

ATTACHMENT 2
CHANGES TO SURRY UNIT 2
THIRD INTERVAL
INSERVICE TESTING PROGRAM
REVISION 0
CHANGE 1

ATTACHMENT

SUMMARY OF CHANGES TO THE SURRY UNIT 2 IST PROGRAM

The following is a section by section summary of changes for Revision 0, Change 1 of the Surry Power Station Unit 2 Inservice Testing (IST) Program for the third IST interval. Revision 0 for the third IST interval was submitted on October 19, 1993 (Serial No. 93-658).

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

3.0 PUMP INSERVICE TEST PROGRAM DESCRIPTION

3.5 PUMP INSERVICE TEST TABLES

Unit 2

Pump

Number

Program Change

2-CC-P-2A

Relief Request P-19 was added for the suction

2-CC-P-2B

pressure instrumentation.

3.6 PUMP TEST PROGRAM RELIEF REQUESTS

Unit 2

Relief

Request

Program Change

P-19

This relief request is being added to the IST Program for the component cooling water pumps 2-CC-P-2A and B. Recently installed inlet pressure gauges have a full scale range of 0 to 3.5 psig. Readings from these inlet pressure gauges over the past year indicate that the dynamic pressures fall within the bottom third of full scale. However, the difference in the error between the 0 to 3.5 psig gauges and gauges that would meet the ASME Section XI three times full-scale rule are so small that the 0 to 3.5 psig gauges can be considered to be equivalent in terms of accuracy for determining differential pressure. Therefore, inlet pressure will be measured with gauges that have a full-scale of 0 to 3.5 psig.

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SUMMARY OF CHANGES TO THE
SURRY UNIT 2
IST PROGRAM

3.7 ALTERNATIVE TESTING FOR NON-CODE PUMPS

Unit 2
Non-Code
Alternative
Test

Program Change

PNC-1

Reference to the frequency response range of the vibration transducers was added. The minimum pump shaft rotational speed for the diesel fuel oil pumps is 690 rpm. To meet the one-third shaft speed requirement, the low end of the frequency response range would have to be 3.8 hz. The transducers used for testing the diesel fuel oil transfer pumps have a low end frequency response of 10 hz. These transducers are capable of detecting vibrations at frequencies of at least one times the rotational speed of the pump, which is adequate for detecting degradation in positive displacement pumps.

A note indicating that OM Part 6 does not require the measurement of suction pressure for positive displacement pumps was added.

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SUMMARY OF CHANGES TO THE SURRY UNIT 2 IST PROGRAM

4.0 VALVE INSERVICE TEST PROGRAM DESCRIPTION

4.4 VALVE INSERVICE TEST TABLES

Unit 2

Valve

Number

Comment/Program Change

2-MS-NRV-201A
2-MS-NRV-201B
2-MS-NRV-201C
2-MS-TV-209
2-MS-TV-210

Program Change: The ASME Code Classification was changed from Class 2 to non-Code Class.

2-CH-LCV-2115B
2-CH-LCV-2115D
2-SI-25
2-SI-MOV-2885A
2-SI-MOV-2885B
2-SI-MOV-2885C
2-SI-MOV-2885D

As for Unit 1, these isolation valves prevent leakage of contaminated containment sump water to the refueling water storage tank from the discharge side of the low head safety injection pumps during recirculation mode transfer phase of safety injection. Relief Request V-52 is being added to the IST program and states that in addition to replacement and repair as corrective actions, an evaluation can be performed. Relief Request V-52 was sent to the NRC by letter dated April 26, 1994 (serial No. 94-223) and is being included in the IST Program through Change 1 to Revision 0.

Program Change: Relief Request V-52 is being added for the leak test.

2-SI-25

The test method to verify valve closure was changed from disassembly and inspection to back seat testing every reactor refueling. Refer to Reactor Refueling Justification RRV-5.

Program Change: Reactor Refueling Justification RRV-5 was revised.

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2-SI-107 These accumulator discharge check valves will
2-SI-109 be tested as pairs to the closed position.
2-SI-128 Refer to Relief Request V-26.
2-SI-130

2-SI-145 Program Change: Relief Request V-26 was
2-SI-147 revised to indicate that valves 2-SI-107 and
109, and 2-SI-128 and 130, and 2-SI-145 and
147 will be tested as pairs of valves in
series to the closed position. Also, Cold
Shutdown Justification CSV-29 is no longer
necessary for valves 2-SI-109, 130 and 147,
and was deleted from the program.

2-SW-130 The internal parts were removed from this
check valve.

Program Change: The valve was removed from
the IST program.

4.5 VALVE TEST PROGRAM RELIEF REQUESTS

Unit 2

Relief

Request Program Change

V-26 This relief request was revised to indicate that
the accumulator discharge check valves will be
tested as pairs of valves to the closed position.
Valves 2-SI-107 and 109, 2-SI-128 and 130, and 2-
SI-145 and 147 perform as pairs of valves in
series to isolate the accumulators from the
reactor coolant system. The downstream valves, 1-
SI-109, 130 and 147 were previously chosen as the
isolation valves and were subject to back seat
tests while the other valves were considered as
backup valves and were not subject to back seat
tests. The other set of valves cannot be
individually back seated with the current piping
configuration. Testing experience has shown that
a severe water hammer can be produced by
attempting to individually test the downstream
isolation valve.

Treating the check valves as a pair of isolation
valves would eliminate the possibility of creating

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SUMMARY OF CHANGES TO THE SURRY UNIT 2 IST PROGRAM

a water hammer event through testing. The accumulators have level indicators and high/low tank level alarms in the control room. Therefore, during normal operation the accumulator level is constantly monitored to ensure that one out of two check valves is seated properly to prevent in leakage from the reactor coolant system.

V-50 Valve 2-SW-130 was removed from the relief request.

V-52 This relief request is being added to the IST program for the RWST isolation valves. The RWST isolation valves prevent leakage of contaminated containment sump water to the refueling water storage tank from the discharge side of the low head safety injection pumps during the recirculation mode transfer phase of safety injection. Relief Request V-52 states that in addition to replacement and repair as corrective actions, an evaluation can be performed. Relief Request V-52 was sent to the NRC by letter dated April 26, 1994 (Serial No. 94-223) and is being included in the IST Program through Change 1 to Revision 0.

