PUMPS AND VALVES IST PLAN

REVISION J

REVIEWED G H Ruiter DATE APR 3 0 1992

Plant Operations Engineer

APPROVED M Marchi DATE APR 3 0 1992

Manager - Kewaunee Plant

The Inservice Testing (IST) plan was prepared for the Kewaunee Nuclear Power Plant to address test requirements for the second 10-year cycle. The Kewaunee Plant which is located nine miles south of Kewaunee, Wisconsin on the western shore of Lake Michigan is operated by Wisconsin Public Service Corporation. Kewaunee is owned jointly by Wisconsin Public Service Corporation, Wisconsin Power & Light Company, and Madison Gas & Electric Company. The Kewaunee plant is a 540 megawatt electric, Westinghouse design, two loop pressurized water reactor which was placed into commercial operation in June 1974. The second inspection interval began June 16, 1984.

This Inservice Testing (IST) Plan was prepared in accordance with the requirements of the Code of Federal Regulations 10 CFR 50.55a(g).

As specified in 10 CFR 50.55a(g)(4)(ii), the ASME code edition and addenda selected for the preparation and use of the plan during the second 10-year interval is the latest version incorporated by reference in 10 CFR 50.55a(b)(2) approved one year prior to the start of the second interval. On June 16, 1983, the 1980 Edition with addenda through Winter 1981 addenda was the latest version of Section XI referenced in 10 CFR 50.55a(b)(2).

This plan consists of tables which delineate the ASME Code Class 1, 2 and 3 pumps and valves subject to the testing requirements of Subsection IWP and IWV of the ASME Boiler and Pressure Vessel Code, 1980 Edition and addenda through Winter 1981.

The tabulation of pumps, Table 1, identifies the pumps to be tested, pump code class, parameters to be measured, test procedures and intervals, and relief requests if necessary.

In addition to relief requests, which address those tests determined to be impractical and for which Nuclear Regulatory Commission approval is required, the plan includes notes in the tables. A note is used to further define the testing method or to reference an exception that is allowed by the Code.

The tabulation of valves, Table 2, identifies the valves to be tested, flow drawing on which the valve appears, ASME code class and category as defined by IWV-2200 of the Code, a description of the valve function, test procedures and frequency, and relief requests.

Valves which are not required to change position to perform their required function are considered "passive" vales and do not require exercise testing; however, if the passive valve is a containment isolation valve, leak rate testing is still required. Valves which are passive and for which seat leakage in the closed position is inconsequential for fulfillment of their function are not included in this IST plan.

The NRC Safety Evaluation Report dated September 30, 1982, concluded that the combination of system design and the performnace of hydrostatic testing is sufficient to assure that certain containment boundary valves are not relied upon to prevent the escape of containment air to the auxiliary building atmosphere. Therefore, several valves which might appear to be containment isolation valves and thus require leak testing (category A), are categorized as type B valves since their leakage is inconsequential for fulfillment of their function.

In accordance with IWV-3415, valves with fail-safe actuators are tested by observing the operation of the valves upon loss of actuation power. Placing the control switch in the proper position during normal exercising of the fail-safe valves will result in removing actuating power to these valves which would test their fail-safe feature.

A program has been established in accordance with IWV-3300 which requires valves with remote position indicators to be observed at least once every two years to verify that valve operation is accurately indicated.

TABLE 1 - ASME CODE CLASS 1, 2 AND 3 PUMP

PUMP DESCRIPTION	ASME CODE CLASS	TEST PARAMETERS	TEST PROCEDURE	TEST INTERVAL	NOTES/RELIEF REQUEST
High Head Safety Injection Pumps A and B	2	1. Speed (if variable)	N/A	N/A	
		2. Inlet Pressure	SP 33-098 SP 33-191*	3 months Refueling	
		3. Differential Pressure	SP 33-098 SP 33-191*	3 months Refueling	
		4. Flow Rate	SP 33-19I	Refueling	RR-5
		5. Vibration Amplitude	SP 55-177	3 months/ Refueling	
		6. Bearing Temperature	SP 33-191	Refueling	RR-14
		7. Lubricant Level or Pressure	SP 33-098 SP 33-191*	3 months Refueling	
			*Full Flow Test		
Residual Heat Removal Pumps A and B	2	1. Speed (if variable)	N/A	N/A	
		2. Inlet Pressure	SP 34-099 SP 34-285*	3 months Cold Shutdown	
		3. Differential Pressure	SP 34-099 SP 34-285*	3 months Cold Shutdown	
		4. Flow Rate	SP 34-285	Cold Shutdown	RR-5
		5. Vibration Amplitude	SP 55-177	3 months/ Cold Shutdown	
		6. Bearing Temperature	---	---	RR-15
		7. Lubricant Level or Pressure	---	---	RR-I5
			*Full Flow Test		

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TABLE 1 - ASME CODE CLASS 1, 2 AND 3 PUMP

PUMP DESCRIPTION	ASME CODE CLASS	TEST PARAMETERS	TEST PROCEDURE	TEST INTERVAL	NOTES/RELIEF REQUEST
Service Water Pumps AI A2 BI B2	3	I. Speed (if variable)	N/A	N/A	
		2. Inlet Pressure	SP 02-138	3 months	RR-16
		3. Differential Pressure	SP 02-138	3 months	
		4. Flow Rate	SP 02-138	3 months	
		5. Vibration Amplitude	SP 55-177	3 months	
		6. Bearing Temperature	---	---	RR-3
		7. Lubricant Level or Pressure	---	---	RR-3
Component Cooling Pumps A and B	3	1. Speed (if variable)	N/A	N/A	
		2. Inlet Pressure	SP 3I-168	3 months	RR-21
		3. Differential Pressure	SP 31-168	3 months	
		4. Flow Rate	SP 31-168	3 months	RR-11
		5. Vibration Amplitude	SP 55-177	3 months	
		6. Bearing Temperature	---	---	RR-17
		7. Lubricant Level or Pressure	SP 31-168	3 months	

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TABLE 1 - ASME CODE CLASS 1, 2 AND 3 PUMP

PUMP DESCRIPTION	ASME CODE CLASS	TEST PARAMETERS	TEST PROCEDURE	TEST INTERVAL	NOTES/RELIEF REQUEST
Auxiliary Feedwater Pumps (Motor Driven) A and B	3	1. Speed (if variable)	N/A	N/A	
		2. Inlet Pressure	SP 05B-104 SP 05B-283*	3 months Cold Shutdown	
		3. Differential Pressure	SP 05B-I04 SP 05B-283*	3 months Cold Shutdown	
		4. Flow Rate	SP 05B-283*	Cold Shutdown	RR-5
		5. Vibration Amplitude	SP 55-177	3 months/ Cold Shutdown	
		6. Bearing Temperature	SP 05B-283*	Cold Shutdown	
		7. Lubricant Level or Pressure	SP 05B-104 SP 05B-283*	3 months Cold Shutdown	
			*Full Flow Test		
Auxiliary Feedwater Pump (Turbine Driven) C	3	1. Speed (if variable)	SP 05B-105 SP 05B-284*	3 months Cold Shutdown	
		2. Inlet Pressure	SP 05B-105 SP 05B-284*	3 months Cold Shutdown	
		3. Differential Pressure	SP 05B-105 SP 05B-284*	3 months Cold Shutdown	
		4. Flow Rate	SP 05B-284*	Cold Shutdown	RR-5
		5. Vibration Amplitude	SP 55-177	3 months Cold Shutdown	
		6. Bearing Temperature	SP 05B-284*	Cold Shutdown	
		7. Lubricant Level or Pressure	SP 05B-105 SP 05B-284*	3 months Cold Shutdown	
			*Full Flow Test		

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TABLE 1 - ASME CODE CLASS 1, 2 AND 3 PUMP

PUMP DESCRIPTION	ASME CODE CLASS	TEST PARAMETERS	TEST PROCEDURE	TEST INTERVAL	NOTES/RELIEF REQUEST
Containment Spray Pumps A and B	2	1. Speed (if variable)	N/A	N/A	
		2. Inlet Pressure	SP 23-100	3 months	RR-22
		3. Differential Pressure	SP 23-100	3 months	
		4. Flow Rate	SP 23-100	3 months	
		5. Vibration Amplitude	SP 55-177	3 months	
		6. Bearing Temperature	---	---	RR-17
		7. Lubricant Level or Pressure	SP 23-100	3 months	
Diesel Generator Fuel Oil Transfer Pumps A and B	N/A	N/A	N/A	N/A	RR-23

