PSNH PUBLIC SERVICE
Company of New Hampshire

SEABROOK STATION
Engineering Office:
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November 17, 1982

SBN-374
T.F. B7.1.2

United States Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Mr. George W. Knighton, Chief
Licensing Branch No. 3
Division of Licensing

References: (a) Construction Permits CPPR-135 and CPPR-136, Docket Nos. 50-443 and 50-444
(b) USNRC Letter, dated August 13, 1982, "Draft Safety Evaluation Report (SER) for Seabrook Station," T. M. Novak to W. C. Tallman

Subject: Responses to Open Draft SER Items (Section 3.9.6; Mechanical Engineering Branch)

Dear Sir:

In response to the Draft SER [Reference (b)], open items which were delineated in Section 3.9.6, we offer the following:

Item (Draft SER Section 3.9.6):

Provide the inservice testing program for pumps and valves.

Response:

The Seabrook Inservice Testing Program for Pumps and Valves will be submitted within six months of the anticipated date for commercial operation. This is consistent with the previous response to RAI 210.41. Information that will serve as the basis for this program is presently available in FSAR Section 3.9(B).6 and in Tables 3.9(B)-22 and 3.9(B)-23. A marked-up copy of Table 3.9(B)-23, reflecting changes which will be made to clarify cases where exceptions or alternatives must be made to Code requirements, is attached. This revised table will be included in OL Application Amendment 48.

Table 3.9(B)-22 presents similar information on pumps. It is presently being reviewed to determine the need for similar clarification.

Specific relief requests will be submitted as part of the complete Inservice Testing Program.

A001

Item (Draft SER Section 3.9.6)

Provide a response to the staff's concern regarding the leak rate testing of pressure isolating valves.

Response:

Valves performing a pressure isolation function between high pressure reactor coolant piping and adjacent low pressure systems will be included and specifically identified as such in Table 3.9(B)-23. These valves will be categorized as Category A or A-C valves in accordance with ASME Section XI. A marked-up copy of Table 3.9(B)-23, reflecting these additions, is attached. FSAR Section 3.9(B).6.2 will also be revised, as shown on the attached page, to make specific reference to these valves.

The prior response to RAI 210.53 is also being revised, as shown on the attached marked-up copy of FSAR Page RAI 210-31, to make it consistent with this response to the Draft SER Open Item and also to the response to RAI 210.41.

These revisions will be incorporated in OL Application Amendment 48.

Very truly yours,

YANKEE ATOMIC ELECTRIC COMPANY

J. DeVincentis
Project Manager

ALL/fsf

cc: Atomic Safety and Licensing Board Service List

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REVISIONS TO

TABLE 3.9(B)-23

TABLE 3.9(B)-23
(Sheet 1 of 57)

CODE VALVE TEST LIST

System: Main Steam (MS) Drawing Reference: 202074

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
MS-V86	2	~~Pneumatic~~ Piston, Fail Safe	Active	B	N/A	N/A	IWV-3410	Note 1
MS-V204	2	Motor	~~Active~~ Passive	B	N/A	N/A	~~IWV-3410~~ N/A	~~Note 1~~ N/A
MS-V88	2	~~Pneumatic~~ Piston, Fail Safe	Active	B	N/A	N/A	IWV-3410	Note 1
MS-V205	2	Motor	~~Active~~ Passive	B	N/A	N/A	~~IWV-3410~~ N/A	~~Note 1~~ N/A
MS-V90	2	~~Pneumatic~~ Piston, Fail Safe	Active	B	N/A	N/A	IWV-3410	Note 1
MS-V206	2	Motor	~~Active~~ Passive	B	N/A	N/A	~~IWV-3410~~ N/A	~~Note 1~~ N/A
MS-V92	2	~~Pneumatic~~ Piston, Fail Safe	Active	B	N/A	N/A	IWV-3410	Note 1
MS-V207	2	Motor	~~Active~~ Passive	B	N/A	N/A	~~IWV-3410~~ N/A	~~Note 1~~ N/A
MS-V127	2	~~Pneumatic~~ Piston, Fail Safe	Active	B	N/A	N/A	IWV-3410	Note 2
MS-V94	3	Check	Active	C	N/A	N/A	IWV-3520	Note 2
MS-V128	2	Piston, Fail Safe	Active	B	N/A	N/A	IWV-3410	Note 2
MS-V96	3	Check	Active	C	N/A	N/A	IWV-3520	Note 2

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TABLE 3.9(B)-23
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System: Main Steam (MS) (continued) Drawing Reference: 202074

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
MS-V171	2	Manual, Globe	Passive	B	N/A	N/A	N/A	N/A
MS-V172	2	Manual, Globe	Passive	B	N/A	N/A	N/A	N/A
MS-PV3001	2	Piston, Fail Safe	Active	B	N/A	N/A	IWV-3410	3 months
MS-PV3002	2	Piston, Fail Safe	Active	B	N/A	N/A	IWV-3410	3 months
MS-PV3003	2	Piston, Fail Safe	Active	B	N/A	N/A	IWV-3410	3 months
MS-PV3004	2	Piston, Fail Safe	Active	B	N/A	N/A	IWV-3410	3 months
MS-V6	2	Safety	Active	C	N/A	N/A	IWV-3510	~~IWV-3500~~ Note 3
MS-V7	2	Safety	Active	C	N/A	N/A	IWV-3510	~~IWV-3500~~ Note 3
MS-V8	2	Safety	Active	C	N/A	N/A	IWV-3510	~~IWV-3500~~ Note 3
MS-V9	2	Safety	Active	C	N/A	N/A	IWV-3510	~~IWV-3500~~ Note 3
MS-V10	2	Safety	Active	C	N/A	N/A	IWV-3510	~~IWV-3500~~ Note 3
MS-V22	2	Safety	Active	C	N/A	N/A	IWV-3510	~~IWV-3500~~ Note 3
MS-V23	2	Safety	Active	C	N/A	N/A	IWV-3510	~~IWV-3500~~ Note 3
MS-V24	2	Safety	Active	C	N/A	N/A	IWV-3510	~~IWV-3500~~ Note 3
MS-V25	2	Safety	Active	C	N/A	N/A	IWV-3510	~~IWV-3500~~ Note 3

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System: Main Steam (MS) (continued) Drawing Reference: 202074

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
MS-V26	2	Safety	Active	C	N/A	N/A	IWV-3510	~~IWV-3500~~ Note 3
MS-V36	2	Safety	Active	C	N/A	N/A	IWV-3510	~~IWV-3500~~ Note 3
MS-V37	2	Safety	Active	C	N/A	N/A	IWV-3510	~~IWV-3500~~ Note 3
MS-V38	2	Safety	Active	C	N/A	N/A	IWV-3510	~~IWV-3500~~ Note 3
MS-V39	2	Safety	Active	C	N/A	N/A	IWV-3510	~~IWV-3500~~ Note 3
MS-V40	2	Safety	Active	C	N/A	N/A	IWV-3510	~~IWV-3500~~ Note 3
MS-V50	2	Safety	Active	C	N/A	N/A	IWV-3510	~~IWV-3500~~ Note 3
MS-V51	2	Safety	Active	C	N/A	N/A	IWV-3510	~~IWV-3500~~ Note 3
MS-V52	2	Safety	Active	C	N/A	N/A	IWV-3510	~~IWV-3500~~ Note 3
MS-V53	2	Safety	Active	C	N/A	N/A	IWV-3510	~~IWV-3500~~ Note 3
MS-V54	2	Safety	Active	C	N/A	N/A	IWV-3510	~~IWV-3500~~ Note 3
~~MS-V5~~	~~2~~	~~Manual, Gate~~	~~Active~~	~~B~~	~~N/A~~	~~N/A~~	~~IWV-3410~~	~~3 months~~

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System: Main Steam (MS) (continued) Drawing Reference: 202074

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
~~MS-V21~~	~~2~~	~~Manual, Gate~~	~~Active~~	~~B~~	~~N/A~~	~~N/A~~	~~IWV-3410~~	~~3 months~~
~~MS-V35~~	~~2~~	~~Manual, Gate~~	~~Active~~	~~B~~	~~N/A~~	~~N/A~~	~~IWV-3410~~	~~3 months~~
~~MS-V49~~	~~2~~	~~Manual, Gate~~	~~Active~~	~~B~~	~~N/A~~	~~N/A~~	~~IWV-3410~~	~~3 months~~

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Note 1: MSIV's full closure time on any closure actuation signal will be verified while in HOT STANDBY during each reactor shutdown except that this verification need not be determined more than once per 3 months for multiple shutdowns unless 3 months have passed since last exercise. Shutdown will not be required for the sole purpose of performing the full closure test. For such a case, the MSIV's will be part stroked.

Note 2: Valves (MS-V127, MS-V128, MS-V94 and MS-V96) will be exercise tested ~~in alternate months~~ in conjunction with Emergency Feedwater Pump Testing ~~performed on a monthly basis.~~ at a minimum frequency of once per 3 months.

Note 3: The frequency and quantity of safety/relief valves subject to test at each refueling outage is in accordance with IWV 3500.

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CODE VALVE TEST LIST

System: Emergency Feedwater System

Drawing Reference: 202076

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
FW-V70	3	Check	Active	C	N/A	N/A	IWV-3520	Note 1
FW-V64	3	Check	Active	C	N/A	N/A	IWV-3520	Note 1
FW-V125	3	Gate	~~Active~~ Passive	B	N/A	N/A	~~IWV-3410~~ N/A	~~3 months~~ N/A
FW-V126	3	Gate	~~Active~~ Passive	B	N/A	N/A	~~IWV-3410~~ N/A	~~3 months~~ N/A
FW-V127	3	Gate	~~Active~~ Passive	B	N/A	N/A	~~IWV-3410~~ N/A	~~3 months~~ N/A
FW-FV4214	3	~~Diaphragm, Fail Safe~~ Motor	Active	B	N/A	N/A	IWV-3410	~~3 months~~ Notes 2 & 3
FW-FV4224	3	~~Diaphragm, Fail Safe~~ Motor	Active	B	N/A	N/A	IWV-3410	~~3 months~~ Notes 2 & 3
FW-FV4234	3	~~Diaphragm, Fail Safe~~ Motor	Active	B	N/A	N/A	IWV-3410	~~3 months~~ Notes 2 & 3
FW-FV4244	3	~~Diaphragm, Fail Safe~~ Motor	Active	B	N/A	N/A	IWV-3410	~~3 months~~ Notes 2 & 3

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Note 1: These valves will be tested during refueling since operation of this portion of the system would introduce cold water into the steam generator feed nozzles.