4.6 VALVE TEST PROGRAM COLD SHUTDOWN JUSTIFICATIONS

Unit 2
Cold
Shutdown
Just

Program Change

CSV-29 This cold shutdown justification is being deleted from the IST program. The accumulator discharge check valves will be tested as pairs to the closed position per Relief Request V-26.

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SURRY UNIT 2
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4.7 VALVE TEST PROGRAM REACTOR REFUELING JUSTIFICATIONS

Units 2
Reactor
Refuel
Just

Program Change

RRV-3 Justification was added for not performing a partial stroke test on the accumulator discharge check valves during cold shutdowns.

RRV-5 Reactor Refueling Justification RRV-5 was revised to indicate that 1-SI-25 (Unit 1) and 2-SI-25 (Unit 2) will be back seat/leak tested to verify closure every reactor refueling instead of disassembled and inspected.

SURRY POWER STATION
UNIT 2
REPLACEMENT PAGES

PUMP INSERVICE TEST TABLE

Pump Ident.	ASME Class	System Resist	Inlet Press	Disch Press	Diff Press	Flow Rate	Vibration	Pump Speed	Lubrication Level/Pressure	Relief Request
1-CC-P-1C	3	VAR	Q	Q	Q	Q	Q	NA	Q	1.16
1-CC-P-1D	3	VAR	Q	Q	Q	Q	Q	NA	Q	1.16
1-CH-P-2C	2	VAR	Q	Q	Q	Q	Q	NA	NA	1.18
1-CH-P-2D	2	VAR	Q	Q	Q	Q	Q	NA	NA	1.18
2-CC-P-2A	3	VAR	Q	Q	Q	Q	Q	NA	NA	1.19
2-CC-P-2B	3	VAR	Q	Q	Q	Q	Q	NA	NA	1.19
2-SW-P-10A	3	VAR	Q	Q	Q	Q	Q	NA	NA	1
2-SW-P-10B	3	VAR	Q	Q	Q	Q	Q	NA	NA	1
1-EE-P-1B	NC	FIX	NA	Q	NA	Q	Q	NA	NA	1.PNC-1
1-EE-P-1E	NC	FIX	NA	Q	NA	Q	Q	NA	NA	1.PNC-1

Note: PNC-1 is not a request for relief but a description of alternative testing for non-Code pumps. Refer to Section 3.7.

RELIEF REQUEST P-19

System : Component Cooling Water

Pump(s) : 2-CC-P-2A
2-CC-P-2B

Class : 3

OM Part 6 Code Requirements For Which Relief Is Requested

The full-scale range of each instrument shall be three times the reference value or less (OM Part 6, Paragraph 4.6.1.2).

Basis For Request

Recently installed inlet pressure gauges have a full scale range of 0 to 3.5 psig. Readings from these inlet pressure gauges over the past year indicate that the dynamic pressures fall within the bottom third of full scale. However, the difference in the error between the 0 to 3.5 psig gauges and gauges that would meet the three times full-scale rule are so small that the 0 to 3.5 psig gauges can be considered to be equivalent in terms of accuracy for determining differential pressure.

For example, the lowest recorded inlet pressure for pump 2-CC-P-2A is 0.5 psig. A gauge that meets the three times full-scale rule would have a full scale of 1.5 psig or less. A 2% accuracy for the 1.5 psig gauge translates to an error of 0.03 psig. A 2% accuracy for the 3.5 psig gauge translates to an error of 0.07 psig. The difference in error of 0.04 psig is insignificant when determining the differential pressures for these pumps which range between 50 and 60 psig. Therefore, the two gauges can be considered to be equivalent in terms of accuracy for determining differential pressure.

Alternate Testing Proposed

Inlet pressure will be measured with gauges that have a full-scale of 0 to 3.5 psig.

NON-CODE ALTERNATIVE TESTING PNC-1

System : Fuel Oil

Pump(s): 1-EE-P-1B
1-EE-P-1E

Class : NC

OM Part 6 Code Requirements Which Cannot Be Met

Measure test quantities after the pump has been running for at least two minutes (OM Part 6, Paragraph 5.6).

The frequency response range of the vibration measuring transducers and their readout system shall be from one-third minimum pump shaft rotational speed to at least 1000 HZ (OM Part 6, Paragraph 4.6.1.6).

Basis For Alternate Testing

The pump operating time is limited due to operational restraints. While the diesels are running, these pumps start automatically when the fuel oil level in the day tank reaches the low level switch, and stop when the level reaches the high level switch. The pump run time can vary depending upon the diesel load and the resulting fuel consumption rate. If the pumps are allowed to run for two minutes prior to measuring the test quantities and the fuel consumption rate is low, not enough time is available to gather all of the required Section XI test data.

The minimum pump shaft rotational speed for these pumps is 690 rpm. To meet the one-third shaft speed requirement, the low end of the frequency response range would have to be 3.8 hz. The transducers used for testing the diesel fuel oil transfer pumps have a low end frequency response of 10 hz. These transducers are capable of detecting vibrations at frequencies of at least one times the rotational speed of the pump, which is adequate for detecting degradation in positive displacement pumps.

Alternate Testing

The measurement of Section XI quantities will begin when the pump automatically starts on a low tank level signal.

The transducers used for testing the diesel fuel oil transfer pumps have a low end frequency response of 10 hz versus the 3.8 hz required by the Code for a pump running at 690 rpm.

NON-CODE ALTERNATIVE TESTING PNC-1 (Cont.)

Note: The diesel oil transfer pumps are positive displacement pumps. According to OM Part 6, Table 2, only discharge pressure need be measured for positive displacement pumps.

