

INTRODUCTION

This second 10-year Inservice Testing (IST) plan was prepared for the Kewaunee Nuclear Power Plant. 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 starts June 16, 1984.

This inservice testing (IST) program was prepared in accordance with the requirements of the Code of Federal Regulations 10 CFR 50.55 a(g).

As specified in 10 CFR 50.55 a(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 50.55 a(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 50.55 a(b)(2).

This plan provides a listing of 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 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 are 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 a testing method or to reference an exception that is allowed by the Code.

Similarly, the tabulation of valves identifies the valves to be tested, flow diagram 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" valves 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 performance 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.

If during implementation of this plan, any tests are found to be impractical we will submit relief requests to the NRC in accordance with 10 CFR 50.55a(g)5.

ASME CODE CLASS 1, 2, AND 3 VALVES

L9-4.1

Valve Indent. Ops. No.	Flow Diagram	ASME Code Class	Valve Cat.	Description	Test Procedure		Testing Frequency		Relief Requests
					Exercise	Leakage	Exercise	Leakage	
PR-1A PR-1B	X-K100-10	1	B	3-inch MOV Prz Relief Block Valve	SP-167-5	N/A	3 months	N/A	
PR-2A PR-2B	X-K100-10	1	C	3-inch AOV Prz Relief Valves	SP-167-9	N/A	Refueling	N/A	
PR-3A PR-3B	X-K100-10	1	C	6-inch safety Prz Safety Valves	SP-076B	N/A	Note 3	N/A	
PR-33A PR-33B	X-K100-10	1	B	1-inch solenoid Prz Steam Space Vent	SP-167-9	N/A	Refueling Note 1	N/A	
RC-45A RC-45B	X-K100-10	1	B	1-inch solenoid Rx Head Vent	SP-167-9	N/A	Refueling Note 1	N/A	
RC-49	X-K100-10	1	B	1-inch solenoid Prz and Rx Vent to Cont.	SP-167-9	N/A	Refueling Note 1	N/A	
RC-46	X-K100-10	1	B	1-inch solenoid Prz and Rx Vent. to PRT	SP-167-9	N/A	Refueling Note 1	N/A	
MG-(R)-513 MG-(R)-512	X-K100-10	2	A	3/8-inch AOV Prt to Gas Analyzer	SP-167-3	SP-90	3 months	Refueling	
NG-304	X-K100-10	2	A/C	3/4-inch check N ₂ supply to PRT	N/A	SP-90	N/A	Refueling	
NG-302	X-K100-10	2	A	3/4-inch AOV N ₂ supply to PRT	SP-167-5	SP-90	3 months	Refueling	
MU-1011	X-K100-10	2	A/C	2-inch check Rx Make-up to PRT	N/A	SP-90	N/A	Refueling	
MU-1010-1	X-K100-10	2	A	2-inch AOV Rx Make-up to PRT	SP-167-5	SP-90	3 months	Refueling	

ASME CODE CLASS 1, 2, AND 3 VALVES

Valve Ident. Ops. No.	Flow Diagram	ASME Code Class	Valve Cat.	Description	Test Procedure		Testing Frequency		Relief Requests
					Exercise	Leakage	Exercise	Leakage	
RHR-1A RHR-1B	X-K100-18	1	B	8-inch MOV RHR take off from hot legs	SP-167-6	N/A	Cold Shutdown Note 1	N/A	
RHR-2A RHR-2B	X-K100-18	1	B	8-inch MOV RHR take off from hot legs	SP-167-6	N/A	Cold Shutdown Note 1	N/A	
RHR-33	X-K100-18	2	C	2-inch, relief valve RHR suction relief valve	SP-192	N/A	Note 3	N/A	
RHR-33-1	X-K100-18	2	C	6-inch, safety relief RHR suction LTOP protection	SP-192	N/A	Note 3	N/A	
RHR-3A RHR-3B	X-K100-18	2	C	8-inch, check RHR pump suction from hot legs	SP-167-6	N/A	Cold Shutdown Note 1	N/A	
RHR-5A RHR-5B	X-K100-18	2	C	8-inch, check RHR pump discharge	SP-167-6	N/A	Cold Shutdown Note 1	N/A	
RHR-11	X-K100-18	1	B	10-inch MOV RHR to Loop B cold leg	SP-167-6	N/A	Cold Shutdown Note 1	N/A	