Note 2: This valve is in the position required to fulfill its safety function. Exercising this valve will not improve its operational readiness but may actually decrease system reliability if the valve fails in a nonconservative position. As an alternative, it will be tested at refueling outages.

Note 3. This valve modulates on system flow demand. Stroke time is not critical and will not be measured.

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CODE VALVE TEST LIST

System: Main Feedwater

Drawing Reference: 202079

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
FW-V29	2	Check	Active	C	N/A	N/A	IWV-3520	Note 3
FW-V38	2	Check	Active	C	N/A	N/A	IWV-3520	Note 3
FW-V47	2	Check	Active	C	N/A	N/A	IWV-3520	Note 3
FW-V56	2	Check	Active	C	N/A	N/A	IWV-3520	Note 3
FW-V30	2	Piston, Fail Safe	Active	B	N/A	N/A	IWV-3410	Note 1
FW-V39	2	Piston, Fail Safe	Active	B	N/A	N/A	IWV-3410	Note 1
FW-V48	2	Piston, Fail Safe	Active	B	N/A	N/A	IWV-3410	Note 1
FW-V57	2	Piston, Fail Safe	Active	B	N/A	N/A	IWV-3410	Note 1
FW-V76	2	Check	Active	C	N/A	N/A	IWV-3520	Note 2
FW-V82	2	Check	Active	C	N/A	N/A	IWV-3520	Note 2

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System: Main Feedwater (continued)

Drawing Reference: 202079

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
FW-V88	2	Check	Active	C	N/A	N/A	IWV-3520	Note 2
FW-V94	2	Check	Active	C	N/A	N/A	IWV-3520	Note 2

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Note 1: Valves full closure time on any closure actuation signal will be verified while in HOT STANDBY during each reactor shutdown except that this verification need not be determined more than once per 3 months for multiple shutdowns unless 3 months have passed since last exercise. Shutdown will not be required for the sole purpose of performing the full closure test. For such a case, the valve will be part stroked.

Note 2: These valves will be tested during refueling since operation of this portion of the system would introduce cold water into the steam generator feed nozzle.

Note 3: Exercising this valve would require securing S.G. Feed and could result in plant trips. Operation of this valve will be verified when entering and leaving Cold shutdown conditions.

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CODE VALVE TEST LIST

System: Main Steam Drains

Drawing Reference: 202086

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
MSD-V44	2	MOV	~~Active~~ Passive	B	N/A	N/A	~~IWV-3410~~ N/A	~~3 months~~ N/A
MSD-V45	2	MOV	~~Active~~ Passive	B	N/A	N/A	~~IWV-3410~~ N/A	~~3 months~~ N/A
MSD-V46	2	MOV	~~Active~~ Passive	B	N/A	N/A	~~IWV-3410~~ N/A	~~3 months~~ N/A
MSD-V47	2	MOV	~~Active~~ Passive	B	N/A	N/A	~~IWV-3410~~ N/A	~~3 months~~ N/A

~~Note 1: These valves will be tested with the same frequency as the FW isolation valves.~~

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CODE VALVE TEST LIST

System: Diesel Generator Air

Drawing Reference: 202101

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
V70A	3	Check	Active	C	N/A	N/A	Note 1	Note 1
V69A	3	Check	Active	C	N/A	N/A	Note 1	Note 1
V43A	3	Solenoid	Active	B	N/A	N/A	Note 1	Note 1
V44A	3	Solenoid	Active	B	N/A	N/A	Note 1	Note 1
V58A	3	Solenoid	Active	B	N/A	N/A	Note 1	Note 1
V53A	3	Check	Active	C	N/A	N/A	Note 1	Note 1
V70B	3	Check	Active	C	N/A	N/A	Note 1	Note 1
V69B	3	Check	Active	C	N/A	N/A	Note 1	Note 1
V43B	3	Solenoid	Active	B	N/A	N/A	Note 1	Note 1
V44B	3	Solenoid	Active	B	N/A	N/A	Note 1	Note 1
B58B	3	Solenoid	Active	B	N/A	N/A	Note 1	Note 1
V53B	3	Check	Active	C	N/A	N/A	Note 1	Note 1

Note 1: All these valves will be tested when the diesel is operated monthly.

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CODE VALVE TEST LIST

System: Diesel Generator Fuel-Lube Oil

Drawing Reference: 202102

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
V115	3	Check	Active	C	N/A	N/A	Note 1	Note 1
~~V84A~~	~~3~~	~~Check~~	~~Active~~	~~C~~	~~N/A~~	~~N/A~~	~~Note 1~~	~~Note 1~~
V121	3	Check	Active	C	N/A	N/A	Note 1	Note 1
~~V24A~~	~~3~~	~~Check~~	~~Active~~	~~C~~	~~N/A~~	~~N/A~~	~~Note 1~~	~~Note 1~~
~~V23A~~	~~3~~	~~Check~~	~~Active~~	~~C~~	~~N/A~~	~~N/A~~	~~Note 1~~	~~Note 1~~
~~V24B~~	~~3~~	~~Check~~	~~Active~~	~~C~~	~~N/A~~	~~N/A~~	~~Note 1~~	~~Note 1~~
~~V23B~~	~~3~~	~~Check~~	~~Active~~	~~C~~	~~N/A~~	~~N/A~~	~~Note 1~~	~~Note 1~~
~~V84B~~	~~3~~	~~Check~~	~~Active~~	~~C~~	~~N/A~~	~~N/A~~	~~Note 1~~	~~Note 1~~

Note 1: These valves are exercised ~~more frequently than the required 3 month interval~~ during routine monthly testing of the diesel generators.

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CODE VALVE TEST LIST

System: Diesel Generator Cooling Water

Drawing Reference: 202103

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
V13A	3	Piston	Active	B	N/A	N/A	Note 1	Note 1
V12A	3	Piston	Active	B	N/A	N/A	Note 1	Note 1
V9A	3	Piston	Active	B	N/A	N/A	Note 1	Note 1
V11A	3	Piston	Active	B	N/A	N/A	Note 1	Note 1
V1A	3	Check	Active	C	N/A	N/A	Note 1	Note 1
V2A	3	Check	Active	C	N/A	N/A	Note 1	Note 1
V13B	3	Piston	Active	B	N/A	N/A	Note 1	Note 1
V12B	3	Piston	Active	B	N/A	N/A	Note 1	Note 1
V9B	3	Piston	Active	B	N/A	N/A	Note 1	Note 1
V11B	3	Piston	Active	B	N/A	N/A	Note 1	Note 1
V1B	3	Check	Active	C	N/A	N/A	Note 1	Note 1
V2B	3	Check	Active	C	N/A	N/A	Note 1	Note 1

Note 1: These valves are exercised more frequently than the required 3-month interval during routine monthly testing of the diesel generators.

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System: Diesel Generator Cooling Water (continued) Drawing Reference: 202103

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
PV-7A1	3	Diaphragm	Active	B	N/A	N/A	Note 1	Note 1
PV-7A2	3	Diaphragm	Active	B	N/A	N/A	Note 1	Note 1
TCV-7A1	3	Diaphragm	Active	B	N/A	N/A	Note 1	Note 1
TCV-7A2	3	Diaphragm	Active	B	N/A	N/A	Note 1	Note 1
PV-7B1	3	Diaphragm	Active	B	N/A	N/A	Note 1	Note 1
PV-7B2	3	Diaphragm	Active	B	N/A	N/A	Note 1	Note 1
TCV-7B1	3	Diaphragm	Active	B	N/A	N/A	Note 1	Note 1
TCV-7B2	3	Diaphragm	Active	B	N/A	N/A	Note 1	Note 1
V4A	3	Check	Active	C	N/A	N/A	Note 1	Note 1
V4B	3	Check	Active	C	N/A	N/A	Note 1	Note 1
V5A	3	Check	Active	C	N/A	N/A	Note 1	Note 1
V5B	3	Check	Active	C	N/A	N/A	Note 1	Note 1

Note 1: These valves are exercised more frequently than the required 3-month interval during routine monthly testing of the diesel generators.

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CODE VALVE TEST LIST

System: Containment Purge

Drawing Reference: 604131

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
CAP-V1	2	Piston, Fail Safe	Active	A	10CFR50 App J	2 years	IWV-3410	Note 1
CAP-V2	2	Piston, Fail Safe	Active	A	10CFR50 App J	2 years	IWV-3410	Note 1
CAP-V3	2	Piston, Fail Safe	Active	A	10CFR50 App J	2 years	IWV-3410	Note 1
CAP-V4	2	Piston, Fail Safe	Active	A	10CFR50 App J	2 years	IWV-3410	Note 1
COP-V1	2	Piston, Fail Safe	Active	A	10CFR50 App J	2 years	IWV-3410	Note 1
COP-V2	2	Piston, Fail Safe	Active	A	10CFR50 App J	2 years	IWV-3410	Note 1
COP-V3	2	Piston, Fail Safe	Active	A	10CFR50 App J	2 years	IWV-3410	Note 1
COP-V4	2	Piston, Fail Safe	Active	A	10CFR50 App J	2 years	IWV-3410	Note 1

Note 1: ~~Test just prior to use when required for containment entry.~~ Opening this valve during operational modes other than cold shutdown is prohibited by Technical Specifications. This valve will be exercised during refueling outages and when operated prior to containment entry.