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VIRGINIA POWER COMPANY
SURRY UNIT 2
THIRD INSERVICE TESTING INTERVAL
INSERVICE TESTING PROGRAM - VALVE TABLE

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VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	ISO TIV CAT	VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS CSV-	RR RRV-	ALT VCN-
"C" CHARGING PUMP DISCHARGE RECIRC LINE CHECK VALVE														
2-CH-276	11548-CBM-0885	2	OF 2	D-4 CHECK VALVE	3.000	2	C		CV	C				1
"C" CHARGING PUMP DISCHARGE CHECK VALVE														
2-CH-309	11548-CBM-088C	1	OF 2	D-4 CHECK VALVE	3.000	2	AC	CIV	CV LT	C C				6
MAIN CHARGING SUPPLY HEADER, INSIDE CONTAINMENT ISOLATION CHECK VALVE														
2-CH-FCV-2113A	11548-CBM-088B	1	OF 2	C-3 AO GLOBE	1.000	2	B		EV FS ST VP	O O O OC				
MANUAL EMERGENCY BORATION PATH FLOW CONTROL VALVE														
2-CH-FCV-2114A	11548-CBM-088B	1	OF 2	D-4 AO GLOBE	2.000	2	B		EV FS ST VP	C C C OC				
PRIMARY GRADE WATER SUPPLY TO BORIC ACID BLENDER ISOLATION VALVE														
2-CH-FCV-2160	11548-CBM-088C	1	OF 2	B-4 AO GLOBE	2.000	1	AE	CIV	LT VP	C OC				
CHARGING FLOW CONTROL TO LOOP FILL HEADER, OUTSIDE CONTAINMENT ISOLATION VALVE														
2-CH-LCV-2115B	11548-CBM-088B	2	OF 2	B-8 NO GATE	8.000	2	A		EV LT ST VP	C O C OC	52			
CHARGING PUMP SUPPLY ISOLATION VALVE FROM REFUELING WATER STORAGE TANK														
2-CH-LCV-2115C	11548-CBM-088B	1	OF 2	C-6 NO GATE	4.000	2	B		EV ST VP	C C OC	11 11			
CHARGING PUMP SUPPLY ISOLATION FROM VOLUME CONTROL TANK														
2-CH-LCV-2115D	11548-CBM-088B	2	OF 2	C-8 NO GATE	8.000	2	A		EV LT ST VP	C O C OC	52			

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VALVE NUMBER	DRAWING NUMBER	SHEET DRWG VALVE NUMBER CORR TYPE	VALVE ASME SIZE CLA	ISO IIV VALVE CAT TYPE	TEST TYPE	TEST POS	REL CS V- CSV- RRV- VCM-	RR RRV-	ALT VCN-
2-MS-087	11548-CBM-064A	1 OF 6 C-6 MANUAL GATE	4.000 2	B	EV	C			
	MAIN STEAM LINE TO TURBINE DRIVEN AUXILIARY FEEDWATER PUMP ISOLATION VALVE								
2-MS-120	11548-CBM-064A	2 OF 6 C-6 MANUAL GATE	4.000 2	B	EV	C			
	MAIN STEAM LINE TO TURBINE DRIVEN AUXILIARY FEEDWATER PUMP ISOLATION VALVE								
2-MS-158	11548-CBM-064A	3 OF 6 C-6 MANUAL GATE	4.000 2	B	EV	C			
	MAIN STEAM LINE TO TURBINE DRIVEN AUXILIARY FEEDWATER PUMP ISOLATION VALVE								
2-MS-176	11548-CBM-064A	4 OF 6 C-7 CHECK VALVE	3.000 2	C	CV	C	42		
						O	42		
	"A" MAIN STEAM HEADER SUPPLY CHECK VALVE TO TURBINE DRIVEN AUXILIARY FEEDWATER PUMP								
2-MS-178	11548-CBM-064A	4 OF 6 D-7 CHECK VALVE	3.000 2	C	CV	C	42		
						O	42		
	"B" MAIN STEAM HEADER SUPPLY CHECK VALVE TO TURBINE DRIVEN AUXILIARY FEEDWATER PUMP								
2-MS-182	11548-CBM-064A	4 OF 6 D-7 CHECK VALVE	3.000 2	C	CV	C	42		
						O	42		
	"C" MAIN STEAM HEADER SUPPLY CHECK VALVE TO TURBINE DRIVEN AUXILIARY FEEDWATER PUMP								
2-MS-NRV-201A	11548-CBM-064A	1 OF 6 E-4 NO STOP CHECK	30.000 NC	C	CV VP	C OC	32		
	"A" MAIN STEAM HEADER NON-RETURN VALVE								
2-MS-NRV-201B	11548-CBM-064A	2 OF 6 D-3 NO STOP CHECK	30.000 NC	C	CV VP	C OC	32		
	"B" MAIN STEAM HEADER NON-RETURN VALVE								
2-MS-NRV-201C	11548-CBM-064A	3 OF 6 D-3 NO STOP CHECK	30.000 NC	C	CV VP	C OC	32		
	"C" MAIN STEAM HEADER NON-RETURN VALVE								
2-MS-PCV-202A	11548-CBM-064A	4 OF 6 C-4 AD GATE	3.000 2	B	EV FS ST VP	C C C OC			
	MAIN STEAM SUPPLY TRIP VALVE TO TURBINE DRIVEN AUXILIARY FEEDWATER PUMP								

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VIRGINIA POWER COMPANY
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VALVE NUMBER	DRAWING NUMBER	SHEET DRWG VALVE NUMBER COOR TYPE	VALVE ASME SIZE CLASS	ISO IIV VALVE CAT TYPE	TEST TYPE	TEST POS	REL CS V- CSV-	RR RRV-	NC ALT VCN-
2-MS-TV-201B	11548-CBM-064A	2 OF 6 C-4 AO CHECK VALVE	30.000 2	B	EV ST VP	C C OC	1 1		

"B" MAIN STEAM HEADER TRIP VALVE									
2-MS-TV-201C	11548-CBM-064A	3 OF 6 C-4 AO CHECK VALVE	30.000 2	B	EV ST VP	C C OC	1 1		

"C" MAIN STEAM HEADER TRIP VALVE									
2-MS-TV-209	11548-CBM-064A	4 OF 6 F-5 AO GATE	3.000 NC	B	EV FS ST VP	C C C OC			

MAIN STEAM HIGH PRESSURE DRAIN ISOLATION TO CONDENSER									
2-MS-TV-210	11548-CBM-064A	4 OF 6 F-7 AO GATE	2.000 NC	B	EV FS ST VP	C C C OC			

