

PUMP AND VALVE INSERVICE TEST
PROGRAM PLAN - REV. 3a
WASHINGTON PUBLIC POWER SUPPLY SYSTEM
NUCLEAR PLANT NO. 2

WPPSS #12

Superseded per Rev 3 to
Pump & Valve Inservice
Test Program Plan

50-397

Ltr. W. 12/26/85
12/19/85

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Date

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12/20/85

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12/20/85

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PUMP AND VALVE INSERVICE TEST
PROGRAM PLAN - REV. 3
WASHINGTON PUBLIC POWER SUPPLY SYSTEM
NUCLEAR PLANT NO. 2

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WNP-2 PUMP AND VALVE INSERVICE TEST PROGRAM -- VALVE TEST TABLES

VALVE NUMBER	CODE CLASS	LOCATION ON P&ID	VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	--POSITION-- NORMAL FAILED		EXER. FREQ.	TEST CODE	NOTES	RELIEF REQUESTS
RHR-V-50A	1	F5 M521 1	TC	12	CK	AO, SA	NC	NA	I	GH..L...X	6	5, 9
RHR-V-50B	1	F13 M521 2	TC	12	CK	AO, SA	NC	NA	I	GH..L...X	6	5, 9
RHR-V-53A	1	E6 M521 1	T	12	GB	NO	NC	FAI	C	GHJ..L...X	1C	5, 20
RHR-V-53B	1	E11 M521 2	T	12	GB	NO	NC	FAI	C	GHJ..L...X	1C	5, 20
RHR-V-73A	2	H14 M521 1	F -P	2	GB	NO	NC	FAI	N	.....X		4
RHR-V-73B	2	H5 M521 2	F -P	2	GB	NO	NC	FAI	N	.....X		4
RHR-V-84A	2	D14 M521 1	C	1.5	CK	SA	NC	NA	Q	.H.....		17
RHR-V-84B	2	B3 M521 2	C	1.5	CK	SA	NC	NA	Q	.H.....		17
RHR-V-84C	2	C6 M521 2	C	1.5	CK	SA	NC	NA	Q	.H.....		17
RHR-V-85A	2	D14 M521 1	BC	1.5	SC	SA, MAN	NC	NA	Q	.H.....		
RHR-V-85B	2	B3 M521 2	BC	1.5	SC	SA, MAN	NC	NA	Q	.H.....		
RHR-V-85C	2	C6 M521 2	BC	1.5	SC	SA, MAN	NC	NA	Q	.H.....		
RHR-V-89	2	J10 M521 2	BC	14	CK	AO, SA	NC	NA	Q	GH.....	4	
RHR-V-115	2	J8 M521 2	B	14	GT	NO	NC	FAI	Q	GHJ.....		20
RHR-V-116	2	J9 M521 2	B	14	GB	NO	NC	FAI	Q	GHJ.....		20
RHR-V-120	2	C11 M521 1	F -P	3	GT	MAN	LC	NA	N	.....X		4
RHR-V-121	2	C11 M521 1	F -P	3	GT	MAN	LC	NA	NX		4
RHR-V-123A	1	E5 M521 1	T	1	GT	NO	NC	FAI	Q	GHJ.....X		5, 20

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VALVE NUMBER	CODE CLASS	LOCATION ON P&ID	VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	--POSITION-- NORMAL FAILED		EXER. FREQ.	TEST CODE	NOTES	RELIEF REQUESTS
RHR-V-123B	1	E13 M521 2	T	1	QT	NO	NC	FAI	Q	CHJ.....X		5, 20
RHR-V-124A	2	B14 M521 1	F -P	1.5	GB	NO	LC	NA	N	.....X		4
RHR-V-124B	2	C12 M521 1	F -P	1.5	GB	MO	LC	NA	N	.....X		4
RHR-V-125A	2	D4 M521 2	F -P	1.5	GB	MO	LC	NA	N	.....X		4
RHR-V-125B	2	D3 M521 2	F -P	1.5	GB	NO	LC	NA	N	.....X		4
RHR-V-130A	2	C7 M521 1	F -P	3	GB	MAN	LC	NA	N	.....X		4
RHR-V-130B	2	C11 M521 2	F -P	3	GB	MAN	LC	NA	N	.....X		4
RHR-V-134A	2	F14 M521 1	F	2	GB	MO	NC	FAI	Q	CHJ.....X		4, 20
RHR-V-134B	2	F5 M521 2	F	2	GB	NO	NC	FAI	Q	CHJ.....X		4, 20
RHR-V-209	1	D5 M521 1	TC	.75	CK	SA	NC	NA	R	.H..L...X		5, 8
TOTAL				100								

WNP-2 PUMP AND VALVE INSERVICE TEST PROGRAM -- VALVE TEST TABLES

VALVE NUMBER	CODE CLASS	LOCATION ON P&ID	VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	--POSITION-- NORMAL FAILED		EXER. FREQ.	TEST CODE	NOTES	RELIEF REQUESTS
PI-EFCX-78C	1	F12 M523 _	FC	1 X .5	CK	SA	NO	NA	R	GH.....X		4, 15
PI-EFCX-79A	1	F15 M523 _	FC	1 X .5	CK	SA	NO	NA	R	GH.....X		4, 15
PI-EFCX-79B	1	F15 M523 _	FC	1 X .5	CK	SA	NO	NA	R	GH.....X		4, 15
RWCU-V-1	1	F15 M523 _	F	6	GT	NO	NO	FAI	Q	CHJ.....X		4, 20
RWCU-V-4	1	E15 M523 _	F	6	GT	NO	NO	FAI	Q	CHJ.....X		4, 20
RWCU-V-40	1	H11 M523 _	F	6	GT	NO	NO	FAI	Q	GHJ.....X		4, 20
TOTAL				6								

