatory Commission. Pursuant to 10 CFR 50.55a(g)(6)(i), we request the specific exceptions for the testing of pumps and valves as outlined in Attachments A and B.

Very truly yours,

R. H. Leasburg

Attachments

A. Requested Exceptions to the Inservice Testing Requirements for Pumps as set forth in subsection IWP to Section XI of the ASME Code 1974 Edition with Addenda through the Summer 1975.

B. Requested Exceptions to the Inservice Testing Requirements for Valves as set forth in subsection IWV to Section XI of the ASME Code 1974 Edition with Addenda through Summer 1975.

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ATTACHMENT A

REQUESTED EXCEPTIONS TO THE INSERVICE TESTING REQUIREMENTS FOR PUMPS
AS SET FORTH IN SUBSECTION IWP TO SECTION XI OF THE ASME CODE
1974 EDITION WITH ADDENDA THROUGH THE SUMMER 1975
NORTH ANNA UNIT 1

MARK NUMBER	PUMP NAME	CLASS	SYSTEM RESISTANCE F - FIXED V - VARIABLE	RELIEF REQUESTED	P_i	ΔP	Q	V	PROPER LUBE LEVEL OR PRESSURE	T_b	REMARKS
1-CC-P-1A	Component Cooling Pump	3	V	Yes	M *	Rel. *,**	Rel. *,**	M	M	A	Remark 1
1-CC-P-1B	Component Cooling Pump	3	V	Yes	M *	Rel. *,**	Rel. *,**	M	M	A	Remark 1
1-CH-P-1A	Charging Pump	2	Note 1, 2	Yes	Rel.	M **	M **	M	M	A	Remark 2
1-CH-P-1B	Charging Pump	2	Note 1, 2	Yes	Rel.	M **	M **	M	M	A	Remark 2
1-CH-P-1C	Charging Pump	2	Note 1, 2	Yes	Rel.	M **	M **	M	M	A	Remark 2
1-CH-P-2A	Boric Acid Transfer Pump	2	F	Yes	Rel. *	Rel. *	Note 1	Rel.	Rel.	Rel.	Remark 3
1-CH-P-2B	Boric Acid Transfer Pump	2	F	Yes	Rel. *	Rel. *	Note 1	Rel.	Rel.	Rel.	Remark 3

MARK NUMBER	PUMP NAME	CLASS	SYSTEM RESISTANCE F - FIXED V - VARIABLE	RELIEF REQUESTED	P_i	ΔP	Q	V	PROPER LUBE LEVEL OR PRESSURE	T_b	REMARKS
1-FC-P-1A	Spent Fuel Pit Pump	3	F	Yes	M *	M *	Note 1, 4	M	M	A	NA
1-FW-P-2	Turbine Driven Aux. Feed Pump	3	F	Yes	M *	M *	M	M	M	A	NA
1-FW-P-3A	Motor Driven Aux. Feed Pump	3	F	Yes	M *	M *	M	M	M	A	NA
1-FW-P-3B	Motor Driven Aux. Feed Pump	3	F	Yes	M *	M *	M	M	M	A	NA
1-QS-P-1A	Quench Spray Pump	3	F	Yes	M *	M *	Note 1	M	M	A	NA
1-QS-P-1B	Quench Spray Pump	3	F	Yes	M *	M *	Note 1	M	M	A	NA
1-RS-P-1A	Inside Recirculation Spray Pump	2	V	Yes	----------	----------	Relief	----------	----------	Note 3	Remark 5

MARK NUMBER	PUMP NAME	CLASS	SYSTEM RESISTANCE F - FIXED V - VARIABLE	RELIEF REQUESTED	P_i	ΔP	Q	V	PROPER LUBE LEVEL OR PRESSURE	T_b	REMARKS
1-RS-P-1B	Inside Recirculation Spray Pump	2	V	Yes	----------	----------	Relief	----------	----------	Note 3	Remark 5
1-RS-P-2A	Outide Recirculation Spray Pump	2	F	Yes	----------	----------	Relief	----------	----------	Note 3	Remark 6
1-RS-P-2B	Outside Recirculation Spray Pump	2	F	Yes	----------	----------	Relief	----------	----------	Note 3	Remark 6
1-SI-P-1A	Low Head Safety Injection Pump	2	F	Yes	Rel. *	Note 1	M	M	Rel.	Note 3	Remark 7
1-SI-P-1B	Low Head Safety Injection Pump	2	F	Yes	Rel. *	Note 1	M	M	Rel.	Note 3	Remark 7
1-SW-P-1A	Service Water Pump	3	V	Yes	Rel. *	M	M	M	Rel.	Note 3	Remark 8
1-SW-P-1B	Service Water Pump	3	V	Yes	Rel. *	M	M	M	Rel.	Note 3	Remark 8

MARK NUMBER	PUMP NAME	CLASS	SYSTEM RESISTANCE F - FIXED V - VARIABLE	RELIEF REQUESTED	P_i	ΔP	Q	V	PROPER LUBE LEVEL OR PRESSURE	T_b	REMARKS
1-SW-P-4	Auxiliary Service Water Pump	3	V	Yes	Rel. *	M	M	M	Rel.	Note 3	Remark 4
1-SW-P-5	Radiation Monitoring Sample Pump	3	F	Yes	----------		Relief		----------	------	Remark 10
1-SW-P-6	Radiation Monitoring Sample Pump	3	F	Yes	----------		Relief		----------	------	Remark 10
1-SW-P-7	Radiation Monitoring Sample Pump	3	F	Yes	----------		Relief		----------	------	Remark 10
1-SW-P-8	Radiation Monitoring Sample Pump	3	F	Yes	----------		Relief		----------	------	Remark 10
1-RS-P-3A	Casing Cooling Pump	3	F	Yes	M *	M *	Note 1	M	M	A	
1-RS-P-3B	Casing Cooling Pump	3	F	Yes	M *	M *	Note 1	M	M	A	

REMARKS

* An exception is required to IWP-4210. Gauge lines have not been provided with a suitable means to assure or determine the presence or absence of liquid when the presence or absence could produce a difference of more than 0.25% in the indicated value of the measured pressure. Reference values and subsequent test values will all be taken with the gauge lines as designed. Therefore, any error would be common to all values recorded and not affect the evaluation of the data.