MAIN STEAM HIGH PRESSURE DRAIN ISOLATION TO STEAM GENERATOR BLOWDOWN SYSTEM									

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VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG DOOR	VALVE TYPE	VALVE SIZE	ASME CLASS	ISO CAT	VALVE TYPE	TEST TYPE	TEST POS	REL V-	CS CSV-	RR RRV-	NC ALT VCH-
2-SI-025	11548-CBM-089A	1 OF 3	E-5	CHECK VALVE	8.000	2	AC		CV	C O LT			5 5	
RWST SUPPLY CHECK VALVE TO CHARGING PUMP SUCTION HEADER														
2-SI-032	11548-CBM-089B	1 OF 4	E-3	MAN GLOBE	1.000	2	AE	CIV	LT	C				
ACCUMULATOR MAKEUP LINE, OUTSIDE CONTAINMENT ISOLATION VALVE														
2-SI-046A	11548-CBM-089A	1 OF 3	A-3	CHECK VALVE	12.000	2	C		CV	O			2	
RWST SUPPLY CHECK VALVE TO "A" LOW HEAD SI PUMP SUCTION														
2-SI-046B	11548-CBM-089A	1 OF 3	B-3	CHECK VALVE	12.000	2	C		CV	O			2	
RWST SUPPLY CHECK VALVE TO "B" LOW HEAD SI PUMP SUCTION														
2-SI-047	11548-CBM-089A	1 OF 3	B-5	CHECK VALVE	12.000	2	C		CV	O	20			
"B" LOW HEAD SI PUMP SUCTION CHECK VALVE FROM CONTAINMENT SUMP														
2-SI-050	11548-CBM-089A	1 OF 3	C-4	CHECK VALVE	10.000	2	C		CV	C O			2 2	
"B" LOW HEAD SI PUMP DISCHARGE CHECK VALVE														
2-SI-053	11548-CBM-089A	2 OF 3	B-4	CHECK VALVE	2.000	2	C		CV	O				
"B" LOW HEAD SI PUMP MINIMUM FLOW/TEST LINE DISCHARGE CHECK VALVE														
2-SI-056	11548-CBM-089A	1 OF 3	B-7	CHECK VALVE	12.000	2	C		CV	O	20			
"A" LOW HEAD SI PUMP SUCTION CHECK VALVE FROM CONTAINMENT SUMP														
2-SI-061	11548-CBM-089A	2 OF 3	B-5	CHECK VALVE	2.000	2	C		CV	O				
"A" LOW HEAD SI PUMP MINIMUM FLOW/TEST LINE DISCHARGE CHECK VALVE														
2-SI-073	11548-CBM-089A	2 OF 3	E-7	MAN GLOBE	.750	2	AE	CIV	LT	C				
ACCUMULATOR TEST LINE, OUTSIDE CONTAINMENT ISOLATION VALVE														
2-SI-079	11548-CBM-089B	4 OF 4	F-7	CHECK VALVE	6.000	1	AC	PIV	CV	C O LT			4 4	
RCS COLD LEG SI ADMISSION CHECK VALVE														
2-SI-082	11548-CBM-089B	4 OF 4	E-7	CHECK VALVE	6.000	1	AC	PIV	CV	C			4	

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VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COORD	VALVE TYPE	VALVE SIZE	ASME CLASS	ISO 1WV CAT	VALVE TYPE	TEST TYPE	TEST POS	REL V-	CS CSV	RR RRV	ALT VCR
2-S1-082	11548-CBM-089B	4 OF 4	E-7	CHECK VALVE	6.000	1	AC	PIV	CV LT	O C			4	
RCS COLD LEG S1 ADMISSION CHECK VALVE														
2-S1-085	11548-CBM-089B	4 OF 4	D-7	CHECK VALVE	6.000	1	AC	PIV	CV LT	C O C			4 4	
RCS COLD LEG S1 ADMISSION CHECK VALVE														
2-S1-088	11548-CBM-089B	4 OF 4	D-7	CHECK VALVE	6.000	1	C		CV	C O	27		4 4	
RCS HOT LEG S1 ADMISSION CHECK VALVE														
2-S1-091	11548-CBM-089B	4 OF 4	C-7	CHECK VALVE	6.000	1	C		CV	C O	27		4 4	
RCS HOT LEG S1 ADMISSION CHECK VALVE														
2-S1-094	11548-CBM-089B	4 OF 4	B-7	CHECK VALVE	6.000	1	C		CV	C O	27		4 4	
RCS HOT LEG S1 ADMISSION CHECK VALVE														
2-S1-107	11548-CBM-089B	1 OF 4	B-7	CHECK VALVE	12.000	1	C		CV	C O	26 26			
"A" ACCUMULATOR DISCHARGE CHECK VALVE														
2-S1-109	11548-CBM-089B	1 OF 4	B-8	CHECK VALVE	12.000	1	C		CV	C O	26 26		3	
"A" ACCUMULATOR COLD LEG ADMISSION CHECK VALVE														
2-S1-128	11548-CBM-089B	2 OF 4	B-6	CHECK VALVE	12.000	1	C		CV	C O	26 26		3	
"B" ACCUMULATOR DISCHARGE CHECK VALVE														
2-S1-130	11548-CBM-089B	2 OF 4	B-7	CHECK VALVE	12.000	1	C		CV	C O	26 26		3	
"B" ACCUMULATOR COLD LEG ADMISSION CHECK VALVE														
2-S1-145	11548-CBM-089B	3 OF 4	B-5	CHECK VALVE	12.000	1	C		CV	C O	26 26		3	
"C" ACCUMULATOR DISCHARGE CHECK VALVE														