WNP-2 PUMP AND VALVE INSERVICE TEST PROGRAM -- VALVE TEST TABLES

VALVE NUMBER	CODE CLASS	LOCATION ON P&ID	VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	--POSITION-- NORMAL FAILED		EXER. FREQ.	TEST CODE	NOTES	RELIEF REQUESTS
SW-V-34	3	C11 M524 2	B	1.5	GB	SOL	NO	FO	Q	GHJK.....		1
SW-V-44	3	E9 M524 1	B	2	GT	NO	NO	FAI	Q	GHJ.....		20
SW-V-54	3	F7 M524 1	B	2	GT	NO	NO	FAI	Q	GHJ.....		20
SW-V-75A	3	A13 M524 1	B	2	GB	NO	NC	FAI	Q	GHJ.....	5	20
SW-V-750	3	B14 M524 2	B	2	GB	NO	NC	FAI	Q	GHJ.....	5	20
SW-V-90	3	H8 M524 2	B	2	GT	NO	NO	FAI	Q	GHJ.....		20
SW-V-92	3	H9 M524 2	C	2	CK	SA	NC	NA	Q	.H.....		
SW-V-187A	3	G14 M524 1	B	6	GT	MD	NO	FAI	Q	GHJ.....	5,3	20
SW-V-187B	3	C13 M524 2	B	6	GT	NO	NO	FAI	Q	GHJ.....	5,3	20
SW-V-188A	3	H13 M524 1	B	6	GT	NO	NO	FAI	Q	GHJ.....	5	20
SW-V-188B	3	D12 M524 2	B	6	GT	NO	NO	FAI	Q	GHJ.....	5	20
SW-V-214	3	C8 M524 1	B	6	BF	AD	NC	FO	Q	GHJK.....		20
SW-V-215	3	C8 M524 1	B	6	BF	AD	NC	FO	Q	GHJK.....		20
SW-V-216	3	H8 M524 2	B	6	BF	AD	NC	FO	Q	GHJK.....		20
SW-V-217	3	H8 M524 2	B	6	BF	AD	NC	FO	Q	GHJK.....		20
TOTAL				33								

MNP-2 PUMP AND VALVE INSERVICE TEST PROGRAM -- VALVE TEST TABLES

VALVE NUMBER	CODE CLASS	LOCATION ON P&ID	VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	--POSITION-- NORMAL FAILED		EXER. FREQ.	TEST CODE	NOTES	RELIEF REQUESTS
CCH-RD-1A	3	G8 M775 _	D	3	RD	SA	NC	NA	N	.....W.		
CCH-RD-1B	3	C7 M775 _	D	3	RD	SA	NC	NA	N	.....W.		
CCH-RV-2A	3	F7 M775 _	BC	.75 X 1	RV	SA	NC	NA	N	.....P...		
CCH-RV-2B	3	B7 M775 _	BC	.75 X 1	RV	SA	NC	NA	N	.....P...		
SW-TCV-11A	3	G3 M775 _	B	2.5	GB	HD	NT	FO	N			
SW-TCV-11B	3	C6 M775 _	B	2.5	GB	HD	NT	FO	N			
SW-V-223A	3	K3 M775 _	C	3	CK	SA	NC	NA	G	.H.....		
SW-V-223B	3	E5 M775 _	C	3	CK	SA	NC	NA	G	.H.....		
SW-V-226A	3	F7 M775 _	C	3	CK	SA	NC	NA	G	.H.....		
SW-V-226B	3	B6 M775 _	C	3	CK	SA	NC	NA	G	.H.....		

TOTAL 10

WNP-2 PUMP AND VALVE INSERVICE TEST PROGRAM -- VALVE TEST TABLES

VALVE NUMBER	CODE CLASS	LOCATION ON P&ID	VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	--POSITION-- NORMAL FAILED		EXER. FREQ.	TEST CODE	NOTES	RELIEF REQUESTS
PSR-VX-73-1	2	J14 M896	F	1	GT	SOL	LC	FC	N	GHJK... X		1.4
PSR-VX-73-2	2	J12 M896	F	1	GT	SOL	LC	FC	N	GHJK... X		1.4
PSR-VX-77A1	1	E14 M896	F	1	GT	SOL	LC	FC	N	GHJK... X		1.4
PSR-VX-77A2	1	E12 M896	F	1	GT	SOL	LC	FC	N	GHJK... X		1.4
PSR-VX-77A3	1	F14 M896	F	1	GT	SOL	LC	FC	N	GHJK... X		1.4
PSR-VX-77A4	1	F12 M896	F	1	GT	SOL	LC	FC	N	GHJK... X		1.4
PSR-VX-80-1	2	K14 M896	F	1	GT	SOL	LC	FC	N	GHJK... X		1.4
PSR-VX-80-2	2	K12 M896	F	1	GT	SOL	LC	FC	N	GHJK... X		1.4
PSR-VX-82-1	2	B12 M896	F	1	GT	SOL	LC	FC	N	GHJK... X		1.4
PSR-VX-82-2	2	B11 M896	F	1	GT	SOL	LC	FC	N	GHJK... X		1.4
PSR-VX-82-7	2	G12 M896	F	1	GT	SOL	LC	FC	N	GHJK... X		1.4
PSR-VX-82-8	2	G11 M896	F	1	GT	SOL	LC	FC	N	GHJK... X		1.4
PSR-VX-83-1	2	J13 M896	F	1	GT	SOL	LC	FC	N	GHJK... X		1.4
PSR-VX-83-2	2	J12 M896	F	1	GT	SOL	LC	FC	N	GHJK... X		1.4
PSR-VX-84-1	2	H12 M896	F	1	GT	SOL	LC	FC	N	GHJK... X		1.4
PSR-VX-84-2	2	H11 M896	F	1	GT	SOL	LC	FC	N	GHJK... X		1.4
PSR-VX-88-1	2	D13 M896	F	1	GT	SOL	LC	FC	N	GHJK... X		1.4
PSR-VX-88-2	2	D11 M896	F	1	GT	SOL	LC	FC	N	GHJK... X		1.4

