PUMP AND VALVE

INSERVICE TESTING PROGRAM

POINT BEACH NUCLEAR PLANT

REVISION 1

May 28, 1991

INDEX

1.0 INTRODUCTION

Revision 0 of the third ASME Inservice Test (IST) Program for Point Beach (Units 1 & 2) will be in effect through the end of the third 120-month (10-year) interval, unless changed and reissued for reasons other than the routine update required at the start of the fourth interval per 10 CFR 50.55a(g). The third interval for both units begins on December 21, 1990.

This document outlines the IST Program for Point Beach Plant, Units 1 and 2, based on the requirements of Section XI of the ASME Boiler and Pressure Vessel Code, 1986 Edition (the Code). References in this document to "IWP" or "IWV" correspond to Subsections IWP and IWV, respectively, of the ASME Section XI, 1986 Edition, unless otherwise noted.

As described in the second (1980) 120-month interval program, strict application of code selection criteria of 10 CFR 50.55a(g)(4)(ii) would have resulted in application of different ASME Section XI code edition being applied to Unit 1 and Unit 2. In the second program, a request was made to match Unit 1 and Unit 2 to the same code edition. A similar request accompanied this third 120-month program; the contents of this program have been prepared under the assumption the request is granted.

Interpretation

1.1 Where conflicts exist between 10 CFR 50.55a and ASME Section XI, 10 CFR 50.55a takes precedence.

1.2 By 10 CFR 50.55a(g)(l), inservice testing of pumps and valves for plants with construction permits docketed prior to January 1, 1971, is limited to those that are safety-related. This applies to PBNP Units 1 and 2.

1.3 According to 10 CFR 50.55a(g)(l) and 10 CFR 50.55a(g)(4), inservice testing shall be conducted in accordance with the appropriate edition/addenda of the code to the extent practical within the limitations of design, geometry, and materials of construction.

1.4 The NRC, via Generic Letter 89-04 and associated documents (References 2.8, 2.9 and 2.10), has provided interpretations and modification of ASME Section XI.

2.0 REFERENCES

This program plan was developed per the requirements and guidance provided by the following documents:

2.1 Title 10, Code of Federal Regulations, Part 50

2.2 NRC Regulatory Guides - Division 1

2.3 Standard Review Plan 3.9.6, "Inservice Testing of Pumps and Valves"

2.4 Final Safety Analysis Report, Point Beach Units 1 & 2

2.5 Point Beach Plant Unit 1 Technical Specifications

2.6 Point Beach Plant Unit 2 Technical Specifications

2.7 ASME Boiler and Pressure Vessel Code, Section XI, 1986 Edition

2.8 NRC Generic Letter 89-04, "Guidance on Developing Acceptable Inservice Testing Programs"

2.9 Point Beach Nuclear Plant Responses to GL 89-04, dated October 3, 1989, March 2, 1990, June 28, 1990, and September 11, 1990.

2.10 NRC minutes of public meetings on GL 89-04, dated October 25, 1989.

2.11 NRC Safety Evaluation Report (SER), dated April 17, 1992, on the Point Beach Nuclear Plant Inservice Testing Program, Third 10-Year Interval.

3.0 INSERVICE TESTING PROGRAM FOR PUMPS

3.1 Code Compliance

This IST program for pumps is based on the requirements of subsection IWP of the code and any interpretations or additional requirements imposed by Reference 2.8. Where these requirements have been determined to be impractical, conformance would cause unreasonable hardship without any compensating increase in safety, or an alternative test provides an acceptable level of quality and safety, relief from code requirements is requested pursuant to the requirements of 10 CFR 50.55a(g)(iii) and Reference 2.8.

3.2 Allowable Ranges of Test Quantities

The allowable ranges for test parameters as specified in Table IWP-3100-2 will be used for all measurements of pressure, flow, and vibrations except as provided for in specific relief requests. In some cases, the performance of a pump may be adequate to fulfill its safety function even though there may be a value of an operating parameter that falls outside the allowable ranges as set forth in Table IWP-3100-2. Should such a situation arise, an expanded allowable range may be determined, on a case-by-case basis, in accordance with IWP-3210 and ASME Code Interpretation XI-1-79-19.

3.3 Testing Intervals

The test frequency for pumps included in the Program will be as set forth in IWP-3400 and related relief requests. A band of +25 percent of the test interval may be applied to a test schedule as allowed by the Point Beach Technical Specifications to provide for operational flexibility.

3.4 Pump Program Table

Appendices A and B list those pumps included in the IST Program with references to parameters to be measured and applicable requests for relief. Pumps which provide a common, shared function for Units 1 and 2 are included in Appendix A. Any explanatory notes required for clarification of test requirements will be included at the end of the respective pump table to which the note applies.

3.5 Relief Requests for Pump Testing

Appendix C includes relief requests related to pump testing.

3.6 Evaluation of Data and Equipment Status Declaration

3.6.1 The duty shift superintendent shall determine equipment operability by comparing test data against the acceptance limits. These limits are contained in an Operations Standing Order. Equipment with data exceeding these limits will be declared inoperable and Technical Specification LCOs applied.

3.6.2 Additional engineering evaluations, data trending, and data retention will be performed in accordance with ASME Section XI code and will be accompanied by equipment status declarations in accordance with plant administrative procedures.

4.0 INSERVICE TESTING PROGRAM FOR VALVES

4.1 Code Compliance

This IST Program for valves is based on the requirements of Subsection IWV of the Code and any interpretations or additional requirements imposed by Reference 2.8. Where these requirements have been determined to be impractical, conformance would cause unreasonable hardship without any compensating increase in safety, or an alternative test provides an acceptable level of quality and safety, relief from Code requirements is requested pursuant to the requirements of 10 CFR 50.55a(g)(iii) and Reference 2.8.

4.2 Testing Intervals

The test frequency for valves included in the Program will be as set forth in IWV-3400, IWV-3500, IWV-3600, and related relief requests. A band of +25 percent of the test interval may be applied to a test schedule as allowed by the Point Beach Technical Specifications to provide for operational flexibility. Where quarterly testing of valves is impractical or otherwise undesirable, testing may be performed during cold shutdown periods as permitted by IWV-3412(a). Justifications for this deferred testing are provided in Appendix G with elaboration of Point Beach policy set forth in Relief Request VRR-5.

4.3 Stroke Time Acceptance Criteria

When required, the acceptance criteria for the stroke times of power-operated valves will be as set forth in IWV-3410 and Reference 2.8.

4.4 Check Valve Testing

Full-stroke exercising of check valves to the open position using system flow will meet the requirements of Reference 2.8, Attachment 1, Position 1.

4.5 Valve Program Table

Appendices D and E list those valves included in the IST Program with references to required testing, respective test intervals, and applicable requests for relief. Valves which serve a common, shared function for Units 1 and 2 are included in Appendix D. Any explanatory notes required for clarification of test requirements will be included at the end of the respective valve table to which the note applies.

4.6 Relief Requests for Valve Testing

Appendix F includes all relief requests related to valve testing.

4.7 Evaluation of Data and Equipment Status Declaration

4.7.1 The duty shift superintendent shall determine equipment operability by comparing test data against the acceptance limits. These limits are contained in an Operations Standing Order. Equipment with data exceeding these limits will be declared inoperable and Technical Specification LCOs applied.

4.7.2 Additional engineering evaluations, data trending, and data retention will be performed in accordance with ASME Section XI and will be accompanied by equipment status declarations in accordance with plant administrative procedures.

4.8 Background Document References

All appendices of this IST Program are consistent with the following IST Program Background Document appendices:

Appendix	Title
A	Main and Reheat Steam
B	Auxiliary Feedwater System
C	Main Feedwater System
D	Service Water System
E	Reactor Coolant System
F	Chemical and Volume Control System
G	Safety Injection and Residual Heat Removal System
H	Containment Spray System
I	Component Cooling System
J	Spent Fuel Pit Cooling System
K	Emergency Diesel Generator Air Start and Fuel Oil Transfer Systems
L	Heating, Ventilation, and Air Conditioning Systems
M	Auxiliary Steam System, Heating Steam, Chilled and Hot Water Systems
N	Instrument and Service Air Systems
O	Post-Accident Containment Vent/Monitoring System
P	Primary Sampling System
Q	Waste Disposal System
R	De-ionized/Reactor Makeup Water System

4.9 Valve Fail-Safe Tests

IWV-3415 states, "When practical, valves with fail-safe actuators shall be tested by observing the operation of the valves upon loss of actuator power."

This type of test demonstrates that a valve will go to the position required to fulfill its safety function upon loss of actuator power.

The following describes the requirements for fail-safe tests for the different types of actuators:

Actuator Type	Fail-Safe Test
Motor	Valve fails as is. No test required.
Solenoid	Valve fails to its safe position upon loss of power to the solenoid.
Air	Valve fails to its safe position upon loss of control air and/or loss of control power to its associated solenoid.

Because of their particular function and manner of operation, certain air and solenoid operated valves do not have fail-safe positions even though they will fail to the open or closed position upon loss of power or control air pressure. For these valves, no fail-safe test requirement is specified. Questions regarding the fail-safe test requirements for a particular valve should be referred to the Background Document entry for that component.

Valves which are passive as defined by IWA-9000 are so indicated in the program, and have no requirements for fail-safe testing specified in the program.

APPENDIX A
PUMP PROGRAM TABLE
UNIT 1

LEGEND

PUMP NUMBER	Numerical designator indicated on the respective flow diagram.
FUNCTION	Generic name/function of the pump.
DRAWING NO.	Corresponds to the flow diagram showing the pump.
TEST PARAMETERS	The table indicates full code compliance by a "YES" in the column associated with that specific parameter. Where the test program deviates from the code requirement, the respective relief request number is noted.
PRR-XX	Where indicated, this refers to the specific relief request (See Appendix C) related to any deviation regarding the measurement or analysis of a parameter.

APPENDIX A
PUMP PROGRAM TABLES
UNIT 1

Test Parameters

Pump Number	Function	Dwg. No.	Lube Level	Speed	Inlet Press	Diff Press	Flow Rate	Bearing Vib	Temp	Remarks
P-002A	Charging Pump	684J741	Yes	Yes	PRR-14	PRR-14	Yes	PRR-7	PRR-8	PRR-1,2,9
P-002B	Charging Pump	684J741	Yes	Yes	PRR-14	PRR-14	Yes	PRR-7	PRR-8	PRR-1,2,9
P-002C	Charging Pump	684J741	Yes	Yes	PRR-14	PRR-14	Yes	PRR-7	PRR-8	PRR-1,2,9
P-004A	BA Transfer	684J741	No	N/A	Yes	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9
P-004B	BA Transfer	684J741	No	N/A	Yes	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9
P-010A	RHR	110E018	Yes	N/A	Yes	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9
P-010B	RHR	110E018	Yes	N/A	Yes	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9
P-011A	CC	110E018	Yes	N/A	Yes	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9,19
P-011B	CC	110E018	Yes	N/A	Yes	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9,19
P-012A	SFP Cooling	110E018	Yes	N/A	Yes	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9
P-012B	SFP Cooling	110E018	Yes	N/A	Yes	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9
P-014A	Containment Spray	110E017	Yes	N/A	Yes	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9
P-014B	Containment Spray	110E017	Yes	N/A	Yes	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9
P-015A	Safety Injection	110E017	Yes	N/A	Yes	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9
P-015B	Safety Injection	110E017	Yes	N/A	Yes	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9
P-029	AFW	M-217	Yes	Yes	Yes	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9,20
P-032A	Service Water	M-207	No	N/A	PRR-13	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9,19

APPENDIX A
PUMP PROGRAM TABLES
UNIT 1

Pump Number	Function	Dwg. No.	Lube Level	Speed	Inlet Press	Diff Press	Flow Rate	Bearing Vib	Temp	Remarks
P-032B	Service Water	M-207	No	N/A	PRR-13	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9,19
P-032C	Service Water	M-207	No	N/A	PRR-13	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9,19
P-032D	Service Water	M-207	No	N/A	PRR-13	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9,19
P-032E	Service Water	M-207	No	N/A	PRR-13	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9,19
P-032F	Service Water	M-207	No	N/A	PRR-13	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9,19
P-038A	AFW	M-217	Yes	N/A	Yes	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9,20
P-038B	AFW	M-217	Yes	N/A	Yes	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9,20
P-070A	FO Transfer	M-219	Yes	N/A	Yes	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9,21
P-070B	FO Transfer	M-219	Yes	N/A	Yes	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9,21
P-111A	CSR Ch Water	M-214	N/A	N/A	Yes	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9
P-111B	CSR Ch Water	M-214	N/A	N/A	Yes	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9
P-112A	CR Ch Water	M-214	N/A	N/A	Yes	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9
P-112B	CR Ch Water	M-214	N/A	N/A	Yes	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9

APPENDIX B
PUMP PROGRAM TABLE
UNIT 2

LEGEND

PUMP NUMBER	Numerical designator indicated on the respective flow diagram.
FUNCTION	Generic name/function of the pump.
DRAWING NO.	Corresponds to the flow diagram showing the pump.
TEST PARAMETERS	The table indicates full code compliance by a "YES" in the column associated with that specific parameter. Where the test program deviates from the code requirement, the respective relief request number is noted.
PRR-XX	Where indicated, this refers to the specific relief request (See Appendix C) related to any deviation regarding the measurement or analysis of a parameter.

APPENDIX B
PUMP PROGRAM TABLES
UNIT 2

Test Parameters

Pump Number	Function	Dwg. No.	Lube Level	Speed	Inlet Press	Diff Press	Flow Rate	Bearing Vib	Temp	Remarks
P-002A	Charging Pump	685J175	Yes	Yes	PRR-14	PRR-14	Yes	PRR-7	PRR-8	PRR-1,2,9
P-002B	Charging Pump	685J175	Yes	Yes	PRR-14	PRR-14	Yes	PRR-7	PRR-8	PRR-1,2,9
P-002C	Charging Pump	685J175	Yes	Yes	PRR-14	PRR-14	Yes	PRR-7	PRR-8	PRR-1,2,9
P-004A	BA Transfer	685J175	N/A	N/A	Yes	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9
P-004B	BA Transfer	685J175	N/A	N/A	Yes	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9
P-010A	RHR	110E029	Yes	N/A	Yes	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9
P-010B	RHR	110E029	Yes	N/A	Yes	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9
P-011A	CC	110E029	Yes	N/A	Yes	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9,19
P-011B	CC	110E029	Yes	N/A	Yes	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9,19
P-014A	Containment Spray	119E035	Yes	N/A	Yes	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9
P-014B	Containment Spray	119E035	Yes	N/A	Yes	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9
P-015A	Safety Injection	119E035	Yes	N/A	Yes	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9
P-015B	Safety Injection	119E035	Yes	N/A	Yes	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9
P-029	AFW	M-217	Yes	Yes	Yes	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9,20

RELIEF REQUEST PRR-1

COMPONENTS: Various, non component specific.

SECTION XI REQUIREMENT:

The full scale range of each instrument shall be three times the reference value or less. (IWP-4120)

BASIS FOR RELIEF.

Table IWP-4110-1 requires the accuracy of instruments used to measure temperature and speed to be equal to or better than ± 5 percent for temperature and ± 2 percent for speed, both based on the full scale reading of the instrument. This means that the accuracy of the measurement can vary as much as ± 15 percent and ± 6 percent, respectively, assuming the range of the instruments extended to the allowed maximum.

These IST pump parameters are often measured with portable test instruments where commercially available instruments do not necessarily conform to the Code requirements for range. In these cases, high quality calibrated instruments will be used where the reading accuracy is at least equal to the Code requirement for full scale accuracy. This will ensure that the measurements are always more accurate than the accuracy as determined by combining the requirements of Table IWP-4110-1 and Paragraph IWP-4120.

ALTERNATE TESTING:

Whenever portable instruments are used for measuring performance parameters, the instruments will be such that the reading accuracy is as follows:

Temperature:	± 5 percent
Speed:	± 2 percent

STATUS: Active. Relief granted by NRC SER dated April 17, 1992.

RELIEF REQUEST PRR-2

COMPONENTS: All pumps in the IST Program.

SECTION XI REQUIREMENT:

Each inservice test shall include the measurement and observation of all quantities in Table IWP-3100-1. (IWP-3300)

Pump inlet pressure shall be measured before starting a pump and during the test. (Table IWP-3100-1)

BASIS FOR RELIEF:

If a pump being tested is in operation as a result of plant or system needs, it is unreasonable to reconfigure system lineups simply to provide for measurement of static inlet pressure. Inlet pressure prior to pump start is not a significant parameter needed for evaluating pump performance or its material condition.

ALTERNATE TESTING:

When performing a test on a pump that is already in operation as a result of system or plant requirements, inlet pressure will only be measured during pump operation.

STATUS: Active. Relief granted by NRC SER dated April 17, 1992.

RELIEF REQUEST PRR-3

COMPONENTS: Safety Injection Pumps: 1P-015 A&B, 2P-015 A&B.
(Drawings: 110E017 Sh 2, 110E035 Sh 2)

SECTION XI REQUIREMENT:

The resistance of the system shall be varied until either the differential pressure or the measured flow rate equals the corresponding reference value. The test quantities shown in Table IWP-3100-1 shall then be measured or observed. (IWP-3100)

When a reference value or set of values may have been affected by repair or routine servicing of a pump, a new reference value or set of values shall be determined, or the previous values reconfirmed by an inservice test run prior to, or within 96 hours after, return of the pump to normal service. (IWP-3111)

BASIS FOR RELIEF:

The inservice testing of these pumps is accomplished by operating the pumps in a recirculation mode through a fixed, flow limiting orifice. The orifice is sized such that pump operation is in the flat (horizontal) region of the pump characteristic curve where pump head is relatively independent of flow rate. Under these test conditions flow rate may not be indicative of pump performance.

NRC Generic Letter 89-04, Position 9, allows elimination of flow rate measurements during quarterly testing where flow rate instrumentation is unavailable provided that appropriate inservice tests are performed during cold shutdowns or refuelings where full or substantial flow conditions can be established and flow rates measured.

The only practical means of establishing full or substantial flow and obtaining quantitative flow rate data during testing of these pumps requires pumping into the reactor coolant system (RCS). During plant operation under normal conditions, this is not possible due to the large differential between the RCS and the maximum pump discharge pressure. Under shutdown conditions when the RCS is depressurized, operation in such a mode is precluded by low temperature over pressurization (LTOP) concerns and restrictions.

Performing post-maintenance testing for all reference values would require a plant shutdown and cooldown prior to returning a repaired pump to service. Tests performed in the recirculation mode (quarterly) are sufficient to provide adequate assessment of the ability of the pump to perform its safety function.

ALTERNATE TESTING:

During each inservice test of these pumps performed in the recirculation mode via the fixed orifice, all required pump parameters per IWP-3100, except flow, will be measured, recorded, and evaluated.

At least once during each reactor refueling when significant flow can be established through an instrumented (flow rate) test circuit, an inservice test will be performed where all required pump parameters will be measured and recorded. Test data taken will be evaluated in accordance with IWP-3200.

Should maintenance be performed that requires post-maintenance testing per IWP-3111, testing will be performed as follows:

* If the plant is not in a refueling shutdown condition such that the testing in the recirculation mode is the only testing practical, then such testing will be performed and the test results evaluated per IWP-3111. Following this, the subject pump will be tested during the next refueling shutdown period where all parameters (including flow rate) will be measured and evaluated with respect to IWP-3111.

* If the plant is in a refueling shutdown condition, the subject pump will be tested with all parameters (including flow rate) measured and evaluated with respect to IWP-3111.

STATUS: No longer in effect. Request withdrawn July 30, 1992, by VPNPD-92-271/NRC-92-085.

RELIEF REQUEST PRR-4

COMPONENTS: Residual Heat Removal Pumps: 1P-010 A&B, 2P-010 A&B.
(Drawings: 110E018 Sh 1, 110E029 Sh 1)

SECTION XI REQUIREMENT:

The resistance of the system shall be varied until either the differential pressure or the measured flow rate equals the corresponding reference value. The test quantities shown in Table IWP-3100-1 shall then be measured or observed. (IWP-3100)

When a reference value or set of values may have been affected by repair or routine servicing of a pump, a new reference value or set of values shall be determined, or the previous values reconfirmed by an inservice test run prior to, or within 96 hours after, return of the pump to normal service. (IWP-3111)

BASIS FOR RELIEF:

The only practical means of establishing full or substantial flow and obtaining quantitative and meaningful flow rate data during testing of these pumps requires pumping into the reactor coolant system (RCS). During plant operation under normal conditions, this is not possible due to the large differential between the RCS and the maximum pump discharge pressure. Thus, the quarterly inservice testing of these pumps is accomplished by operating the pumps in a recirculation mode through a fixed, flow limiting orifice. The orifice is sized such that pump operation is in the flat (horizontal) region of the pump characteristic curve where pump head is relatively independent of flow rate. In addition, the range and accuracy of the flow instrumentation do not provide adequate repeatability at the reduced flow rate available in this flow scheme. Under such test conditions, flow rate measurements may not be indicative of pump performance.

NRC Generic Letter 89-04, Position 9, allows elimination of flow rate measurements during testing where flow rate instrumentation is unavailable provided that appropriate inservice tests are performed during cold shutdowns or refuelings where full or substantial flow conditions can be established and flow rates measured.

Performing post-maintenance testing for all reference values would require a plant shutdown and cooldown prior to returning a repaired pump to service. Tests performed in the recirculation mode are sufficient to provide adequate assessment of the ability of the pump to perform its safety function.

ALTERNATE TESTING:

During each inservice test of these pumps performed in the recirculation mode via the fixed orifice, all required pump parameters per IWP-3100, except flow, will be measured.

During refueling shutdown periods when operation of the residual heat removal system is practical and significant flow can be established through an instrumented (flow rate) test circuit, an inservice test will be performed where all required pump parameters will be measured and recorded. Test data taken will be evaluated in accordance with IWP-3200.

Should maintenance be performed that requires post-maintenance testing per IWP-3111, testing will be performed as follows:

* If the plant is not in a refueling shutdown condition such that the testing in the recirculation mode is the only testing practical, then such testing will be performed and the test results evaluated per IWP-3111. Following this, the subject pump will be tested during the next refueling shutdown period where all parameters (including flow rate) will be measured and evaluated with respect to IWP-3111.

* If the plant is in a refueling shutdown condition, the subject pump will be tested with all parameters (including flow rate) measured and evaluated with respect to IWP-3111.

STATUS: No longer in effect. Request withdrawn July 30, 1992, by VPNPD-92-271/NRC-92-085.

RELIEF REQUEST PRR-5

COMPONENTS: Auxiliary Feedwater Pumps: 1P-029, 2P-029, P-038A, and P-038B. (Drawing: M-217)

SECTION XI REQUIREMENT:

The resistance of the system shall be varied until either the differential pressure or the measured flow rate equals the corresponding reference value. The test quantities shown in Table IWP-3100-1 shall then be measured or observed. (IWP-3100)

When a reference value or set of values may have been affected by repair or routine servicing of a pump, a new reference value or set of values shall be determined, or the previous values reconfirmed by an inservice test run prior to, or within 96 hours after, return of the pump to normal service. (IWP-3111)

BASIS FOR RELIEF:

The only practical means of establishing full or substantial flow and obtaining quantitative and meaningful flow rate data during testing of these pumps requires pumping into the steam generators. During plant operation under normal conditions, this is undesirable due to the possibility of causing thermal shock to the auxiliary feedwater piping nozzles. For this reason, the inservice testing of these pumps is accomplished by operating the pumps in a recirculation mode through a fixed, flow limiting orifice. The orifice is sized to provide pump operation in the flat (horizontal) region of the pump characteristic curve where pump head is relatively independent of flow rate. In addition, flow instrumentation is not provided in this test scheme. Thus, under these test conditions, flow rate measurements are neither practical nor would they provide any meaningful information if available.

NRC Generic Letter 89-04, Position 9, allows elimination of flow rate measurements during quarterly testing where flow rate instrumentation is unavailable provided that appropriate inservice tests are performed during cold shutdowns or refuelings where full or substantial flow conditions can be established and flow rates measured.

Performing post-maintenance testing for all reference values would require a plant shutdown and cooldown prior to returning a repaired pump to service. Tests performed in the recirculation mode (quarterly) are sufficient to provide adequate assessment of the ability of the pump to perform its safety function.

ALTERNATE TESTING:

During each inservice test of these pumps performed in the recirculation mode via the fixed orifice, all required pump parameters per IWP-3100, except flow, will be measured, recorded, and evaluated.

Should maintenance be performed that requires post-maintenance testing per IWP-3111, testing will be performed as follows:

* If the plant is not in a cold shutdown condition such that the testing in the recirculation mode is the only testing practical, then such testing will be performed and the test results evaluated per IWP-3111. Following this, the subject pump will be tested during the next cold shutdown period where all parameters (including flow rate) will be measured and evaluated with respect to IWP-3111.

* If the plant is in a cold shutdown condition, the subject pump will be tested with all parameters (including flow rate) measured and evaluated with respect to IWP-3111.

During cold shutdown periods when operation of the auxiliary feedwater pumps pumping to a steam generator is possible without the potential of thermal shock, inservice testing will be performed where all required pump parameters will be measured and recorded. Test data taken will be evaluated in accordance with IWP-3200. Testing at cold shutdown will be at a frequency determined by intervals between shutdowns as follows:

For intervals of 3 months or longer - each shutdown.

For intervals of less than 3 months - testing is not required unless 3 months have passed since the last shutdown test of the subject pump.

STATUS: No longer in effect. Request withdrawn March 24, 1992, by VPNPD-92-115/NRC-92-034.

RELIEF REQUEST PRR-6

COMPONENTS: Containment Spray Pumps: 1P-014 A&B, 2P-014 A&B.
(Drawings: 110E017 Sh 3, 110E035 Sh 3)

SECTION XI REQUIREMENT:

The resistance of the system shall be varied until either the differential pressure or the measured flow rate equals the corresponding reference value. The test quantities shown in Table IWP-3100-1 shall then be measured or observed. (IWP-3100)

BASIS FOR RELIEF:

The only practical means of establishing full or substantial flow and obtaining quantitative and meaningful flow rate data during testing of these pumps requires pumping into the containment spray headers and into the containment atmosphere. This is obviously impractical and undesirable. For this reason, the quarterly inservice testing of these pumps is accomplished by operating the pumps in a recirculation mode through a fixed, flow limiting orifice. The orifice is sized such that pump operation in the flat (horizontal) region of the pump characteristic curve where pump head is relatively independent of flow rate. Note also that flow instrumentation is not provided in the recirculation circuit nor in the constant recirculation line through the eductors. Thus, under these test conditions, flow rate measurements are not possible.

ALTERNATE TESTING:

During each inservice test of these pumps performed in the recirculation mode via the fixed orifice, all required pump parameters per IWP-3100, except flow, will be measured, recorded, and evaluated.

STATUS: No longer in effect. Request withdrawn July 30, 1992, by VPNPD-92-271/NRC-92-085.

RELIEF REQUEST PRR-7

COMPONENTS: All pumps in the IST Program.

SECTION XI REQUIREMENT:

At least one displacement vibration amplitude (peak-to-peak) composite shall be read during each inservice test. The direction of displacement shall be measured in a plane approximately perpendicular to the rotating shaft, and in the horizontal or vertical direction that has the largest deflection for the particular pump installation. (IWP-4510)

The allowable ranges of inservice test quantities in relation to the reference values are tabulated in Table IWP-3100-2. (IWP-3210)

BASIS FOR RELIEF:

Measuring vibration in velocity units rather than displacement is an industry accepted practice considered to be more sensitive to small changes that are indicative of developing mechanical problems. Velocity measurements detect not only high-amplitude vibration characteristic of major mechanical problems, but low-amplitude vibration caused by misalignment, imbalance, or minor bearing wear as well.

It is impractical to search for the direction with the largest deflection and procedurally return to that precise location on successive tests. In addition, the direction of maximum deflection may vary with the material condition and age of the pump, thus eliminating consistency between test data. Adapting this requirement to test procedures could cause confusion as to the proper locations for measuring pump vibration. Also, comparing subsequent test data to reference test data taken at different locations does not provide a good measure of pump degradation.

ASME OMb-1989, Part 6, Section 4.6.4, permits measurement of vibration at two mutually perpendicular locations, and the comparing of subsequent test data to the reference value at that specific location. Additionally, ASME OMb-1989, Part 6, also permits measurement of vibration in velocity units.

ALTERNATE TESTING:

All vibration aspects of pump inservice testing will meet the requirements for vibration testing contained in ASME OMb-1986, Part 6.

STATUS: Active. Relief granted with provisions by NRC SER dated April 17, 1992. Provisions called out in the SER were incorporated into this request with the issuance of IST Program Appendix C, Revision 3.

RELIEF REQUEST PRR-8

COMPONENTS: All pumps in the IST Program.

SECTION XI REQUIREMENT:

The temperature of all centrifugal pump bearing outside the main flow path and of the main shaft bearings of reciprocating pumps shall be measured at points selected to be responsive to changes in the temperature of the bearings. (IWP-3300, IWP-4310)

BASIS FOR RELIEF:

The data associated with bearing temperatures taken at one-year intervals provides little statistical basis for determining the incremental degradation of a bearing or any meaningful trending information or correlation. In many cases, pump bearings are water cooled. Bearing temperature is, thus, a function of the temperature of the cooling medium which can vary considerably.

Vibration measurements are a significantly more reliable indication of pump bearing degradation than are temperature measurements. All pumps in the IST Program are subject to vibration measurements. Although excessive bearing temperature is an indication of an imminent or existing bearing failure, it is highly unlikely that such a condition would go unnoticed during routine surveillance testing since it would manifest itself in other obvious indications such as audible noise, unusual vibration, or increased motor current.

Any potential gain from taking bearing temperature measurements, which in many cases must be done locally using portable instruments, cannot offset the cost in terms of operator effort, distraction of operators from other duties, excessive operating periods for standby pumps, and unnecessary personnel radiation exposure.

Elimination of the requirements for bearing temperature measurement is consistent with ASME OMb-1989, Part 6, which does not contain any requirements for bearing temperature measurement.

ALTERNATE TESTING:

Vibration monitoring will be performed as described in relief request PRR-7. Such vibration monitoring provides adequate monitoring and evaluation of the material condition of the pump bearings.

STATUS: Active. Relief granted by NRC SER dated April 17, 1992.

RELIEF REQUEST PRR-9

COMPONENTS: All pumps in the IST Program.

SECTION XI REQUIREMENT:

If in the presence or absence of liquid in a gauge line could produce a difference of more than 0.25 percent in the indicated value of the measured pressure, means shall be provided to ensure or determine the presence or absence of liquid as required for the static correction used. (IWP-4210)

BASIS FOR RELIEF:

When this requirement is applied to the measurement of pump suction pressure where measured pressures are at relatively low levels, the 0.25 percent limit is overly restrictive and often results in complicated venting procedures and unnecessary health risks associated with handling and disposal of radioactive fluids with no commensurate gain or improvement of test reliability.

Normally, the only quantitative use of suction pressure measurements, where significant accuracy is required, is in determining pump differential pressure or head. In most cases the pump discharge pressure exceeds the suction pressure by at least a factor of five (5). This being the case, a 0.25 percent error introduced into the suction pressure measurement results in an error of 0.05 percent in the differential pressure calculation. This is insignificant in light of the potential 6 percent error allowance applied to both the suction and discharge pressure instruments (IWP-4110).

ALTERNATE TESTING:

If the presence or absence of liquid in a gauge line used for sensing pump suction pressure could produce a difference of more than 0.25 percent in the calculated value of the pump differential pressure, means shall be provided to ensure or determine the presence or absence of liquid as required for the static correction used. The calculation of pump differential pressure shall be proceduralized to account for liquid in the pressure sensing gauge lines so that the accuracy of the final value obtained meets Code requirements.

STATUS: Active. Relief granted with provisions by NRC SER dated April 17, 1992. Provisions called out in the SER were incorporated into this request with the issuance of IST Program Appendix C, Revision 3.

RELIEF REQUEST PRR-10

COMPONENTS: All pumps in the IST Program.

SECTION XI REQUIREMENT:

Instrument accuracy shall be within the limits of Table IWP-4110-1. (For pressure and flow rate this is ±2 percent.) (IWP-4110)

The full scale range of each instrument shall be three times the reference value or less. (IWP-4120)

BASIS FOR RELIEF:

The intent of Paragraphs IWP-4110 and IWP-4120 is to ensure that the recorded test parameters are accurate within certain bounds, thereby providing assurance of accuracy and repeatability. These paragraphs do not provide any guidance on the specific bounds within which they apply. It is unclear whether or not primary sensors are considered. Further, numerous instrument loops at Point Beach utilize remote indicators without redundant local indication.

ALTERNATE TESTING:

For instruments which have primary sensors associated with the instrument loop (flow orifice, etc.), the primary sensor accuracy is not considered. This will not affect repeatability.

For instruments which have both instruments and indicators positioned locally, and when remote computerization is used, Table 4110-1 will be applied.

For instrument loops which consist of transmitters and remote readouts, for pressure, differential pressure, and flow rate, an acceptable accuracy is ±3 percent.

STATUS: Withdrawal Pending. Interim relief granted for one year by the by NRC SER dated April 17, 1992. A review components covered by this request has determined that the request may be withdrawn upon approval of relief request PRR-21, as discussed in letter to the NRC VPNPD-92-355/NRC-92-135, dated November 16, 1992.

RELIEF REQUEST PRR-11

COMPONENTS: Boric Acid Transfer Pumps: 1P-004 A&B, 2P-004 A&B.
(Drawings: 684J741, 685J175)

SECTION XI REQUIREMENT:

The resistance of the system shall be varied until either the differential pressure or the measured flow rate equals the corresponding reference value. The test quantities shown in Table IWP-3100-1 shall then be measured or observed. (IWP-3100)

BASIS FOR RELIEF:

The quarterly inservice testing of these pumps is accomplished by operating the pumps in a recirculation mode in a circuit having no capability for flow measurement. A test circuit is available in which pump flow rate can be measured, however, it requires injection of highly concentrated boric acid solution into the reactor coolant system (RCS). During plant operation this is not practical since it would upset the RCS boric acid balance, adversely affect reactor power, and create a plant power transient. If injection were to be performed during cold shutdown periods (other than refueling), the result would be over boration of he RCS and potential operating difficulties during subsequent plant startup.

NRC Generic Letter 89-04, Position 9, allows elimination of flow rate measurements during quarterly testing where flow rate instrumentation is unavailable provided that appropriate inservice tests are performed during cold shutdowns or refuelings where full or substantial flow conditions can be established and flow rates measured.

ALTERNATE TESTING:

During each inservice test, these pumps will be operated in the recirculation mode via the non-instrumented flow loop.

At least once during each reactor refueling, an inservice test will be performed where all required pump parameters will be measured, recorded, and evaluated in accordance with IWP-3100.

STATUS: No longer in effect. Request withdrawn March 02, 1993, by VPNPD-93-054/NRC-93-031.

RELIEF REQUEST PRR-12

COMPONENTS: Boric Acid Transfer Pumps: 1P-004 A&B, 2P-004 A&B.
(Drawings: 684J741, 685J175)

SECTION XI REQUIREMENT:

An inservice test shall be run on each pump nominally every three months during normal plant operation. (IWP-3400)

Each inservice test shall include the measurement and observation of all quantities in Table IWP-3100-1, except for bearing temperatures, which shall be measured during at least one inservice test each year. (IWP-3300)

BASIS FOR RELIEF:

The system installations do not provide any mechanism for measuring pump suction pressure, discharge pressure, or pump flow rate during normal plant operation. The only practical method of determining pump flow rate is to pump to the reactor coolant system (RCS). Due to the problems associated with over boration of the RCS, this can only be done during reactor refueling outages.

To prevent boric acid crystallization, each of these is encapsulated in insulation and is heat traced precluding access for measuring pump or motor vibration. It is impractical to routinely remove this insulation to provide such access.

The CVCS system is configured such that any of the four (4) boric acid transfer pumps can supply either unit if necessary. This provides a significant amount of redundancy and reliability for the function of RCS boration. In consideration of this, a reduced frequency and reduced scope testing of these pumps is adequate.

ALTERNATE TESTING:

During reactor refueling outages, each of these pumps will be tested and flow rate will be verified to be adequate to serve its safety function. In conjunction with these tests, pump vibration will be measured as practical considering the insulation encapsulation.

STATUS: No longer in effect. Request withdrawn March 02, 1993, by VPNPD-93-054/NRC-93-031.

RELIEF REQUEST PRR-13

COMPONENTS: Service Water Pumps: P-032A, P-032B, P-032C, P-032D, P-032E, and P-032F.

(Drawing: M-207 Sh 1)

SECTION XI REQUIREMENT:

Each inservice test shall include the measurement and observation of all quantities in Table IWP-3100-1. (IWP-3300)

Pump inlet pressure shall be measured before starting a pump and during the test. (Table IWP-3100-1)

BASIS FOR RELIEF:

These pumps are vertical line shaft pumps submerged in the intake structure with no practical means of measuring pump inlet pressure. The inlet pressure, however, can be determined by calculation using the measured height of water above the pump inlet as measured at the intake as an input. During each inservice test, the water level in the intake pit remains relatively constant, thus only one measurement of level and the associated suction pressure calculation need be performed.

ALTERNATE TESTING:

During testing of these pumps, one value of inlet pressure will be calculated based on water level at the intake structure. The procedure for performing this calculation will be specified in the test procedure document. The accuracy of the calculation will be within the Code accuracy requirements for direct measurement of this parameter.

STATUS: Active. Relief granted with provisions by NRC SER dated April 17, 1992. Provisions called out in the SER were incorporated into this request with the issuance of IST Program Appendix C, Revision 3.

RELIEF REQUEST PRR-14

COMPONENTS: CVCS Charging Pumps: 1P-002A, 1P-002B, 1P-002C, 2P-002A, 2P-002B, and 2P-002C.
(Drawings: 684J741, 685J175)

SECTION XI REQUIREMENT:

Each inservice test shall include the measurement and observation of all quantities in Table IWP-3100-1. (IWP-3300)

BASIS FOR RELIEF:

The CVCS configuration is such that there is no installed instrumentation provided for measuring charging pump suction or differential pressures. Installation of temporary instrumentation is burdensome and there is little value in measuring these parameters.

These pumps are multiple plunger, positive displacement reciprocating pumps where the pump discharge pressure is purely a function of pump design and is independent of suction pressure. This is reflected in ASME OMb-1989, Part 6, Section 5.2 (Table 2), where this newer Code requires measurement of pump discharge pressure for positive displacement pumps, and measurement of differential and suction pressures is not required.

ALTERNATE TESTING:

Inservice testing of charging pumps will be in accordance with ASME OMb-1989, Part 6.

STATUS: Active. Relief granted by NRC SER dated April 17, 1992.

RELIEF REQUEST PRR-15

COMPONENTS: Control Room and Cable Spreading Room Chill Water Pumps: P-111A, P-111B, P-112A, and P-112B. (Drawing: M-214 Sh 2)

SECTION XI REQUIREMENT:

Each inservice test shall include the measurement and observation of all quantities in Table IWP-3100-1. (IWP-3300)

BASIS FOR RELIEF:

The chill water system configuration is such that there is no installed instrumentation provided for measuring flow rate. However, the installation does provide for the capability of operation under a constant (fixed) resistance mode such that pumps can be monitored and evaluated from pump differential pressure.

ALTERNATE TESTING:

During inservice testing of these chilled water pumps, the pumps will be operated in a mode such that the system resistance is fixed and repeatable. During these tests, pump differential pressure will be measured and evaluated in accordance with IWP-3210.

STATUS: No longer in effect. Request withdrawn March 02, 1993, by VPNPD-93-054/NRC-93-031.

RELIEF REQUEST PRR-16

COMPONENTS: All pumps in the IST Program.

SECTION XI REQUIREMENT:

Differential pressure is a measured parameter. (IWP-3100)

BASIS FOR RELIEF:

Pumps are not equipped with instruments which directly provide a value for differential pressure.

ALTERNATE TESTING:

Differential pressure may be calculated using suction and discharge pressures.

STATUS: No longer in effect. Request withdrawn March 02, 1993, by VPNPD-93-054/NRC-93-031.

RELIEF REQUEST PRR-17

COMPONENTS: Safety Injection Pumps: 1P-015 A&B, 2P-015 A&B.
(Drawings: 110E017 Sh 2, 110E035 Sh 2)

Residual Heat Removal Pumps: 1P-010 A&B, 2P-010 A&B.
(Drawings: 110E018 Sh 1, 110E029 Sh 1)

SECTION XI REQUIREMENT:

Each pump shall be run at least five minutes under conditions as stable as the system permits. At the end of this time, at least one measurement or observation of each of the quantities specified shall be made and recorded. (IWP-3500)

BASIS FOR RELIEF:

When performing the significant flow rate tests at refueling shutdown conditions, the pumps use the refueling water storage tank (RWST) as a suction source and deliver to the refueling cavity. The RWST does not contain a sufficient amount of fluid to allow each pump to run at the reference point for five minutes, plus get performance data at two other points (multiple reference points per IWP-3112).

The overall run time for completing the test of each pump (three or more data points) does exceed five minutes. When performing periodic non-instrumented recirc line testing, the pump will be operated for at least five minutes.

ALTERNATE TESTING:

When performing three data point testing, an overall run time of five minutes will be met. Pump operation during periodic recirc line testing will be at least five minutes in duration.

STATUS: No longer in effect. Request withdrawn March 02, 1993, by VPNPD-93-054/NRC-93-031.

RELIEF REQUEST PRR-18

COMPONENTS: Auxiliary Feedwater Pumps: 1P-029, 2P-029, P-038A, and P-038B. (Drawing: M-217)

SECTION XI REQUIREMENT:

Each pump shall be run at least five minutes under conditions as stable as the system permits. At the end of this time, at least one measurement or observation of each of the quantities specified shall be made and recorded. (IWP-3500)

BASIS FOR RELIEF:

During cold shutdown periods when operation of the auxiliary feedwater pumps pumping to a steam generator is possible without the potential of thermal shock, inservice testing will be performed where all required pump parameters will be measured and recorded. Test data will be taken at three data points (Multiple reference point per IWP-3112).

At this time, however, there is very little decay heat remaining in the reactor coolant system (RCS). Sustained operation of auxiliary feedwater at substantial flow rates causes significant pressure decreases in the RCS which challenge reactor coolant pump operation limits and cause RCS level decreases due to temperature induced shrink.

ALTERNATE TESTING:

When performing three data point testing, an overall run time of five minutes will be met. Pump operation during periodic recirc line testing will be at least five minutes in duration.

STATUS: No longer in effect. Request withdrawn March 02, 1993, by VPNPD-93-054/NRC-93-031.

RELIEF REQUEST PRR-19

COMPONENTS: Service Water Pumps: P-032A, P-032B, P-032C, P-032D, P-032E, and P-032F.
(Drawing: M-207 Sh 1)

Component Cooling Water Pumps: 1P-011 A&B and 2P-011 A&B.
(Drawings: 110E018 Sh 3, 110E029 Sh 3)

SECTION XI REQUIREMENT:

Reference values are defined as one or more fixed sets of values of the quantities shown in Table IWP-3100-1, as measured or observed when the equipment is known to be operating acceptably. (IWP-3110)

BASIS FOR RELIEF:

The component cooling water (CCW) pumps and service water (SW) pumps are tested in-situ. These systems contain numerous components which use temperature control valves that automatically adjust position (thereby pump discharge flow) in response to sensed temperature. This manner of operation prevents the setting and maintaining of a single, specific reference value.

ALTERNATE TESTING:

ASME OMa-1988, Part 6, Section 5.2(c), states, "Where system resistance cannot be varied, flow rate and pressure shall be determined and compared to their respective reference values."

The system resistance in the CCW system and the SW system cannot be varied to achieve a fixed value for testing due to the constant operation of the numerous automatic valves in the systems. Consequently, both differential pressure and flow shall be compared to their respective limits. The tolerance around the value intended to serve as the fixed value shall be ± 2 percent, which is more conservative than the limits of either Table IWP-3100-2 or OMa-1988, Part 6.

STATUS: Active. Relief granted by NRC SER dated March 26, 1992.

RELIEF REQUEST PRR-20

COMPONENTS: Auxiliary Feedwater Pumps: 1P-029, 2P-029, P-038A, and P-038B. (Drawing: M-217)

SECTION XI REQUIREMENT:

Reference values are defined as one or more fixed sets of values of the quantities shown in Table IWP-3100-1, as measured or observed when the equipment is known to be operating acceptably. (IWP-3110)

BASIS FOR RELIEF:

The auxiliary feedwater pumps are tested by operating the pumps in a recirculation mode through a fixed, flow limiting orifice. There is no means within this line to throttle flow and pumps are tested with all valves in the circuit fully open. This manner of operation prevents the setting and maintaining of a single, specific reference value as read on the installed digital flow meter.

ALTERNATE TESTING:

ASME OMa-1988, Part 6, Section 5.2(c), states, "Where system resistance cannot be varied, flow rate and pressure shall be determined and compared to their respective reference values."

The system resistance in the test loop of the auxiliary feedwater system cannot be varied to achieve a fixed value for testing due to the lack of any throttle valve in the test loop. Consequently, both differential pressure and flow shall be compared to their respective limits. The tolerance around the value intended to serve as the fixed value shall be ± 2 percent, which is more conservative than the limits of either Table IWP-3100-2 or OMa-1988, Part 6.

STATUS: Awaiting NRC response. Submitted to the NRC March 24, 1992, by VPNPD-92-115/NRC-92-034.

RELIEF REQUEST PRR-21

COMPONENTS: Fuel Oil Transfer Pumps: P-070A and P-070B.
(Drawing: M-219)

SECTION XI REQUIREMENT:

1) An inservice test shall be conducted with the pump operating at nominal motor nameplate speed for constant speed drives, and at a speed adjusted to the reference speed for variable speed drives. The resistance of the system shall be varied until either the measured differential pressure or the measured flow rate equals the corresponding reference value. The test quantities shown in Table IWP-3100-1 shall then be measured or observed and recorded as directed in this Subsection. Each measured test quantity shall then be compared with the reference value of the same quantity. Any deviations determined shall be compared with the limits given in Table IWP-3100-2 and specified corrective action taken. (IWP-3100)

2) Instrument accuracy shall be within the limits of Table IWP-4110-1. Station instruments meeting these requirements shall be acceptable. {NOTE: Table IWP 4110-1, "Acceptable Instrument Accuracy," delineates an acceptable accuracy of ±2% of full scale for flow rate instruments.}
(IWP-4110)

ALTERNATE TESTING:

1) P-070A and P-070B are both Crane-Deming gear driven, single speed, rotary gear type positive displacement pumps. For pumps of this type, discharge pressure is independent of suction pressure and is a function only of the pump design. Measuring pump inlet and differential pressure does not provide any meaningful information for evaluating pump performance. Consequently, later editions of the Code do not require the measurement of either inlet or differential pressure for positive displacement pumps.