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TABLE 2 - ASME CODE CLASS 1, 2 AND 3 VALVES
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SYSTEM	VALVE IDENT. OPS. NO	FLOW DIAGRAM	ASME CODE CLASS	VALVE CAT.	DESCRIPTION	TEST PROCEDURE EXERCISE	/ LEAKAGE	TEST FREQUENCY EXERCISE	/ LEAKAGE	RELIEF REQUEST
1	AS-1 AS-2	M-602	2	A	1-inch AOV Cntmt Air Sample to Rad. Monitors	SP55-167-5	SP56A-090	3 months	Refueling	
1	AS-32	M-602	2	A	1-inch AOV Cntmt Air Sample Return	SP55-167-5	SP56A-090	3 months	Refueling	
1	AS-33	M-602	2	A/C	1-inch check Cntmt Air Sample Return	---	SP56A-090	3 months	Refueling	RR-2
1	IA-101	M-213	Note 4	Note 4	1-inch AOV Inst. air to Cntmt	SP55-167-6	N/A	Cold Shutdown Note 15	N/A	
1	IA-102 IA-103	M-213	2	A/C	1-inch check Inst. air to Cntmt	---	SP56A-090	---	Refueling	RR-1
1	SA-471 SA-472	M-213	2	A/C	2-inch, manual/check Service air to Cntmt	N/A	SP56A-090	N/A	Refueling	RR-6A
1	SA-471-I SA-471-2	M-213	2	A	3/4-inch, manual Service air to Cntmt Annulus	N/A	SP56A-090	Note 1	Refueling	
1	SA-7004A SA-7004B	M-403	2	A/C	2-inch check Air Supply to Containment	N/A	SP56A-090	Note 1	Refueling	
1	SA-7003A SA-7003B	M-403	2	A	2-inch MOV Air Supply to Containment	SP55-167-4	SP56A-090	3 months	Refueling	

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SYSTEM	VALVE IDENT. OPS. NO	FLOW DIAGRAM	ASME CODE CLASS	VALVE CAT.	DESCRIPTION	TEST PROCEDURE EXERCISE	/ LEAKAGE	TEST FREQUENCY EXERCISE	/ LEAKAGE	RELIEF REQUEST
2	SW-1AI SW-1A2 SW-1B1 SW-1B2	M-202	3	C	14-inch, check SW pump discharge	SP02-138	N/A	3 months	N/A	
2	SW-3A SW-3B	M-202	3	B	24-inch, AOV SW pump disch. cross connect	SP02-138	N/A	3 months	N/A	
2	SW-4A SW-4B	M-202	3	B	20-inch, AOV SW supply to Turbine Bldg.	SP02-138	N/A	3 months	N/A	
2	SW-301A SW-301B	M-202	3	B	4-inch, AOV SW return from D/G Coolers	SP42-109 OR SP42-047	N/A	1 month	N/A	RR-4
2	SW-501A SW-501B	M-202	3	C	3-inch check SW to AFW pumps	SP05B-105	N/A	3 months	N/A	
2	SW-502 SW-601A SW-601B	M-202	3	B	4-inch MOV SW supply to AFW pumps	SP05B-104 SP05B-I05	N/A	3 months	N/A	
2	SW-901A SW-901B SW-901C SW-90ID	M-547	3	C	8-inch check SW supply to Cntmt F/C units	SP02-138	N/A	3 months	N/A	
2	SW-90IA-1 SW-901B-1 SW-901C-1 SW-901D-1	M-547	3	B	8-inch AOV Shroud Cooling Coil Bypass	SP02-138	N/A	3 months	N/A	
2	SW-903A SW-903B SW-903C SW-903D	M-547	3	B	8-inch MOV SW return from Cntmt F/C units	SP02-138	N/A	3 months	N/A	

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SYSTEM	VALVE IDENT. OPS. NO	FLOW DIAGRAM	ASME CODE CLASS	VALVE CAT.	DESCRIPTION	TEST PROCEDURE EXERCISE	/ LEAKAGE	TEST FREQUENCY EXERCISE	/ LEAKAGE	RELIEF REQUEST
2	SW-910A SW-910B SW-910C SW-910D	M-547	3	B	3-inch AOV Shroud Cooling Coil Supply	SP02-138	N/A	3 months	N/A	
2	SW-914A SW-9I4B SW-914C SW-914D	M-547	3	B	3-inch AOV Shroud Cooling Coil Discharge	SP02-138	N/A	3 months	N/A	
2	SW-1300A SW-1300B	M-202	3	B	10-inch, MOV SW to CC Heat Exchanger	SP3I-I68	N/A	3 months	N/A	
2	SW-1400	X-K100-19	3	B	2-inch MOV CC Emergency Makeup SW	SP31-168	N/A	3 months	N/A	
2	SW-6010	M-202	2	A	2-inch, manual SW to Cntmt Hose Stations	N/A	SP56A-090	Note 1	Refueling	
2	SW-6011	M-202	2	A/C	2-inch, check SW to Cntmt Hose Stations	N/A	SP56A-090	Note 1	Refueling	
5A	FW-12A FW-12B	M-205	2	B	16-inch MOV Main FW to S/G Isol. Valves	SP55-I67-6	N/A	Cold Shutdown Note 11	N/A	
5A	FW-13A FW-13B	M-205	2	C	16-inch check Main FW to S/G	SP55-167-6	N/A	Cold Shutdown Note 1I	N/A	
5B	AFW-IA AFW-1B AFW-1C	M-205	3	C	3-inch check AFW pumps discharge	SP05B-283 SP05B-284	N/A	Cold Shutdown Note 12	N/A	

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SYSTEM	VALVE IDENT. OPS. NO	FLOW DIAGRAM	ASME CODE CLASS	VALVE CAT.	DESCRIPTION	TEST PROCEDURE EXERCISE	TEST PROCEDURE LEAKAGE	TEST FREQUENCY EXERCISE	TEST FREQUENCY LEAKAGE	RELIEF REQUEST
5B	AFW-4A AFW-4B	M-205	2	C	3-inch check AFW to Steam Generators	SP05B-283	N/A	Cold Shutdown Note 12	N/A	
5B	AFW-10A AFW-10B	M-205	2	B	3-inch MOV TD AFW pump cross connects	SP05B-105	N/A	3 months	N/A	
6	MS-1A MS-1B	M-203	2	B/C	30-inch AOV/check Main Steam Isolation Valves	SP55-167-6	N/A	Cold Shutdown Note 10	N/A	
6	MS-100A MS-100B	M-203	2	B	3-inch MOV MS to TD AFW pump	SP05B-105	N/A	3 months	N/A	
6	MS-101A MS-101B	M-203	3	C	3-inch check MS to TD AFW pump	SP05B-105 SP05B-284	N/A	3 months Cold Shutdown Note 16	N/A	
6	MS-102	M-203	3	B	3-inch MOV MS to TD AFW pump	SP05B-105	N/A	3 months	N/A	
6	SD-1A1 SD-1A2 SD-1A3 SD-1A4 SD-1A5 SD-1B1 SD-1B2 SD-1B3 SD-1B4 SD-1B5	M-203	2	C	6-inch, safety relief Main Steam Line S/V	SP06-077	N/A	Note 3	N/A	

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SYSTEM	VALVE IDENT. OPS. NO	FLOW DIAGRAM	ASME CODE CLASS	VALVE CAT.	DESCRIPTION	TEST PROCEDURE EXERCISE	/ LEAKAGE	TEST FREQUENCY EXERCISE	/ LEAKAGE	RELIEF REQUEST
7	BT-2A BT-2B BT-3A BT-38	M-203	2	B	2-inch MOV S/G Blowdown Isol. Valves	SP55-167-1	N/A	3 months	N/A	
7	BT-31A BT-31B BT-32A BT-32B	M-219	2	B	3/8-inch AOV SGBT sample lines	SP55-167-1	N/A	3 months	N/A	
10	SA-2002A-P SA-2002B-P	M-213	Note 5	Note 5	1 1/2-inch check Station Air to D/G Air Start Motors	SP42-109 OR SP42-047	N/A	1 month Note 20	N/A	
10	SA-2012A SA-20128	M-213	Note 5	Note 5	1/4-inch Solenoid Start-up Comp. & Receiver to SW-301A(B)	SP42-109 OR SP42-047	N/A	1 month	N/A	RR-4
10	D/G A #1&#2 Air Start Valves D/G B #1&#2 Air Start Valves	None	Note 5	Note 5	Air Start Valves to D/G A & B Air Start Motors	SP42-109 OR SP42-047	N/A	2 months	N/A	RR-4A
18	LOCA-2A LOCA-2B	M-403	2	A	2-inch MOV H2 Control Post LOCA Cntmt Sample	SP55-167-4	SP56A-090	3 months	Refueling	
18	LOCA-3A LOCA-3B	M-403	2	A	1-inch AOV H2 Control Post LOCA Cntmt Sample	SP55-167-4	SP56A-090	3 months	Refueling	
18	LOCA-10A LOCA-10B	M-403	2	A	1-inch AOV H2 Control Post LOCA Cntmt Sample	SP55-167-4	SP56A-090	3 months	Refueling	