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VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	ISO IWV CAT	VALVE TYPE	TEST TYPE	TEST POS	REL V-	CS CSV-	RR BRV-	ALT VCM-	NC TEST
2-SI-147	11548-CBM-0898	3 OF 4	B-7	CHECK VALVE	12.000	1	C		CV	C	26				
										O	26		3		
	"C" ACCUMULATOR COLD LEG ADMISSION CHECK VALVE														
2-SI-150	11548-CBM-087A	3 OF 3	F-6	MAN GLOBE	.750	2	AE	CIV	LT	C					
	BORON INJECTION TANK BYPASS LINE ISOLATION VALVE - TO RCS COLD LEG														
2-SI-174	11548-CBM-089A	3 OF 3	D-6	MAN GLOBE	.750	2	AE	CIV	LT	C					
	HIGH HEAD SAFETY INJECTION TO RCS														
2-SI-224	11548-CBM-089B	4 OF 4	F-3	CHECK VALVE	3.000	2	C		CV	O			4		
	HIGH HEAD SI FROM CHARGING PUMPS TO RCS COLD LEGS, INSIDE CONT CHECK VALVE														
2-SI-225	11548-CBM-089B	4 OF 4	E-3	CHECK VALVE	3.000	2	C		CV	O			4		
	HIGH HEAD SI FROM CHARGING PUMPS TO RCS COLD LEGS, INSIDE CONT CHECK VALVE														
2-SI-226	11548-CBM-089B	4 OF 4	C-3	CHECK VALVE	3.000	2	C		CV	O			4		
	HIGH HEAD SI FROM CHARGING PUMPS TO RCS HOT LEGS, INSIDE CONT CHECK VALVE														
2-SI-227	11548-CBM-089B	4 OF 4	C-3	CHECK VALVE	3.000	2	C		CV	O			4		
	HIGH HEAD SI FROM CHARGING PUMPS TO RCS HOT LEGS, INSIDE CONT CHECK VALVE														
2-SI-228	11548-CBM-089B	4 OF 4	B-3	CHECK VALVE	6.000	2	C		CV	O			4		
	LOW HEAD SI FROM LHSI PUMP TO RCS HOT LEGS, INSIDE CONT CHECK VALVE														
2-SI-229	11548-CBM-089B	4 OF 4	B-3	CHECK VALVE	6.000	2	C		CV	O			4		
	LOW HEAD SI FROM LHSI PUMP TO RCS HOT LEGS, INSIDE CONT CHECK VALVE														
2-SI-235	11548-CBM-089B	4 OF 4	F-7	CHECK VALVE	2.000	1	C		CV	C			4		
										O			4		
	HIGH HEAD SI TO RCS COLD LEG, INSIDE MISSILE BARRIER CHECK VALVE														
2-SI-236	11548-CBM-089B	4 OF 4	E-7	CHECK VALVE	2.000	1	C		CV	C			4		
										O			4		
	HIGH HEAD SI TO RCS COLD LEG, INSIDE MISSILE BARRIER CHECK VALVE														
2-SI-237	11548-CBM-089B	4 OF 4	D-7	CHECK VALVE	2.000	1	C		CV	C			4		
										O			4		

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VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG DOOR	VALVE TYPE	VALVE SIZE	ASME CLASS	ISO IIV CAT	VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	RR JUST RRV-	MC ALT VCH-
2-SI-MOV-2867D	11548-CBM-089A	3 OF 3	E-6	NO GATE	3.000	2	A	CIV	EV	C		18		
									LT	C		18		
									ST	C		18		
									VP	OC		18		
BOROM INJECTION TANK OUTLET TO RCS COLD LEG, OUTSIDE CONTAINMENT ISOLATION VALVE														
2-SI-MOV-2869A	11548-CBM-089A	3 OF 3	C-7	NO GATE	3.000	2	A	CIV	EV	C		25		
									LT	C		25		
									ST	C		25		
									VP	OC		25		
HIGH HEAD SI FROM CHARGING HEADER TO RCS HOT LEGS, OUTSIDE CONTAINMENT ISOLATION VALVE														
2-SI-MOV-2869B	11548-CBM-089A	3 OF 3	E-4	NO GATE	3.000	2	A	CIV	EV	C		25		
									LT	C		25		
									ST	C		25		
									VP	OC		25		
HIGH HEAD SI FROM CHARGING HEADER TO RCS HOT LEGS, OUTSIDE CONTAINMENT ISOLATION VALVE														
2-SI-MOV-2885A	11548-CBM-089A	2 OF 3	B-5	NO GATE	2.000	2	A		EV	C				
									LT	C	52			
									ST	C				
									VP	OC				
"A" LOW HEAD SI PUMP MINIMUM FLOW/TEST LINE ISOLATION														
2-SI-MOV-2885B	11548-CBM-089A	2 OF 3	B-4	NO GATE	2.000	2	A		EV	C				
									LT	C	52			
									ST	C				
									VP	OC				
"B" LOW HEAD SI PUMP MINIMUM FLOW/TEST LINE ISOLATION														
2-SI-MOV-2885C	11548-CBM-089A	2 OF 3	B-4	NO GATE	2.000	2	A		EV	C				
									LT	C	52			
									ST	C				
									VP	OC				
"B" LOW HEAD SI PUMP MINIMUM FLOW/TEST LINE ISOLATION														
2-SI-MOV-2885D	11548-CBM-089A	2 OF 3	B-5	NO GATE	2.000	2	A		EV	C				
									LT	C	52			
									ST	C				
									VP	OC				

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VALVE NUMBER	DRAWING NUMBER	SHEET DRWG NUMBER COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	ISO IIV VALVE CAT TYPE	TEST TYPE	TEST POS	REL CS V- CSV-	RR RRV-	NC ALT VCN-
2-SW-108	11548-CBM-071B	1 OF 2 B-4	CHECK VALVE	2.000	3	C	CV	C O	50		
CHARGING PUMP SERVICE WATER PUMP CHECK VALVE											
2-SW-113	11548-CBM-071B	1 OF 2 B-7	CHECK VALVE	2.000	3	C	CV	C O	50		
CHARGING PUMP SERVICE WATER PUMP CHECK VALVE											
2-SW-206	11548-CBM-071A	3 OF 3 E-8	MAN GATE	2.000	2	AE	CIV LT	C			
CONTAINMENT ISOLATION VALVE FOR SERVICE WATER DRAINS TO HEAT EXCHANGER											
2-SW-203	11548-CBM-071A	3 OF 3 E-8	MAN GATE	2.000	2	AE	CIV LT	C			
CONTAINMENT ISOLATION VALVE FOR SERVICE WATER DRAINS TO HEAT EXCHANGER											
2-SW-246	11548-CBM-071A	3 OF 3 D-8	CHECK VALVE	3.000	NC	C	CV	O			
RECIRCULATION SPRAY HEAT EXCHANGER SERVICE WATER RETURN VENT VALVE											
2-SW-247	11548-CBM-071A	3 OF 3 D-7	CHECK VALVE	3.000	3	C	CV	O	46		
RECIRCULATION SPRAY HEAT EXCHANGER SERVICE WATER SUPPLY VENT VALVE											
2-SW-248	11548-CBM-071A	3 OF 3 D-7	CHECK VALVE	3.000	NC	C	CV	O			
RECIRCULATION SPRAY HEAT EXCHANGER SERVICE WATER RETURN VENT VALVE											
2-SW-249	11548-CBM-071A	3 OF 3 D-6	CHECK VALVE	3.000	3	C	CV	O	46		
RECIRCULATION SPRAY HEAT EXCHANGER SERVICE WATER SUPPLY VENT VALVE											
2-SW-250	11548-CBM-071A	3 OF 3 D-6	CHECK VALVE	3.000	NC	C	CV	O			
RECIRCULATION SPRAY HEAT EXCHANGER SERVICE WATER RETURN VENT VALVE											
2-SW-251	11548-CBM-071A	3 OF 3 D-6	CHECK VALVE	3.000	3	C	CV	O	46		
RECIRCULATION SPRAY HEAT EXCHANGER SERVICE WATER SUPPLY VENT VALVE											
2-SW-252	11548-CBM-071A	3 OF 3 D-5	CHECK VALVE	3.000	NC	C	CV	O			
RECIRCULATION SPRAY HEAT EXCHANGER SERVICE WATER RETURN VENT VALVE											
2-SW-253	11548-CBM-071A	3 OF 3 D-5	CHECK VALVE	3.000	3	C	CV	O	46		