   As opposed to ASME Section XI (1986), IWP-3100, which does not differentiate between positive displacement and centrifugal pumps, the more recent ASME OMb-1989, Part 6, Section 5.2, "Test Procedure," shall be used for inservice testing of P-070A and P-070B.

2) Instrument accuracy for the measurement of flow rate during inservice testing of P-070A and P-070B shall be within ±3% of full scale, as opposed to ±2% of full scale required by IWP-4110.

BASIS FOR RELIEF:

1) As discussed in the Alternate Testing section above, ASME Section XI (1986) does not differentiate between positive displacement and centrifugal pumps when delineating test procedures. Measurement of suction and differential pressures does not provide any meaningful information for evaluating positive displacement pump performance. As discussed above, use of the test procedures outlined in the more recent ASME OMb-1989, Part 6, correctly differentiates between different types of pumps and provides an acceptable alternative to the Section XI Code requirements for assuring pump operational readiness.

2) The flow rate instruments used for P-070A and P-070B inservice testing have a range of 0-15 GPM, which ideally places pump reference flow at approximately two-thirds of full scale (approximately 10 GPM). An accuracy of ±3% of full scale translates to ±0.45 GPM for these instruments, whereas an accuracy of ±2% of full scale, as called out in IWP-4110, would translate to ±0.30 GPM. The difference of 0.15 GPM is not significant, especially when considering that since these are positive displacement pumps flow rate does not vary. The installed instruments with an accuracy of ±3% of full scale are sufficient in this application to assure pump operational readiness.

STATUS: Awaiting NRC response. Submitted to the NRC November 16, 1992, by VPNPD-92-355/NRC-92-135.

RELIEF REQUEST PRR-22/VRR-36

COMPONENTS: Non Component Specific.

SECTION XI REQUIREMENT:

This Subsection provides the rules and requirements for inservice testing to assess operational readiness of certain Class 1, 2, and 3 valves (and their actuating and position indicating systems) in light-water cooled nuclear power plants, which are required to perform a specific function in shutting down a reactor to the cold shutdown condition in mitigating the consequences of an accident or in providing over pressure protection.
(IWV-1100)

ALTERNATE TESTING:

The Point Beach Inservice Test (IST) Program includes components (pumps and valves) which are required to perform a specific function in shutting down a reactor to the cold shutdown condition only where those components are utilized under accident conditions. Components which support achievement of cold shutdown under non accident conditions, and which are not required to achieve cold shutdown following an accident, are not required to be included in the Point Beach IST Program.

BASIS FOR RELIEF:

The Point Beach Final Safety Analysis Report (FSAR), Chapter 14, "Safety Analysis," evaluates the safety aspects of either Unit 1 or Unit 2 of the plant, demonstrates that either or both units can be operated safely, and shows that exposures from credible accidents do not exceed the guidelines of 10 CFR 100. Given that these evaluations demonstrate that the Point Beach units can be operated safely and do not go beyond the plant achieving a hot shutdown condition in any scenario, specifically requiring the inservice testing of components which are required to achieve cold shutdown under non accident conditions is unwarranted, and does not provide any increase in the level of Program quality or safety to the public. Consequently, relief may be granted under either 10 CFR 50.55a(a)(3)(i), 10 CFR 50.55a(a)(3)(ii), or both.

STATUS: Awaiting NRC response. Submitted to the NRC November 16, 1992, by VPNPD-92-354/NRC-92-134.

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

CONTENTS

LEGEND

VALVE The plant alpha-numerical designator for the subject valve.

CORD The coordinate location of the valve on the designated drawing.

CLASS The ISI classification of the valve as per the respective ISI boundary drawings.

CAT The valve category per Paragraph IWV-2100.

SIZE The valve's nominal size in inches.

TYPE The valve type

AP	Pneumatic Pilot
BA	Ball
BTF	Butterfly
CK	Check
DI	Diaphragm
GA	Gate
GL	Globe
SCK	Stop/Check
SRV	Safety/Relief
NE	Needle (throttle)

ACT The valve actuator type as follows:

AO	Air-operated
HO	Hydraulic-operated
MA	Manual valve
MO	Electric motor-operated
SA	Self-actuated
SO	Solenoid-operated

POS Designates the normal position of the valve during plant operation at power.

REQMT Identifies the test requirements for valve as follows:

BT-C Exercise to closed position. For power-operated valves, stroke times will be measured unless excluded by an associated relief request.

BT-O Exercise to open position. For power-operated valves, stroke times will be measured unless excluded by an associated relief request.

BT-EE	Exercise valve to verify proper operation and stroking with no stroke time measurements. Requires observation of system parameters or local observation of valve operation.
BT-PV	Exercise test of pneumatic pilot valve. Test is performed in conjunction with the associated main valve test.
CV-C	Exercise check valve to the closed position.
CV-O	Exercise check valve to the full-open position.
CV-PO	Partial-stroke exercise check valve in the open direction.
CV-PC	Partial-stroke exercise check valve in the close direction.
FST	Fail safe test.
INSP	Disassembly and inspection of check valves.
PIT	Position indication verification per IWV-3300.
RVT	Safety/Relief valve setpoint test per ASME-OMa-1.
SLT-1	Seat leakrate test per 10 CFR 50, App. J.
SLT-2	Seat leakrate test for pressure isolation valves per Technical Specification 15.3.16.
SLT-3	Seat leakrate test for pneumatic check valves to verify capability of maintaining accumulator gas inventory following loss of supply system pressure.
SLT-4	Leak testing of safety injection accumulator check valves.
SLT-5	Seat leakrate test to identify gross leakage. Specific leakage rates will not be measured but leakage will be determined and evaluated with respect to system operability and its capability to perform its safety function.
SLT-6	Seat leakrate test to identify gross leakage. Specific leakage rates will be measured and evaluated with respect to system operability and its capability to perform its safety function.

TEST FREQ The required test interval abbreviations are defined as follows:

RR	Each reactor refueling outage (cycle)
CS	Cold shutdown (per Technical Specifications)
E-CS	Cold shutdown with Event V testing required
QR	Quarterly (during plant operation)
1Y	Once per calendar year
2Y	Every 2 years
5Y	Every 5 years
10Y	Every 10 years
SR	Prior to placing a system or component in operable status
SP	Other (see applicable request for relief)

REMARKS

Applicable requests for relief from code requirements (see Appendix F) are noted in the REMARKS column adjacent to the associated test requirement and designated VRR-XX.

Applicable notes are included in the REMARKS column and are designated NOTE-XX. A list of notes is attached as the last page of the appendix.

Cold shutdown testing justifications are provided in Appendix G. Each explanation is identified by a reference number (CSJ-XX) that appears in the respective REMARKS column adjacent to the pertinent test requirements.

SYSTEM: Auxiliary Feedwater
DRAWING NO.: M-217

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
AF-00026	C4	1P-29 Suction	3	B	6	GA	MA	O	BT-C	QR	
AF-00039	E4	1P-38A Suction	3	B	4	GA	MA	O	BT-C	QR	
AF-00052	F4	1P-38B Suction	3	B	4	GA	MA	O	BT-C	QR	
AF-00100	B9	AFW to 1A S/G	2	C	3	CK	SA	C	CV-O	CS	CSJ-1
AF-00101	D9	AFW to 1B S/G	2	C	3	CK	SA	C	CV-O	CS	CSJ-1
AF-00102	B8	AFW to 1A S/G	2	A/C	3	CK	SA	A/C	CV-O CV-C SLT-6	CS CS 2Y	CSJ-1 CSJ-1
AF-00104	D8	AFW to 1B S/G	2	A/C	3	CK	SA	A/C	CV-O CV-C SLT-6	CS CS 2Y	CSJ-1 CSJ-1
AF-00106	B8	AFW to 1A S/G	2	A/C	3	CK	SA	A/C	CV-O CV-C SLT-6	CS CS 2Y	CSJ-1 CSJ-1
AF-00107	D8	AFW to 1B S/G	2	A/C	3	CK	SA	A/C	CV-O CV-C SLT-6	CS CS 2Y	CSJ-1 CSJ-1
AF-00108	C7	1P-29 Disch Ck	3	C	4	CK	SA	C	CV-O	CS	CSJ-2
AF-00109	D6	P-38A Disch Ck	3	C	3	CK	SA	C	CV-O	CS	CSJ-2
AF-00110	F8	P-38B Disch Ck	3	C	3	CK	SA	C	CV-O	CS	CSJ-2
AF-00111	C5	1P-29 Suct Ck	3	C	6	CK	SA	C	CV-PO CV-O	QR CS	 CSJ-3

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Auxiliary Feedwater
DRAWING NO.: M-217

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
AF-00112	E5	P-38A Suct Ck	3	C	4	CK	SA	C	CV-PO CV-O	QR CS	 CSJ-3
AF-00113	F5	P-38B Suct. Ck	3	C	4	CK	SA	C	CV-PO CV-O	QR CS	 CSJ-3
AF-04000	C8	1B S/G AFW Isol	3	B	3	GL	MO	C	BT-C PIT	QR 2Y	
AF-04001	B8	1A S/G AFW Isol	3	B	3	GL	MO	C	BT-C PIT	QR 2Y	
AF-04002	C6	1P-29 Mini-flow	3	B	1	GA	AO	O	BT-C BT-O FST PIT	QR QR QR 2Y	
AF-04006	D5	1P-29 Ser Wtr Sup	3	B	6	GA	MO	O	BT-O PIT	QR 2Y	
AF-04007	D6	P-38A Mini-flow	3	B	1	GA	AO	O	BT-C BT-O FST PIT	QR QR QR 2Y	
AF-04009	E5	P-38A Ser Wtr Sup	3	B	4	GA	MO	O	BT-O PIT	QR 2Y	
AF-04012	E6	P-38A Press Con	3	B	3	GA	AO	O	BT-O FST PIT	QR QR 2Y	

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Auxiliary Feedwater
DRAWING NO.: M-217

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
AF-04014	E6	P-38B Mini-flow	3	B	1	GA	AO	O	BT-C BT-O FST PIT	QR QR QR 2Y	
AF-04016	F5	P-38B Ser Wtr Sup	3	B	4	GA	MO	O	BT-O PIT	QR 2Y	
AF-04019	F6	P-38B Press Con	3	B	3	GA	AO	O	BT-O FST PIT	QR QR 2Y	
AF-04021	E7	AFW to 1B S/G	3	B	3	GA	MO	O	BT-O BT-C PIT	QR QR 2Y	
AF-04023	D8	AFW to 1A S/G	3	B	3	GA	MO	O	BT-O BT-C PIT	QR QR 2Y	
AF-04026	C6	1P-029 Suction Rel	3	C	1	SRV	SA	C	RVT	10Y	
AF-04027	F6	P-038B Suction Rel	3	C	1	SRV	SA	C	RVT	10Y	
AF-04028	E6	P-038A Suction Rel	3	C	1	SRV	SA	C	RVT	10Y	

SYSTEM: Aux Steam, Heating Steam, Chilled and Hot Water
DRAWING NO.: M-214, Sheet 1

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
HV-00632	D7	Aux Stm to Cont	2	A	3	GA	MA	C	SLT-1	RR	VRR-23 Passive
HV-00633	A7	Aux Stm Cond Ret	2	A	1.5	GA	MA	C	SLT-1	RR	VRR-23 Passive
HV-00808	B7	Aux Stm Cond Ret	2	A	1.5	GA	MA	C	SLT-1	RR	VRR-23 Passive
HV-00809	A7	Aux Stm Cond Ret	2	A	1.5	GA	MA	C	SLT-1	RR	VRR-23 Passive
HV-00818	C7	Aux Steam to Cont	2	A	3	GA	MA	C	SLT-1	RR	VRR-23 Passive

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Aux Steam Heating Steam, Chilled and Hot Water
DRAWING NO.: M-214, Sheet 2

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
HV-00898A	C8	Pump P-112A Disc Ck	NC	C	3	CK	SA	O	CV-O CV-C SLT-5	QR QR 2Y	
HV-00900A	B8	Pump P-112B Disc Ck	NC	C	3	CK	SA	O	CV-O CV-C SLT-5	QR QR 2Y	
HV-00914A	B8	Pump P-111A Disc Ck	NC	C	3	CK	SA	O	CV-O CV-C SLT-5	QR QR 2Y	
HV-00916A	A8	Pump P-111B Disc Ck	NC	C	3	CK	SA	O	CV-O CV-C SLT-5	QR QR 2Y	

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Chemical and Volume Control
DRAWING NO.: 684J741

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
CV-00112B	B10	RWST to Chg Pump	2	B	4	GA	MO	C	BT-O PIT	CS 2Y	CSJ-34
CV-00112C	C10	VCT to Chg Pump	2	B	4	GA	MO	O	BT-C PIT	CS 2Y	CSJ-4
CV-00142	C12	Charging Flow Cont	2	B	3	GL	AO	O	BT-O FST PIT	CS CS 2Y	CSJ-5
CV-00283A	B12	Chg Pump Disc Saf	2	C	.75	SRV	SA	C	RVT	10Y	
CV-00283B	B12	Chg Pump Disc Saf	2	C	.75	SRV	SA	C	RVT	10Y	
CV-00283C	A12	Chg Pump Disc Saf	2	C	.75	SRV	SA	C	RVT	10Y	
CV-00295	C14	Charging Hdr Ck	1	C	3	CK	SA	O	CV-O	QR	
CV-00304C	A14	RCP Seal Wtr Sup	1	A/C	2	CK	SA	O	CV-C SLT-1	RR RR	VRR-12
CV-00304D	A15	RCP Seal Wtr Sup	1	A/C	2	CK	SA	O	CV-C SLT-1	RR RR	VRR-12
CV-00313	C12	RCP Seal Wtr Ret	2	A	3	GA	MO	O	BT-C PIT SLT-1	CS 2Y RR	CSJ-6
CV-00313A	C13	RCP Seal Wtr Ret	2	A	3	GL	AO	O	BT-C FST PIT SLT-1	CS CS 2Y RR	CSJ-6 CSJ-6

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Chemical and Volume Control
DRAWING NO.: 684J741

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
CV-00323A	A12	Aux Charging Isol	2	A	2	GL	MA	C	SLT-1	RR	Passive
BS-00333A	A6	BA Transfer Pump Disch	2	C	2	CK	SA	C	CV-O CV-C SLT-5	QR QR 2Y	
BS-00333B	A6	BA Transfer Pump Disch	2	C	2	CK	SA	C	CV-O CV-C SLT-5	QR QR 2Y	
CV-00350	A9	Emerg Boration	2	B	2	GA	MO	C	BT-O PIT	QR 2Y	
CV-00351	A9	Emerg Boration Ck	2	C	2	CK	SA	C	CV-O	RR	VRR-24
CV-00357	B10	RWST to Chg Pump	2	C	4	CK	SA	C	CV-O	CS	CSJ-34
CV-00370	C13	Charging Hdr Ck	2	A/C	3	CK	SA	O	CV-O CV-C SLT-1	QR RR RR	VRR-13

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Chemical and Volume Control
DRAWING NO.: 684J741

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
CV-00371	D13	RCS Letdown Iso	2	A	2	GL	AO	O	BT-C FST PIT SLT-1	CS CS 2Y RR	CSJ-7 CSJ-7
CV-00371A	D13	RCS Letdown Iso	2	A	2	GL	AO	O	BT-C FST PIT SLT-1	CS CS 2Y RR	CSJ-7 CSJ-7
CV-01296	A14	Aux Charging Iso	1	A	2	GL	AO	O/C	BT-O BT-C FST PIT SLT-1	QR QR QR 2Y RR	

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Component Cooling Water
DRAWING NO.: 110E018, Sheet 1

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
CC-00738A	G3	RHR Cooling Water Sup	3	B	10	GA	MO	C	BT-O PIT	QR 2Y	
CC-00738B	G2	RHR Cooling Water Sup	3	B	10	GA	MO	C	BT-O PIT	QR 2Y	

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Component Cooling Water
DRAWING NO.: 110E018, Sheet 2

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
CC-00719	G11	Containment CCW Sup	2	B	6	GA	MO	O	BT-C PIT	CS 2Y	CSJ-9
CC-00754A	F13	RCP Clg Water Sup	2	A	4	GA	MO	O	BT-C SLT-1 PIT	CS RR 2Y	CSJ-10
CC-00754B	F10	RCP Clg Water Sup	2	A	4	GA	MO	O	BT-C SLT-1 PIT	CS RR 2Y	CSJ-10
CC-00755A	E13	RCP Clg Wtr Sup Ck	2	A/C	4	CK	SA	O	CV-C SLT-1	RR RR	VRR-10 VRR-23
CC-00755B	E10	RCP Clg Wtr Sup Ck	2	A/C	4	CK	SA	O	CV-C SLT-i	RR RR	VRR-10 VRR-23
CC-00759A	F11	RCP Clg Wtr Ret	2	A	4	GA	MO	O	BT-C SLT-1 PIT	CS RR 2Y	CSJ-10 VRR-23
CC-00759B	F8	RCP Clg Wtr Ret	2	A	4	GA	MO	O	BT-C SLT-1 PIT	CS RR 2Y	CSJ-10 VRR-23

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Component Cooling Water
DRAWING NO.: 110E018, Sheet 2

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
CC-00763A	E12	RCP Clg Wtr Ret S/R	2	C	2	SRV	SA	C	RVT	10Y	
CC-00763B	E8	RCP Clg Wtr Ret S/R	2	C	2	SRV	SA	C	RVT	10Y	
CC-00767	E7	Ex LD HX Clg Wtr Sup	2	A/C	2	CK	SA	C	CV-C SLT-1	RR RR	VRR-30 VRR-30
CC-000769	F5	Ex LD HX Clg Wtr Ret	2	A	2	GL	AO	C	BT-C FST PIT SLT-1	QR QR 2Y RR	

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Component Cooling Water
DRAWING NO.: 110E018, Sheet 3

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
CC-00724A	I8	CCW Pump Disch Check	3	C	10	CK	SA	O	CV-O CV-C SLT-5	QR QR QR	
CC-00724B	H8	CCW Pump Disch Check	3	C	10	CK	SA	O	CV-O CV-C SLT-5	QR QR QR	
CC-00773	I11	CCW Normal Makeup	3	B	2	GL	MA	C	SLT-5	2Y	Passive
CC-00779	J11	CCW Surge Tank Relief	3	C	3	SRV	SA	C	RVT	10Y	
CC-00779A	J11	CCW Surge Tk Vac Bkr	3	C	1	CK	SA	C	CV-O CV-C	QR QR	
CC-00815	I11	CCW Emergency Makeup	3	B	2	GL	MO	C	SLT-5 PIT	2Y 2Y	Passive

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Component Cooling Water
DRAWING NO.: PBM-230

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
CCW-LW-63	H7	CCW Supply to Radwaste	3	A	6	BTF	AO	O	BT-C FST SLT-6 PIT	CS CS 2Y 2Y	CSJ-35 CSJ-35
CCW-LW-64	A7	CCW Return from Radwaste	3	A	6	BTF	AO	O	BT-C FST SLT-6 PIT	CS CS 2Y 2Y	CSJ-35 CSJ-35

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Containment Spray
DRAWING NO.: M-110E017, Sheet 3

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SI-00836A	F7	NaOH Supply	2	B	2	GL	AO	C	BT-O FST PIT	QR QR 2Y	
SI-00836B	E7	NaOH Supply	2	B	2	GL	AO	C	BT-O FST PIT	QR QR 2Y	
SI-00840A	G5	Spr Add Tank Vac Bkr	2	C	.75	SRV	SA	C	RVT	10Y	
SI-00840B	G5	Spr Add Tank Vac Bkr	2	C	.75	SRV	SA	C	RVT	10Y	
SI-00847A	H8	Spray Add Educt Check	2	C	2	CK	SA	C	CV-O	QR	
SI-00847B	D8	Spray Add Educt Check	2	C	2	CK	SA	C	CV-O	QR	
SI-00858A	I3	RWST to CS Pump P14A	2	C	6	CK	SA	C	CV-O	QR	
SI-00858B	C3	RWST to CS Pump P14B	2	C	6	CK	SA	C	CV-O	QR	
SI-00860A	I10	CS Pump 1-P14A Disch	2	B	6	GA	MO	C	BT-O PIT	QR QR	
SI-00860B	I10	CS Pump 1-P14A Disch	2	B	6	GA	MO	C	BT-O PIT	QR QR	

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Containment Spray
DRAWING NO.: M-110E017, Sheet 3

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SI-00860C	C10	CS Pump 1-P14B Disch	2	B	6	GA	MO	C	BT-O PIT	QR QR	
SI-00860D	C10	CS Pump 1-P14B Disch	2	B	6	GA	MO	C	BT-O PIT	QR QR	
SI-00862A	I11	CS Pump 1-P14A Disch	2	A/C	6	CK	SA	C	CV-O SLT-1	QR RR	VRR-23, 29
SI-00862B	C11	CS Pump 1-P14B Disch	2	A/C	6	CK	SA	C	CV-O SLT-1	QR RR	VRR-23, 29
SI-00862G	H11	Train A Test Isolation	2	A	6	GA	MA	C	SLT-1	RR	Passive VRR-23
SI-00862H	D11	Train B Test Isolation	2	A	6	GA	MA	C	SLT-1	RR	Passive VRR-23
SI-00864A	H11	CS Pump Test Recirc	2	A	.75	GL	MA	C	SLT-1	RR	Passive VRR-23
SI-00864B	C11	CS Pump Test Recirc	2	A	.75	GL	MA	C	SLT-1	RR	Passive VRR-23
SI-00868A	I12	CS Nozzle A HDR Isolation	2	A	6	GA	MA	O	SLT-1	RR	Passive VRR-23
SI-00868B	C12	CS Nozzle B HDR Isolation	2	A	6	GA	MA	O	SLT-1	RR	Passive VRR-23
SI-00870A	13	RWST to CS Pump P14A	2	A	6	GA	MO	O	BT-O BT-C SLT-6 PIT	QR QR 2Y 2Y	

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Containment Spray
DRAWING NO.: M-110E017, Sheet 3

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SI-00870B	C3	RWST to CS Pump P14B	2	A	6	GA	MO	O	BT-O BT-C SLT-6 PIT	QR QR 2Y 2Y	
SI-00871A	I5	RHR to CS Pump P14A	2	B	6	GA	MO	C	BT-O BT-C PIT	QR QR 2Y	
SI-00871B	C5	RHR to CS Pump P14B	2	B	6	GA	MO	C	BT-O BT-C PIT	QR QR 2Y	
SI-00872	G6	Spray Add Tank Saf	2	C	.75	RV	SA	C	RVT	10Y	

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Deionized/Reactor Makeup Water
DRAWING NO.: PBM-231, Sheet 2

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
DI-00009	C10	DI Water Sup to Cont	2	A	2	DI	MA	C	SLT-1	RR	Passive
DI-00011	C10	DI Water Sup to Cont	2	A	2	DI	MA	C	SLT-1	RR	Passive

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Emergency Diesel Generator Air-Start
DRAWING NO.: M-209, Sheet 12

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
DA-00100	E7	Elect-Dr Comp Disc	3	A/C	1.5	CK	SA	O/C	CV-C SLT-3	QR 2Y	
DA-00112	E4	Dsl/Ele Dr Comp Dis	3	A/C	1.5	CK	SA	O/C	CV-C SLT-3	QR 2Y	
DA-00125	C5	EDG Air Start Eq Ck	3	C	.375	CK	SA	C	CV-O CV-C	QR QR	VRR-25 VRR-25
DA-00126	C4	EDG Air Start Eq Ck	3	C	.375	CK	SA	C	CV-O CV-C	QR QR	VRR-25 VRR-25
DA-00200	E7	Elect-Dr Comp Disc	3	A/C	1.5	CK	SA	O/C	CV-C SLT-3	QR 2Y	
DA-00212	E4	Dsl/Ele Dr Comp Dis	3	A/C	1.5	CK	SA	O/C	CV-C SLT-3	QR 2Y	
DA-00225	C5	EDG Air Start Eq Ck	3	C	.375	CK	SA	C	CV-O CV-C	QR QR	VRR-25 VRR-25
DA-00226	C4	EDG Air Start Eq Ck	3	C	.375	CK	SA	C	CV-O CV-C	QR QR	VRR-25 VRR-25
DA-03055A	C6	Receiver T60A Relief	3	C	.5	RV	SA	C	RVT	10Y	
DA-03055B	C6	Receiver T60B Relief	3	C	.5	RV	SA	C	RVT	10Y	
DA-03055C	C6	Receiver T60C Relief	3	C	.5	RV	SA	C	RVT	10Y	
DA-03055D	C3	Receiver T60D Relief	3	C	.5	RV	SA	C	RVT	10Y	
DA-03055E	C3	Receiver T60E Relief	3	C	.5	RV	SA	C	RVT	10Y	

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Emergency Diesel Generator Air-Start
DRAWING NO.: M-209, Sheet 12

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
DA-03055F	C3	Receiver T60F Relief	3	C	.5	RV	SA	C	RVT	10Y	
DA-03056A	C6	Receiver T61A Relief	3	C	.5	RV	SA	C	RVT	10Y	
DA-03056B	C6	Receiver T61B Relief	3	C	.5	RV	SA	C	RVT	10Y	
DA-03056C	C6	Receiver T61C Relief	3	C	.5	RV	SA	C	RVT	10Y	
DA-03056D	C3	Receiver T61D Relief	3	C	.5	RV	SA	C	RVT	10Y	
DA-03056E	C3	Receiver T61E Relief	3	C	.5	RV	SA	C	RVT	10Y	
DA-03056F	C3	Receiver T61F Relief	3	C	.5	RV	SA	C	RVT	10Y	
DA-03057A	B4	EDG Starting Valve	3	B	.375	GL	AO	C	BT-O	QR	VRR-17
DA-03057B	B5	EDG Starting Valve	3	B	.375	GL	AO	C	BT-O	QR	VRR-17
DA-03058A	B4	EDG Starting Valve	3	B	.375	GL	AO	C	BT-O	QR	VRR-17
DA-03058B	B5	EDG Starting Valve	3	B	.375	GL	AO	C	BT-O	QR	VRR-17
DA-06316A	C5	EDG Start Air Relay	3	B	.375	GL	SO	C	BT-O	QR	VRR-25
DA-06316B	C4	EDG Start Air Relay	3	B	.375	GL	SO	C	BT-O	QR	VRR-25
DA-06317A	C5	EDG Start Air Relay	3	B	.375	GL	SO	C	BT-O	QR	VRR-25
DA-06317B	C4	EDG Start Air Relay	3	B	.375	GL	SO	C	BT-O	QR	VRR-25
DA-06318A	B5	EDG Start Mtr Pin Eng	3	B	.375	GL	SO	C	BT-O	QR	VRR-25

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Emergency Diesel Generator Air-Start
DRAWING NO.: M-209, Sheet 12

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
DA-06318B	B4	EDG Start Mtr Pin Eng	3	B	.375	GL	SO	C	BT-O	QR	VRR-25
DA-06319A	B5	EDG Start Mtr Pin Eng	3	B	.375	GL	SO	C	BT-O	QR	VRR-25
DA-06319B	B4	EDG Start Mtr Pin Eng	3	B	.375	GL	SO	C	BT-O	QR	VRR-25

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Emergency Diesel Generator Fuel Oil
DRAWING NO.: M-219

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
FO-00014	C9	DFO Pump P-70A Disc	3	C	2	CK	SA	C	CV-O CV-C SLT-5	QR QR 2Y	
FO-00019	B9	DFO Pump P-70B Disc	3	C	[illegible]	CK	SA	C	CV-O CV-C SLT-5	QR QR 2Y	
FO-00024	D8	DFO Pumpout Isol	3	B	2	GA	MA	C	SLT-5	2Y	Passive
FO-00034	H2	Fire Pump Fuel Sup	3	B	2	GA	MA	C	SLT-5	2Y	Passive
FO-03910	C9	DFO Pump P-70A S/R	3	C	.75	SRV	SA	C	SLT-5	2Y	Passive
FO-03911	C9	DFO Pump P-70B S/R	3	C	.75	SRV	SA	C	SLT-5	2Y	Passive
FO-03922	H4	Boiler Day Tk Inlet	3	B	1	GA	AO	C	BT-C FST SLT-5 PIT	QR QR 2Y 2Y	
FO-03930	G3	EDG Day Tk T31A In	3	B	1	GA	MO	C	BT-C BT-O SLT-5 PIT	QR QR 2Y 2Y	
FO-03931	G2	EDG Day Tk T31B In	3	B	1	GA	MO	C	BT-C BT-O SLT-5 PIT	QR QR QR 2Y	

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Emergency Diesel Generator Fuel Oil
DRAWING NO.: M-219

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
FO-03940	D9	DFO Pump Press Cont	3	C	1	GL	SA	C	BT-EE SLT-5	QR 2Y	
FO-03941	C9	DFO Pump Press Cont	3	C	1	GL	SA	C	BT-EE SLT-5	QR 2Y	

SYSTEM: Heating and Ventilation
DRAWING NO.: M-144, Sheet 1

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SW-02976	C6	Spray PP Room T/C	3	B	2	GL	SO	C	FST	QR	M-2207 Sh 1
SW-02977	B7	RHR PP Room T/C	3	B	2	GL	AO	O	FST	QR	M-207 Sh 1

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Heating and Ventilation
DRAWING NO.: M-144, Sheet 2

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
VNCR-04639	D7	Control Room T/C	NC	B	3	GL	AO	O	FST	QR	
VNCSR-04640	H7	Cable Spread Room T/C	NC	B	2	GL	AO	O	FST	QR	

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Heating and Ventilation
DRAWING NO.: M-215, Sheet 1

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
VNPSE-03212	H3	Cont. Purge Exhaust	2	A	36	BTF	AO	C	BT-C FST SLT-1 PIT	CS CS 2Y 2Y	CSJ-12, Note 2 CSJ-12, Note 2 VRR-23, 29, Note 2 Note 2
VNPSE-03213	H4	Cont. Purge Exhaust	2	A	36	BTF	AO	C	BT-C FST SLT-1 PIT	CS CS 2Y 2Y	CSJ-12, Note 2 CSJ-12, Note 2 VRR-23, 29, Note 2 Note 2
VNPSE-03244	F3	Cont. Purge Supply	2	A	36	BTF	AO	C	BT-C FST SLT-1 PIT	CS CS 2Y 2Y	CSJ-12, Note 2 CSJ-12, Note 2 VRR-23, 29, Note 2 Note 2
VNPSE-03245	F4	Cont. Purge Supply	2	A	36	BTF	AO	C	BT-C FST SLT-1 PIT	CS CS 2Y 2Y	CSJ-12, Note 2 CSJ-12, Note 2 VRR-23, 29, Note 2 Note 2

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Heating and Ventilation
DRAWING NO.: M-215, Sheet 2

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
RM-03200AA	G3	Cont Atmos Samp Retr	2	A/C	1	CK	SA	O	CV-C SLT-1	RR RR	VRR-16
RM-03200A	F3	Cont Atmos Samp Retr	2	A	1	GA	AO	O	BT-C FST SLT-1 PIT	QR QR RR 2Y	
RM-03200B	F8	Cont Atmos Samp Sup	2	A	1	GA	AO	O	BT-C FST SLT-1 PIT	QR QR RR 2Y	
RM-03200C	G8	Cont Atmos Samp Sup	2	A	1	GA	AO	O	BT-C FST SLT-1 PIT	QR QR RR 2Y	

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Instrument Air
DRAWING NO.: M-209, Sheet 5

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
IA-00644	B5	Purge Vlv 3244 Sup	NC	A/C	.25	CK	SA	C	CV-O CV-C SLT-3	CS CS 2Y	CSJ-13 CSJ-13 VRR-14
IA-00645	C5	Purge Vlv 3212 Sup	NC	A/C	.25	CK	SA	C	CV-O CV-C SLT-3	CS CS 2Y	CSJ-13 CSJ-13 VRR-14

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Instrument Air
DRAWING NO.: M-209, Sheet 7

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
IA-01182	B5	Inst Air to Cont	2	A/C	2	CK	SA	C	CV-C SLT-1	QR RR	 VRR-23
IA-01184	B5	Inst Air to Cont	2	A	1	GA	MA	C	SLT-1	RR	VRR-23 Passive
IA-01192	B5	Inst Air to Cont	2	A/C	2	CK	SA	C	CV-C SLT-1	QR RR	
IA-03047	B4	Inst Air to Cont	2	A	2	GA	AO	O	BT-C FST SLT-1 PIT	QR QR RR 2Y	
IA-03048	B4	Inst Air to Cont	2	A	2	GA	AO	O	BT-C FST SLT-1 PIT	QR QR RR 2Y	

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Instrument Air
DRAWING NO.: M-209, Sheet 11

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
IA-01206	G9	Inst Air to PORV	NC	A/C		CK	SA	C	CV-O CV-C SLT-3	CS CS 2Y	CSJ-28 CSJ-28 Note 1
IA-01209	G9	Inst Air to PORV	NC	A/C		CK	SA	C	CV-O CV-C SLT-3	CS CS 2Y	CSJ-28 CSJ-28 Note 1
IA-01280	F6	Purge Vlv 3245 Sup	NC	A/C	.25	CK	SA	C	CV-O CV-C SLT-3	CS CS 2Y	CSJ-13 CSJ-13 VRR-14
IA-01281	E6	Purge Vlv 3213 Sup	NC	A/C	.25	CK	SA	C	CV-O CV-C SLT-3	CS CS 2Y	CSJ-13 CSJ-13 VRR-14
IA-01301	G10	Nit. Sup to PORV	NC	A/C	.5	CK	SA	C	CV-O CV-C SLT-3	CS CS 2Y	CSJ-28 CSJ-28 Note 1
IA-01302	G10	Nit Sup to PORV	NC	A/C	.5	CK	SA	C	CV-O CV-C SLT-3	CS CS 2Y	CSJ-28 CSJ-28 Note 1
IA-01605	G9	Inst Air to PORV	NC	A/C		CK	SA	C	CV-O CV-C SLT-3	CS CS 2Y	CSJ-28 CSJ-28 Note 1

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Instrument Air
DRAWING NO.: M-209, Sheet 11

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
IA-01606	G9	Inst Air to PORV	NC	A/C		CK	SA	C	CV-O CV-C SLT-3	CS CS 2Y	CSJ-28 CSJ-28 Note 1
IA-06308	G10	PORV Nit Sup S/R	NC	C		SRV	SA	C	RVT	10Y	Note 1
IA-06309	G10	PORV Nit Sup S/R	NC	C		SRV	SA	C	RVT	10Y	Note 1
IA-06310	F10	PORV 430 Nit Sup Reg	NC	C	.25	GL	SA	O/C	BT-EE	CS	CSJ-28 Note 1
IA-06311	F10	PORV 431C Nit Sup Reg	NC	C	.25	GL	SA	O/C	BT-EE	CS	CSJ-28 Note 1

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Main Feedwater
DRAWING NO.: M-202, Sheet 2

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
CS-00466AA	C9	S/G 1A Feedwtr Ck	2	A/C	16	CK	SA	O	CV-C SLT-6	CS CS	VRR-21 VRR-21
CS-00466BB	C9	S/G 1A Feedwtr Ck	2	A/C	16	CK	SA	O	CV-C SLT-6	CS CS	VRR-21 VRR-21
CS-00476AA	G9	S/G 1B Feedwtr Ck	2	A/C	16	CK	SA	O	CV-C SLT-6	CS CS	VRR-21 VRR-21
CS-00476BB	G9	S/G 1B Feedwtr ck	2	A/C	16	CK	SA	O	CV-C SLT-6	CS CS	VRR-21 VRR-21

SYSTEM: Main and Reheat Steam
DRAWING NO.: M-201, Sheet 1

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
MS-02005	G8	Main Steam Safety	2	C	6	RV	SA	C	RVT	5Y	VRR-35
MS-02006	G8	Main Steam Safety	2	C	6	RV	SA	C	RVT	5Y	VRR-35
MS-02007	G7	Main Steam Safety	2	C	6	RV	SA	C	RVT	5Y	VRR-35
MS-02008	G7	Main Steam Safety	2	C	6	RV	SA	C	RVT	5Y	VRR-35
MS-02010	D8	Main Steam Safety	2	C	6	RV	SA	C	RVT	5Y	VRR-35
MS-02011	D8	Main Steam Safety	2	C	6	RV	SA	C	RVT	5Y	VRR-35
MS-02012	D7	Main Steam Safety	2	C	6	RV	SA	C	RVT	5Y	VRR-35
MS-02013	D7	Main Steam Safety	2	C	6	RV	SA	C	RVT	5Y	VRR-35
MS-02015	H7	MS Atmos Stm Dmp	2	B	6	GL	AO	C	FST BT-C BT-O PIT	QR QR QR 2Y	
MS-02016	E7	MS Atmos Stm Dmp	2	B	6	GL	AO	C	FST BT-C BT-O PIT	QR QR QR 2Y	
MS-02017	G7	Main Steam Isolation	2	B	30	SCK	AO	O	BT-C FST PIT	CS CS 2Y	CSJ-15 CSJ-15
MS-02017A	G4	Main Steam NonReturn	2	C	30	CK	SA	O	CV-C CV-PC	CS SP	CSJ-16 CSJ-16
MS-02017A-S	G6	MSIV 2017 Air Pilot	NC	B	.75	AP	SO	O	BT-PV	CS	CSJ-17

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Main and Reheat Steam
DRAWING NO.: M-201, Sheet 1

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
MS-02017B-S	G5	MSIV 2017 Air Pilot	NC	B	.75	AP	SO	O	BT-PV	CS	CSJ-17
MS-02017C-S	H6	MSIV 2917 Air Pilot	NC	B	1	AP	SO	C	BT-PV	CS	CSJ-17
MS-02017D-S	H5	MSIV 2017 Air Pilot	NC	B	1	AP	SO	C	BT-PV	CS	CSJ-17
MS-02018	D9	Main Steam Isolation	2	B	30	SCK	AO	O	BT-C FST PIT	CS CS 2Y	CSJ-15 CSJ-15
MS-02018A	D4	Main Steam Nonreturn	2	C	30	CK	SA	O	CV-C CV-PC	CS SP	CSJ-16 CSJ-16
MS-02018A-S	D6	MSIV 2018 Air Pilot	NC	B	.75	AP	SO	O	BT-PV	CS	CSJ-17
MS-02018B-S	D5	MSIV 2018 Air Pilot	NC	B	.75	AP	SO	O	BT-PV	CS	CSJ-17
MS-02018C-S	E6	MSIV 2018 Air Pilot	NC	B	1	AP	SO	C	BT-PV	CS	CSJ-17
MS-02018D-S	E5	MSIV 2018 Air Pilot	NC	B	1	AP	SO	C	BT-PV	CS	CSJ-17
MS-02019	F6	AFW Steam Supply	2	B/C	3	SCK	MO	S	BT-O CV-O BT-C PIT	QR QR QR 2Y	
MS-02020	E6	AFW Steam Supply	2	B/C	3	SCK	MO	S	BT-O CV-O BT-C PIT	QR QR QR 2Y	
MS-02082	B5	Main Steam to AFW Pump	2	B	3	GL	SA/ MA	O	BT-C BT-O PIT	QR QR 2Y	VRR-1

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Main and Reheat Steam
DRAWING NO.: M-201, Sheet 1

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
MS-02083	C9	S/G Sample Isol	2	A	.75	DI	AO	O	BT-C FST SLT-1 PIT	QR QR RR 2Y	
MS-02084	F9	S/G Sample Isol	2	A	.75	DI	AO	O	BT-C FST SLT-1 PIT	QR QR RR 2Y	
MS-02090	C8	SW to AFW Pump P-029	3	B	1	GL	AO	O	BT-O FST	QR QR	
MS-05958	B10	S/G Blowdown Isol	2	A	2	GA	AO	O	BT-C FST SLT-1 PIT	QR QR RR 2Y	
MS-05959	E10	S/G Blowdown Isol	2	A	2	GA	AO	O	BT-C FST SLT-1 PIT	QR QR RR 2Y	
RS-SA-09	F7	Radwaste Steam Supply	2	B	3	GA	AO	O	BT-C FST PIT	QR QR 2Y	

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Post-Accident Containment Vent/Monitoring
DRAWING NO.: M-224

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
H2-V-04	D6	Post-Acc Purge Disch	2	A	2	DI	MA	C	BT-O SLT-1	CS RR	CSJ-33 VRR-23
H2-V-05	D6	Post-Acc Purge Disch	2	A	2	DI	MA	C	BT-O SLT-1	CS RR	CSJ-33 VRR-23
H2-V-06	D6	Post-Acc Purge Drain	2	A	.75	GA	MA	C	SLT-1	RR	VRR-23 Passive
H2-V-07	D6	Post-Acc Purge Drain	2	A	.75	GA	MA	C	SLT-1	RR	VRR-23 Passive
H2-V-08	E6	Post-Acc Atmos. Samp	2	A	.75	DI	MA	C	SLT-1	RR	Passive
H2-V-09	E6	Post-Acc Atmos. Samp	2	A	.75	DI	MA	C	SLT-1	RR	Passive
H2-V-12	D6	Post-Acc Service Air Sup	2	A	2	DI	MA	C	BT-O SLT-1	CS RR	CSJ-33 VRR-23
H2-V-13	D6	Post-Acc Service Air Sup	2	A	2	DI	MA	C	BT-O SLT-1	CS RR	CSJ-33 VRR-23
H2-V-19	D7	Post-Acc Alt Vent	2	A	2	DI	MA	C	BT-O SLT-1	CS RR	CSJ-33 VRR-23
H2-V-20	D7	Post-Acc Alt Vent	2	A	2	DI	MA	C	BT-O SLT-1	CS RR	CSJ-33 VRR-23
H2-V-22	D7	Post-Acc Sup Drain	2	A	2	DI	MA	C	BT-O SLT-1	CS RR	CSJ-33 VRR-23

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Post-Accident Containment Vent/Monitoring
DRAWING NO.: M-224

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
H2-V-23	D7	Post Acc Sup Drain	2	A	2	DI	MA	C	BT-O SLT-1	CS RR	CSJ-33 VRR-23

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Primary Sampling
DRAWING NO.: 541F092

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SC-00951	G12	Press Stm Sample	1	A	.375	GL	AO	C	BT-C FST SLT-1 PIT	QR QR RR 2Y	
SC-00953	F12	Press Liq Sample	1	A	.375	CL	AO	C	BT-C FST SLT-1 PIT	QR QR RR 2Y	
SC-00955	E12	Hot Leg Sample	1	A	.375	GL	AO	O/C	BT-C FST SLT-1 PIT	QR QR RR 2Y	
SC-00959	E12	RHR Sample	2	A	.375	GL	AO	C	BT-C FST SLT-6 PIT	QR QR 2Y 2Y	
SC-00966A	G10	Press Stm Sample	1	A	.375	GL	AO	C	BT-C FST SLT-1 PIT	QR QR RR 2Y	
SC-00966B	F10	Press Liq Sample	1	A	.375	GL	AO	C	BT-C FST SLT-1 PIT	QR QR RR 2Y	

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Primary Sampling
DRAWING NO.: 541F092

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SC-00966C	E10	Hot Leg Sample	1	A	.375	GL	AO	O/C	BT-C FST SLT-1 PIT	QR QR RR 2Y	

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Reactor Coolant
DRAWING NO.: 541F091, Sheet 1

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
RC-00430	H5	Power-Operated Rel	1	B	2	GL	AO	C	BT-C BT-O FST PIT	CS CS CS 2Y	CSJ-18 CSJ-18 CSJ-18
RC-00431C	I5	Power-Operated Rel	1	B	2	GL	AO	C	BT-C BT-O FST PIT	CS CS CS 2Y	CSJ-18 CSJ-18 CSJ-18
RC-00434	I7	Pressurizer Safety	1	C	3	SRV	SA	C	RVT	5Y	VRR-35
RC-00435	I6	Pressurizer Safety	1	C	3	SRV	SA	C	RVT	5Y	VRR-35
RC-00515	I5	PORV Block Valve	1	B	3	GA	MO	O	BT-C PIT	QR 2Y	Note 3
RC-00516	H5	PORV Block valve	1	B	3	GA	MO	O	BT-C PIT	QR 2Y	Note 3

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VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Reactor Coolant
DRAWING NO.: 541F091, Sheet 2

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
RC-00508	D2	PRT Fill Line Iso	2	A	2	DI	AO	O/C	BT-C FST SLT-1 PIT	QR QR RR 2Y	
RC-00528	D3	PRT Nitrogen Sup	2	A/C	.75	CK	SA	O/C	CV-C SLT-1	RR RR	VRR-11
RC-00529	D3	PRT Fill Line Ck	2	A/C	2	CK	SA	O/C	CV-C SLT-1	RR RR	VRR-18
RC-00538	E3	PRT Sample	2	A	.375	GL	AO	O	BT-C FST SLT-1 PIT	QR QR RR 2Y	
RC-00539	E3	PRT Sample	2	A	.375	GL	AO	O	BT-C FST SLT-1 PIT	QR QR RR 2Y	
RC-00570A	F5	RX Vessel Vent	1	B	1	GL	SO	C	FST BT-O PIT	CS CS 2Y	CSJ-19 CSJ-19
RC-00570B	F5	RX Vessel Vent	1	B	1	GL	SO	C	FST BT-O PIT	CS CS 2Y	CSJ-19 CSJ-19
RC-00575A	F5	RX Vess/Press Vent	1	B	1	GL	SO	C	FST BT-O PIT	CS CS 2Y	CSJ-19 CSJ-19

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VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Reactor Coolant
DRAWING NO.: 541F091, Sheet 1