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CODE VALVE TEST LIST

System: Fire Protection

Drawing Reference: 604146

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
FP-V592	2	Manual, Locked Closed	Passive	A	10CFR50 App J	2 years	N/A	N/A
FP-V588	2	Check	Passive	A	10CFR50 App J	2 years	N/A	N/A

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CODE VALVE TEST LIST

System: Primary Component Cooling - Loop B ~~Equipment Drain~~ Drawing Reference: 804982 ~~805040~~

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
CC-V266	3	MOV	Active	B	N/A	N/A	IWV-3410	3 months
CC-V272	3	MOV	Active	B	N/A	N/A	IWV-3410	3 months
CC-V445	3	Piston, Fail Safe	Active	B	N/A	N/A	IWV-3410	3 months

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CODE VALVE TEST LIST

System: Primary Component Cooling - Loop A ~~Equipment Drain~~ Drawing Reference: 809581 ~~805040~~

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
CC-V137	3	MOV	Active	B	N/A	N/A	IWV-3410	3 months
CC-V145	3	MOV	Active	B	N/A	N/A	IWV-3410	3 months
CC-V32	3	Piston, Fail Safe	Active	B	N/A	N/A	IWV-3410	3 months

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CODE VALVE TEST LIST

System: Refueling Cavity Clean Up

Drawing Reference: 804988

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
SF-V86	2	Manual, Locked Closed	Passive	A	10CFR50 App J	2 years	N/A	N/A
SF-V87	2	Manual, Locked Closed	Passive	A	10CFR50 App J	2 years	N/A	N/A
SF-V101	2	Safety	Passive ~~Active~~	A&C	10CFR50 App J	2 years	N/A ~~IWV-3520~~	N/A ~~Refueling~~

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CODE VALVE TEST LIST

System: Floor Drain

Drawing Reference: 804994

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
WLD-V41	2	Diaphragm, Fail Safe	Active	A	10CFR50 App J	2 years	IWV-3410	3 months
WLD-V42	2	Diaphragm, Fail Safe	Active	A	10CFR50 App J	2 years	IWV-3410	3 months
WLD-V209	2	Safety	~~Active~~ Passive	~~A&C~~ A-C	10CFR50 App J	2 years	~~IWV-3520~~ N/A	~~Refueling~~ N/A

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CODE VALVE TEST LIST

System: Reactor Coolant System

Drawing Reference: 805002

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
RC-V323	1 + 2	MOV	Active	B	N/A	N/A	IWV-3410	Note 1
RC-V1	1	Manual	Passive	B	N/A	N/A	N/A	N/A
RC-FV2881	2	Solenoid	Active	B	N/A	N/A	IWV-3410	Note 1

SB 1 & 2 FSAR

Note 1: This valve will be tested during refueling due to the fact that depressurization of the RCS would result from opening this valve, if the second, in-line value is open or has failed.

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CODE VALVE TEST LIST

System: Reactor Coolant Loop No. 1 (RHR) Drawing Reference: 805003

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
RC-V22	1	MOV	Active	~~B~~ A	IWV-3420 ~~N/A~~	Note 4 ~~N/A~~	IWV-3410 (Note 1)	Note 2
RC-V23	1	MOV	Active	A	10CFR50 App J	2 years (Note 4)	IWV-3410 (Note 1)	Note 2
CS-V4	2	Check	Active	A-C	10CFR50 App J	2 years	IWV-3520	Note 3

SB 1 & 2 FSAR

Note 1: A valve position indicator verification will be performed in accordance with IWV-3300 each refueling.

Note 2: These valves will be operated during cold shutdown when ~~every time~~ the RHR system is placed on line.

Note 3: To protect reactor coolant pump seals, flow to them is required all the time during power operation, start-ups, and shutdowns. Exercising of these valves will be performed during refueling outages when risk of equipment damage is eliminated by securing the pumps.

Note 4: This valve is category A because it is a boundary valve between high-pressure RCS piping and adjacent low-pressure systems. It will be leak tested in accordance with Technical Specifications.

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CODE VALVE TEST LIST

System: Reactor Coolant Loop No. 2 Drawing Reference: 805004

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
CS-V20	2	Check	Active	A-C	10CFR50 App J	2 years	IWV-3520	Note 1

Note 1: To protect reactor coolant pump seals, flow to them is required all the time during power operation, start-ups, and shutdown. Exercising of this valve will be performed during refueling outages when risk of equipment damage is eliminated by securing the pumps.

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CODE VALVE TEST LIST

System: Reactor Coolant Loop No. 3 Drawing Reference: 805005

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
CS-V36	2	Check	Active	A-C	10CFR50 App J	2 years	IWV-3520	Note 1

SB 1 & 2 FSAR

Note 1: To protect reactor coolant pump seals, flow to them is required all the time during power operation, start-ups, and shutdown. Exercising of this valve will be performed during refueling outages when risk of equipment damage is eliminated by securing the pumps.

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CODE VALVE TEST LIST

System: Reactor Coolant Loop No. 4 (RHR) Drawing Reference: 805006

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
RC-V87	1	MOV	Active	~~B~~ A	IWV-3420 ~~N/A~~	Note 4 ~~N/A~~	IWV-3410 (Note 1)	Note 2
RC-V88	1	MOV	Active	A	10CFR50 App J	2 years (Note 4)	IWV-3410 (Note 1)	Note 2
CS-V52	2	Check	Active	A-C	10CFR50 App J	2 years	IWV-3520	Note 3

SB 1 & 2 FSAR

Note 1: A valve position indicator verification will be performed in accordance with IWV-3300 each refueling.

Note 2: These valves will be operated ~~every time~~ during cold shutdown when the RHR System is placed on line.

Note 3: To protect reactor coolant pump seals, flow to them is required all the time during power operation, start-up and shutdown. Exercising of this valve will be performed during refueling outages when risk of equipment damage is eliminated by securing the pumps.

Note 4: This valve is Category A because it is a boundary valve between high-pressure RCS piping and adjacent low-pressure systems. It will be leak tested in accordance with Technical Specifications.

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CODE VALVE TEST LIST

System: Reactor Coolant Pressurizer

Drawing Reference: 805007

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
RC-V122	1	MOV	Active	B	N/A	N/A	IWV-3410	Note 1 ~~IWV-3500~~
RC-V124	1	MOV	Active	B	N/A	N/A	IWV-3410	Note 1 ~~IWV-3500~~
RC-V115	1	Safety	Active	C	N/A	N/A	IWV-3510	Note 2 ~~IWV-3500~~
RC-V116	1	Safety	Active	C	N/A	N/A	IWV-3510	Note 2 ~~IWV-3500~~
RC-V117	1	Safety	Active	C	N/A	N/A	IWV-3510	Note 2 ~~IWV-3500~~
RC-PCV456A	1	Solenoid ~~Relief~~	Active	~~C~~ B	N/A	N/A	IWV-3410 ~~3510~~	Note 1 ~~IWV-3500~~
RC-PCV456B	1	Solenoid ~~Relief~~	Active	~~C~~ B	N/A	N/A	IWV-3410 ~~3510~~	Note 1 ~~IWV-3500~~

SB 1 & 2 FSAR

Note 1: This valve cannot be operated during power operation without potential loss of pressurizer pressure control. This valve will be exercised when in cold shutdown.

Note 2: The frequency and quantity of safety / relief values subject to test at each refueling outage will be in accordance with IWV-3500.

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CODE VALVE TEST LIST

System: Residual Heat Removal

Drawing Reference: 805008

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
CBS-V55	2	Check	Active	~~A-C~~ C	~~10CFR50 App J~~ N/A	~~2 years~~ N/A	IWV-3520	Note 1
RH-V4	2	Check	Active	C	N/A	N/A	IWV-3520	Note 1
RH-V35	2	MOV	Active	B	N/A	N/A	IWV-3410	3 months
RH-V22	2	MOV	Active	B	N/A	N/A	IWV-3410	3 months
RH-V14	2	MOV	Active	A	10CFR50 App J	2 years	IWV-3410	3 months
RH-V70	2	MOV	Active	A	10CFR50 App J	2 years	IWV-3410	3 months
RH-V15	1	Check	Active	A-C	10CFR50 App J	2 years (Note 4)	IWV-3520	Note 2
RH-V31	1	Check	Active	A-C	10CFR50 App J	2 years (Note 4)	IWV-3520	Note 2
CBS-V56	2	Check	Active	~~A-C~~ C	~~10CFR50 App J~~ N/A	~~2 years~~ N/A	IWV-3520	Note 1
RH-V40	2	Check	Active	C	N/A	N/A	IWV-3520	Note 1
RH-V36	2	MOV	Active	B	N/A	N/A	IWV-3410	3 months
RH-V21	2	MOV	Active	B	N/A	N/A	IWV-3410	3 months
RH-V26	2	MOV	Active	A	10CFR50 App J	2 years	IWV-3410	3 months
RH-V32	2	MOV	Active	A	10CFR50 App J	2 years	IWV-3410	3 months
RH-V29	1	Check	Active	A-C	10CFR50 App J	2 years (Note 4)	IWV-3520	Note 2

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System: Residual Heat Removal (continued) Drawing Reference: 805008

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
RH-V30	1	Check	Active	A-C	10CFR50 App J	2 years (Note 4)	IWV-3520	Note 2
CS-V497	2	Check	Passive	C	N/A	N/A	N/A	N/A
RH-FCV611	2	MOV	Active	B	N/A	N/A	IWV-3410	3 months (Note 3)
RH-FCV610	2	MOV	Active	B	N/A	N/A	IWV-3410	3 months (Note 3)
RH-FCV619	2	Diaphragm, Fail Safe	Active	B	N/A	N/A	IWV-3410	~~Note 1~~ 3 months
RH-FCV618	2	Diaphragm, Fail Safe	Active	B	N/A	N/A	IWV-3410	~~Note 1~~ 3 months
RH-HCV607	2	Diaphragm, Fail Safe	Active	B	N/A	N/A	IWV-3410	~~Note 1~~ 3 months
RH-HCV606	2	Diaphragm, Fail Safe	Active	B	N/A	N/A	IWV-3410	~~Note 1~~ 3 months
RH-V28	2	Diaphragm, Fail Safe	Passive	A	10 CFR 50 App J ~~IWV-3420~~	2 years	N/A	N/A
RH-V27	2	Diaphragm, Fail Safe	Passive	A	10CFR50 App J ~~IWV-3420~~	2 years	N/A	N/A
CS-V496	2	Check	Passive	C	N/A	N/A	N/A	N/A

SB 1 & 2 FSAR

TABLE 3.9(B)-23
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System: Residual Heat Removal (continued) Drawing Reference: 805008

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
RH-V17	2	Diaphragm, Fail Safe	~~Active~~ Passive	B	N/A	N/A	~~IWV-3410~~ N/A	~~3 months~~ N/A
RH-V16	2	Diaphragm, Fail Safe	~~Active~~ Passive	B	N/A	N/A	~~IWV-3410~~ N/A	~~3 months~~ N/A

SB 1 & 2 FSAR

Note 1: Test during ~~monthly~~ pump inservice testing, per IWP-3000.

Note 2: To exercise these normally, closed check valves would require ~~low~~ reactor coolant system pressure below RHR pump discharge pressure and injection of borated water from the RHR pumps. The valves shall be verified as operable during ~~cold shutdown~~ refueling outages.