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VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG DOOR	VALVE TYPE	VALVE SIZE	ASME CLASS	ISO IIV VALVE CAT	TEST TYPE	TEST POS	REL V-	CS CSV-	RR RRV-	ALT VCN-
RECIRCULATION SPRAY HEAT EXCHANGER SERVICE WATER SUPPLY VENT VALVE													
2-SW-442	11548-CBM-071B	1 OF 2	B-4	CHECK VALVE	2.000	3	C	CV	O	50			
CHARGING PUMP SERVICE WATER PUMP DISCHARGE CHECK VALVE													
2-SW-445	11548-CBM-071B	1 OF 2	B-6	CHECK VALVE	2.000	3	C	CV	O	50			
CHARGING PUMP SERVICE WATER PUMP DISCHARGE CHECK VALVE													
2-SW-MOV-201A	11548-CBM-071A	3 OF 3	B-4	MO BFLY	36.000	3	B	EV ST VP	C C OC				
BEARING COOLING WATER HEAT EXCHANGER ISOLATION VALVE													
2-SW-MOV-201B	11548-CBM-071A	3 OF 3	B-4	MO BFLY	36.000	3	B	EV ST VP	C C OC				
BEARING COOLING WATER HEAT EXCHANGER ISOLATION VALVE													
2-SW-MOV-202A	11548-CBM-071A	2 OF 3	D-6	MO BFLY	42.000	3	B	EV ST VP	C C OC				
SERVICE WATER HEADER SUPPLY ISOLATION TO COMPONENT COOLING HEAT EXCHANGERS													
2-SW-MOV-202B	11548-CBM-071A	2 OF 3	D-5	MO BFLY	42.000	3	B	EV ST VP	C C OC				
SERVICE WATER HEADER SUPPLY ISOLATION TO COMPONENT COOLING HEAT EXCHANGERS													
2-SW-MOV-203A	11548-CBM-071A	3 OF 3	B-8	MO BFLY	30.000	3	B	EV ST VP	O O OC				
SERVICE WATER HEADER SUPPLY ISOLATION TO RECIRC SPRAY HEAT EXCHANGERS													
2-SW-MOV-203B	11548-CBM-071A	3 OF 3	B-8	MO BFLY	30.000	3	B	EV ST VP	O O OC				
SERVICE WATER HEADER SUPPLY ISOLATION TO RECIRC SPRAY HEAT EXCHANGERS													
2-SW-MOV-203C	11548-CBM-071A	3 OF 3	B-3	MO BFLY	30.000	3	B	EV ST VP	O O OC				

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VALVE NUMBER	DRAWING NUMBER	SHEET DRWG VALVE NUMBER CORR TYPE	VALVE ASME SIZE CLASS	ISO IWV VALVE TEST CAT TYPE	TEST POS	REL CS V- CSV- RRV- VCN-	RR RRV-	ALT TEST
SERVICE WATER HEADER SUPPLY ISOLATION TO RECIRC SPRAY HEAT EXCHANGERS								
2-SW-MOV-203D	11548-CBM-071A	3 OF 3 B-2 NO BFLY	30.000 3	B	EV ST VP	O O OC		
SERVICE WATER HEADER SUPPLY ISOLATION TO RECIRC SPRAY HEAT EXCHANGERS								
2-SW-MOV-204A	11548-CBM-071A	3 OF 3 D-7 NO BFLY	24.000 3	B	EV ST VP	C O C O OC		
SERVICE WATER SUPPLY TO "A" RECIRC SPRAY HEAT EXCHANGER, OUTSIDE CONT ISOLATION VALVE								
2-SW-MOV-204B	11548-CBM-071A	3 OF 3 D-6 NO BFLY	24.000 3	B	EV ST VP	C O C O OC		
SERVICE WATER SUPPLY TO "B" RECIRC SPRAY HEAT EXCHANGER, OUTSIDE CONT ISOLATION VALVE								
2-SW-MOV-204C	11548-CBM-071A	3 OF 3 D-5 NO BFLY	24.000 3	B	EV ST VP	C O C O OC		
SERVICE WATER SUPPLY TO "C" RECIRC SPRAY HEAT EXCHANGER, OUTSIDE CONT ISOLATION VALVE								
2-SW-MOV-204D	11548-CBM-071A	3 OF 3 D-4 NO BFLY	24.000 3	B	EV ST VP	C O C O OC		
SERVICE WATER SUPPLY TO "D" RECIRC SPRAY HEAT EXCHANGER, OUTSIDE CONT ISOLATION VALVE								
2-SW-MOV-205A	11548-CBM-071A	3 OF 3 D-8 NO BFLY	24.000 3	B	EV ST VP	C O C O OC		
SERVICE WATER RETURN FROM "A" RECIRC SPRAY HEAT EXCHANGER, OUTSIDE CONT ISOLATION VALVE								
2-SW-MOV-205B	11548-CBM-071A	3 OF 3 D-7 NO BFLY	24.000 3	B	EV ST VP	C O C O OC		