ASME CODE CLASS 1, 2, AND 3 VALVES

Valve Indent. Ops. No.	Flow Diagram	ASME Code Class	Valve Cat.	Description	Test Procedure		Testing Frequency		Relief Requests
					Exercise	Leakage	Exercise	Leakage	
CC-3A CC-3B	X-K100-19	3	C	10-inch, check Comp. cooling pump discharge	SP-168	N/A	3 months	N/A	
CC-400A CC-400B	X-K100-19	3	B	10-inch, MOV CC water to RHR Hx	SP-167-5	N/A	3 months	N/A	

ASME CODE CLASS 1, 2, AND 3 VALVES

Valve Indent. Ops. No.	Flow Diagram	ASME Code Class	Valve Cat.	Description	Test Procedure		Testing Frequency		Relief Requests
					Exercise	Leakage	Exercise	Leakage	
CC-653	X-K100-20	2	8	3-inch MOV CCW from Excess Letdown Hx	SP-167-5	N/A	3 months	N/A	

ASME CODE CLASS 1, 2, AND 3 VALVES

Valve Indent. Ops. No.	Flow Diagram	ASME Code Class	Valve Cat.	Description	Test Procedure		Testing Frequency		Relief Requests
					Exercise	Leakage	Exercise	Leakage	
SI-22A	X-K100-28	1	C	12 inch, check Accum. disch. to Cold Leg	SP-144	N/A	Refueling Note 1	N/A	
SI-22B	X-K100-28	1	A/C	12 inch, check Accum. disch. to Cold Leg	SP-144	SP-204	Refueling Note 1	Note 2	
SI-21A SI-21B	X-K100-28	1	C	12 inch, check Accum. disch. Stop Valves	SP-144	N/A	Refueling Note 1	N/A	
SI-13A SI-13B	X-K100-28	1	C	6 inch, check HPSI to Cold Legs	SP-191	N/A	Refueling Note 1	N/A	
SI-12A SI-12B	X-K100-28	1	C	2 inch, check HPSI to Cold Legs	SP-191	N/A	Refueling Note 1	N/A	
SI-16A SI-16B	X-K100-28	1	C	2 inch, check HPSI to Rx.Vessel Core Flood	SP-191	N/A	Refueling Note 1	N/A	
SI-15A SI-15B	X-K100-28	2	B	2 inch, MOV HPSI to Rx.Vessel Core Flood	SP-98	N/A	3 months	N/A	
SI-304A SI-304B	X-K100-28	1	A/C	6 inch, check HPSI and LPSI to Rx. Vessel	SP-167-9	SP-203	Refueling Note 1	Note 2	
SI-303A SI-303B	X-K100-28	1	A/C	6 inch, check LPSI to Rx. Vessel	SP-167-9	SP-203	Refueling Note 1	Note 2	
NG-108A NG-108B	X-K100-28	2	A	1 inch AOV N ₂ supply to Accum.	N/A	SP-90	N/A	Refueling	

ASME CODE CLASS 1, 2, AND 3 VALVES

Valve Indent. Ops. No.	Flow Diagram	ASME Code Class	Valve Cat.	Description	Test Procedure		Testing Frequency		Relief Requests
					Exercise	Leakage	Exercise	Leakage	
NG-107	X-K100-28	2	A	1 inch AOV N ₂ supply to Accum.	SP-167-5	SP-90	3 months	Refueling	
SI-350A SI-350B I-351A I-351B	X-K100-28	2	B	12-inch MOV Cont. Sump Recirc. to RHR	SP-99	N/A	3 months	N/A	