** An exception is required to IWP-4110. Instrumentation included under this exception is only ± 4% accurate.

1. The accuracy of flow instrumentation at normal operating flows is about ± 8%. This accuracy does not lend itself to satisfying the requirements of Table IWP-2100-2 where the acceptable range is + 2% - 6%. In addition, varying flow rates interfere with normal plant operation since flows have been balanced to meet heat load requirements. Therefore, the ΔP and Q for each of these pumps will be recorded but not compared to reference values for head curve verification. Additionally, motor current will be recorded for comparison purposes.

2. Suction pressure instrumentation is not installed or required. These pumps are capable of producing greater than 2400 psig discharge pressure, while the suction pressure would nominally be 15 to 20 psig. The Volume Control Tank pressure will be recorded using Control Room indication to establish initial conditions for testing. This indication is about 4% accurate.

3. Monitoring discharge pressure monthly is considered sufficient since these pumps provide the driving force to deliver boric acid to the charging pump suction and operator observation of boration and chemical analysis of boron concentration will indicate whether desired results have been achieved. The Boric Acid Tanks serve as the head for these pumps. Tank level will be observed from the Control Room to establish initial conditions for testing. The ΔP will be calculated from the Boric Acid Tank level. This indication is about 4% accurate. The pump is totally encased in insulation making Tb, V and lubricant level or pressure impossible to measure or observe.

4. This pump takes suction from Lake Anna. The reservoir has a minimum level required by Technical Specifications. This indication, which is about 4% accurate, will be observed from the Control Room to establish initial conditions for testing. Proper lubricant pressure or level cannot be observed since the bearings are in the main flow path.

5. These pumps are run dry to verify operational readiness; therefore Pi ΔP, Q and proper lubricant level or pressure cannot be measured. Each pump is equipped with a sensor to detect pump rotation. In addition, a vibration alarm associated with each pump will alert Control Room personnel to excessive pump vibration.

6. These pumps will be run dry or wet to verify operational readiness. Each will be observed to verify rotation. At least once per 18 months, each will be tested on its recirculation path when flow and discharge pressure will be observed. A vibration alarm associated with each pump will alert Control Room personnel to excessive pump vibration. Due to pump design, it is not possible to measure a suction pressure. Proper lubricant level or pressure is not required since bearings are in the main flow path.

7. These pumps take suction from the RWST for pump performance testing. This tank has a minimum level required by Technical Specifications, which will be observed from the Control Room. This indication is about 4% accurate. Proper lubricant level or pressure cannot be observed since bearings are in the main flow path.

8. The accuracy of flow instrumentation at normal operating flow is about ± 8%. This accuracy does not lend itself to satisfying the requirements of Table IWP-2100-2 where the acceptable range is + 2% - 6%. In addition, varying flow rates interfere with normal plant operation since flows have been balanced to meet heat load requirements. Therefore, the dischage pressure and Q for each pump will be recorded but not compared to reference values for head curve verification. These pumps take suction from the Service Water Reservoir, which has a minimum level required by Technical Specifications. This level indication, which is about 4% accurate, will be observed from the Control Room to establish initial conditions for testing. Proper lubricant level or pressure cannot be observed since bearings are in the main flow path. Motor current will be recorded for comparison purposes.

9. This pump takes suction from the Service Water Reservoir, which has a minimum required level by Technical Specifications. This level indication, which is about 4% accurate, will be observed from the Control Room to establish initial conditions for testing. Proper lubricant level or pressure cannot be observed since bearings are in the main flow path.

10. The flow paths of these pumps are normally dry. At least once per 18 months, each pump will be automatically started in conjunction with a test signal for Containment Depressurization Actuation. These pumps will be run dry monthly.

NOTES

1. In a fixed resistance system, it is required to measure ΔP or Q, not both (IWP Table 3100-1).

2. When these pumps are operated on recirculation flow, the system is fixed resistance. When they are tested as the operating pump, the system is variable resistance.

3. Reference is made to IWP 4310, which establishes exception to T_b for bearings within the main flow path.

4. Pump will be tested only when there is water in the spent fuel pit.

5. Symbols and abbreviations from Attachment A.0 are as follows:

   M - Monthly

   A - Annually

   Rel - Relief Requested

ATTACHMENT B

REQUESTED EXCEPTIONS TO THE INSERVICE TESTING REQUIREMENTS FOR VALVES
AS SET FORTH IN SUBSECTION IWV TO SECTION XI OF THE ASME CODE
1974 EDITION WITH ADDENDA THROUGH THE SUMMER 1975
NORTH ANNA UNIT 1

STATEMENT OF PARTICULARS

A review of ASME Class 1, 2, 3 valves has been completed for the North Anna Unit 1 Systems. Attachment B.1 provides a tabulation of the valves that are subject to the testing requirements of ASME Boiler and Pressure Vessel Code, 1974 edition, subsection IWV with addenda through summer 1975. The table identifies the valves to be tested, valve code classes, and valve category per IWV-2000. Relief from the testing requirements of ASME XI is requested when they are determined to be impractical. Specific information regarding the Code requirement determined to be impractical and alternate testing programs are noted in Attachment B.2.

Leak testing of containment isolation valves shall be performed in accordance with Appendix J of 10CFR50 in lieu of ASME XI subsection IWV.

There are no testable Category D valves in North Anna Unit 1 Systems. All Category E valves shall be tested in accordance with IWV-3700.