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
RC-00575B	F5	RX Vess/Press Vent	1	B	1	GL	SO	C	FST BT-O PIT	CS CS 2Y	CSJ-19 CSJ-19
RC-00580A	G5	Pressurizer Vent	1	B	1	GL	SO	C	FST BT-O PIT	CS CS 2Y	CSJ-19 CSJ-19
RC-00580B	G5	Pressurizer Vent	1	B	1	GL	SO	C	FST BT-O PIT	CS CS 2Y	CSJ-19 CSJ-19
RC-00595	D3	PRT Nitrogen Sup	2	A	.75	DI	MA	O/C	BT-C SLT-1	QR RR	

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Safety Injection and Residual Heat Removal
DRAWING NO.: 110E017, Sheet 1

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SI-00830A	H7	SIS Accum Relief	2	C	1	SRV	SA	C	RVT	10Y	
SI-00830B	D7	SIS Accum Relief	2	C	1	SRV	SA	C	RVT	10Y	
SI-00834A	H7	SIS Accum Vent	2	B	1	GL	AO	C	BT-C BT-O FST PIT	CS CS CS 2Y	CSJ-30 CSJ-30 CSJ-30
SI-00834B	D7	SIS Accum Vent	2	B	1	GL	AO	C	BT-C BT-O FST PIT	CS CS CS 2Y	CSJ-30 CSJ-30 CSJ-30
SI-00841A	G8	SIS Accum Disch	2	B	10	GA	MO	O	BT-C PIT	CS 2Y	CSJ-20
SI-00841B	B7	SIS Accum Disch	2	B	10	GA	MO	O	BT-C PIT	CS 2Y	CSJ-20
SI-00842A	G8	SIS Accum Disch Ck	1	A/C	10	CK	SA	C	CV-PO CV-C CV-PO INSP SLT-4	E-CS QR RR SP QR	VRR-4 VRR-4 VRR-4 VRR-4 VRR-4
SI-00842B	B8	SIS Accum Disch Ck	1	A/C	10	CK	SA	C	CV-PO CV-C CV-PO INSP SLT-4	E-CS QR RR SP QR	VRR-4 VRR-4 VRR-4 VRR-4 VRR-4

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VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Safety Injection and Residual Heat Removal
DRAWING NO.: 110E017, Sheet 1

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SI-00845A	F8	SIS Cold Leg Inj	1	A/C	2	CK	SA	C	CV-O CV-C SLT-2	RR RR E-CS	VRR-2 VRR-2
SI-00845B	D8	SIS Cold Leg Inj	1	A/C	2	CK	SA	C	CV-O CV-C SLT-2	RR RR E-CS	VRR-2 VRR-2
SI-00845C	E8	SIS Core Deluge	1	A/C	2	CK	SA	C	CV-O CV-C SLT-2	RR RR E-CS	VRR-2 VRR-2
SI-00845D	F8	SIS Core Deluge	1	A/C	2	CK	SA	C	CV-O CV-C SLT-2	RR RR E-CS	VRR-2 VRR-2
SI-00845E	F8	SIS Cold Leg Inj	1	A/C	2	CK	SA	C	CV-O CV-C SLT-2	RR RR E-CS	VRR-2 VRR-2
SI-00845F	E8	SIS Cold leg Inj	1	A/C	2	CK	SA	C	CV-O CV-C SLT-2	RR RR E-CS	VRR-2 VRR-2
SI-00846	H3	Accum Nit Supply	2	A	1	GL	AO	C	BT-C FST PIT SLT-1	QR QR 2Y RR	
SI-00850A	A4	Cont Sump Hyd Isol	2	B	10	GA	HO	C	BT-C BT-O PIT	QR QR 2Y	

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VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Safety Injection and Residual Heat Removal
DRAWING NO.: 110E017, Sheet 1

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SI-00850B	B6	Cont Sump Hyd Isol	2	B	10	GA	HO	C	BT-C BT-O PIT	QR QR 2Y	
SI-00852A	B7	RHR/LH Core Deluge	2	B	6	GA	MO	C	BT-O BT-C PIT	CS CS 2Y	CSJ-21 CSJ-21
SI-00852B	A7	RHR/LH Core Deluge	2	B	6	GA	MO	C	BT-O BT-C PIT	CS CS 2Y	CSJ-21 CSJ-21
SI-00853A	B8	RHR/LH Inj Check	1	A/C	6	CK	SA	C	CV-PO CV-C CV-O CV-C SLT-2	E-CS E-CS RR RR E-CS	VRR-3 VRR-3 VRR-3 VRR-3 VRR-22
SI-00853B	A8	RHR/LH Inj Check	1	A/C	6	CK	SA	C	CV-PO CV-C CV-O CV-C SLT-2	E-CS E-CS RR RR E-CS	VRR-3 VRR-3 VRR-3 VRR-3 VRR-22
SI-00853C	B9	RHR/Core Deluge	1	A/C	6	CK	SA	C	CV-PO CV-C CV-O CV-C SLT-2	E-CS E-CS RR RR E-CS	VRR-3 VRR-3 VRR-3 VRR-3 VRR-22

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Safety Injection and Residual Heat Removal
DRAWING NO.: 110E017, Sheet 1

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SI-00853D	A10	RHR/Core Deluge	1	A/C	6	CK	SA	C	CV-PO CV-C CV-O CV-C SLT-2	E-CS E-CS RR RR E-CS	VRR-3 VRR-3 VRR-3 VRR-3 VRR-22
SI-00861A	B4	RHR RX Ves Inj S/R	2	C	.75	SRV	SA	C	RVT	10Y	
SI-00867A	G9	SIS Cold Leg Inj Ck	1	A/C	10	CK	SA	C	CV-PO CV-C CV-PO CV-C INSP SLT-2	E-CS E-CS RR RR SP E-CS	VRR-4 VRR-4 VRR-4 VRR-4 VRR-4 VRR-22
SI-00867B	B9	SIS Cold Leg Inj Ck	1	A/C	10	CK	SA	C	CV-PO CV-C CV-PO CV-C INSP SLT-2	E-CS E-CS RR RR SP E-CS	VRR-4 VRR-4 VRR-4 VRR-4 VRR-4 VRR-22
SI-00875A	F6	SIS Test Recirc Ck	2	C	.75	CK	SA	C	CV-O CV-C SLT-5	QR QR 2Y	
SI-00875B	F5	SIS Test Recirc Ck	2	C	.75	CK	SA	C	CV-O CV-C SLT-5	QR QR 2Y	

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Safety Injection and Residual Heat Removal
DRAWING NO.: 110E017, Sheet 1

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SI-00878A	E8	RX Vessel Safety Inj	2	B	2	GL	MO	C	BT-O BT-C PIT	QR QR 2Y	
SI-00878B	D8	SIS Loop Inj	2	B	2	GL	MO	O	BT-O BT-C PIT	CS CS 2Y	CSJ-23 CSJ-23
SI-00878C	E8	RX Vessel Safety Inj	2	B	2	GL	MO	C	BT-O BT-C PIT	QR QR 2Y	
SI-00878D	F8	SIS Loop Inj	2	B	2	GL	MO	O	BT-O BT-C PIT	CS CS 2Y	CSJ-23 CSJ-23
SI-00887	E4	Test Line Saf	2	C	.75	SRV	SA	C	RVT	10Y	
SI-00957	H4	N2 Supply Vent/Rel	2	A	1	GL	AO	C	BT-O FST SLT-1 PIT	CS CS RR 2Y	CSJ-30 CSJ-30

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VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Safety Injection and Residual Heat Removal
DRAWING NO.: 110E017, Sheet 2

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SI-00825A	F5	SIS Pump Suction	2	B	12	GA	MO	C	BT-O PIT	QR 2Y	
SI-00825B	F5	SIS Pump Suction	2	B	12	GA	MO	C	BT-O PIT	QR 2Y	
SI-00826B	H7	SIS Pump Rendunt Suct	2	B	8	GA	MO	C	BT-O BT-C PIT	QR QR 2Y	
SI-00826C	G7	SIS Pump Rendunt Suct	2	B	8	GA	MO	C	BT-O BT-C PIT	QR QR 2Y	
SI-00829A	F9	SI Pump Disch Cross-connect	2	A	4	GA	MA	C	SLT-6	2Y	Passive
SI-00829B	F9	SI Pump Disch Cross-connect	2	A	4	GA	MA	C	SLT-6	2Y	Passive
SI-00851A	B4	Cont Sump Isol	2	B	10	GA	MO	C	BT-C BT-O PIT	QR QR 2Y	
SI-00851B	B4	Cont Sump Isol	2	B	10	GA	MO	C	BT-C BT-O PIT	QR QR 2Y	
SI-00854A	D3	RHR Pump Suct Ck	2	A/C	10	CK	SA	C	CV-O CV-C SLT-6	QR QR 2Y	

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Safety Injection and Residual Heat Removal
Drawing NO.: 110E017, Sheet 2

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SI-00854B	C3	RHR Pump Suct Ck	2	A/C	10	CK	SA	C	CV-O CV-C SLT-6	QR QR 2Y	
SI-00856A	D3	RHR Pump Suct	2	B	10	GA	MO	O	BT-C PIT	QR 2Y	
SI-00856B	C3	RHR Pump Suct	2	B	10	GA	MO	O	BT-C PIT	QR 2Y	
SI-00857A	E7	RHR to SIS Pump Suct	2	B	6	GA	MA	C	BT-O	QR	
SI-00857B	E7	RHR to SIS Pump Suct	2	B	6	GA	MA	C	BT-O	QR	
SI-00866A	F3	SIS Pump Disch	2	B	4	GA	MO	O	BT-O BT-C PIT	QR QR 2Y	
SI-00866B	E3	SIS Pump Disch	2	B	4	GA	MO	O	BT-O BT-C PIT	QR QR 2Y	
SI-00889A	F8	SIS Pump Disch Ck	2	C	6	CK	SA	C	CV-O	QR	
SI-00889B	F8	SIS Pump Disch Ck	2	C	6	CK	SA	C	CV-O	QR	
SI-00891A	E8	SIS Pump Mini-rec Ck	2	C	2	CK	SA	C	CV-O	QR	VRR-37
SI-00891B	E8	SIS Pump Mini-rec Ck	2	C	2	CK	SA	C	CV-O	QR	VRR-37

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Safety Injection and Residual Heat Removal
Drawing NO.: 110E017, Sheet 2

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SI-00895	E5	SIS Pump Mini-rec Ck	2	C	2	CK	SA	C	CV-O	QR	
SI-00896A	F6	SIS Pump Suction	2	A	6	GA	MO	O	SLT-6 BT-C PIT	2Y QR 2Y	
SI-00896B	E6	SIS Pump Suction	2	A	6	GA	MO	O	SLT-6 BT-C PIT	2Y QR 2Y	
SI-00897A	E2	SIS Test Line Ret	2	A	2	GL	AO	O	BT-C FST SLT-6 PIT	CS CS 2Y 2Y	CSJ-36 CSJ-36
SI-00897B	E2	SIS Test Line Ret	2	A	2	GL	AO	O	BT-C FST SLT-6 PIT	CS CS 2Y 2Y	CSJ-36 CSJ-36

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Safety Injection and Residual Heat Removal
DRAWING NO.: 110E018, Sheet 1

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
RH-00710A	E4	RHR Pump Disch Ck	2	C	8	CK	SA	C	CV-O	QR	
RH-00710B	B4	RHR Pump Disch Ck	2	C	8	CK	SA	C	CV-O	QR	
RH-00706A	H6	RHR/RWST Isol	2	A	6	GA	MA	C	SLT-6	2Y	Passive
RH-00706B	H6	RHR/RWST Isol	2	A	6	GA	MA	C	SLT-6	2Y	Passive
RH-00624	G7	RHR HX Outlet	2	B	8	BTF	AO	O	PIT	2Y	Passive
RH-00625	G7	RHR HX Outlet	2	B	8	BTF	AO	O	PIT	2Y	Passive
RH-00626	G7	RHR HX Bypass	2	B	6	BTF	AO	C	PIT	2Y	Passive
RH-00700	B10	RHR Loop Isolation	1	A	10	GA	MO	C	BT-O BT-C PIT SLT-6	CS CS 2Y 2Y	CSJ-37 CSJ-37 Note 5
RH-00701	B9	RHR Loop Isolation	1	A	10	GA	MO	C	BT-O BT-C PIT SLT-6	CS CS 2Y 2Y	CSJ-37 CSJ-37 Note 5
RH-00704A	D7	RHR Pump Suction	2	B	8	GA	MA	C	BT-O BT-C	CS CS	CSJ-37 CSJ-37 Note 6
RH-00704B	B7	RHR Pump Suction	2	B	8	GA	MA	C	BT-O BT-C	CS CS	CSJ-37 CSJ-37 Note 6

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Safety Injection and Residual Heat Removal
Drawing NO.: 110E018, Sheet 1

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
RH-00720	C10	RHR Return to RCS	1	A	10	GA	MO	C	BT-O BT-C PIT SLT-6	CS CS 2Y 2Y	CSJ-37 CSJ-37

SYSTEM: Service Air
DRAWING NO.: M-209, Sheet 2

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SA-00027	F7	Serv Air Cont Sup	2	A	4	GA	MA	C	SLT-1	RR	Passive
SA-00017	F7	Serv Air Cont Sup	2	A	4	GA	MA	C	SLT-1	RR	Passive

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Service Water
DRAWING NO.: M-207, Sheet 1

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SW-00032A	D2	SW Pp P-032A Disc Ck	3	C	16	CK	SA	O/C	CV-O CV-C SLT-5	QR QR 2Y	
SW-00032B	D1	SW Pp P-032B Disc Ck	3	C	16	CK	SA	O/C	CV-O CV-C SLT-5	QR QR 2Y	
SW-00032C	D1	SW Pp P-032C Disc Ck	3	C	16	CK	SA	O/C	CV-O CV-C SLT-5	QR QR 2Y	
SW-00032D	E2	SW Pp P-032D Disc Ck	3	C	16	CK	SA	O/C	CV-O CV-C SLT-5	QR QR 2Y	
SW-00032E	E1	SW Pp P-032E Disc Ck	3	C	16	CK	SA	O/C	CV-O CV-C SLT-5	QR QR 2Y	
SW-00032F	E1	SW Pp P-032F Disc Ck	3	C	16	CK	SA	O/C	CV-O CV-C SLT-5	QR QR 2Y	
SW-00135A	C7	SW to AFW Pp P-029	3	C	1	CK	SA	O	CV-PO INSP	QR RR	VRR-15 VRR-15
SW-02818	G6	Cable Sp Rm Clr Sup	3	B	3	GL	MO	O	BT-O PIT	QR 2Y	
SW-02819	D6	Control Rm Clr Sup	3	B	3	GL	MO	O	BT-O PIT	QR 2Y	

SYSTEM: Service Water
DRAWING NO.: M-207, Sheet 1

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SW-02838	C3	G02 EDG HX Outlet	3	B	4	GA	AO	C	BT-O FST PIT	QR QR 2Y	
SW-02839	B3	G01 EDG HX Outlet	3	B	4	GA	AO	C	BT-O FST PIT	QR QR 2Y	
SW-02869	H8	SW Hdr (West) Isol	3	B	14	BTF	MO	O	BT-C PIT	QR 2Y	
SW-02870	B8	SW Hdr (West) Isol	3	B	14	BTF	MO	O	BT-C PIT	QR 2Y	
SW-02890	E2	SW Header Cross-Tie	3	B	24	BTF	MO	O	BT-C PIT	QR 2Y	
SW-02891	E2	SW Header Cross-Tie	3	B	24	BTF	MO	O	BT-C PIT	QR 2Y	
SW-02929A	G5	AFW Pump Rm Clr T/C	3	B	2	GL	AO	O	FST	QR	
SW-02929B	B5	AFW Pump Rm Clr	3	B	2	GL	AO	O	FST	QR	

SYSTEM: Service Water
DRAWING NO.: M-207, Sheet 2

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SW-02880	F5	Turb Hall Clrs In	3	B	6	GA	MO	O	BT-C PIT	CS 2Y	CSJ-27

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Service Water
DRAWING NO.: M-207, Sheet 3

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SW-00012A	E7	CCW 1HX-12A Outlet	3	B	2	GL	AO	O	FST	QR	
SW-00012B	E6	CCW HX-12B Outlet	3	B	2	GL	AO	O	FST	QR	
SW-00012C	E5	CCW HX-12C Outlet	3	B	2	GL	AO	O	FST	QR	
SW-00012D	E5	CCW 2HX-12D Outlet	3	B	2	GL	AO	O	FST	QR	
SW-00286	C7	CCW 1HX-12A Inlet	3	B	12	GA	MA	O/C	BT-O	QR	
SW-00290	G5	CCW HX-12C Inlet	3	B	12	GA	MA	O/C	BT-O	QR	
SW-00296	G5	CCW 2HX-12D Inlet	3	B	12	GA	MA	O/C	BT-O	QR	
SW-00307	E5	CCW 2HX-12D Outlet	3	B	12	GA	MA	O/C	BT-O	QR	
SW-00315	E5	CCW HX-12C Outlet	3	B	12	GA	MA	O/C	BT-O	QR	
SW-00322	E7	CCW 1HX-12A Outlet	3	B	12	GA	MA	O/C	BT-O	QR	
SW-00346	G6	CCW HX-12B Inlet	3	B	12	GA	MA	O/C	BT-O	QR	
SW-00360	E6	CCW HX-12B Outlet	3	B	12	GA	MA	O/C	BT-O	QR	
SW-00396A	H6	Battery Rm Cooler Sup	3	C	2	CK	SA	O	CV-O	QR	
SW-00397A	H6	Battery Rm Cooler Sup	3	C	2	CK	SA	O	CV-O	QR	
SW-02816	B3	Svc Bldg HVAC Clg Iso	3	B	6	GA	MO	O	BT-C PIT	QR 2Y	
SW-02930A	B6	SFP Clr Sup	3	B	8	GA	MO	O	BT-C PIT	QR 2Y	

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Service Water
DRAWING NO.: M-207, Sheet 3

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SW-02930B	C6	SFP Clr Sup	3	B	8	GA	MO	O	BT-C PIT	QR 2Y	
SW-02977	D5	RHR Pump Rm Clr T/C	3	B	2	GL	AO	O	FST	QR	See H&V System
SW-LW-61	G4	BDE/Vent Cond In	3	B	8	GA	AO	O	BT-C FST PIT	QR QR 2Y	
SW-LW-62	G3	BDE/Vent Cond Out	3	B	8	GA	AO	O	BT-C FST PIT	QR QR 2Y	

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Service Water
DRAWING NO.: M-207, Sheet 4

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SW-00015A	B4	Cont Clr Supply Ck	3	C	8	CK	SA	O	CV-O	QR	
SW-00015B	B2	Cont Clr Supply Ck	3	C	8	CK	SA	O	CV-O	QR	
SW-00015C	B4	Cont Clr Supply Ck	3	C	8	CK	SA	O	CV-O	QR	
SW-00015D	B3	Cont Clr Supply Ck	3	C	8	CK	SA	O	CV-O	QR	
SW-02907	G2	Cont Clr Emerg Flow	3	B	12	GA	MO	C	BT-O PIT	QR 2Y	
SW-02908	G4	Cont Clr Emerg Flow	3	B	12	GA	MO	C	BT-O PIT	QR 2Y	
SW-02959	D5	Cont Clr Disch S/R	3	C		SRV	SA	C	RVT	10Y	
SW-02963	D2	Cont Clr Disch S/R	3	C		SRV	SA	C	RVT	10Y	
SW-02967	D4	Cont Clr Disch S/R	3	C		SRV	SA	C	RVT	10Y	
SW-02971	D3	Cont Clr Disch S/R	3	C		SRV	SA	C	RVT	10Y	
SW-04300	D1	Cavity Clr Ret S/R	3	C		SRV	SA	C	RVT	10Y	
SW-04301	D1	Cavity Clr Ret S/R	3	C		SRV	SA	C	RVT	10Y	

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Spent Fuel Pit Cooling
DRAWING NO.: 110E018, Sheet 4

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SF-00009A	F6	SFP Pp P-12A Disc Ck	3	C	8	CK	SA	O/C	CV-O CV-C SLT-5	QR QR 2Y	
SF-00010A	F6	SFP Pp P-12B Disc Ck	3	C	8	CK	SA	O/C	CV-O CV-C SLT-5	QR QR 2Y	

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Waste Disposal
DRAWING NO.: 684J971, Sheet 1

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SF-00816	C6	P-033 RWCP Suction	2	A	2	DI	MA	C	SLT-1	RR	VRR-23 Passive
WL-01003A	C6	RCDT Pump Suction	2	A	3	DI	AO	O/C	BT-C FST SLT-1 PIT	QR QR RR 2Y	 VRR-23
WL-01003B	C6	RCDT Pump Suction	2	A	3	DI	AO	O/C	BT-C FST SLT-1 PIT	QR QR RR 2Y	 VRR-23
WL-01698	C6	RCDT to -19' Sump	2	A	2	DI	AO	C	BT-C FST SLT-1 PIT	QR QR RR 2Y	 VRR-23
WL-01721	C6	RCDT Pumps Suct Con	2	A	3	DI	AO	O/C	BT-C FST SLT-1 PIT	QR QR RR 2Y	
WL-01723	C6	Cont Sump Dr	2	A	3	DI	AO	O/C	BT-C FST SLT-1 PIT	QR QR RR 2Y	 VRR-23
WL-01728	C6	Cont Sump Dr	2	A	3	DI	AO	O/C	BT-C FST SLT-1 PIT	QR QR RR 2Y	 VRR-23

APPENDIX D
VALVE PROGRAM TABLES
UNIT 1

SYSTEM: Waste Disposal
DRAWING NO.: 684J971, Sheet 1

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
WG-01786	B5	RCDT Vent	2	A	1	DI	AO	O	BT-C FST SLT-1 PIT	QR QR RR 2Y	
WG-01787	B5	RCDT Vent	2	A	1	DI	AO	O	BT-C FST SLT-1 PIT	QR QR RR 2Y	
WG-01788	B5	RCDT Sample	2	A	.75	DI	AO	O/C	BT-C FST SLT-1 PIT	QR QR RR 2Y	
WG-01789	B5	RCDT Sample	2	A	.75	DI	AO	O/C	BT-C FST SLT-1 PIT	QR QR RR 2Y	

NOTES

1. These valves and their respective test requirements are included in the IST Program for information and tracking purposes only. They do not necessarily meet the requirements for inclusion per IWV-1100, but are identified for testing per NRC Generic Letter 90-06. Thus, the tests specified may not necessarily satisfy the corresponding requirements of Subsection IWV or NRC Generic Letter 89-04.

2. Stroke testing of these valves is not required by code or regulation, but is performed for good engineering practice. These valves can only be opened when the associated unit is in cold shutdown, and thus would be considered passive if no stroke testing was performed.

3. If a PORV is isolated in accordance with Technical Specifications, the associated block valve will be exercised at cold shutdown.

4. Testing of this valve is not required by any code or regulation, but is included as a matter of good engineering practice.

5. The functional leak tightness of these valves is demonstrated by daily RCS leakage calculations. Additional leak rate testing is not required per IWV-3421.

6. These valves are operated, and the operation subsequently analyzed, routinely on a frequency which meets the requirements of IWV-3411 and IWV-3412(a). In accordance with IWV-3414, no additional testing is required.

CONTENTS

LEGEND

VALVE	The plant alpha-numerical designator for the subject valve.
CORD	The coordinate location of the valve on the designated drawing.
CLASS	The ISI classification of the valve as per the respective ISI boundary drawings.
CAT	The valve category per Paragraph IWV-2100.
SIZE	The valve's nominal size in inches.
TYPE	The valve type

AP	Pneumatic Pilot
BA	Ball
BTF	Butterfly
CK	Check
DI	Diaphragm
GA	Gate
GL	Globe
SCK	Stop/Check
SRV	Safety/Relief
NE	Needle (throttle)

ACT — The valve actuator type as follows:

AO	Air-operated
HO	Hydraulic-operated
MA	Manual valve
MO	Electric motor-operated
SA	Self-actuated
SO	Solenoid-operated

POS — Designates the normal position of the valve during plant operation at power.

REQMT — Identifies the test requirements for a valve as follows:

BT-C	Exercise to closed position. For power-operated valves, stroke times will be measured unless excluded by an associated relief request.

BT-O	Exercise to open position. For power-operated valves, stroke times will be measured unless excluded by an associated relief request.
BT-EE	Exercise valve to verify proper operation and stroking with no stroke time measurements. Requires observation of system parameters or local observation of valve operation.
BT-PV	Exercise test of pneumatic pilot valve. Test is performed in conjunction with the associated main valve test.
CV-C	Exercise check valve to the closed position.
CV-O	Exercise check valve to the full-open position.
CV-PO	Partial-stroke exercise check valve in the open direction.
CV-PC	Partial-stroke exercise check valve in the close direction.
FST	Fail safe test
INSP	Disassembly and inspection of check valves
PIT	Position indication verification per IWV-3300
RVT	Safety/Relief valve setpoint test per ASME OMa-1
SLT-1	Seat leakrate test per 10 CFR 50, App J
SLT-2	Seat leakrate test for pressure isolation valves per Technical Specification 15.3.16.
SLT-3	Seat leakrate test for pneumatic check valves to verify capability of maintaining accumulator gas inventory following loss of supply system pressure.
SLT-4	Leaktesting of safety injection accumulator check valves
SLT-5	Seat leakrate test to identify gross leakage. Specific leakage rates will not be measured, but leakage will be determined and evaluated with respect to system operability and its capability to perform its safety function.

SLT-6	Seat leakrate test to identify gross leakage. Specific leakage rates will be measured and evaluated with respect to system operability and its capability to perform its safety function.

TEST FREQ

The required test interval abbreviations are defined as follows:

RR	Each reactor refueling outage (cycle)
CS	Cold shutdown (per Technical Specifications)
E-CS	Cold shutdown with Event V testing required
QR	Quarterly (during plant operation)
1Y	Once Per Calendar Year
2Y	Every 2 years
5Y	Every 5 years
10Y	Every 10 years
SR	Prior to placing a system or component in operable status
SP	Other (see applicable request for relief)

REMARKS

Applicable requests for relief from Code requirements (see Appendix F) are noted in the REMARKS column adjacent to the associated test requirement and designated VRR-XX.

Applicable notes are included in the REMARKS column and are designated NOTE-XX. A list of notes is attached as the last page of the appendix.

Cold shutdown testing justifications are provided in Appendix G. Each explanation is identified by a reference number (CSJ-XX) that appears in the respective REMARKS column adjacent to the pertinent test requirement.

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Auxiliary Feedwater
DRAWING NO.: M-217

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
AF-00064	G4	2P-29 Suction	3	B	6	GA	MA	O	BT-C	QR	
AF-00100	F9	AFW to 2A S/G	2	C	3	CK	SA	C	CV-O	CS	CSJ-1
AF-00101	G9	AFW to 2B S/G	2	C	3	CK	SA	C	CV-O	CS	CSJ-1
AF-00103	E8	AFW to 2A S/G	2	A/C	3	CK	SA	C	CV-O CV-C SLT-6	CS CS 2Y	CSJ-1 CSJ-1
AF-00105	G8	AFW to 2B S/G	2	A/C	3	CK	SA	C	CV-O CV-C SLT-6	CS CS 2Y	CSJ-1 CSJ-1
AF-00106	E8	AFW to 2A S/G	2	A/C	3	CK	SA	C	CV-O CV-C SLT-6	CS CS 2Y	CSJ-1 CSJ-1
AF-00107	G8	AFW to 2B S/G	2	A/C	3	CK	SA	C	CV-O CV-C SLT-6	CS CS 2Y	CSJ-1 CSJ-1
AF-00108	G7	2P-29 Disch Ck	3	C	4	CK	SA	C	CV-O	CS	CSJ-2
AF-00111	G5	2P-29 Suct Ck	3	C	6	CK	SA	C	CV-PO CV-O	QR CS	 CSJ-3
AF-04000	G8	2B S/G AFW IsoL	3	B	3	GL	MO	C	BT-C PIT	QR 2Y	
AF-04001	F8	2A S/G AFW Isol	3	B	3	GL	MO	C	BT-C PIT	QR 2Y	

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Auxiliary Feedwater
DRAWING: M-217

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
AF-04002	F6	2P-29 Mini-flow	3	B	1	GA	AO	O	BT-C BT-O FST PIT	QR QR QR 2Y	
AF-04006	G5	2P-29 Ser Wtr Sup	3	B	6	GA	MO	O	BT-O PIT	QR 2Y	
AF-04020	F7	AFW to 2B S/G	3	B	3	GA	MO	O	BT-O BT-C PIT	QR QR 2Y	
AF-04022	E8	AFW to 2A S/G	3	B	3	GA	MO	O	BT-O BT-C PIT	QR QR 2Y	
AF-04026	G6	2P-029 Suction Rel	3	C	1	SRV	SA	C	RVT	10Y	

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Aux Steam, Heating Steam, Chilled and Hot Water
DRAWING NO.: M-2214, Sheet

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
HV-00263	E2	Aux Steam to Cont	2	A	3	GA	MA	C	SLT-1	RR	VRR-23 Passive
HV-00286	C2	Aux Steam Cond Ret	2	A	1.5	[illegible]	MA	C	SLT-1	RR	VRR-23 Passive
HV-00287	C2	Aux Steam Cond Ret	2	A	1.5	GA	MA	C	SLT-1	RR	VRR-23 Passive
HV-00636	D2	Aux Steam to Cont	2	A	3	GA	MA	C	SLT-1	RR	VRR-23 Passive
HV-00637	C3	Aux Steam Cond Ret	2	A	1.5	GA	MA	C	SLT-1	RR	VRR-23 Passive

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Chemical and Volume Control
DRAWING NO.: 685J175

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
CV-00112B	B6	RWST to Chg Pump	2	B	4	GA	MO	C	BT-O PIT	CS 2Y	CSJ-34
CV-00112C	C6	VCT to Chg Pump	2	B	4	GA	MO	O	BT-C PIT	CS 2Y	CSJ-4
CV-00142	C8	Charging Flow Cont	2	B	3	GL	AO	O	BT-O FST PIT	CS CS 2Y	CSJ-5
CV-00283A	B8	Chg Pump Disc Saf	2	C	.75	SRV	SA	C	RVT	10Y	
CV-00283B	B8	Chg Pump Disc Saf	2	C	.75	SRV	SA	C	RVT	10Y	
CV-00283C	A8	Chg Pump Disc Saf	2	C	.75	SRV	SA	C	RVT	10Y	
CV-00295	C10	Charging Hdr Ck	1	C	3	CK	SA	O	CV-O	QR	
CV-00304C	C10	RCP Seal Wtr Sup	1	A/C	2	CK	SA	O	CV-C SLT-1	RR RR	VRR-12
CV-00304D	C11	RCP Seal Wtr Sup	1	A/C	2	CK	SA	O	CV-C SLT-1	RR RR	VRR-12
CV-00313	C8	RCP Seal Wtr Ret	2	A	3	GA	MO	O	BT-C PIT SLT-1	CS 2Y RR	CSJ-6
CV-00313A	C9	RCP Seal Wtr Ret	2	A	3	GL	AO	O	BT-C FST PIT SLT-1	CS CS 2Y RR	CSJ-6 CSJ-6
CV-00323A	A9	Aux Chrging Isol	2	A	2	GL	MA	C	SLT-1	RR	Passive

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Chemical and Volume Control
DRAWING NO.: 685J175

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
BS-00333A	A3	BA Xfer Pump Disch	2	C	2	CK	SA	C	CV-O CV-C SLT-5	QR QR 2Y	
BS-00333B	A3	BA Xfer Pump Disch	2	C	2	CK	SA	C	CV-O CV-C SLT-5	QR QR 2Y	
CV-00350	A5	Emerg Boration	2	B	2	GA	MO	C	BT-O PIT	QR 2Y	

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Chemical and Volume Control
DRAWING NO.: 684J741

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
CV-00351	A6	Emerg Boration Ck	2	C	2	CK	SA	C	CV-O	RR	VRR-24
CV-00357	B6	RWST to Chg Pump	[illegible]	C	4	CK	SA	C	CV-O	CS	CSJ-34
CV-00370	C9	Charging Hdr Ck	2	A/C	3	CK	SA	O	CV-O CV-C SLT-1	QR RR RR	VRR-13
CV-00371	D9	RCS Letdown Iso	2	A	2	GL	AO	O	BT-C FST PIT SLT-1	CS CS 2Y RR	CSJ-7 CSJ-7
CV-00371A	D9	RCS Letdown Iso	2	A	2	GL	AO	O	BT-C FST PIT SLT-1	CS CS 2Y RR	CSJ-7 CSJ-7
CV-01296	All	Aux Charging Iso	1	A	2	GL	AO	O/C	PIT SLT-1 BT-O BT-C FST	2Y RR QR QR QR	

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Component Cooling Water
DRAWING NO.: 110E029, Sheet 1

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
CC-00738A	G4	RHR Cooling Wtr Sup	3	B	10	GA	MO	C	BT-O PIT	QR 2Y	
CC-00738B	G3	RHR Cooling Wtr Sup	3	B	10	GA	MO	C	BT-O PIT	QR 2Y	

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Component Cooling Water
DRAWING NO.: 110E029, Sheet 2

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
CC-00719	G12	Cont CCW Sup	2	B	6	GA	MO	O	BT-C PIT	CS 2Y	CSJ-9
CC-00754A	F13	RCP Clg Water Sup	2	A	4	GA	MO	O	BT-C SLT-1 PIT	CS RR 2Y	CSJ-10
CC-00754B	F10	RCP Clg Water Sup	2	A	4	GA	MO	O	BT-C SLT-1 PIT	CS RR 2Y	CSJ-10
CC-00755A	E13	RCP Clg Wtr Sup Ck	2	A/C	4	CK	SA	O	CV-C SLT-1	RR RR	VRR-10 VRR-23
CC-00755B	E10	RCP Clg Wtr Sup Ck	2	A/C	4	CK	SA	O	CV-C SLT-1	RR RR	VRR-10 VRR-23
CC-00759A	F11	RCP Clg Water Ret	2	A	4	GA	MO	O	BT-C SLT-1 PIT	CS RR 2Y	CSJ-10 VRR-23
CC-00759B	F8	RCP Clg Water Ret	2	A	4	GA	MO	O	BT-C SLT-1 PIT	CS RR 2Y	CSJ-10 VRR-23
CC-00763A	E12	RCP Clg Wtr Ret S/R	2	C	2	SRV	SA	C	RVT	10Y	
CC-00763B	E8	RCP Clg Wtr Ret S/R	2	C	2	SRV	SA	C	RVT	10Y	
CC-00767	E7	Ex LD HX Clg Wtr Sup	2	A/C	2	CK	SA	C	CV-C SLT-1	RR RR	VRR-30 VRR-30

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Component Cooling Water
DRAWING NO.: 110E029, Sheet 2

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
CC-00769	F5	Ex LD HX Clg Wtr Ret	2	A	2	GL	AO	C	BT-C FST PIT SLT-1	QR QR 2Y RR	

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Component Cooling Water
DRAWING NO.: 110E029, Sheet 3

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
CC-00724A	G7	CCW Pump Disch Check	3	C	10	CK	SA	O	CV-O CV-C SLT-5	QR QR QR	
CC-00724B	F7	CCW Pump Disch Check	3	C	10	CK	SA	O	CV-O CV-C SLT-5	QR QR QR	
CC-00773	F9	CCW Normal Makeup	3	B	2	GL	MA	C	SLT-5	2Y	Passive
CC-00779	H9	CCW Surge Tank Relief	3	C	3	SRV	SA	C	RVT	10Y	
CC-00779A	H9	CCW Surge Tk Vac Breaker	3	C	1	CK	SA	C	CV-O CV-C	QR QR	
CC-00815	F9	CCW Emerg Makeup	3	B	2	GL	MO	C	SLT-5 PIT	2Y 2Y	Passive

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Containment Spray
DRAWING NO.: M-110E035, Sheet 3

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SI-00836A	F7	NaOH Supply	2	B	2	GL	AO	C	BT-O FST PIT	QR QR 2Y	
SI-00836B	E7	NaOH Supply	2	B	2	GL	AO	C	BT-O FST PIT	QR QR 2Y	
SI-00840A	G5	Spray Add Tank Vac Breaker	2	C	.75	SRV	SA	C	RVT	10Y	
SI-00840B	G5	Spray Add Tank Vac Breaker	2	C	.75	SRV	SA	C	RVT	10Y	
SI-00847A	H8	Spray Add Educt Check	2	C	2	CK	SA	C	CV-O	QR	
SI-00847B	D8	Spray Add Educt Check	2	C	2	CK	SA	C	CV-O	QR	
SI-00858A	I3	RWST to CS Pump P14A	2	C	6	CK	SA	C	CV-O	QR	
SI-00858B	C3	RWST to CS Pump P14B	2	C	6	CK	SA	C	CV-O	QR	
SI-00860A	I10	CS Pump 1-P14A Disch	2	B	6	GA	MO	C	BT-O PIT	QR QR	
SI-00860B	I10	CS Pump 1-P14A Disch	2	B	6	GA	MO	C	BT-O PIT	QR QR	

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Containment Spray
DRAWING NO.: M-110E035, Sheet 3

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SI-00860C	C10	CS Pump 1-P14B Disch	2	B	6	GA	MO	C	BT-O PIT	QR QR	
SI-00860D	C10	CS Pump 1-P14B Disch	2	B	6	GA	MO	C	BT-O PIT	QR QR	
SI-00862A	I11	CS Pump 1-P14A Disch	2	A/C	6	CK	SA	C	CV-O SLT-1	QR RR	VRR-23, 29
SI-00862B	C11	CS Pump 1-P14B Disch	2	A/C	6	CK	SA	C	CV-O SLT-1	QR RR	VRR-23, 29
SI-00862G	H11	Train "A" Test Isolation	2	A	6	GA	MA	C	SLT-1	RR	Passive VRR-23
SI-00862H	D11	Train "B" Test Isolation	2	A	6	GA	MA	C	SLT-1	RR	Passive VRR-23
SI-00864A	H11	CS Pump Test Recirc	2	A	.75	GL	MA	C	SLT-1	RR	Passive VRR-23
SI-00864B	C11	CS Pump Test Recirc	2	A	.75	GL	MA	C	SLT-1	RR	Passive VRR-23
SI-00868A	I12	CS Nozzle A Hdr Isolation	2	A	6	GA	MA	O	SLT-1	RR	Passive VRR-23
SI-00868B	C12	CS Nozzle B Hdr Isolation	2	A	6	GA	MA	O	SLT-1	RR	Passive VRR-23

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Containment Spray
DRAWING NO.: M-110E035, Sheet 3

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SI-00870A	I3	RWST to CS Pump P14A	2	A	6	GA	MO	O	BT-O BT-C SLT-6 PIT	QR QR 2Y 2Y	
SI-00870B	C3	RWST to CS Pump P14B	2	A	6	GA	MO	O	BT-O BT-C SLT-6 PIT	QR QR 2Y 2Y	
SI-00871A	I5	RHR to CS Pump P14A	2	B	6	GA	MO	C	BT-O BT-C PIT	QR QR 2Y	
SI-00871B	C5	RHR to CS Pump P14B	2	B	6	GA	MO	C	BT-O BT-C PIT	QR QR 2Y	
SI-00872	G6	Spray Add Tank Saf	2	C	.75	RV	SA	C	RVT	10Y	

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Deionized/Reactor Makeup Water
DRAWING NO.: PBM-231, Sheet 2

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
DI-00009	E2	DI Water Sup to Cont	2	A	2	DI	MA	C	SLT-1	RR	Passive
DI-00011	E1	DI Water Sup to Cont	2	A	2	DI	MA	C	SLT-1	RR	Passive

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Heating and Ventilation
DRAWING NO.: M-2215, Sheet 1

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
VNPSE-03212	G3	Cont Purge Exhaust	2	A	36	BTF	AO	C	BT-C FST SLT-1 PIT	CS CS 2Y 2Y	CSJ-12 CSJ-12 VRR-23, 29 Note 2
VNPSE-03213	G3	Cont Purge Exhaust	2	A	36	BTF	AO	C	BT-C FST SLT-1 PIT	CS CS 2Y 2Y	CSJ-12 CSJ-12 VRR-23, 29 Note 2
VNPSE-03244	D3	Cont Purge Supply	2	A	36	BTF	AO	C	BT-C FST SLT-1 PIT	CS CS 2Y 2Y	CSJ-12 CSJ-12 VRR-23, 29 Note 2
VNPSE-03245	D3	Cont Purge Supply	2	A	36	BTF	AO	C	BT-C FST SLT-1 PIT	CS CS 2Y 2Y	CSJ-12 CSJ-12 VRR-23, 29 Note 2

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Heating and Ventilation
DRAWING NO.: M-2215, Sheet 2

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
RM-03200AA	G3	Cont Atmos Samp Retr	2	A/C	1	CK	SA	O	CV-C SLT-1	RR RR	VRR-16
RM-03200A	F3	Cont Atmos Samp Retr	2	A	1	GA	AO	O	BT-C FST SLT-1 PIT	QR QR RR 2Y	
RM-03200B	F8	Cont Atmos Samp Sup	2	A	1	GA	AO	O	BT-C FST SLT-1 PIT	QR QR RR 2Y	
RM-03200C	G8	Cont Atmos Samp Sup	2	A	1	GA	AO	O	BT-C FST SLT-1 PIT	QR QR RR 2Y	

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Instrument Air
DRAWING NO.: M-209, Sheet 7

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
IA-00876	E8	Purge Vlv 3244 Sup	NC	A/C	.25	CK	SA	C	CV-O CV-C SLT-3	CS CS 2Y	CSJ-13 CSJ-13 VRR-14
IA-00877	E8	Purge Vlv 3212 Sup	NC	A/C	.25	CK	SA	C	CV-O CV-C SLT-3	CS CS 2Y	CSJ-13 CSJ-13 VRR-14
IA-01314	E3	Inst Air to Cont	2	A/C	2	CK	SA	C	CV-C SLT-1	QR RR	 VRR-23
IA-01316	E4	Inst Air to Cont	2	A	1	GA	MA	C	SLT-1	RR	VRR-23 Passive
IA-01324	F3	Inst Air to Cont	2	A/C	2	CK	SA	C	CV-C SLT-1	QR RR	
IA-03047	E3	Inst Air to Cont	2	A	2	GA	AO	O	BT-C FST SLT-1 PIT	QR QR RR 2Y	
IA-03048	F3	Inst Air to Cont	2	A	2	GA	AO	O	BT-C FST SLT-1 PIT	QR QR RR 2Y	

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Instrument Air
DRAWING NO.: M-209, Sheet 11

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
IA-01335	F4	Inst Air to PORV	NC	A/C		CK	SA	C	CV-O CV-C SLT-3	CS CS 2Y	CSJ-28 CSJ-28 Note 1
IA-01338	G4	Inst Air to PORV	NC	A/C		CK	SA	C	CV-O CV-C SLT-3	CS CS 2Y	CSJ-28 CSJ-28 Note 1
IA-01401	H2	Purge Vlv 3245 Sup	NC	A/C	.25	CK	SA	C	CV-O CV-C SLT-3	CS CS 2Y	CSJ-13 CSJ-13 VRR-14
IA-01402	H1	Purge Vlv 3213 Sup	NC	A/C	.25	CK	SA	C	CV-O CV-C SLT-3	CS CS 2Y	CSJ-13 CSJ-13 VRR-14
IA-01418	F4	Nit Sup to PORV	NC	A/C	.5	CK	SA	C	CV-O CV-C SLT-3	CS CS 2Y	CSJ-28 CSJ-28 Note 1
IA-01419	G4	Nit Sup to PORV	NC	A/C	.5	CK	SA	C	CV-O CV-C SLT-3	CS CS 2Y	CSJ-28 CSJ-28 Note 1
IA-01652	F4	Inst Air to PORV	NC	A/C		CK	SA	C	CV-O CV-C SLT-3	CS CS 2Y	CSJ-28 CSJ-28 Note 1

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Instrument Air
DRAWING NO.: M-209, Sheet 11

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
IA-01653	G4	Inst Air to PORV	NC	A/C		CK	SA	C	CV-O CV-C SLT-3	CS CS 2Y	CSJ-28 CSJ-28 Note 1
IA-06340	F4	PORV Nit Sup S/R	NC	C		SRV	SA	C	RVT	10Y	Note 1
IA-06341	G4	PORV Nit Sup S/R	NC	C		SRV	SA	C	RVT	10Y	Note 1
IA-06342	F5	PORV 430 Nit Sup Reg	NC	C	.25	GL	SA	O/C	BT-EE	CS	CSJ-28 Note 1
IA-06343	G5	PORV 431C Nit Sup Reg	NC	C	.25	GL	SA	O/C	BT-EE	CS	CSJ-28 Note 1

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Main Feedwater
DRAWING NO.: M-2202, Sheet 2

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
CS-00466AA	C2	S/G 1A FW Ck	2	A/C	16	CK	SA	O	CV-C SLT-6	CS CS	VRR-21 VRR-21
CS-00466BB	D1	S/G 1A FW Ck	2	A/C	16	CK	SA	O	CV-C SLT-6	CS CS	VRR-21 VRR-21
CS-00476AA	G2	S/G 1B FW Ck	2	A/C	16	CK	SA	O	CV-C SLT-6	CS CS	VRR-21 VRR-21
CS-00476BB	H1	S/G 1B FW Ck	2	A/C	16	CK	SA	O	CV-C SLT-6	CS CS	VRR-21 VRR-21

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Main and Reheat Steam
DRAWING NO.: M-2201, Sheet 1

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
MS-02005	G3	Main Stm Safety	2	C	6	RV	SA	C	RVT	5Y	VRR-35
MS-02006	G4	Main Stm Safety	2	C	6	RV	SA	C	RVT	5Y	VRR-35
MS-02007	G4	Main Stm Safety	2	C	6	RV	SA	C	RVT	5Y	VRR-35
MS-02008	G4	Main Stm Safety	2	C	6	RV	SA	C	RVT	5Y	VRR-35
MS-02010	D3	main Stm Safety	2	C	6	RV	SA	C	RVT	5Y	VRR-35
MS-02011	D4	Main Stm Safety	2	C	6	RV	SA	C	RVT	5Y	VRR-35
MS-02012	D4	Main Stm Safety	2	C	6	RV	SA	C	RVT	5Y	VRR-35
MS-02013	D4	Main Stm Safety	2	C	6	RV	SA	C	RVT	5Y	VRR-35
MS-02015	H5	MS Atmos Stm Dmp	2	B	6	GL	AO	C	FST BT-C BT-O PIT	QR QR QR 2Y	
MS-02016	E5	MS Atmos Stm Dmp	2	B	6	GL	AO	C	FST BT-C BT-O PIT	QR QR QR 2Y	
MS-02017	G5	Main Stm Isolation	2	B	30	SCK	AO	O	BT-C FST PIT	CS CS 2Y	CSJ-15 CSJ-15
MS-02017A	G7	Main Stm Nonreturn	2	C	30	CK	SA	O	CV-PC CV-C	SP CS	CSJ-16 CSJ-16
MS-02017A-S	G6	MSIV 2017 Air Pilot	NC	B	.75	AP	SO	O	BT-PV	CS	CSJ-17