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d) <u>Valve Number</u>	<u>Code Id.</u>	<u>Function</u>
RCC-V-5	2, A	Isolation valves for reactor closed cooling water lines
RCC-V-21	2, A	
RCC-V-40	2, A	
RCC-V-104	2, A	

Justification--Closure of any isolation valve will interrupt cooling water flow to the Reactor Recirculation (RRC) Pump seals, to the RRC pump motor coolers and to the Drywell Air Coolers possibly causing failure of this equipment.

e) <u>Valve Number</u>	<u>Code Id.</u>	<u>Function</u>
RFW-V-10A, B	1, A-C	Reactor feedwater inboard check valves
RFW-V-32A, B	1, A-C	Reactor feedwater outboard check valves
RFW-V-65A, B	1, A	Reactor feedwater stop valves

Justification

- 1) Closure of either Category A valve (RFW-V-65A, 65B) would result in a loss of flow to the reactor vessel and cause a significant reduction of reactor coolant inventory.
- 2) Category A-C valves are held open by feedwater flow and cannot be closed during power operations.

g) <u>Valve Number</u>	<u>Code Id.</u>	<u>Function</u>
HY-V-17A, B	2, B	Valves provide hydraulic control fluid to the reactor recirculation flow control valve hydraulic operators. Recirculation flow control valves are RRC-V-60A and RCC-V-60B.
HY-V-18A, B	2, B	
HY-V-19A, B	2, B	
HY-V-20A, B	2, B	
HY-V-33A, B	2, B	
HY-V-34A, B	2, B	
HY-V-35A, B	2, B	
HY-V-36A, B	2, B	

Justification--Exercising of the hydraulic valves may cause repositioning of the reactor recirculation flow control valve, causing undesirable reactivity changes in the core.

i) <u>Valve Number</u>	<u>Code Id.</u>	<u>Function</u>
CIA-V-39A, B	3, B	These valves cross connect the normal nitrogen supply for the Main Steam Isolation Valves and Main Steam Relief Valves (including the 7 ADS Valves) accumulators to the backup nitrogen supply for the 7 ADS valves.

Justification--Testing these valves requires securing the backup nitrogen supply to the ADS valve accumulators. This is unsafe to do while the plant is operating.

REQUEST FOR RELIEF NO. RV-4

System, Valves, and ASME Classification	See Table RV-4.
Function	Containment Isolation
Code Testing Requirement	1. Leak Test Requirements (IWV-3420)
Basis for Relief	1. The purpose of leak rate testing is, ultimately, to assure that the limits of 10CFR100 are not exceeded. Hence the <u>overall</u> leakage from the containment is the critical parameter in leak rate testing, not individual valve leak rates. Appendix J Leak Test requirements specifically address leakage requirements for valves functioning as containment isolation valves.
Alternate Testing to be Performed	<ol style="list-style-type: none">1. These valves will be leak tested according to 10CFR50, Appendix J as detailed in the WNP-2 Technical Specifications and FSAR in lieu of IWV-3420.2. WNP-2 will specify a target leak rate based on valve type and size for those valves being Type C leak tested. This target leak rate is generally much more conservative than the limits proposed in IWV-3426, however, the target leak rate is usually not a fixed limit.3. A technical evaluation of valves with leakage in excess of 120% of the target value will be performed to determine if leakage is acceptable. This facilitates the timely identification of problem valves and provides WNP-2 with some flexibility in scheduling repair or replacement of the problem valve.4. The Appendix J limit of 0.60 La will be met (0.60 La is equivalent to 68,020 SCCM).

Quality/Safety Impact

These valves are all category A valves and whether active or passive perform a common safety function of containment isolation. The Appendix J and Technical Specification requirements recognize this safety function and provides leak test requirements based on this safety function. The proposed alternate testing provides adequate assurance of quality and public safety.

REQUEST FOR RELIEF NO. RV-10

System	Service Water
Valves	SW-V-201, 204, 206, 209, 210, 211, 213 CMS-V-212
ASME Classification	Code Class: 3 Category: B
Function	These solenoid valves realign system cooling flow to the hydrogen-oxygen analyzers in the event of an emergency.
Code Testing Requirement	IWV-3411. Measure the stroke-time of power operated valves.
Basis for Relief	These valves are solenoid valves with stroke times much less than a second. These valves do not have a manual control switch or valve position indication.
Alternate Testing to be Performed	Valve exercising per IWV-3412 will provide adequate assurance of valve operability. Verification that the valve opens and closes is based on observing the appropriate system response.

Quality/Safety Impact

Valve operability is adequately evaluated by the tests associated with IWV-3410 with the exception of IWV-3413 noted above. This testing provides adequate assurance of material quality and public safety.

REQUEST FOR RELIEF NO. RV-20

System	Various (see attached Table RV-20)
Valves	Identified in Table RV-20
ASME Classification	As described in Table RV-20.
Function	System control valves and Containment isolation valves.
Code Testing Requirement	IWV-3417(a) which requires comparison of measured stroke time with "the previous test".
Basis for Relief	WNP-2 Administrative Procedures require specific acceptance criteria to be included in Technical Specification surveillance procedures, of which valve stroke timing procedures are a part. Since recorded times may vary slightly as a result of plant conditions or test personnel, the requirement to compare the results with <u>the</u> previous value implies that acceptance criteria may <u>have</u> to be changed each time the surveillance is performed. This is administratively unweildly and unnecessary.
Alternate Testing	WNP-2 valve stroke acceptance criteria are founded on empirically obtained baseline values unless constrained by the FSAR, Technical Specifications or other commitments. The acceptance range for valves with stroke times between 2* and 10 seconds is the baseline time + 50%; for valves with stroke times greater than 10 seconds, the baseline time + 25%. This approach allows stability of acceptance criteria and ensures that the valves remain within a reasonable range around an established baseline. WNP-2 Administrative procedures require engineering evaluation if stroke times fall outside the established acceptance ranges. *See RV-1 for valves with stroke times less than or equal to 2 seconds.