Note 3: This valve modulates on system flow demand. Stroke time is not critical and will not be measured.

Note 4: This valve is Category A because it is a boundary between high-pressure RCS piping and adjacent low-pressure systems. It will be leak tested in accordance with Technical Specifications.

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CODE VALVE TEST LIST

System: Safety Injection Accumulators

Drawing Reference: 805009

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
SI-V6	1	Check	Active	A-C	~~IWV-3420 N/A~~	~~N/A~~ Note 4	IWV-3520	Note 1
SI-V3	1	MOV	Active	B	N/A	N/A	IWV-3410	~~Cold Shutdown~~ Note 2
SI-V5	1	Check	Active	A-C	~~IWV-3420 N/A~~	~~N/A~~ Notes 4&5	IWV-3520	Note 1
SI-V21	1	Check	Active	A-C	~~IWV-3420 N/A~~	~~N/A~~ Note 4	IWV-3520	Note 1
SI-V17	1	MOV	Active	B	N/A	N/A	IWV-3410	~~Cold Shutdown~~ Note 2
SI-V20	1	Check	Active	A-C	~~IWV-3420 N/A~~	~~N/A~~ Notes 4&5	IWV-3520	Note 1
SI-V36	1	Check	Active	A-C	~~IWV-3420 N/A~~	~~N/A~~ Note 4	IWV-3520	Note 1
SI-V32	1	MOV	Active	B	N/A	N/A	IWV-3410	~~Cold Shutdown~~ Note 2
SI-V35	1	Check	Active	A-C	~~IWV-3420 N/A~~	~~N/A~~ Notes 4&5	IWV-3520	Note 1
SI-V51	1	Check	Active	A-C	~~IWV-3420 N/A~~	~~N/A~~ Note 4	IWV-3520	Note 1

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System: Safety Injection Accumulators (continued) Drawing Reference: 805009

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
SI-V47	1	MOV	Active	B	N/A	N/A	IWV-3410	~~Cold~~ Note 2 ~~Shutdown~~
SI-V50	1	Check	Active	A- C	~~IWV-3420 N/A~~	~~Notes 4&5 N/A~~	IWV-3520	Note 1
SI-V247	2	Relief	~~Passive Active~~	A-C	10CFR50 App J	2 years	~~N/A IWV-3510~~	~~N/A IWV-3500~~
SI-V70	2	Diaphragm, Fail Safe	~~Passive Active~~	A	10CFR50 App J	2 years	~~N/A IWV-3410~~	~~N/A 3 months~~
SI-V62	2	Diaphragm, Fail Safe	~~Passive Active~~	A	10CFR50 App J	2 years	~~N/A IWV-3410~~	~~N/A 3 months~~
SI-V10	2	Safety	Active	C	N/A	N/A	IWV-3510	Note 3 ~~IWV-3500~~
SI-V30	2	Safety	Active	C	N/A	N/A	IWV-3510	Note 3 ~~IWV-3500~~
SI-V45	2	Safety	Active	C	N/A	N/A	IWV-3510	Note 3 ~~IWV-3500~~
SI-V60	2	Safety	Active	C	N/A	N/A	IWV-3510	Note 3 ~~IWV-3500~~

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Note 1: To exercise this normally closed check valve would require the simulation of a loss-of-coolant accident, i.e., low RCS pressure. The valve shall be verified as operable by initiating accumulator injection to the RCS with the vessel head removed during each refueling outage.

Note 2: This normally open valve is in the position required for accident conditions and, per Technical Specifications, must remain open during power operations. Operability will be verified when the valve is closed during cold shutdown and reopened during plant startup.

Note 3: The frequency and quantity of safety/relief valves subject to test at each refueling outage is in accordance with IWV-3500.

Note 4: This valve is Category A because it is a boundary valve between high-pressure RCS piping and adjacent low-pressure systems. It will be leak tested in accordance with Technical Specifications.

Note 5: Leak testing this valve requires shutting the associated accumulator isolation MOV. The MOV is required, by Technical Specifications, to be open during power operations. This valve will be tested during cold shutdown when the accumulator is isolated.

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CODE VALVE TEST LIST

System: Safety Injection Cold Leg

Drawing Reference: 805010

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
CBS-V47	2	MOV	Active	B	N/A	N/A	IWV-3410	3 months
CBS-V48	2	Check	Active	~~A-C~~ C	~~IWV-3420~~ N/A	~~2 years~~ N/A	IWV-3520	~~3 months~~ Note 2
CBS-V49	2	MOV	~~Active~~ Passive	B	N/A	N/A	~~IWV-3410~~ N/A	~~3 months~~ N/A
CS-V460	2	MOV	Active	B	N/A	N/A	IWV-3410	3 months
CS-V461	2	MOV	Active	B	N/A	N/A	IWV-3410	3 months
CS-V475	2	MOV	Active	B	N/A	N/A	IWV-3410	3 months
SI-V90	2	MOV	Active	B	N/A	N/A	IWV-3410	3 months
SI-V96	2	Check	Active	C	N/A	N/A	IWV-3520	3 months
SI-V112	2	MOV	Active	B	N/A	N/A	IWV-3410	3 months
SI-V114	2	MOV	Active	B	N/A	N/A	IWV-3410	3 months
SI-V118	1	Check	Active	A-C	IWV-3420	~~2 years~~ Note 3	IWV-3520	Note 1
SI-V122	1	Check	Active	A-C	IWV-3420	~~2 years~~ Note 3	IWV-3520	Note 1
SI-V126	1	Check	Active	A-C	IWV-3420	~~2 years~~ Note 3	IWV-3520	Note 1
SI-V130	1	Check	Active	A-C	IWV-3420	~~2 years~~ Note 3	IWV-3520	Note 1
CBS-V51	2	MOV	Active	B	N/A	N/A	IWV-3410	3 months

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System: Safety Injection Cold Leg (continued) Drawing Reference: 805010

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
CBS-V52	2	Check	Active	~~A~~ C	~~IWV-3420~~ N/A	~~2 years~~ N/A	IWV-3520	~~3 months~~ Note 2
CBS-V53	2	MOV	~~Active~~ Passive	B	N/A	N/A	~~IWV-3410~~ N/A	~~3 months~~ N/A
SI-V89	2	MOV	Active	B	N/A	N/A	IWV-3410	3 months

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Note 1: Exercising these valves during operation would require initiating flow to the RCS using the safety injection pumps. During operation the RCS pressure will be higher than the safety injection pumps discharge pressure. As an alternate these valves shall be exercised at refueling outages.

Note 2: This valve will be exercised during Safety Injection Pump operability testing per IWP-3000.

Note 3: This valve is Category A because it is a boundary valve between high-pressure RCS piping and adjacent low-pressure systems. It will be leak tested in accordance with Technical Specifications.

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CODE VALVE TEST LIST

System: Safety Injection

Drawing Reference: 805010

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
SI-V93	2	MOV	Active	~~A~~ B	~~IWV-3420~~ N/A	~~2 years~~ N/A	IWV-3410	3 months
SI-V71	2	Check	Active	C	N/A	N/A	IWV-3520	3 months
SI-V111	2	MOV	Active	B	N/A	N/A	IWV-3410	3 months
SI-V160	2	Diaphragm, Fail Safe	~~Active~~ Passive	A	10CFR50 App J	2 years	~~IWV-3410~~ N/A	~~3 months~~ N/A

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COLD VALVE TEST LIST

System: Boron Injection

Drawing Reference: 805010

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
CS-V65	2	MOV	Active	B	N/A	N/A	IWV-3410	3 months
CS-V66	2	MOV	Active	B	N/A	N/A	IWV-3410	3 months
SI-V165	2	Diaphragm, Fail Safe	Active	B	N/A	N/A	IWV-3410	3 months
SI-V163	2	Check	Active	C	N/A	N/A	IWV-3520	Note 1
SI-V161	2	Check	Active	C	N/A	N/A	IWV-3520	Note 1
SI-V173	2	Diaphragm, Fail Safe	Active	B	N/A	N/A	IWV-3410	3 months
SI-V174	2	Diaphragm, Fail Safe	Active	B	N/A	N/A	IWV-3410	3 months
SI-V138	2	MOV	Active	B	N/A	N/A	IWV-3410	3 months
SI-V139	2	MOV	Active	B	N/A	N/A	IWV-3410	3 months
SI-V140	1	Check	Active	A-C	~~IWV-3420 N/A~~	~~Note 5 N/A~~	IWV-3520	Note 3
SI-V144	1	Check	Active	A-C	~~IWV-3420 N/A~~	~~Note 5 N/A~~	IWV-3520	Note 3
SI-V148	1	Check	Active	A-C	~~IWV-3420 N/A~~	~~Note 5 N/A~~	IWV-3520	Note 3
SI-V152	1	Check	Active	A-C	~~IWV-3420 N/A~~	~~Note 5 N/A~~	IWV-3520	Note 3

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System: Boron Injection (continued) Drawing Reference: 805010

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
SI-V156	1	Check	Active	A-C	~~IWV-3420~~ N/A	~~Note 5~~ N/A	IWV-3520	Note 3
SI-V102	2	MOV	Active	~~B~~ A	~~10CFR50 APP J~~ N/A	~~2 years~~ N/A	IWV-3410	3 months
SI-V106	1	Check	Active	A-C	~~10CFR50 APP J~~ N/A	~~2 years (Note 5)~~ N/A	IWV-3520	Note 4
RH-V53	1	Check	Active	A-C	~~IWV-3420~~ N/A	~~Note 5~~ N/A	IWV-3420	Note 4
SI-V110	1	Check	Active	A-C	~~10CFR50 APP J~~ N/A	~~2 years (Note 5)~~ N/A	IWV-3520	Note 4
RH-V52	1	Check	Active	A-C	~~IWV-3420~~ N/A	~~Note 5~~ N/A	IWV-3520	Note 4
SI-V77	2	MOV	Active	~~B~~ A	~~10CFR50 App J~~ N/A	~~2 years~~ N/A	IWV-3410	3 months
SI-V81	1	Check	Active	A-C	~~10CFR50 App J~~ N/A	~~2 years (Note 5)~~ N/A	IWV-3520	Note 4
SI-V82	1	Check	Active	A-C	~~IWV-3420~~ N/A	~~Note 5~~ N/A	IWV-3520	Note 4
SI-V86	1	Check	Active	A-C	~~10CFR50 App J~~ N/A	~~2 years (Note 5)~~ N/A	IWV-3520	Note 4
SI-V87	1	Check	Active	A-C	~~IWV-3420~~ N/A	~~Note 5~~ N/A	IWV-3520	Note 4
SI-V157	2	Diaphragm, Fail Safe	~~Active~~ Passive	~~B~~ A	~~10CFR50 App J~~ N/A	~~2 years~~ N/A	~~IWV-3410~~ N/A	~~3 months~~ N/A