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SYSTEM	VALVE IDENT. OPS. NO	FLOW DIAGRAM	ASME CODE CLASS	VALVE CAT.	DESCRIPTION	TEST PROCEDURE EXERCISE	/ LEAKAGE	TEST FREQUENCY EXERCISE	/ LEAKAGE	RELIEF REQUEST
18	LOCA-100A LOCA-100B	M-403	2	A	2-inch AOV H2 Control Post LOCA to H2 Recombiners	SP55-167-4	SP56A-090	3 months	Refueling	
18	LOCA-201A LDCA-201B	M-403	2	A	2-inch AOV H2 Control Post LOCA Return from H2 Recombiners	SP55-167-4	SP56A-090	3 months	Refueling	
18	RBV-1 RBV-2 RBV-3 RBV-4	M-602	2	A	36-inch AOV Cntmt Purge & Vent	SP55-167-6	SP56A-090/ SP18-092	Cold Shutdown Note 6	Refueling/ 6 months	
18	RBV-150A RBV-150B RBV-150C RBV-150D	M-602	Note 19	Note 19	48x48-inch AOD F/C Unit Emergency Discharge Dampers	SP55-167-9	N/A	Refueling	N/A	
18	VB-10A VB-10B	M-602	2	A	18-inch AOV Cntmt Vacuum Breaker	SP55-167-5	SP56A-090	3 months	Refueling	
18	VB-11A VB-11B	M-602	2	A/C	21-inch check Cntmt Vacuum Breaker	N/A	SP56A-090	Note 1	Refueling	
23	ICS-2A ICS-2B	M-217	2	B	8-inch MOV RWST supply to ICS pumps	SP23-100	N/A	3 months	N/A	
23	ICS-3A ICS-3B	M-217	2	C	8-inch check RWST supply to ICS pumps	SP23-100	N/A	3 months	N/A	RR-7
23	ICS-4A ICS-4B	M-217	2	C	6-inch check ICS pump discharge	SP23-100	N/A	3 months	N/A	RR-7

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SYSTEM	VALVE IDENT. OPS. NO	FLOW DIAGRAM	ASME CODE CLASS	VALVE CAT.	DESCRIPTION	TEST PROCEDURE EXERCISE	TEST PROCEDURE LEAKAGE	TEST FREQUENCY EXERCISE	TEST FREQUENCY LEAKAGE	RELIEF REQUEST
23	ICS-5A ICS-5B ICS-6A ICS-68	M-217	2	B	6-inch MOV ICS pump discharge	SP23-100	N/A	3 months	N/A	
23	ICS-8A ICS-8B	M-217	2	C	6-inch check/manual ICS discharge line spray header, outside Cntmt	SP23-100	SSEP-08	3 months	Refueling	
23	ICS-9A ICS-9B	M-217	2	C	6-inch check/manual ICS discharge line spray header, inside Cntmt	SP55-167-6	SSEP-08	Cold Shutdown Note 14	Refueling	
23	ICS-201 ICS-202	M-217	2	B	2-inch AOV ICS recirc. to RWST	SP23-100	N/A	3 months	N/A	
23	C1-1001A CI-1001B	M-217	Note 4	Note 4	2-inch, AOV Caustic Additive to Cntmt Spray	SP23-100	N/A	3 months	N/A	
27	MU-301	M-205	Note 4	Note 4	6-inch check CST supply to AFW pumps	SP05B-104 & SP05B-105 SP05B-283 & SP05B-284	N/A	3 months Cold Shutdown Note 16	N/A	
27	MU-311A MU-311B MU-311C	M-205	3	C	4-inch check CST supply to AFW pumps	SP05B-104 & SP05B-105 SP05B-283 & SP05B-284	N/A	3 months Cold Shutdown Note 16	N/A	
27	MU-1011	X-K100-10	2	A/C	2-in check Rx Make-up to PRT	---	SP56A-090	---	Refueling	RR-6
27	MU-1010-1	X-K100-10	2	A	2-in AOV Rx Make-up to PRT	SP55-167-5	SP56A-090	3 months	Refueling	

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TABLE 2 - ASME CODE CLASS 1, 2 AND 3 VALVES

SYSTEM	VALVE IDENT. OPS. NO	FLOW DIAGRAM	ASME CODE CLASS	VALVE CAT.	DESCRIPTION	TEST PROCEDURE EXERCISE	TEST PROCEDURE LEAKAGE	TEST FREQUENCY EXERCISE	TEST FREQUENCY LEAKAGE	RELIEF REQUEST
30	MD(R)-323A MD(R)-323B	M-539	2	A	3-inch MOV Dearated drain pumps to Cntmt	N/A	SP56A-090	Note 1	Refueling	
30	MD(R)-324	M-539	2	A	3-inch check Dearated drain pumps to Cntmt	N/A	SP56A-090	Note 1	Refueling	
30	WG-310	M-539	2	A	2-inch solenoid Dearated drain tank Vent to Cntmt	N/A	SP56A-090	Note 1	Refueling	
30	WG-311	M-539	2	A	1-inch solenoid Dearated drain tank Vent to Cntmt	N/A	SP56A-090	Note 1	Refueling	
31	CC-3A CC-3B	X-K100-19	3	C	10-inch, check Component Cooling pump discharge	SP31-168	N/A	3 months	N/A	
31	CC-400A CC-400B	X-K100-19	3	B	10-inch, MOV CC water to RHR Hx	SP31-168	N/A	3 months	N/A	
31	CC-653	X-K100-20	2	B	3-inch MOV CCW from Excess Letdown Hx	SP31-168	N/A	3 months Note 4	N/A	
32A	MD(R)-134 MD(R)-135	X-K100-131	2	A	3-inch AOV Cntmt sump pump discharge	SP55-167-3	SP56A-090	3 months	Refueling	
32A	MG(R)-503 MG(R)-504	X-K100-131	2	A	3/8-inch AOV RCDT Vent to Gas Analyzer	SP55-167-3	SP56A-090	3 months	Refueling	

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SYSTEM	VALVE IDENT. OPS. NO	FLOW DIAGRAM	ASME CODE CLASS	VALVE CAT.	DESCRIPTION	TEST PROCEDURE EXERCISE	/ LEAKAGE	TEST FREQUENCY EXERCISE	/ LEAKAGE	RELIEF REQUEST
32B	MG(R)-509 MG(R)-510	X-K100-131	2	A	1-inch AOV RCDT to vent header	SP55-167-3	SP56A-090	3 months	Refueling	
32B	MG(R)-513 MG(R)-512	X-K100-10	2	A	3/8-inch AOV PRT to Gas Analyzer	SP55-167-3	SP56A-090	3 months	Refueling	
33	SI-2A SI-2B	X-K100-29	2	B	8-inch, MOV BAT supply to HPSI	SP33-098	N/A	3 months	N/A	
33	SI-4A SI-4B	X-K100-29	2	B	12-inch, MOV RWST supply to HPSI	SP33-098	N/A	3 months	N/A	
33	SI-5A SI-5B	X-K100-29	2	B	6-inch, MOV HPSI pump suction	SP33-098	N/A	3 months	N/A	
33	SI-6A SI-6B	X-K100-29	2	C	4-inch, check HPSI pump discharge	SP33-191	N/A	Refueling	N/A	RR-13
33	SI-9B	X-K100-28	2	B	3-inch, MOV HPSI to RX Vessel Core Flood	SP33-098	N/A	3 months	N/A	
33	SI-12A SI-12B	X-K100-28	1	C	2-inch, check HPSI to Cold Legs	SP33-191	N/A	Refueling	N/A	RR-13
33	SI-13A SI-13B	X-K100-28	1	C	6-inch, check HPSI to Cold Legs	SP33-191	N/A	Refueling	N/A	RR-13
33	SI-15A SI-15B	X-K100-28	2	B	2-inch, MOV HPSI to Rx Vessel Core Flood	SP33-098	N/A	3 months	N/A	
33	SI-16A SI-16B	X-K100-28	1	C	2-inch, check HPSI to Rx Vessel Core Flood	SP33-191	N/A	Refueling	N/A	RR-13
33	SI-21A SI-21B	X-K100-28	1	C	12-inch, check Accum. disch. Stop Valves	SP33-144	N/A	Cold Shutdown Note 18	N/A	RR-10

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TABLE 2 - ASME CODE CLASS 1, 2 AND 3 VALVES
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SYSTEM	VALVE IDENT. OPS. NO	FLOW DIAGRAM	ASME CODE CLASS	VALVE CAT.	DESCRIPTION	TEST PROCEDURE EXERCISE	TEST PROCEDURE LEAKAGE	TEST FREQUENCY EXERCISE	TEST FREQUENCY LEAKAGE	RELIEF REQUEST
33	SI-22A	X-K100-28	1	C	12-inch, check Accum. disch to Cold Leg	SP33-144	N/A	Cold Shutdown Note 18	N/A	RR-10
33	SI-22B	X-K100-28	1	A/C	12-inch, check Accum. disch to Cold Leg	SP33-144	SP33-204	Cold Shutdown Note 18	Note 2	RR-10
33	SI-206A SI-206B	X-K100-29	2	C	2-inch, check Test line to RWST	Note 17	N/A	Note 17	N/A	
33	SI-208 SI-209	X-K100-29	2	B	2-inch, MOV Test line to RWST	SP34-099	N/A	3 months	N/A	
33	SI-300A SI-300B	X-K100-29	2	B	10-inch, MOV RWST Supply to RHR Pumps	SP34-099	N/A	3 months	N/A	
33	SI-301A SI-301B	X-K100-29	2	B	10-inch, check RWST Supply to RHR Pumps	SP55-167-9	N/A	Refueling	N/A	RR-13
33	SI-303A SI-303B	X-K100-28	1	A/C	6-inch, check LPSI to Rx Vessel	SP55-167-9	SP34-203	Refueling	Note 2	RR-13
33	SI-304A SI-304B	X-K100-28	1	A/C	6-inch, check HPSI and LPSI to Rx Vessel	SP55-167-9	SP34-203	Refueling	Note 2	RR-13
33	SI-350A SI-350B SI-351A SI-351B	X-K100-28	2	B	12-inch MOV Cntmt Sump Recirc to RHR	SP34-099	N/A	3 months	N/A	