ASME CODE CLASS 1, 2, AND 3 VALVES

Valve Ident. Ops. No.	Flow Diagram	ASME Code Class	Valve Cat.	Description	Test Procedure		Testing Frequency		Relief Requests
					Exercise	Leakage	Exercise	Leakage	
SI-6A SI-6B	X-K100-29	2	C	4 inch, check HPSI pump discharge	SP-191	N/A	Note 1 Refueling	N/A	
SI-5A I-5B	X-K100-29	2	B	6 inch, MOV HPSI pump suction	SP-98	N/A	3 months	N/A	
SI-4A SI-4B	X-K100-29	2	B	12 inch, MOV RWST supply to HPSI	SP-98	N/A	3 months	N/A	
SI-2A SI-2B	X-K100-29	2	B	8 inch, MOV 8AT supply to HPSI	SP-98	N/A	3 months	N/A	
RHR-300A RHR-300B	X-K100-29	2	B	6 inch, MOV HPSI pump suction from RHR	SP-167-9	N/A	3 months	N/A	
SI-301A SI-301B	X-K100-29	2	C	10 inch, check RWST supply to RHR pumps	SP-167-9	N/A	Note 1 Refueling	N/A	
SI-300A SI-300B	X-K100-29	2	B	10 inch, MOV RWST Supply to RHR Pumps	SP-99	N/A	3 months	N/A	
SI-208 SI-209	X-K100-29	2	B	2 inch, MOV Test line to RWST	SP-98	N/A	3 months	N/A	

ASME CODE CLASS 1, 2, AND 3 VALVES

Valve Ident. Ops. No.	Flow Diagram	ASME Code Class	Valve Cat.	Description	Test Procedure		Testing Frequency		Relief Requests
					Exercise	Leakage	Exercise	Leakage	
LD-4A LD-4B LD-4C	X-K100-35	2	A	2 inch, ADV Outlet from Letdown Orifices	SP-167-5	SP-90	3 months	Refueling	
D-6	X-K100-35	2	A	2 inch, ADV Letdown to Heat Exchanger	SP-167-9	SP-90	Refueling Note 1	Refueling	
CVC-211 CVC-212	X-K100-35	2	A	3 inch, MOV RCP seal return	SP-167-9	SP-90	Refueling Note 1	Refueling	
CVC-205A CVC-205B CVC-206A CVC-206B	X-K100-35	1	A/C	2 inch, check RCP seal injection	-----	SP-90	-----	Refueling	RR-1
CVC-10	X-K100-35	2	A/C	2 inch, check Charging to Regen. Hx.	-----	SP-90	-----	Refueling	RR-1
CVC-7	X-K100-36	2	A	2 inch, control Charging to Regen. Hx.	SP-90	SP-90	Refueling Note 1	Refueling	RR-12
VC-9	X-K100-36	2	A	2 inch, manual Charging to Regen. Hx.	N/A	SP-90	N/A	Refueling	

ASME CODE CLASS 1, 2, AND 3 VALVES

Valve Indent. Ops. No.	Flow Diagram	ASME Code Class	Valve Cat.	Description	Test Procedure		Testing Frequency		Relief Requests
					Exercise	Leakage	Exercise	Leakage	
RC-402 RC-403	X-K100-44	1	A	3/8 inch AOV Prz Steam Space Sample	SP-167-5	SP-90	3 months	Refueling	
RC-412 RC-413	X-K100-44	1	A	3/8 inch AOV Prz liquid space sample	SP-167-5	SP-90	3 months	Refueling	
RC-422 RC-423	X-K100-44	1	A	3/8 inch solenoid RC Hot Leg Sample	SP-167-5	SP-90	3 months	Refueling	

ASME CODE CLASS 1, 2, AND 3 VALVES

Valve Indent. Ops. No.	Flow Diagram	ASME Code Class	Valve Cat.	Description	Test Procedure		Testing Frequency		Relief Requests
					Exercise	Leakage	Exercise	Leakage	
MG(R)-503 MG(R)-504	X-K100-131	2	A	3/8 inch AOV RCDT Vent to Gas Analyzer	SP-167-3	SP-90	3 months	Refueling	
MG(R)-509 MG(R)-510	X-K100-131	2	A	1 inch AOV RCDT to vent Header	SP-167-3	SP-90	3 months	Refueling	
RC-507 RC-508	X-K100-131	2	A	3 inch AOV RCDT pump discharge	SP-167-5	SP-90	3 months	Refueling	
MD(R)-134 MD(R)-135	X-K100-131	2	A	3 inch AOV Cont. sump pump discharge	SP-167-3	SP-90	3 months	Refueling	