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System: Boron Injection (continued) Drawing Reference: 805010

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
RH-V50	1	Check	Active	A-C	10CFR50 App J ~~N/A~~	2 years (Note 5) ~~N/A~~	IWV-3520	Note 2
RH-V51	1	Check	Active	A-C	10CFR50 App J ~~N/A~~	2 years (Note 5) ~~N/A~~	IWV-3520	Note 2
SI-V183	2	Manual, locked closed	Passive	B	N/A	N/A	N/A	N/A
-V844	2	MOV	Active	B	N/A	N/A	IWV-3410	3 months
-V845	2	MOV	Active	B	N/A	N/A	IWV-3410	3 months
CS-V846	2	MOV	Active	B	N/A	N/A	IWV-3410	3 months
CS-V847	2	MOV	Active	B	N/A	N/A	IWV-3410	3 months
SI-V257	2	Check	Active	C	N/A	N/A	IWV-3520	Note 3
SI-V134	2	Diaphagm, Fail Safe	Passive	A	10CFR50 App J	2 years	N/A	N/A

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Note 1: Test during monthly pump inservice testing.

Note 2: Exercising these valves during operation would require initiating flow to the RCS using the RHR pumps. During operation, the RCS pressure will be higher than the RHR pump discharge pressure. As an alternate, these valves will be exercised at refueling outages.

Note 3: The only way to verify that these normal closed check valves open is by initiating flow, using the charging pumps, into the reactor coolant. If charging flow was directed to the reactor coolant system in this manner it could cause overpressurization during cold shutdown or provide a loss in charging flow control during operation. As an alternate, these check valves shall be exercised open during refueling outages.

Note 4: Exercising these valves during opertion would require flow to the RCS using the safety injection pumps. During operation the RCS pressure will be higher than the safety injection pumps discharge pressure. As an alternate these valves shall be exercised at refueling outages.

Note 5: This valve is Category A because it is a boundary valve between high-pressure RCS piping and adjacent low-pressure systems. It will be leak tested in accordance with Technical Specifications.

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COLD VALVE TEST LIST

System: Chemical & Volume Control

Drawing Reference: 805011

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
CS-V142	2	MOV	Active	B	N/A	N/A	IWV-3410	Note 1
CS-V143	2	MOV	Active	A	10CFR50 App J	2 years (Note 4)	IWV-3410	Note 1
CS-V144	2	Check	Active	A-C	10CFR50 App J	2 years (Note 4)	IWV-3520	Note 1
CS-V149	2	MOV	Active	A	10CFR50 App J	2 years	IWV-3410	Note 1
CS-V150	2	Diaphragm, Fail Safe	Active	A	10CFR50 App J	2 years	IWV-3410	Note 1
CS-V154	2	MOV	Active	A	10CFR50 App J	2 years	IWV-3410	Note 2
CS-V158	2	MOV	Active	A	10CFR50 App J	2 years	IWV-3410	Note 2
CS-V162	2	MOV	Active	A	10CFR50 App J	2 years	IWV-3410	Note 2
CS-V166	2	MOV	Active	A	10CFR50 App J	2 years	IWV-3410	Note 2
CS-V167	2	MOV	Active	A	10CFR50 App J	2 years	IWV-3410	Note ~~1~~ 2
CS-V168	2	MOV	Active	A	10CFR50 App J	2 years	IWV-3410	Note ~~1~~ 2
~~CS-V148~~	~~2~~	~~Safety~~	~~Active~~	~~C~~	~~N/A~~	~~N/A~~	~~IWV-3510~~	~~Note 2~~
CS-V794	2	Safety	~~Active~~ Passive	A-C	~~N/A~~ 10CFR50 App J	~~N/A~~ 2 years	~~IWV-3510~~ N/A	~~Note 2~~ N/A
~~CS-V173~~	~~2~~	~~Safety~~	~~Active~~	~~C~~	~~N/A~~	~~N/A~~	~~IWV-3510~~	~~Note 1~~

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System: Chemical & Volume Control (continued) Drawing Reference: 805011

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
CS-V186	1	Check	Active	C	N/A	N/A	IWV-3520	Note 3
~~CS-V175~~	~~1~~	~~Globe~~	~~Active~~	~~A~~	~~10CFR50 App J~~	~~2 years~~	~~IWV-3410~~	~~3 months~~
~~CS-V176~~	~~1~~	~~Globe~~	~~Active~~	~~A~~	~~10CFR50 App J~~	~~2 years~~	~~IWV-3410~~	~~3 months~~
CS-V178	1	Check	Active	C	N/A	N/A	IWV-3520	Note 1
CS-V179	1	Check	Active	C	N/A	N/A	IWV-3520	Note 1
CS-V181	1	Check	Active	C	N/A	N/A	IWV-3520	Note 1
CS-V182	1	Check	Active	C	N/A	N/A	IWV-3520	Note 1
CS-V185	1	Globe	Active	~~A~~ B	~~10CFR50 App J~~ N/A	~~2 years~~ N/A	IWV-3410	~~3 months~~ Note 3
CS-LCV459	1	Globe	~~Active~~ Passive	~~A~~ B	~~10CFR50 App J~~ N/A	~~2 years~~ N/A	~~IWV-3410~~ N/A	~~3 months~~ N/A
CS-LCV460	1	Globe	~~Active~~ Passive	~~A~~ B	~~10CFR50 App J~~ N/A	~~2 years~~ N/A	~~IWV-3410~~ N/A	~~3 months~~ N/A
CS-V180	2	Diaphragm, Fail Safe	Passive	B	N/A	N/A	N/A	N/A
CS-HCV182	2	Diaphragm, Fail Safe	Passive	B	N/A	N/A	N/A	N/A

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Note 1: These valves cannot be exercised during power operation or cold shutdown when charging and letdown systems are in operation. It will be exercised at refueling outages when the charging and letdown systems are secured.

Note 2: To protect pump seals, flow to them is required all the time during power operation or start-up and shutdown. Exercising of this valve will be performed during refueling outages when risk of equipment damage is eliminated by securing the pumps.

Note 3: Exercising this valve during normal operations will impact pressurizer pressure control. This valve will be exercised during plant cooldown when aux. spray is initiated.

Note 4: This valve is Category A because it is a boundary valve between high-pressure RCS piping and adjacent low-pressure systems. It will be leak tested in accordance with Technical Specifications.

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CODE VALVE TEST LIST

System: Chemical & Volume Control

Drawing Reference:: 805012

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
CS-LCV112B	2	MOV	Active	B	N/A	N/A	IWV-3410	Note 2
CS-LCV112C	2	MOV	Active	B	N/A	N/A	IWV-3410	Note 2
CS-V196	2	MOV	Active	B	N/A	N/A	IWV-3410	3 months
CS-V197	2	MOV	Active	B	N/A	N/A	IWV-3410	3 months
CBS-V58	2	Check	Active	~~A-C~~ C	~~IWV-3420~~ N/A	~~2 years~~ N/A	IWV-3520	Note 2
CBS-V60	2	Check	Active	~~A-C~~ C	~~IWV-3420~~ N/A	~~2 years~~ N/A	IWV-3520	Note 2
CS-V200	2	Check	Active	C	N/A	N/A	IWV-3520	Note 1
CS-V209	2	Check	Active	C	N/A	N/A	IWV-3520	Note 1

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Note 1: ~~Proper opening of check valve is routinely verified in normal operation or during Section XI, IWP-3000 pump testing.~~ Exercising this valve would require centrifugal charging pump operation in a lineup that would create excess charging flow to the RCS. This valve will be tested, per Technical Specifications, when pump actuation on an "S" signal is verified during refueling outages.

Note 2: These valves cannot be exercised during power operation or cold shutdown when charging and letdown systems are in operation. It will be exercised at refueling outages when the charging and letdown systems are secured.

TABLE 3.9(B)-23
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CODE VALVE TEST LIST

System: Chemical & Volume Control Thermal Regeneration

Drawing Reference: 805013

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
CS-V213	2	Check	Active	C	N/A	N/A	IWV-3520	Note 1

Note 1: This valve cannot be exercised during power operation or cold shutdown when the letdown systems are in operation. It will be exercised at refueling outages when letdown systems are secured.

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CODE VALVE TEST LIST

System: Chemical & Volume Control - Emergency Boration Drawing Reference: 805014

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
~~CS-V440~~	~~3~~	~~Check~~	~~Active~~	~~C~~	~~N/A~~	~~N/A~~	~~IWV-3520~~	~~3 months~~
CS-V426	2	MOV	Active	B	N/A	N/A	IWV-3410	3 months
CS-V427	2	Check	Active	C	N/A	N/A	IWV-3520	3 months
~~CS-V442~~	~~2~~	~~Manual~~	~~Active~~	~~B~~	~~N/A~~	~~N/A~~	~~IWV-3410~~	~~3 months~~
~~CS-V439~~	~~3~~	~~Manual~~	~~Active~~	~~B~~	~~N/A~~	~~N/A~~	~~IWV-3410~~	~~3 months~~
~~CS-V437~~	~~3~~	~~Manual~~	~~Active~~	~~B~~	~~N/A~~	~~N/A~~	~~IWV-3410~~	~~3 months~~
CS-V449	3	Check	Active	C	N/A	N/A	IWV-3520	Note 1
CS-V453	3	Check	Active	C	N/A	N/A	IWV-3520	Note 1
~~RMW-V37~~	~~2~~	~~Check~~	~~Active~~	~~B~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~
~~CS-V452~~	~~2~~	~~Manual~~	~~Passive~~	~~B~~	~~N/A~~	~~N/A~~	~~N/A~~	~~N/A~~
~~CS-V424~~	~~2~~	~~Manual~~	~~Active~~	~~B~~	~~N/A~~	~~N/A~~	~~IWV-3410~~	~~3 months~~
~~CS-V430~~	~~2~~	~~Manual~~	~~Active~~	~~B~~	~~N/A~~	~~N/A~~	~~IWV-3410~~	~~3 months~~

Note 1: These valves will be tested during ~~the monthly~~ periodic testing of BAT pumps, per IWV-3000.