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Approved by C. M. Powers 12/20/85
Plant Manager, WNP-2 Date

Concurrence David L. Vance 12/20/85
Authorized Nuclear Inservice Inspector Date

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RECORD OF PROGRAM PLAN REVISIONS

3a	12/20/85	REVISION				
3	6/10/85	REVISION			<i>AMC/pe R. Lewis BOB</i>	<i>TF Hoyle</i>
2	11/3/83	REVISION			<i>AMC/pe M. Reis</i>	<i>TF Hoyle</i>
1	8/28/82	REVISION			<i>AMC/pe M. Reis</i>	<i>TF Hoyle</i>
0	4/23/81	ORIGINAL			<i>mp new R. W. W. W. W.</i>	<i>TF Hoyle</i>
No.	DATE	REVISIONS		BY	CHK'D	APP'D

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TITLE	SHEET	REVISION
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	3.7-9	2 (was 3-19)
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TITLE	SHEET	REVISION
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Test		
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		0
	4.5-1	(was 4-43)
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	4.5-26	3
	4.5-27	3
	4.5-28	3
	4.5-29	3
	4.5-30	3
	4.5-31	3
	4.5-32	3
	4.5-33	3
	4.5-34	3a
	4.5-35	3a
	4.5-36	3a
		2
	4.6-1	(was 4-58)
	4.6-2	3

TITLE	SHEET	REVISION
5.0 Quality Assurance Program	5-1	0
6.0 Flow Diagrams	6-1	3
Control & Service Air	M510*	55
Diesel Oil & Misc. Systems	M512*	38
Demineralized Water	M517*	57
Reactor Core Iso. Cooling	M519*	44
High/Low Pressure Core Spray	M520*	48
Residual Heat Removal	M521*	50/51
Standby Liq. Control	M522*	20
Reactor Water Cleanup	M523*	59
Standby Service Water	M524*	52/51
Reactor Closed Cooling	M525*	42
Fuel Pool Cooling	M526*	54
Control Rod Drive	M528*	41
Main Steam and Reactor Feedwater	M529*	46
Reactor Recirc. Cooling	M530*	47
Equip. Drain Radioactive	M537*	45
Floor Drain Radioactive	M539*	52
Containment Cooling & Purge	M543*	50
Containment Atmos. Control	M554*	38
Containment Instru. Air	M556*	34
Main Steam Leakage Cont.	M557*	18

TITLE	SHEET	REVISION
Neutron Monitoring (Not a Flow Diagram)	M604*	13
Steam and Liquid Sam.	M607*	17/16/10
Emergency Chilled Water	M775*	5
Pri. Containment Nitrogen Inerting	M783*	17
Post Accident Sampling	M896*	14

*Burns & Roe Flow Diagram Number

WHP-2 Pump Inservice Test Table

INP Parameter

Pump Ident.	ASME Code Class	Inlet Pressure, P _i	Discharge Pressure, P _o	Differential Pressure, P	Flowrate, Q	Vibration, V	Bearing Temperature T _b	Pump Speed, N	Lubrication Level/ Pressure	Relief Request(s)
CCH-P-1A	3	Q	Q	Q	Q	Q	N/A	NR	Q	1
CCH-P-1B	3	Q	Q	Q	Q	Q	N/A	NR	Q	1
DO-P-1A	3 See Note A	Q	Q	Q	Q	Q	N/A	NR	N/A	1,5
DO-P-1B	3 See Note A	Q	Q	Q	Q	Q	N/A	NR	N/A	1,5
DO-P-2	3 See Note A	Q	Q	Q	Q	Q	N/A	NR	N/A	1,5
FPC-P-1A See Note B	3	Q	Q	Q	Q	Q	N/A	NR	Q	1
FPC-P-1B See Note B	3	Q	Q	Q	Q	Q	N/A	NR	Q	1
HPCS-P-1	2	Q	Q	Q	Q	Q	N/A	NR	Q	1
HPCS-P-2	3	N/A	Q	N/A	Q	Q	N/A	NR	Q	1,3
LPCS-P-1	2	Q	Q	Q	Q	Q	N/A	NR	Q	1
RCIC-P-1	2	Q	Q	Q	Q	Q	N/A	Q	Q	1,4

RELIEF REQUEST RP-5

Pumps

DO-P-1A
DO-P-1B
DO-P-2

Section XI Code Requirement
For Which Relief is Requested

IHP-4600. Flow rate shall be measured using a rate or quantity meter installed in the pump test circuit.

Bases for Request

A rate or quantity meter is not installed in the test circuit. To have one installed would be costly and time consuming with few compensating benefits.

Alternate Testing Proposed

Pump flow rate will be determined by measuring the volume of fluid pumped and dividing by the corresponding pump run time. The volume of fluid pumped will be determined by the difference in fluid level in the day tank at the beginning and ending of the pump run time (day tank fluid level corresponds to volume of fluid in the tank).

Quality/Safety Impact

The day tanks are horizontal cylindrical tanks with elliptical ends. The tank fluid volume is approximately 3,200 gallons. Fluid level measurement is accurate to a quarter inch which corresponds to an average volume error of approximately 11 gallons. The test methodology used to measure pump flow rate will provide results consistent with code requirements. This will provide adequate assurance of material quality and public safety.