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TABLE 2 - ASME CODE CLASS 1, 2 AND 3 VALVES
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SYSTEM	VALVE IDENT. OPS. NO	FLOW DIAGRAM	ASME CODE CLASS	VALVE CAT.	DESCRIPTION	TEST PROCEDURE EXERCISE	/ LEAKAGE	TEST FREQUENCY EXERCISE	/ LEAKAGE	RELIEF REQUEST
34	RHR-1A RHR-1B	X-K100-18	1	B	8-inch MOV RHR suction from Hot Legs	SP55-167-6	N/A	Cold Shutdown Note 7	N/A	
34	RHR-2A RHR-28	X-K100-18	1	B	8-inch MOV RHR suction from Hot Legs	SP55-167-6	N/A	Cold Shutdown Note 7	N/A	
34	RHR-3A RHR-3B	X-K100-18	2	C	8-inch, check RHR pump suction from Hot Legs	SP34-285	N/A	Cold Shutdown Note 7	N/A	
34	RHR-5A RHR-5B	X-K100-18	2	C	8-inch, check RHR pump discharge	SP34-099 SP34-285	N/A	3 months Cold Shutdown Note 9	N/A	
34	RHR-11	X-K100-1B	1	B	10-inch MOV RHR to Loop B Cold Leg	SP55-167-6	N/A	Cold Shutdown Note 8	N/A	
34	RHR-33	X-K100-18	2	C	2-inch relief valve RHR suction relief valve	SP34-192	N/A	Note 3	N/A	
34	RHR-33-1	X-K100-18	2	C	6-inch, safety relief RHR Suction LTOP protection	SP34-192	N/A	Note 3	N/A	
34	RHR-300A RHR-300B	X-K100-29	2	B	6-inch, MOV HPSI pump suction from RHR	SP33-098	N/A	3 months	N/A	
34	RHR-400A RHR-400B	M-217	2	B	6-inch MOV RHR supply to ICS pumps	SP34-099	N/A	3 months	N/A	
34	RHR-401A RHR-401B	M-217	2	C	6-inch check RHR supply to ICS pumps	SP34-099	N/A	3 months	N/A	RR-8

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TABLE 2 - ASME CODE CLASS 1, 2 AND 3 VALVES
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SYSTEM	VALVE IDENT. OPS. NO	FLOW DIAGRAM	ASME CODE CLASS	VALVE CAT.	DESCRIPTION	TEST PROCEDURE EXERCISE	TEST PROCEDURE LEAKAGE	TEST FREQUENCY EXERCISE	TEST FREQUENCY LEAKAGE	RELIEF REQUEST
35	CVC-7	X-K100-36	2	A	2-inch control Charging to Regen. Hx	SP55-167-6	SP56A-090	Cold Shutdown	Refueling	RR-12
35	CVC-9	X-K100-36	2	A	2-inch manual Charging to Regen. Hx	N/A	SP56A-090	Note 1	Refueling	
35	CVC-10	X-K100-35	2	A/C	2-inch, check Charging to Regen. Hx	---	SP56A-090	---	Refueling	RR-1
35	CVC-54	M-539	2	A	2-inch solenoid VCT offgas vent to Cntmt	N/A	SP56A-090	Note 1	Refueling	
35	CVC-55	M-539	2	A/C	2-inch check VCT offgas vent to Cntmt	N/A	SP56A-090	Note 1	Refueling	
35	CVC-205A CVC-205B CVC-206A CVC-206B	X-K100-35	1	A/C	2-inch, check RXCP seal injection	---	SP56A-090	---	Refueling	RR-1
35	CVC-211 CVC-212	X-K100-35	2	A	3-inch, MOV RXCP seal return	SP55-167-6	SP56A-090	Cold Shutdown	Refueling	RR-20
35	CVC-440	X-K100-36	Note 4	Note 4	2-inch, MOV Emergency Boration	SP55-167-5	N/A	3 months	N/A	
35	LD-4A LD-4B LD-4C	X-K100-35	2	A	2-ich AOV Outlet from Letdown Orifices	SP55-167-5	SP56A-090	3 months	Refueling	
35	LD-6	X-K100-35	2	A	2-inch, AOV Letdown to Heat Exchanger	SP55-167-6	SP56A-090	Cold Shutdown Note 13	Refueling	

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TABLE 2 - ASME CODE CLASS 1, 2 AND 3 VALVES
(Page 13 of 14)

SYSTEM	VALVE IDENT. OPS. NO	FLOW DIAGRAM	ASME CODE CLASS	VALVE CAT.	DESCRIPTION	TEST PROCEDURE EXERCISE	/ LEAKAGE	TEST FREQUENCY EXERCISE	/ LEAKAGE	RELIEF REQUEST
36	PR-1A PR-1B	X-K100-10	1	B	3-inch MOV Przr Relief Block Valve	SP55-167-5	N/A	3 months	N/A	
36	PR-2A PR-2B	X-K100-10	1	B	3-inch AOV Przr Relief Valves	SP55-167-6	N/A	Cold Shutdown Note 4A	N/A	
36	PR-3A PR-3B	X-K100-10	1	C	6-inch safety Przr Safety Valves	SP36-076B	N/A	Note 3	N/A	
36	PR-33A PR-33B	X-K100-10	1	B	1-inch solenoid Przr Steam Space Vent	SP55-167-9	N/A	Refueling	N/A	RR-18 & RR-19
36	PR-45A PR-45B	X-K100-10	1	B	1-inch solenoid Rx Head Vent	SP55-167-9	N/A	Refueling	N/A	RR-18 & RR-19
36	RC-46	X-K100-10	1	B	1-inch solenoid Przr and Rx Vent to PRT	SP55-167-9	N/A	Refueling	N/A	RR-18 & RR-19
36	RC-49	X-K100-10	1	B	1-inch solenoid Przr and Rx Vent to Cntmt	SP55-167-9	N/A	Refueling	N/A	RR-18 & RR-19
36	RC-507 RC-508	X-K100-131	2	A	3-inch AOV RCDT pump discharge	SP55-167-5	SP56A-090	3 months	Refueling	
37	RC-402 RC-403	X-K100-44	2	A	3/8-inch AOV Przr Steam Space Sample	SP55-167-5	SP45A-090	3 months	Refueling	
37	RC-412 RC-413	X-K100-44	2	A	3/8-inch AOV Przr liquid space Sample	SP55-167-5	SP56A-090	3 months	Refueling	

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TABLE 2 - ASME CODE CLASS 1, 2 AND 3 VALVES

SYSTEM	VALVE IDENT. OPS. NO	FLOW DIAGRAM	ASME CODE CLASS	VALVE CAT.	DESCRIPTION	TEST PROCEDURE EXERCISE	TEST PROCEDURE LEAKAGE	TEST FREQUENCY EXERCISE	TEST FREQUENCY LEAKAGE	RELIEF REQUEST
37	RC-422 RC-423	X-K100-44	2	A	3/8-inch solenoid RC Hot Leg Sample	SP55-167-5	SP56A-090	3 months	Refueling	RR-18
51	NG-107	X-K100-28	2	A	1-inch AOV N2 supply to Accum.	SP55-167-5	SP56A-090	3 months	Refueling	
51	NG-107-1	X-K100-28	2	A	1-inch check N2 supply to Accum.	N/A	SP56A-090	Note 1	Refueling	
51	NG-302	X-K100-10	2	A	3/4-inch AOV N2 supply to PRT	SP55-167-5	SP56A-090	3 months	Refueling	
51	NG-304	X-K100-10	2	A/C	3/4-inch check N2 supply to PRT	---	SP56A-090	---	Refueling	RR-6

Biennial verification of AOV and MOV remote position indication per IWV-3300 is performed by SP87-273 and SP87-274 respectively.

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APPENDIX A

Inservice Testing Program

Generic Relief Requests

The following relief requests are general in nature and apply to the entire IST program. These relief requests are not indicated on the program tables because they apply to the entire program and need not be noted as a relief for each individual pump or valve.

Relief Request IST-RR-G1

Individual valves and groups of valves which are required to perform a containment isolation function under postulated accident conditions are leak tested in accordance with Appendix J to 10 CFR 50 and need not be further leak tested in accordance with Section XI, Articles IWV-3421 through IWV-3425.

Leakage limits for containment isolation valves or groups of containment isolation valves and associated corrective actions have been established in lieu of the trending requirements of IWV-3427(b) of the ASME code. This method was discussed with the NRC staff during a March 12 and 13, 1985 meeting regarding the Kewaunee Inservice Testing Program.

Relief Request IST-RR-G2

In lieu of the requirements of Article IWV-3417 of the ASME Code, alert and action levels based on minimum/maximum acceptable stroke times have been established. When a valve exhibits a stroke time exceeding the alert level, the valve testing frequency is increased to monthly until the condition is corrected. (For valves which are tested only at cold or refueling shutdowns the condition is investigated and resolved prior to leaving the shutdown mode). If a valve's stroke time exceeds the action level limit, the valve will be declared inoperable.