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Main and Reheat Steam
DRAWING NO.: M-2201, Sheet 1

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
MS-02017B-S	G5	MSIV 2017 Air Pilot	NC	B	.75	AP	S0	O	BT-PV	CS	CSJ-17
MS-02017C-S	H6	MSIV 2017 Air Pilot	NC	B	1	AP	SO	C	BT-PV	CS	CSJ-17
MS-02017D-S	H6	MSIV 2017 Air Pilot	NC	B	1	AP	SO	C	BT-PV	CS	CSJ-17
MS-02018	D5	Main Stm Isolation	2	B	30	SCK	AO	O	BT-C FST PIT	CS CS 2Y	CSJ-15 CSJ-15
MS-02018A	D7	Main Stm Nonreturn	2	C	30	CK	SA	O	CV-PC CV-C	SP CS	CSJ-16 CSJ-16
MS-02018A-S	D6	MSIV 2018 Air Pilot	NC	B	.75	AP	SO	O	BT-PV	CS	CSJ-17
MS-02018B-S	D5	MSIV 2018 Air Pilot	NC	B	.75	AP	SO	O	BT-PV	CS	CSJ-17
MS-02018C-S	E6	MSIV 2018 Air Pilot	NC	B	1	AP	SO	C	BT-PV	CS	CSJ-17
MS-02018D-S	E6	MSIV 2018 Air Pilot	NC	B	1	AP	SO	C	BT-PV	CS	CSJ-17
MS-02019	F6	AFW Steam Supply	2	B/C	3	SCK	MO	C	BT-O CV-O BT-C PIT	QR QR QR 2Y	
MS-02020	E6	AFW Steam Supply	2	B/C	3	SCK	MO	C	BT-O CV-O BT-C PIT	QR QR QR 2Y	
MS-02082	B8	Main Steam to AFW Pump	2	B	3	GL	SA/ MA	O	BT-C BT-O PIT	QR QR 2Y	VRR-1

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Main and Reheat Steam
DRAWING NO.: M-2201, Sheet 1

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
MS-02083	B2	S/G Sample Isol	2	A	.75	DI	AO	O	BT-C FST SLT-1 PIT	QR QR RR 2Y	
MS-02084	F2	S/G Sample Isol	2	A	.75	DI	AO	O	BT-C FST SLT-1 PIT	QR QR RR 2Y	
MS-02090	B9	SW to AFW Pump P-029	3	B	1	GL	AO	O	BT-O FST	QR QR	
MS-05958	E2	S/G Blowdown Isol	2	A	2	GA	AO	O	BT-C FST SLT-1 PIT	QR QR RR 2Y	
MS-05959	B2	S/G Blowdown Isol	2	A	2	GA	AO	O	BT-C FST SLT-1 PIT	QR QR RR 2Y	
RS-SA-10	F9	Radwaste Steam Supply	2	B	3	GA	AO	O	BT-C FST PIT	QR QR 2Y	

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Post-Accident Containment Vent/Monitoring
DRAWING NO.: M-224

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
H2-V-04	D5	Post-Acc Purge Disch	2	A	2	DI	MA	C	BT-O SLT-1	CS RR	CSJ-33 VRR-23
H2-V-05	D5	Post-Acc Purge Disch	2	A	2	DI	MA	C	BT-O SLT-1	CS RR	CSJ-33 VRR-23
H2-V-06	D5	Post-Acc Purge Drain	2	A	.75	GA	MA	C	SLT-1	RR	VRR-23 Passive
H2-V-07	D5	Post-Acc Purge Drain	2	A	.75	GA	MA	C	SLT-1	RR	VRR-23 Passive
H2-V-08	E5	Post-Acc Atmos Samp	2	A	.75	DI	MA	C	SLT-1	RR	Passive
H2-V-09	E5	Post-Acc Atmos Samp	2	A	.75	DI	MA	C	SLT-1	RR	Passive
H2-V-12	D5	Post-Acc Svc Air Sup	2	A	2	DI	MA	C	BT-O SLT-1	CS RR	CSJ-33 VRR-23
H2-V-13	D5	Post-Acc Svc Air Sup	2	A	2	DI	MA	C	BT-O SLT-1	CS RR	CSJ-33 VRR-23
H2-V-19	D5	Post-Acc Alt Vent	2	A	2	DI	MA	C	BT-O SLT-1	CS RR	CSJ-33 VRR-23 Passive
H2-V-20	D5	Post-Acc Alt Vent	2	A	2	DI	MA	C	BT-O SLT-1	CS RR	CSJ-33 VRR-23 Passive

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Post-Accident Containment Vent/Monitoring
DRAWING NO.: M-224

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
H2-V-22	D4	Post-Acc Sup Drain	2	A	2	DI	MA	C	BT-O SLT-1	CS RR	CSJ-33 VRR-23 Passive
H2-V-23	D4	Post-Acc Sup Drain	2	A	2	DI	MA	C	BT-O SLT-1	CS RR	CSJ-33 VRR-23 Passive

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Primary Sampling
DRAWING NO.: 541F448

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SC-00951	F9	Press Stm Sample	1	A	.375	GL	AO	C	BT-C FST SLT-1 PIT	QR QR RR 2Y	
SC-00953	E9	Press Liq Sample	1	A	.375	GL	AO	C	BT-C FST SLT-1 PIT	QR QR RR 2Y	
SC-00955	E9	Hot Leg Sample	1	A	.375	GL	AO	O/C	BT-C FST SLT-1 PIT	QR QR RR 2Y	
SC-00959	D9	KHR Sample	2	A	.375	GL	AO	C	BT-C FST SLT-6 PIT	QR QR 2Y 2Y	
SC-00966A	F8	Press Stm Sample	1	A	.375	GL	AO	C	BT-C FST SLT-1 PIT	QR QR RR 2Y	
SC-00966B	E8	Press Liq Sample	1	A	.375	GL	AO	C	BT-C FST SLT-1 PIT	QR QR RR 2Y	

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Primary Sampling
DRAWING NO.: 541F448

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SC-00966C	E8	Leg Sample	1	A	.375	GL	AO	O/C	BT-C FST SLT-1 PIT	QR QR RR 2Y	

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Reactor Coolant
DRAWING NO.: 541F445, Sheet 1

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
RC-00430	H5	Power-Operated Rel	1	B	2	GL	AO	C	BT-C BT-O FST PIT	CS CS CS 2Y	CSJ-18 CSJ-18 CSJ-18
RC-00431C	I5	Power-operated Rel	1	B	2	GL	AO	C	BT-C BT-O FST PIT	CS CS CS 2Y	CSJ-18 CSJ-18 CSJ-18
RC-00434	I7	Pressurizer Safety	1	C	3	SRV	SA	C	RVT	5Y	VRR-35
RC-00435	I6	Pressurizer Safety	1	C	3	SRV	SA	C	RVT	5Y	VRR-35
RC-00515	I5	PORV Block Valve	1	B	3	GA	MO	O	BT-C PIT	QR 2Y	Note 3
RC-00516	H5	PORV Block Valve	1	B	3	GA	MO	O	BT-C PIT	QR 2Y	Note 3

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Reactor Coolant
DRAWING NO.: 541F445, Sheet 2

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
RC-00508	D2	PRT Fill Line Iso	2	A	2	DI	AO	O/C	BT-C FST SLT-1 PIT	QR QR RR 2Y	
RC-00528	D3	PRT Nitrogen Sup	2	A/C	.75	CK	SA	O/C	CV-C SLT-1	RR RR	VRR-11
RC-00529	D3	PRT Fill Line Ck	2	A/C	2	CK	SA	O/C	CV-C SLT-1	RR RR	VRR-18
RC-00538	E3	PRT Sample	2	A	.375	GL	AO	O	BT-C FST SLT-1 PIT	QR QR RR 2Y	
RC-00539	E2	PRT Samp'e	2	A	.375	GL	AO	O	BT-C FST SLT-1 PIT	QR QR RR 2Y	
RC-00570A	F5	RX Vess Vent	1	B	1	GL	SO	C	FST BT-O PIT	CS CS 2Y	CSJ-19 CSJ-19
RC-00570B	F5	RX Vess Vent	1	B	1	GL	SO	C	FST BT-O PIT	CS CS 2Y	CSJ-19 CSJ-19
RC-00575A	F5	RX Vess/Press Vent	1	B	1	GL	SO	C	FST BT-O PIT	CS CS 2Y	CSJ-19 CSJ-19

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Reactor Coolant
DRAWING NO.: 541F445, Sheet 2

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
RC-00575B	F4	RX Vess/Press Vent	1	B	1	GL	SO	C	FST BT-O PIT	CS CS 2Y	CSJ-19 CSJ-19
RC-00580A	G5	Pressurizer Vent	1	B	1	GL	SO	C	FST BT-O PIT	CS CS 2Y	CSJ-19 CSJ-19
RC-00580B	G5	Pressurizer Vent	1	B	1	GL	SO	C	FST BT-O PIT	CS CS 2Y	CSJ-19 CSJ-19
RC-00595	D3	PRT Nitrogen Sup	2	A	.75	DI	MA	O/C	BT-C SLT-1	QR RR	

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Safety Injection and Residual Heat Removal
DRAWING NO.: 110E035, Sheet 1

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SI-00830A	J10	SIS Accum Relief	2	C	1	SRV	SA	C	RVT	10Y	
SI-00830B	F10	SIS Accum Relief	2	C	1	SRV	SA	C	RVT	10Y	
SI-00834A	H7	SIS Accum Vent	2	B	1	GL	AO	C	BT-C BT-O FST PIT	CS CS CS 2Y	CSJ-30 CSJ-30 CSJ-30
SI-00834B	D7	SIS Accum Vent	2	B	1	GL	AO	C	BT-C BT-O FST PIT	CS CS CS 2Y	CSJ-30 CSJ-30 CSJ-30
SI-00841A	H10	SIS Accum Disch	2	B	10	GA	MO	O	BT-C PIT	CS 2Y	CSJ-20
SI-00841B	E10	SIS Accum Disch	2	B	10	GA	MO	O	BT-C PIT	CS 2Y	CSJ-20
SI-00842A	H12	SIS Accum Disch Ck	1	A/C	10	CK	SA	C	CV-PO CV-C CV-PO INSP SLT-4	E-CS QR RR SP QR	VRR-4 VRR-4 VRR-4 VRR-4 VRR-4
SI-00842B	E12	SIS Accum Disch Ck	1	A/C	10	CK	SA	C	CV-PO CV-C CV-PO INSP SLT-4	E-CS QR RR SP QR	VRR-4 VRR-4 VRR-4 VRR-4 VRR-4

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Safety Injection and Residual Heat Removal
DRAWING NO.: 110E035, Sheet 1

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SI-00845A	H12	SIS Cold Leg Inj	1	A/C	2	CK	SA	C	CV-O CV-C SLT-2	RR RR E-CS	VRR-2 VRR-2
SI-00845B	D12	SIS Cold Leg Inj	1	A/C	2	CK	SA	C	CV-O CV-C SLT-2	RR RR E-CS	VRR-2 VRR-2
SI-00845C	G12	SIS Core Deluge	1	A/C	2	CK	SA	C	CV-O CV-C SLT-2	RR RR E-CS	VRR-2 VRR-2
SI-00845D	D12	SIS Core Deluge	1	A/C	2	CK	SA	C	CV-O CV-C SLT-2	RR RR E-CS	VRR-2 VRR-2
SI-00845E	E12	SIS Cold Leg Inj	1	A/C	2	CK	SA	C	CV-O CV-C SLT-2	RR RR E-CS	VRR-2 VRR-2
SI-00845F	G12	SIS Cold Leg Inj	1	A/C	2	CK	SA	C	CV-O CV-C SLT-2	RR RR E-CS	VRR-2 VRR-2
SI-00846	J5	Accum Nit Supply	2	A	1	GL	AO	C	BT-C FST PIT SLT-1	QR QR 2Y RR	
SI-00850A	B7	Cont Sump Hyd Isol	2	B	10	GA	HO	C	BT-C BT-O PIT	QR QR 2Y	

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Safety Injection and Residual Heat Removal
DRAWING NO.: 110E035, Sheet 1

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SI-00850B	B10	Cont Sump Hyd Isol	2	B	10	GA	HO	C	BT-C BT-O PIT	QR QR 2Y	
SI-00851A	B5	Cont Sump Isol	2	B	10	GA	MO	C	BT-C BT-O PIT	QR QR 2Y	
SI-00851B	A5	Cont Sump Isol	2	B	10	GA	MO	C	BT-C BT-O PIT	QR QR 2Y	
SI-00852A	C11	RHR/LH Core Deluge	2	B	6	GA	MO	C	BT-O BT-C PIT	CS CS 2Y	CSJ-21 CSJ-21
SI-00852B	B11	RHR/LH Core Deluge	2	B	6	GA	MO	C	BT-O BT-C PIT	CS CS 2Y	CSJ-21 CSJ-21
SI-00853A	C12	RHR/LH Inj Check	1	A/C	6	CK	SA	C	CV-PO CV-C CV-O CV-C SLT-2	E-CS E-CS RR RR E-CS	VRR-3 VRR-3 VRR-3 VRR-3 VRR-22
SI-00853B	B12	RHR/LH Inj Check	1	A/C	6	CK	SA	C	CV-PO CV-C CV-O CV-C SLT-2	E-CS E-CS RR RR E-CS	VRR-3 VRR-3 VRR-3 VRR-3 VRR-22

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Safety Injection and Residual Heat Removal
DRAWING NO.: 110E035, Sheet 1

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SI-00853C	C13	RHR/Core Deluge	1	A/C	6	CK	SA	C	CV-PO CV-C CV-O CV-C SLT-2	E-CS E-CS RR RR E-CS	VRR-3 VRR-3 VRR-3 VRR-3 VRR-22
SI-00853D	B13	RHR/Core Deluge	1	A/C	6	CK	SA	C	CV-PO CV-C CV-O CV-C SLT-2	E-CS E-CS RR RR E-CS	VRR-3 VRR-3 VRR-3 VRR-3 VRR-22
SI-00861A	C8	RHR RX Ves Inj S/R	2	C	.75	SRV	SA	C	RVT	10Y	
SI-00866A	H5	SIS Pump Disch	2	B	4	GA	MO	O	BT-O BT-C PIT	QR QR 2Y	
SI-00866B	H5	SIS Pump Disch	2	B	4	GA	MO	O	BT-O BT-C PIT	QR QR 2Y	
SI-00867A	H13	SIS Cold Leg Inj Ck	1	A/C	10	CK	SA	C	CV-PO CV-C CV-PO CV-C INSP SLT-2	E-CS E-CS RR RR SP E-CS	VRR-4 VRR-4 VRR-4 VRR-4 VRR-4 VRR-22

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Safety Injection and Residual Heat Removal
DRAWING NO.: 110E035, Sheet 1

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SI-00867B	E13	SIS Cold Leg Inj ck	1	A/C	10	CK	SA	C	CV-PO CV-C CV-PO CV-C INSP SLT-2	E-CS E-CS RR RR SP E-CS	VRR-4 VRR-4 VRR-4 VRR-4 VRR-4 VRR-22
SI-00875A	F7	SIS Test Recirc Ck	2	C	.75	CK	SA	C	CV-O CV-C SLT-5	QR QR 2Y	
SI-00875B	F7	SIS Test Recirc Ck	2	C	.75	CK	SA	C	CV-O CV-C SLT-5	QR QR 2Y	
SI-00878A	D12	RX Vessel Safety Inj	2	B	2	GL	MO	C	BT-O BT-C PIT	QR QR 2Y	
SI-00878B	D12	SIS Loop Inj	2	B	2	GL	MO	O	BT-O BT-C PIT	CS CS 2Y	CSJ-23 CSJ-23
SI-00878C	G12	RX Vessel Safety Inj	2	B	2	GL	MO	C	BT-O BT-C PIT	QR QR 2Y	
SI-00878D	H12	SIS Loop Inj	2	B	2	GL	MO	O	BT-O BT-C PIT	CS CS 2Y	CSJ-23 CSJ-23
SI-00887	F6	Test Line S/R	2	C	.75	SRV	SA	C	RVT	10Y	

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Safety Injection and Residual Heat Removal
DRAWING NO.: 110E035, Sheet 1

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SI-00957	I6	N2 Supply Vent/Rel	2	A	1	GL	AO	C	BT-O FST SLT-1 PIT	CS CS RR 2Y	CSJ-30 CSJ-30

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Safety Injection and Residual Heat Removal
DRAWING NO.: 110E035, Sheet 2

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SI-00825A	H5	SIS Pump Suction	2	B	12	GA	MO	C	BT-O PIT	QR 2Y	
SI-00825B	H5	SIS Pump Suction	2	B	12	GA	MO	C	BT-O PIT	QR 2Y	
SI-00826B	J7	SIS Pump Rendunt Suct	2	B	8	GA	MO	C	BT-O BT-C PIT	QR QR 2Y	
SI-00826C	I7	SIS Pump Rendunt Suct	2	B	8	GA	MO	C	BT-O BT-C PIT	QR QR 2Y	
SI-00829A	F9	SI Pump Disch Cross-connect	2	A	4	GA	MA	C	SLT-6	2Y	Passive
SI-00829B	F9	SI Pump Disch Cross-connect	2	A	4	GA	MA	C	SLT-6	2Y	Passive
SI-00854A	E4	RHR Pump Suct Ck	2	A/C	10	CK	SA	C	CV-O CV-C SLT-6	QR QR 2Y	
SI-00854B	E4	RHR Pump Suct Ck	2	A/C	10	CK	SA	C	CV-O CV-C SLT-6	QR QR 2Y	
SI-00856A	E4	RHR Pump Suct	2	B	10	GA	MO	O	BT-C PIT	QR 2Y	
SI-00856B	E4	RHR PUMP Suct	2	B	10	GA	MO	O	BT-C PIT	QR 2Y	

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Safety Injection and Residual Heat Removal
DRAWING NO.: 110E035, Sheet 2

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SI-00857A	G8	RHR to SIS Pump Suct	2	B	6	GA	MA	C	BT-O	QR	
SI-00857B	G7	RHR to SIS Pump Suct	2	B	6	GA	MA	C	BT-O	QR	
SI-00889A	I10	SIS Pump Disch Ck	2	C	6	CK	SA	C	CV-O	QR	
SI-00889B	H10	SIS Pump Disch Ck	2	C	6	CK	SA	C	CV-O	QR	
SI-00891A	G9	SIS Pump Mini-rec Ck	2	C	2	CK	SA	C	CV-O	QR	VRR-37
SI-00891B	G9	SIS Pump Mini-rec Ck	2	C	2	CK	SA	C	CV-O	QR	VRR-37
SI-00895	H5	SIS Pump Mini-Rec Ck	2	C	2	CK	SA	C	CV-O	QR	
SI-00896A	I7	SIS Pump Suction	2	A	6	GA	MO	O	SLT-6 BT-C PIT	2Y QR 2Y	
SI-00896B	H7	SIS Pump Suction	2	A	6	GA	MO	O	SLT-6 BT-C PIT	2Y QR 2Y	
SI-00897A	I2	SIS Test Line Ret	2	A	2	GL	AO	O	BT-C FST SLT-6 PIT	CS CS 2Y 2Y	CSJ-36 CSJ-36

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Safety Injection and Residual Heat Removal
DRAWING NO.: 110E035, Sheet 2

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SI-00897B	H2	SIS Test Line Ret	2	A	2	GL	AO	O	BT-C FST SLT-6 PIT	CS CS 2Y 2Y	CSJ-36 CSJ-36

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Safety Injection and Residual Heat Removal
DRAWING NO.: 110E029, Sheet 1

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
RH-00710A	E4	RHR Pump Disch Ck	2	C	8	CK	SA	C	CV-O	QR	
RH-00710B	B4	RHR Pump Disch Ck	2	C	8	CK	SA	C	CV-O	QR	
RH-00706A	H6	RHR/RWST Isol	2	A	6	GA	MA	C	SLT-6	2Y	Passive
RH-00706B	H6	RHR/RWST Isol	2	A	6	GA	MA	C	SLT-6	2Y	Passive
RH-00624	G7	RHR HX Outlet	2	B	8	BTF	AO	O	PIT	2Y	Passive
RH-00625	G7	RHR HX Outlet	2	B	8	BTF	AO	O	PIT	2Y	Passive
RH-00626	G7	RHR HX Bypass	2	B	6	BTF	AO	C	PIT	2Y	Passive
RH-00700	B10	RHR Loop Isolation	1	A	10	GA	MO	C	BT-O BT-C PIT SLT-6	CS CS 2Y 2Y	CSJ-37 CSJ-37 Note 5
RH-00701	B9	RHR Loop Isolation	1	A	10	GA	MO	C	BT-O BT-C PIT SLT-6	CS CS 2Y 2Y	CSJ-37 CSJ-37 Note 5
RH-00704A	D7	RHR Pump Suction	2	B	8	GA	MA	C	BT-O BT-C	CS CS	CSJ-37 CSJ-37 Note 6
RH-00704B	B7	RHR Pump Suction	2	B	8	GA	MA	C	BT-O BT-C	CS CS	CSJ-37 CSJ-37 Note 6

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Safety Injection and Residual Heat Removal
DRAWING NO.: 110E029, Sheet 1

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
RH-00720	C10	RHR Return to RCS	1	A	10	GA	MO	C	BT-O BT-C PIT SLT-6	CS CS 2Y 2Y	CSJ-37 CSJ-37

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Service Air
DRAWING NO.: M-209, Sheet 2

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SA-00027	F4	Service Air Cont Sup	2	A	4	GA	MA	C	SLT-1	RR	Passive
SA-00017	F4	Service Air Cont Sup	2	A	4	GA	MA	C	SLT-1	RR	Passive

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Service Water
DRAWING NO.: M-207, Sheet 1

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SW-00112A	G7	SW TO AFW PP P-029	3	C	1	CK	SA	O	CV-PO INSP	QR RR	VRR-15 VRR-15
SW-02976	B8	Spray PP Room T/C	3	B	2	GL	SO	O	FST	QR	See Unit 1 H&V System

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Service Water
DRAWING NO.: M-2207, Sheet 1

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SW-02817	C6	WT Service Wtr Inlet	3	B	6	GA	MO	O	BT-C PIT	QR 2Y	
SW-02880	C5	Turb Hall Clrs In	3	B	6	GA	MO	O	BT-C PIT	CS 2Y	CSJ-27

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Service Water
DRAWING NO.: M-207, Sheet 4

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SW-00015A	G8	Cont Clr Supply Ck	3	C	8	CK	SA	O	CV-O	QR	
SW-00015B	G6	Cont Clr Supply Ck	3	C	8	CK	SA	O	CV-O	QR	
SW-00015C	G7	Cont Clr Supply Ck	3	C	8	CK	SA	O	CV-O	QR	
SW-00015D	G7	Cont Clr Supply Ck	3	C	8	CK	SA	O	CV-O	QR	
SW-02907	C8	Cont Clr Emerg Flow	3	B	12	GA	MO	C	BT-O PIT	QR 2Y	
SW-02908	C7	Cont Clr Emerg Flow	3	B	12	GA	MO	C	BT-O PIT	QR 2Y	
SW-02959	E8	Cont Clr Disch S/R	3	C	1	SRV	SA	C	RVT	10Y	
SW-02963	E6	Cont Clr Disch S/R	3	C	1	SRV	SA	C	RVT	10Y	
SW-02967	E7	Cont Clr Disch S/R	3	C	1	SRV	SA	C	RVT	10Y	
SW-02971	E6	Cont Clr Disch S/R	3	C	1	SRV	SA	C	RVT	10Y	
SW-04300	E5	Cavity Clr Ret S/R	3	C	1	SRV	SA	C	RVT	10Y	
SW-04301	E5	Cavity Clr Ret S/R	3	C	1	SRV	SA	C	RVT	10Y	

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Waste Disposal
DRAWING NO.: 684J971, Sheet 1

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SF-00816	C6	P-033 RWCP Suction	2	A	2	DI	MA	C	SLT-1	RR	VRR-23 Passive
WL-01003A	C6	RCDT Pump Suction	2	A	3	DI	AO	O/C	BT-C FST SLT-1 PIT	QR QR RR 2Y	VRR-23
WL-01003B	C6	RCDT Pump Suction	2	A	3	DI	AO	O/C	BT-C FST SLT-1 PIT	QR QR RR 2Y	VRR-23
WL-01698	C6	RCDT to El -19' Sump	2	A	2	DI	AO	C	BT-C FST SLT-1 PIT	QR QR RR 2Y	VRR-23
WL-01721	C6	RCDT Pumps Suct Con	2	A	3	DI	AO	O/C	BT-C FST SLT-1 PIT	QR QR RR 2Y	
WL-01723	C6	Containment Sump Dr	2	A	3	DI	AO	O/C	BT-C FST SLT-1 PIT	QR QR RR 2Y	VRR-23
WL-01728	C6	Containment Sump Dr	2	A	3	DI	AO	O/C	BT-C FST SLT-1 PIT	QR QR RR 2Y	VRR-23

APPENDIX E
VALVE PROGRAM TABLE
UNIT 2

SYSTEM: Waste Disposal
DRAWING NO.: 684J971, Sheet 1

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
WG-01786	B5	RCDT Vent	2	A	1	DI	AO	O	BT-C FST SLT-1 PIT	QR QR RR 2Y	
WG-01787	B5	RCDT Vent	2	A	1	DI	AO	O	BT-C FST SLT-1 PIT	QR QR RR 2Y	
WG-01788	B5	RCDT Sample	2	A	.75	DI	AO	O/C	BT-C FST SLT-1 PIT	QR QR RR 2Y	
WG-01789	B5	RCDT Sample	2	A	.75	DI	AO	O/C	BT-C FST SLT-1 PIT	QR QR RR 2Y	

NOTES

1. These valves and their respective test requirements are included in the IST Program for information and tracking purposes only. They do not necessarily meet the requirements for inclusion per IWV-1100, but are identified for testing per NRC Generic Letter 90-06. Thus, the tests specified may not necessarily satisfy the corresponding requirements of Subsection IWV or NRC Generic Letter 89-04.

2. Stroke testing of these valves is not required by code or regulation, but is performed for good engineering practice. These valves can only be opened when the associated unit is in cold shutdown, and thus would be considered passive if no stroke testing was performed.

3. If a PORV is isolated in accordance with Technical Specifications, the associated block valve will be exercised at cold shutdown.

4. Testing of this valve is not required by any code or regulation, but is included as a matter of good engineering practice.

5. The functional leak tightness of these valves is demonstrated by daily RCS leakage calculations. Additional leak rate testing is not required per IWV-3421.

6. These valves are operated, and the operation subsequently analyzed, routinely on a frequency which meets the requirements of IWV-3411 and IWV-3412(a). In accordance with IWV-3414, no additional testing is required.

RELIEF REQUEST VRR-1

COMPONENTS: Various, non component specific.

CATEGORY: Various.

FUNCTION: N/A.

SECTION XI REQUIREMENT:

If, for power operated valves, an increase in stroke time of 50% or more for valves with full stroke times less than or equal to 10 seconds is observed, the test frequency shall be increased to once each month until corrective action is taken, at which time the original test frequency shall be resumed. (IWV-3417)

BASIS FOR RELIEF:

The stroke time measurements taken during testing of fast acting valves (those less than 2 seconds) are subject to considerable variation due to conditions unrelated to the material condition of the valve (e.g. test conditions, operator reaction time, etc). In accordance with NRC Generic Letter (GL) 89-04, Position 6, an alternate method of evaluating stroking times is considered acceptable.

ALTERNATE TESTING:

The stroke time evaluation for those valves in the IST Program which are fast acting (those which have a nominal stroke time of less than 2 seconds) will not account for successive increases of measured stroke time per IWV-3417 with the change in test frequency as required. In lieu of this, the assigned maximum limiting value of stroke time will be established at two seconds. Upon exceeding the two second time limit, the valve will be declared inoperable and action taken in accordance with IWV-3417.

STATUS: Active. Relief granted by NRC SER dated April 17, 1992.

RELIEF REQUEST VRR-2

COMPONENTS: UNIT 1 (Drawing 110E017 Sh 1): SI-00845 A through F.
UNIT 2 (Drawing 110E035 Sh 1): SI-00845 A through F.

CATEGORY: A/C.

FUNCTION:

These valves open with differential pressure to provide flow paths from the safety injection (SI) pumps to the reactor coolant system (RCS) for emergency core cooling. They close to prevent backflow from the associated safety injection accumulators and from the low pressure safety injection system should portions of a train become faulted. In the normally closed position, they provide pressure isolation from the reactor coolant system.

SECTION XI REQUIREMENT:

Check valves shall be exercised at least once every 3 months, except as provided by IWV-3522. (IWV-3521)

BASIS FOR RELIEF:

Full stroke exercising of these valves would require operating a SI pump at maximum required accident condition flow and injecting into the RCS since no full flow recirculation path exists. During normal operation, the SI discharge pressure of 1500 psig is insufficient to overcome RCS pressure. During shutdown conditions, injection via the SI pumps is precluded by restrictions related to low temperature over pressurization (LTOP) concerns, as discussed in Technical Specification 15.3.15.B.

The lack of a recirculation path precludes partial stroking during operation and cold shutdown for valves SI-00845 C&D (Units 1&2).

These are simple check valves with no external means of position indication. Thus, the only practical means of verifying closure is by performing a leak test or backflow test. Such testing requires that the valve first be taken out of its safety position when it may be left undisturbed. This reduction in plant safety is not warranted. In addition, such testing occurs in radiation areas, thereby increasing personnel exposure.

ALTERNATE TESTING:

At each reactor refueling outage these valves will all be full stroke exercised to the open position.

Valve seat leakage testing will be performed in accordance with Technical Specification 15.3.16 (Event V Leakage Tests).

Valves SI-00845 A,B,E, and F (Units 1&2) will be partial stroked to the open position during any cold shutdown in which the leakage tests of Technical Specification 15.3.16 are required.

STATUS: Active. Relief granted with provisions by NRC SER dated April 17, 1992. Provisions called out in the SER were incorporated into this request with the issuance of IST Program Appendix F, Revision 3.

RELIEF REQUEST VRR-3

COMPONENTS: UNIT 1 (Drawing 110E017 Sh 1): SI-00853 A through D.
UNIT 2 (Drawing 110E035 Sh 1): SI-00853 A through D.

CATEGORY: A/C.

FUNCTION:

Valves 1&2 SI-00853 A&B open with differential pressure to provide flow paths from the low head safety injection pumps to the reactor coolant system (RCS) for emergency core cooling. Valves 1&2 SI-00853 C&D open with differential pressure to provide flow paths from the low and high head safety injection pumps to the RCS for emergency core cooling. In the closed position, they provide pressure isolation from the reactor coolant system.

SECTION XI REQUIREMENT:

Check valves shall be exercised at least once every 3 months, except as provided by IWV-3522. (IWV-3521)

BASIS FOR RELIEF:

Full or partial stroking during normal operation is not possible because neither the low or the high head safety injection pump discharge pressure is sufficient to overcome RCS pressure. Even if pump discharge pressures were adequate, any stoke testing would cause the injection of cold, borated water into the RCS, resulting in unacceptable thermal and power transients.

Stroke testing these valves during cold shutdowns is possible, but not desirable unless leak testing per Technical Specification 15.3.16 (Event V leak testing) is also scheduled. Leakage testing per Technical Specification 15.3.16 assures valve integrity, thus minimizing the possibility of an inter-system LOCA which bypasses containment. Exercising these valves during every cold shutdown may reduce the assurances that a valve is, in fact, properly seated as established via the Technical Specification 15.3.16.

ALTERNATE TESTING:

These valves will be full stroke exercised during pump full flow testing performed during refueling. In addition, they will be full stroke exercised during cold shutdown periods when performance of Technical Specification 15.3.16 leakage testing is required.

Seat leakage testing will be performed in accordance with Point Beach Technical Specification 15.3.16.

STATUS: Active. Relief granted by NRC SER dated April 17, 1992.

RELIEF REQUEST VRR-4

COMPONENTS: UNIT 1 (Drawing 110E017 Sh 1): SI-00867 A&B, SI-00842 A&B.
UNIT 2 (Drawing 110E035 Sh 1): SI-00867 A&B, SI-00842 A&B.

CATEGORY: A/C.

FUNCTION:

These valves open with differential pressure to provide flow paths from the safety injection (SI) pumps and SI accumulators to the reactor coolant system (RCS) cold legs during an accident. They are normally closed. In the closed position, they serve as RCS pressure isolation valves.

SECTION XI REQUIREMENT:

Check valves shall be exercised at least once every 3 months, except as provided by IWV-3522. (IWV-3521)

BASIS FOR RELIEF:

During normal operation, neither SI pump discharge pressure of 1500 psi nor SI accumulator pressure of 760 psig, is sufficient to overcome RCS pressure. Full or partial stroke testing is, therefore, not possible.

During cold shutdown, partial or full stroke testing via the use of SI pumps or SI accumulators is not permitted so as to prevent the possibility of a low-temperature over-pressurization event.

A full stroke test to the RCS could be possible during refueling when the reactor vessel head is removed, but the volume and flow rate required for the test could result in damage to the core internals. There is also the potential of forcing a nitrogen bubble into the RCS piping and refueling cavity resulting in possible safety implications, which makes this testing concept inadvisable.

ALTERNATE TESTING:

The following alternate testing will be performed:

1. At a minimum for these valves, partial open and shut stroke tests will be done at each refueling outage. In addition, partial open and shut stroke tests will be conducted at each cold shutdown which requires an Event V test. (See Technical Specification 15.3.16)

2. Seat leakage tests of SI-00867 A&B will be performed in accordance with Point Beach Technical Specification 15.3.16, "Reactor Coolant System Pressure Isolation Valve Leakage Tests."

3. Seat leakage tests of SI-00842 A&B will be performed quarterly coincident with SI pump tests. A seat leakage rate of 5 gpm or less will be considered acceptable.

4. Valves SI-00842A and SI-00867A will each be disassembled, inspected, and manually stroked once every six years, rotating the sequence of valves being inspected such that a different one is completed each time until all have been inspected and the sequence repeats. Should a failure be detected, the other valve for that unit shall be disassembled and proper operation verified prior to completion of that outage. The opposite unit's two valves will be disassembled and inspected during that unit's next scheduled refueling outage.

5. Valves SI-00842B and SI-00867B require a complete core off load in order to disassemble and inspect. One valve of the four will be disassembled, inspected, and manually stroked each outage in which a complete core off load is scheduled. Typically this will be done concurrently with reactor vessel inspections. The disassembly schedule will be arranged such that a different valve is disassembled, inspected, and manually stroked during each core off load and all valves are completed at least once every 120 months. Should a failure be detected, the other valve for that unit will be disassembled and proper operation verified prior to the completion of the outage.

6. In the inspections which result from the detection of a failure, should an additional failure be detected, all remaining six valves will be disassembled, inspected, and manually stroked. Valves associated with the unit in outage will be completed prior to the return of that unit to service, even if it requires an unscheduled core off load to be performed. Valves associated with the opposite unit will be completed during the next scheduled refueling outage, even if a complete core off load was not previously planned.

BASIS FOR EXTENDED INSPECTION INTERVAL:

The NRC, in Generic Letter (GL) 89-04, Attachment 1, Position 2, requested information to support extension of valve disassembly and inspection intervals of greater than once every six years. Within the last three years, each valve of the eight identified in this request has been disassembled, inspected, and manually stroked per the criteria in GL 89-04, Attachment 1, Position 2. This maintenance was performed in conjunction with retaining block stud replacement done in response to NRC Information Notice 88-05. To date, no degradation of valve operability or performance has been noted in any disassembly and inspection performed on these valves. The following table lists each specific valve, the individual maintenance work request (MWR) under which the inspection was performed, and the completion date:

UNIT 1

SI-00842A	MWR 872759	April 14, 1988
	MWR 890172	April 11, 1990
SI-00842B	MWR 890174	April 21, 1990
SI-00867A	MWR 872755	April 15, 1988
	MWR 890176	April 24, 1990
SI-00867B	MWR 890178	April 21, 1990

UNIT 2

SI-00842A	MWR 872760	October 18, 1987
	MWR 890173	October 05, 1989
SI-00842B	MWR 890175	November 04, 1989
SI-00867A	MWR 872753	October 20, 1987
	MWR 890177	October 05, 1989
SI-00867B	MWR 890179	November 03, 1989

The request to provide basis for extended inspection interval only applies to SI-00842B and SI-00867B, as these are the only valves which will go beyond the six-year period specified in GL 89-04, Attachment 1, Position 2. The maintenance history of all eight valves is provided, nevertheless, for completeness when attempting to show the trouble-free history of the valves in general.

Additional justification for the extended inspection interval may be found in the NRC Safety Evaluation Report (SER) on the In-Service Test Program at Point Beach dated April 17, 1992. The Technical Evaluation Report (TER), Section 3.14.3.4, attached to the SER states, "...it would be an extreme hardship to require the licensee to comply with the six-year inspection interval for the two valves which require the reactor to be defueled and drained in order to be tested (SI-00842B)."

The drawings referenced by this request will show that the conditions which must exist to permit the disassembly of SI-00842B must also exist to permit the disassembly of SI-00867B. Thus, the extended period for inspection should apply to both (four valves total, two per unit).

STATUS: Active. Relief granted with provisions by NRC SER dated April 17, 1992. Request revised to incorporate the necessary provisions and resubmitted to the NRC on July 30, 1992 (VPNPD-92-271/NRC/92-085). No NRC response has been received as of the date of issuance for IST Program Appendix F, Revision 3.

RELIEF REQUEST VRR-5

COMPONENTS: All valves with testing deferred to cold shutdown conditions, as listed in IST Program Appendix G, "Cold Shutdown Justifications."

CATEGORY: Various.

FUNCTION: N/A.

SECTION XI REQUIREMENT:

Valves shall be exercised to the position required to fulfill their function unless such operation is not practical during plant operation. If only limited operation is practical during plant operation, the valve shall be part-stroke exercised during plant operation and full-stroke exercised during cold shutdowns. Valves that cannot be exercised during plant operation shall be specifically identified by the Owner and shall be full-stroke exercised during cold shutdowns. Full-stroke exercising during cold shutdowns for all valves not full-stroke exercised during plant operation shall be on a frequency determined by the intervals between shutdowns as follows:

- For intervals of 3 months or longer -- exercise during each cold shutdown.

- For intervals of less than 3 months -- full-stroke exercise is not required unless 3 months have passed since the last shutdown exercise.

(IWV-3412 and IWV-3522)

BASIS FOR RELIEF:

In many instances, testing of all valves designated for testing during cold shutdown conditions cannot be completed due to the brevity of the outage. Extension of an outage solely to permit completion of valve testing which requires cold shutdown conditions represents an excessive burden to the licensee. This fact has been recognized in ASME OMa-1988, Part 10, Sections 4.2.1.2(g) and 4.3.2.2(g), which state:

> "Valve exercising shall commence within 48 hours of achieving cold shutdown, and continue until all testing is complete or the plant is ready to return to power. For extended outages, testing need not be commenced in 48 hours provided all valves required to be tested during cold shutdown will be tested prior to plant startup. However, it is not the intent of this Part to keep the plant in cold shutdown in order to complete cold shutdown testing."

ALTERNATE TESTING:

All valves with testing deferred to cold shutdown conditions, as listed in IST Program Appendix G, "Cold Shutdown Justifications," shall be tested under the provisions and at the frequencies specified in ASME OMa-1988, Part 10, Sections 4.2.1.2 and 4.3.2.2.

IST Program Appendix G contains only those valves which can be tested under any cold shutdown of sufficient length. Specific valves, or groups of valves, which require special plant conditions other than cold shutdown to facilitate testing are covered in specific relief requests other than relief request VRR-5.

STATUS: Active. Relief granted with exceptions by NRC SER dated April 17, 1992. Exceptions called out in the SER were removed from this request with the issuance of IST Program Appendix F, Revision 3.

RELIEF REQUEST VRR-6

COMPONENTS. UNIT 1 (Drawing 110E017 Sh 2): SI-00854 A&B.
UNIT 2 (Drawing 110E035 Sh 2): SI-00854 A&B.

CATEGORY: A/C.

FUNCTION:

These valves open with differential pressure to provide flow paths from the refueling water storage tank (RWST) to the suctions of the residual heat removal (RHR) pumps for low head safety injection (SI) into the reactor coolant system (RCS). During post-LOCA recirculation, these valves close to prevent sump water from returning to the RWST.

SECTION XI REQUIREMENT:

Check valves shall be exercised at least once every 3 months, except as provided by IWV-3522. (IWV-3521)

BASIS FOR RELIEF:

Valve stroking is not possible during normal operation because RHR pump discharge pressure is not sufficient to overcome RCS pressure. During cold shutdown periods, full stroke testing of these valves is not possible because the RCS does not contain a sufficient expansion volume and there is no return flow path to the RWST for recirculation.

ALTERNATE TESTING:

At least once during each reactor refueling, these valves will be full stroke exercised and their leak tight integrity verified by a seat leakage test.

STATUS: No longer in effect. Request withdrawn July 30, 1992, by VPNPD-92-271/NRC-92-085.

RELIEF REQUEST VRR-7

COMPONENTS: UNIT 1 (Drawing 110E017 Sh 2): SI-00889 A&B.
UNIT 2 (Drawing 110E035 Sh 2): SI-00889 A&B.

CATEGORY: C.

FUNCTION:

These valves open with differential pressure to provide flow paths from the safety injection (SI) pumps to the reactor coolant system (RCS) for emergency core cooling.

SECTION XI REQUIREMENT:

Check valves shall be exercised at least once every 3 months, except as provided by IWV-3522. (IWV-3521)

BASIS FOR RELIEF:

Full stroke exercising of these valves would require operating a SI pump at maximum required accident condition flow and injecting into the RCS since no full flow recirculation path exists. During normal operation, the SI discharge pressure of 1500 psig is insufficient to overcome RCS pressure. During shutdown conditions, injection via the SI pumps is precluded by restrictions related to low temperature over pressurization (LTOP) concerns, as discussed in Technical Specification 15.3.15.B.

ALTERNATE TESTING:

These valves will be partial stroke exercised each quarter.

Each valve will be full stroke exercised to the open position every reactor refueling outage.

STATUS: No longer in effect. Request withdrawn July 30, 1992, by VPNPD-92-271/NRC-92-085.

RELIEF REQUEST VRR-8

COMPONENTS: UNIT 1 (Drawing 110E017 Sh 3): SI-00858 A&B.
UNIT 2 (Drawing 110E035 Sh 3): SI-00858 A&B.

CATEGORY: C.

FUNCTION:

These valves open with differential pressure to provide flow paths from the refueling water storage tank (RWST) to the suctions of the containment spray pumps.

SECTION XI REQUIREMENT:

Check valves shall be exercised at least once every 3 months, except as provided by IWV-3522. (IWV-3521)

BASIS FOR RELIEF:

Full stroke exercising of these valves would require operating the containment spray pumps at maximum required accident condition flow and spraying into the containment building since no full flow recirculation path exists. This is obviously impractical and undesirable.

ALTERNATE TESTING:

These valves will be partial stroke exercised each quarter.

Each valve will be disassembled, inspected, and manually stroked every reactor refueling outage, in accordance with the provisions of GL 89-04, Attachment 1, Position 2.

STATUS: No longer in effect. Request withdrawn July 30, 1992, by VPNPD-92-271/NRC-92-085.

RELIEF REQUEST VRR-9

COMPONENTS: UNIT 1 (Drawing 110E017 Sh 3): SI-00862 A&B.
UNIT 2 (Drawing 110E035 Sh 3): SI-00862 A&B.

CATEGORY: A/C.

FUNCTION:

These valves open with differential pressure to provide flow paths from the refueling water storage tank (RWST) to the suctions of the containment spray pumps. In the closed position, these valves provide containment isolation.

SECTION XI REQUIREMENT:

Check valves shall be exercised at least once every 3 months, except as provided by IWV-3522. (IWV-3521)

BASIS FOR RELIEF:

Full or partial stroke exercising of these valves would require operating the containment spray pumps at maximum required accident condition flow and spraying into the containment building since no full flow recirculation path exists. This is obviously impractical and undesirable.

These are simple check valves with no external means of position indication. Thus, the only practical means of verifying closure is by performing a leak test or backflow test. Performing such tests of these valves involves considerable effort and system realignment such that routine testing during plant operation or cold shutdown is impractical.

ALTERNATE TESTING:

During reactor refueling outages, these valves will be Type C local leak rate tested in accordance with 10 CFR 50, Appendix J. Additionally, all valves will be disassembled, inspected, and manually stroke exercised each reactor refueling outage in accordance with GL 89-04, Attachment 1, Position 2.

STATUS: No longer in effect. Request withdrawn July 30, 1992, by VPNPD-92-271/NRC-92-085.

RELIEF REQUEST VRR-10

COMPONENTS: UNIT 1 (Drawing 110E018 Sh 2): CC-00755 A&B.
UNIT 2 (Drawing 110E029 Sh 2): CC-00755 A&B.

CATEGORY: A/C.

FUNCTION:

These valves open to provide flow paths to the reactor coolant pumps (RCPs), and close to provide containment isolation for the component cooling water (CCW) system in the event of an accident. Since the RCPs are not safety related components, only the function of these valves to stroke closed is safety related. Stroke testing in the open direction is not required by the Code.

SECTION XI REQUIREMENT:

Check valves shall be exercised at least once every 3 months, except as provided by IWV-3522. (IWV-3521)

BASIS FOR RELIEF:

These are simple check valves with no external means of position indication. Thus, the only practical means of verifying closure is by performing a leak test or backflow test. During plant operation, such testing would require securing the RCPs, which is not possible. Performing such tests of these valves involves considerable effort and system realignment such that routine testing during cold shutdown is impractical.