UMP-2 PUMP AND VALVE INSERVICE TEST PROGRAM - VALVE TEST TABLES

VALVE NUMBER	CODE CLASS	LOCATION ON P&ID	VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	-- POSITION -- NORMAL FAILED		EXER. FREQ.	TEST CODE	NOTES	RELIEF REQUESTS
RHR-V-50A	1	F5 M521 1.	TC	12	CK	AO, SA	NC	NA	I	CH..L...X	6	5.9
RHR-V-50B	1	F13 M521 2	TC	12	CK	AO, SA	NC	NA	I	CH..L...X	6	5.9
RHR-V-53A	1	E6 M521 1	T	12	GB	MO	NC	FAI	C	GHJ.L...X	1C	5.20
RHR-V-53B	1	E11 M521 2	T	12	GB	MO	NC	FAI	C	GHJ.L...X	1C	5.20
RHR-V-60A	2	H11 M521 1	B	.75	SV	SOL	NC	FC	Q	GHJK.....		1
RHR-V-60B	2	H8 M521 2	B	.75	SV	SOL	NC	FC	Q	GHJK.....		1
RHR-V-73A	2	H14 M521 1	F -P	2	GB	MO	NC	FAI	N	.....X		4
RHR-V-73B	2	H5 M521 2	F -P	2	GB	MO	NC	FAI	N	.....X		4
RHR-V-75A	2	G11 M521 1	B	.75	SV	SOL	NC	FC	Q	GHJK.....		1
RHR-V-75B	2	C9 M521 2	B	.75	SV	SOL	NC	FC	Q	GHJK.....		1
RHR-V-84A	2	D14 M521 1	C	1.5	CK	SA	NC	NA	Q	.H.....		17
RHR-V-84B	2	B3 M521 2	C	1.5	CK	SA	NC	NA	Q	.H.....		17
RHR-V-84C	2	C6 M521 2	C	1.5	CK	SA	NC	NA	Q	.H.....		17
RHR-V-85A	2	D14 M521 1	BC	1.5	SC	SA, MAN	NC	NA	Q	.H.....		
RHR-V-85B	2	B3 M521 2	BC	1.5	SC	SA, MAN	NC	NA	Q	.H.....		
RHR-V-85C	2	C6 M521 2	BC	1.5	SC	SA, MAN	NC	NA	Q	.H.....		
RHR-V-87	2	J10 M521 2	BC	14	CK	AO, SA	NC	NA	Q	GH.....	6	
RHR-V-115	2	J9 M521 2	B	14	GT	MO	NC	FAI	Q	GHJ.....		20

UNP-2 PUMP AND VALVE INSERVICE TEST PROGRAM -- VALVE TEST TABLES

VALVE NUMBER	CODE CLASS	LOCATION ON P&ID	VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	--POSITION-- NORMAL FAILED		EXER. FREQ.	TEST CODE	NOTES	RELIEF REQUESTS
RHR-V-116	2	J9 M521 2	B	14	GB	MO	NC	FAI	Q	GHJ.		20
RHR-V-120	2	C11 M521 1	F -P	3	GT	MAN	LC	NA	N	..... X		4
RHR-V-121	2	C11 M521 1	F -P	3	GT	MAN	LC	NA	N	..... X		4
RHR-V-123A	1	E5 M521 1	T	1	GT	MO	NC	FAI	Q	GHJ. L... X		5.20
RHR-V-123B	1	E13 M521 2	T	1	GT	MO	NC	FAI	Q	GHJ. L... X		5.20
RHR-V-124A	2	B14 M521 1	F -P	1.5	GB	MO	LC	NA	N	..... X		4
RHR-V-124B	2	C12 M521 1	F -P	1.5	GB	MO	LC	NA	N	..... X		4
RHR-V-125A	2	D4 M521 2	F -P	1.5	GB	MO	LC	NA	N	..... X		4
RHR-V-125B	2	D3 M521 2	F -P	1.5	GB	MO	LC	NA	N	..... X		4
RHR-V-130A	2	C7 M521 1	F -P	3	GB	MAN	LC	NA	N	..... X		4
RHR-V-130B	2	C11 M521 2	F -P	3	GB	MAN	LC	NA	N	..... X		4
RHR-V-134A	2	F14 M521 1	F	2	GB	MO	NC	FAI	Q	GHJ. X		4.20
RHR-V-134B	2	F5 M521 2	F	2	GB	MO	NC	FAI	Q	GHJ. X		4.20
RHR-V-209	1	D5 M521 1	TC	.75	CK	SA	NC	NA	R	H...L... X		5.8
TOTAL				104								

UNP-2 PUMP AND VALVE INSERVICE TEST PROGRAM -- VALVE TEST TABLES

VALVE NUMBER	CODE CLASS	LOCATION ON P&ID	VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	-- POSITION -- NORMAL FAILED		EXER. FREQ.	TEST CODE	NOTES	RELIEF REQUESTS
PI-EFCX-78C	1	F12 M523	FC	1 X .5	CK	SA	NO	NA	R	GH.....X		4.15
PI-EFCX-79A	1	F15 M523	FC	1 X .5	CK	SA	NO	NA	R	GH.....X		4.15
PI-EFCX-79B	1	F15 M523	FC	1 X .5	CK	SA	NO	NA	R	GH.....X		4.15
RWCU-V-1	1	F15 M523	F	6	GT	MO	NO	FAI	C	GHJ.....X	1N	4.20
RWCU-V-4	1	E15 M523	F	6	GT	MO	NO	FAI	C	GHJ.....X	1N	4.20
RWCU-V-40	1	H11 M523	F	6	GT	MO	NO	FAI	C	GHJ.....X	1N	4.20
TOTAL				6								