ASME CODE CLASS 1, 2, AND 3 VALVES

Valve Indent. Ops. No.	Flow Diagram	ASME Code Class	Valve Cat.	Description	Test Procedure		Testing Frequency		Relief Requests
					Exercise	Leakage	Exercise	Leakage	
SW1A1 SW1A2 SW1B1 SW1B2	M-202	3	C	14 inch, check SW pump discharge	SP-167-10	N/A	3 months	N/A	
W3A W3B	M-202	3	B	24 inch, AOV SW pump disch. cross connect	SP-167-2	N/A	3 months	N/A	
SW4A SW4B	M-202	3	B	20 inch, AOV SW supply to Turb. Bldg.	SP-167-2	N/A	3 months	N/A	
SW-1300A SW-1300B	M-202	3	B	10 inch, MOV SW to CC Heat Exchanger	SP-167-9	N/A	Refueling Note 1	N/A	
SW301A SW301B	M-202	3	B	4 inch, AOV SW return from D/G coolers	-----	N/A	-----	N/A	RR-4
SW1111A SW1111B	M-202	3	C	3/4 inch check SW return from SI pump Stuffing box	-----	N/A	-----	N/A	RR-5
SW1121A W1121B	M-202	3	C	3/4 inch check SW return from SI pump Lube oil Hx	-----	N/A	-----	N/A	RR-5
SW601A SW601B SW502	M-202	3	B	4 inch MOV SW supply to AFW pumps	SP-104	N/A	3 months	N/A	
SW501A SW501B	M-202	3	C	3 inch check SW to AFW pumps	SP-105	N/A	3 months	N/A	
SW6010	M-202	2	A	2 inch, manual SW to Cont. Hse. Stations	N/A	SP-90	N/A	Refueling	
SW6011	M-202	2	A/C	2 inch, check SW to Cont. Hse. Stations	N/A	SP-90	N/A	Refueling	

ASME CODE CLASS 1, 2, AND 3 VALVES

Valve Indent. Ops. No.	Flow Diagram	ASME Code Class	Valve Cat.	Description	Test Procedure		Testing Frequency		Relief Requests
					Exercise	Leakage	Exercise	Leakage	
MS-1A MS-1B	M-203	2	B/C	30 inch AOV/check Main Steam Isolation Valves	SP-103	N/A	Cold Shutdown Note 1	N/A	
SD1B1 SD1B2 SD1B3 SD1B4 SD1B5 SD1A1 SD1A2 SD1A3 SD1A4 SD1A5	M-203	2	C	6 inch, safety relief Mainstream line S/V	SP-077	N/A	Note 3	N/A	
MS100A MS100B	M-203	2	B	3 inch MOV MS to TD AFW pump	SP-167-5	N/A	3 months	N/A	
MS101A MS101B	M-203	3	C	3 inch check MS to TD AFW pump	SP-105	N/A	3 months	N/A	
MS102	M-203	3	B	3 inch MOV MS to TD AFW pump	SP-105	N/A	3 months	N/A	
T-2A T-2B BT-3A BT-3B	M-203	2	B	2 inch MOV S/G Blowdown isol. valves	SP-167-1	N/A	3 months	N/A	
SD-3A SD-3B	M-203	2	B	6 inch AOV Main Steam Header Relief	later	N/A	3 months	N/A	RR-2

ASME CODE CLASS 1, 2, AND 3 VALVES

Valve Indent. Ops. No.	Flow Diagram	ASME Code Class	Valve Cat.	Description	Test Procedure		Testing Frequency		Relief Requests
					Exercise	Leakage	Exercise	Leakage	
FW-12A FW-12B	M-205	2	B	16 inch MOV Main FW to S/G isol. valves	SP-167-6	N/A	Cold Shutdown Note 1	N/A	
FW-13A FW-13B	M-205	2	C	16 inch check Main FW to S/G	later	N/A	Cold Shutdown Note 1	N/A	
MU-311A MU-311B MU-311C	M-205	3	C	4 inch check CST supply to AFW pumps	3 months	N/A	3 months	N/A	RR-13
AFW-1A AFW-1B AFW-1C	M-205	3	C	3 inch check AFW pumps discharge	SP-167-6	N/A	Cold Shutdown Note 1	N/A	RR-6
AFW-10A AFW-10B	M-205	2	B	3 inch MOV TD AFW pump cross connects	SP-105	N/A	3 months	N/A	
AFW-4A AFW-4B	M-205	2	C	3 inch check AFW to steam generators	SP-167-6	N/A	Cold Shutdown Note 1	N/A	RR-6
MU-301	M-205	Note 4	Note 4	6 inch check CST supply to AFW pumps	SP-104/ 105	N/A	3 months	N/A	RR-13