Any inspection requirements identified as impractical during the course of the inspection period will be noted and included in the inspection program at the time of the next revision.

When one valve in a redundant safety related system is found inoperable during testing, non-redundant valves in the remaining train will not be cycled as procedures require but will be cycled after the first inoperable valve in the system is returned to service.

This valve testing program addresses all valves determined to be essential in the mitigation of the consequences of an accident. The program has been reviewed to assure that testing the valves at the intervals specified will not place the plant in an unsafe condition. Where practical, valves will be cycled at 3 month test intervals.

SYSTEM ABBREVIATION	SYSTEM NAME
BD	Steam Generator Blowdown
CC	Component Cooling
CVCS	Chemical and Volume Control System
CV	Containment Vacuum
DA	Containtment Sump Drains
DG	Primary Drains
FW	Feedwater
HV	Habitability and Ventilation
IA	Instrument Air
LM	Leakage Monitoring
MS	Main Steam
QS	Quench Spray
RC	Reactor Coolant
RH	Residual Heat Removal
RM	Radation Monitoring
RS	Recirculation Spray
SI	Safety Injection
SS	Sampling
SW	Service Water
VG	Vent Gas
WT	Steam Generator Wet Layup

SYSTEM: BD, CC VALVE	FUNCTION	ASME III CAT.	ASME XI CAT.	RELIEF REQUESTED	TEST FREQUENCY		REMARKS
					EXERCISE	LEAKAGE	
TV-BD-100 A, B, C, D, E, F	Containment Steam Generator Blowdown Isolation Valves	II	B	No	Every 3 Months	Each Refueling	NA
MOV-CC-100A MOV-CC-100B	CCW Throttling Valve of RHR Heat Exchangers	III	B	No	Every 3 Months	NA	NA
TV-CC-100A, B, C 105A, B, C	Containment Air Recirculation Coils Isolation Valves	-	A	Yes	Cold Shutdown	Each Refueling	Note 1
TV-CC-101A, B	RCP's Thermal Barrier Containment Isolation Valves	III	A	Yes	Cold Shutdown	Each Refueling	Note 2
TV-CC-102A, B C, D, E, F	RCP's, UBLO, LBLO and Stator Cooler Containment Isolation Valves	III	A	Yes	Cold Shutdown	Each Refueling	Note 2
TV-CC-103A, B	RHR HX Return Line Containment Isolation Valves	III	A	No	Every 3 Months	Each Refueling	NA
TV-CC-104A, B, C	RCP's UBLO, LBLO and Stator Cooler Containment Isolation Valves	III	A	Yes	Cold Shutdown	Each Refueling	Note 2
RV-CC-128A, B	RHR HX Relief Valve	III	C	No	Note 3	NA	Note 3

SYSTEM: CC, CVCS VALVE	FUNCTION	ASME III CAT.	ASME XI CAT.	RELIEF REQUESTED	TEST FREQUENCY		REMARKS
					EXERCISE	LEAKAGE	
1-CC-24, 47	CC Pump Discharge Check Valves	III	C	No	Every 3 Months	NA	NA
1-CC-60	Unit 1/Unit 2 Common Header Check Valve	III	C	No	Every 3 Months	NA	NA
1-CC-84, 119, 154	RCP's UBLO, LBLO and Stator Cooler Inlet Check Valves	III	AC	Yes	Each Refueling	Each Refueling	Note 4
1-CC-193, 198	RHR HX Inlet Check Valves	III	AC	Yes	Each Refueling	Each Refueling	Note 4
1-CC-546 1-CC-572 1-CC-559	Containment Recirc Air Cooler Isolation Check Valves	II	AC	Yes	Each Refueling	Each Refueling	Note 4
FCV-1160	Aux RCS Charging Control Valve	--	A	Yes	Every Refueling	Each Refueling	Note 27
FCV-1200A, B, C	Hand Control Letdown Valves	II	A	Yes	Cold Shutdown	Each Refueling	Note 9
HCV-1142	Letdown from RHR	II	A	No	Every 3 Months	Each Refueling	NA

SYSTEM: CVCS VALVE	FUNCTION	ASME III CAT.	ASME XI CAT.	RELIEF REQUESTED	TEST FREQUENCY		REMARKS
					EXERCISE	LEAKAGE	
MOV-1115B, D, C, E	Charging Pump Suction Isolation Valves	II	B	Yes	Cold Shutdown	NA	Note 5
MOV-1267A, B	2-CH-P-1A Suction Valves	II	B	Yes	Cold Shutdown	NA	Note 38
MOV-1269A, B	2-CH-P-1B Suction Valves	II	B	Yes	Cold Shutdown	NA	Note 38
MOV-1270A, B	2-CH-P-1C Suction Valves	II	B	Yes	Cold Shutdown	NA	Note 38
MOV-1275A, B, C	Charging Pump Recirculation Valves	II	B	No	Every 3 Months	NA	NA
MOV-1286A, B, C MOV-1287A, B, C	Charging Pump Discharge Valves	II	B	Yes	Cold Shutdown	NA	Note 38
MOV-1289A	Normal Charging Header Isolation Valve	II	A	Yes	Each Refueling	Each Refueling	Note 6
MOV-1289B	Normal Charging Header Isolation Valve	II	B	Yes	Each Refueling	NA	Note 6