WNP-2 PUMP AND VALVE INSERVICE TEST PROGRAM -- VALVE TEST TABLES

VALVE NUMBER	CODE CLASS	LOCATION ON P&ID	VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	--POSITION-- NORMAL FAILED		EXER. FREQ.	TEST CODE	NOTES	RELIEF REQUESTS
SW-V-34	3	C11 M524 2	B	1.5	GB	SOL	NO	FO	Q	GHJK.....		1
SW-V-44	3	E9 M524 1	D	2	GT	MO	NO	FAI	Q	GHJ.....		20
SW-V-54	3	F7 M524 1	B	2	GT	MO	NO	FAI	Q	GHJ.....		20
SW-V-75A	3	A13 M524 1	D	2	GB	MO	NC	FAI	Q	GHJ.....	5	20
SW-V-75B	3	B14 M524 2	D	2	GB	MO	NC	FAI	Q	GHJ.....	5	20
SW-V-90	3	H8 M524 2	D	2	GT	MO	NO	FAI	Q	GHJ.....		20
SW-V-92	3	H9 M524 2	C	2	CK	SA	NC	NA	Q	.H.....		
SW-V-187A	3	G14 M524 1	B	6	GT	MO	NO	FAI	Q	GHJ.....	5,3	20
SW-V-187D	3	C13 M524 2	D	6	GT	MO	NO	FAI	Q	GHJ.....	5,3	20
SW-V-188A	3	H13 M524 1	D	6	GT	MO	NO	FAI	Q	GHJ.....	5	20
SW-V-188D	3	D12 M524 2	D	6	GT	MO	NO	FAI	Q	GHJ.....	5	20
SW-V-214	3	C8 M524 1	B	6	BF	AO	NC	FO	Q	.H.K.....		20,21
SW-V-215	3	C8 M524 1	D	6	BF	AO	NC	FO	Q	.H.K.....		20,21
SW-V-216	3	H8 M524 2	D	6	BF	AO	NC	FO	Q	.H.K.....		20,21
SW-V-217	3	H8 M524 2	D	6	BF	AO	NC	FO	Q	.H.K.....		20,21
TOTAL				33								

WSP-2 PUMP AND VALVE INSERVICE TEST PROGRAM -- VALVE TEST TABLES

VALVE NUMBER	CODE CLASS	LOCATION ON P&ID	VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	--POSITION-- NORMAL FAILED		EXER FREQ	TEST CODE	NOTES	RELIEF REQUESTS
CCH-RD-1A	3	GB M775 _	D	3	RD	SA	NC	NA	N	.....W.		
CCH-RD-1B	3	C7 M775 _	D	3	RD	SA	NC	NA	N	.....W.		
CCH-RV-2A	3	F7 M775 _	BC	.75 X 1	RV	SA	NC	NA	N	.....P...		
CCH-RV-2B	3	B7 M775 _	BC	.75 X 1	RV	SA	NC	NA	N	.....P...		
SW-TCV-11A	3	C5 M775 _	D	2.5	GB	HO	NT	FO	Q	.H.K.....		22
SW-TCV-11B	3	C6 M775 _	B	2.5	GB	HO	NT	FO	Q	.H.K.....		22
SW-TCV-15A	3	J10 M775 _	B	2.5	GB	HO	NT	FO	Q	.H.K.....		22
SW-TCV-15B	3	E10 M775 _	B	2.5	GB	HO	NT	FO	Q	.H.K.....		22
SW-V-222A	3	K5 M775 _	C	3	CK	SA	NC	NA	Q	.H.....		
SW-V-223B	3	E5 M775 _	C	3	CK	SA	NC	NA	Q	.H.....		
SW-V-224A	3	F7 M775 _	C	3	CK	SA	NC	NA	Q	.H.....		
SW-V-226B	3	BA M775 _	C	3	CK	SA	NC	NA	Q	.H.....		
TOTAL				12								

WNP-2 PUMP AND VALVE INSERVICE TEST PROGRAM -- VALVE TEST TABLES

VALVE NUMBER	CODE CLASS	LOCATION ON P&ID	VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	---POSITION---		EXER. FREQ.	TEST CODE	NOTES	RELIEF REQUESTS
							NORMAL	FAILED				
PSR-VX-73-1	2	J14 M896	F	1	GT	SOL	LC	FC	Q	GHJK... X		1.4.23
PSR-VX-73-2	2	J12 M896	F	1	GT	SOL	LC	FC	Q	GHJK... X		1.4
PSR-VX-77A1	1	E14 M896	F	1	GT	SOL	LC	FC	Q	GHJK... X		1.4.23
PSR-VX-77A2	1	E12 M896	F	1	GT	SOL	LC	FC	Q	GHJK... X		1.4
PSR-VX-77A3	1	F14 M896	F	1	GT	SOL	LC	FC	Q	GHJK... X		1.4.23
PSR-VX-77A4	1	F12 M896	F	1	GT	SOL	LC	FC	Q	GHJK... X		1.4
PSR-VX-80-1	2	K14 M896	F	1	GT	SOL	LC	FC	Q	GHJK... X		1.4.23
PSR-VX-80-2	2	K12 M896	F	1	GT	SOL	LC	FC	Q	GHJK... X		1.4
PSR-VX-82-1	2	B12 M896	F	1	GT	SOL	LC	FC	Q	GHJK... X		1.4.23
PSR-VX-82-2	2	B11 M896	F	1	GT	SOL	LC	FC	Q	GHJK... X		1.4
PSR-VX-82-7	2	G12 M896	F	1	GT	SOL	LC	FC	Q	GHJK... X		1.4.23
PSR-VX-82-B	2	G11 M896	F	1	GT	SOL	LC	FC	Q	GHJK... X		1.4
PSR-VX-83-1	2	J13 M896	F	1	GT	SOL	LC	FC	Q	GHJK... X		1.4.23
PSR-VX-83-2	2	J12 M896	F	1	GT	SOL	LC	FC	Q	GHJK... X		1.4
PSR-VX-84-1	2	H12 M896	F	1	GT	SOL	LC	FC	Q	GHJK... X		1.4.23
PSR-VX-84-2	2	H11 M896	F	1	GT	SOL	LC	FC	Q	GHJK... X		1.4
PSR-VX-88-1	2	D13 M896	F	1	GT	SOL	LC	FC	Q	GHJK... X		1.4.23
PSR-VX-88-2	2	D11 M896	F	1	GT	SOL	LC	FC	Q	GHJK... X		1.4