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VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COORD	VALVE TYPE	VALVE SIZE	ASME CLASS	ISO IWF CAT	VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	RR JUST RRV-	NC ALT TEST VCN-
SERVICE WATER RETURN FROM "B" RECIRC SPRAY HEAT EXCHANGER, OUTSIDE CONT ISOLATION VALVE														
2-SW-MOV-205C	11548-CBP-071A	3 OF 3	D-6	NO BFLY	24.000	3	B		EV	C				
									ST	C				
									VP	OC				
SERVICE WATER RETURN FROM "C" RECIRC SPRAY HEAT EXCHANGER, OUTSIDE CONT ISOLATION VALVE														
2-SW-MOV-205D	11548-CBM-071A	3 OF 3	D-5	NO BFLY	24.000	3	B		EV	C				
									ST	C				
									VP	OC				
SERVICE WATER RETURN FROM "D" RECIRC SPRAY HEAT EXCHANGER, OUTSIDE CONT ISOLATION VALVE														
2-SW-TCV-208A	11548-CBM-071B	1 OF 2	E-7	AO GATE	1.500	3	B		EV	O				
									FS	O				
									ST	O	47			
SERVICE WATER TO CHARGING PUMP LUBE OIL COOLER TEMPERATURE CONTROL VALVE														
2-SW-TCV-208B	11548-CBM-071B	1 OF 2	E-5	AO GATE	1.500	3	B		EV	O				
									FS	O				
									ST	O	47			
SERVICE WATER TO CHARGING PUMP LUBE OIL COOLER TEMPERATURE CONTROL VALVE														
2-SW-TCV-208C	11548-CBM-071B	1 OF 2	E-4	AO GATE	1.500	3	B		EV	O				
									FS	O				
									ST	O	47			
SERVICE WATER TO CHARGING PUMP LUBE OIL COOLER TEMPERATURE CONTROL VALVE														

RELIEF REQUEST V-26

System : Safety Injection

Valve(s): 2-SI-107 2-SI-109
 2-SI-128 2-SI-130
 2-SI-145 2-SI-147

Category: C

Class : 1

Function: Accumulator Discharge Check

OM Part 10 Code Requirements For Which Relief Is Requested

OM Part 10, Section 4.3.2.4(a) - This section states in part that, "The necessary valve obturator movement shall be demonstrated by exercising the valve and observing that either the obturator travels to the seat on cessation or reversal of flow, or opens to the position required to fulfill its function, as specified in para. 1.1, or both. Observation may be by observing a direct indicator such as a position indicating device, or by other indicator(s) such as changes in system pressure, flow rate, level, temperature, seat leakage testing or other positive means." This section implies that the techniques used to verify obturator movement be applied to every valve on a test frequency that is practical.

Basis For Request

Exercise to the Open Position

Non-intrusive techniques are used to verify obturator movement for the SI accumulator discharge check valves. These techniques provide a "positive means" for verifying obturator movement, however, due to the burden of applying these techniques in the field, a sampling program will be used as described in the alternate testing section.

Exercise to the Closed Position

Valves 2-SI-107 and 109, 2-SI-128 and 130, and 2-SI-145 and 147 perform as pairs of valves in series to isolate the accumulators from the reactor coolant system. The downstream valves, 2-SI-109, 130 and 147 were previously chosen as the isolation valves and were subject to back seat tests while the other valves were

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RELIEF REQUEST V-26 (Cont.)

considered as backup valves and were not subject to back seat tests. The other set of valves cannot be individually back seated with the current piping configuration. Testing experience has shown that a severe water hammer can be produced by attempting to individually test the downstream isolation valve.

To individually test these valves, a reactor coolant system pressure in excess of 1000 psi was needed to properly seat the valves. The line upstream was then vented using a 3/4 inch sample line. Flow in the sample line was monitored to verify that the check valve seated. Also, the accumulator was isolated by the upstream motor operated isolation valve.

During one test, a steam bubble was created in the volume of pipe upstream of the check valve due to the initial high pressure and temperature in the line, and due to the subsequent venting of the line and the flashing of water to steam. When the motor operated isolation valve was opened following the test to restore the accumulator to service, a severe water hammer was created by the collapsing steam bubble. Although less severe hydraulic transients had been observed in previous tests, the potential for system damage became obvious after this test.

Other test methodologies were evaluated to determine if valve closure could be verified while reducing or eliminating the possibility of creating another water hammer event. For example, testing at a lower reactor coolant temperature and pressure reduces the amount of water flashing to steam. However, testing has shown that the check valves do not seat properly at reactor coolant system pressures less than 1000 psi. It was concluded that with the current system configuration, a test could not be designed that would meet these criteria.

Treating the check valves as a pair of isolation valves would eliminate the possibility of creating a water hammer event through testing. The accumulators have level indicators and high/low tank level alarms in the control room. Therefore, during normal operation the accumulator level is constantly monitored to ensure that one out of two check valves is seated properly to prevent in leakage from the reactor coolant system.

RELIEF REQUEST V-26 (Cont.)

Alternate Testing Proposed

Exercise to the Open Position

During the first refueling outage where non-intrusive techniques are used, all valves in the group will be tested to verify that the techniques verify valve obturator movement. During subsequent refueling outages, flow testing will be performed on all valves in the group, but the non-intrusive techniques need be applied only to one valve in each group, on a rotating basis, unless indications of problems are identified. In this case, all valves in the group will be subjected to the non-intrusive techniques. The test frequency is in accordance with Generic Letter 89-04, Position 2.

Valves 2-SI-130 and 147 are in one group and valves 2-SI-107, 109, 128 and 145 are in the other group. Because 2-SI-130 and 147 are downstream from where RHR connects to the SI line, they experience different service conditions than the other valves.

The justification for testing these valves during reactor refuelings was moved to Reactor Refueling Justification RRV-3

Exercise to the Closed Position

Valves 2-SI-107 and 109, 2-SI-128 and 130, and 2-SI-145 and 147 perform as pairs of valves in series to isolate the accumulators from the reactor coolant system. Monitoring the accumulator level during normal operation will be an adequate demonstration that one out of two valves in series is seating properly. If leakage past both valves in series to the accumulators becomes unacceptable for normal operation, both valves will be declared inoperable. The check valves will not be individually tested to the closed position.

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RELIEF REQUEST V-50

System : Service Water

Valve(s): 2-SW-108 2-SW-442
 2-SW-113 2-SW-445

Category: C

Class : 3 (2-SW-108,113,442,445)

Function: Charging Pump Service Water Pump discharge Check
 Valves

OM Part 10 Code Requirements For Which Relief Is Requested

OM Part 10, Paragraph 4.3.2.4(c) reads in part that, "disassembly every refueling outage to verify operability of check valves may be used." This sentence implies that each valve in the group given above must be disassembled every refueling outage.

Basis For Request

The design basis for the charging pump service water system is currently undergoing reevaluation. A full flow acceptance criteria will not be available until this reevaluation is complete.

These check valves can be disassembled while the plant is operating. To allow for flexibility in planning for refueling outages and still meet the intent of OM Part 10, the valves will be disassembled on a reactor refueling frequency but not necessarily during refueling outages.