ALTERNATE TESTING:

During reactor refueling outages, these valves will be exercised to the closed position during Type C local leak rate tests required by 10 CFR 50, Appendix J.

STATUS: Active. Relief granted by NRC SER dated April 17, 1992.

RELIEF REQUEST VRR-11

COMPONENTS: UNIT 1 (Drawing 541F091 Sh 2): RC-00528.
UNIT 2 (Drawing 541F445 Sh 2): RC-00528.

CATEGORY: A/C.

FUNCTION:

These valves open to provide flow paths for nitrogen supply to the pressurizer relief tanks (PRTs), and close to provide containment isolation for the nitrogen system in the event of an accident. Since the PRTs are not safety related components, only the function of these valves to stroke closed is safety related. Stroke testing in the open direction is not required by the Code.

SECTION XI REQUIREMENT:

Check valves shall be exercised at least once every 3 months, except as provided by IWV-3522. (IWV-3521)

BASIS FOR RELIEF:

Because nitrogen make up to the PRTs is seldom required, these valves are normally closed. These are simple check valves with no external means of position indication. Thus, the only practical means of verifying closure is by performing a leak test or backflow test. Performing such tests of these valves involves considerable effort and system realignment such that routine testing during plant operation or cold shutdown is impractical.

ALTERNATE TESTING:

During reactor refueling outages, these valves will be exercised to the closed position during Type C local leak rate tests required by 10 CFR 50, Appendix J.

STATUS: Active. Relief granted by NRC SER dated April 17, 1992.

RELIEF REQUEST VRR-12

COMPONENTS: UNIT 1 (Drawing 684J741): CV-00304 C&D.
UNIT 2 (Drawing 685J175): CV-00304 C&D.

CATEGORY: A/C.

FUNCTION:

These valves open to provide flow paths for seal water injection to the reactor coolant pumps (RCPs), and close to provide containment isolation for the chemical and volume control (CVCS) system in the event of an accident. Since the RCPs are not safety related components, only the function of these valves to stroke closed is safety related. Stroke testing in the open direction is not required by the Code.

SECTION XI REQUIREMENT:

Check valves shall be exercised at least once every 3 months, except as provided by IWV-3522. (IWV-3521)

BASIS FOR RELIEF:

These valves are normally open. They are simple check valves with no external means of position indication. Thus, the only practical means of verifying closure is by performing a leak test or backflow test. During plant operation, such testing would require securing the RCPs, which is not possible. Performing such tests of these valves involves considerable effort and system realignment such that routine testing during cold shutdown is impractical.

ALTERNATE TESTING:

During reactor refueling outages, these valves will be exercised to the closed position during Type C local leak rate tests required by 10 CFR 50, Appendix J.

STATUS: Active. Relief granted by NRC SER dated April 17, 1992.

RELIEF REQUEST VRR-13

COMPONENTS: UNIT 1 (Drawing 684J741): CV-00370.
UNIT 2 (Drawing 685J175): CV-00370.

CATEGORY: A/C.

FUNCTION:

These valves open to provide flow paths for charging water into the reactor coolant system (RCS) from the charging pumps. They close to provide containment isolation for the chemical and volume control (CVCS) system in the event of an accident.

SECTION XI REQUIREMENT:

Check valves shall be exercised at least once every 3 months, except as provided by IWV-3522. (IWV-3521)

BASIS FOR RELIEF:

These valves are normally open. They are simple check valves with no external means of position indication. Thus, the only practical means of verifying closure is by performing a leak test or backflow test. During plant operation, such testing would require securing the charging pumps, which is not prudent and could result in a plant trip. Performing such tests of these valves involves considerable effort and system realignment such that routine testing during cold shutdown is impractical.

ALTERNATE TESTING:

During reactor refueling outages, these valves will be exercised to the closed position during Type C local leak rate tests required by 10 CFR 50, Appendix J. Stroke exercising in the open direction will be performed quarterly during normal plant operation.

STATUS: Active. Relief granted by NRC SER dated April 17, 1992.

RELIEF REQUEST VRR-14

COMPONENTS:	UNIT 1 (Drawing M-209 Sh 5):	IA-00644 and IA-00645.
	UNIT 1 (Drawing M-209 Sh 11):	IA-01280 and IA-01281.
	UNIT 2 (Drawing M-209 Sh 7):	IA-00876 and IA-00877.
	UNIT 2 (Drawing M-209 Sh 11):	IA-01401 and IA-01402.

CATEGORY: A/C.

FUNCTION:

These valves open to provide air to inflate purge valve boot seals. They close on a loss of supply air pressure to maintain the boot seals inflated.

SECTION XI REQUIREMENTS:

Valve seat leakage may be determined by one of the following:

a) draining the line, closing the valve, bringing one side to test pressure, and measuring leakage through a downstream telltale connection; or

b) measuring the feed rate required to maintain pressure between two valves or between two seats of a gate valve, provided the total apparent leak rate is charged to the valve or gate valve seat being tested, and that the conditions required by IWV-3423 are satisfied.

(IWV-3424)

BASIS FOR RELIEF:

There are other acceptable techniques available which can be utilized to determine leakage rates through valves. ASME OMa-1988, Part 10, Section 4.2.2.3(c)(3), allows determination of valve leakage by measuring pressure decay in a test volume, provided the total apparent leakage rate is charged to the valve, valve combination, or gate valve seat being tested.

ALTERNATE TESTING:

Leakage testing of these valves will be accomplished by measurement of pressure decay in the test volume, as discussed in ASME OMa-1988, Part 10, Section 4.2.2.3(c)(3). All leakage noted will be assigned to the particular valve being tested. Differential pressure will be applied in the same direction as when the valve is performing its safety function.

STATUS: Active. Relief granted by NRC SER dated April 17, 1992.

RELIEF REQUEST VRR-15

COMPONENTS: UNIT 1 (Drawing M-207 Sh 1): SW-00135A.
UNIT 2 (Drawing M-207 Sh 1): SW-00112A.

CATEGORY: C.

FUNCTION:

These valves open to provide flow paths to the steam driven auxiliary feedwater pumps (1&2 P-029) for bearing cooling water.

SECTION XI REQUIREMENT:

Check valves shall be exercised to the position required to fulfill their function. Confirmation that the disk moves away from the seat shall be by visual observation, by electric signal, by observation of substantially free flow through the valve, or by other positive means. (IWV-3522)

If valve exercising is performed using flow through the valve as the means to verify that the disk has moved away from its seat, there must be quantitative measurement of flow which confirms that "maximum required accident condition flow" has passed through the valve. Any flow rate less than this is considered a partial stroke exercise. (GL 89-04, Attachment 1, Position 1)

BASIS FOR RELIEF:

There is no practical means of quantitatively measuring flow through these check valves. In accordance with GL 89-04, Attachment 1, Position 2, an acceptable alternative to exercising check valves with flow is a program of valve disassembly, inspection, and manual exercising to verify disk movement.

ALTERNATE TESTING:

During quarterly auxiliary feedwater pump testing, these valves will be exercised (partial stroke as defined by GL 89-04, Attachment 1, Position 1) and pump temperatures monitored.

During each reactor refueling outage, the valve associated with the unit undergoing refueling will be disassembled, inspected, and manually stroked. The program of valve disassembly, inspection, and manual exercising will meet all requirements called out in GL 89-04, Attachment 1, Position 2.

STATUS: Active. Relief granted with provisions by NRC SER dated April 17, 1992. Provisions called out in the SER were incorporated into this request with the issuance of IST Program Appendix F, Revision 3.

RELIEF REQUEST VRR-16

COMPONENTS: UNIT 1 (Drawing M-215 Sh 2): RM-03200AA.
UNIT 2 (Drawing M-2215 Sh 2): RM-03200AA.

CATEGORY: A/C.

FUNCTION:

These valves open to provide a return flow path to the containment from the containment atmospheric monitoring system. They close to provide containment isolation. Only the function of these valves to stroke closed is safety related. Stroke testing in the open direction is not required by the Code.

SECTION XI REQUIREMENT:

Check valves shall be exercised at least once every 3 months, except as provided by IWV-3522. (IWV-3521)

BASIS FOR RELIEF:

During normal plant operation, gases from a continuous sampling system return sample flow to the containment through these lines/valves. To test these valves during operation or cold shutdown, it would be necessary to discharge potentially radioactive gases to the environment. There is no mechanism to partial stroke these valves.

ALTERNATE TESTING:

During reactor refueling outages, these valves will be exercised to the closed position during Type C local leak rate tests required by 10 CFR 50, Appendix J.

STATUS: Active. Relief granted by NRC SER dated April 17, 1992.

RELIEF REQUEST VRR-17

COMPONENTS: NON UNIT SPECIFIC (Drawing M-209 Sh 12): DA-03057 A&B.
DA-03058 A&B.

CATEGORY: B.

FUNCTION:

These valves operate to supply starting air on demand to the emergency diesel generator (EDG) air starting motors. They isolate air to the motors after startup.

SECTION XI REQUIREMENT:

If, for power operated valves, an increase in stroke time of 50% or more for valves with full stroke times less than or equal to 10 seconds is observed, the test frequency shall be increased to once each month until corrective action is taken, at which time the original test frequency shall be resumed. (IWV-3417)

The stroke time of all power operated valves shall be measured to the nearest second, for stroke times 10 seconds or less, or 10% of the specified limiting stroke time for full-stroke times longer than 10 seconds, whenever such a valve is full-stroke tested.
(IWV-3413)

BASIS FOR RELIEF:

These are enclosed air-pilot operated valves with no remote or local position indication, and where the valve design prohibits visual observation of valve operation or position. Thus, stroke time measurements are not possible. Failure of a valve to operate properly would result in unacceptable start and operation of the associated EDG.

ALTERNATE TESTING:

Valve stroking will be performed monthly in conjunction with the associated EDG start testing. Valve stroking parameters will be considered acceptable if the diesel generator start is acceptable. If a diesel generator fails to start, at no fault of the respective valve(s), the valve stroking parameters will be considered acceptable, which will be proven with the restart following EDG corrective action.

Air motor banks will be alternated by procedure to ensure all valves are tested at least once each quarter. Maximum limiting diesel start time used to verify proper valve operation shall be as discussed in the Point Beach FSAR, Section 8.2.3.

STATUS: Active. Relief granted with provisions by NRC SER dated April 17, 1992. Provisions called out in the SER were incorporated into this request with the issuance of IST Program Appendix F, Revision 3.

RELIEF REQUEST VRR-18

COMPONENTS: UNIT 1 (Drawing 541F091 Sh 2): RC-00529.
UNIT 2 (Drawing 541F445 Sh 2): RC-00529.

CATEGORY: A/C.

FUNCTION:

These valves open to provide flow paths for makeup water supply to the pressurizer relief tanks (PRTs), and close to provide containment isolation in the event of an accident. Since the PRTs are not safety related components, only the function of these valves to stroke closed is safety related. Stroke testing in the open direction is not required by the Code.

SECTION XI REQUIREMENT:

Check valves shall be exercised at least once every 3 months, except as provided by IWV-3522. (IWV-3521)

BASIS FOR RELIEF:

These valves are normally closed. They are simple check valves with no external means of position indication. Thus, the only practical means of verifying closure is by performing a leak test or backflow test. Performing such tests of these valves involves considerable effort and system realignment such that routine testing during plant operation or cold shutdown is impractical.

ALTERNATE TESTING:

During reactor refueling outages, these valves will be exercised to the closed position during Type C local leak rate tests required by 10 CFR 50, Appendix J.

STATUS: Active. Relief granted by NRC SER dated April 17, 1992.

RELIEF REQUEST VRR-19

COMPONENTS:	UNIT 1 (Drawing 684J741):	CV-00300 A&B.
	UNIT 2 (Drawing 685J175):	CV-00300 A&B.

CATEGORY: A.

FUNCTION:

These manual valves are normally in a throttled open position to provide seal water to the reactor coolant pumps (RCPs) during pump operation. They may be closed to provide containment isolation at the direction of plant operators. Since the RCPs are not safety related components, only the function of these valves to stroke closed is safety related. Stroke testing in the open direction is not required by the Code.

SECTION XI REQUIREMENT:

Category A and B valves shall be exercised at least once every 3 months, except as provided by IWV-3412(a), IWV-3415, and IWV-3416. (IWV-3411)

BASIS FOR RELIEF:

Exercising these valves during RCP operation would result in significant damage to the pumps. During cold shutdown periods, it is customary to maintain the RCPs in operation unless plant conditions require them to be secured. Thus, requiring the exercising of these valves would result in a considerable operational burden. Note that these small manual valves are highly reliable with respect to their capability to close and exercising during refueling outages will adequately demonstrate their operability.

ALTERNATE TESTING:

During reactor refueling outages, these valves will be exercised to the closed position during Type C local leak rate tests required by 10 CFR 50, Appendix J.

STATUS: No longer in effect. Request withdrawn March 02, 1993, by VPNPD-93-054/NRC-93-031.

RELIEF REQUEST VRR-20

COMPONENTS: UNIT 1 (Drawing M-201 Sh 1): MS-02090.
UNIT 2 (Drawing M-2201 Sh 1): MS-02090.

CATEGORY: A.

FUNCTION:

These valves open upon start of the associated auxiliary feedwater pump to provide cooling water to the turbine bearings.

SECTION XI REQUIREMENT:

If, for power operated valves, an increase in stroke time of 50% or more for valves with full stroke times less than or equal to 10 seconds is observed, the test frequency shall be increased to once each month until corrective action is taken, at which time the original test frequency shall be resumed. (IWV-3417)

The stroke time of all power operated valves shall be measured to the nearest second, for stroke times 10 seconds or less, or 10% of the specified limiting stroke time for full-stroke times longer than 10 seconds, whenever such a valve is full-stroke tested.
(IWV-3413)

BASIS FOR RELIEF:

These are enclosed solenoid operated valves with no remote or local position indication, and where the valve design prohibits visual observation of valve operation or position. Thus, stroke time measurements are not possible. Failure of a valve to operate properly would result in a lack of cooling water pressure at the bearing cooling water inlet.

ALTERNATE TESTING:

These valves will be exercised in conjunction with testing of the associated auxiliary feedwater pump. Proper operation of the valves will be determined by observing pump bearing cooling water pressure and bearing temperatures.

STATUS: No longer in effect. Request withdrawn March 02, 1993, by VPNPD-93-054/NRC-93-031.

RELIEF REQUEST VRR-21

COMPONENTS:	UNIT 1 (Drawing M-202 Sh 2):	CS-00466 AA&BB. CS-00476 AA&BB.
	UNIT 2 (Drawing M-2202 Sh 2):	CS-00466 AA&BB. CS-00476 AA&BB.

CATEGORY: A/C.

FUNCTION:

The main feedwater line to each steam generator has two, normally open, in line, series check valves. The function of these valves is to close upon reversal of flow to ensure that auxiliary feedwater flow is unimpaired to at least one of the two steam generators while main feedwater is not available. The series check valves also prevent simultaneous blowdown of both steam generators in the event of a main feed pipe failure.

SECTION XI REQUIREMENT:

Check valves shall be exercised at least once every 3 months, except as provided by IWV-3522. (IWV-3521)

Valves that are normally open during plant operation and whose function is to prevent reversed flow shall be tested in a manner that proves that the disk travels to the seat promptly on cessation or reversal of flow. Confirmation that the disk is on its seat shall be by visual observation, by an electrical signal initiated by a position indicating device, by observation of pressure indications in the system, or by other positive means. (IWV-3522)

Category A valves shall be leak tested, except that valves which function in the course of plant operation in a manner that demonstrates functionally adequate seat tightness need not be leak tested. In such cases, the valve record shall provide the basis for the conclusion that operational observations constitute satisfactory demonstration. (IWV-3421)

BASIS FOR RELIEF:

The main feed line to each steam generator consists of two series check valves. The Point Beach FSAR makes no assumptions that require both series check valves to function. There are no position indicators on these valves to verify disk position, nor are there any pressure taps between them to enable individual leak rate testing. It is physically impossible, given the present plant configuration, to verify individual valve closure. Closure and seat tightness of at least one of the two series check valves can be verified by measuring the differential pressure across, or the leakage past, the combination of both valves. Since the valves in series are considered to be redundant, testing both valves as a single unit is adequate to ensure that the safety function of the valve combination is verified and maintained.

Prompt seating of each valve on cessation or reversal of flow cannot be verified at the instant of closure since no direct indication of valve disk position is available.

Valve testing can only be conducted during cold shutdowns, since flow of main feedwater to the steam generators must be secured in order to perform the tests.

ALTERNATE TESTING:

A valve exercise test of each series combination of main feedwater check valves will be conducted during cold shutdowns, in accordance with the provisions of IWV-3412(a) and IWV-3522 that address the exercising of valves which have had testing deferred to cold shutdown conditions. At least one of the series valves will be verified closed after flow is secured by measuring the differential pressure across, or the leakage past, the two valves in series.

Leak rate testing to satisfy Category A requirements will meet the criteria outlined in IWV-3420, except that the two valves in series shall be treated as though they were a single component.

Additionally, once every 10 years, each main feedwater check valve shall be opened and inspected. The split body construction of valves 1&2 CS-00466 AA and 1&2 CS-00476 AA limits access to the valve internals, and permits inspection only through use of a boroscope. Complete disassembly of these valves is not practical since it would require the movement of piping and the cutting of large pipe support structures. Valves 1&2 CS-00466 BB and 1&2 CS-00476 BB are constructed with no such limitations.

STATUS: Active. Interim relief granted with provisions for a period of one year by NRC SER dated April 17, 1992. Request revised to incorporate the necessary provisions and address regulatory concerns in an effort to obtain unconditional relief. The revised request was resubmitted to the NRC (VPNPD-93-054/NRC-93-031) on March 02, 1993. No NRC response has been received as of the date of issuance for IST Program Appendix F, Revision 3.

RELIEF REQUEST VRR-22

COMPONENTS: UNIT 1 (Drawing 110E017 Sh 1): SI-00853 A through D.
SI-00867 A&B.
UNIT 2 (Drawing 110E035 Sh 1): SI-00853 A through D.
SI-00867 A&B.

CATEGORY: A/C.

FUNCTION:

These check valves open to provide for high and low pressure safety injection (SI) into the reactor coolant system (RCS). Each of these valves is designated as a pressure isolation valve (PIV) and provides isolation for safeguards systems from RCS pressure when closed.

SECTION XI REQUIREMENT:

For valves NPS 6 and larger, if a leakage rate exceeds the rate determined by the previous test by an amount that reduces the margin between measured leakage rate and the maximum permissible rate by 50% or greater, the test frequency shall be doubled; the tests shall be scheduled to coincide with a cold shutdown until corrective action is taken, at which time the original test frequency shall be resumed. If tests show a leakage rate increasing with time, and a projection based on three or more tests indicates that the leakage rate of the next scheduled test will exceed the maximum permissible leakage rate by greater than 10%, the valve shall be replaced or repaired. (IWV-3427)

BASIS FOR RELIEF:

Leak testing of these valves is primarily for the purpose of confirming their capability of preventing over pressurization and catastrophic failure of the SI piping and components. In this regard, special leakage acceptance criteria has been established and included in Point Beach Technical Specification 15.3.16. Satisfying both Technical Specification 15.3.16 and the Code acceptance criteria is not warranted and would be confusing.

ALTERNATE TESTING:

Leakage rate acceptance criteria for these valves shall be in accordance with Technical Specification 15.3.16.

STATUS: Active. Relief granted by NRC SER dated April 17, 1992.

RELIEF REQUEST VRR-23

COMPONENTS: Containment Isolation Valves per Table VRR-23-1

CATEGORY: A or A/C

FUNCTION: These valves are closed to provide containment isolation.

SECTION XI REQUIREMENT:

Category A valves shall be leak tested, except that valves which function in the course of plant operation in a manner that demonstrates functionally adequate seat tightness need not be tested. In such cases, the valve record shall provide the basis for the conclusion that operational observations constitute satisfactory demonstration. Valve seat leakage shall be determined per IWV-3424 and analyzed per IWV-3426.
(IWV-3421, IWV-3424, IWV-3426, and NRC GL 89-04, Attachment 1, Position 10)

BASIS FOR RELIEF:

Due to the configuration of system piping and components, in many cases individual leakage rate tests are impractical or impossible. In these cases, it is customary to perform tests of valves in parallel. This concept of testing and evaluation is consistent with the intent of 10 CFR 50, Appendix J, and Section XI, IWV-3424(b), which permits leakage testing by measurement of feed rate required to maintain pressure between two valves. This method of testing is valid as long as the leakage measured is charged entirely to each valve being tested.

In practice, the leakage rate limit assigned to a set of valves tested in parallel is never greater than the leakage rate limit which would be assigned to the most limiting valve in the set if it were to be tested alone. Hence, the practice of leakage rate testing valves in parallel is at least as conservative as the leakage rate testing required per Section XI. Additionally, when leakage rates exceed the limit specified for a set of valves, testing will be done to determine individual valve leakage rates wherever possible to facilitate corrective maintenance efforts.

This method of testing valves in parallel saves time, manpower resources, and radiation exposure and is a safe and viable alternative to leakage rate testing each valve individually.

ALTERNATE TESTING:

In those cases where testing individual valves is impractical or impossible, valves will be leak rate tested simultaneously in multiple valve arrangements. A maximum permissible leakage rate will be applied to each combination of valves; and in no case will this limit exceed the limit which would be applied to the most limiting valve in the set if it were to be tested individually. If the limit for a set of valves tested in parallel should be exceeded, the test lineup will be modified wherever possible to determine individual valve leakage rates.

STATUS: Active. Relief granted for only part of those valves listed in Table VRR-23-1, and denied for the remainder by NRC SER dated April 17, 1992. Request revised to address regulatory concerns and resubmitted to the NRC on July 30, 1992 (VPNPD-92-271/NRC/92-085) in attempt to gain full relief for all valves listed. No NRC response has been received as of the date of issuance for IST Program Appendix F, Revision 3.

TABLE VRR-23-1

SYSTEM	VALVES	
Auxiliary Steam	HV-00632 (Unit 1)	HV-00633 (Unit 1)
	HV-00808 (Unit 1)	HV-00809 (Unit 1)
	HV-00818 (Unit 1)	HV-00263 (Unit 2)
	HV-00286 (Unit 2)	HV-00287 (Unit 2)
	HV-00636 (Unit 2)	HV-00637 (Unit 2)
Chemical & Volume Control	CV-00323B (Units 1&2)	
	CV-00384B (Units 1&2)	
Component Cooling Water	CC-00755 A&B (Units 1&2)	
	CC-00759 A&B (Units 1&2)	
Containment Spray	SI-00862 A&B&G&H (Units 1&2)	
	SI-00864 A&B (Units 1&2)	
	SI-00868 A&B (Units 1&2)	
Heating & Ventilation	VNPSE-03212 (Units 1&2)	
	VNPSE-03213 (Units 1&2)	
	VNPSE-03244 (Units 1&2)	
	VNPSE-03245 (Units 1&2)	
Instrument Air	IA-01182 (Unit 1)	IA-01184 (Unit 1)
	IA-01314 (Unit 2)	IA-01316 (Unit 2)
Post-Accident Containment Vent/Monitoring	H2-V-04 (Units 1&2)	H2-V-05 (Units 1&2)
	H2-V-06 (Units 1&2)	H2-V-07 (Units 1&2)
	H2-V-12 (Units 1&2)	H2-V-13 (Units 1&2)
	H2-V-19 (Units 1&2)	H2-V-20 (Units 1&2)
	H2-V-22 (Units 1&2)	H2-V-23 (Units 1&2)
Waste Disposal	SF-00816 (Units 1&2)	WL-01698 (Units 1&2)
	WL-01723 (Units 1&2)	WL-01728 (Units 1&2)
	WL-01003 A&B (Units 1&2)	

RELIEF REQUEST VRR-24

COMPONENTS: UNIT 1 (Drawing 684J741): CV-00351.
UNIT 2 (Drawing 685J175): CV-00351.

CATEGORY: C.

FUNCTION:

These valves open to provide a flow path for emergency reactor coolant system (RCS) boration from the discharge of the boric acid transfer pumps to the suctions of the charging pumps.

SECTION XI REQUIREMENT:

Check valves shall be exercised at least once every 3 months, except as provided by IWV-3522. (IWV-3521)

BASIS FOR RELIEF:

Stroke testing these valves in the open direction requires the introduction of highly concentrated boric acid solution from the boric acid makeup tanks to the suctions of the charging pumps. This results in the addition of an excessive amount of boron to the RCS which will adversely affect plant power, potentially causing a reactor trip. During cold shutdowns of short duration, the introduction of excessive amounts of boron into the RCS complicates the task of maintaining proper plant chemistry and creates difficulties with subsequent startup, especially later in core life.

In addition to the adverse effects on primary plant chemistry, pumping high concentrations of boric acid through the emergency boration line can cause reactor coolant pump (RCP) seal failure. The RCP seal water supply lines are not heat traced. Crystallization of concentrated boric acid in the RCP seal injection filters will occur and cause a loss of RCP seal water. Consequently, it is only possible to perform stroke testing on 1&2 CV-00351 when reactor coolant pumps are secured and the associated RCP seal water lines are isolated. Crystallization of boric acid may also occur in instrumentation sensing lines as concentrated boric acid is pumped into the chemical and volume control (CVCS) system for the purpose of stroke testing 1&2 CV-00351.

The steps necessary to establish plant conditions to permit the testing of 1&2 CV-00351, and those which are required to recover from that testing, are sufficient to preclude the testing of the valves during cold shutdowns in which there is no reactor refueling. Extending a cold shutdown period for the sole purpose of providing the necessary time to allow for the test and recovery from test conditions is excessively burdensome to the licensee.

BASIS FOR RELIEF (CONTINUED):

Point Beach operates on an annual refueling cycle for each unit, and non refueling cold shutdowns between cycles are rare. Deferral of testing for 1&2 CV-00351 to refueling outages will test each valve on an annual basis and is in keeping with ASME OMa-1988, Part 10, Section 4.3.2.2(e). Testing during annual refueling outages provides adequate assurance of the ability of these valves to perform their safety function.

ALTERNATE TESTING:

These valves will be full stroke exercised to the open position during reactor refueling outages.

STATUS: Active. This request is an open item as evaluated by the NRC SER dated April 17, 1992. Request revised to address regulatory concerns in an effort to obtain unconditional relief. The revised request was resubmitted to the NRC on March 02, 1993 (VPNPD-93-054/NRC-93-031). No NRC response has been received as of the date of issuance for IST Program Appendix F, Revision 3.

RELIEF REQUEST VRR-25

COMPONENTS: NON UNIT SPECIFIC (Drawing M-209 Sh 12): DA-06316 A&B.
DA-06317 A&B.
DA-06318 A&B.
DA-06319 A&B.
DA-00125.
DA-00126.
DA-00225.
DA-00226.

CATEGORY: B and C.

FUNCTION:

These valves operate as required to supply starting air and to sequence starting operations of the emergency diesel generators (EDGs).

SECTION XI REQUIREMENT:

The stroke time of all power operated valves shall be measured to the nearest second, for stroke times 10 seconds or less, or 10% of the specified limiting stroke time for full-stroke times longer than 10 seconds, whenever such a valve is full-stroke tested.
(IWV-3413)

Check valves shall be exercised to the position required to fulfill their function. Confirmation that the disk moves away from the seat shall be by visual observation, by electric signal, by observation of substantially free flow through the valve, or by other positive means. (IWV-3522)

If valve exercising is performed using flow through the valve as the means to verify that the disk has moved away from its seat, there must be quantitative measurement of flow which confirms that "maximum required accident condition flow" has passed through the valve. Any flow rate less than this is considered a partial stroke exercise. (GL 89-04, Attachment 1, Position 1)

BASIS FOR RELIEF:

These valves are integral (skid mounted) components to the diesel air start system for each emergency diesel generator and have no valve position indication mechanism. As such, there are no practical methods for measuring stroke times or flow rates through individual valves. If a valve were to fail to stroke as required, this fact would be reflected in an unacceptable starting time and/or performance of the respective EDG.

ALTERNATE TESTING:

Valve stroking will be performed monthly in conjunction with the associated EDG start testing. Stroke times for Category B valves will not be measured. Flow rates through check valves will not be measured. Valve stroking parameters will be considered acceptable if the diesel generator start is acceptable. If a diesel generator fails to start, at no fault of the respective valve(s), the valve stroking parameters will be considered acceptable, which will be proven with the restart following EDG corrective action.

Air motor banks will be alternated by procedure to ensure all valves are tested at least once each quarter. Maximum limiting diesel start time used to verify proper valve operation shall be as discussed in the Point Beach FSAR, Section 8.2.3.

STATUS: Active. Relief granted with provisions by NRC SER dated April 17, 1992. Provisions called out in the SER were incorporated into this request with the issuance of IST Program Appendix F, Revision 3.

RELIEF REQUEST VRR-26

COMPONENTS: UNIT 1 (Drawing 684J741): BS-00333 A&B.
UNIT 2 (Drawing 685J175): BS-00333 A&B.

CATEGORY: C.

FUNCTION:

These valves open to provide a flow path from the boric acid transfer pumps to the emergency boration header and close to prevent recirculation through an idle pump.

SECTION XI REQUIREMENT:

Check valves shall be exercised at least once every 3 months, except as provided by IWV-3522. (IWV-3521)

BASIS FOR RELIEF:

Full stroke testing of these valves requires operating the boric acid transfer pumps at or near rated flow and verifying full accident flow through each valve. This can be performed during plant operation, however there is no instrumentation available in the test loop by which flow can be measured.

Flow through individual valves can be measured by pumping into the charging pump suction header and measuring charging flow using installed instrumentation. This, however, requires the introduction of highly concentrated boric acid solution from the boric acid makeup tanks to the suctions of the charging pumps. This results in the addition of an excessive amount of boron to the reactor coolant system (RCS) which will adversely affect plant power, potentially causing a reactor trip. During cold shutdowns of short duration, the introduction of excessive amounts of boron into the RCS complicates the task of maintaining proper plant chemistry and creates difficulties with subsequent startup, especially later in core life. In addition, there is no flow rate instrumentation installed in this flow path.

ALTERNATE TESTING:

Each valve will be partial stroke exercised quarterly. During boric acid transfer pump testing performed each reactor refueling outage, system flow rates will be measured to verify full stroke of these valves.

STATUS: No longer in effect. Request withdrawn March 02, 1993, by VPNPD-93-054/NRC-93-031.

RELIEF REQUEST VRR-27

COMPONENTS: UNIT 1 (Drawing 110E017 Sh 2): SI-00891 A&B.
UNIT 2 (Drawing 110E035 Sh 2): SI-00891 A&B.

CATEGORY: C.

FUNCTION:

These valves open to provide flow paths from the safety injection (SI) pumps to the refueling water storage tank (RWST) to provide for minimum flow through the respective pumps in the event they are operating under low or no flow conditions.

SECTION XI REQUIREMENT:

Check valves shall be exercised at least once every 3 months, except as provided by IWV-3522. (IWV-3521)

Check valves shall be exercised to the position required to fulfill their function. Confirmation that the disk moves away from the seat shall be by visual observation, by electric signal, by observation of substantially free flow through the valve, or by other positive means. (IWV-3522)

If valve exercising is performed using flow through the valve as the means to verify that the disk has moved away from its seat, there must be quantitative measurement of flow which confirms that "maximum required accident condition flow" has passed through the valve. Any flow rate less than this is considered a partial stroke exercise. (GL 89-04, Attachment 1, Position 1)

BASIS FOR RELIEF:

There is no flow rate instrumentation available to verify valve full stroke exercising as required by GL 89-04, Attachment 1, Position 1. These valves have no means of local or remote position indication.

ALTERNATE TESTING:

During quarterly pump testing, each of these valves will be partial stroked exercised via recirculation through the minimum flow test circuits with no flow measurements.

As an alternative to full stroke exercising, these valves shall be disassembled, inspected, and manually stroke exercised in accordance with the provisions outlined in GL 89-04, Attachment 1, Position 2.

STATUS: No longer in effect. Request withdrawn March 02, 1993, by VPNPD-93-054/NRC-93-031.

RELIEF REQUEST VRR-28

COMPONENTS:	UNIT 1 (Drawing M-217):	AF-04002.
	UNIT 2 (Drawing M-217):	AF-04002.
	COMMON (Drawing M-217):	AF-04007 and AF-04014.

CATEGORY: B.

FUNCTION:

These air operated valves open to ensure minimum recirculation flow from the auxiliary feedwater pumps to prevent pump damage. These valves automatically shut in response to increases in main line flow, such that they are fully shut when pump damage due to insufficient flow is no longer a concern.

SECTION XI REQUIREMENT:

The stroke time of all power operated valves shall be measured to the nearest second, for stroke times 10 seconds or less, or 10% of the specified limiting stroke time for full-stroke times longer than 10 seconds, whenever such a valve is full-stroke tested.
(IWV-3413)

BASIS FOR RELIEF:

These are control valves. They respond to discharge flow and may end up in some throttled position. As control valves, they may be exempt from testing per IWV-1200. They do provide an important function, nonetheless. They are required to shut when sufficiently large main line flows are achieved to ensure full pump capacity is available to meet accident requirements. The appropriate acceptance criteria for these valves is to assure that they respond properly to flow.

ALTERNATE TESTING:

These valves will be verified to close when sufficiently large main line flows are achieved. This will be performed on a cold shutdown frequency because large main line flow rates of cold feedwater during operation produce unacceptable thermal stresses on feedwater system piping.

STATUS: No longer in effect. Request withdrawn March 02, 1993, by VPNPD-93-054/NRC-93-031.

RELIEF REQUEST VRR-29

COMPONENTS: UNITS 1&2 : Containment Isolation Valves (CIVs), greater than or equal to 6 inches NPS, that are Type C Local Leak Rate Tested (LLRT) under 10 CFR 50, Appendix J.

CATEGORY: A and A/C.

FUNCTION:

Each of these valves is designated as a containment isolation valve (CIV), and provides for the integrity of the primary containment in case of an accident.

SECTION XI REQUIREMENT:

For valves NPS 6 and larger, if a leakage rate exceeds the rate determined by the previous test by an amount that reduces the margin between measured leakage rate and the maximum permissible rate by 50% or greater, the test frequency shall be doubled; the tests shall be scheduled to coincide with a cold shutdown until corrective action is taken, at which time the original test frequency shall be resumed. If tests show a leakage rate increasing with time, and a projection based on three or more tests indicates that the leakage rate of the next scheduled test will exceed the maximum permissible leakage rate by greater than 10%, the valve shall be replaced or repaired. (IWV-3427)

BASIS FOR RELIEF:

The usefulness of applying this requirement to these valves does not justify the burden of compliance. This stance is supported by GL 89-04, Attachment 1, Position 10.

ALTERNATE TESTING:

Leak rate test results for these valves will be evaluated per IWV-3426 and IWV-3427(a). The requirements of IWV-3427(b) will not be applied.

STATUS: Active. Relief granted by NRC SER dated April 17, 1992.

RELIEF REQUEST VRR-30

COMPONENTS: UNIT 1 (Drawing 110E018 Sh 2): CC-00767.
UNIT 2 (Drawing 110E029 Sh 2): CC-00767.

CATEGORY: A/C.

FUNCTION:

These valves open to provide flow paths for cooling water to the excess letdown heat exchangers, and close to provide containment isolation for the component cooling water (CCW) system in the event of an accident. Since the excess letdown heat exchangers are not safety related components, only the function of these valves to stroke closed is safety related. Stroke testing in the open direction is not required by the Code.

SECTION XI REQUIREMENT:

Check valves shall be exercised at least once every 3 months, except as provided by IWV-3522. (IWV-3521)

BASIS FOR RELIEF:

These are simple check valves with no external means of position indication. Thus, the only practical means of verifying closure is by performing a leak test or backflow test. Performing such tests of these valves involves considerable effort and system realignment such that routine testing during plant operation or cold shutdown is impractical.

ALTERNATE TESTING:

During reactor refueling outages, these valves will be exercised to the closed position during Type C local leak rate tests required by 10 CFR 50, Appendix J.

STATUS: Active. Relief granted by NRC SER dated April 17, 1992.

RELIEF REQUEST VRR-31

COMPONENTS: NON UNIT SPECIFIC (Drawing M-214 Sh 2): HV-00898A, HV-00900A, HV-00914A, HV-00916A.

CATEGORY: C.

FUNCTION:

These valves open with differential pressure to provide flow paths from the control room and cable spreading room chill water pumps to various cooler units. Each closes to prevent recirculation flow through an idle pump.

SECTION XI REQUIREMENT:

Check valves shall be exercised at least once every 3 months, except as provided by IWV-3522. (IWV-3521)

Check valves shall be exercised to the position required to fulfill their function. Confirmation that the disk moves away from the seat shall be by visual observation, by electric signal, by observation of substantially free flow through the valve, or by other positive means. (IWV-3522)

If valve exercising is performed using flow through the valve as the means to verify that the disk has moved away from its seat, there must be quantitative measurement of flow which confirms that "maximum required accident condition flow" has passed through the valve. Any flow rate less than this is considered a partial stroke exercise. (GL 89-04, Attachment 1, Position 1)

BASIS FOR RELIEF:

There is no flow rate instrumentation available to verify valve full stroke exercising as required by GL 89-04, Attachment 1, Position 1. These valves have no means of local or remote position indication.

ALTERNATE TESTING:

During quarterly pump testing, each of these valves will be partial stroked exercised with no flow measurements.

As an alternative to full stroke exercising, these valves shall be disassembled, inspected, and manually stroke exercised in accordance with the provisions outlined in GL 89-04, Attachment 1, Position 2.

STATUS: No longer in effect. Request withdrawn March 02, 1993, by VPNPD-93-054/NRC-93-031.

RELIEF REQUEST VRR-32

COMPONENTS:
UNIT 1 (Drawing M-209 Sh 11): IA-01206 and IA-01209.
UNIT 1 (Drawing M-209 Sh 11): IA-01605 and IA-01606.
UNIT 2 (Drawing M-209 Sh 11): IA-01335 and IA-01338.
UNIT 2 (Drawing M-209 Sh 11): IA-01652 and IA-01653.

CATEGORY: A/C.

FUNCTION:

These valves open with differential pressure to provide flow paths for operating air from the plant instrument air system to the reactor coolant system (RCS) power operated relief valves (PORVs). In the event of a loss of air pressure in the instrument air system, these valves close to prevent diversion of the nitrogen gas backup that provides for PORV operation.

SECTION XI REQUIREMENTS:

Valve seat leakage may be determined by one of the following:

a) draining the line, closing the valve, bringing one side to test pressure, and measuring leakage through a downstream telltale connection; or

b) measuring the feed rate required to maintain pressure between two valves or between two seats of a gate valve, provided the total apparent leak rate is charged to the valve or gate valve seat being tested, and that the conditions required by IWV-3423 are satisfied.

(IWV-3424)

BASIS FOR RELIEF:

Plant configuration for these valves is such that two valves are installed in series with no test connection in the common piping between them that could be used to test the valves individually. The function of closure and isolation can be accomplished with only one valve. Thus, if either valve has acceptable leak tight integrity, the system remains functional. The testing of two series valves in combination adequately demonstrates the ability of the system to function.

Note that these valves are included in the testing program for information and tracking purposes in response to NRC Generic Letter (GL) 90-06. They do not strictly meet the requirements of IWV-1100 for inclusion within the IST Program.

ALTERNATE TESTING:

These valves will be leak tested in combination, such that the measured leak rate will be assigned to the combination as though it were a single valve.

STATUS: No longer in effect. Request withdrawn March 02, 1993, by VPNPD-93-054/NRC-93-031.

RELIEF REQUEST VRR-33

COMPONENTS: NON UNIT SPECIFIC (Drawing M-219): FO-03940 and FO-03941.

CATEGORY: A/C.

FUNCTION:

These valves operate to control fuel oil transfer pump discharge pressure and provide a flow path to prevent pump or piping damage after pump start before the day tank inlet valves are fully opened. After flow is established to the day tanks, these valves close to prevent diversion of fuel oil back to the emergency fuel oil tank.

SECTION XI REQUIREMENT:

Valves shall be exercised to the position required to fulfill their function unless such operation is not practical during plant operation. If only limited operation is practical during plant operation, the valve shall be part-stroke exercised during plant operation and full-stroke exercised during cold shutdowns. Valves that cannot be exercised during plant operation shall be specifically identified by the Owner and shall be full-stroke exercised during cold shutdowns. Full-stroke exercising during cold shutdowns for all valves not full-stroke exercised during plant operation shall be on a frequency determined by the intervals between shutdowns as follows:

- For intervals of 3 months or longer -- exercise during each cold shutdown.

- For intervals of less than 3 months -- full-stroke exercise is not required unless 3 months have passed since the last shutdown exercise.

(IWV-3412)

BASIS FOR RELIEF:

Since these are essentially back pressure regulating valves requiring no outside source of power to operate, they are exempt from stroke time measurements required by IWV-3412. However, it is not practical to perform a full stroke test of these valves since position of the valve disk cannot be determined visually or by any other positive means.

Considering the type and function of these valves, an operational/functional test is the most effective manner of ascertaining the condition of the valves and proving their ability to perform their function.

ALTERNATE TESTING:

These valves will be subjected to an operational test to verify proper operation with respect to limiting and controlling fuel oil transfer pump discharge pressure. During these tests, system operating parameters will be monitored to determine valve operability.

STATUS: No longer in effect. Request withdrawn March 02, 1993, by VPNPD-93-054/NRC-93-031.

RELIEF REQUEST VRR-34

COMPONENTS: UNIT 1 (Drawing M-224): H2-V-04, H2-V-05, H2-V-12, H2-V-13, H2-V 19, H2-V-20, H2-V-22, and H2-V-23.
UNIT 2 (Drawing M-224): H2-V-04, H2-V-05, H2-V-12, H2-V-13, H2-V 19, H2-V-20, H2-V-22, and H2-V-23.

CATEGORY: A.

SECTION XI REQUIREMENTS:

Category A and B valves shall be exercised at least once every 3 months, except as provided by IWV-3412(a), IWV-3415, and IWV-3416. (IWV-3411)

BASIS FOR RELIEF:

These are manual valves which must remain shut at all times except to perform stroke testing. They ar diaphragm type valves. Thus, they do not have a disk which can separate from the stem. Frequent flexing of diaphragms is a common failure mechanism. These valves use stainless steel in their construction, and are susceptible to galling. Frequent stroking of these valves could lead to inoperability rather than proving operability.

ALTERNATE TESTING:

These valves shall be exercised once per year.

STATUS: No longer in effect. Request withdrawn July 30, 1992, by VPNPD-92-271/NRC-92-085.

RELIEF REQUEST VRR-35

COMPONENTS:

UNIT 1 (Drawing M-201 Sh 1): MS-02005, MS-02006, MS-02007, MS-02008, MS-02010, MS-02011, MS-02012, and MS-02013.
UNIT 2 (Drawing M-2201 Sh 1): MS-02005, MS-02006, MS-02007, MS-02008, MS-02010, MS-02011, MS-02012, and MS-02013.

UNIT 1 (Drawing 541F091 Sh 1&2): RC-00434 and RC-00435.
UNIT 2 (Drawing 541F445 Sh 1&2): RC-00434 and RC-00435.

CATEGORY: C.

FUNCTION:

Main steam safety valves provide steam generator over pressure protection and an additional heat sink for core cooling. Pressurizer safety valves provide over pressure protection for the reactor coolant system (RCS).

SECTION XI REQUIREMENT:

For safety valves, corrective action and additional testing shall be in accordance with the requirements of ASME/ANSI OM-1-1981, for valves not meeting acceptance criteria of ASME/ANSI OM-1-1981. (IWV-3513)

For safety valves, refurbished equipment shall be subjected to tests performed in the following sequence:

(a) visual examination
(b) seat tightness determination
(c) set pressure determination
(d) determination of compliance with the Owner's seat tightness criteria
(e) determination of electrical characteristics and operation of bellows alarm switch
(f) verification of the integrity of balancing devices on balanced valves
(g) determination of operation and electrical characteristics of position indicators

(ASME/ANSI OM-1-1981, 7.3.1.1 and 7.4.1.1)

BASIS FOR RELIEF:

Experience has shown that, for the valves in question, there exists an absolute maximum change in relief set pressure following a "Jack-and-Lap" procedure where not more than 0.002 inch of seating material is removed. Transmittals from Crosby Valve and Gage Company (Crosby) show the calculated maximum change in valve set pressure resulting from a 0.002 inch Jack-and-Lap is 2.3 psig (0.2%) for main steam safety valves, and 9.0 psig (0.36%) for pressurizer safety valves. Subsequent telephone conversations with Crosby confirmed that they have performed actual tests to substantiate their calculations. The percentage change in nameplate set pressure in each case is well below the 3% change acceptance criteria called out in ASME/ANSI OM-1-1981, 1.3.3.4. Thus, the change in set pressure due to the Jack-and-Lap procedure is within the tolerance specified by ASME/ANSI OM-1-1981.

ALTERNATE TESTING:

Following Jack-and-Lap procedures on either a main steam safety valve or pressurizer safety valve in which the maximum total amount of seating material removed is not more than 0.002 inch, no set pressure test will be performed prior to returning the valve to service provided:

1) The calculated maximum change in set pressure is subtracted from the valve set pressure obtained prior to the Jack-and-Lap procedures. This is 0.2% for main steam safety valve setpoints and 0.36% for pressurizer safety valve setpoints.

2) The newly calculated valve set pressure is within the 3% tolerance of valve nameplate set pressure called out in ASME/ANSI OM-1-1981.

If the above conditions are not met, the valve will have its set pressure retested prior to return to service as called out in ASME/ANSI OM-1-1981, 7.3.1.1.

In every case, all other testing aside from the set pressure determination will be performed as called out in ASME/ANSI OM-1-1981.

STATUS: Awaiting NRC response. Submitted to the NRC July 29, 1992, by VPNPD-92-266/NRC-92-082.

RELIEF REQUEST PRR-22/VRR-36

COMPONENTS: Non Component Specific.

CATEGORY: Not Applicable.