SYSTEM: CVCS VALVE	FUNCTION	ASME III CAT.	ASME XI CAT.	RELIEF REQUESTED	TEST FREQUENCY		REMARKS
					EXERCISE	LEAKAGE	
MOV-1350	Emergency Boration Valve	II	B	Yes	Cold Shutdown	NA	Note 7
MOV-1373	Charging Pump Recirculation Header Isolation Valve	II	B	Yes	Each Refueling	NA	Note 24
MOV-1380 MOV-1381	Reactor Coolant Pump Seal Wtr. Return Containment Isolation Valves	II	A	Yes	Each Refueling	Each Refueling	Note 8
RV-1203	Letdown Header Relief Valve	II	AC	No	Note 3	Each Refueling	Note 3
RV-1209	Letdown Header Relief Valve	II	C	No	Note 3	NA	Note 3
RV-1257	Volume Control Tank Relief Valve	II	C	No	Note 3	NA	Note 3
TV-1204	Letdown Header Containment Isolation Valve	II	A	Yes	Each Refueling	Each Refueling	Note 9
1-CH-118, 133	Boric Acid Transfer Pump Discharge Check Valve (Refer to Unit 2 ISI Program)	II	C	No	Every 3 Months	NA	NA

SYSTEM: CVCS,CV,DA VALVE	FUNCTION	ASME III CAT.	ASME XI CAT.	RELIEF REQUESTED	TEST FREQUENCY		REMARKS
					EXERCISE	LEAKAGE	
1-CH-238, 242	Emergency Boration Path Check Valve	II	C	Yes	Cold Shutdown	NA	Note 7
1-CH-254 267 279	Charging Pump Discharge Check Check Valves	II	C	No	Every 3 Months	NA	NA
1-CH-322 330 402	RCS Charging Containment Isolation Valves	II	AC	Yes	Each Refueling	Each Refueling	Note 28
1-CH-336 358 389	RCS Charging Containment Isolation Valves	II	AC	Yes	Each Refueling	Each Refueling	Note 28
TV-CV-100	Containment Vacuum Trip Valve	-	A	Yes	Each Refueling	Each Refueling	Note 29
TV-CV-150A, B C, D	Containment Vacuum Pump Suction Isolation Valves	-	A	No	Every 3 Months	Each Refueling	NA
1-CV-4	Containment Vacuum Ejector Isolation Valve	-	AE	Yes	NA	Each Refueling	Note 30
TV-DA-100A, B	Reactor Containment Sump Pump Discharge Containment Isolation Valve	-	A	No	Every 3 Months	Each Refueling	NA

SYSTEM: DA, DG, FW VALVE	FUNCTION	ASME III CAT.	ASME XI CAT.	RELIEF REQUESTED	TEST FREQUENCY		REMARKS
					EXERCISE	LEAKAGE	
TV-DA-103A	Post Accident Sample System Return Line Isolation Valve	-	A	No	Every 3 Months	Each Refueling	NA
TV-DA-103B	Post Accident Sample System Return Line Trip Valve	-	B	No	Every 3 Months	NA	NA
1-DA-39, 41	Primary Drain Transfer Line Isolation Valve	II	AE	Yes	NA	Each Refueling	Note 30
1-DA-65	Post Accident Sample System Return Line Check Valve	-	A,C	Yes	Each Refueling	Each Refueling	Note 28
TV-DG-100A, B	Primary Drains Transfer Pump Containment Isolation Trip Valves	-	A	No	Every 3 Months	Each Refueling	NA
HCV-FW-100C	Auxiliary Feedwater Pump Admission to Valve to Steam Generator	III	B	Yes	Cold Shutdown	NA	Note 10
MOV-FW-100B, D	Auxiliary Feedwater Pump Admission Valves to Steam Generators	III	B	Yes	Cold Shutdown	NA	Note 10
PCV-FW-159A, B	AFW Control Valve	III	B	Yes	Every 3 Months	NA	Note 31

SYSTEM: FW, HV, IA VALVE	FUNCTION	ASME III CAT.	ASME XI CAT.	RELIEF REQUESTED	TEST FREQUENCY		REMARKS
					EXERCISE	LEAKAGE	
RV-FW-100	Turbine Auxiliary Feedwater Pump Discharge Relief Valve	III	C	No	Note 3	NA	Note 3
1-FW-47, 79, 111	Main Feedwater Check Valve at Penetration	II	C	No	Each Refueling	NA	Note 11
1-FW-68, 100, 132	Auxiliary Feedwater Header Check Valves at Main Feedwater Header	II	C	Yes	Every 3 Months	NA	Note 12
1-FW-148, 150, 165, 167, 183, 185	Auxiliary Feedwater Pumps Discharge and Recirculation Check Valves	III	C	Yes	Every 3 Months	NA	Note 12
1-FW-93, 127, 279	Auxiliary Feedwater Header Check Valves	III	C	Yes	Every 3 Months	NA	Note 12
MOV-HV-100A, B, C MOV-HV-101, 102	Containment Purge and Exhaust Isolation Valves	-	A	Yes	Cold Shutdown	Each Refueling	Note 17
TV-IA-101A, B	Containment Instrument Air Supply	II	A	No	Every 3 Months	Each Refueling	NA
TV-IA-102A	Containment Instrument Air Return	II	A	No	Every 3 Months	Each Refueling	NA

SYSTEM: IA, LM, MS VALVE	FUNCTION	ASME III CAT.	ASME XI CAT.	RELIEF REQUESTED	TEST FREQUENCY		REMARKS
					EXERCISE	LEAKAGE	
TV-IA-102B	Containment Instrument Air Return	II	B	No	Every 3 Months	NA	NA
1-IA-55	Containment Instrument Air Return	II	AC	Yes	Each Refueling	Each Refueling	Note 23
1-IA-149	Air Radiation Monitor Return	-	AC	Yes	Each Refueling	Each Refueling	Note 28
TV-LM-100A, B, C, D, E, F, G, H	Leakage Monitoring Containment Isolation Valves	-	A	No	Every 3 Months	Each Refueling	NA
TV-LM-101A, B, C, D	Leakage Monitoring Reference Containment Isolation Valves	-	A	No	Every 3 Months	Each Refueling	NA
NRV-MS-101A, 101B, 101C	Main Steam NRV's	III	C	Yes	Cold Shutdown	NA	Note 13
SV-MS-101A,B,C, 102A,B,C, 103A,B,C, 104A,B,C,105A,B,C	Main Steam Safety Valves	II	C	No	Note 3	NA	Note 3
Terry Turbine Trip Valve	Turbine Driven Auxiliary Feed Pump Trip Valve	-	B	Yes	Cold Shutdown	NA	Note 33