TOTAL 18

d) <u>Valve Number</u>	<u>Code Id.</u>	<u>Function</u>
RCC-V-5	2, A	Isolation valves for reactor closed cooling water lines
RCC-V-21	2, A	
RCC-V-40	2, A	
RCC-V-104	2, A	

Justification--Closure of any isolation valve will interrupt cooling water flow to the Reactor Recirculation (RRC) Pump seals, to the RRC pump motor coolers and to the Drywell Air Coolers possibly causing failure of this equipment.

f) <u>Valve Number</u>	<u>Code Id.</u>	<u>Function</u>
RFW-V-10A, B	1, A-C	Reactor feedwater inboard check valves
RFW-V-32A, B	1, A-C	Reactor feedwater outboard check valves
RFW-V-65A, B	1, A	Reactor feedwater stop valves

Justification

- 1) Closure of either Category A valve (RFW-V-65A, 65B) would result in a loss of flow to the reactor vessel and cause a significant reduction of reactor coolant inventory.
- 2) Category A-C valves are held open by feedwater flow and cannot be closed during power operations.

g) <u>Valve Number</u>	<u>Code Id.</u>	<u>Function</u>
HY-V-17A, B	2, B	Valves provide hydraulic control fluid to the reactor recirculation flow control valve hydraulic operators. Recirculation flow control valves are RRC-V-60A and RCC-V-60B.
HY-V-18A, B	2, B	
HY-V-19A, B	2, B	
HY-V-20A, B	2, B	
HY-V-33A, B	2, B	
HY-V-34A, B	2, B	
HY-V-35A, B	2, B	
HY-V-36A, B	2, B	

Justification--Exercising of the hydraulic valves may cause repositioning of the reactor recirculation flow control valve, causing undesirable reactivity changes in the core.

i) <u>Valve Number</u>	<u>Code Id.</u>	<u>Function</u>
CIA-V-39A, B	3, B	These valves cross connect the normal nitrogen supply for the Main Steam Isolation Valves and Main Steam Relief Valves (including the 7 ADS Valves) accumulators to the backup nitrogen supply for the 7 ADS valves.

Justification--Testing these valves requires securing the backup nitrogen supply to the ADS valve accumulators. This is unsafe to do while the plant is operating.

n) <u>Valve Number</u>	<u>Code Id.</u>	<u>Function</u>
RWCU-V-1	1, A	Containment Iso.; RWCU Pump Suction Iso.
RWCU-V-4	1, A	Containment Iso., RWCU Pump Suction Iso.
RWCU-V-40	1, A	Containment Iso., RWCU Pump Discharge Iso.

Justification--Testing these valves during power operations leads to overheating of the pumps, significantly increasing the potential for equipment damage.

REQUEST FOR RELIEF NO. RV-4

System, Valves,
and ASME
Classification

See Table RV-4.

Function

Containment Isolation

Code Testing
Requirement

1. Leak Test Requirements (IWV-3420)

Basis for
Relief

1. The purpose of leak rate testing is, ultimately, to assure that the limits of 10CFR100 are not exceeded. Hence the overall leakage from the containment is the critical parameter in leak rate testing, not individual valve leak rates. Appendix J Leak Test requirements specifically address leakage requirements for valves functioning as containment isolation valves.

Alternate Testing
to be Performed

1. These valves will be leak tested according to 10CFR50, Appendix J as detailed in the WNP-2 Technical Specifications and FSAR in lieu of IWV-3420.
2. WNP-2 will specify a target leak rate based on valve type and size for those valves being Type C leak tested. This target leak rate is generally much more conservative than the limits proposed in IWV-3426, however, the target leak rate is usually not a fixed limit.
3. A technical evaluation of valves with leakage in excess of the target value will be performed to determine if leakage is acceptable. This facilitates the timely identification of problem valves and provides WNP-2 with some flexibility in scheduling repair or replacement of the problem valve.
4. The Appendix J limit of 0.60 La will be met (0.60 La is equivalent to 68,020 SCCM).

Quality/Safety Impact

These valves are all category A valves and whether active or passive perform a common safety function of containment isolation. The Appendix J and Technical Specification requirements recognize this safety function and provides leak test requirements based on this safety function. The proposed alternate testing provides adequate assurance of quality and public safety.

REQUEST FOR RELIEF NO. RV-10

System	Service Water
Valves	SW-V-201, 204, 206, 209, 210, 211, 213 MS-V-212
ASME Classification	Code Class: 3 Category: B
Function	These solenoid valves realign system cooling flow to the hydrogen-oxygen analyzers in the event of an emergency.
Code Testing Requirement	IWV-3413. Measure the stroke-time of power operated valves.
Basis for Relief	These valves are solenoid valves with stroke times much less than a second. These valves do not have a manual control switch or valve position indication.
Alternate Testing to be Performed	Valve exercising per IWV-3412 will provide adequate assurance of valve operability. Verification that the valve opens and closes is based on observing the appropriate system response.

Quality/Safety Impact

Valve operability is adequately evaluated by the tests associated with IWV-3410 with the exception of IWV-3413 noted above. This testing provides adequate assurance of material quality and public safety.