SECTION XI REQUIREMENT:

This Subsection provides the rules and requirements for inservice testing to assess operational readiness of certain Class 1, 2, and 3 valves (and their actuating and position indicating systems) in light-water cooled nuclear power plants, which are required to perform a specific function in shutting down a reactor to the cold shutdown condition in mitigating the consequences of an accident or in providing over pressure protection.
(IWV-1100)

ALTERNATE TESTING:

The Point Beach Inservice Test (IST) Program includes components (pumps and valves) which are required to perform a specific function in shutting down a reactor to the cold shutdown condition only where those components are utilized under accident conditions. Components which support achievement of cold shutdown under non accident conditions, and which are not required to achieve cold shutdown following an accident, are not required to be included in the Point Beach IST Program.

BASIS FOR RELIEF:

The Point Beach Final Safety Analysis Report (FSAR), Chapter 14, "Safety Analysis," evaluates the safety aspects of either Unit 1 or Unit 2 of the plant, demonstrates that either or both units can be operated safely, and shows that exposures from credible accidents do not exceed the guidelines of 10 CFR 100. Given that these evaluations demonstrate that the Point Beach units can be operated safely and do not go beyond the plant achieving a hot shutdown condition in any scenario, specifically requiring the inservice testing of components which are required to achieve cold shutdown under non accident conditions is unwarranted, and does not provide any increase in the level of Program quality or safety to the public. Consequently, relief may be granted under either 10 CFR 50.55a(a)(3)(i), 10 CFR 50.55a(a)(3)(ii), or both.

STATUS: Awaiting NRC response. Submitted to the NRC November 16, 1992, by VPNPD-92-354/NRC-92-134.

RELIEF REQUEST VRR-37

COMPONENTS: UNIT 1 (Drawing 110E017 Sh 2): SI-00891 A&B.
UNIT 2 (Drawing 110E035 Sh 2): SI-00891 A&B.

CATEGORY: C.

FUNCTION:

These valves open to provide flow paths from the safety injection (SI) pumps to the refueling water storage tank (RWST) to provide for minimum flow through the respective pumps in the event they are operating against reactor coolant system (RCS) pressures higher than pump shutoff head.

Flow through the mini-recirc lines is limited by the individual line orifices, and is small enough to make the effects of bypass flow through an idle pump negligible with respect to the running pump's ability to fulfill its safety function. During long term recirculation, there is no path back from the RCS that would allow reverse flow through an idle pump. As a result, these check valves do not have a safety related closure function.

SECTION XI REQUIREMENT:

Check valves shall be exercised to the position required to fulfill their function. Confirmation that the disk moves away from the seat shall be by visual observation, by electric signal, by observation of substantially free flow through the valve, or by other positive means. (IWV-3522)

If valve exercising is performed using flow through the valve as the means to verify that the disk has moved away from its seat, there must be quantitative measurement of flow which confirms that "maximum required accident condition flow" has passed through the valve. Any flow rate less than this is considered a partial stroke exercise.
(GL 89-04, Attachment 1, Position 1)

BASIS FOR RELIEF:

There is no installed flow rate instrumentation available to verify valve full stroke exercising as required by GL 89-04, Attachment 1, Position 1. These valves have no means of local or remote position indication. Disassembly and inspection in accordance with GL 89-04, Attachment 1, Position 2, risks destroying the valve due to galling of the body to bonnet threads.

BASIS FOR RELIEF (CONTINUED):

Use of portable instruments provides a suitable means to measure flow rate in the lines containing these valves and enables testing per GL 89-04, Attachment 1, Position 1. Although the portable instruments lack the accuracy and repeatability of permanently installed instrumentation, these difficulties can be overcome.

Use of portable instruments can be sufficiently proceduralized to ensure reasonable repeatability and accuracy in measurements. Inaccuracies associated with equipment can be applied conservatively when establishing check valve flow rate acceptance criteria, such that even with the worst possible instrument accuracy, the check valve must pass the "maximum required accident condition flow" of GL 89-04, Attachment 1, Position 1, if the acceptance criteria is met.

Note that these portable flow rate instruments are only being used for the full stroke exercising of check valves 1&2 SI-00891 A&B, and not for gathering any data related to pump performance. Consequently, the strict Code requirements pertaining to instruments used in pump testing (IWP-4000) do not apply in this instance, and relief is not required from these sections of the Code.

ALTERNATE TESTING:

During quarterly pump testing, each of these valves will be full stroked exercised via recirculation through the minimum flow test circuits. Quantitative measurement of flow which confirms that "maximum required accident condition flow" has passed through the valve shall be accomplished using portable flow rate instruments. The manner of use of these instruments shall be sufficiently proceduralized to ensure maximum repeatability and accuracy of the measurements. Acceptance criteria established based on flow rate will take portable instrument accuracy into account in such a manner so as to ensure that the check valve must have passed the "maximum required accident condition flow" of GL 89-04, Attachment 1, Position 1, if the acceptance criteria is met.

STATUS: Active. Request submitted to the NRC for initial review and approval on March 02, 1993 (VPNPD-93-054/NRC-93-031). No NRC response as of the date of issue for Appendix F, Revision 3.

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COLD SHUTDOWN JUSTIFICATIONS

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COLD SHUTDOWN JUSTIFICATIONS

CSJ NO.	COMPONENT
31	1&2AF-4002, AF-4007, AF-4014
32	SW-00307, SW-00315, SW-00322 and SW-00360
33	1&2H2-V-04, 1&2H2-V-05, 1&2H2-V-12, 1&2H2-V-13, 1&2H2-V-19, 1&2H2-V-20, 1&2H2-V-22, and 1&2H2-V-23
34	1&2CV-00112B and 1&2CV-00357
35	CCW-LW-63 and CCW-LW-64
36	1&2SI-00897 A&B
37	1&2RH-00700, 1&2RH-00701, 1&2RH-00704 A&B, and 1&2RH-00720

This appendix is intended to provide the justification for performing valve exercising only at cold shutdown conditions as permitted by IWV-3412(a), IWV-3415, and IWV-3522. Specifically included in this category are the following:

* Valves whose failure in a position other than the normal position could jeopardize the immediate safety of the plant or system components;

* Valves whose failure in a position other than the normal position could cause all trains of a safeguard system to be inoperable;

* Valves whose failure in a position other than the normal position might cause a transient that could lead to a plant trip;

* When test requirements or conditions are precluded by system operation or access.

Cold shutdown testing is performed under conditions outlined in Relief Request VRR-5.

Although several cold shutdown justifications are no longer in effect, all are included for reference. Justifications which are no longer active are so indicated.

CSJ-1 Auxiliary Feedwater Supply Check Valves

UNIT 1 (Drawing M-217): AF-00100, AF-00101, AF-00102, AF-00104, AF-00106, and AF-00107
UNIT 2 (Drawing M-217): AF-00100, AF-00101, AF-00103, AF-00105, AF-00106, and AF-00107

Full-stroke exercising of these valves would require operation of a related auxiliary feedwater pump and injection of cold water (85°F) into the hot (450°F) feedwater supply piping. This, in turn, would result in unacceptable thermal stress on the feedwater system piping components.

STATUS: Active.

CSJ-2 Auxiliary Feedwater Pump Discharge Check Valves

UNITS 1&2 (Drawing M-217): AF-00108
COMMON (Drawing M-217): AF-00109 and AF-00110

Full-stroke exercising of these valves would require operation of the related auxiliary feedwater pump and injection of cold water (85°F) into the hot (450°F) feedwater supply piping. This, in turn, would result in unacceptable thermal stress on the feedwater system piping components.

STATUS: Active.

CSJ-3 Auxiliary Feedwater Pump Suction Check Valves

UNITS 1&2 (Drawing M-217): AF-00111
COMMON (Drawing M-217): AF-00112 and AF-00113

Full-stroke exercising of these valves would require operation of a related auxiliary feedwater pump and injection of cold water (85°F) into the hot (450°F) feedwater supply piping. This, in turn, would result in unacceptable thermal stress on the feedwater system piping components. These valves will be partial stroke tested during quarterly testing via the minimum flow recirculation lines.

STATUS: Active.

CSJ-4 Volume Control Tank Outlet Valves

UNIT 1 (Drawing 684J741): CV-00112C
UNIT 2 (Drawing 685J175): CV-00112C

Closing this valve during operation of a charging pump would isolate the VCT from the charging pump suction header damaging any operating charging pumps and interrupting the flow of charging water flow to the RCS with the potential of RCS transient and plant trip.

STATUS: Active.

CSJ-5 Charging Flow Control Valves

UNIT 1 (Drawing 684J741): CV-00142
UNIT 2 (Drawing 685J175): CV-00142

Closing this valve during operation isolates the charging pumps from the RCS and would result in undesirable pressurizer level transients with the potential for a plant trip and potential damage to the charging pumps. If the valve failed to reopen, then a expedited plant shutdown would be required.

STATUS: Active.

CSJ-6 RCP Seal Water Return Valves

UNIT 1 (Drawing 684J741): CV-00313 and CV-00313A
UNIT 2 (Drawing 685J175): CV-00313 and CV-00313A

Exercising these valves to the closed position when the associated reactor coolant pump (RCP) in operation would interrupt flow from the respective RCP seals and result in pump damage.

STATUS: Active.

CSJ-7 Letdown Line Isolation Valves

UNIT 1 (Drawing 684J741): CV-00371 and CV-00371A
UNIT 2 (Drawing 685J175): CV-00371 and CV-00371A

Closing either of these valves during operation isolates the letdown line from the RCS and would result in undesirable pressurizer level transients with the potential for a plant trip. If a valve failed to reopen, then a expedited plant shutdown would be required.

STATUS: Active.

CSJ-8 Charging Line HCV Outlet Valves

UNIT 1 (Drawing 684J741): CV-00384B
UNIT 2 (Drawing 685J175): CV-00384B

Closing these valves during operation will interrupt flow of charging water flow to the RCS with the potential of RCS transient and plant trip.

STATUS: No longer active as of 12/01/92.

CSJ-9 Containment Cooling Water Supply Valves

UNIT 1 (Drawing 110E018 Sh 2): CC-00719
UNIT 2 (Drawing 110E029 Sh 2): CC-00719

This valve is required to be open to ensure continued cooling of reactor coolant pump auxiliary components. Closing this valve during plant operation would result in severe RCP damage leading to plant operation in a potentially unsafe mode and a subsequent plant shutdown.

STATUS: Active.

CSJ-10 RCP Cooling Water Supply/Return Isolation Valves

UNIT 1 (Drawing 110E018 Sh 2): CC-00754 A&B and CC-00759 A&B
UNIT 2 (Drawing 110E029 Sh 2): CC-00754 A&B and CC-00759 A&B

These valves are required to be open to ensure continued cooling of reactor coolant pump auxiliary components. Closing any of these valves during plant operation would result in severe RCP damage leading to plant operation in a potentially unsafe mode and a subsequent plant shutdown.

STATUS: Active.

CSJ-11 Sodium Hydroxide (NaOH) Supply Valves

UNIT 1 (Drawing 110E017 Sh 3): SI-00836 A&B
UNIT 2 (Drawing 110E035 Sh 3): SI-00836 A&B

In order to exercise these valves without contaminating the containment spray piping with sodium hydroxide would require isolating the NaOH supply from the containment spray eductors. This, in turn, renders the sodium hydroxide additive subsystem for both trains of containment spray inoperative during the test period.

STATUS: No longer active as of 12/01/92.

CSJ-12 Containment Purge Supply and Exhaust Valves

UNIT 1 (Drawing M-215 Sh1): VNPSE-03212, VNPSE-03213, VNPSE-03244, and VNPSE-03245
UNIT 2 (Drawing M-2215 Sh1): VNPSE-03212, VNPSE-03213, VNPSE-03244, and VNPSE-03245

These valves are administratively maintained locked in the closed position at all times when the plant is operating and are considered to be "out-of-service." They are only opened during cold shutdown and refueling outages. Due to the large size of these valves and the potential for damage as a result of frequent cycling, it is not prudent to operate them more than is absolutely necessary.

STATUS: Active.

CSJ-13 Containment Purge Valve Air Supply Check Valves

UNIT 1 (Drawing M-209 Sh 11): IA-01280 and IA-01281
UNIT 1 (Drawing M-209 Sh 5): IA-00644 and IA-00645
UNIT 2 (Drawing M-209 Sh 11): IA-01401 and IA-01402
UNIT 2 (Drawing M-209 Sh 7): IA-00876 and IA-00877

These valves and other valves required for exercising are located within the containment building and, as such, are not readily accessible during plant operation at power.

STATUS: Active.

CSJ-14 Main Steamline Atmospheric Steam Dump Valves (Power-Operated Reliefs)

UNIT 1 (Drawing M-201 Sh 1): MS-02015 and MS-02016
UNIT 2 (Drawing M-2201 Sh 1): MS-02015 and MS-02016

Opening these valves during plant operation at power will result in an undesirable power transient with the potential for exceeding a reactor core power limit or a plant trip.

STATUS: No longer active as of 05/28/91.

CSJ-15 Main Steam Isolation Valves

UNIT 1 (Drawing M-201 Sh 1): MS-02017 and MS-02018
UNIT 2 (Drawing M-2201 Sh 1): MS-02017 and MS-02018

During plant operation at power, closure of either of these valves is not practical as it would require isolating a steam generator which would result in a severe transient on the steam and reactor systems and a reactor plant trip.

STATUS: Active.

CSJ-16 Main Steam Non-Return Valves

UNIT 1 (Drawing M-201 Sh 1): MS-02017A and MS-02018A
UNIT 2 (Drawing M-2201 Sh 1): MS-02017A and MS-02018A

Exercising these valves requires isolating the associated steam generator which is not practical without a plant shutdown, and, if performed during plant operation, will result in a plant trip. These valves can be partially stroked when going to hot shutdown or during any significant load reduction.

STATUS: Active.

CSJ-17 MSIV Air Pilot Valves

UNIT 1 (Drawing M-201 Sh 1): MS-02017A-S, MS-02017B-S, MS-02017C-S, MS-02017D-S, MS-02018A-S, MS-02018B-S, MS-02018C-S, MS-02018D-S
UNIT 2 (Drawing M-2201 Sh 1): MS-02017A-S, MS-02017B-S, MS-02017C-S, MS-02017D-S, MS-02018A-S, MS-02018B-S, MS-02018C-S, MS-02018D-S

Testing of these valves can result in closure of the related MSIV. During plant operation at power, closure of any MSIV is not desirable as it would cause isolation of a steam generator which would result in a severe transient on the steam and reactor systems and a reactor plant trip.

STATUS: Active.

CSJ-18 Power-Operated Relief Valves (PORVs)

UNIT 1 (Drawing 541F091 Sh 1&2): RC-00430 and RC-00431C
UNIT 2 (Drawing 541F445 Sh 1&2): RC-00430 and RC-00431C

Due to the potential impact of the resulting transient should one of these valves open prematurely or stick in the open position, it is considered imprudent to cycle them during plant operation. In accordance with NRC Generic Letter 90-06, they will be exercised when practical with the reactor shutdown.

STATUS: Active.

CSJ-19 Reactor Coolant System Vents

UNIT 1 (Drawing 541F091 Sh 2): RC-00570 A&B, RC-00575 A&B, and RC-00580 A&B
UNIT 2 (Drawing 541F445 Sh 2): RC-00570 A&B, RC-00575 A&B, and RC-00580 A&B

These are isolation valves for the reactor coolant system, failure of a valve to close or significant leakage following closure could result in a loss of coolant in excess of the limits imposed by Technical Specification 15.3.1.D leading to a plant shutdown. Furthermore, if a valve were to fail open or valve indication fail to show the valve returned to the fully closed position following exercising, prudent plant operation would result in a plant shutdown.

STATUS: Active.

CSJ-20 Safety Injection Accumulator Discharge Valves

UNIT 1 (drawing 110E017 Sh 1): SI-00841 A&B
UNIT 2 (drawing 110E035 Sh 1): SI-00841 A&B

During plant operation in any mode above cold shutdown these valves are required to remain open and disabled. Closing one of these valves renders the associated accumulator unavailable for injection in the event of a LOCA. Closing either of these valves during plant operation is considered to be imprudent and unsafe.

STATUS: Active.

CSJ-21 RHR/Low Head Core Deluge Valves

UNIT 1 (Drawing 110E017 Sh 1): SI-00852 A&B
UNIT 2 (Drawing 110E035 Sh 1): SI-00852 A&B

Opening these valves with the RCS at normal pressures could expose the downstream safety injection piping to RCS pressure with the only protection being the two check valves. This is considered to be imprudent and an unwarranted challenge to plant safety.

STATUS: Active.

CSJ-22 Reactor Vessel Safety Injection Valves

UNIT 1 (Drawing 110E017 Sh 1): SI-00878 A&C
UNIT 2 (Drawing 110E035 Sh 1): SI-00878 A&C

During plant operation in any mode above cold shutdown these valves are required to remain open and disabled. Closing one of these valves renders the associated accumulator unavailable for injection in the event of a LOCA. Closing either of these valves during plant operation is considered to be imprudent and unsafe.

STATUS: No longer active as of 01/10/93.

CSJ-23 Safety Injection Loop Motor-Operated Valves

UNIT 1 (Drawing 110E017 Sh 1): SI-00878 B&D
UNIT 2 (Drawing 110E035 Sh 1): SI-00878 B&D

These valves remain open during power operation. Exercising these valves will result in isolation of one of the injection flow paths to the RCS. This is considered imprudent and an unwarranted compromise of plant safety.

STATUS: Active.

CSJ-24 Safety Injection Redundant Boric Acid Suction Valves

UNIT 1 (Drawing 110E017 Sh 2): SI-00826 B&C
UNIT 2 (Drawing 110E035 Sh 2): SI-00826 B&C

Exercising these valves requires closure of the downstream valve, SI-00826A or the mini-flow valve from the RWST to preclude overfilling the BASTs from the RWST. Operation in either configuration would isolate all water sources from both SI pumps with the potential of the loss of functionality in the event of an accident.

STATUS: No longer active as of 01/10/93.

CSJ-25 Safety Injection Test Line Return Valves

UNIT 1 (Drawing 110E017 Sh 2): SI-00897 A&B
UNIT 2 (Drawing 110E035 Sh 2): SI-00897 A&B

Closing either of these valves isolates the minimum flow recirc lines from both SI pumps and, in the event of SI initiation at elevated RCS pressure, both pumps could sustain damage with the potential of rendering both safety injection pumps inoperable.

STATUS: No longer active as of 12/23/92. Necessary provisions of this justification incorporated into CSJ-36.

CSJ-26 RHR Pump Discharge Check Valves

UNIT 1 (Drawing 110E018 Sh 1): RH-00710 A&B
UNIT 2 (Drawing 110E029 Sh 1): RH-00710 A&B

During normal plant operation, the RHR pumps cannot develop sufficient discharge pressure to pump through these valves to the RCS and full-stroke exercise them in the open direction.

STATUS: No longer active as of 12/01/92.

CSJ-27 Turbine Hall Coolers Inlet Valves

UNIT 1 (Drawing M-207 Sh 2): SW-02880
UNIT 2 (Drawing M-2207 Sh 1): SW-02880

Closing these valves results in securing cooling water to the associated turbine plant auxiliaries, including the main turbine, main generator, steam generator feedwater pumps, condensate pumps, and other supporting equipment. If, during testing, these valves were to fail to reopen for any extended period of time, the associated turbine generator and various supporting components would sustain significant damage.

STATUS: Active.

CSJ-28 PORV Instrument Air Supply Check Valves
PORV Nitrogen Supply Check Valves
PORV Nitrogen Supply Pressure Regulator Valves

UNIT 1 (Drawing M-209 Sh 11): IA-01206, IA-01209, IA-01605, IA-01606, IA-01301, IA-01302, IA-06310, and IA-06311
UNIT 2 (Drawing M-209 Sh 11): IA-01335, IA-01338, IA-01652, IA-01653, IA-01418, IA-01419, IA-06342, and IA-06343

These valves need only be tested prior to entering a condition where LTOP precautions must be administered (i.e. cold shutdown). Furthermore, exercising these valves requires containment entry and operation of the PORVs which is not advisable during plant operation at power. (Reference: GL 90-06)

STATUS: Active.

CSJ-29 Containment Spray Pump Suction From RWST Valves

UNIT 1 (Drawing 110E017 Sh 3): SI-00870 A&B
UNIT 2 (Drawing 110E035 Sh 3): SI-00870 A&B

Stroking these valves during power operation is not practical because the supply of water to the pump would be isolated, thereby making the system unable to perform its safety function should it be required to do so.

STATUS: No longer active as of 05/28/91.

CSJ-30 Safety Injection Accumulator Nitrogen Vent Valves

UNIT 1 (Drawing 110E017 Sh 1): SI-00957 and SI-00834 A&B
UNIT 2 (Drawing 110E035 Sh 1): SI-00957 and SI-00834 A&B

Stroking these valves during operation has the potential for reducing plant safety. If a series valve were to leak, accumulator nitrogen pressure could drop below that required to maintain the accumulator operable. Stroke testing at cold shutdown when accumulators are not required provides a satisfactory demonstration of valve operability without the possibility of compromising plant safety.

STATUS: Active.

CSJ-31 AFW Pump Mini-Recirc Valves

UNITS 1&2 (Drawing M-217): AF-04002
COMMON (Drawing M-217): AF-04007 and AF-04014

Generating a close signal for these valves (which is equivalent to failing the operating air, see Appendix H) requires a large main line flow rate. The addition of large quantities of cold feedwater would cause unacceptable thermal stresses on the feedwater piping.

STATUS: No longer active as of 02/25/93.

CSJ-32 Component Cooling Water Heat Exchanger Cooling Water Outlet Valves

COMMON (Drawing M-207 Sh 3): SW-00307, SW-00315, SW-00322, and SW-00360

Operating these valves during power operation causes large fluctuations in component cooling water temperature. The effects of these temperature changes is seen on reactor coolant pump performance parameters, particularly the No. 1 seal. The temperature transients are most noticeable when the RCS is at normal operating temperatures when a large temperature gradient exists between the RCS and the CCW system. We think that placing temperature transients on the RCP No. 1 seal and lube oil systems leads to seal and bearing damage and could result in catastrophic failures.

In cold shutdown the RCS temperature has been reduced by at least 350°F. This results in a lower temperature gradient between RCS and CCW and less chance of RCP damage.

STATUS: No longer active as of 12/11/92.

CSJ-33 Post-Accident Containment Vent Manual Valves

UNITS 1&2 (Drawing M-224): H2-V-04, H2-V-05, H2-V-12, H2-V-13, H2-V-19, H2-V-20, H2-V-22, and H2-V-23

Exercising these valves to the OPEN position at any time other than cold shutdown constitutes a violation of reactor containment integrity as discussed in Technical Specification 15.3.6 A (a).

STATUS: Active.

CSJ-34 RWST to Charging Pump Suction Control and Check Valves

UNIT 1 (Drawing 684J741): CV-00112B and CV-00357
UNIT 2 (Drawing 685J175): CV-00112B and CV-00357

Exercising these valves to the OPEN position during plant operation would result in the injection of $\geq$2000 ppm borated water from the refueling water storage tank (RWST) to the reactor coolant system (RCS). This would result in an undesirable temperature transient with the potential for a reactor trip and safety injection.

STATUS: Active.

CSJ-35 Radwaste Cooling Supply and Return Valves

COMMON (Drawing PBM-230): CCW-LW-63 and CCW-LW-64

These normally open valves may be shut to isolate non-essential, non-class piping and components associated with the radioactive waste processing system from safety-related sections of the Unit 2 component cooling water (CCW) system.

Stroke testing these valves on a quarterly basis would force the shutdown of both units' gas strippers, which is undesirable when a unit is at power due to the resultant increased coolant activity levels. The increase in gaseous coolant activity would cause a corresponding increase in airborne radioactivity levels and personnel exposure should the reactor coolant system be vented for any reason before returning the gas strippers to service. Consequently, stroke testing will be performed during Unit 2 cold shutdowns of sufficient length, as described in ASME OMb-1989, Part 10, Subsection 4.3.2.2(c), "Exercising Requirements," when loss of the gas strippers has less impact on coolant gaseous activity levels.

STATUS: Active.

CSJ-36 Safety Injection Test Line Return Valves

UNIT 1 (Drawing 110E017 Sh 2): SI-00897 A&B
UNIT 2 (Drawing 110E035 Sh 2): SI-00897 A&B

These valves are normally gagged open to ensure the availability of the common minimum flow recirculation path for both safety injection (SI) pumps. Stroke testing these valves during conditions other than cold shutdown makes it possible for one or both SI pumps to be damaged should either of these valves fail in the shut position coincident with SI pump start without any other flow path being available.

STATUS: Active.

CSJ-37 RHR Loop Isolation Valves
RHR Pump Suction Valves
RHR Return to RCS Valves

UNIT 1 (Drawing 110E018 Sh 1): RH-00700, RH-00701, RH-00704 A&B, and RH-00720
UNIT 2 (Drawing 110E029 Sh 1): RH-00700, RH-00701, RH-00704 A&B, and RH-00720

These valves are all opened only to permit operation in the shutdown cooling mode. Operation at other times would expose RHR piping to possible fluid pressures in excess of design limits.

STATUS: Active.

POINT BEACH NUCLEAR PLANT
Units 1 & 2

INSERVICE TESTING PROGRAM

BACKGROUND DOCUMENT

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INSERVICE TESTING (IST) PROGRAM DISCUSSION

1.0 INTRODUCTION

This document establishes the philosophy by which the scope of the ASME Section XI IST Program is determined including which components are to be included and the extent and type of testing required for each. In the course of developing this document, each of the significant safety systems and other supporting systems at Point Beach was evaluated with respect to the function of each component and the need for its operability as it relates to the scope of Section XI.

2.0 BACKGROUND

ASME B&PV Code, Section XI (the Code) requires that the owner of each nuclear power plant prepare and submit a "plan" for testing and inspection of systems and components under the jurisdiction of the Code and in compliance with Title 10, Part 50 of the Code of Federal Regulations (Para. 50.55.a). With respect to the elements of that plan related to the testing of pumps and valves, Section XI, Subsections IWP and IWV specify, in general terms, the program scope and testing requirements needed to satisfy the Code. Specifically, Paragraphs IWP-1100 and IWV-1100 state that the Code rules apply to ISI Class 1, 2, and 3.

* Centrifugal and positive displacement pumps that are required to perform a specific function in shutting down the reactor or in mitigating the consequences of an accident and that are provided with an emergency power source, and

* Valves (and their actuating and position indicating systems) which are required to perform a specific function in shutting down the reactor to the cold shutdown condition or in mitigating the consequences of an accident.

Over the period of time since the Code was first issued, the industry and the NRC have provided additional interpretations to the Code requirements through various mechanisms including program review meetings, on site inspections, generic letters, etc. It is the intent of this document to cull out the various interpretations and positions that are likely to be imposed on the Point Beach plants in the future, establish succinct rules for determining the Program scope, and evaluate each of the plant systems and related components in a consistent manner to identify which components should be included in the testing program and to what extent each should be tested. This evaluation will, in turn, support the development of an "updated" Point Beach IST Program.

3.0 DISCUSSION

As discussed earlier, the IST Program must include those pumps and valves that perform a specific function in shutting down the reactor including cooldown to cold shutdown or in mitigating the consequences of an accident. In this regard, the following guidelines are set forth for evaluation of system components (pumps and valves) with respect to their inclusion in the Point Beach IST Program and to what extent testing will be performed.

3.1 Where multiple components are capable of performing the same equivalent and redundant specified function (e.g., multiple valves closing in series) and where the components are not supplied by alternate and redundant power supplies, only one need be included in the Program. The component must be relied upon to perform and not simply have the capability of performance. This exemption only applies where licensing documents do not take credit for the designed redundancy. Components performing redundant functions shall be included in the testing program if, in the process of analysis or licensing justification, they are relied upon to be operable.

3.2 The Point Beach FSAR and related design basis documents shall be the primary references for determining which components are required to perform specified functions related to the spectrum of predicated accidents. Although several other plant source documents (Tech Specs., EOPs) identify various components that may be important to plant safety or are to be operated in conjunction with recovery from an accident, unless specific credit is taken in the plant safety analysis (or is implied in the analysis) for a pump or valve, the component need not be included in the IST Program. An exception to this are those cases where the NRC imposes test requirements at their discretion.

3.3 Valves installed primarily for the purpose of providing convenient operational flexibility (e.g., system cross-connects) but would not be required to operate assuming that the designated first-line systems and components operate satisfactorily, need not be included in the Program. This does not exclude active valves that could be called upon as a result of optional system lineups existing prior to the initiation of an accident.

3.4 Valves that are actuated as a result of a safety system automatic response shall be included in the Program to the extent that the testing shall verify valve operation required as a result of the safety system input. This applies only if valve movement is required to support those functions required as specified by the Code. This requirement extends only to testing defined by the Code and is not intended to imply the need for verifying a valve's response to automatic logic system output.

3.5 Valves whose sole function is to provide system or component redundancy related to failure of passive components need not be included if a set of all of the active components (pumps and valves) needed to fulfill the specified system (train) function are tested - double or unrelated simultaneous failures need not be assumed. In some cases where protection of critical systems from passive failures is a commitment, then components providing the redundancy or isolation of failed components are included in the testing program.

3.6 System safety/relief valves shall be included except where the function of the valve is solely to provide overpressure protection of an isolated component due to thermal expansion of the internally contained fluid or a valve is installed only as response to construction code requirements. In the case of safety/relief valves installed on process lines that penetrate primary containment and could be isolated during an accident, if an overpressure condition could be created within the piping at the penetration such that the structural integrity of the containment could be jeopardized, then the valve should be setpoint tested.

3.7 All valves included in the Point Beach leak rate testing program complying with 10 CFR 50, Appendix J shall be included in the Program as Category A valves. (Reference 5, Position 10)

3.8 All high-low pressure interface valves (pressure isolation valves -- PIVs) which are listed in the Point Beach Technical Specifications shall be included in the Program as Category A valves. (Reference 5, Position 4)

3.9 Any active Category A valve shall be designated for testing (exercising) to the closed direction.

3.10 When a valve's normal position during operation is its position required to perform its designated safety function and valve movement may be required due to plant evolutions or possible repositioning during accident response or recovery operations, then periodic exercising per the Code is required (i.e., the valve cannot be considered passive).

3.11 Where an air-operated valve is provided with a simple air-pilot valve, the pilot valve need not be specifically included in the Program provided that the testing performed on the main valve verifies the proper operation of the pilot valve.

3.12 Control valves are specifically excluded from testing per IWV-1200(a); however, if a control valve must change position to support a safety-related function and it has a fail-safe position, then it must be included in the Program and tested to the extent practical. Steam turbine governor valves are considered to be an integral part of the turbine and, as such, are not included in the IST Program. (Reference 5, Position 11.g)

3.13 Check valves are included where a valve serves as the only effective boundary between piping associated with a necessary safety function and non-safety grade (non-seismic) piping. In general, failure of passive system components is assumed only for non-safety grade systems.

3.14 Where a valve performs a safety function in both directions (open and closed) exercising in both directions is required as described in Reference 1. For these power-operated valves, stroke time measurements in both directions would be required.

3.15 When testing a check valve to the closed position, when practical, it should first be demonstrated that the valve was open prior to closure otherwise it can be deduced that no exercising was performed. Exercising a valve to its "full-open" position, however, is not required.

3.16 Pumps and valves whose only safety function is predicated on plant shutdown and recovery from a fire per commitments made as a result of 10 CFR 50, Appendix R are not included in the IST Program.

3.17 Pumps and valves that are not categorized as ISI Class 1, 2, or 3 need not be included in the IST Program.

3.18 Check valves that have a safety function to close should be evaluated with respect to categorization as Category A/C versus C with respect to the following issues:

3.18.1 Whether the flow requirements for connected systems can be achieved with the maximum possible leakage through the check valve.

3.18.2 The effect of any reduced system flows resulting from the leakage on the performance of other systems and components.

3.18.3 The consequences of loss of fluid from the system.

3.18.4 The effect that backflow through a valve may have on piping and components, such as the effect of high temperature and thermal stresses.

3.18.5 The radiological exposure to plant personnel and the public caused by the leak.

3.19 The issues raised in Paragraph 3.18, above, are applied to <u>all</u> boundary valves included in the diesel fuel oil system and selected valves in other critical systems.

4.0 SYSTEM EVALUATION

All potentially significant plant systems at Point Beach are examined and evaluated to identify those pumps and valves that meet the applicable criteria established herein for inclusion in the Point Beach IST Program.

4.1. Main Steam

Safety valves, relief valves, and steam dump valves provide overpressure protection for steam generators and heat sink during transients.

Supply steam to turbine-driven auxiliary feedwater pumps.

Provides isolation of steam generators in the event of steamline break.

4.2 Condensate

The Condensate System transfers water from the hotwells to the suction of the feedwater pumps and is NOT required to operate in an accident.

4.3 Main Feedwater

Although Feed Regulating and Bypass Valves and Main Feed Pump Discharge Valves close to prevent overfeeding a faulted steam generator, the primary protection against overfeeding is the automatic trip of the main feedwater, condensate, and heater drain pumps.

Steam Generator inlet check valves close to prevent passage of makeup from the auxiliary feedwater pumps back through a faulted feedwater system.

4.4 Auxiliary Feedwater

Provides makeup to the steam generators under accident conditions.

4.5 Extraction Steam

This system transfers steam from various stages of the main turbine to the feedwater heaters and is NOT required to operate in an accident.

4.6 Heater Drains

This system collects condensate from various parts of the secondary steam system and transfers it to feedwater heaters or the condensers and is NOT required to operate in an accident.

4.7 Circulating Water

This system circulates cooling water to the plant main condensers. Since the main condensers are not critical components, operation of this system is NOT required in the event of an accident even though the condenser steam dumps "may" be used if available.

The intake structure includes several valves used for de-icing and these will be evaluated.

4.8 Service Water

The service water system circulates cooling water to various critical and non-critical components. Service water also provides a backup source of steam generator makeup water via the auxiliary feedwater system.

Valves that operate to supply service water should be included as well as those that, in the event of an accident, are closed to isolate non-critical heat loads.

4.9 Main Turbine and Crossover Steam Dump

Provides mechanism for directing steam from the HP to the LP turbines including overspeed protection in the event of a turbine trip. (NOT considered safety-related function)

Provides post-accident heat sink (if available). Other options are available and this is NOT relied upon as first-line protection.

4.10 Turbine Lube Oil and Generator Seal Oil

Supports main turbine-generator with NO safety-related function.

4.11 Instrument Air, Diesel Generator Starting Air and Service Air

Air supply (check valves and accumulators) for the Primary Containment Purge Valves are required to be tested per ISI Basis Document.

EDG air start system is categorized as Class 3 and, thus, should be included. (Must test independent trains and individual components)

4.12 Water Treatment

Not relied upon for accident mitigation.

4.13 Demineralized Water/Reactor Makeup Water

Although these systems could be utilized as additional sources of makeup in the event of a LOCA, the designated safety-related water inventory is adequate for accident response. Thus, they are not relied upon for mitigation of any accident.

4.14 Fire Protection

Although there are certain features of the fire water system that provide backup water supplies to safety-related systems, these are considered extreme measures and are NOT taken credit for in the accident analysis nor are they considered to be part of the related safeguard system.

4.15 Hydrogen Gas

NOT relied upon for accident mitigation.

4.16 Heating and Ventilating (HVAC)

HVAC systems serve the function of cooling and ventilation of various spaces throughout the plant. It is assumed that room/area coolers associated with affected safety equipment are required to be operable to ensure continued operability of the related equipment.

Except for those sections penetrating primary containment, the ducts and flowpaths (including dampers and valves) are not ISI-class components and, thus, are NOT considered for inclusion in the IST Program.

The Control Room and Cable Spreading Room A/C chilled water systems are required to ensure post-accident habitability of the spaces with respect to personnel and to maintain critical equipment operable.

4.17 Fuel Oil

Provides a reliable supply of fuel oil to the EDGs and boilers. Those components related to the EDG fuel supply are required. Note: The Fuel Oil Storage Tanks and associated valves are not ISI-classed components.

4.18 Nitrogen Gas

Nitrogen is used for blanketing several tanks to prevent air intrusion. Since gas makeup is only required on an incidental basis and not in response to an accident, the "nitrogen gas system" is NOT necessarily required.

4.19 Carbon Dioxide Gas

Used to service main turbine only - NO safety function.

4.20 Safety Injection

Provides emergency core cooling following an accident. The following modes of operation should be evaluated:

* SI pumps from BASTs and RWSTs to RCS loops and reactor vessel deluge;
* Safety Injection Accumulator discharge to RCS loops;
* RCS/SIS system pressure isolation (Event V);
* Various modes of post-LOCA recirculation including use of RHR pumps, containment spray pumps, and safety injection pumps;
* RHR pumps from RWSTs to reactor vessel and to RCS loops.

4.21 Component Cooling

The Component Cooling System provides the following functions during an accident:

4.21.1 Post-accident heat sink for the reactor;

4.21.2 Cooling of various critical components including:

RHR Heat Exchanger;
Containment Spray Pumps;
Safety Injection Pumps; and
RHR Pumps.

4.22 Sampling

Although sampling is an important element in responding to an accident, it is NOT critical for accident mitigation.

4.23 Post-DBA Hydrogen Control

This consists of valves used for post-accident containment sampling and subsequent dilution with service air as required. Must evaluate the need to include these components.

The FSAR and Tech Specs do not specifically identify this system as one required for accident mitigation but it is listed as an "Engineered Safeguard System" in the system descriptions (TRHB 10.16). Thus, the function of this system should be evaluated.

4.24 Containment Spray

The Containment Spray System sprays boric acid solution into the containment to limit peak pressure in the event of a LOCA. In addition, it has the capability of sodium hydroxide injection to facilitate the removal of elemental iodine from the containment atmosphere.

4.25 Spent Fuel Cooling

Provide cooling and purification to irradiated fuel stored in the spent fuel pool. Purification is NOT considered a critical function.

NOTE: Spent Fuel Cooling does not satisfy the criteria for inclusion in the program since there is no connection of this system with the safety of the reactor plant as stated in IWV/IWP.

4.26 Waste Disposal

This system provides means for disposal of liquid and gaseous radioactive waste and gas blanketing of primary system components. Operation of this system is NOT critical for accident response.

4.27 Primary Containment Isolation

All valves required to be leak tested per the Point Beach LLRT procedures for compliance with 10 CFR 50, Appendix J are required to be included in the IST Program. (Ref. Generic Letter 89-04)

5.0 BACKGROUND DOCUMENT ORGANIZATION

For convenience, the evaluation of each system is included in its own appendix of this document as outlined below:

Appendix	System
A.	Main and Reheat Steam System
B.	Auxiliary Feedwater System
C.	Main Feedwater System
D.	Service Water System
E.	Reactor Coolant System
F.	Chemical and Volume Control System
G.	Safety Injection and Residual Heat Removal System
H.	Containment Spray System
I.	Component Cooling System
J.	Spent Fuel Pit Cooling System
K.	Emergency Diesel Generator Air Start and Fuel Oil Transfer Systems
L.	Heating, Ventilation, and Air Conditioning Systems
M.	Auxiliary Steam System
N.	Instrument and Service Air Systems
O.	Post-Accident Containment Vent/Monitoring System
P.	Primary Sampling System
Q.	Waste Disposal System
R.	De-Ionized/Makeup Water System

For convenience, in the texts of the evaluations, the test requirements are identified by certain abbreviations. These are defined below.

BT-O/BT-C	Category A and B Valves - Exercise a valve to the open/closed position. In the case of Category A and B power-operated valves stroke times will be measured. For check valves and manually-operated valves only exercising is required.
CV-O/CV-C	Category C and A/C Check Valves - Exercise a valve to the open/closed position.
FST	Fail safe test
PIT	Remote position indication checks.
SLT-A	Seat leak test - Specific acceptance criteria established

SLT-B	Seat leak test - System-related functional leak rate demonstration
RVT	Safety/relief valve setpoint verification.
VBT	Vacuum breaker setpoint test

6.0 REFERENCES

6.1 ASME Boiler and Pressure Vessel Code, Section XI, 1986 Edition.

6.2 Title 10 Code of Federal Regulations, Part 50 (Para. 55.55(a)).

6.3 Point Beach Final Safety Analysis Report (FSAR)

6.4 Point Beach Technical Specifications

6.5 NRC Generic Letter No. 89-04 - Guidance On Developing Acceptable Inservice Testing Program.

6.6 Review of Generic Letter 89-04 Check Valve Analysis & Report, PBM 91-0209, Oct. 7, 1990.

6.7 Point Beach Drawings

Drawing	Title
M-144 Sh 1	Heating & Ventilation-Temp Control, Units 1&2
M-144 Sh 2	Heating & Ventilation-Temp Control, Units 1&2
M-201 Sh 1	Main and Reheat Steam
M-201 Sh 3	Main and Reheat Steam
M-202 Sh 2	Feedwater System, Unit 1
M-207 Sh 1	Service Water
M-207 Sh 2	Service Water
M-207 Sh 3	Service Water
M-207 Sh 4	Service Water
M-208 Sh 2	Fire Protection Water
M-209 Sh 2	Service Air
M-209 Sh 5	Instrument Air
M-209 Sh 7	Instrument Air
M-209 Sh 11	Instrument Air
M-209 Sh 12	Emergency Diesel Gen Air Start System
M-211 Sh 1	Heating and Ventilating Airflow

6.7 Point Beach Drawings (Cont'd)

Drawing	Title
M-212 Sh 1	Circulating Water - Screen Wash
M-212 Sh 2	Circulating Water - Screen Wash
M-214 Sh 2	Aux Stm, Heating Stm, Chilled & Hot Wtr, Unit 1
M-215 Sh 1	Heating and Ventilation
M-215 Sh 2	R211-212
M-217	Auxiliary Feedwater
M-219	Fuel Oil
M-224	Post-Accident Containment Vent/Monitoring
M-2201 Sh 1	Main and Reheat Steam, Unit 2
M-2201 Sh 3	Steam Generator Blowdown, Unit 2
M-2202 Sh 2	Feedwater, Unit 2
M-2207 Sh 1	Service Water, Unit 2
M-2214	Aux Stm, Heating Stm, Chilled & Hot Wtr, Unit 2
M-2215 Sh 1	Heating & Ventilation, Unit 2
M-2215 Sh 2	R211-212
PBM-230	Radwaste Component Cooling Water
PBM-231 Sh 1	De-ionized and Rx Make-up Water
PBM-231 Sh 2	De-ionized and Rx Make-up Water
110E017 Sh 1	Safety Injection (I/S Containment), Unit 1
110E017 Sh 2	Safety Injection (O/S Containment), Unit 1
110E017 Sh 3	Safety Injection (Containment Spray), Unit 1
110E018 Sh 1	Auxiliary Coolant (RHR/CCW), Unit 1
110E018 Sh 2	Auxiliary Coolant (CCW), Unit 1
110E018 Sh 3	Auxiliary Coolant (CCW), Unit 1
110E018 Sh 4	Auxiliary Coolant (CCW & SFP Cooling), Unit 1
110E029 Sh 1	Auxiliary Coolant (RHR/CCW), Unit 2
110E029 Sh 2	Auxiliary Coolant (CCW), Unit 2
110E029 Sh 3	Auxiliary Coolant (CCW), Unit 2
110E035 Sh 1	Safety Injection (I/S Containment), Unit 2
110E035 Sh 2	Safety Injection (O/S Containment), Unit 2
110E035 Sh 3	Safety Injection (Containment Spray), Unit 2
541F091 Sh 1	Reactor Coolant, Unit 1
541F091 Sh 2	Reactor Coolant, Unit 1
541F092	Sample System, Unit 1
541F445 Sh 1	Reactor Coolant, Unit 2
541F445 Sh 2	Reactor Coolant, Unit 2
541F448	Process Sampling, Unit 2

6.7 Point Beach Drawings (Cont'd)

Drawing	Title
684J741 Sh 1	Chemical & Volume Control Unit 1
684J971	Radwaste Systems
685J175 Sh 1	Chemical & Volume Control Unit 2

6.8 PBNP Pump and Valve IST Program Appendices

6.8.1 (App. A) Pump Program Tables - Unit 1

6.8.2 (App. B) Pump Program Tables - Unit 2

6.8.3 (App. C) Pump Program Requests for Relief - Units 1 & 2

6.8.4 (App. D) Valve Program Tables - Unit 1

6.8.5 (App. E) Valve Program Tables - Unit 2

6.8.6 (App. F) Valve Program Requests for Relief - Units 1 & 2

6.8.7 (App. G) Cold Shutdown Justifications

Safety Functions:

Provides motive power to steam-driven auxiliary feedwater pumps.

Components are arranged to prevent gross leakage from both steam generators as a result of a steam line break upstream of a main steam isolation valve.

Valves are provided to limit the release of fission products in the case of a steam generator tube rupture and to limit steam release from the steam generators to ensure an adequate water inventory is available for the steam supply needed for operating the auxiliary feedwater pumps.

Components:

1-MS-00251 & 1-MS-00252 (M-201, Sh 1)
2-MS-00251 & 2-MS-00252 (M-2201, Sh 1)
Main Steam Supply Stop-Check Valves To Radwaste

These valves open to provide flowpaths for steam from each of the steam generators to the radwaste systems (non-critical). They close to provide isolation between the steam generators in the event of a steam line break upstream of the MSIVs. The normal lineup for these valves is one open and the other closed, thus the steam generator isolation function is not required.

Test Requirement: None

1-MS-02005 through 1-MS-02008 and 1-MS-02010 through 1-MS-02013 (M-201, Sh 1)
2-MS-02005 through 2-MS-02008 and 2-MS-02010 through 2-MS-02013 (M-2201, Sh 1)
Main Steam Safety/Relief Valves

These valves provide steam generator over-pressure protection and an additional heat sink for core cooling. (FSAR 10.2.2 and 14.1.10 & 11)

Test Requirement: RVT

1-MS-02015 and 1-MS-02016 (M-201, Sh 1)
2-MS-02015 and 2-MS-02016 (M-2201, Sh 1)
Main Steam Atmospheric Steam Dump Valves (Power-Operated Reliefs)

These valves provide a means of rejecting reactor core heat in the event that the main condenser heat sink is unavailable. In the event of a small break LOCA these valves would be opened to remove heat and reduce reactor coolant system pressure until RHR System operational limits are achieved. However, as stated in FSAR (Section 6.2.2 and 10.2.2), the use of these steam dumps is not required to meet core cooling objectives. The valves are required to close, if open, to limit release of fission products in the event of a steam generator tube rupture. Although it is unlikely that a tube rupture incident would occur simultaneously with a plant condition where opening of these valves is required, the EOP identifies the need for closure in such an event and, for that reason, is considered prudent to include a requirement for exercising in the closed direction. Since there are several cases where the EOPs depend on these valves to operate under accident conditions to effect a safe and orderly plant shutdown, it is prudent to include them in the test program.