ASME CODE CLASS 1, 2, AND 3 VALVES

Valve Indent. Ops. No.	Flow Diagram	ASME Code Class	Valve Cat.	Description	Test Procedure		Testing Frequency		Relief Requests
					Exercise	Leakage	Exercise	Leakage	
SA-2002A SA-2002B	M-213	3	C	1½ inch, check Serv. air from air Receiver to D/G	-----	N/A	-----	N/A	RR-4
SA-471 SA-472	M-213	2	A	2 inch, manual Serv. air to cont.	N/A	SP-90	N/A	Refueling	
IA-103 IA-102	M-213	2	A/C	1 inch check Inst. air to cont.	-----	SP-90	-----	Refueling	RR-1
IA-101	M-213	2	A	1 inch AOV Inst. air to cont.	SP-167-9	SP-90	Refueling Note 1	Refueling	
SA-471-1 SA-472-2	M-213	2	A	¾ inch, manual Serv. air to cont.	N/A	SP-90	N/A	Refueling	

ASME CODE CLASS 1, 2, AND 3 VALVES

Valve Indent. Ops. No.	Flow Diagram	ASME Code Class	Valve Cat.	Description	Test Procedure		Testing Frequency		Relief Requests
					Exercise	Leakage	Exercise	Leakage	
NG-210 NG-220 NG-230 NG-240 NG-250 NG-260	M-216	2	A	3/4 inch, manual Elec. pen. inlet valves	N/A	SP-90	N/A	Refueling	

ASME CODE CLASS 1, 2, AND 3 VALVES

Valve Indent. Ops. No.	Flow Diagram	ASME Code Class	Valve Cat.	Description	Test Procedure		Testing Frequency		Relief Requests
					Exercise	Leakage	Exercise	Leakage	
ICS-3A ICS-3B	M-217	2	C	8 inch check RWST supply to ICS pumps	SP-100	N/A	3 months	N/A	RR-7
RHR-400A RHR-400B	M-217	2	B	6 inch MOV RHR supply to ICS pumps	SP-100	N/A	3 months	N/A	
RHR-401A RHR-401B	M-217	2	C	6 inch check RHR supply to ICS pumps	SP-167-8	N/A	Refueling	N/A	RR-8
ICS-4A ICS-4B	M-217	2	C	6 inch check ICS pump discharge	SP-100	N/A	3 months	N/A	RR-7
ICS-5A ICS-5B ICS-6A ICS-6B	M-217	2	B	6 inch, MOV ICS pump discharge	SP-100	N/A	3 months	N/A	
ICS8A ICS8B	M-217	2	C	6 inch check ISC discharge line spray header	-----	N/A	-----	N/A	RR-9
ICS-201 ICS-202	M-217	2	B	2 inch, AOV ICS recirc. to RWST	SP-100	N/A	3 months	N/A	

ASME CODE CLASS 1, 2, AND 3 VALVES

Valve Indent. Ops. No.	Flow Diagram	ASME Code Class	Valve Cat.	Description	Test Procedure		Testing Frequency		Relief Requests
					Exercise	Leakage	Exercise	Leakage	
BT-31A BT-31B BT-32A BT-32B	M-219	2	B	3/8 inch AOV SGBT sample lines	SP-167-1	N/A	3 months	N/A	