SYSTEM: MS,QS VALVE	FUNCTION	ASME III CAT.	ASME XI CAT.	RELIEF REQUESTED	TEST FREQUENCY		REMARKS
					EXERCISE	LEAKAGE	
TV-MS-101A,B,C	Main Steam Trip Isolation Valves	II	B	Yes	Cold Shutdown	NA	Note 13
TV-MS-111A, B	Main Steam To Auxiliary Feedwater Turbine Pump	III	B	No	Every 3 Months	NA	NA
1-MS-19, 58, 96	Main Steam Check Valves		C	Yes	Cold Shutdown	NA	Note 34
1-MS-119, 122, 124	Main Steam to Auxiliary Feedwater Turbine Pump Check Valves	III	C	Yes	Every 3 Months	NA	Note 32
TV-1519A	PG Water to Pressurizer Relief Tank Containment Isolation Valve	-	-	No	Every 3 Months	Each Refueling	NA
MOV-QS-100A, B	Refueling Water Storage Tank Supply Isolation to Quench Spray Pumps	II	B	No	Every 3 Months	NA	NA
MOV-QS-101A, B	Quench Spray Pump Discharge and Containment Isolation	II	A	No	Every 3 Months	Each Refueling	NA
MOV-QS-102A, B	Chemical Addition Tank Disch. Isolation Valve	II	B	No	Every 3 Months	NA	NA

SYSTEM: QS,RM,RP,RS VALVE	FUNCTION	ASME III CAT.	ASME XI CAT.	RELIEF REQUESTED	TEST FREQUENCY		REMARKS
					EXERCISE	LEAKAGE	
1-QS-11, 19	Quench Spray Pump Containment Isolation Check Valve	II	AC	Yes	Each Refueling	Each Refueling	Note 14
TV-RM-100A, B, C, C	Containment Radiation Monitoring Isolation Trip Valves	-	A	No	Every Months	Each Refueling	NA
1-RP-50, 84	Refueling Purification Inlet and Outlet Manual Valves (Refer to Unit 2 ISI Program)	-	A/E	Yes	NA	Each Refueling	Note 30
MOV-RS-100A, B 101A, B	Casing Cooling Pump Discharge Valves	II	A	No	Every 3 Months	Each Refueling	NA
MOV-RS-155A, B	Outside Recirculation Spray Pump Suction Valves	II	B	Yes	Cold Shutdown	NA	Note 10
MOV-RS-156A, B	Outside Recirculation Spray Pump Discharge Valves	II	B	Yes	Cold Shutdown	NA	Note 10
1-RS-18, 27	Outside Recirculation Spray Pump Dischrage and Containment Isolation Check Valves	II	AC	Yes	Each Refueling	Each Refueling	Note 14
1-RS-123, 138	Casing Cooling Pump Discharge Check Valves to Outside Recirculation Pumps	II	C	Yes	Each Refueling	NA	Note 15

SYSTEM: RC VALVE	FUNCTION	ASME III CAT.	ASME XI CAT.	RELIEF REQUESTED	TEST FREQUENCY		REMARKS
					EXERCISE	LEAKAGE	
1-RC-149	Per Relief Valve PG Water Supply, Containment Isolation Check Valve	I	AC	Yes	Each Refueling	Each Refueling	Note 28
SV-1551A, B, C	Pressurizer Safety Valves	I	C	No	Note 3	NA	Note 3
1-RC-176, 178	Containment Isolation Valves for Pressurizer Pressure Dead Weight Tester	I	AE	Yes	NA	Each Refueling	Note 30
HCV-1758	RHR HX Flow Control Valve	II	B	No	Every 3 Months	NA	NA
FCV-1605	RHR HX Bypass Control Valve	II	B	No	Every 3 Months	NA	NA
MOV-1700, 1701 1720A, B	RHR System Isolation Valves	I	A	Yes	Cold Shutdown	Each Refueling	Note 16
RV-1721A, B	RHR System Relief Valves	II	C	No	Note 3	NA	Note 3
1-PH-7, 15	RHR Pump Discharge Check Valves	II	C	No	Cold Shutdown	NA	Note 16

SYSTEM: SI, RH VALVE	FUNCTION	ASME III CAT.	ASME XI CAT.	RELIEF REQUESTED	TEST FREQUENCY		REMARKS
					EXERCISE	LEAKAGE	
1-RH-36, 37	RHR Containment Isolation Valves	II	AE	Yes	NA	Each Refueling	Note 30
HCV-1936	Accumulator Tank Purge Control Valve	II	A	Yes	Cold Shutdown	Each Refueling	Note 36
MOV-1860A, B	Low Head Safety Injection Pump Suction From Containment Sump	II	B	No	Every 3 Months	NA	NA
MOV-1862A, B	Low Head Safety Injection Pump Suction From the Refueling Water Storage Tank	II	B	No	Every 3 Months	NA	NA
MOV-1863A	Low Head Safety Injection to Charging Pump Suction	II	B	No	Every 3 Months	NA	NA
MOV-1863B	Low Head Safety Injection to Charging Pump Suction	II	B	Yes	Cold Shutdown	NA	Note 5
MOV-1864A, B	LHSI Pump Cold Leg Discharge Stop Valves	II	B	Yes	Cold Shutdown	NA	Note 10
MOV-1865A, B, C	Accumulator Outlet Valves	II	B	Yes	Cold Shutdown	NA	Note 19