A normal operating range has been established which defines the historical variance in the stroke times during past exercises. WPSC believes that developing a normal range of stroke times from previous tests is equal to if not a superior method of identifying valve degradation to that of the code. Stroke times which are not within the normal range are not necessarily indicative of degradation or unacceptability; however, further monitoring may be warranted.

Power operated valves with normal stroke times of 2 seconds or less will be defined as rapid-acting valves. These valves will have a maximum limiting value of full-stroke time of 2 seconds. If a rapid-acting valve exhibits a stroke time greater than 2 seconds the valve will be declared inoperable and corrective action will be taken in accordance with IWV-3417(b). This is consistent with GL 89-04.

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In general, for valves which normally exhibit a stroke time of less than or equal to 10 seconds but greater than 2 seconds, the alert level is defined as the value at which the stroke time is less than 50% of the normal stroke time or greater than 150% of the normal stroke time.

The action level is defined as the value at which the measured stroke time is either less than half of the alert minimum stroke time or greater than twice the alert maximum stroke time. Although IWV-3417 only expresses concern for an increase in stroke time from the previous inservice test, WPSC contends that comparing test results to both upper and lower alert and action levels, calculated from normal stroke times, can be useful in identifying valve degradation. However, establishing lower limits for valves that have normal stroke times of less than or equal to 5 seconds is impractical (e.g., a valve with a normal stroke time of 5 seconds has lower alert and action levels (after rounding) of less than 3 seconds and less than 1 second respectively). Therefore, valves with normal stroke times of less than or equal to 5 seconds will only have upper alert and action levels (rapid-acting valves only have an upper action level.)

For valves which normally exhibit a stroke time of greater than 10 seconds, the alert level is defined as the value at which the stroke time is less than 75% of the normal stroke time or greater than 125% of the normal stroke time. The action level is defined as the value at which the measured stroke time is either half of the alert minimum stroke time or greater than twice the alert maximum stroke time.

In all cases if a predefined limit exists (such as FSAR limits, good engineering judgement, etc.) the most limiting of either the predefined limit or the calculated limit will be used.

The establishment of stroke time ranges meets the intent of the ASME code by providing a method of identifying degradation of valve performance and establishing limits at which corrective action must be taken.

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APPENDIX B

Inservice Testing Program

Relief Requests

Relief Request IST-RR-1

Components Affected

The following check valves are affected:

Valve #	Flow Diagram
CVC-205A	X-K-100-35
CVC-205B	X-K-100-35
CVC-206A	X-K-100-35
CVC-206B	X-K-100-35
CVC-10	X-K-100-35
IA-102	M-213
IA-103	M-213

Section XI Requirement

Article IWV-3522 requires that these check valves be exercised to the position required to fulfill their function at least once every 3 months unless such operation is not practical during plant operation. If only limited operation is practical during plant operation, the check valve shall be part-stroke exercised during plant operation and full-stroke exercised during cold shutdowns. Valves that cannot be exercised during plant operation shall be specifically identified by the Owner and shall be full-stroke exercised during cold shutdown.

Basis for Requesting Relief

The safeguard function required for these valves is to provide containment isolation. Exercise tests in the closed direction are not performed during plant operation since these lines are required to operate.

Alternate Methods of Testing

These valves do act as containment isolation valves and will receive leakage tests in accordance with 10 CFR 50, Appendix J during refueling which will verify full closure capability.

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Relief Request IST-RR-2

Components Affected

Valve #	Flow Diagram
AS-33	M-602

Section SI Requirement

Article IWV-3522 requires that these check valves be exercised to the position required to fulfill their function at least once every 3 months unless such operation is not practical during plant operation. If only limited operation is practical during plant operation, the check valve shall be part-stroke exercised during plant operation and full-stroke exercised during cold shutdowns. Valves that cannot be exercised during plant operation shall be specifically identified by the Owner and shall be full-stroke exercised during cold shutdown.

Basis for Requesting Relief

The safeguard function required for this valve is to provide containment isolation. Quarterly exercise tests on the air operated sample isolation valve (AS-32) do exercise this valve in the closed direction during plant operation; however due to lack of position indication, full closure cannot be verified.

Alternate Method of Testing

This valve does act as a containment isolation valve and will receive leakage tests in accordance with 10 CFR 50, Appendix J during refueling which will verify full closure capability.

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Relief Request IST-RR-3

Components Affected

The following parameters on Service Water Pumps A1, A2, B1, B2, are affected:

1) Proper lubricant level or pressure

2) Bearing temperature

Section XI Requirement

Article IWP-3110 requires that pump bearing temperature be measured and that proper lubricant level or pressure be observed. The frequency for performing these pump tests is at least once every 3 months.

Basis for Requesting Relief

Seal injection flow is used for bearing cooling and the water being pumped provides lubrication. The system design does not provide for monitoring the seal injection water and the submerged impeller pump design does not include bearing temperature measuring capability; therefore, bearing temperature and lubricant level cannot be measured. The seal injection low flow alarm, annunciated in the control room, will provide early indication of loss of cooling water.

Alternate Method of Testing

There is no practical means of measuring these parameters.

Relief Request IST-RR-4

Components Affected

Valve #	Flow Diagram
SW-301A	M-202 Sh. 1
SW-301B	M-202 Sh. 1
SA-2012A	M-213
SA-2012B	M-213

Section XI Requirement

Articles IWV-3411 and IWV-3412 require that these valves be exercised to the position required to fulfill their function at least once every 3 months unless such operation is not practical during plant operation. If only limited operation is practical during plant operation, the valve shall be part-stroke exercised during plant operation and full-stroke exercised during cold shutdowns. Valves that cannot be exercised during plant operation shall be specifically identified by the Owner and shall be full-stroke exercised during cold shutdowns. Article IWV-3413 requires that the limiting value of full-stroke time of each power-operated valve shall be specified by the Owner.

Basis for Requesting Relief

SA-2012A(B) are 3-way solenoid valves that receive an automatic open signal based on diesel RPM as part of the diesel generator (D/G) start sequence. When the diesel reaches the required RPM, SA-2012A(B) changes position and vents air from the SW-301A(B) actuator. This causes SW-301A(B) to open and thereby allows service water to cool the D/G components.

NOTE: Relief has been granted for these valves for an interim period of 1 year. WPSC should develop a means to enhance the current testing to monitor the valves for degradation. Relief is granted until 1/27/93.

There is no operator action necessary to open these valves nor is there any remote position indication that could be used for stroke timing. SW-301A(B) can be verified to be in full open position by observing local indication on top of the valve. However, since the opening of these valves is not a direct result of operator action it is impractical to use the local indication as a means of stroke timing the valves because the local operator would not know when the initial opening signal was generated. There is no practical method of performing full stroke exercise timing tests on these valves. The proposed alternate method of testing will ensure valve operability.

Alternate Method of Testing

During monthly surveillance testing of the D/Gs these valves will be verified to be operable. SW-301A(B) will be verified to be in full open position by observing local indication on top of the valves. This will verify SA-2012A(B) are operable since the opening of SW-301A(B) is a direct result of SA-2012A(B) actuation.

Relief Request IST-RR-4A

Components Affected

Valve #	Flow Diagram
Diesel Generator 1A Air Start Valves #1 and #2	None
Diesel Generator 1B Air Start Valves #1 and #2	None

Section XI Requirement

Articles IWV-3411 and IWV-3412 require that these valves be exercised to the position required to fulfill their function at least once every 3 months unless such operation is not practical during plant operation. If only limited operation is practical during plant operation, the valve shall be part-stroke exercised during plant operation and full-stroke exercised during cold shutdowns. Valves that cannot be exercised during plant operation shall be specifically identified by the Owner and shall be full-stroke exercised during cold shutdowns. Article IWV-3413 requires that the limiting value of full-stroke time of each power-operated valve shall be specified by the Owner.

Basis for Requesting Relief

These valves receive an automatic open signal as part of the diesel generator (D/G) start sequence. Their function is to supply air to the air start motors on the diesels. The D/Gs are tested monthly and the #1 and #2 air start motors on each diesel are alternated between tests. Alternating the air start motors assures that each valve is exercised at least once every three months. There is no operator action necessary to open these valves nor is there any remote indication that would allow stroke time measurement. The proposed alternate method of testing will ensure valve operability.

Alternate Methods of Testing

Operation of these valves is instrumental in starting the D/Gs. Failure of the D/G to reach rated speed in the normal time may be an indication of valve degradation. Therefore, monitoring D/G start time will ensure operability of these valves.

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Relief Request IST-RR-5

Components Affected

Safety Injection Pumps A and B
Residual Heat Removal Pumps A and B
Auxiliary Feedwater Pump A, B and C

Section XI Requirement

Article IWP-3100 details the pump parameters that must be measured or observed at least once every 3 months with the pump operating. Included in the parameters to be measured is flow rate.

Basis for Requesting Relief

As allowed by Article IWP-1400 of the ASME code, a pump can be tested in a bypass loop if its normal path cannot be practically tested. These pumps are operated at least once every 3 months and tested using a fixed resistance recirculation path. In each case the recirculation bypasses the installed system flow instrumentation; therefore, measuring flow rate through the bypass loop is not possible.

Since each pump is tested using a fixed resistance flow path, the flow rate is not a variable during test performance. In addition, if the characteristics of the recirculation line were to change, causing a change in flow rate, measuring the pump differential pressure will indicate the change in the pump/test loop system and appropriate corrective actions will be initiated.