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CODE VALVE TEST LIST

System: Primary Component Cooling Loop-B

Drawing Reference: 805016

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
CC-V295	3	Check	Active	C	N/A	N/A	IWV-3520	Note 1
CC-V298	3	Check	Active	C	N/A	N/A	IWV-3520	Note 1
CC-V447	3	Piston, Fail Safe	Active	B	N/A	N/A	IWV-3410	Note 2
CC-V448	3	Piston, Fail Safe	Active	B	N/A	N/A	IWV-3410	Note 2
CC-TV2271-1	3	Diaphragm, Fail Safe	Active	B	N/A	N/A	IWV-3410	Note 2
CC-TV2271-2	3	Diaphragm, Fail Safe	Active	B	N/A	N/A	IWV-3410	Note 2

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Note 1: Pump discharge check valves are continuously monitored for proper opening and seating (idle pump) by observation of system flow rate and by inservice pump testing in accordance with Section XI, IWP-3000. Failure of the idle pump check valve to seat properly will reduce system flow rate, an obvious abnormality.

Note 2: Loss of primary component cooling water will jeopardize plant safety in all modes. At refueling outages, loss of cooling water to the RHR heat exchangers would put the plant in an abnormal operating condition. It is felt that exercising this valve closed could lead to it failing closed, and thereby instigating a loss of cooling system integrity. This valve will be exercised whenever the primary component cooling water is shutdown.

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CODE VALVE TEST LIST

System: Spent Fuel Pool Cooling

Drawing Reference: 805017

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
SF-V7	3	Check	Active	C	N/A	N/A	IWV-3520	Note 1
SF-V3	3	Check	Active	C	N/A	N/A	IWV-3520	Note 1

Note 1: Test during ~~monthly~~ periodic pump ~~operation~~ testing per IWV-3000.

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CODE VALVE TEST LIST

System: Primary Component Cooling Loop-A

Drawing Reference: 805018

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
CC-V1	3	Check	Active	C	N/A	N/A	IWV-3520	Note 1
CC-V4	3	Check	Active	C	N/A	N/A	IWV-3520	Note 1
CC-V341	3	Piston, Fail Safe	Active	B	N/A	N/A	IWV-3410	Note 2
CC-V426	3	Piston, Fail Safe	Active	B	N/A	N/A	IWV-3410	Note 2
CC-V427	3	Piston, Fail Safe	Active	B	N/A	N/A	IWV-3410	Note 2
CC-TV2171-1	3	Diaphragm Fail Safe	Active	B	N/A	N/A	IWV-3410	Note 2
CC-TV2171-2	3	Diaphragm Fail Safe	Active	B	N/A	N/A	IWV-3410	Note 2

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Note 1: Pump discharge check valves are continuously monitored for proper opening and seating (idle pump) by observation of system flow rate and by inservice pump testing in accordance with Section XI, IWP-3000. Failure of the idle pump check valve to seat properly will reduce system flow rate, an obvious abnormality.

Note 2: Loss of primary component cooling water will jeopardize plant safety in all modes. At refueling outage, loss of cooling water to the RHR heat exchangers would put the plant in an abnormal operating condition. It is felt that exercising this valve could lead to it failing closed, and thereby instigating a loss of cooling system integrity. This valve will be exercised whenever the primary component cooling water is shutdown.

CODE VALVE TEST LIST

System: Service Water ~~Primary Component Cooling Loop A~~ Drawing Reference: 805019

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
SW-V53	3	Check	Active	C	N/A	N/A	IWV-3520	Note 2
SW-V54	3	MOV	Active	B	N/A	N/A	IWV-3410	3 months
SW-V24	3	Check	Active	C	N/A	N/A	IWV-3520	Note 2
SW-V25	3	MOV	Active	B	N/A	N/A	IWV-3410	3 months
SW-V4	3	MOV	Active	B	N/A	N/A	IWV-3410	3 months
SW-V5	3	MOV	Active	B	N/A	N/A	IWV-3410	3 months
SW-V16	3	Piston, Fail Safe	Active	B	N/A	N/A	IWV-3410	Note 1
SW-V18	3	Piston, Fail Safe	Active	B	N/A	N/A	IWV-3410	Note 1
SW-V74	3	MOV	Active	B	N/A	N/A	IWV-3410	3 months
SW-V76	3	MOV	Active	B	N/A	N/A	IWV-3410	3 months
SW-V19	3	MOV	Active	B	N/A	N/A	IWV-3410	3 months
SW-V20	3	MOV	Active	B	N/A	N/A	IWV-3410	3 months
SW-V27	3	MOV	Active	B	N/A	N/A	IWV-3410 ~~IWV-3510~~	3 months ~~IWV-3500~~
SW-V56	3	MOV	Active	B	N/A	N/A	IWV-3410 ~~IWV-3510~~	3 months ~~IWV-3500~~

Note 1: These valves are exercised more frequently than the required 3-month interval, as they perform their function during routine testing of the Emergency Diesel Generators.

Note 2: These valves are exercised during ~~routine monthly~~ periodic testing of the pumps, per IWV-3000.

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CODE VALVE TEST LIST

System: Service Water

Drawing Reference: 805019

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
~~SW-V11~~	~~3~~	~~MOV~~	~~Passive~~	~~A~~	~~10CFR50 App J~~	~~2 years~~	~~IWV-3410~~	~~3 months~~
~~SW-V13~~	~~3~~	~~MOV~~	~~Passive~~	~~A~~	~~10CFR50 App J~~	~~2 years~~	~~IWV-3410~~	~~3 months~~
SW-V23	3	MOV	Active	B	N/A	N/A	IWV-3410 ~~IWV-3520~~	3 months
SW-V34	3	MOV	Active	B	N/A	N/A	IWV-3410 ~~IWV-3520~~	3 months
~~SW-V65~~	~~3~~	~~MOV~~	~~Passive~~	~~A~~	~~10CFR50 App J~~	~~2 years~~	~~IWV-3410~~	~~3 months~~
~~SW-V66~~	~~3~~	~~MOV~~	~~Passive~~	~~A~~	~~10CFR50 App J~~	~~2 years~~	~~IWV-3410~~	~~3 months~~
~~SW-V67~~	~~3~~	~~MOV~~	~~Passive~~	~~A~~	~~10CFR50 App J~~	~~2 years~~	~~IWV-3410~~	~~3 months~~
~~SW-V68~~	~~3~~	~~MOV~~	~~Passive~~	~~A~~	~~10CFR50 App J~~	~~2 years~~	~~IWV-3410~~	~~3 months~~
~~SW-V69~~	~~3~~	~~MOV~~	~~Passive~~	~~A~~	~~10CFR50 App J~~	~~2 years~~	~~IWV-3410~~	~~3 months~~
~~SW-V70~~	~~3~~	~~MOV~~	~~Passive~~	~~A~~	~~10CFR50 App J~~	~~2 years~~	~~IWV-3410~~	~~3 months~~
SW-V15	3	MOV	Active	B	N/A	N/A	IWV-3410 ~~IWV-3520~~	3 months
SW-V17	3	MOV	Active	B	N/A	N/A	IWV-3410 ~~IWV-3520~~	3 months
SW-V26	3	MOV	Active	B	N/A	N/A	IWV-3410 ~~IWV-3520~~	3 months
SW-V55	3	MOV	Active	B	N/A	N/A	IWV-3410 ~~IWV-3520~~	3 months

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CODE VALVE TEST LIST

System: Nitrogen

Drawing Reference: 805020

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
NG-FV 460S ~~NG-V120~~	2	Solenoid ~~Piston~~	Passive ~~Active~~	A	10CFR50 App J	2 years	N/A ~~IWV-3410~~	N/A ~~3 months~~
NG-FV 4610 ~~NG-V121~~	2	Solenoid ~~Piston~~	Passive ~~Active~~	A	10CFR50 App J	2 years	N/A ~~IWV-3410~~	N/A ~~3 months~~
NG-V13	2	Diaphragm ~~Fail Safet~~	Passive ~~Active~~	A	10CFR50 App J	2 years	N/A ~~IWV-3410~~	N/A ~~3 months~~
NG-V14	2	Diaphragm ~~Check~~	Passive ~~Active~~	A	10CFR50 App J	2 years	N/A ~~IWV-3410~~	N/A ~~3 months~~
NG-V18	2	Check	Passive ~~Active~~	C	N/A	N/A	N/A	N/A
NG-V20	2	Check	Passive	C	N/A	N/A	N/A	N/A
NG-V22	2	Check	Passive	C	N/A	N/A	N/A	N/A
NG-V24	2	Check	Passive	C	N/A	N/A	N/A	N/A

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CODE VALVE TEST LIST

System: Reactor Makeup Water

Drawing Reference: 805021

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
RMW-V30	2	Piston, Fail Safe	Passive	A	10CFR50 App J	2 years	N/A	N/A
RMW-V29	2	Check	Passive	A/C	10CFR50 App J	2 years	N/A	N/A

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CODE VALVE TEST LIST

System: Combustrial Gas Control

Drawing Reference: 805022

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
CGC-V46	2	Check	~~Active~~ Passive	A-C	10CFR50 App J	2 years	~~IWV-3520~~ N/A	~~Note 1~~ N/A
CGC-V43	2	Manual, Locked Closed	Passive	A	10CFR50 App J	2 years	N/A	N/A
CGC-V44	2	Manual, Locked Closed	Passive	A	10CFR50 App J	2 years	N/A	N/A
CGC-V25	2	Check	~~Active~~ Passive	~~B~~ A-C	10CFR50 App J ~~N/A~~	2 years ~~N/A~~	~~IWV-3520~~ N/A	~~3 months~~ N/A
CGC-V24	2	Manual	~~Active~~ Passive	~~B~~ A	10 CFR50 App J ~~N/A~~	2 years ~~N/A~~	~~IWV-3410~~ N/A	~~3 months~~ N/A
CGC-V4	2	Check	~~Active~~ Passive	~~B~~ A-C	10 CFR50 App J ~~N/A~~	2 years ~~N/A~~	~~IWV-3520~~ N/A	~~3 months~~ N/A
CGC-V3	2	Manual, Locked closed	~~Active~~ Passive	~~B~~ A	10 CFR50 App J ~~N/A~~	2 years ~~N/A~~	~~IWV-3410~~ N/A	~~3 months~~ N/A
~~CGC-V30~~	~~2~~	~~MOV~~	~~Active~~	~~B~~	~~N/A~~	~~N/A~~	~~IWV-3410~~	~~3 months~~ N/A
CGC-V32	2	~~Diaphragm~~ Manual, Locked Closed	~~Active~~ Passive	~~B~~ A	10CFR50 App J ~~N/A~~	2 years ~~N/A~~	~~IWV-3410~~ N/A	~~3 months~~ N/A
CGC-V28	2	~~Motor~~ MOV	~~Active~~ Passive	A	10CFR50 App J	2 years	~~IWV-3410~~ N/A	~~3 months~~ N/A
CGC-V36	2	Manual, Locked Closed	~~Active~~ Passive	A	10CFR50 App J	2 years	~~IWV-3410~~ N/A	~~3 months~~ N/A
~~CGC-V8~~	~~2~~	~~Manual, Locked Open~~	~~Active~~	~~B~~	~~N/A~~	~~N/A~~	~~IWV-3410~~	~~3 months~~