Alternate Testing Proposed

These valves will be placed into two groups and one valve from each group will be disassembled and inspected on a reactor refueling frequency. A different valve will be disassembled for each inspection. Valves 2-SW-108 and 113 will be in one group, and valves 2-SW-442 and 445 will be in the other group. If a valve fails its inspection, the remaining valves in the group will be disassembled and inspected. The check valves will be partial stroke tested every three months. This test frequency is in accordance with Generic Letter 89-04, Position 2.

RELIEF REQUEST V-52

System : Chemical and Volume Control and
Safety Injection

Valve(s): 2-CH-LCV-2115B 2-SI-MOV-2885A
 2-CH-LCV-2115D 2-SI-MOV-2885B
 2-SI-25 2-SI-MOV-2885C
 2-SI-MOV-2885D

Category: A and A/C

Class : 2

Function: RWST Isolation Valves

OM Part 10 Code Requirements
For Which Relief Is Requested

OM Part 10, Section 4.2.2.3(f) - Valves or valve combinations with leakage rates exceeding the values specified by the Owner in (e) above shall be declared inoperable and be either repaired or replaced.

Basis For Request

Valves 2-CH-LCV-2115B and D, and 2-SI-25 are in the supply line to the charging pumps from the RWST. Valves 2-SI-MOV-2885A, B, C and D are on test lines that run from the discharge of the low head SI pumps to the RWST. During recirculation mode transfer, the RWST is isolated and the low head SI pumps recirculate highly contaminated water from the containment sump to the reactor vessel.

The RWST isolation valves work as a system of valves to protect the RWST from the contaminated sump water. Permissible valve leakage rates are based on each valve's possible contribution to the total allowable leakage rate to the RWST. When the leakages from each valve have been measured and summed, an individual valve's permissible leakage rate may have been exceeded but the overall allowable leakage to the RWST may not have been exceeded. In these cases, a repair or replacement may not be necessary because the system of isolation valves has been verified to be performing adequately.

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RELIEF REQUEST V-52 (Cont.)

Alternate Testing Proposed

In addition to repair or replacement as corrective actions, an evaluation can be performed which demonstrates that even if a valve has exceeded its permissible leakage rate, the overall leakage rate to the RWST will be maintained below the overall allowable RWST leakage rate. No repair or replacement is necessary if the evaluation is performed.

CW-1

COLD SHUTDOWN JUSTIFICATION CSV-29

Cold Shutdown Justification Withdrawn

CU-1

COLD SHUTDOWN JUSTIFICATION CSV-32

System : Main Steam

Valve(s): 2-MS-NRV-201A
2-MS-NRV-201B
2-MS-NRV-201C

Category: C

Class : NC

Function: Main Steam Non-Return Valves

Cold Shutdown Justification

Valve Description

The main steam non-return valves (NRVs) at Surry Power Station are located in the main steam valve house and are a globe type stop check design. The valves measure approximately 16 feet from the bottom of the valve body to the top of the hand wheel and weigh almost 18,000 lbs. The disk is welded to a hollow piston and the whole assembly is free to move about 25 vertical inches within the valve body cylinder. The disk measures 25.5 inches across and the disk and piston assembly weighs approximately 1,200 lbs. When the main steam system is not inservice, a motor operator is used to run the valve stem down onto the disk to secure the main steam line.

The valves open to allow steam to the turbine. For accident conditions, the non-return valves in conjunction with the main steam trip valves prevent the blowdown of more than one steam generator for any break location, even if one valve fails to close. For example, for a break upstream of the trip valve in one line, the closure of either the non-return valve in that line or the trip valves in the other lines prevents the blowdown of the other steam generators.

Method of Testing

The piping downstream of each non-return valve leads to a common distribution manifold and cannot be isolated. Therefore, performing a back seat test using flow is not practical. Also, valve disassembly and inspection are not practical alternatives due to the size of the valve and the weight of the disk.

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REACTOR REFUELING JUSTIFICATION RRV-3

System : Safety Injection

Valve(s): 2-SI-107 2-SI-109
 2-SI-128 2-SI-130
 2-SI-145 2-SI-147

Category: C

Class : 1

Function: Accumulator Discharge Check

Reactor Refueling Justification

These valves cannot be partial or full flow tested during normal operation because the accumulator pressure (600 to 650 psig) is below Reactor Coolant System pressure and the injection of boric acid water would upset the reactor coolant chemistry. During cold shutdown, the RCS pressure still prevents full flow testing.

To achieve full flow through the valves during reactor refueling, the accumulator would have to be discharged from an initial pressure of 600 psig. Discharging the accumulator from this pressure would stress the piping system and inject nitrogen into the RCS. Nitrogen in the RCS has been linked to gas binding of the RHR pumps. However, the accumulator can be discharged from a lower pressure during reactor refuelings when the RCS is depressurized. At this pressure, full flow conditions will not be established; however, enough flow will be developed to open the check valves to the full open position. This event can be verified and documented using non-intrusive diagnostic techniques.

A partial flow test is not practical during cold shutdowns. The flow from the accumulator is dependent on the pressure differential between the accumulator and the RCS. The pressure differential cannot be controlled to the fine degree necessary to preclude dumping too much water into the pressurizer, thus making it difficult to control pressurizer level while pressure is being reduced during cooldown. Also, dumping cold accumulator water into the RCS could thermally shock the system.

Testing Frequency

Non-intrusive diagnostic techniques will be used to determine that the check valves open to the full open position. A sampling program will be applied to the non-intrusive techniques as described in Relief Request V-26.

REACTOR REFUELING JUSTIFICATION RRV-5

System : RWST Cross Tie

Valve(s): 2-SI-25
2-SI-400

Category: C

Class : 2

Function: Charging Pump Suction from RWST Cross Tie

Reactor Refueling Justification

Exercising these valves 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 reactor coolant boron inventory.

Full flow for the charging system can only be established during reactor refueling when the RCS is depressurized.

Valve 2-SI-25 must close to preserve inventory from the Unit 1 RWST when the cross tie lines are opened. This valve is also subject to leak testing, which is performed every reactor refueling. Verification of closure will be performed during the leak test every reactor refueling instead of every cold shutdown because the small increase in safety gained by testing during cold shutdown does not justify performing a leak rate test.

Testing Frequency

These valves will partial flow tested during every cold shutdown and full flow tested during every reactor refueling.

Valve 2-SI-25 will be exercised to the closed position every refueling outage.

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