Alternate Methods of Testing

The Auxiliary Feedwater pumps and the Residual Heat Removal pumps are tested in a configuration that allows flow measurement under full-flow conditions on a cold shutdown frequency. The high head Safety Injection pumps are tested in a configuration that allows flow measurement under full-flow conditions on a refueling outage frequency.

Relief Request IST-RR-6

Components Affected

Valve #	Flow Diagram
NG-304	X-K100-10
MU-1011	X-K100-10

Section XI Requirement

Article IWV-3522 requires that these check valves be exercised to the position required to fulfill their function at least once every 3 months unless such operation is not practical during plant operation. If only limited operation is practical during plant operation, the check valve shall be part-stroke exercised during plant operation and full-stroke exercised during cold shutdowns. Valves that cannot be exercised during plant operation shall be specifically identified by the Owner and shall be full-stroke exercised during cold shutdown.

Basis for Requesting Relief

These valves are normally closed check valves whose safety function is to remain closed post accident to provide containment isolation (i.e. passive). Periodic opening of these valves during power operation may be necessary to maintain desired pressurizer relief tank level, temperature and pressure. If these valves are opened during power operation, they are opened for short duration only. Opening of these valves would necessitate recategorizing these valves as active, however, no practical means exist to verify full closure of these check valves following their usage.

Alternate Method of Testing

These valves do act as containment isolation valves and will receive leakage tests in accordance with 10 CFR 50, Appendix J during refueling which will verify full closure capability.

Relief Request IST-RR-6A

Components Affected

Valve #	Flow Diagram
SA-471	M-213
SA-472	M-213

Section XI Requirement

Article IWV-3522 requires that these check valves be exercised to the position required to fulfill their function at least once every 3 months unless such operation is not practical during plant operation. If only limited operation is practical during plant operation, the check valve shall be part-stroke exercised during plant operation and full-stroke exercised during cold shutdowns. Valves that cannot be exercised during plant operation shall be specifically identified by the Owner and shall be full-stroke exercised during cold shutdowns.

Basis for Requesting Relief

These valves are normally closed stop check valves whose safety function is to remain closed post accident to provide containment isolation (i.e passive). Periodic opening of these valves during power operation may be necessary to provide service air inside of containment. If these valves are opened during power operation, they are opened for short duration only. Opening of these valves would necessitate recategorizing these valves as active; however, no practical means exist to verify full closure of these stop check valves following their usage.

Alternate Method of Testing

These valves do act as containment isolation valves and will receive leakage tests in accordance with 10 CFR 50, Appendix J during refueling which will verify full closure capability.

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Relief Request IST-RR-7

Components Affected

Valve #	Flow Diagram
ICS-3A(B)	M-217
ICS-4A(B)	M-217

Section XI Requirements

Article IWV-3522 requires that these check valves be exercised to the position required to fulfill their function at least once every three months unless such operation is not practical during plant operation. If only limited operation is practical during plant operation, the check valve shall be part-stroke exercised during plant operation and full-stroke exercised during plant shutdowns. Valves that cannot be exercised during plant operation shall be specifically identified by the Owner and shall be full-stroke exercised during cold shutdowns.

Basis for Requesting Relief

A test line downstream of these valves was installed to recirculate water back to the Refueling Water Storage Tank (RWST) during quarterly Internal Containment Spray (ICS) pump testing. The orifice plate was replaced in the test line during the 1992 refueling outage under DCR 2379. Both trains of ICS were full-flow tested prior to the replacement of the orifice plate. However, after the replacement, train "A" marginally passed the test and train "B" was able to obtain only 96% of the required flow. This is acceptable for pump testing but check valve testing requires 100% of the design flow to pass through the valves to verify full-stroke to the open position. The orifice will be modified during the 1993 Refueling Outage to allow design flow to pass through the system and accommodate full-flow testing of these valves. For these reasons, we are requesting relief for a period of one year to allow for the modification of the system during the 1993 Refueling Outage. This Relief Request will be deleted after the full-flow testing capability is restored to the system.

Alternate Method of Testing

During the quarterly ICS pump run test, partial stroke operation of these valves will be verified. After the modifications during the 1993 refueling outage, the valves will be full-flow tested to verify full-stroke capabilities. If full-flow is not obtained after the modification, the valves will be grouped and a sample disassembly will be performed at that time.

Relief Request IST-RR-8

Components Affected

Valve #	Flow Diagram
RHR-401A	M-217
RHR-401B	M-217

Section XI Requirement

Article IWV-3522 requires that these check valves be exercised to the position required to fulfill their function at least once every 3 months unless such operation is not practical during plant operation. If only limited operation is practical during plant operation, the check valve shall be part-stroke exercised during plant operation and full-stroke exercised during cold shutdown. Valves that cannot be exercised during plant operation shall be specifically identified by the Owner and shall be full-stroke exercised during cold shutdown.

Basis for Requesting Relief

These check valves are in the RHR supply line to the ICS pumps. During the 1991 KNPP refueling outage, a modification was made to the ICS system to allow for full flow testing of the ICS pumps and certain ICS check valves. WPSC is currently evaluating if it is possible to utilize this new configuration to also full-stroke exercise RHR-401A(B). To full-stroke these valves, the RHR and ICS pumps must be operated in series with flow through the full-flow test line.

It has been determined that passing flow from the RHR pumps through idle ICS pumps is possible without damaging the ICS pumps; however, only partial flow (approximately 75%) can be obtained. Partial flow exercising of check valves RHR-401A and B is being performed quarterly using this method. If the evaluation proves that a full flow test can be performed, the valves will be full-stroke exercised during cold shutdown per IWV-3522. However, if full flow testing cannot be performed, approval of this relief request would allow disassembly and inspection as an alternate method to ensure operability of RHR-401A(B). In addition to ensuring operability, the new proposed alternate method of testing will also identify valve degradation, and is consistent with Generic Letter 89-04 acceptable alternatives.

It should be noted that prior to receipt of the Safety Evaluation of the KNPP IST Program, RHR-401A(B) were demonstrated operable by observing pressure downstream of these check valves. Recognizing the NRC's desire for additional verification of operability, WPSC disassembled and inspected both of these check valves during the 1991 refueling outage and one during the 1992 refueling outage in accordance with the alternate acceptable methods identified in Generic Letter 89-04. Although the NRC has already adopted disassembly and inspection as an acceptable alternate method, WPSC is formally requesting relief to ensure the docket is complete in this regard, and to clearly state our intent to implement disassembly and inspection in the future, should our evaluation demonstrate that full flow testing for RHR-401A(B) is not possible.

Alternate Method of Testing

If full-flow testing is not possible at cold shutdowns, these valves (RHR-401A(B)) will be placed into a sample disassembly and inspection program. Valves will be grouped according to factors such as size, manufacturer, service conditions, etc. Ultimate grouping will be based on good engineering judgement. A different valve from each group will be disassembled and inspected each refueling outage. Full-stroke capability of the valve will be verified by manually exercising the disk. The internals of the valve will be inspected for loose or corroded parts. If the disassembled valve is found to be incapable of performing its intended function, the remaining valves in the sample group will also be inspected.

Relief Request IST-RR-9

DELETED

Relief Request IST-RR-10

Components Affected

Valve #	Flow Diagram
SI-21A	X-K100-28
SI-21B	X-K100-28
SI-22A	X-K100-28
SI-22B	X-K100-28

Section XI Requirement

Article IWV-3522 requires that these check valves be exercised to the position required to fulfill their function at least once every 3 months unless such operation is not practical during plant operation. If only limited operation is practical during the plant operation, the check valve shall be part-stroke exercised during plant operation and full-stroke exercised during cold shutdowns. Valves that cannot be exercised during plant operation shall be specifically identified by the Owner and shall be full-stroke exercised during cold shutdowns.

Basis for Requesting Relief

These check valves will be tested during cold shutdowns (see Note 18); however, it is not feasible to exercise these check valves at the design basis LOCA flow rate (approximately 14,000 gpm.)

Alternate Method of Testing

Consistent with paragraph IWV-3522(b), these check valves will be partial flow exercised in a manner demonstrating that the disk moves freely off its seat by comparison of pressure differential and flow rate. In addition, these valves will be disassembled/inspected each defueling outage in order to detect any degradation that may have occurred.

Relief Request IST-RR-11

Components Affected

Component Cooling Pump-A
Component Cooling Pump B

Section XI Requirement

Article IWP-3100 details the parameters that must be measured or observed at least once every three months with the pump operating. Included in the parameters to be measured is flow rate.

Basis for Requesting Relief

Component Cooling flow will vary depending on plant mode and amount of equipment in service needing cooling. Therefore, a stable flow rate at a predefined reference value cannot be reproduced during each quarterly test.

Alternate Methods of Testing

Pump performance measurements are made with the flow condition of nominal flow during power operation plus flow through RHR heat exchanger 1B.

Flow measurements are made from a computer point and differential pressures are measured and recorded. The differential pressure is compared to that predicted by the pump curve for the measured flow rate. Action levels have been established based on the deviation from the predicted pump curve valves. This method of establishing Action levels is consistent with Article IWP-3110.