Test Requirement: BT-O BT-C PIT FST

1-MS-02017 and 1-MS-02018 (M-201, Sh 1)
2-MS-02017 and 2-MS-02018 (M-2201, Sh 1)
Main Steam Isolation Valves

These valves close to prevent the unrestricted release of steam from multiple steam generators in the event of a steam line rupture inside the containment building and to isolate the steam generators in the event of a LOCA or steam generator tube rupture. When closed, they provide isolation of unaffected steam generators thus ensuring an adequate supply of steam for AFW Pump Turbine operation. (FSAR 10.2.2 and 14.2.5.1)

Test Requirement: BT-C PIT FST

1-MS-02017A and 1-MS-02018A (M-201, Sh 1)
2-MS-02017A and 2-MS-02018A (M-2201, Sh 1)
Main Steam Non-Return Valves

In the event of a steam line rupture upstream of a main steam isolation valve, these valves close to prevent unrestricted blowdown of the unaffected steam generator(s). Since there are no critical steam loads downstream of these valves, exercising to the open position is not required. (FSAR 10.2.2 and 14.2.5.1)

Test Requirement: CV-C

1-MS-02017C-S, 1-MS-02017D-S, 1-MS-02018C-S, and 1-MS-02018D-S (M-201, Sh 1)
2-MS-02017C-S, 2-MS-02017D-S, 2-MS-02018C-S, and 2-MS-02018D-S (M-2201, Sh 1)
MSIV Pneumatic Operator Exhaust Valves

These valves open/shift to provide an exhaust path for air from the underside of the MSIV operating cylinder when an MSIV closing signal is received. Although these valves are not classified as Class 1, 2, or 3, they are included in the Program for completeness.

Test Requirement: BT-O

1-MS-02017A-S, 1-MS-02017B-S, 1-MS-02018A-S, and 1-MS-02018B-S (M-201, Sh 1)
2-MS-02017A-S, 2-MS-02017B-S, 2-MS-02018A-S, and 2-MS-02018B-S (M-2201, Sh 1)
MSIV Pneumatic Operator Supply Valves

These valves close/shift to secure supply air to the underside of the MSIV operating cylinder when an MSIV closing signal is received. Although these valves are not classified as Class 1, 2, or 3, they are included in the Program for completeness.

Test Requirement: BT-C

1-MS-02019 and 1-MS-02020 (M-201, Sh 1)
2-MS-02019 and 2-MS-02020 (M-2201, Sh 1)
AFW Steam Supply Stop/Check Valves

These normally-closed valves open to provide flowpaths for steam from each of the steam generators to the respective AFW Pump turbine. They close to provide isolation between the steam generators in the event of a steam line break upstream of the MSIV,s. (FSAR 10.2.2)

Test Requirement: CV-O BT-O BT-C PIT

1-MS-02042 and 1-MS-02045 (M-201, Sh 1)
2-MS-02042 and 2-MS-02045 (M-2201, Sh 1)
Steam Generator Blowdown Isolation Valves

These normally-open valves can be closed to isolate the steam generators and the containment in an event of an accident. They auto-close in the event of a high-radiation signal from the sample line radiation monitor however they are not considered containment isolation valves nor is credit taken for their closure and, thus, are not leak tested in accordance with Appendix J.(FSAR 10.2.2)

Test Requirement: None

1-MS-02082 (M-201, Sh 1)
2-MS-02082 (M-2201, Sh 1)
Main Steam Supply Isolation Valves to Auxiliary Feedwater Pumps

These normally-open isolation valves close in response to auxiliary feed pump turbine overspeed. Following an overspeed pump trip, they will be manually reopened to provide flowpaths for steam from the steam generators to the respective auxiliary feedwater pump turbine.

Test Requirement: BT-C BT-O PIT

1-MS-02083 and 1-MS-02084 (M-201, Sh 1)
2-MS-02083 and 2-MS-02084 (M-2201, Sh 1)
Steam Generator Sample Valves

These valves are opened to draw samples from the steam generators and close for containment isolation in the event of an accident. They also close in the event of a high-radiation signal from the sample line radiation monitor. (FSAR 10.2.2) They are leak tested in accordance with Appendix J.

Test Requirement: BT-C FST SLT-A PIT

1-MS-05958 and 1-MS-05959 (M-201, Sh 1)
2-MS-05958 and 2-MS-05959 (M-2201, Sh 1)
Steam Generator Blowdown Isolation Valves

These normally-open valves close to isolate the steam generators and the containment in an event of an accident. They also close in the event of a high-radiation signal from the sample line radiation monitor. (FSAR 10.2.2) They are leak tested in accordance with Appendix J.

Test Requirement: BT-C FST SLT-A PIT

RS-SA-09 (M-201, Sh 1)
RS-SA-10 (M-2201, Sh 1)
Main Steam Supply To Radwaste

These valves close in the event of AFW pump actuation to limit steam inventory loss from the steam generator(s) to supply non-critical loads.

Test Requirement: BT-C FST PIT

AUXILIARY FEEDWATER

Safety Functions:

Supplies feedwater required for core cooling tot the steam generators whenever the normal feedwater supply systems are unavailable. (FSAR 10.2.2)

Components are capable of isolating the auxiliary feedwater (AFW) supply piping from each steam generator in the event of a steam generator tube rupture.

Components:

AFW Pumps 1P-029, 2P-029, and P038A&B (M-217)

The AFW pumps are required to supply feedwater to the steam generators in the event of the loss of the normal feedwater supply.

Test Requirement: IWP-3000

AF-00026, AF-00039, AF-00052, and AF-00064 (M-217)
AFW Pump Suction Isolation Valves (from CST)

These manual valves are normally locked open (passive) to provide a flowpath for feedwater from the condensate storage tanks (CSTs) to each of the AFW pumps. They would be closed to prevent flow into the CSTs in the event it becomes necessary to supply the AFW pumps from the service water header.

Test Requirement: BT-C

1-AF-00100, 00101, 2-AF-00100, and 00101 (M-217)
AFW Pump Discharge to Steam Generator Check Valves

These valves open to provide flowpaths from the AFW pumps to the steam generators.

Test Requirement: CV-O

1-AF-00102, 00104, 00106, and 00107 (M-217)
2-AF-00103, 00105, 00106, and 00107 (M-217)
AFW Pump Discharge to Steam Generator Check Valves

These valves open to provide flowpaths from the AFW pumps to the steam generators. They close whenever their respective line has flow shut off. Backleakage through these check valves into connected aux feedwater piping that is at a lower pressure could result in reduced flow in the line which is at a higher pressure. This loss of inventory prevention function causes CV-C and SLT-A testing. These valves close following pump operation to preclude steam binding of the AFW pumps. The temperature of the associated piping is monitored periodically during operation to ensure pump binding does not pose a problem with respect to the availability of the AFW pumps. This function is not within the scope of ASME Section XI.

Test Requirement: CV-O CV-C SLT-A

1-AF-00108, 2-AF-00108, AF-00109, AND AF-00110 (M-217)
AFW Pump Discharge Check Valves

These valves open to provide flowpaths from their respective AFW pumps. Since each AFW pump discharges to a separate supply header, reverse flow recirculation through an idle pump is not of concern.

Test Requirement: CV-O

1-AF-00111, 2-AF-00111, AF-00112, and AF-00113 (M-217)
AFW Pump Suction Check Valves (from CST)

These valves open to provide a flowpath for feedwater from the condensate storage tanks (CSTs) to each of the AFW pumps. They would close to prevent flow into the CSTs in the event it becomes necessary to supply the AFW pumps from the service water header. However, under such a condition, the upstream manual isolation valves may be closed, eliminating the necessity for the check valves to close. Thus, testing in the closed direction is not an IST program requirement.

Test Requirement: CV-O

1-AF-00114 and 2-AF-00114
Steam-Driven AFW Pump Minimum Flow Check Valves

These valves open to ensure minimum recirculation flow through the AFW pumps to prevent pump damage in the event of isolation of an AFW discharge line. Under accident conditions, the pump discharges to the steam generators through motor-operated valves and, thus, flowrate is solely a function of the differential pressure between the steam generators and the discharge of the auxiliary feedwater pumps. With this arrangement, there is always adequate flow from the operating auxiliary feedwater pumps to the steam generators and additional flow through the minimum flow lines is not required.

Test Requirement: None

AF-00115 and AF-00116 (M-217)
Motor-Operated AFW Pump Minimum Flow Check Valves

These valves open to ensure minimum recirculation flow through the AFW pumps to prevent pump damage in the event of isolation of an AFW discharge line. Under accident conditions, the pump flowrate is solely a function of the differential pressure between the steam generators and the discharge of the auxiliary feedwater pumps which is controlled by pressure regulating valves in the pump discharge headers. With this arrangement, there is always adequate flow from the operating auxiliary feedwater pumps to the steam generators and additional flow through the minimum flow lines is not required.

Test Requirement: None

AF-00117
AFW Pump Minimum Flow Header Check Valve

This valve opens to provide a flowpath for minimum recirculation flow from the AFW pumps to the condensate storage tanks. Under accident conditions, the pump flowrate is solely a function of the differential pressure between the steam generators and the discharge of the auxiliary feedwater pumps which is controlled by pressure regulating valves in the pump discharge headers. With this arrangement, there is always adequate flow from the operating auxiliary feedwater pumps to the steam generators and additional flow through the minimum flow lines is not required.

Test Requirement: None

AF-00118
Condensate Return from Auxiliary Steam

This valve opens to provide a flowpath from auxiliary steam sources to the condensate storage tanks. It closes to prevent the flow from the AFW pump minimum recirculation flow from spilling as a result of failure of non-safety grade piping in the auxiliary steam system. Since the AFW pump minimum flow is a small quantity and, in the course of an accident, would probably be isolated, the potential quantity of loss of makeup inventory should this valve fail to close would be insignificant.

Test Requirement: None

1-AF-04000, 1-AF-04001, 2-AF-04000, and 2-AF-04001 (M-217)
AFW Pump to Steam Generator Valves

These valves are normally throttled at a pre-set position to provide for 200 gpm flowrate to each of the serviced steam generators, therefore, they are not required to change position in order to satisfy the functional requirements of the AFW system. They are closed by operator action to isolate the affected steam generator in the event of a steam leak or tube rupture and automatically close to isolate the affected unit.

Test Requirements: BT-C PIT

1-AF-04002, 2-AF-04002, AF-04007, and AF-04014 (M-217)
AFW Pump Mini-Recirc Valves

These valves open to ensure minimum recirculation flow through the AFW pumps to prevent damage in the event of isolation of an AFW discharge line. As flow from the respective pumps increases, these valves close to ensure full AFW flow is directed to the steam generators. The fail-safe position for these valves is considered to be the closed position, since under accident conditions it is this position which ensures full AFW flow is directed to the steam generators.

Test Requirement: BT-O BT-C PIT FST

1-AF-04006, 2-AF-04006, AF-04009, and AF-04016 (M-217)
AFW Pump Service Water Supply Valves

In the event that, in the course of an accident, the supply of condensate is exhausted or otherwise unavailable, these valves would be open to supply service water to the suctions of the AFW pumps for makeup to the steam generators.

Test Requirements: BT-O PIT

AF-04012 and AF-04019 (M-217)
AFW Pump P38A&B Pressure Control Valves

The AFW flow control valves open, as required, to control the discharge pressures of motor-operated AFW pumps P-38A&B. They fail open on loss of pneumatic or electric power.

Test Requirement: BT-O FST PIT

AF-04020, AF-04021, AF-04022, and AF-04023 (M-217)
AFW Pump Discharge to Steam Generators Valves

These valves open to align the motor-driven AFW pumps to the respective steam generators. They are closed to isolate the affected steam generator in the event of a steam leak or tube rupture.

Test Requirements: BT-O BT-C PIT

1-AF-04026, 2-AF-04026, AF-04027, AND AF-04028 (M-217)
AFW Pump Suction Safety Relief Valves

These valves protect components in the suction line to each AFW pump from over-pressurization in the event of a malfunction in the pump discharge lines that could cause a high pressure in the discharge line to be transmitted through the pump to the suction piping.

Test Requirement: RVT

MAIN FEEDWATER

Safety Function:

Isolates the steam generators upon actuation of SIS or AFW initiation. Prevents overfeeding of a steam generator following a steam line break and ensures AFW flow is directed to the steam generators in the event of a feedwater line break upstream of the main feedwater regulating valves.

Components:

1-CS-00466 and 1-CS-00476 (M-202)
2-CS-00466 and 2-CS-00476 (M-2202)
Steam Generator Feedwater Regulator Valves

These valves auto-close in the event of SIS initiation to isolate the steam generators and the feedwater piping upstream of the feedwater regulating valves and to prevent overfeeding of the steam generators. This is considered to be redundant to the automatic trip function of the main feedwater, condensate, and heater drain tank pumps in the event of containment over-pressure (5 psig) and thus, testing is not required. (FSAR 14.2.5)

Test Requirement: None

1-CS-00466 AA & BB and 1-CS-00476 AA & BB (M-202)
2-CS-00466 AA & BB and 2-CS-00476 AA & BB (M-2202)
Steam Generator Feedwater Supply Check Valves

These valves close to isolate the steam generators following a feedpump trip or other circumstance that would depressurize a feedwater supply header. They also prevent flow from the AFW Pumps from spilling from a ruptured feedwater header. Since excessive leakage through these valves would adversely affect the performance of the associated auxiliary feedwater trains, these valves should be category A and functionally leaktested. Note: The function of these valves (in series) is redundant.

Test Requirement: CV-C SLT-A

1-CS-00480 and 1-CS-00481 (M-202)
2-CS-00480 and 2-CS-00481 (M-2202)
Steam Generator Feedwater Regulator Valve Bypass Valves

These valves auto-close in the event of SIS initiation to isolate the steam generators and to prevent overfeeding of the steam generators. This is considered to be redundant to the automatic trip function of the main feedwater, condensate, and heater drain tank pumps in the event of containment over-pressure (5 psig) and thus, testing is not required. (FSAR 14.2.5)

Test Requirement: None

1-CS-02189 and 1-CS-02190 (M-202)
2-CS-02189 and 2-CS-02190 (M-2202)
Main Feedwater Pump Discharge Valves

These valves auto-close when the associated feedwater pump is tripped. This ensures that overfeeding a steam generator is minimized in the postulated event that the feedwater regulating valve associated with the affected steam generator fails to close. This is considered to be redundant to the automatic trip function of the main feedwater, condensate, and heater drain tank pumps in the event of containment over-pressure (5 psig) and thus, testing is not required. (FSAR 14.2.5)

Test Requirement: None

Safety Function:

Provides cooling to certain vital safety equipment in both units including:

*Primary Containment
*Component Cooling Heat Exchangers
*Vital Area Room Coolers
*Emergency Diesel Generators
*Critical Air Conditioning Equipment
*Auxiliary Feedwater Pumps
*Spent Fuel Pit Heat Exchangers

Components:

P-032 A-F (M-207, Sh 1)
Service Water (SW) Pumps

Each Service Water Pump provides the required cooling water flow rate through the various cooled components to support adequate heat removal and ensure proper functioning of related safety-related equipment and systems.

Test Requirement: IWP-3000

1P-31 A&B (M-207, Sh. 1)
2P-31 A&B (M-207, Sh. 1)
Service Water Screen Wash Pumps

These pumps operate intermittently to wash debris from the traveling screens. They are not included in the test program because the rate of deposition of debris on the screens is not expected to be sufficient enough to cause an acute problem during an accident whereby operator action could not be taken to manually clean the screens. Even if the screens were to foul, there is ample bypass flow past the screens to provide for adequate flow to the Service Water Pumps.

Test Requirement: None

SW-LW-61 & SW-LW-62 (M-207, Sh 3)
BD Evap & Vent Condensers Inlet and Outlet Valves

These normally-open valves close to isolate non-vital service water heat loads during an accident.

Test Requirement: BT-C PIT FST

SW-00012 A-D (M-207, Sh 3)
CCW Heat Exchanger Temperature Control Valves

These valves modulate to control the temperatures of the respective CCW Heat Exchangers. On loss of control air, they will open to ensure adequate cooling of each heat exchangers to support immediate CCW system needs. IWV-1200 excludes control valves from the scope of the Program, however NRC Generic Letter 89-04 (Position 11) requires inclusion of control valves where there is a specified required fail-safe position. Thus, these valves are included in the Program.

Test Requirement: FST

1-SW-00015 A-D (M-207, Sh 4)
2-SW-00015 A-D (M-207, Sh 4)
Containment Cooler Cooling Water Supply Check Valves

Each valve opens to provide a flow path for service water to its respective Containment Cooler. In the event of a failure of a heat exchanger or related piping inside the containment, these valve would close to provide a containment isolation function. However, the coolers and piping are located outside of the missile barrier and are considered to be a closed system. Also, the service water pressure is always expected to be greater than the internal pressure of the containment. For these reasons, closure testing is not considered to be required. These valves are not leak tested in accordance with Appendix J.

Test Requirement: CV-O

1-SW-00030 A&B (M-207, Sh 4)
2-SW-00030 A&B (M-207, Sh 4)
Cavity Cooler Cooling Water Supply Check Valves

Each valve opens to provide a flow path for service water to its respective Cavity Cooler; however, these coolers are not required for accident mitigation. In the event of a failure of a heat exchanger or related piping inside the containment, these valves would close to provide a containment isolation function. However, the coolers and piping are located outside of the missile barrier and are considered to be a closed system. Also, the service water pressure is always expected to be greater than the internal pressure of the containment. For these reasons closure testing is not considered to be required.

Test Requirement: None

SW-00032 A-F (M-207, Sh 1)
Service Water Pump Discharge Check Valves

Each valve opens to provide a flow path for service water from its respective pump to the Service Water Supply Headers and closes to prevent reverse flow through an idle pump. Since excessive leakage through an idle pump could adversely affect the performance of operating pumps, these valves are subjected to a periodic functional leak test.

Test Requirement: CV-O CV-C SLT-B

SW-00112A and SW-00135A (M-207, Sh 1)
Turbine-Driven AFW Pump Cooling Water Supply Check Valves

Each valve opens to provide a flow path for service water to each of the steam driven AFW Pumps. There is no apparent significant closure function.

Test Requirement: CV-O

SW-00307, SW-00315, SW-00322, and SW-00360 (M-207, Sh 3)
CCW HX Cooling Water Outlet Valves

These valves must be opened to provide sufficient cooling water flow through the CCW Heat Exchangers for post-accident (recirculation) heat rejection.

Test Requirement: BT-O

SW-00286, SW-00290, SW-00296, and SW-00346 (M-207, Sh 3)
CCW Heat Exchanger Cooling Water Inlet Valves

These valves must be opened to provide sufficient cooling water flow through the CCW heat exchangers for post-accident (recirculation) heat rejection.

Test Requirement: BT-O

SW-00396A and SW-00397A (M-207, Sh 3)
Battery Room Heat Exch. Cooling Water Supply Check Valves

Each valve opens to provide a flow path for service water from the service water headers to the respective battery room coolers. There does not appear to be any significant safety function of these valves in the closed position.

Test Requirement: CV-O

1-MS-02090 (M-201, Sh 1)
2-MS-02090 (M-2201, Sh 1)
AFW Pump Cooling Water Supply Valves

Each valve opens to provide a flow path for service water to each of the steam-driven AFW Pumps. There is no apparent significant closure function.

Test Requirement: BT-O FST

SW-02816 (M-207, Sh 3)
Service Bldg. HVAC Cooling Water MOV

These normally-open valves close to isolate non-vital service water heat loads during an accident.

Test Requirement: BT-C PIT

SW-02817 (M-2207, Sh 1)
Service Water Inlet MOV

These normally-open valves close to isolate non-vital service water heat loads during an accident.

Test Requirement: BT-C PIT

SW-02818 and SW-02819 (M-207, Sh 1)
Control Room/Cable Spreading Room A/C Heat Exchanger Inlet Supply Valves

These normally-open valves provide flow paths for service water to the respective A/C system condensers to ensure continued operability of the air conditioning units. Since they may not be open when post-accident air conditioning may be required, they should be exercised accordingly.

Test Requirement: BT-O PIT

SW-02818 A&B and SW-02819 A&B (M-201, Sh 1)
Control Room/Cable Spreading Room A/C Temperature Control Valves

These valves modulate to control service water flow to several A/C unit condensers. Although they fail to the open position, there is no fail-safe position for these valves. Failure in any position would ultimately result in the loss of the respective A/C unit (PBM 92-0583). Consequently, these valves are specifically excluded from the scope of the IST Program under IWV-2100.

Test requirement: None

SW-02838 and SW-02839 (M-207, Sh 1)
EDG Heat Exchanger Outlet Cooling Control Valves

These valves open upon receiving a starting signal to the EDG. Subsequent closure is not a requirement albeit desirable from an operational viewpoint.

Test Requirement: BT-O FST PIT

SW-02869 and SW-02870 (M-207, Sh 1)
Service Water West Header Isolation Valves

These normally-open valves may be closed to isolate the Service Water Supply Headers as may be required during an accident, but there is no designated safety function for these valves to close, thus they are considered to be passive. Taking into consideration the importance of the system and the absolute need to maintain service water availability at all times, it is prudent to ensure the capability of isolation (splitting) the headers in the unlikely event of a passive failure during an accident. For this reason, these valves are exercised to the closed position.

Test Requirement: BT-C PIT

1-SW-02880 (M-207, Sh 2)
2-SW-02880 (M-2207, Sh 1)
Turbine Hall Coolers Inlet Valve

These normally-open valves close to isolate non-vital service water heat loads during an accident.

Test Requirement: BT-C PIT

SW-02890 and SW-02891 (M-207, Sh 1)
Service Water Header Cross-Tie Isolation Valves

During normal operation these valves are open and the headers are interconnected. Manual manipulation of these valves may be required as a result of a component failure in one of the headers. Taking into consideration the importance of the system and the absolute need to maintain service water availability at all times, it is prudent to ensure the capability of isolation (splitting) the headers in the unlikely event of a passive failure during an accident. For this reason, these valves are exercised to the closed position.

Test Requirement: BT-C PIT

1-SW-02907 and 1-SW-02908 (M-207, Sh 4)
2-SW-02907 and 2-SW-02908 (M-207, Sh 4)
Containment Vent Coolers Emergency Flow Valves

These normally-closed valves open on a safety injection signal to initiate containment cooling water flow. (FSAR 6.3)

Test Requirement: BT-O PIT

SW-TCV-02929 A&B (M-207, Sh 1 and M-144, Sh 1)
Aux. Feedwater Pump Room Cooler Temperature Control Valves

These valves modulate to control the temperatures of the respective rooms to ensure continued operability of the safety-related components in the rooms. On loss of control air, they will open to ensure full flow to each cooler. IWV-1200 specifically excludes control valves from the scope of the Program. However, NRC Generic Letter 89-04 (Position 11) requires inclusion of control valves where there is a specified required fail-safe position. Thus, these valves are included in the Program.

Test Requirement: FST

SW-02930 A&B (M-207, Sh 3)
Spent Fuel Pit HX Cooling Water Isolation Valves

These normally-open valves close to isolate non-vital service water heat loads during an accident.

Test Requirement: BT-C PIT

1-SW-02959, 1-SW-02963, 1-SW-02967, and 1-SW-02971 (M207, Sh 4)
2-SW-02959, 2-SW-02963, 2-SW-02967, and 2-SW-02971 (M207, Sh 4)
Containment Cooler Cooling Water Return Relief Valves

In the event it is required to isolate a containment cooler during an accident, these valves would protect the associated piping and containment penetration from over-pressure due to a potential temperature excursion inside containment with the potential breach of containment.

Test Requirement: RVT

SW-02976 (M-2207, Sh 1 & M-144, Sh 1)
Containment Spray Pump Area Cooler Temperature Control Valve

This valve opens to supply cooling water to the associated room coolers. On loss of control air, they will open to ensure full flow to each condenser. IWV-1200 specifically excludes control valves from the scope of the Program. However, NRC Generic Letter 89-04 (Position 11) requires inclusion of control valves where there is a specified required fail-safe position. Thus, these valves are included in the Program.

Test Requirement: FST

SW-02977 (M-207, Sh 3 & M-144, Sh 1)
RHR Pump Area Cooler Temperature Control Valve

This valve opens to supply cooling water to the associated room coolers. On loss of control air, they will open to ensure full flow to each condenser. IWV-1200 specifically excludes control valves from the scope of the Program. However, NRC Generic Letter 89-04 (Position 11) requires inclusion of control valves where there is a specified required fail-safe position. Thus, these valves are included in the Program.

Test Requirement: FST

AF-04007A and AF-04014A (M-207, Sh 1)
AFW Pump Cooling Water Supply Solenoid Valves

Each valve opens to provide a flow path for cooling water to each of the motor-driven AFW Pumps. Since the pump bearings and seals are cooled by the pumped medium and the steam generator makeup does not have the potential of being at elevated temperatures, bearing cooling is not required. There is no apparent significant closure function.

Test Requirement: None

1-SW-04300 and 1-SW-04301 (M-207, Sh 4)
2-SW-04300 and 2-SW-04301 (M-207, Sh 4)
Cavity Cooler Cooling Water Return Relief Valves

In the event it is required to isolate a cavity cooler during an accident, these valves would protect the associated piping and containment penetration from over-pressure due to a potential temperature excursion inside containment with the potential breach of containment.

Test Requirement: RVT

SW-04401 and SW-04404 (M-207, Sh 1)
EDG Service Water Heat Exchanger Thermal Relief Valves

These valves open to protect the respective EDG Oil Coolers in the event of heating of a cooler with the cooler isolated. Since when a cooler is isolated it would be considered out of service anyway, this function is not considered important for the proper operation of the service water system or of the related EDG.

Test Requirement: None

Service Water Screen Wash Pump Discharge Check Valves

These valves close to prevent reverse flow through an idle screen wash pump and open to provide flow paths from the pumps to the screens. Since, in the context of the scope of the IST Program, the pumps are not considered important to the operation of the Intake Cooling Water System, no testing of these valves is prescribed.

Test Requirement: None

REACTOR COOLANT SYSTEM

Safety Function:

The safety function of the Reactor Coolant System is to maintain the structural and leaktight integrity of its pressure boundary to assure containment of fission products should fuel failure occur. It also provides a means of removing decay heat from the reactor core.

Components:

1-RC-00430 & 00431C (541F091, Sh 1&2)
2-RC-00430 & 00431C (541F445, Sh 1&2)
Power-Operated Relief Valves (PORV)

The PORV's are designed to open in the event of a reactor coolant system transient to reduce system pressure and preclude opening of the RCS safety valves for all but the most severe conditions. This function is, however, not assumed in the FSAR safety analysis, thus the necessity of testing for this function is questionable. (Reference NRC Generic Letter 90-06) Another primary safety function of these valves is to protect the reactor coolant system from over-pressurization when the reactor vessel is cooled down (LTOP). In addition, during plant cooldown following an accident where the reactor coolant pumps are not in operation, a PORV may be opened to vent the pressurizer in order to provide for de-pressurization of the reactor coolant system. Due to the critical nature of the circumstances should one of these valves fail to close, it is prudent to exercise these valves to the closed position as well.

Test Requirement: BT-O BT-C FST PIT

1-RC-00431A (541F091, Sh 1)
2-RC-00431A (541F445, Sh 1)
Pressurizer Spray Valves

These valves open to spray down the pressurizer steam space thus reducing or controlling pressurizer pressure as required. No credit is taken in the safety analysis for the operation of these valves and the valves fail closed on loss of instrument air to the containment.

Test Requirement: None

1-RC-00434 and 00435 (541F091, Sh 1&2)
2-RC-00434 and 00435 (541F445, Sh 1&2)
Pressurizer Safety Valves

These valves provide over-pressure protection for the Reactor Coolant System (ASME Code Safety/Reliefs).

Test Requirement: RVT

1-RC-00508 & 00529 (541F091, Sh 2)
2-RC-00508 & 00529 (541F445, Sh 2)
Pressurizer Relief Tank (PRT) Fill Line Isolation/Check

The air-operated valve is opened and the check valve opens, as required, to add water to the PRT; this is not considered to be a safety function. They close for primary containment isolation and are tested in accordance with Appendix J.

Test Requirements: AOV: BT-C FST SLT-A PIT
CV: CV-C SLT-A

1-RC-00515 & 00516 (541F091, Sh 1&2)
2-RC-00515 & 00516 (541F445, Sh 1&2)
PORV Block Valves

These valves are normally-open to provide flowpaths to the PORV's and are closed to isolate the associated PORV's in the event that a PORV should inadvertently jam or stick in the open position or leak excessively. Since they are open during operation and need not change position to perform their function in the open position, testing in the open direction is not required.

Test Requirement: BT-C PIT

1-RC-00528 & 00595 (541F091, Sh 2)
2-RC-00528 & 00595 (541F445, Sh 2)
Pressurizer Relief Tank (PRT) N2 Line Isolation/Check

The manual valve is opened and the check valve opens, as required, to pressurize the PRT with nitrogen; this is not considered to be a safety function. They close for primary containment isolation and are tested in accordance with Appendix J.

Test Requirements: CV: CV-C SLT-A
MA: BT-C SLT-A

1-RC-00538 & 00539 (541F091, Sh 2)
2-RC-00538 & 00539 (541F445, Sh 2)
Pressurizer Relief Tank (PRT) Sample Isolation

These valves are opened, as required, to draw a sample of the air space within the PRT. They close for primary containment isolation and are tested in accordance with Appendix J.

Test Requirements: BT-C FST SLT-A PIT

1-RC-00570 A&B, 00575 A&B, and 00580 A&B (541F091, Sh 2)
2-RC-00570 A&B, 00575 A&B, and 00580 A&B (541F445, Sh 2)
Reactor Vessel & Pressurizer Vent Valves

These valves are opened as needed to vent non-condensable gases trapped in the reactor vessel head or the pressurizer to either the pressurizer relief tank or the containment atmosphere. Exercising these valves is noted as a commitment via letter from C.W. Fay to H.R. Denton dated 2-29-84.

Test Requirement: BT-O PIT FST

1-RC-00597 (541F091, Sh 1)
2-RC-00597 (541F445, Sh 1)
Reactor Vessel Flange Leakage Monitor Isolation Valves

These normally-open valves provide passage for leakage between the reactor vessel O-rings to be detected indicating possible failure of the inside O-ring. Should leakage be detected, the associated valve would be closed as desired for operational reasons, however such an event is not considered to be serious in the context of an accident scenario.

Test Requirement: None

1-RC-00503 & 00541 (541F091, Sh 1)
2-RC-00503 & 00541 (541F445, Sh 1)
RC Loop A Cold Leg Manual Drain Valves

These normally-closed valves are only rarely used. They are opened to allow a complete loop drain to the reactor coolant drain tank (RCDT). Although they are pressure isolation valves (PIVs), they are not required to be leak rate tested by Code and no practical method of leak rate testing is possible given the physical plant configuration. Leakage past the two valves in series would be detected by daily RCS leakage calculations and increasing RCDT level, pressure, and temperature. They are considered passive in the closed position. Thus, stroke testing is not required.

Test Requirement: None

1-RC-00598 & 00599 (541F091, Sh 1)
2-RC-00598 & 00599 (541F445, Sh 1)
RC Loop B Cold Leg Motor Operated Drain Valves

These normally-closed valves are only rarely used. They are opened to allow a complete loop drain to the reactor coolant drain tank (RCDT). Although they are pressure isolation valves (PIVs), they are not required to be leak rate tested by Code and no practical method of leak rate testing is possible given the physical plant configuration. Leakage past the two valves in series would be detected by daily RCS leakage calculations and increasing RCDT level, pressure, and temperature. They are considered passive in the closed position. Thus, stroke testing is not required.

Test Requirement: None

CHEMICAL AND VOLUME CONTROL (CVCS)

Safety Function:

The CVCS System serves as an alternate shutdown system by providing for reactor coolant system boration when required. (FSAR 9.2)

Components:

1-P-002 A-C (684J741)
2-P-002 A-C (685J175)
Charging Pumps

The Charging Pumps deliver concentrated boric acid solution at the rate required for RCS boration from the discharge of the RWST's or the Boric Acid Transfer Pumps to the RCS. In addition, the charging pumps are used to mitigate the effects of a small break LOCA. However, per the safety analysis, the safety injection pumps are the primary means for responding to a small break LOCA but no such credit is taken in the safety analysis. (FSAR 9.2 and 6.2.2)

Test Requirement: IWP-3000

1-P-004 A&B (684J741)
2-P-004 A&B (685J175)
Boric Acid Transfer Pumps

The Boric Acid Transfer Pumps deliver concentrated boric acid solution at the rate required for RCS boration from the Boric Acid Tanks to the suction of the Charging Pumps. (FSAR 9.2)

Test Required: IWP-3000

1-CV-00112B (684J741)
2-CV-00112B (685J175)
RWST To Charging Pump Suction Control Valves

These valves open to provide the primary (preferred) source of concentrated borated water for RCS boration.

Test Requirement: BT-O PIT

1-CV-00112C (684J741)
2-CV-00112C (685J175)
Volume Control Tank (VCT) To Charging Pump Suction Valves

During an accident, these valves remain open and close during RCS boration to isolate the VCT when the source of borated water for the charging pump suction is shifted to the RWST.

Test Requirement: BT-C PIT

1-CV-00142 (684J741)
2-CV-00142 (685J175)
Charging Line Flow Control Valves

These valves are opened to provide a flowpath from the Charging Pumps to the RCS during RCS boration. In addition, they open to provide system makeup for small RCS leaks (LOCA) where RCS pressure would remain above the shutoff head of the safety injection pumps.

Test Requirement: BT-O FST PIT

1-CV-00266 (684J741)
2-CV-00266 (685J175)
Volume Control Tank (VCT) Outlet Check Valves

These valves open to provide suction from the VCT to the charging pumps and close to isolate the VCT during RCS boration. Since the closure function is redundant with the function of CV-00112C, neither of these functions is considered critical.

Test Requirement: None

1-CV-00278 A-C (684J741)
2-CV-00278 A-C (685J175)
Charging Pump Safety/Relief Discharge Check Valves

In the event that a charging pump were to be operated with its discharge valve closed (assuming the respective discharge relief valve opens and recirculates to the pump suction) these check valves will prevent over-pressurization of the pump suction piping by relieving pressure to the VCT. While this provision is important as a feature for equipment protection, it is not related to the safety function of the charging pumps and, thus, these valves are not included in the IST Program.

Test Requirement: None

1-CV-00283 A-C (684J741)
2-CV-00283 A-C (685J175)
Charging Pump Relief Valves

These valves open to protect the Charging Pumps from damage caused by over-pressure should flow be over-throttled or a downstream valve inadvertently closed. If the setpoint of one of the valves were to drift too low whereby it lifted prematurely or stuck open, then all three pumps associated with that unit could be adversely affected when the capability for injection is reduced by the relieving capacity of the open valve.

Test Requirement: RVT

1-CV-00295 (684J741)
2-CV-00295 (685J175)
Charging Header Check Valves

These valves open to provide flowpaths for RCS boration from the Charging Pumps to the RCS. Leaktesting is not performed since there are two upstream valves that are leak tested.

Test Requirement: CV-O

1-CV-00296 and 1-CV-00297 (684J741)
2-CV-00296 and 2-CV-00297 (685J175)
Auxiliary Pressurizer Spray Isolation and Check Valves

These valves open to provide an additional pathway for pressurizer spray when the reactor coolant pumps are not in operation. Alternate means of pressurizer cooldown and depressurization are available, thus, pressurizer spray is not required for plant shutdown or cooldown. Should valve CV-001298 be closed with a charging pump in operation, air-operated valve(s) CV-00296 will open to prevent dead-heading of a charging pump. Although these valves perform important operational functions, they are not required for accident mitigation and, thus, are not required to be included in the IST Program.

Test Requirement: None

1-CV-00300 A&B (684J741)
1-CV-00300 A&B (685J175)
RCP Seal Injection Throttle Valves

These normally-throttled open manual valves may be shut, as necessary, to isolate seal injection flow to reactor coolant pumps. Although they could be used to provide containment isolation when shut, they are typically not called upon to fill the containment isolation role and are not tested under Appendix J. Consequently, they are not included in the IST Program.

Test Requirement: None

1-CV-00304 C&D (684J741)
2-CV-00304 C&D (685J175)
Reactor Coolant Pump (RCP) Seal Water Injection Check Valves

The operation of the RCP's is not required for accident recovery, thus neither is the seal water injection. For this reason, there is no safety requirement for these valves to open, however, these valves are required to close for containment isolation and are leaktested per Appendix J.

Test Requirements: CV-C SLT-A

1-CV-00313 (684J741)
2-CV-00313 (685J175)
Reactor Coolant Pump (RCP) Seal Water Return Containment Isolation Valves

The operation of the RCP's is not required for accident recovery, thus neither is the seal water injection. For this reason, there is no safety requirement for these valves to open, however, these valves are required to close for containment isolation and are leaktested per Appendix J.

Test Requirements: BT-C SLT-A PIT

1-CV-00313A (684J741)
2-CV-00313A (685J175)
Reactor Coolant Pump (RCP) Seal Water Return Containment Isolation Valves

The operation of the RCP's is not required for accident recovery, thus neither is the seal water injection. For this reason, there is no safety requirement for these valves to open, however, these valves are required to close for containment isolation and are leaktested per Appendix J.

Test Requirements: BT-C SLT-A PIT FST

1-CV-00323A (684J741)
2-CV-00323A (685J175)
Auxiliary Spray Isolation Valves

These valves are normally locked closed and are manually opened in the event pressurizer spray is required and the normal spray pathway is unavailable. This is not considered to be a safety-related function and is not required to mitigate the consequences of an accident. These valves are leaktested per Appendix J, therefore, they are included in the Program as Category A - Passive.

Test Requirement: SLT-A

1-CV-00323B (684J741)
2-CV-00323B (685J175)
Charging Line HCV Bypass Valves

These normally-closed manual valves may be opened, if necessary, in the event that a charging flow control valve (1&2 CV-00142) is shut and inoperable or must be isolated for some reason. Power operation of the plant in this mode would normally not be done for any extended period of time, and is not considered essential since the alternate charging flow path via CV-01296 is available. These valves are considered passive in the closed position. Since the CVCS system is a closed system outside of containment, these valves are not required to be tested under Appendix J.

Test Requirement: None

1-BS-00333 A&B (684J741)
2-BS-00333 A&B (685J175)
Boric Acid Transfer Pump Discharge Check Valves

These valves open to provide flowpaths for flow from the Boric Acid Transfer Pumps to the suction of the Charging Pumps. They close to prevent reverse flow through an idle pump and recirculation to the Boric Acid Tanks. Excessive leakage through the valve associated with the idle pump could adversely affect the performance of the operating pump, thus these valves should be subjected to a functional leaktest.

Test Requirement: CV-O CV-C SLT-B

1-CV-00350 (684J741)
2-CV-00350 (685J175)
RCS Boration Isolation Valves

These valves open to provide flowpaths from the Boric Acid Transfer Pumps to the suctions of the Charging Pumps during RCS boration operations.

Test Requirement: BT-O PIT

1-CV-00351 (684J741)
2-CV-00351 (685J175)
RCS Boration Check Valves

These valves open to provide flowpaths from the Boric Acid Transfer Pumps to the suctions of the Charging Pumps during RCS boration operations.

Test Requirement: CV-O

1-CV-00357 (684J741)
2-CV-00357 (685J175)
RWST To Charging Pump Suction Check Valves

These valves open to provide the primary (preferred) source of concentrated borated water for RCS boration.

Test Requirement: CV-O

1-CV-00369A (684J741)
2-CV-00369A (685J175)
RHR Letdown Valves

These normally-closed valves are opened, as necessary, during decay heat removal operation for letdown from the RHR to he CVCS. Upstream valves in the RHR system (RH-00715 C&D) are seat leaktested. This valve is not considered to be a containment isolation barrier.

Test Requirement: None

1-CV-00370 (684J741)
2-CV-00370 (685J175)
Charging Header Check Valves

These valves open to provide flowpaths for RCS boration from the Charging Pumps to the RCS. The valves close to prevent backflow and gross leakage outside containment in the event of an upstream pipe break. The latter function is not relevant since the pipe break is not a postulated accident for this evaluation. However, these valves perform a containment isolation function and are leaktested per Appendix J.

Test Requirement: CV-O CV-C SLT-A

1-CV-00371 (684J741)
2-CV-00371 (685J175)
Reactor Coolant Letdown Containment Isolation Valves

Letdown capability is not required for accident recovery and thus there is no safety requirement for these valves to open, however, these valves are required to close for containment isolation and are leaktested per Appendix J.

Test Requirements: BT-C SLT-A PIT FST

1-CV-00371A (684J741)
2-CV-00371A (685J175)
Reactor Coolant Letdown Containment Isolation Valves

Letdown capability is not required for accident recovery and thus there is no safety requirement for these valves to open, however, these valves are required to close for containment isolation and are leaktested per Appendix J.

Test Requirements: BT-C SLT-A FST PIT

1-CV-00384B (684J741)
2-CV-00384B (685J175)
Charging Line HCV Outlet Valves

These normally-open valves may be shut, as necessary, to isolate the charging flow control valves (1&2 CV-00142). Although they could be used to provide containment isolation when shut, they are typically not called upon to fill the containment isolation role and are not tested under Appendix J. Consequently, they are not included in the IST program.

Test Requirement: None

1-CV-01296 (684J741)
2-CV-01296 (685J175)
Auxiliary Charging Containment Isolation Valves

These normally-closed valves may be opened to provide an alternate charging pathway if the normal charging flow path is unavailable. It is conceivable that they may be required to both open and shut under accident conditions, and thus, are stroke tested in both directions. These valves are leak rate tested under Appendix J.

Test Requirements: SLT-A PIT BT-O BT-C FST

1-CV-001298 (684J741)
2-CV-001298 (685J175)
Charging Line Isolation Valves

These valves open to provide flowpaths from the Charging Pumps to the RCS serving as the primary pathways for RCS boration into the cold legs. Since they are normally open during plant operation and would not be required to change position to perform their safety function, they can be considered to be passive, thus no testing is required.

Test Requirement: None

Safety Function:

Following a loss of coolant accident (LOCA), the Safety Injection (SIS) System provides sufficient flow of borated water to the reactor core to ensure adequate emergency cooling. After the injection phase of the accident, the system provides for long-term core cooling and recirculation. This section also discusses the role of the RHR System and related components in reaching and maintaining the reactor coolant system in a cold shutdown condition during operation in the "normal" shutdown cooling alignment. (FSAR 6.2)

In the event of a main steam line break or steam generator tube rupture, the SIS provides the addition of borated water to maintain adequate shutdown margin and makeup to the RCS.

Components:

1P-010 A&B (110E018 Sh 1)
2P-010 A&B (110E029 Sh 1)
Residual Heat Removal Pumps

These pumps operate to inject borated makeup to the RCS in the event of a large break in the RCS pressure boundary. During the long-term cooling (recirculation) mode they take suction on the containment sumps and circulate water through the RHR Heat Exchangers to the suctions of the SI Pumps, Containment Spray Pumps, or directly to the reactor coolant system.

Following a plant shutdown resulting from an event other than that requiring post-LOCA long-term recirculation cooling, these pumps circulate reactor coolant through the RHR Heat Exchangers to provide for core cooling to remain in a cold shutdown condition.

Test Requirement: IWP-3000

1P-015 A&B (110E017 Sh 2)
2P-015 A&B (110E035 Sh 2)
Safety Injection Pumps

These pumps inject borated water into the RCS in the event of a safety injection actuation signal initiated by secondary-side accident or a loss of reactor coolant due to a primary-side leak.

During the Post-LOCA recirculation mode of operation with the RCS pressure elevated, these pumps may circulate water from the outlet of the RHR Heat Exchangers back to the RCS for long-term core cooling.

Test Requirement: IWP-3000

1-RH-00700 and 1-RH-00701 (110E018 Sh 1)
2-RH-00700 and 2-RH-00701 (110E029 Sh 1)
RHR Loop Stop Valves

These normally-closed, motor-operated valves isolate the RHR System from the reactor cooling system during plant operation and are opened to provide flow paths from the RCS to the RHR Pumps during operation in the shutdown cooling mode. FSAR Sections 14.2.4 and 14.2.5 which discuss main steam line rupture and steam generator tube rupture casualties take credit for establishing RHR cooling within 6 hours of the casualty. Consequently, these valves are included in the IST Program.

Test Requirement: BT-O BT-C PIT SLT-A

1-RH-00704 A&B (110E018 Sh 1)
2-RH-00704 A&B (110E029 Sh 1)
RHR Pump Loop Suction (RHR Mode) Valves

These normally-locked-closed manual valves are opened to provide flow paths from the RCS to the RHR Pumps during operation in the shutdown cooling mode. They remain closed (Category B valves) to prevent inadvertent draining of the RWST to the RCS. FSAR Sections 14.2.4 and 14.2.5 which discuss main steam line rupture and steam generator tube rupture casualties take credit for establishing RHR cooling within 6 hours of the casualty. Consequently, these valves are included in the IST Program.

Test Requirement: BT-O BT-C

1-RH-00706 A&B (110E018 Sh 1)
2-RH-00706 A&B (110E029 Sh 1)
RHR Train A/B Test Line Isolation Valve

These normally-closed manual valves remain closed at all times when the plant is in operation. During post-LOCA recirculation they must provide adequate leak tight integrity to ensure recirculation water from the sump is not returned to the RWST.

Test Requirement: SLT-A

1-RH-00710 A&B (110E018 Sh 1)
2-RH-00710 A&B (110E029 Sh 1)
Residual Heat Removal Pump Discharge Check Valves

These valves open to provide flow paths from each of the RHR Pumps to the RHR discharge headers and piping. Since the RHR Pumps discharge through separate, non-cross-connected piping to the SI Pump suction and to the RCS, the check valves need not close for the RHR (LPSI) system to perform its function. Technical Specifications require RHR system leakage testing.