SYSTEM: SI VALVE	FUNCTION	ASME III CAT.	ASME XI CAT.	RELIEF REQUESTED	TEST FREQUENCY		REMARKS
					EXERCISE	LEAKAGE	
MOV-1867A, B	Boron Injection Tank Inlet Valves	II	B	No	Every 3 Months	NA	NA
MOV-1867C, D	Boron Injection Tank Outlet Valves	II	A	Yes	Each Refueling	Each Refueling	Note 39
MOV-1836 1869A, B	High Head Safety Injection Off Charging Header	II	AE	Yes	Each Refueling	Each Refueling	Note 18
MOV-1885A, B, C, D	LHSI Pump Recirc. Stop Valves	II	B	No	Every 3 Months	NA	NA
MOV-1890A, B	Low Head Safety Injection to Hot Legs	II	AE	Yes	Each Refueling	Each Refueling	Note 20
MOV-1890C, D	Low Head Safety Injection to Cold Legs	II	A	Yes	Each Refueling	Each Refueling	Note 20
RV-1845A, B, C	Low Head Safety Injection Pump Discharge Relief Valves	II	C	No	Note 3	NA	Note 3
RV-1857B	Boron Injection Tank Relief Valve	II	C	No	Note 3	NA	Note 3

SYSTEM: SI VALVE	FUNCTION	ASME III CAT.	ASME XI CAT.	RELIEF REQUESTED	TEST FREQUENCY		REMARKS
					EXERCISE	LEAKAGE	
TV-1842 1859	Accumulator Test Line Containment Isolation Trip Valves	-	A	No	Every 3 Months	Each Refueling	NA
TV-SI-100	Accumulator Nitrogen Purge Containment Isolation Trip Valve	-	A	No	Every 3 Months	Each Refueling	NA
TV-SI-101	Accumulator to Waste Gas Sys. Containment Isolation Valves	-	A	No	Every 3 Months	Each Refueling	NA
TV-1884A, B, C	Boron Injection Tank Recirc. Trip Valves	II	B	No	Every 3 Months	NA	NA
1-SI-1, 16	Low Head Safety Injection Pump Check Valves From Containment Sump	II	C	Yes	Each Refueling	NA	Note 21
1-SI-9, 26	Low Head Safety Injection Pump Discharge Check Valves	II	C	Yes	Each Refueling	NA	Note 35
1-SI-47	Refueling Water Storage Tank To Charging Pump Suction Check Valve	II	C	Yes	Cold Shutdown	NA	Note 7
1-SI-18	Low Head Safety Injection Pump Check Valve From Refueling Water Storage Tank	II	C	Yes	Each Refueling	NA	Note 35

SYSTEM: SI VALVE	FUNCTION	ASME III CAT.	ASME XI CAT.	RELIEF REQUESTED	TEST FREQUENCY		REMARKS
					EXERCISE	LEAKAGE	
1-SI-4, 21	Low Head Safety Injection Pump Seal Water Supply Check Valves	II	C	No	Every 3 Months	NA	NA
1-SI-12, 29	Low Head Safety Injection Pump Recirculation Check Valves	II	C	No	Every 3 Months	NA	NA
1-SI-58	Accumulator Make Up Manual Isolation Valve	II	AE	Yes	NA	Each Refueling	Note 30
1-SI-66	Boron Injection Tank Recirculation Check Valve	II	C	No	Every 3 Months	NA	NA
1-SI-79, 90, 185, 201	High Head Safety Injection to Cold Legs Containment Isolation Check Valves	II	AC	Yes	Each Refueling	Each Refueling	Note 22
1-SI-190,192,194	High Head Safety Injection to Cold Legs	I	C	Yes	Each Refueling	NA	Note 22
1-SI-195, 197, 199	Low Head Safety Injection to Cold Legs Containment Isolation Check Valves	I	AC	Yes	Each Refueling	Each Refueling	Note 23
1-SI-83, 86, 89	Cold Leg Safety Injection Admission Check Valves	I	AC	Yes	Each Refueling	Each Refueling	Note 22

SYSTEM: SI, SS VALVE	FUNCTION	ASME III CAT.	ASME XI CAT.	RELIEF REQUESTED	TEST FREQUENCY		REMARKS
					EXERCISE	LEAKAGE	
1-SI-95, 99, 103	Hot Leg Safety Injection Admission Check Valves	I	C	Yes	Each Refueling	NA	Note 22
1-SI-209, 211, 213	Low Head Safety Injection to Hot Legs	I	C	Yes	Each Refueling	NA	Note 23
1-SI-206, 207	Low Head Safety Injection to Hot Legs Containment Isolation Check Valves	II	AC	Yes	Each Refueling	Each Refueling	Note 23
1-SI-106, 110	Accumulator Makeup and Nitrogen Supply Check Valves	II	AC	Yes	Each Refueling	Each Refueling	Note 28
1-SI-125, 127, 142, 144, 159, 161	Accumulator Discharge Check Valves	I	AC	Yes	Each Refueling	Each Refueling	Note 25
1-SI-305, 306	Low Head Safety Injection Suction Control Valves	II	B	Yes	Each Refueling	NA	Note 40
RV-1858A, B, C	Accumulator Relief Valves	I	C	No	Note 3	NA	Note 3
TV-SS-100A, B	Pressurizer Liquid Space Sample Line Containment Isolation Valves	I	A	No	Every 3 Months	Each Refueling	NA