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Relief Request IST-RR-12

Components Affected

Valve #	Flow Diagram
CVC-7	X-K100-36

Section XI Requirement

Article IWV-1200 states that valves used for system control are exempt from testing; however, this control valve performs a containment isolation function. Therefore, in accordance with IWV-2100 this normally open valve is considered "active" and should be exercised to the closed position quarterly.

Basis for Requesting Relief

CVC-7 is an air-operated control valve, with a manual loading station, required to remain open during normal plant operation. The valve must remain open to provide a flow path from the charging pumps to the reactor coolant system. Therefore, exercising is not possible on a quarterly frequency. In addition, since the valve is manually controlled, measuring closing stroke time is not appropriate. Control valves are exempt from Section XI testing; however, since CVC-7 may perform a containment isolation function, it is included in the KNPP Pumps and Valves IST Plan.

Alternate Method of Testing

Since CVC-7 may perform a containment isolation function, it is closed and leak tested (10 CFR 50 Appendix J) each refueling. In addition, CVC-7 will also be full-stroke exercised and verified to exhibit smooth closure during cold shutdowns, unless tested within the preceding three months.

Relief Request IST-RR-13

Components Affected

Valve #	Flow Diagram	Valve #	Flow Diagram
SI-12A	X-K100-28	SI-303A	X-K100-28
SI-12B	X-K100-28	SI-303B	X-K100-28
SI-13A	X-K100-28	SI-304A	X-K100-28
SI-13B	X-K100-28	SI-304B	X-K100-28
SI-16A	X-K100-28	SI-6A	X-K100-29
SI-16B	X-K100-28	SI-6B	X-K100-29
		SI-301A	X-K100-29
		SI-301B	X-K100-29

Section XI Requirement

Article IWV-3522 requires that these check valves be exercised to the position required to fulfill their function at least once every 3 months unless such operation is not practical during plant operation. If only limited operation is practical during plant operation, the check valve shall be part-stroke exercised during plant operation and full-stroke exercised during cold shutdown. Valves that cannot be exercised during plant operation shall be specifically identified by the Owner and shall be full-stroke exercised during cold shutdowns.

Basis for Requesting Relief

These HPSI and LPSI check valves cannot be full or partial stroke exercised during power operation because neither the SI Pump head or the RHR Pump head is sufficient to overcome RCS pressure. The HPSI check valves cannot be full-stroke exercised using the SI Pumps during cold shutdowns since this could result in a challenge to the RCS low-temperature overpressurization protection system.

The LPSI check valves cannot be full-stroke exercised during cold shutdowns since there is not sufficient expansion volume in the RCS to allow flow to be established to test these valves. In addition, these valves cannot be exercised during cold shutdowns since establishing RHR flow through them may cause cooling flow to bypass the core and not remove decay heat.

Alternate Methods of Examination

These valves will be exercise tested on a refueling outage frequency.

Relief Request IST-RR-14

Components Affected

Safety Injection Pump A
Safety Injection Pump B

Section XI Requirement

Article IWP-3500(b) states that the pumps shall be run until the bearing temperatures stabilize, and then the quantities specified shall be measured or observed and recorded. A bearing temperature shall be considered stable when three successive readings taken at 10 minute intervals do not vary by more than 3%.

Basis for Requesting Relief

The Safety Injection pumps are limited to a maximum of 30 minutes operation on the mini-flow recirculation line to avoid pump damage; this restriction prevents obtaining stable bearing temperatures during the quarterly pump tests. Lack of adequate expansion volume in the RCS while at Cold Shutdown prevents obtaining stable bearing temperatures with the plant at cold shutdown.

The bearing temperatures on these pumps are measured during the refueling outage during filling of the refueling cavity. Stabilization of bearing temperature prior to the refueling cavity becoming full may not always be possible. In addition, the bearing oil cooling system for this pump is cooled by the service water system. The system is not temperature stabilized therefore, meaningful results from the recording of this temperature cannot be expected.

Alternate Method of Testing

The bearing temperatures on the Safety Injection Pumps are measured during the refueling outage while filling the reactor cavity. If bearing temperatures are not stabilized by the time the cavity is filled, the temperature reached just prior to the cavity becoming full will be utilized.

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Relief Request IST-RR-15

Components Affected

Residual Heat Removal Pump A
Residual Heat Removal Pump B

Section XI Requirement

Article IWP-3100 details the parameters that must be monitored either quarterly or annually when the pump is running. Included in the required parameters are verification of proper lubricant level or pressure and measurement of bearing temperature.

Basis for Requesting Relief

These pumps depend primarily on the liquid being pumped for lubrication of the pump bearings. The bearing lubricating water flow cannot be verified and pressure cannot be monitored. It is impractical to measure bearing temperature and lubricant level with this system design.

Alternate Method of Testing

No practical method of testing these parameters exists for this pump design.

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Relief Request IST-RR-16

Components Affected

Service Water Pump A1 -
Service Water Pump A2
Service Water Pump B1
Service Water Pump B2

Section XI Requirement

Article IWP-3100 details the parameters that must be monitored on a quarterly basis when the pump is running. Included in the parameters to be measured is the pump inlet pressure.

Basis for Requesting Relief

The Service Water pumps are of submerged impeller vertical design with no means of direct inlet pressure measurement as required by IWP-4200. The pumps suction side water supply is provided by the forebay.

Alternative Methods of Examination

Inlet pressure of these pumps will be established by reference to the level of water above the pump suction (forebay level).

Additionally, measurement of SW pump static suction pressure is not possible because all four pumps are submerged in, and take a suction directly from the forebay. Since there normally is at least two Service Water pumps operating at all times, static pump suction conditions cannot be obtained.

Relief Request IST-RR-17

Components Affected

Component Cooling Pump A
Component Cooling Pump B
Containment Spray Pump A
Containment Spray Pump B

Section XI Requirement

Article IWP-3100 details the parameters that must be measured either quarterly or annually when the pump is running. Included in the parameters to be measured on an annual basis is the pump bearing temperature (IWP-3300).

Basis for Requesting Relief

These pumps utilize an oil cooling reservoir internal to the pump to provide cooling to the bearings. The reservoir is cooled by natural convection through the pump casing (i.e. no cooling water is supplied). The pump design does not provide instrument ports to monitor the reservoir temperature nor does the manufacturer require monitoring the bearing temperature.

Alternate Methods of Testing

The lubricant level will be monitored via a local sight glass to ensure adequate lubricant level for cooling.

Relief Request IST-RR-18

Components Affected

Valve #	Flow Diagram
PR-33A	X-K100-10
PR-33B	X-K100-10
PR-45A	X-K100-10
PR-45B	X-K100-10
PR-46	X-K100-10
PR-49	X-K100-10
PR-422	X-K100-44
PR-423	X-K100-44

Section XI Requirement

Article IWV-3300 requires that these valves be observed at least once every two years to verify that valve operation is accurately indicated by their remote position indicators.

Basis for Requesting Relief

These valves are the pressurizer and reactor vessel head vent valves and the RCS hot leg sample line isolation valves. All the affected valves are fast-acting solenoid operated valves and are designed with completely enclosed movable plug/valve stem assemblies and position indicating reed switches. This design precludes observation of valve and switch operation for the purpose of verifying remote indication.

Alternate Method of Examination

The two RCS hot leg sample line isolation valves are leak tested during each refueling outage and are used routinely for obtaining reactor coolant samples; unexpected results in either case would identify potential problems with the remote position indication. Likewise, the pressurizer and reactor head vent valves are tested to verify open flow paths during each performance of the reactor coolant system fill and vent procedure and leak tightness is observed routinely within the scope of RCS leakage monitoring required by Technical Specifications. Problems with the remote position indication for these valves could be identified.

Relief Request IST-RR-19

Components Affected

Valve #	Flow Diagram
PR-33A	X-K100-10
PR-33B	X-K100-10
PR-45A	X-K100-10
PR-45B	X-K100-10
PR-46	X-K100-10
PR-49	X-K100-10

Section XI Requirement

Article IWV-3411 requires that these normally closed valves be full stroke exercised at least once every three months except as provided by IWV-3412(a). IWV-3412(a) states that "valves shall be exercised to the position required to fulfill their function unless such operation is not practical during plant operation. If only limited operation is practical during plant operation, the valve shall be part stroked during plant operation and full stroke exercised during cold shutdown."

Basis for Requesting Relief

These valves are the pressurizer and reactor vessel head vent valves. These valves cannot be operated during power operation because opening the valves could relieve reactor coolant water to either the pressurizer relief tank or directly to containment. Unnecessarily challenging these valves during power operation could result in a significant loss of coolant inventory. These valves cannot be exercise tested during cold shutdown conditions for similar reasons. Testing during cold shutdown conditions has indicated that unexpected valve opening can occur. As one of two valves in a series is opened, the associated valve has experienced burping or chattering. Unnecessary challenges to the system under cold shutdown conditions is not warranted.

Alternate Method of Examination

These valves will be exercise tested on a refueling outage frequency.

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Relief Request IST-RR-20

Components Affected

Valve #	Flow Diagram
CVC-211	X-K100-35
CVC-212	X-K100-35

Section XI Requirement

Article IWV-3411 requires that these normally open valves be full stroke exercised at least once every three months except as provided by IWV-3412(a). IWV-3412(a) states that "valves shall be exercised to the position required to fulfill their function unless such operation is not practical during plant operation. If only limited operation is practical during plant operation, the valve shall be part stroked during plant operation and full stroke exercised during cold shutdowns."