REQUEST FOR RELIEF NO. RV-20

System	Various (see attached Table RV-20)
Valves	Identified in Table RV-20
ASME Classification	As described in Table RV-20.
Function	System control valves and Containment isolation valves.
Code Testing Requirement	IWV-3417(a) which requires comparison of measured stroke time with "the previous test".
Basis for Relief	WNP-2 Administrative Procedures require specific acceptance criteria to be included in Technical Specification surveillance procedures, of which valve stroke timing procedures are a part. Since recorded times may vary slightly as a result of plant conditions or test personnel, the requirement to compare the results with <u>the</u> previous value implies that acceptance criteria may have to be changed each time the surveillance is performed. This is administratively unweildly and unnecessary.
Alternate Testing	WNP-2 valve stroke acceptance criteria are founded on empirically obtained baseline values unless constrained by the FSAR, Technical Specifications or other commitments. The acceptance range for valves with stroke times between 2* and 10 seconds is the baseline time + 50%; for valves with stroke times greater than 10 seconds, the baseline time + 25%. This approach allows stability of acceptance criteria and ensures that the valves remain within a reasonable range around an established baseline. WNP-2 Administrative procedures require engineering evaluation if stroke times fall outside the established acceptance ranges. *See RV-1 for valves with stroke times less than or equal to 2 seconds.

REQUEST FOR RELIEF NO. RV-21

System	Service Water
Valves	SW-V-214, 215, 216, 217
Asme Classification	Code Class 3, Category B
Function	These are the inlet valves for cooling water flow to the emergency diesel generators heat exchangers.
Code Testing Requirement	IWV-3413, measure the stroke time of power operated valves.
Basis for Relief	These are air operated butterfly valves furnished as part of the emergency diesel generator. They do not have a manual control switch or any remote position indicators. Attempts to monitor the stroke times has provided inconsistent and misleading results.
Alternate Testing to be Performed	Valve exercising per IWV-3412 will provide adequate assurance of valve operability. Verification that the valve opens and closes is based on local observation of the valve actuator.

Quality/Safety Impact

Valve operability is adequately demonstrated by the tests associated with IWV-3410 with the exception of IWV-3413 noted above. This testing provides adequate assurance of material quality and public safety.

REQUEST FOR RELIEF NO. RV-22

System	Emergency Chilled Water
Valves	SW-TCV-11A, 11B, 15A, 15B
Asme Classification	Code Class 3, Category B
Function	These are the temperature control valves for cooling water flow to the chiller heat exchangers.
Code Testing Requirement	IWV-3413, measure the stroke time of power operated valves.
Basis for Relief	These are hydraulically operated glohe valves used for control of chillwater temperature. They do not have a manual control switch or any remote position indicators.
Alternate Testing to be Performed	Valve exercising per IWV-3412 will provide adequate assurance of valve operability. Verification of valve position is based on observing the appropriate system response or locally observing stem position.

Quality/Safety Impact

Valve operability is adequately demonstrated by the tests associated with IWV-3410 with the exception of IWV-3413 noted above. This testing provides adequate assurance of material quality and public safety.

REQUEST FOR RELIEF NO. RV-23

System	Post Accident Sampling Sampling		
Valves	PSR-VX-73-1 *PSR-VX-77A1 *PSR-VX-77A3	PSR-VX-80-1 PSR-VX-82-1 PSR-VX-82-7	PSR-VX-83-1 PSR-VX-84-1 PSR-VX-88-1
ASME Classification	Code Class: 2 Category: A *Code Class: 1		
Function	Closed Position - Containment Isolation		
Code Testing Requirement	IWV-3413, Power Operated Valves (stroke times)		
Basis for Relief	These nine PSR solenoid valves are the inboard Containment Isolation Valve for nine different penetrations and are operated from a single keylock control switch. It is impractical to measure the individual valve stroke times. To do so would require repetitive cycling of the control switch causing unnecessary wear on the valves and control switch with little compensating benefit.		
Alternate Testing to be Performed	The stroke time of the slowest valve will be measured by terminating the stroke time measurement when the last of the nine indicating lights becomes illuminated. If the stroke time of the slowest valve is in the acceptance range, then the stroke times of all valves will be considered acceptable.		

Quality/Safety Impact

The proposed alternate testing will verify that the valves respond in a timely manner and provide information for monitoring signs of material degradation. This provides adequate assurance of material quality and public safety.

November 12, 1986

DISTRIBUTION:

Docket No. 50-397

BWD-3r/f

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DOCKET NO(S). 50-397

Mr. G. C. Sorenson, Manager
Washington Public Power Supply System
P.O. Box 968
3000 George Washington Way
Richland, Washington 99352

SUBJECT:

WNP-2

The following documents concerning our review of the subject facility are transmitted for your information.

- ☐ Notice of Receipt of Application, dated _____.
- ☐ Draft/Final Environmental Statement, dated _____.
- ☐ Notice of Availability of Draft/Final Environmental Statement, dated _____.
- ☐ Safety Evaluation Report, or Supplement No. _____ dated _____.
- ☐ Environmental Assessment and Finding of No Significant Impact, dated _____.
- ☐ Notice of Consideration of Issuance of Facility Operating License or Amendment to Facility Operating License, dated _____.
- ☒ Bi-Weekly Notice; Applications and Amendments to Operating Licenses Involving No Significant Hazards Considerations, dated 10/22/86 [see page(s)] 37522
11/5/86 40287
- ☐ Exemption, dated _____.
- ☐ Construction Permit No. CPPR-_____, Amendment No. _____ dated _____.
- ☐ Facility Operating License No. _____, Amendment No. _____ dated _____.
- ☐ Order Extending Construction Completion Date, dated _____.
- ☐ Monthly Operating Report for _____ transmitted by letter dated _____.
- ☐ Annual/Semi-Annual Report- _____
transmitted by letter dated _____.

Office of Nuclear Reactor Regulation

Enclosures:
As stated

cc: See next page

OFFICE	LA:BWD-3:DB						
SURNAME	EHylton/vag						
DATE	11/12/86						