ASME CODE CLASS 1, 2, AND 3 VALVES

Valve Indent. Ops. No.	Flow Diagram	ASME Code Class	Valve Cat.	Description	Test Procedure		Testing Frequency		Relief Requests
					Exercise	Leakage	Exercise	Leakage	
LOCA 2A LOCA 2B	M-403	2	A	2 inch MOV H ₂ control post LOCA Cont. sample	SP-167-4	SP-90	3 months	Refueling	
LOCA 3A LOCA 3B	M-403	2	A	1 inch AOV H ₂ control post LOCA Cont. sample	SP-167-4	SP-90	3 months	Refueling	
LOCA 10A LOCA 10B	M-403	2	A	1 inch AOV H ₂ control post LOCA Cont. sample	SP-167-4	SP-90	3 months	Refueling	
LOCA 100A LOCA 100B	M-403	2	A	2 inch AOV H ₂ Control post LOCA to H ₂ recombiners	SP-167-4	SP-90	3 months	Refueling	
SA 7004A SA 7004B	M-403	2	A/C	2 inch check Air supply to containment	N/A	SP-90	N/A	Refueling	
SA 7003A SA 7003B	M-403	2	A	2 inch MOV Air supply to containment	SP-167-4	SP-90	3 months	Refueling	

ASME CODE CLASS 1, 2, AND 3 VALVES

Valve Indent. Ops. No.	Flow Diagram	ASME Code Class	Valve Cat.	Description	Test Procedure		Testing Frequency		Relief Requests
					Exercise	Leakage	Exercise	Leakage	
WG-310	M-539	2	A	2 inch solenoid Deaerated drain tank Vent to Cont.	N/A	SP-90	N/A	Refueling	
WG-311	M-539	2	A	1 inch solenoid Deaerated drain tank Vent to Cont.	N/A	SP-90	N/A	Refueling	
CVC-54	M-539	2	A	2 inch solenoid VCT offgas vent to Cont.	N/A	SP-90	N/A	Refueling	
CVC-55	M-539	2	A/C	2 inch check VCT offgas vent to Cont.	N/A	SP-90	N/A	Refueling	
MD(R)-323A MD(R)-323B	M-539	2	A	3 inch MOV Deaerated drain pumps to Cont.	N/A	SP-90	N/A	Refueling	
MD(R)-324	M-539	2	A/C	3 inch check Deaerated drain pumps to Cont.	N/A	SP-90	N/A	Refueling	

ASME CODE CLASS 1, 2, AND 3 VALVES

Valve Indent. Ops. No.	Flow Diagram	ASME Code Class	Valve Cat.	Description	Test Procedure		Testing Frequency		Relief Requests
					Exercise	Leakage	Exercise	Leakage	
SW-901A SW-901B SW-901C SW-901D	M-547	2	C	8 inch check SW supply to cont. F/C units	-----	N/A	-----	N/A	RR-10
SW-910A SW-910B SW-910C SW-910D	M-547	2	B	3 inch solenoid SW supply to shroud Cooling coil	SP-167-2	N/A	3 months	N/A	
SW-914A SW-914B SW-914C SW-914D	M-547	2	B	3 inch solenoid SW return from shroud cooling coil	SP-167-2	N/A	3 months	N/A	
SW-903A SW-903B SW-903C SW-903D	M-547	2	B	8 inch MOV SW return from F/C units	SP-167-2	N/A	3 months	N/A	

ASME CODE CLASS 1, 2, AND 3 VALVES

Valve Indent. Ops. No.	Flow Diagram	ASME Code Class	Valve Cat.	Description	Test Procedure		Testing Frequency		Relief Requests
					Exercise	Leakage	Exercise	Leakage	
AS-32	M-602	2	A	1 inch AOV Cont. air sample return	SP-167-5	SP-90	3 months	Refueling	
AS-33	M-602	2	A/C	1 inch check Cont. Air sample return	SP-167-5	SP-90	3 months	Refueling	
AS1 AS2	M-602	2	A	1 Inch AOV Cont. air sample to Rad. monitors	SP-167-5	SP-90	3 months	Refueling	
VB-10A VB-10A	M-602	2	A	18 inch AOV Cont. vacuum breaker	SP-167-6	SP-90	3 months	Refueling	
VB-11A VB-11B	M-602	2	A/C	21 inch check Cont. vacuum breaker	N/A	SP-90	N/A	Refueling	
RBV-1 RBV-2 RBV-3 RBV-4	M-602	2	A	36 inch AOV Cont. purge & vent	N/A	SP-90/ SP-92	N/A	6 months/ Refueling	Note 6