Basis for Requesting Relief

The safety function of these valves is to provide containment isolation. If the RCP seal return line containment isolation valves were placed in the closed position during power operation it would challenge the seal return relief valve and could cause a loss of RCS water to the pressurizer relief tanks. Therefore, closure of these valves during reactor coolant pump operation is not in the best interest of safety.

Alternative Methods of Examination

If the reactor coolant pumps are stopped during a cold shutdown, these valves will be exercised at that time, otherwise they will be exercised during the refueling outage. This ensures that the valves will be exercised at least on a refueling outage frequency.

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Relief Request IST-RR-21

Components Affected

Component Cooling Pump A
Component Cooling Pump B

Section XI Requirement

Article IWP-3100 details the parameters that must be measured either quarterly or annually when the pump is running. Included in the parameters to be measured is the pump inlet pressure before starting the pump.

Basis for Requesting Relief

At least one Component Cooling Pump is always running during plant operation. Since the pumps are arranged in parallel with common inlet and discharge piping, measuring the "before pump start" inlet pressure provides no meaningful data.

Alternate Method of Testing

None, the inlet pressure before pump start will not be measured.

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Relief Request IST-RR-22

Components Affected

Containment Spray Pump A
Containment Spray Pump B

Section XI Requirement

Article IWP-3100 details the parameters that must be measured either quarterly or annually when the pump is running. Included in the parameters to be measured is the pump inlet pressure.

Basis for Requesting Relief

The pump suction is supplied from the RWST with no installed pressure instrumentation capability.

Alternate Method of Testing

Pump inlet pressure is calculated from the RWST level. Since RWST level is confined to a very narrow band by Technical Specifications and does not change during test performance, the containment spray pump inlet pressure remains at a constant value and is included as a known quantity in the test procedure. The change in pump inlet pressure with and without the pump running is beyond the accuracy of the calculation method; therefore, inlet pressure before pump start is not recorded.

Relief Request IST-RR-23

Components Affected

Diesel Generator Fuel Oil Transfer Pump 1A
Diesel Generator Fuel Oil Transfer Pump 1B

Section XI Requirement

The Diesel Generator fuel oil transfer pumps are not within the scope of inservice testing as defined by Article IWP-1100; performance testing of these pumps is not specifically required by Section XI. However, 10 CFR 50.55(g)(6)(ii) states that the Commission may require the licensee to follow an augmented inservice inspection program for systems and components which it deems necessary. The current NRC position is that the Emergency Diesel Generator fuel oil transfer pumps should be included in the IST program and should be tested in accordance with the Code except where specific relief is requested.

Basis for Requesting Relief

The fuel oil transfer pumps are submerged within the underground fuel oil storage tanks in approximately 10 feet of diesel fuel oil and are inaccessible for routine testing or monitoring. In addition, instrumentation is not installed with which to measure bearing temperature, rotor vibration, flow, differential pressure, etc.

The Diesel Generators are supplied from indoor fuel oil day tanks which provide sufficient fuel capacity for Diesel Generator response to a loss of offsite power. As such, the fuel oil transfer pumps are not required to perform a specific function in shutting down the reactor or in mitigating the consequences of an accident (see IWP-1100), but are used only to replenish the day tanks upon fuel oil level loss during Diesel Generator runs. However, should a fuel oil transfer pump become inoperable, a variety of alternate means are available to transfer fuel oil to the day tanks; sufficient time is available to implement these alternate means of fuel oil transfer.

Alternate Method of Testing

The Diesel Generator fuel oil transfer pumps will be verified operable on a monthly basis in conjunction with routine surveillance testing (i.e., 2 hour duration run test) of the Emergency Diesel Generators. Operability of the fuel oil transfer pumps is defined as the ability to start and transfer fuel oil from the underground fuel oil storage tanks to the day tanks.

APPENDIX C

Inservice Testing Program

NOTES

Note 1 These valves have been defined as "passive" in accordance with Article IWV-2100. Exercise testing of these valves is not required.

Note 2 The leakage testing of these valves is performed in accordance with Technical Specification 4.2.a.3.

Note 3 Testing of safety and relief valves will be in accordance with the requirements of IWV-3500.

Note 4 Testing of this valve is not required by the ASME Code; however, since the operation of this valve has been determined to be important, the valve has been included in the program.

Note 4A Testing of this valve is not required by the ASME Code; however, since the operation of this valve has been determined to be important, the valve has been included in the program. In response to GL 90-06, WPSC committed to testing this valve as part of the IST Plan.

Note 5 These valves are not ASME Code Class 1, 2 or 3 but have been determined to be important to safety and therefore, the NRC requires an augmented inservice inspection per 10 CFR 50.55a(g)(6)(ii).

Note 6 These valves are administratively locked closed during power operation and cannot be cycled. In accordance with Article IWV-3412(a) of the ASME Code, these valves will be full stroke exercised during cold shutdowns.

Note 7 These valves are associated with the residual heat removal (RHR) system. The RHR suction valves (RHR-1A, RHR-1B, RHR-2A, RHR-2B) are interlocked with the RCS pressure and cannot be opened when RCS pressure is above 450 psig. The RHR pump suction check valves (RHR-3A and RHR-3B) cannot be exercised during power operation since the flow path involves taking a suction from the RCS hot legs and the suction isolation valves cannot be opened at normal operating RCS pressure. In accordance with Article IWV-3412(a) of the ASME code, these valves will be exercised during cold shutdowns.

Note 8 This valve does not perform a safety related function, however, it is the normal RHR cooldown flow path isolation valve. Since this valve will be operated during a normal controlled cooldown evolution, periodic testing is prudent; therefore, the valve has been included in the program. Exercise testing during cold shutdowns will identify valve degradation.

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Note 9 These RHR pump discharge check valves cannot be full-stroke exercised during power operation since the RHR pump head is not sufficient to overcome RCS pressure. These valves are partial stroked on a quarterly basis during the RHR pump test which utilizes a minimum flow recirculation line. In accordance with Article IWV-3412(a) of the ASME Code, these valves will be full stroke exercised during cold shutdowns.

Note 10 Exercising the main steam isolation valves (either full or partial stroke) during power operation would cause a plant transient that would result in a plant trip. In accordance with Article IWV-3412(a) of the ASME Code and Technical Specification 4.7, these valves will be full stroke exercised to the closed position during cold shutdowns.

Note 11 Exercising these valves during power operation would result in a loss of feedwater to the steam generators which would cause a plant trip. In accordance with Article IWV-3412(a) of the ASME Code, these valves will be verified closed by comparing pressures in the steam generators with the pressures upstream of the valves.

Note 12 Exercising these valves during power operation would result in thermal cycling of the feedwater nozzles and piping, which could result in premature component failure. In accordance with Article IWV-3412(a) of the ASME Code, these valves will be full stroke exercised during cold shutdowns.

Note 13 Exercising this isolation valve in the letdown line to the closed position during power operation could thermal shock the regenerative heat exchanger and charging piping, possibly causing premature failure. In accordance with Article IWV-3412(a) of the ASME Code, this valve will be full stroke exercised during cold shutdowns.

Note 14 These check valves are located inside containment and are not readily accessible during power operation. In accordance with Article IWV-3412(a) of the ASME Code, these valves will be manually exercised during cold shutdowns.

Note 15 Closure of this normally open valve would result in isolation of instrument air to containment. Removing instrument air to containment results in several air operated valves failing to their safe position. Several systems which are desired operable during power operation, such as charging and letdown, would isolate on loss of instrument air to the system's isolation valves. In accordance with Article IWV-3412(a) of the ASME Code, this valve will be full stroke exercised during cold shutdowns.

Note 16 Since the Auxiliary Feedwater (AFW) pumps are not full flow tested during power operation (see note 12), full stroke verification for these check valves cannot be performed during power operation. In accordance with IWV-3412(a) these valves will be partial stroked during the quarterly AFW pump test and full stroke exercised during cold shutdowns.

Note 17 These valves are not required to be tested (per Article IWV-1200), however, they are exercised during the quarterly safety injection pump and valve test. When a SI pump is running on mini flow recirculation, its corresponding testline check valve must open.

Note 18 These SI Accumulator discharge check valves cannot be full or partial stroke exercised during power operation since neither Accumulator pressure or SI pump discharge pressure are sufficient to overcome RCS pressure. In accordance with Article IWV-3412(a) of the ASME Code, these valves will be exercised during cold shutdowns (see RR-10). Additionally, these valves will be disassembled and inspected periodically in accordance with Generic Letter No. 89-04 guidance.

Note 19 Testing these ventilation dampers is outside the scope of the ASME Code; however, since their operation has been determined to be important to the operation of the Containment Fan Units, these dampers have been included in the program with a test frequency of once each refueling shutdown.

Note 20 The valves are not ASME Code Class 1, 2, or 3 but have been determined to be important to safety and therefore, the NRC requires an augmented inservice inspection per 10 CFR 50.55a(g)(6)(ii). These check valves are exercised to the position required to perform their safety function in accordance with the ASME Code during the monthly diesel generator testing.