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TABLE 3.9(B)-23
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System: Combustible Gas Control (continued) Drawing Reference: 805022

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
CGC-V10	2	Manual, Locked Closed	~~Active~~ Passive	~~B~~ A	~~N/A~~ 10CFR50 App J	~~N/A~~ 2 years	~~IWV-3410~~ N/A	~~3 months~~ N/A
CGC-V14	2	~~Diaphragm~~ MOV	~~Active~~ Passive	A	10CFR50 App J	2 years	~~IWV-3410~~ N/A	~~3 months~~ N/A
CGC-V15	2	Manual, Locked Closed	Passive	A	10CFR50 App J	2 years	~~IWV-3410~~ N/A	~~3 months~~ N/A
~~CGC-V34~~	~~2~~	~~Manual~~	~~Active~~	~~B~~	~~N/A~~	~~N/A~~	~~IWV-3410~~	~~3 months~~
~~CGC-V12~~	~~2~~	~~Manual~~	~~Active~~	~~B~~	~~N/A~~	~~N/A~~	~~IWV-3410~~	~~3 months~~
CGC-V45	2	Manual, Locked Closed	Passive	A	10 CFR50 App J	2 years	N/A	N/A

~~Note 1: Test during cold shutdown. Testing during operation will require breaking containment integrity on this line.~~

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CODE VALVE TEST LIST

System: ECCS/CS Fluid Supplies

Drawing Reference: 805023

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
CBS-V38	2	MOV	Active	B	N/A	N/A	IWV-3410	3 months
CBS-V43	2	MOV	Active	B	N/A	N/A	IWV-3410	3 months
CS-LCV112D	2	MOV	Active	B	N/A	N/A	IWV-3410	Note 1
CS-LCV112E	2	MOV	Active	B	N/A	N/A	IWV-3410	Note 1
CBS-V2	2	MOV	Active	A	~~IWV-3420~~ N/A	~~2 years~~ N/A	IWV-3410	3 months
CBS-V3	2	Check	Active	~~B~~ C	~~IWV-3420~~ N/A	~~2 years~~ N/A	IWV-3520	Note ~~1~~ 2
CBS-V5	2	MOV	Active	A	~~IWV-3420~~ N/A	~~2 years~~ N/A	IWV-3410	3 months
CBS-V7	2	Check	Active	~~B~~ C	~~IWV-3420~~ N/A	~~2 years~~ N/A	IWV-3520	Note ~~1~~ 2
CBS-V8	2	MOV	Active	B	N/A	N/A	IWV-3410	3 months
CBS-V9	2	Check	Active	C	N/A	N/A	IWV-3520	~~Refueling~~ Note 4
CBS-V26	2	Check	Active	C	N/A	N/A	IWV-3520	~~Refueling~~ Note 4
CBS-V14	2	MOV	Active	B	N/A	N/A	IWV-3410	3 months
CBS-V15	2	Check	Active	C	N/A	N/A	IWV-3520	~~Refueling~~ Note 4
CBS-V25	2	Check	Active	C	N/A	N/A	IWV-3520	~~Refueling~~ Note 4
CBS-V31	2	Piston, Fail Safe	Active	~~A~~ B	~~IWV-3420~~ N/A	~~2 years~~ N/A	IWV-3410	Note 2

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System: ECCS/CS Fluid Supplies (continued) Drawing Reference: 805023

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
CBS-V32	2	Piston, Fail Safe	Active	~~A~~ B	~~IWV-3420~~ N/A	~~2 years~~ N/A	IWV-3410	Note 2
CBS-V33	2	Piston, Fail Safe	Active	~~A~~ B	~~IWV-3420~~ N/A	~~2 years~~ N/A	IWV-3410	Note 2
CBS-V11	2	MOV	Active	~~B~~ A	~~N/A~~ 10CFR50 App J	~~N/A~~ 2 years	3410	3 months
CBS-V12	2	Check	Active	~~B~~ A	~~N/A~~ 10 CFR 50 App J	~~N/A~~ 2 years	IWV-3520	~~Refueling~~ Note 3
CBS-V17	2	MOV	Active	~~B~~ A	~~N/A~~ 10 CFR 50 App J	~~N/A~~ 2 years	IWV-3410	3 months
CBS-V18	2	Check	Active	~~B~~ A	~~N/A~~ 10 CFR 50 App J	~~N/A~~ 2 years	IWV-3520	~~Refueling~~ Note 3

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Note 1: Exercising this value during power operation would require the charging pump suctions to be aligned with the refueling water storage tank. This would cause a sudden increase in RCS boron inventory. It shall be exercised during cold shutdown when the RCS is borated to shutdown conditions.

Note 2: These valves will be tested during ~~monthly~~ periodic pump tests, per IWV-3000.

Note 3: Testing this valve requires containment entry to align the system to preclude inadvertant initiation of containment spray. This valve will be exercised during refueling outages.

Note 4: This valve cannot be exercised by system flow without substantial amounts of water in the containment sump. This valve will be exercised during refueling outages during leak testing of adjacent valves or by disassembly and mechanical exercise.

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CODE VALVE TEST LIST

System: Steam Generator Blowdown

Drawing Reference: 805024

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
SB-V9	2	Diaphragm, Fail Safe	Active	A	10CFR50 App J	2 years	IWV-3410	3 months
SB-V10	2	Diaphragm, Fail Safe	Active	A	10CFR50 App J	2 years	IWV-3410	3 months
SB-V11	2	Diaphragm, Fail Safe	Active	A	10CFR50 App J	2 years	IWV-3410	3 months
SB-V12	2	Diaphragm, Fail Safe	Active	A	10CFR50 App J	2 years	IWV-3410	3 months
~~SB-V1~~	~~2~~	~~Diaphragm, Fail Safe~~	~~Active~~	~~A~~	~~10CFR50 App J~~	~~2 years~~	~~IWV-3410~~	~~3 months~~
~~SB-V3~~	~~2~~	~~Diaphragm, Fail Safe~~	~~Active~~	~~A~~	~~10CFR50 App J~~	~~2 years~~	~~IWV-3410~~	~~3 months~~
~~SB-V5~~	~~2~~	~~Diaphragm, Fail Safe~~	~~Active~~	~~A~~	~~10CFR50 App J~~	~~2 years~~	~~IWV-3410~~	~~3 months~~
~~SB-V7~~	~~2~~	~~Diaphragm, Fail Safe~~	~~Active~~	~~A~~	~~10CFR50 App J~~	~~2 years~~	~~IWV-3410~~	~~3 months~~

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TABLE 3.9(B)-23
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CODE VALVE TEST LIST

System: Nuclear Samples

Drawing Reference: 805025

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
RC-FV2830 ~~RC-V202~~	2	Solenoid ~~Diaphragm~~, Fail Safe	Active	A	10CFR50 App J	2 years	IWV-3410	3 months
RC-FV2831 ~~RC-V203~~	2	Solenoid ~~Diaphragm~~, Fail Safe	Active	A	10CFR50 App J	2 years	IWV-3410	3 months
RC-FV2832 ~~RC-V204~~	2	Solenoid ~~Diaphragm~~, Fail Safe	Active	A	10CFR50 App J	2 years	IWV-3410	3 months
RC-FV2833 ~~RC-V205~~	2	S noid ~~D hragm~~, Fail Safe	Active	A	10CFR50 App J	2 years	IWV-3410	3 months
RC-FV2840 ~~RC-V206~~	2	Solenoid ~~Diaphragm~~, Fail Safe	Active	A	10CFR50 App J	2 years	IWV-3410	3 months
RC-FV2874 ~~RC-V207~~	2	Solenoid ~~Diaphragm~~, Fail Safe	Active	A	10CFR50 App J	2 years	IWV-3410	3 months
RC-FV2876 ~~RC-V286~~	2	Solenoid ~~Diaphragm~~, Fail Safe	Active	A	10CFR50 App J	2 years	IWV-3410	3 months
RC-V340 ~~RC-V287~~	2	Manual, Locked Closed ~~Diaphragm~~, ~~Fail Safe~~	~~Active~~ Passive	A	10CFR50 App J	2 years	~~IWV-3410~~ N/A	~~3 months~~ N/A
RC-V344	2	Manual, Locked Closed	Passive	A	10CFR50 App J	2 years	N/A	N/A
RC-V312	2	Safety	~~Active~~ Passive	A-C	10CFR50 App J	2 years	~~IWV-3510~~ N/A	~~IWV-3500~~ N/A
RC-V314	2	Safety	~~Active~~ Passive	A-C	10CFR50 App J	2 years	~~IWV-3510~~ N/A	~~IWV-3500~~ N/A
RC-V337	2	Safety	Passive	A-C	10CFR50 App J	2 years	N/A	N/A

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TABLE 3.9(B)-23
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CODE VALVE TEST LIST

System: Primary Component Cooling Loop-B

Drawing Reference: 805028

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
~~CC-V445~~ (V447)	~~3~~	~~Piston~~	~~Active~~	~~B~~	~~N/A~~	~~N/A~~	~~IWV-3410~~	~~3 months~~
~~CC-V266~~	~~3~~	~~MOV~~	~~Active~~	~~B~~	~~N/A~~	~~N/A~~	~~IWV-3410~~	~~3 months~~
~~CC-V272~~	~~3~~	~~MOV~~	~~Active~~	~~B~~	~~N/A~~	~~N/A~~	~~IWV-3410~~	~~3 months~~
CC-V175	2	Piston, Fail Safe	Active	A	10CFR50 App J	2 years	IWV-3410	Note 1
CC-V176	2	Piston, Fail Safe	Active	A	10CFR50 App J	2 years	IWV-3410	Note 1
CC-V257	2	Piston, Fail Safe	Active	A	10CFR50 App J	2 years	IWV-3410	Note 1
CC-V256	2	Piston, Fail Safe	Active	A	10CFR50 App J	2 years	IWV-3410	Note 1
CC-V474	2	Safety	~~Active~~ Passive	~~G-A~~ A-C	10CFR50 App J	2 years	~~IWV-3510~~ N/A	~~IWV-3510~~ N/A
CC-V840	2	Safety	~~Active~~ Passive	~~G-A~~ A-C	10CFR50 App J	2 years	~~IWV-3510f~~ N/A	~~IWV-3500~~ N/A

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Note 1: To cool and protect RCP seals, flow to them is required at all times during power operation or cold shutdown. Exercising of this valve will be performed during refueling outages when risk of equipment damage is eliminated by securing the RCPs.