SYSTEM: SS, SW VALVE	FUNCTION	ASME III CAT.	ASME XI CAT.	RELIEF REQUESTED	TEST FREQUENCY		REMARKS
					EXERCISE	LEAKAGE	
TV-SS-101A, B	Pressurizer Vapor Space Sample Line Containment Isolation Valves	I	A	No	Every 3 Months	Each Refueling	NA
TV-SS-102A, B	Primary Coolant Cold Leg Sample Line Containment Isolation Valves	I	A	No	Every 3 Months	Each Refueling	NA
TV-SS-103B TV-SS-107A, B	RHR System Sample Line Containment Isolation Valves	II	A	No	Every 3 Months	Each Refueling	NA
TV-SS-104A, B	Pressurizer Relief Tank Gas Space Sample Line Containment Isolation Valve	-	A	No	Every 3 Months	Each Refueling	NA
TV-SS-106A, B	Primary Coolant Hot Leg Sample Line Containment Isolation Valves	I	A	No	Every 3 Months	Each Refueling	NA
TV-SS-112A, B	Steam Generator Sample Line Containment Isolation Valves	II	A	No	Every 3 Months	Each Refueling	NA
MOV-SW-101A, B, C, D MOV-SW-105A,B,C,D	Recirculation Spray HX Isolation Valves	III	B	Yes	Each Refueling	NA	Note 26
MOV-SW-100A, B	S.W. to Spray Array Stop Valves (Refer to Unit 2 ISI Program)	-	B	No	Every 3 Months	NA	NA

SYSTEM: SW VALVE	FUNCTION	ASME III CAT.	ASME XI CAT.	RELIEF REQUESTED	TEST FREQUENCY		REMARKS
					EXERCISE	LEAKAGE	
MOV-SW-115A, B MOV-SW-117	Auxiliary SW Pump Discharge Stops Valves	II'	B	No	Every 3 Months	NA	NA
MOV-SW-102A, B MOV-SW-106A, B	Recirc. Spray HX Cross-Connect Valves (Refer to Unit 2 ISI Program)	-	B	Yes	Cold Shutdown	NA	Note 10
MOV-SW-103A,B,C,D MOV-SW-104A,B,C,D	Recirculation Spray HX Containment Isolation Valves	III	A	Yes	Cold Shutdown	Each Refueling	Note 10
MOV-SW-108A, B	Component Cooling HX Isolation Valves	III	B	No	Every 3 Months	NA	NA
RV-SW-100A,B,C,D	Recirculation Spray HX Relief Valves	III	C	No	Note 3	NA	Note 3
RV-SW-101A, B	Component Cooling HX Relief Valves	III	C	No	Note 3	NA	Note 3
1-SW-22	Auxiliary Service Water Pump Discharge Check Valve	III	C	No	Every 3 Months	NA	NA
1-SW-114, 116	Service Water to Recirc. Spray HX Check Valves	III	C	Yes	Each Refueling	NA	Note 26

SYSTEM: SW, VG, WT VALVE	FUNCTION	ASME III CAT.	ASME XI CAT.	RELIEF REQUESTED	TEST FREQUENCY		REMARKS
					EXERCISE	LEAKAGE	
1-SW-120, 130, 140, 150	Recirc. Spray HX Inlet Containment Isolation Check Valves	III	AC	Yes	Each Refueling	Each Refueling	Note 26
1-SW-309, 311	Service Water to Spray Array Check Valves (Refer to Unit 2 ISI Program)	-	C	No	Every 3 Months	NA	NA
TV-VG-100A, B	Vent Gas Containment Isolation Trip Valve	-	A	No	Every 3 Months	Each Refueling	NA
1-WT-465, 488, 511, 468, 491, 514	Steam Generator Wet Layup	-	AE	Yes	Each Refueling	Each Refueling	Note 37
RV-EG-103A, B RV-EG-105A, B RV-EG-104A, B RV-EG-106A, B	Pump (1-EG-P-1HA & B) Relief Valves, 1-EG-P-1JA, B, 2-EG-P-2HA, B, 2-EG-P-2JA, B	-	C	No	Note 3	NA	Note 3

NOTES

1. Closing of these valves during power operations would seriously impair the heat removal capability of the containment ventilation system. These valves are vital for continued power operations. As an alternative, they will be cycled each cold shutdown.

2. Component cooling water flow to the reactor coolant pumps is required at all times the pumps are in operation. Failure of one of these valves in a closed position during cycling would result in a loss of the cooling flow to the pump. Power operated valves in these systems will be cycled at each cold shutdown and refueling when the reactor coolant pumps are secured. Verification of check valves operation to the open position will be performed each time coolant flow is reestablished after each refueling.

3. The frequency and quantity of relief valves subject to test at each refueling outage will be in accordance with IWV-3500. RV-1203 will be exercised in accordance with the frequency in IWV-3500.

4. These check valves remain in a normally open position with component cooling flow. The only method for verifying these valves closed is during the refueling outage leak rate test.

5. Exercising this valve during power operation would require the charging pump suctions to be aligned with the refueling water storage tank. This would cause a sudden increase in RCS boron inventory. It will be exercised during cold shutdown when the RCS is borated to shutdown conditions.

6. Failure of these valves in a closed position during exercising would cause a loss of charging flow and could result in an inability to maintain reactor coolant inventory. These valves will be exercised when the charging system is not in use during cold shutdown and refueling outages.

7. Exercising this valve during operation could cause a sudden increase in RCS boron inventory. It shall be exercised at cold shutdown when the RCS is already borated to shutdown conditions.

8. To protect pump seals, flow to them is required at all times during power operation. Exercising of these valves will be performed during cold shutdown and refueling outages when the risk of equipment damage is eliminated by securing the pumps.

9. These valves cannot be exercised when the charging and letdown systems are in operation due to the high risk of overpressurization of the RCS. They will be exercised at cold shutdown and refueling outages.

10. These valves are in the position required to fulfill their function. Exercising this valve will not improve its operational readiness. Exercising this valve may actually decrease system reliability if the valve fails in a nonconservative position. As an alternate, it will be exercised at cold shutdown and refueling outages.

11. Closure of mainstream or feedwater valves during normal operations would result in turbine and reactor trips. These valves are closed during the process of shutdown and reopened during plant start-up. Operation of these valves will be verified when entering or leaving cold shutdown.