ASME CODE CLASS 1, 2, AND 3 PUMPS

Pump Description	ASME Code Class	Test Parameters	Test Procedure	Test Interval	Notes/Relief Requests
High Head Safety Injection Pumps 1A and 1B	2	1. Speed (if variable)	N/A	N/A	
		2. Inlet Pressure	SP-98	3 months	
		3. Differential Pressure	SP-98	3 months	
		4. Flow Rate	N/A	N/A	Note 5
		5. Vibration Amplitude	SP-177	3 months	
		6. Bearing Temperature	SP-191	Refueling	RR-14
		7. Lubricant Level or Pressure	SP-98	3 months	
Residual Heat Removal Pumps 1A and 1B	2	1. Speed (if variable)	N/A	N/A	
		2. Inlet Pressure	SP-99	3 months	
		3. Differential Pressure	SP-99	3 months	
		4. Flow Rate	N/A	N/A	Note 5
		5. Vibration Amplitude	SP-177	3 months	
		6. Bearing Temperature	---	---	RR-15
		7. Lubricant Level or Pressure	---	---	RR-15

ASME CODE CLASS 1, 2, AND 3 PUMPS

Pump Description	ASME Code Class	Test Parameters	Test Procedure	Test Interval	Notes/Relief Requests
Service Water	3	1. Speed (if variable)	N/A	N/A	
Pumps		2. Inlet Pressure	later	3 months	RR-16
		3. Differential Pressure	later	3 months	
1A1		4. Flow Rate	N/A	N/A	Note 5
1A2		5. Vibration Amplitude	SP-177	3 months	
1B1		6. Bearing Temperature	---	---	RR-3
1B2		7. Lubricant Level or Pressure	---	---	RR-3
Component	3	1. Speed (if variable)	N/A	N/A	
Cooling		2. Inlet Pressure	SP-168	3 months	
Pumps		3. Differential Pressure	SP-168	3 months	RR-11
		4. Flow Rate	SP-168	3 months	
1A and 1B		5. Vibration Amplitude	SP-177	3 months	
		6. Bearing Temperature	---	---	RR-17
		7. Lubricant Level or Pressure	SP-168	3 months	

ASME CODE CLASS 1, 2, AND 3 PUMPS

Pump Description	ASME Code Class	Test Parameters	Test Procedure	Test Interval	Notes/Relief Requests
Auxiliary	3	1. Speed (if variable)	N/A	N/A	
Feedwater		2. Inlet Pressure	SP-104	3 months	
Pumps		3. Differential Pressure	SP-104	3 months	
(Motor Driven)		4. Flow Rate	N/A	N/A	Note 5
		5. Vibration Amplitude	SP-177	3 months	
1A and 1B		6. Bearing Temperature	SP-167-7	Refueling	
		7. Lubricant Level or Pressure	SP-104	3 months	
Auxiliary	3	1. Speed (if variable)	SP-105	3 months	
Feedwater		2. Inlet Pressure	SP-105	3 months	
Pump		3. Differential Pressure	SP-105	3 months	
(Turbine Driven)		4. Flow Rate	N/A	N/A	Note 5
		5. Vibration Amplitude	SP-177	3 months	
1C		6. Bearing Temperature	SP-167-7	Refueling	
		7. Lubricant Level or Pressure	SP-105	3 months	

ASME CODE CLASS 1, 2, AND 3 PUMPS

L9-8.4

Pump Description	ASME Code Class	Test Parameters	Test Procedure	Test Interval	Notes/Relief Requests
Containment	2	1. Speed (if variable)	N/A	N/A	
Spray Pumps		2. Inlet Pressure	SP-100	3 months	
		3. Differential Pressure	SP-100	3 months	
1A and 1B		4. Flow Rate	N/A	N/A	Note 5
		5. Vibration Amplitude	SP-177	3 months	
		6. Bearing Temperature	---	---	RR-17
		7. Lubricant Level or Pressure	SP-100	3 months	

INSERVICE TESTING PROGRAM
RELIEF REQUESTS

- RR-1 The safeguard function required for these check 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. The valves do act as containment isolation valves and will receive leakage tests during refueling which will verify closure capability.
- RR-2 The valve is stroked fully open every three months; however, since the valve is a manual control valve, measuring opening time is not appropriate.
- RR-3 Seal injection flow is used for bearing cooling. Since the system design does not provide for monitoring the seal injection water and since cooling water is not required for pump start, 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.
- RR-4 Proper operation of these valves is verified by the monthly 4 hour surveillance testing of the Diesel Generators.
- RR-5 Proper operation of these check valves is confirmed during the quarterly testing of the Safety Injection Pumps.
- RR-6 Operation of these normally closed check valves will be verified by establishing and observing flow through the individual line during startup and shutdown of the plant.