CC-V929	2	Manual	Passive	A	10CFR50 App J	2 years	N/A	N/A
CC-V931	2	Manual	Passive	A	10CFR50 App J	2 years	N/A	N/A
CC-V936	2	Manual	Passive	A	10CFR50 App J	2 years	N/A	N/A
CC-V938	2	Manual	Passive	A	10CFR50 App J	2 years	N/A	N/A

TABLE 3.9(B)-23
(Sheet 53 of 57)

CODE VALVE TEST LIST

System: Primary Component Cooling

Drawing Reference: 805029

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
~~CC-V329~~	~~3~~	~~Piston~~	~~Active~~	~~B~~	~~N/A~~	~~N/A~~	~~IWV-3410~~	~~3 months~~
~~CC-V145~~	~~3~~	~~MOV~~	~~Active~~	~~B~~	~~N/A~~	~~N/A~~	~~IWV-3410~~	~~3 months~~
~~CC-V137~~	~~3~~	~~MOV~~	~~Active~~	~~B~~	~~N/A~~	~~N/A~~	~~IWV-3410~~	~~3 months~~
CC-V168	2	Piston, Fail Safe	Active	A	10CFR50 App J	2 years	IWV-3410	Note 1
CC-V57	2	Piston, Fail Safe	Active	A	10CFR50 App J	2 years	IWV-3410	Note 1
CC-V122	2	Piston, Fail Safe	Active	A	10CFR50 App J	2 years	IWV-3410	Note 1
CC-V121	2	Piston, Fail Safe	Active	A	10CFR50 App J	2 years	IWV-3410	Note 1
CC-V410	3	Safety	~~Active~~ Passive	A-C	10CFR50 App J	2 years	~~IWV-3510~~ N/A	~~IWV-3500~~ N/A
CC-V845	3	Safety	~~Active~~ Passive	A-C	10CFR50 App J	2 years	~~IWV-3510~~ N/A	~~IWV-3500~~ N/A

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Note 1: To cool and protect RCP seals, flow to them is required at all times during power operation or cold shutdown. Exercising of this valve will be performed during refueling outages when risk of equipment damage is eliminated by securing the RCPs.

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CODE VALVE TEST LIST

System: Demineralizer Water

Drawing Reference: 805030

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
DM-V4	2	Manual, Locked Closed	Passive	A	10CFR50 App J	2 years	N/A	N/A
DM-V5	2	Manual, Locked Closed	Passive	A	10CFR50 App J	2 years	N/A	N/A
DM-V18	2	Safety	Passive ~~Active~~	A-C	10CFR50 App J	2 years	N/A ~~IWV-3510~~	N/A ~~IWV-3500~~

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TABLE 3.9(B)-23
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CODE VALVE TEST LIST

System: Demineralizer Water

Drawing Reference: 805033

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
SW-V1	3	Check	Active	C	N/A	N/A	IWV-3414/ 3520	Note 1
SW-V2	3	MOV	Active	B	N/A	N/A	IWV-3410	3 months
SW-V3	3	Check	Active	C	N/A	N/A	IWV-3414/ 3520	Note 1
SW-V22	3	MOV	Active	B	N/A	N/A	IWV-3410	3 months
SW-V28	3	Check	Active	C	N/A	N/A	IWV-3414/ 3520	Note 1
SW-V29	3	MOV	Active	B	N/A	N/A	IWV-3410	3 months
SW-V30	3	Check	Active	C	N/A	N/A	IWV-3414/ 3520	Note 1
SW-V31	3	MOV	Active	B	N/A	N/A	IWV-3410	3 months

Note 1: Pump discharge check valves are continuously monitored for proper opening and seating (idle pump) by observation of system flow rate or by pump testing in accordance with Section XI, IWP-3000. Failure of the idle pump check valve to seat properly will reduce system flow rate, an obvious abnormality.

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TABLE 3.9(B)-23
(Sheet 56 of 57)

CODE VALVE TEST LIST

System: Equipment Vents

Drawing Reference: 805635

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
VG-FV1661 ~~VG-V46~~	2	Globe, Fail Safe	Active	A	10CFR50 App J	2 years	IWV-3410	3 months
VG-FV1712 ~~VG-V47~~	2	Globe, Fail Safe	Active	A	10CFR50 App J	2 years	IWV-3410	3 months

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TABLE 3.9(B)-23
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CODE VALVE TEST LIST

System: Equipment Drain

Drawing Reference: 805040

Valve ID	Code Class	Type	Function IWV-2100	Category IWV-2200	Leak Test Procedure	Minimum Leak Test Frequency	Exercise Test Procedure	Minimum Exercise Test Frequency
WLD-V81	2	Piston, Fail Safe	Active	A	10CFR50 App J	2 years	IWV-3410	3 months
WLD-V82	2	Piston, Fail Safe	Active	A	10CFR50 App J	2 years	IWV-3410	3 months
WLD-V213	2	Safety	~~Active~~ Passive	A-C	10CFR50 App J	2 years	~~IWV-3510~~ N/A	~~IWV-3500~~ N/A

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REVISIONS TO

SECTION 3.9(B)-6

parameters which could be affected by the replacement, repair, or maintenance are within acceptable limits.

Valves with remote position indicators, which during plant operation are inaccessible for direct observation, will be visually observed at least as frequently as scheduled refueling outages, with at least one observation being made every 2 years to verify that remote valve indications accurately reflect valve operation.

insert * →

Records and reports of inservice valve tests will be kept in accordance with Article IWV-6000 of the Code.

Exceptions taken to certain Article IWV-3000 requirements and clarifications are discussed below:

a. Article IWV-3000 testing, which is impractical or which cannot be performed during plant operation, will be conducted during scheduled refueling shutdowns rather than cold shutdowns. This exception is necessary because all cold shutdowns are not refueling shutdowns. A typical non-refueling cold shutdown is unscheduled and of shorter duration. In most cases, the reactor vessel head is not removed. Therefore, exercise testing of check valves which requires flow into the reactor coolant system is impractical.

b. Category A valves, which are required to affect containment isolation, will be leak tested in accordance with 10CFR 50, Appendix J.

c. Certain valves which become an extension of the containment boundary under post-accident conditions, but are not required to close to affect containment isolation, will be leak tested in accordance with Subarticle IWV-3420. This applies to certain emergency core cooling and containment spray system valves, which if leaking, would allow passage of post-accident fluids outside the containment. Allowable leakage will be that which is specified in Subarticle IWV-3420.

d. Isolation valves in main steam, main feedwater, and emergency feedwater systems, which are not expected to become an extended part of the containment boundary as a result of a loss-of-coolant accident, do not require special leakage testing and are, therefore, categorized as either Category B or C, as applicable.

e. Category A check valves, used for containment isolation inside the containment, and not part of emergency core cooling or containment spray systems, need not be exercised per Subarticle IWV-3520. The proper seating of these valves is assured by required periodic leak testing in accordance with 10CFR50, Appendix J.

* Valves which act as an isolation boundary between high pressure reactor coolant piping and adjacent low pressure systems, and whose undetected failure or degradation could lead to an inter-system LOCA, will be considered Category A or A-C valves and tested in accordance with this section and the Technical Specifications.

REVISIONS TO

RAI 210.53

The staff's present position on leak rate limiting conditions for operation must be equal to or less than 1 gallon per minute for each valve (GPM) to ensure the integrity of the valve. Demonstrate the adequacy of the redundant pressure isolation function and give an indication of valve degradation over a finite period of time. Significant increases over this limiting valve would be an indication of valve degradation from one test to another.

Leak rates higher than 1 GPM will be considered if the leak rate changes are below 1 GPM above the previous test leak rate or system design precludes measuring 1 GPM with sufficient accuracy. These items will be reviewed on a case by case basis.

The Class 1 to Class 2 boundary will be considered the isolation point which must be protected by redundant isolation valves.

In cases where pressure isolation is provided by two valves, both will be independently leak tested. When three or more valves provide isolation, only two of the valves need to be leak tested.

Provide a list of all pressure isolation valves included in your testing program along with four sets of Piping and Instrument Diagrams which describe your reactor coolant system pressure isolation valves. Also discuss in detail how your leak testing program will conform to the above staff position.

RESPONSE:

A valve test program is in preparation and, when completed, will address inservice testing of valves whose function is to perform pressure isolation between high pressure reactor coolant and low pressure systems. ~~Specific information regarding valve testing criteria, frequency, and exceptions will be made available to the NRC Project Manager for review by January 1, 1983. This date is consistent with the previously stated submittal date for information relative to the Inservice Inspection Program.~~

Delete these words and replace with these

RAI 210.54

It is the staff ...rial safety-related instrumentation lines should b... ...toring program during pre-operational o... ...either a visual or instru-mented inspe... ...ify any excessive vibration th...

Provide a ... ...ion ... lines that wil...

The particular valves to be included in this test program and the test procedures and frequency will be shown in Table 3.9(B)-23. Test requirements and acceptance criteria will be per Technical Specifications. The information in Section 3.9(B)-6 and the Technical Specifications will serve as the basis for the valve test program. The Seabrook Inservice Testing Program for Pumps and Valves will be submitted within six months of the anticipated date for commercial operation."

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