12. 1-FW-100, 1-FW-148, 1-FW-150, and 1-FW-93 cannot be exercised during cold shutdown, because steam is not available to operate the turbine driven auxiliary feedwater pump.

13. Closure of these valves during power operation will result in a Reactor Trip. As an alternative, they will be cycled each cold shutdown, but not more than once every 92 days.

14. It is not possible to verify that these normally closed check valves open without initiation of spray through the upper containment header or by visual obesrvation inside the containment. These valves shall be exercised during refueling outages as per the Technical Specification requirements for weight loaded check valves.

15. It is impractical to exercise this check valve during power operation per IWV-3520. Opening the test valve would break containment vacuum. The check valves shall be exercised at refueling outages.

16. Operation of RHR System valves during power operations would subject the RHR System to full RCS pressure. Valves in the RHR System will be exercised each time the RHR System is put into operation during the cooldown and shutdown of the reactor coolant system. These valves will be leak tested in accordance with Technical Specifications.

17. Opening their valves during power operation would break containment vacuum and violate containment integrity. Their valves shall be exercised each cold shutdown, but not more than once every 92 days.

18. These noramally closed valves are directly attached to the charging pump discharge header. During operation or cold shutdown the charging system must be in operation. If these valves were opened during these periods, uncontrolled flow the the reactor coolant system may cause overpressurization. As an alternate, these valves shall be cycled at refueling outages when the charging pumps can be secured.

19. These normally opened valves are in the required position for an accident and are required by Technical Specifications to remain open during power operations. They are closed in the normal process of shutdown to cold conditions and reopened during subsequent heat up.

20. These valves are in their required safety position with power to their operators removed during power operations. To exercise these valves would require leakage testing as per T.S. 4.4.6.2.2. The leakage testing would disturb the downstream check valves which would require a containment entry to test. As an alternate, these valves will be exercised each refueling.

21. These normally closed check valves cannot be exercised during plant operation or cold shutdown. No connections exist downstream of the check valve to input flow or pressure which could promote movement of the disc away from the seat. A test connection is required between the isolation valve and the check valves but cannot be installed. The isolation valve and check valve are butt welded together with no spool piece between them to provide a place for the test connection. As an alternate test, the check valve bonnet shall be removed at refueling outages and the disc shall be exercised mechanically to verify free movement without binding.

22. The only way to verify that these normally closed check valves open is by initiating flow, using the charging pumps, into the reactor coolant system hot and cold legs. If charging flow was directed to the reactor coolant system in this manner, it could cause overpressurization during cold shutdown or provide a loss in charging flow control during operation. As an alternate, these check valves shall be exercised open during refueling outages.

23. The only way to verify that these normally closed check valves can open is by initiating flow, using the low head safety injection pumps, into the reactor coolant system hot and cold legs. During operation or cold shutdown, reactor coolant system pressure will be higher than the low head pump discharge pressure precluding flow into the vessel. As an alternate, these valves shall be exercised open at refueling outages.

24. This valve cannot be exercised without possible damage to the charging pumps. It will be exercised with the charging pumps secured at cold shutdown and refueling outages.

25. To exercise this normally closed check valve would require the simulation of a loss of coolant accident, i.e. low RCS pressure. The valve shall be verified operable by initiating accumulator injection to the RCS with the vessel head removed during each refueling outage. 1-SI-144 and 1-SI-161 will be exercised when the RHR System is in service during cold shutdown.

26. A commitment has been made to the ACRS prohibiting the introduction of service water into the Recirc. Spray Heat Exchangers without subsequent filling of the heat exchanger with primary grade water. Exercising this valve will be accomplished at refueling outages when service water flow will be sent through the heat exchangers and PG water may be used to fill them.

27. FCV-1160 cannot be exercised during power operation or cold shutdown. FCV-1160 is normally closed and its accident position is closed (containment isolation function).

28. These valves cannot be exercised during power operation or cold shutdown. The only method available to verify that these valves close is during the refueling leak rate test.

29. TV-CV-100 is normally closed and its accident position is closed. The valve will be exercised during refueling outages when establishing containment vacuum.

30. These are manual valves and will not be exercised because they are in their accident position (closed).

31. PCV-FW-159A, B will be exercised quarterly but will not be timed. Stroke time is not important because these are modulating valves.

32. These valves will be tested during power operation. These valves cannot be tested during cold shutdown or refueling because steam is not available to run the turbine driven auxiliary feedwater pump.

33. This is the governor valve for the steam driven auxiliary feed pump. This valve is normally open and will be exercised (but not timed) every 18 months during the overspeed trip test.

34. 1-MS-19, 58 and 96 are located in a high temperature area that would be hazardous to enter during power operation. These valves will be exercised closed during cold shutdown and refueling outages.

35. These valves cannot be exercised during power operation because the discharge pressure of the low head S.I. pumps cannot overcome RCS pressure. These valves will be exercised during refueling outages and the reactor vessel head is removed to provide enough volume to accomodate the large flow rate. 1-SI-18 will be partially stroked during the monthly pump test.

36. HCV-1936 is in its safety position and will be exercised during cold shutdown and refueling outages.

37. These are manual valves and they are in their intended safety position (closed). They will be exercised during refueling when the wet layup system is placed in operation.

38. These valves are in their intended safety position (open). A failure in the closed position may damage a charging pump in the event of an auto start. These valves will be exercised at cold shutdown when the charging pumps are not required to be operable.

39. To exercise these valves would require leakage testing as per T.S. 4.4.6.2.2. The leakage testing distrubs 1-SI-79 downstream, which requires a containment entry to test. These valves will be exercised each refueling.

40. These normally locked open manual control valves cannot be exercised during plant operation or cold shutdown to assure plant integrity. These valves will be exercised each refueling.