- RR-7 The operation of these check valves will be partially verified during performance testing of the pumps. These valves are of the split disc design and the low flow pump test conditions will require only limited actuation of the valves.
- RR-8 The operation of these check valves will be partially verified during refueling by flow testing of the lines. Normal plant operation prohibits testing of these lines.
- RR-9 Introducing flow through valves would result in the fluid being sprayed into the containment. Due to the split disc design of these valves, utilizing a compressible gas would provide assurance of only minimal movement of the valve discs. These check valves will be physically inspected to observe freedom of disc movement every five years.
- RR-10 These valves are associated with safeguard systems which will be operated during and following an accident and are required to remain open for the system to fulfill the safeguard function. These systems are designed to remain intact postaccident and in effect are an extension of the containment, therefore, no exercising or leakage testing is required. The hydrostatic testing in accordance with Section XI of the ASME Boiler and Pressure Vessel Code 1980 Edition and Addenda through the Winter 1981 will assure leak tightness of these systems.
- RR-11 For these pumps, a flow rate is established and the differential pressure is measured. The differential pressure recorded is compared to that predicted by the pump curve. Action levels have been established based on the deviation from the predicted pump curve values.

RR-12 Exercise timing tests are not performed on this valve since it is a control valve required to remain open during normal operation. Since the valve may perform a containment isolation function, the valve is leak tested each refueling. The valve is stroked fully closed each refueling prior to the leakage test. Since the valve is a manual control valve, measuring closing time is not appropriate.

RR-13 Proper operation of these check valves is confirmed during the quarterly testing of the auxiliary feedwater pumps.

RR-14 IWP-3500(b) requires running the pump until the bearing temperature stabilizes. (A bearing temperature shall be considered stable when three successive readings taken at 10 minute intervals do not vary by more than 3%). The bearing temperatures on the Safety Injection Pump are measured during the refueling outage by filling the refueling 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.

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.

RR-15 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.

- RR-16 The service water pumps are vertical design with no means of direct inlet pressure measurement as required by IWP-4200. Inlet pressure to these pumps will be established by reference to the level of water above the pump suction (forebay level).
- RR-17 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. The lubricant level will be monitored via a local sight glass to ensure adequate lubricant level.

INSERVICE TESTING PROGRAM

NOTES

Note 1 IWV-3412 states that "valves that cannot be exercised during plant operations shall be specifically identified by the Owner and shall be full-stroke exercised during cold shutdowns". The term "cold shutdown" covers a wide variety of plant conditions which can exist with the reactor coolant temperature equal to, or less than 200°F. Under cold shutdown conditions the system may be "solid" such that introducing flow into the system to exercise check valves would have a high probability of overpressurizing the system. These tests can only be performed when the reactor coolant system is vented to the containment atmosphere and partially drained such as for a refueling. Similarly, some systems such as the RHR system have interlocks which prohibit their operation during normal plant operating conditions.

These valves for which only limited operation is practical during plant operation will be exercised during cold shutdown or refueling, whichever is applicable.

Note 2 The leakage testing of these valves is performed in accordance with Technical Specification 4.2.a.1.C.

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

Note 4 The boundaries defined for the ASME Code Class 1, 2 and 3 components and piping does not include this valve. Since the operation of this valve has been determined to be important, the valve has been included in the program.

- Note 5 As allowed by IWP-1400 of the ASME Code, a pump can be tested in a bypass loop if its normal path cannot be practically tested. This pump is tested under a fixed resistance recirculation path, therefore quantitatively measuring flow rate is not applicable.
- Note 6 These valves are administratively locked closed, thus exercise testing is not required.