Test Requirement: CV-O

1-RH-00713 A&B (110E018 Sh 1)
2-RH-00713 A&B (110E029 Sh 1)
Residual Heat Removal Pump Discharge Cross-Connect Valves

These normally-closed manual-operated valves may be opened during shutdown cooling to permit using either RHR Heat Exchanger with either pump and to provide temperature control via FCV-626 for the "B" train. These functions are not considered to be critical with respect to accident recovery.

Test Requirement: None

1-RH-00716 A&B (110E018 Sh 1)
2-RH-00716 A&B (110E029 Sh 1)
Residual Heat Removal HX Outlet Valves

These normally-open, manual-operated valves remain open during low-pressure safety injection and shutdown cooling to provide flow paths from the heat exchangers to the RCS loops and reactor vessel.

Test Requirement: None

1-RH-00716 C&D (110E018 Sh 1)
2-RH-00716 C&D (110E029 Sh 1)
Residual Heat Removal HX Outlet Cross-Connect Valves

These normally-closed, manual-operated valves may be opened during shutdown cooling to permit using the "B" RHR Heat Exchanger while in the shutdown cooling mode of operation. This flexibility is not considered to be critical with respect to accident recovery.

Test Requirement: None

1-RH-00718 A&B (110E018 Sh 1)
2-RH-00718 A&B (110E029 Sh 1)
RHR Pump Suction (RHR Mode) Check Valves

These valves open to provide flow paths from the RCS to the RHR Pumps during operation in the shutdown cooling mode. They close to prevent inadvertent draining of the RWST to the RCS if the isolation valves (RH-704) are open. The latter is not considered a critical function since the isolation valves are normally closed. Since operation in the shutdown cooling mode is not required to bring the plant to its design safe-shutdown condition, this valve is not required to change position to perform any safety function.

Test Requirement: None

1-RH-00720 (110E018 Sh 1)
2-RH-00720 (110E029 Sh 1)
RHR Return To RCS Valves

These normally-closed (power removed) valves are opened to provide flow paths from the RHR Heat Exchangers to the RCS during operation in the shutdown cooling mode. During plant operation they provide pressure isolation of the RHR system from the RCS. FSAR Sections 14.2.4 and 14.2.5 which discuss main steam line rupture and steam generator tube rupture casualties take credit for establishing RHR cooling within 6 hours of the casualty. Consequently, these valves are included in the IST Program.

Test Requirement: BT-O BT-C PIT SLT-A

1-RH-00742 and 1-RH-00742A (110E018 Sh 1)
2-RH-00742 and 2-RH-00742A (110E029 Sh 1)
Refueling Water Return RWST Valves

These normally-closed manual valves remain closed at all times when the plant is in operation. Prior to the SI/RHR full-flow test line modifications, adequate leak tight integrity was required to ensure recirculation water from the sump was not returned to the RWST. This function has now been taken over by RH-00706A&B following modifications. Hence, leak rate testing of RH-00742 and RH-00742A is no longer required.

Test Requirement: None

1-RH-00624 and 1-RH-00625 (110E018 Sh 1)
2-RH-00624 and 2-RH-00625 (110E029 Sh 1)
RHR Heat Exchanger Outlet Valves

These valves are normally open and are required to remain open for low-head safety injection. During RHR System operation (after plant shutdown and partial cooldown) they may be throttled to control the RCS cooldown rate. It is unlikely that any event could occur during this cooldown period that would require these valves to be closed and subsequently reopening. Taking these considerations into account, these valves are categorized as "passive" per IWV-2100 and exercise testing is not required per IWV-3700.

Test Requirement: PIT

1-RH-00626 (110E018 Sh 1)
2-RH-00626 (110E029 Sh 1)
RHR Heat Exchanger Bypass Valves

These normally-closed valves are opened (throttled) to provide a means of temperature control during the residual heat removal mode of operation. In an accident scenario, temperature control would be insignificant with respect to accident mitigation and they would remain closed to direct all water through the heat exchangers. These valves are categorized as "passive" and exercise testing is not required.

Test Requirement: PIT

1-SI-00825 A&B (110E017 Sh 2)
2-SI-00825 A&B (110E035 Sh 2)
RWST To Safety Injection Pump Suction Valves

Following a safety injection signal and the subsequent emptying of the Boric Acid Tank(s), these normally-closed valves open automatically to supply borated water from the RWST's to the suction of the Safety Injection Pumps.

Test Requirements: BT-O PIT

1-SI-00825C (110E017 Sh 2)
2-SI-00825C (110E035 Sh 2)
Safety Injection Pump Minimum Flow Suction From RWST (MOV-825 A&B Bypass) Valves

These normally-open, fail-open valves provide a minimum flow of water to the Safety Injection Pumps until the Boric Acid Tank Supply Valves are open. Since they are not required to change position, they are passive and testing is not required.

Test Requirements: None

1-SI-00826A (110E017 Sh 2)
2-SI-00826A (110E035 Sh 2)
Safety Injection Boric Acid Suction Valves

Following a safety injection signal these normally-open valves remain open (passive) to supply borated water from the Boric Acid Tanks to the suction of the Safety Injection Pumps. (FSAR 6.2.2)

Test Requirements: None

1-SI-00826 B&C (110E017 Sh 2)
2-SI-00826 B&C (110E035 Sh 2)
Safety Injection Redundant Boric Acid Suction Valves

Following a safety injection signal these normally-closed valves open to supply borated water from the Boric Acid Tanks to the suction of the Safety Injection Pumps. When the water level in a Boric Acid Tank reaches the LO-LO Level alarm point, these valves close to isolate the empty tanks. (FSAR 6.2.2)

Test Requirements: BT-O BT-C PIT

1-SI-00829 A&B (110E017 Sh 2)
2-SI-00829 A&B (110E035 Sh 2)
Safety Injection Header Cross-Connect Valves

These normally closed valves are locked closed to isolate safety injection trains, and are considered passive in the performance of their safety function. They must have enough leak tight integrity to ensure that water from the sump is not returned to the RWST during post-LOCA recirculation.

Test Requirement: SLT-A

1-SI-00830 A&B (110E017 Sh 1)
2-SI-00830 A&B (110E035 Sh 1)
SI Accumulator Tank Safety/Relief Valves

These valves protect the SI accumulators and associated piping and components from over-pressure. (FSAR 6.2.2)

Test Requirement: RVT

1-SI-00834 A&B (110E017 Sh 1)
2-SI-00834 A&B (110E035 Sh 1)
SIS Accumulator Vent Valves

These valves are normally closed (fail closed) and are only required to open from time to time to adjust the pressure within the respective accumulators to assure compliance with the Tech Spec requirements for SIS accumulator pressure and level. During post-accident conditions, these valves could be used to prevent accumulator nitrogen from entering the RCS and remain closed until plant conditions are stable and long-term recovery valve lineups are established. This assumes the accumulator discharge motor-operated valves are closed to preclude nitrogen injection into the RCS after an accumulator is emptied.

Test Requirement: BT-O FST PIT BT-C

1-SI-00835 A&B (110E017 Sh 1)
2-SI-00835 A&B (110E035 Sh 1)
SIS Accumulator Makeup Valves

These normally-closed valves are opened from time to time to add water to the accumulators as necessary to maintain the minimum specified water inventory. They would not be called upon to operate or perform any function in the event of an accident .

Test Requirement: None

1-SI-00839 A-D (110E017 Sh 1)
2-SI-00839 A-D (110E035 Sh 1)
Safety Injection Loop Cold Leg/Accumulator Test Valves

These normally-closed air-operated valves are opened occasionally to verify the leak tight integrity of the associated injection check valves. They would not be called upon to perform any function in the event of an accident.

Test Requirement: None

1-SI-00841 A&B (110E017 Sh 1)
2-SI-00841 A&B (110E035 Sh 1)
SI Accumulator Discharge Valves

These valves are normally locked-open with their breakers de-energized to preclude inadvertent closure. They are required to remain open to provide flow paths from the respective accumulators to the RCS cold legs. Following injection of the tanks contents, these valves are closed by operator action to preclude injection of nitrogen into the RCS.

Test Requirement: BT-C PIT

1-SI-00842 A&B (110E017 Sh 1)
2-SI-00842 A&B (110E035 Sh 1)
SI Accumulator Discharge Check Valves

These valves open to provide a flow path from the SI Accumulators to the RCS cold legs. Upon initiation of high-head safety injection, they close to isolate the SIS accumulators from the safety injection headers during SIS injection to prevent diversion of SIS flow into the accumulators. Seat leakage is routinely performed in conjunction with verifying the material condition of the valve internals and is not related to a specific limit related to the safety function of the valve. (FSAR 6.2.2)

Test Requirement: CV-O CV-C SLT-A

1-SI-00844 A&B (110E017 Sh 1)
2-SI-00844 A&B (110E035 Sh 1)
SIS Accumulator Drain Valves

These normally-closed valves are opened from time to time to remove water from the accumulators as necessary to maintain the specified water inventory. They would not be called upon to operate or perform any function in the event of an accident.

Test Requirement: None

1-SI-00845 A,B,E&F (110E017 Sh 1)
2-SI-00845 A,B,E&F (110E035 Sh 1)
SIS Pump Injection To Cold Leg Check Valves

These valves open to provide flow paths for borated water injection from the SIS pumps to each of the RCS cold legs. They close to isolate the SIS from the high pressure of the RCS and thus provide a pressure isolation function to preclude damage to SIS components due to over-pressurization from the RCS and are tested in accordance with Technical Specification 15.3.16.

Test Requirement: CV-O CV-C SLT-A

1-SI-00845 C&D (110E017 Sh 1)
2-SI-00845 C&D (110E035 Sh 1)
SIS Pump Core Deluge Injection Check Valves

These valves open to provide flow paths for borated water injection from Safety Injection Pumps 1-P15B and 2-P15B to each of the reactor vessel core deluge injection paths. They close to isolate the SIS from the high pressure of the RCS and thus provide a pressure isolation function to preclude damage to SIS components due to over-pressurization from the RCS and are tested in accordance with Technical Specification 15.3.16.

Test Requirement: CV-O CV-C SLT-A

1-SI-00846 (110E017 Sh 1)
2-SI-00846 (110E035 Sh 1)
Accumulator Nitrogen Supply Valves

These normally-closed, fail-closed valves are opened, as required, to supply nitrogen to the accumulators as needed to maintain the required tank pressure. Nitrogen makeup to the accumulators is not considered to be critical with respect to accident mitigation. They close to provide primary containment isolation and is leak tested per Appendix J.

Test Requirements: BT-C FST PIT SLT-A

1-SI-00850 A&B (110E017 Sh 1)
2-SI-00850 A&B (110E035 Sh 1)
Containment Sump Hydraulic Isolation Valves

These normally-closed, hydraulically-operated valves are opened to align the RHR Pumps to take suction from the containment sump for post-accident long-term recirculation. While closed they also provide for containment isolation but are not designated a containment isolation valve.

Test Requirement: BT-O PIT BT-C

1-SI-00851 A&B (110E017 Sh 2)
2-SI-00851 A&B (110E035 Sh 1)
Containment Sump Isolation Valves

These normally-closed valves are opened to align the RHR Pumps to take suction from the containment sump for post-accident long-term recirculation. While closed they also provide for containment isolation but are not designated as containment isolation valves.

Test Requirement: BT-O PIT BT-C

1-SI-00852 A&B (110E017 Sh 1)
2-SI-00852 A&B (110E035 Sh 1)
RHR/Low Head Core Deluge Valves

These valves open to provide flow paths from the discharge of the RHR heat exchangers to the reactor vessel when low-head injection is initiated. They are closed or remain closed to align the system for recirculation via the safety injection pumps or containment cooling using the containment spray pumps. In addition, they provide a pressure isolation function to protect the RHR System piping from RCS pressure but are not designated as pressure isolation valves. (FSAR 6.2.2)

Test Requirement: BT-O BT-C PIT

1-SI-00853 A&B (110E017 Sh 1)
2-SI-00853 A&B (110E035 Sh 1)
RHR/ Low Head Injection Check Valves

These valves open to provide flow paths for borated water injection from the RHR pumps to the reactor vessel. They also isolate the RHR piping system from the RCS pressure and thus perform a pressure isolation function and are tested in accordance with Technical Specification 15.3.16.

Test Requirement: CV-O CV-C SLT-A

1-SI-00853 C&D (110E017 Sh 1)
2-SI-00853 C&D (110E035 Sh 1)
Core Deluge/Shutdown Cooling Check Valves

These valves open to provide flow paths for borated water injection from the RHR and Safety Injection Pumps to the reactor vessel. They also isolate the SI piping systems from the RCS pressure and thus perform a pressure isolation function and are tested in accordance with Technical Specification 15.3.16.

Test Requirement: CV-O CV-C SLT-A

1-SI-00854 A&B (110E017 Sh 2)
2-SI-00854 A&B (110E035 Sh 2)
RHR Pump Suction From RWST Check Valves

These valves open to provide flow paths for borated water injection from the RWST's to the suction of the RHR pumps for low-pressure safety injection. They close during post-accident recirculation to isolate the RWST from the containment sump suction lines. Because of this they are tested in the closed position and subjected to a seat leak test to ensure there is no potential for significant leakage from the containment sump to the RWST during recirculation.

Test Requirement: CV-O CV-C SLT-A

1-SI-00856 A&B (110E017 Sh 2)
2-SI-00856 A&B (110E035 Sh 2)
RHR Pump Suction From RWST Valves

These locked-open valves are closed to isolate the suctions of the RHR Pumps from the respective RWST's during alignment in the post-LOCA long-term cooling (recirculation) mode where RHR pump suction is from the containment sump. Since they are normally lock-open, they are considered passive in the open position and no exercising is required in the open direction.

Test Requirement: BT-C PIT

1-SI-00857 A&B (110E017 Sh 2)
2-SI-00857 A&B (110E035 Sh 2)
RHR To SI Pump Suction Valves

These manually-operated valves are opened to provide flow paths from the outlets of the RHR Heat Exchangers to the suctions of the SI Pumps when the system is aligned in the recirculation mode at elevated pressure.

Test Requirement: BT-O

1-SI-00861A (110E017 Sh 1)
2-SI-00861A (110E035 Sh 1)
RHR Pump Reactor Vessel Injection Line Safety/Relief Valves

These valves protect the reactor vessel injection line leading from the outlet of the "B" RHR Heat Exchangers to the reactor vessel from over pressure.

Test Requirement: RVT

1-SI-00861 B&C (110E018 Sh 1)
2-SI-00861 B&C (110E029 Sh 1)
RHR Shutdown Cooling Supply Line Safety/Relief Valves

These valves protect components in the RHR Pump suctio.. from over-pressurization due to inadvertent opening or leakage through the shutdown cooling supply valves RH-700 and RH-701. Since these are associated only with those parts of the RHR System related to shutdown cooling, they are not considered to be included in the IST Program scope.

Test Requirement: None

1-SI-00866 A&B (110E017 Sh 2)
2-SI-00866 A&B (110E035 Sh 1)
SIS Pump Discharge Valves

These valves open to provide flow paths from the SIS pumps to the RCS cold legs or reactor vessel upon initiation of an injection signal. These valves have the capability to be throttled shut upon demand to facilitate EOP-directed SI flow reduction.

Test Requirement: BT-O BT-C PIT

1-SI-00867 A&B (110E017 Sh 1)
2-SI-00867 A&B (110E035 Sh 1)
Safety Injection Cold Leg Injection Check Valves

These valves open to provide flow paths from the safety injection pumps and the SI Accumulators to the RCS cold legs under accident conditions. They close to isolate the SI System from the RCS and protect SIS system components from potential damage caused by over-pressurization and are tested in accordance with Technical Specification 15.3.16.

Test Requirement: CV-O CV-C SLT-A

1-SI-00875 A&B (110E017 Sh 1)
2-SI-00875 A&B (110E035 Sh 1)
SIS Pump Test Recirculation Line Check Valves

These valves connect to a potential recirculation flow path from the safety injection pumps to the SIS test line. A set point of 1745 psig is applied to safety/relief valves SI-00887. Test line isolation valves to the RWST are normally shut, no recirculation flow provided. They close to provide isolation between the two independent safety injection trains and provide protection from the loss of both trains in the event of passive failure in one of the trains. Should such an event occur, excessive leakage through the associated check valve could result in a significant spillage from the unaffected train and a reduction of flow to the RCS.

Test Requirement: CV-C SLT-A

1-SI-00878 A&C (110E017 Sh 1)
2-SI-00878 A&C (110E035 Sh 1)
Reactor Vessel Safety Injection Valves

These normally-closed, motor-operated valves open to provide flow paths for borated water injection from Safety Injection Pumps 1-P15B and 2-P15B to each of the reactor vessel core deluge injection paths. They remain closed to isolate the SIS from the high pressure of the RCS and thus provide a pressure isolation function to preclude damage to SIS components due to over-pressurization from the RCS. During the course of an accident they may be required to open and close as plant conditions change. (Note: In each line the downstream check valve is relied upon to perform this function and, thus, these valves are not considered category A valves.)

Test Requirements: BT-C BT-O PIT

1-SI-00878 B&D (110E017 Sh 1)
2-SI-00878 B&D (110E035 Sh 1)
SIS Loop Safety Injection Valves

These normally-open, motor-operated valves provide flow paths for borated water injection from Safety Injection Pumps 1-P15A and 2-P15A to each of the reactor coolant system cold legs. They are not required to change position to perform their safety function. They should be tested since they may be used during post-accident realignments.

Test Requirements: BT-O BT-C PIT

1-SI-00885 A&B (110E017 Sh 1)
2-SI-00885 A&B (110E035 Sh 1)
LPSI Injection/Shutdown Cooling Valves Bonnet Pressure Relief Check Valves

These valves open to preclude pressure buildup in the bonnet areas of valves SI-852A&B that could restrict valve operation when required. There is no discernable failure mode of these check valves that could prohibit pressure relief to an extent that would inhibit operation of the respective motor-operated valves, thus testing these valves is not required. Since the lines containing these valves leads from the downstream (high pressure) side of the valve to the area between the discs, closure of the valves is not significant.

Test Requirement: None

1-SI-00887 (110E017 Sh 1)
2-SI-00887 (110E035 Sh 1)
Test Line Safety/Relief Valve

This valve protects the SI cold leg injection headers from over-pressure due to RCS back leakage. Per FSAR 6.2.2 these valves perform no specific safety function. However, it is NRC policy that all system safety/relief valves whose sole function is not thermal relief, should be included in the test program.

Test Requirement: RVT

1-SI-00889 A&B (110E017 Sh 2)
2-SI-00889 A&B (110E035 Sh 2)
Safety Injection Pump Discharge Check Valves

These valves open to provide flow paths from each of the high-head safety injection pumps to the various SI headers and piping. Since the SIS Pumps discharge through separate, non-cross-connected piping to the cold legs, these check valves need not close for the SI system to perform its function.

Test Requirement: CV-O

1-SI-00891 A&B (110E017 Sh 2)
2-SI-00891 A&B (110E035 Sh 2)
SI Pump Minimum Flow Check Valves

These valves open to provide flow paths for SI Pump minimum flow to ensure pump cooling during low-flow conditions. Since the discharge valves to the RWST (SI-897A&B) remain open during injection where minimum flow is limited by the individual line orifices, the potential effect of bypass flow through an idle pump is negligible. During long-term recirculation there is no path that would allow reverse flow through the idle pump, thus the closure of these valves is not required for the SI System to perform its safety function.

Test Requirement: CV-O

1-SI-00895 (110E017 Sh 2)
2-SI-00895 (110E035 Sh 2)
Safety Injection Pump Minimum Flow Suction From RWST Check Valves

These valves provide a minimum flow of water to the safety injection pumps to prevent pump damage until the Boric Acid Tank Supply Valves are open. At that point, the downstream isolation valves auto close to prevent water flow between the RWSTs and the Boric Acid Tanks.

Test Requirements: CV-O

1-SI-00896 A&B (110E017 Sh 2)
2-SI-00896 A&B (110E035 Sh 2)
Safety Injection Pump Suction Valves

These normally-open valves are closed during long-term recirculation where the Safety Injection Pumps are used in conjunction with the RHR Pumps.

Test Requirements: BT-C PIT SLT-A

1-SI-00897 A&B (110E017 Sh 2)
2-SI-00897 A&B (110E035 Sh 2)
SI Test Line Return Valves

These valves are normally gagged open and remain open to provide flow paths for minimum flow protection for the SI Pumps. Thus, they are considered passive in the open position and exercising in the open direction is not required. During post-LOCA long-term recirculation, they will be un-gagged and closed to block recirculation flow from returning to the RWSTs. In order to prevent the return of cooling water to the RWST during post-LOCA recirculation, these valves must have a high degree of leak tight integrity, thus they should be subjected to a functional leak test.

Test Requirement: BT-C FST SLT-A PIT

1-SI-00957 (110E017 Sh 1)
2-SI-00957 (110E035 Sh 1)
SIS Accumulator Combined Vent Valves

These normally-closed valves are opened to vent the SI Accumulators as necessary to maintain the desired accumulator internal pressure. The SI accumulator outlet motor-operated valves are relied upon to be closed to prevent nitrogen injection into the RCS following an accumulator dump. These valves provide a redundant means to prevent the accumulator nitrogen from entering the RCS in the event of an accident (passive). They are leak tested per Appendix J and, thus, are identified as Category A and exercised closed.

Test Requirement: BT-O SLT-A PIT FST

Safety Functions:

The containment spray system sprays cooling water into the primary containment atmosphere in the event of a LOCA or main steam line break inside containment, thus ensuring that containment internal pressure does not exceed its design valve.

The containment spray system also has the capability of spraying the containment with borated water and sodium hydroxide additive to minimize the amount of elemental radioactive iodine in the containment atmosphere.

Components:

1-P-014A and 1-P-014B (110E017, Sh 3)
2-P-014A and 2-P-014B (110E035, Sh 3)
Containment Spray Pumps

These pumps function to provide a supply of borated water from the RWSTs or the containment sumps (via RHR pumps) for containment cooling, reduction of airborne radioactive iodine, and pressure suppression.

Test Requirement: IWP-3000

1-SI-00836 A&B (110E017, Sh 3)
2-SI-00836 A&B (110E035, Sh 3)
Sodium Hydroxide Redundant Supply Valves

These normally closed valves open to allow spray additive to gravity feed to the containment spray eductors, from where it can be drawn into the spray system piping.

Test Requirement: BT-O P:T FST

1-SI-00840 A&B (110E017, Sh 3)
2-SI-00840 A&B (110E035, Sh 3)
Spray Additive Tank Vacuum Breaker Valves

These valves close to allow an over pressure nitrogen blanket to be maintained within the tank. In the event that a tank is drained to the extent that the nitrogen pressure decreases to atmospheric, these valves open to prevent a vacuum from occurring in the tank and thereby restricting flow to the associated containment spray eductor. Note that the nitrogen blanket is not an operational requirement for proper system function.

Test Requirement: RVT

1-SI-00847 (110E017, Sh 3)
2-SI-00847 (110E035, Sh 3)
Spray Additive Eductor Check Valves

These valves open to provide flow paths from the spray additive tank to the containment spray eductors. They close to isolate the RWSTs (under normal system line up) from spray additive piping. This closure function is not considered safety related.

Test Requirement: CV-O

1-SI-00858 A&B (110E017, Sh 3)
2-SI-00858 A&B (110E035, Sh 3)
Containment Spray Pump Suction From RWST Check Valves

These valves open to provide flow paths from the RWSTs to the suctions of the containment spray pumps. They are closed when the containment spray pumps are taking suction from the RHR pumps. However, upstream motor operated valves (SI-00870 A&B) are also closed to prevent water from the RHR pumps from being diverted to the RWSTs. Consequently, closure exercising and seat leakage testing are not required.

Test Requirement: CV-O

1-SI-00859 A&B (110E017, Sh 3)
2-SI-00859 A&B (110E035, Sh 3)
Containment Spray Pump Minimum Flow Check Valves

These valves open to provide flow paths for the containment spray pumps during periodic testing and operation of the pumps under minimum flow conditions. They close to prevent reverse flow through an idle containment spray pump during operation of the opposite pump. Since flow through this line is limited by an orifice and the 3/4 inch bypass around the isolation valves, any reduction in containment spray will be minimal and will have little effect on the operation of the containment spray system. Consequently, these valves are not required to operate in the closed direction for the containment spray system to be able to fulfill its safety function.

Under accident conditions, pump discharge motor operated valves (SI-00860 A through D) open simultaneously with pump start with the result that the containment spray pumps are not operated under low flow conditions for any appreciable length of time. Furthermore, during the brief period of time while the discharge valves are opening, pump cooling is afforded somewhat by recirculation flow through the spray eductor line. Consequently, these valves are not required to operate in the open direction for the containment spray system to be able to fulfill its safety function.

Test Requirement: None

1-SI-00860 A through D (110E017, Sh 3)
2-SI-00860 A through D (110E035, Sh 3)
Containment Spray Pump Discharge Valves

These valves open to provide flow paths from the containment spray pumps to the containment spray headers. (FSAR 6.4.1)

Test Requirement: BT-O PIT

1-SI-00862 A&B (110E017, Sh 3)
2-SI-00862 A&B (110E035, Sh 3)
Containment Spray Pump Discharge Check Valves

These valves open to provide flow paths from the containment spray pumps to the containment spray headers. They close to provide for containment isolation and are tested per Appendix J.

Test Requirement: CV-O CV-C SLT-A

1-SI-00862 G&H (110E017, Sh 3)
2-SI-00862 G&H (110E035, Sh 3)
Containment Spray Train A/B Test Line Isolation Valves

These valves are normally shut and considered passive. They are leak rate tested under Appendix J.

Test Requirement: SLT-A

1-SI-00864 A&B (110E017, Sh 3)
2-SI-00864 A&B (110E035, Sh 3)
Containment Spray Test/Recirculation Valves

These valves are opened during pump testing to allow recirculation to the RWST (non safety related function). They are normally closed (passive) and are leak rate tested under Appendix J.

Test Requirement: SLT-A

1-SI-00868 A&B (110E017, Sh 3)
2-SI-00868 A&B (110E035, Sh 3)
Containment Spray Nozzle Header Isolation Valves

These manual valves are normally shut and considered passive. They are leak rate tested under Appendix J.

Test Requirement: SLT-A

1-SI-00870 A&B (110E017, Sh 3)
2-SI-00870 A&B (110E035, Sh 3)
Containment Spray Pump Suction From RWST Valves

These valves open to provide flow paths from the RWSTs to the suctions of the containment spray pumps. They are closed when the containment spray pumps are taking suction from the RHR pumps to prevent water from the RHR pumps from being diverted to the RWSTs. Since post-accident manipulation may be required, the valves should be exercised in both directions. Also, the leak tight integrity of these valve must be such that, under recirculation mode operation, backflow to the RWSTs will be minimal.

Test Requirement: BT-O BT-C SLT-A PIT

1-SI-00871 A&B (110E017, Sh 3)
2-SI-00871 A&B (110E035, Sh 3)
Containment Spray Pump Suction From RHR Pump Valves

These normally closed valves open to provide flow paths from the outlets of the RHR heat exchangers to the suctions of the containment spray pumps. Since post-accident manipulation of these valves may be required, they should be exercised in both directions. (FSAR 6.4.1)

Test Requirement: BT-O BT-C PIT

1-SI-00872 A&B (110E017, Sh 3)
2-SI-00872 A&B (110E035, Sh 3)
Spray Additive Tank Safety/Relief Valves

These valves serve to protect the spray additive tanks from over pressure during nitrogen pressurization.

Test Requirement: RVT

COMPONENT COOLING WATER SYSTEM

Safety Functions:

The component cooling water system provides cooling water to safety-related equipment during accident conditions to support heat removal from the reactor core and the primary containment. The system is designed to isolate non-essential loads to ensure adequate cooling of essential heat loads and to isolate the supply to the reactor coolant pump thermal barrier coolers in the event of thermal barrier failure that could result in a radiation release outside the containment building.

Components:

1-P-011A and 1-P-011B (110E018, Sh 3)
2-P-011A and 2-P-011B (110E029, Sh 3)
Component Cooling Water Pumps

These pumps circulate cooling water through the component cooling water heat exchangers to the various essential heat loads during accident conditions to support the necessary heat removal from the reactor core and primary containment.

Test Requirement: IWP-3000

1-CC-00017 (110E018, Sh 3)
2-CC-00017 (110E029, Sh 3)
Surge Tank Vent Air Operated Valves

These valves close to prevent radioactive release outside containment in the event that component cooling piping inside containment is damaged. Since any component cooling piping in the containment is seismic or isolated during an accident, this would constitute a passive failure situation and thus not required to be tested.

Test Requirement: None

CC-LW-63 and CCW-LW-64 (PBM-230)
Radwaste Cooling Supply and Return Valves

These normally-open valves may be closed at the operator's discretion to isolate non-essential and non-classed piping and components associated with the radioactive waste processing system from safety-related sections of the CCW system. When closed, they must have sufficient leak tight integrity to ensure adequate CCW water inventory is retained to support extended cooling operations.

Test Requirement: BT-C FST PIT SLT-A

1-CC-00719 (110E018, Sh 2)
2-CC-00719 (110E029, Sh 2)
Containment CCW Supply Motor Operated Valves

These valves may be closed at the operator's discretion to isolate non-critical heat loads and to limit the loss of containment cooling water inventory in the event of a pipe rupture inside containment. This function is redundant with that of motor-operated valves 1-CC-00754 A&B (2-CC-00754 A&B) but no redundant valve is provided for the excess letdown heat exchanger, thus testing should be performed.

Test Requirement: BT-C PIT

1-CC-00721A and CC-00721B (110E018, Sh 3)
CC-00721C and 2-CC-00721D (110E029, Sh 3)
Component Cooling Water Heat Exchanger Thermal Relief Valves

These valves (note that the B and C valves are non-unit specific) open to protect an isolated heat exchanger from over pressure in the event of an increase in internal temperature. Since an out of service heat exchanger is, by definition, not available to mitigate accident consequence, these valves, in turn, are not required. Should these valves open inadvertently, the flow bypassing the related heat exchanger (approx. 52 gpm) is sufficiently small that the capability of the system is not significantly degraded.

Test Requirement: None

1-CC-00724 A&B (110E018, Sh 3)
2-CC-00724 A&B (110E029, Sh 3)
Component Cooling Water Pump Discharge Check Valves

These valves open to provide flow paths from the CCW Pumps to the cooling water headers and close to prevent reverse flow through an idle pump. Should the valve associated with an idle pump leak excessively it would have an adverse affect on the apparent performance of the operating pump and could result in inadequate cooling water flow through the system. Thus, these valves are subjected to a functional leak test.

Test Requirement: CV-C CV-O SLT-B

1-CC-00726C, 1-CC-00728C (110E018, Sh 3)
2-CC-00726B, 2-CC-00728B (110E029, Sh 3)
Component Cooling Water Unit Cross-Connect Valves

These manual-operated valves are positioned to split or cross-connect the CCW headers to ensure the continued operability of the CCW System. Since this would likely require response to a passive failure condition (eg. pipe break), exercising these valves is not required.

Test Requirement: None

1-CC-00736 A&B (110E018, Sh 1)
2-CC-00736 A&B (110E029, Sh 1)
Residual Heat Removal (RHR) Heat Exchanger Cooling Water Thermal Relief Valves

These valves open to protect the RHR Heat Exchangers shell side in the event a heat exchanger is subjected to heating while isolated. Since an isolated heat exchanger is necessarily unavailable, then these valves are not required for accident response.

Test Requirement: None

1-CC-00738 A&B (110E018, Sh 1)
2-CC-00738 A&B (110E029, Sh 1)
Residual Heat Removal (RHR) Heat Exchanger Cooling Water Supply Valves

These normally-closed valves are opened by operator action to provide cooling water flow to each RHR heat exchanger during plant shutdown or post-LOCA recirculation.

Test Requirement: BT-O PIT

1-CC-00745 (110E018, Sh 3)
2-CC-00745 (110E029, Sh 2)
RCP Cooling Water/Excess Letdown Outlet Header Non-return Valves

These valves close to limit the loss of containment cooling water inventory in the event of a pipe rupture in upstream piping. Since the upstream piping is ISI classed piping, passive failure is not postulated and, thus, testing is not required.

Test Requirement: None

1-CC-00754 A&B (110E018, Sh 2)
2-CC-00754 A&B (110E029, Sh 2)
RCP Cooling Water Supply Header Isolation Valves

These normally-open valves are closed by operator action to isolate non-essential cooling loads under conditions when emergency cooling is required and to limit the loss of cooling water should the cooling water piping inside containment rupture. They are also closed in the event of a tube rupture in the thermal barrier heat exchanger and for containment isolation to limit the release of reactor coolant and other sources of radionuclides outside the primary containment. None of these functions are considered to be critical to the operation of the CCW System. These valves are leak rate tested per Appendix J therefore they are identified as Category A and exercised to the closed position.

Test Requirement: BT-C PIT SLT-A

1-CC-00755 A&B (110E018, Sh 2)
2-CC-00755 A&B (110E029, Sh 2)
RCP Cooling Water Supply Header Check Valves

These valves close in the event of a tube rupture in the thermal barrier heat exchanger and for containment isolation to limit the release of reactor coolant and other sources of radionuclides outside the primary containment. These valves are leak rate tested per Appendix J therefore they are identified as Category A and exercised to the closed position.

Test Requirement: CV-C SLT-A

1-CC-00759 A&B (110E018, Sh 3)
2-CC-00759 A&B (110E029, Sh 3)
RCP Cooling Water Return Motor-Operated Valves

These normally-open valves are closed at the discretion of the operator to isolate the RCP cooling piping inside containment to limit the loss of cooling water should the cooling water piping serving the RCP's rupture. Additionally, they would be closed to limit the release of reactor coolant outside containment in the event of a tube rupture in a thermal barrier heat exchanger and for containment isolation. Each of the valves are tested as containment isolation valves per Appendix J.

Test Requirement: BT-C SLT-A PIT

1-CC-00762 A&B (110E018, Sh 2)
2-CC-00762 A&B (110E029, Sh 2)
RCP Thermal Barrier Cooling Relief Valves

These valves open to protect the RCP thermal barrier cooling piping form over-pressure in the event of thermal barrier failure and closure of flow control valves 1CC-761 A&B (2CC-761). Since this piping is designed for elevated pressure and failure results in no significant consequence in an accident scenario, testing is not required.

Test Requirement: None

1-CC-00763 A&B (110E018, Sh 2)
2-CC-00763 A&B (110E029, Sh 2)
RCP Cooling Water Return Header Relief Valves

These relief valves open to protect the CCW piping and containment penetrations from over-pressure in the event of a tube rupture in the thermal barrier heat exchanger or thermal expansion if the lines were to be isolated.

Test Requirement: RVT

1-CC-00766 (110E018, Sh 2)
2-CC-00766 (110E029, Sh 2)
Excess Letdown Heat Exchanger Inlet Valve

These normally-closed, manual valves isolate the excess letdown heat exchangers from the remainder of the CCW system. Since there is no safety function associated with the excess letdown heat exchanger, these lines would probably be isolated by CV-00719 following an accident, and they are not considered to be containment isolation valves, thus, no testing is required.

Test Requirement: None

1-CC-00767 (110E018, Sh 2)
2-CC-00767 (110E029, Sh 2)
Excess Letdown Heat Exchanger Inlet Check Valve

In the event of a tube rupture in the excess letdown heat exchanger, these valves close to prevent the uncontrolled release of reactor coolant into the CCW system. The excess letdown heat exchanger is seldom used, therefore the impact of this accident is relatively insignificant. However, since these valves are tested in accordance with Appendix J they should be tested to the closed position and identified as Category A/C.

Test Requirement: CV-C SLT-A

1-CC-00768 (110E018, Sh 2)
2-CC-00768 (110E029, Sh 2)
Excess Letdown Heat Exchanger Shell Side Relief Valves

These relief valves, along with the surge tank relief valves, open to protect the CCW piping from overpressure in the event of a tube rupture in the excess letdown heat exchanger. Since these heat exchangers are seldom used and this is an unlikely event to occur simultaneously with an accident where CCW operation is critical, these valves are not included in the test program.

Test Requirement: None

1-CC-00769 (110E018, Sh 3)
2-CC-00769 (110E029, Sh 3)
Excess Letdown Heat Exchanger Cooling Water Return Air Operated Valves

These valves are normally closed. In the remote chance they should be opened, they may be closed at the discretion of the operator to isolate the excess letdown heat exchanger and divert cooling water to essential cooling loads. They are also leak tested per Appendix J.

Test Requirement: BT-C FST SLT-A PIT

1-CC-00773 (110E018, Sh 3)
2-CC-00773 (110E029, Sh 3)
Component Cooling Surge Tank Makeup Valves

These valves are normally closed (passive) and are opened for short periods as required to provide makeup water to the CCW system. When closed, they must have sufficient leak tight integrity (assuming an upstream pipe rupture in non-classed piping) to ensure adequate CCW water inventory is retained to support extended cooling operations.

Test Requirement: SLT-B

1-CC-00779 (110E018, Sh 3)
2-CC-00779 (110E029, Sh 3)
Component Cooling Surge Tank Relief Valves

These relief valves open to protect the CCW piping from overpressure in the event of an uncontrolled mass addition to the CCW system caused by a tube rupture in a heat exchanger or overfilling from the makeup systems. Since there is a significant potential for subjecting the CCW system to overpressure from a variety of sources it is prudent to include these valves in the test program.

Test Requirement: RVT

1-CC-00815 (110E018, Sh 3)
2-CC-00815 (110E029, Sh 3)
Component Cooling Emergency Makeup Motor-Operated Valves

These valves are opened to provide additional makeup water to the CCW system to account for system leakage. Since the surge tank volume is designed to makeup for normal leakage, it is not expected that makeup will be required to ensure system operability. When closed, they must have sufficient leak tight integrity (assuming an upstream pipe rupture in non-classed piping) to ensure adequate CCW water inventory is retained to support extended cooling operations. Since they are normally closed, they are considered to be passive and no exercising is required.

Test Requirement: SLT-B PIT

1-CC-00779A (110E018, Sh 3)
2-CC-00779A (110E018, Sh 3)
CCW Surge Tank Vacuum Breakers

These valves are spring-loaded check valves that open to prevent a vacuum lock on the supply of makeup water to the CCW system. In the event of a leak from the RCS to the CCW System, these valves close to contain radioactive coolant within the surge tank thus preventing an uncontrolled release to the auxiliary building. Seat leakage is not measured because any release of radioactive gas is to the auxiliary building and is accommodated by the ventilation system.

Test Requirement: CV-O CV-C

SPENT FUEL PIT COOLING

Safety Function:

The spent fuel pit cooling system is designed to provide long-term cooling for spent fuel and components in the pit.

NOTE: This system is included as a result of a past internal commitment. It does not necessarily reflect the IST scope definition presented in IWV-1100 or IWP-1100 since there is no specified accident (in the strict definition of the word) for which mitigation is required. The spent fuel pit cooling pumps are supplied electric power from an emergency source except that they do not automatically restart in the event of loss and recovery of the respective electric busses. Loss of cooling to the spent fuel pit generally does not present an acute problem. Assuming forced cooling is lost with an initial temperature of 120 °F and a complete reactor core stored in the pit (worst probable inventory conditions) 11.15 hours will elapse before complete SFP inventory boil-off occurs. (Ref. NEPB-86-479)

Components:

P-012A&B (110E018, Sh 4)
Spent Fuel Pit Cooling Water Pumps

These pumps circulate water from the spent fuel pits through the spent fuel pit heat exchangers to remove decay heat from fuel stored in the pits.

Test Requirement: IWP-3000

SF-00009A and 00010A (110E018, Sh 4)
Spent Fuel Pit Cooling Pump Discharge Check Valves

These valves open to provide flowpaths from the spent fuel pit cooling water pumps to the spent fuel pit heat exchanger and close to prevent reverse flow through an idle pump. In the event of excessive leakage through the valve associated with an idle pump, the result would be reduced cooling capacity of the operating system, potentially below the design minimum. Thus, these valves should be subjected to a functional leak test.

Test Requirement: CV-O CV-C SLT-B

EMERGENCY DIESEL GENERATOR AIR START AND FUEL OIL TRANSFER SYSTEM

Safety Function:

The emergency diesel generators supply electric power to critical electrically-operated equipment that operates to affect plant shutdown and mitigate the consequences of accidents. The components discussed in this section provide support to the generators for air start and fuel delivery.

Components:

P-070 A&B (M-219)
Emergency Diesel Generator Fuel Oil Transfer Pumps

These pumps transfer fuel oil, as required for diesel operation, from the Emergency Fuel Tank to the individual day tanks.

Test Requirement: IWP-3000

DA-00100 and DA-00200 (M-209, Sh 12)
EDG Air Start Electric Compressor Check Valves

These valves open to provide flow paths from the air compressor to the EDG starting air supply receivers and close to prevent blowdown of the receivers through the compressors when they not in operation. The air supply contained in the receivers is adequate to start the respective EDG under the worst-case conditions and, thus, the air compressors are not relied upon for a safety function and these valves perform no safety function in the open direction. While closed, these valves must maintain the leak tight integrity of the system and, thus, they are identified as Category A and leak tested accordingly.

Test Requirement: CV-C SLT-A

DA-00112 and DA-00212 (M-209, Sh 12)
EDG Air Start Electric/Diesel Compressor Check Valves

These valves open to provide flow paths from the air compressor to the EDG starting air supply receivers and close to prevent blowdown of the receivers through the compressors when they are not in operation. The air supply contained in the receivers is adequate to start the respective EDG under the worst-case conditions and, thus, the air compressors are not relied upon for a safety function and these valves perform no safety function in the open direction. While closed, these valves must maintain the leak tight integrity of the system and, thus, they are identified as Category A and leak tested accordingly.

Test Requirement: CV-C SLT-A

DA-00123 & DA-00223 (M-209, Sh 12)
EDG Starting Air Receiver Cross-Connect Valve

This normally-closed valve remains closed to ensure the independence of the EDG starting air banks and is opened if it becomes necessary to charge starting air tanks with the electric/diesel-driven air compressor. Since it is assumed that recharging the air receivers is not expected to be critical during an accident, exercising of this valve is not required.

Test Requirement: None

DA-00125, DA-00126, DA-00225, and DA-00226 (M-209, Sh 12)
EDG Air Start Pressure Equalizing Check Valves

These valves close to prevent opening the drive air supply valves before the starting air motor pinion gears are fully engaged. They open to ensure the drive air supply valves close promptly and before the pinion gears disengage when the starting signal is removed.

Test Requirement: CV-O CV-C

DA-03055 A-F and DA-03056 A-F (M-209, Sh 12)
EDG Starting Air Receiver Relief Valves

These valves protect the EDG starting air receivers from over-pressure caused by external forces (e.g., fire, over charging, etc.). In the case of a malfunction of an air compressor, there is a potential that all three tanks in the bank could be over-pressurized and damaged, however each bank is normally isolated from the other and a single bank is capable of starting the related EDG. Thus, testing of these relief valves is not required. Although leakage through these valves would reduce the diesel generator starting air inventory leak testing is not required since the air tank pressure is routinely monitored and excessive leakage would readily be discovered and the condition corrected.

Test Requirement: RVT

DA-03057 A&B and DA-03058 A&B (M-209, Sh 12)
EDG Starting Valves

These valves open to supply drive air to the EDG air starting motors. They do not have a fail safe position. Consequently, no fail safe test requirement is specified.

Test Requirement: BT-O

DA-06316 A&B and DA-06317 A&B (M-209, Sh 12)
EDG Starting Valve Air Relay Valves

After the starting motor clutch mechanisms are engaged, these valves open to shift the starting valves which supply starting air to the starting motors. They do not have a fail safe position. Consequently, no fail safe test requirement is specified.

Test Requirement: BT-O

DA-06318 A&B and DA-06319 A&B (M-209, Sh 12)
EDG Starting Motor Pinion Engaging Solenoid Valves

These valves open to supply starting air to the starting motor clutch mechanisms which engage the pinion gears of the starting motors. They do not have a fail safe position. Consequently, no fail safe test requirement is specified.

Test Requirement: BT-O

FO-00014 and FO-00019 (M-219)
Diesel Fuel Oil Transfer Pump Discharge Check Valves

These valves open to provide flow paths from the fuel oil transfer pumps to the respective day tanks and close to prevent recirculation through an idle pump. Since excessive back leakage through a valve associated with an idle pump would adversely affect the performance of the operating pump and potentially damage the idle pump, leakage through these valves is considered critical and determination of seat leakage is required.

Test Requirement: CV-O CV-C SLT-B

FO-00024 (M-219)
Diesel Fuel Oil Pump-Out Valve

This valve is normally closed and is opened only during brief periods when discharging fuel oil or conducting special testing. Thus, it is considered to be passive. Since excessive leakage of this valve could result in the loss of fuel inventory and a reduction in the effective capability of the fuel oil transfer pumps to replenish the emergency diesel day tanks, seat leakage testing is required.

Test Requirement: SLT-B

FO-00034 (M-219)
P-035B Diesel Fire Pump Fuel Supply

This valve is normally closed and is opened only during brief periods when replenishing the fire pump fuel supply. Thus, it is considered to be passive. Since excessive leakage of this valve could result in the loss of fuel inventory and a reduction in the effective capability of the fuel oil transfer pumps to replenish the emergency diesel day tanks, seat leakage testing is required.

Test Requirement: SLT-B

FO-00074, FO-00075, FO-00076, and FO-00077 (M-219)
EDG Fuel Oil Transfer Pump Bypass Valves

These normally-closed valves will be opened in the event that gravity feed of fuel to the EDG is required. This function is not included in any accident analysis. Since the day tanks are assumed to be available with an adequate supply of fuel oil for diesel start and operation for a limited time, the need to transfer oil without the fuel oil transfer pumps is remote, thus exercising of these valves is not required. Leakage through these valves is expected to be minimal since recirculation back to the Emergency Fuel Tank is prevented by additional normally-closed valves at the pipe connection downstream of the pressure regulating valves.

Test Requirement: None

FO-03910 & FO-03911
Fuel Oil Transfer Pump Discharge Relief Valves

These valves open to protect the fuel oil transfer pumps and discharge piping from over-pressure; however, this function is provided for with valves FO-03940 and FO-03941. Excessive leakage of one of these valves would recirculate fuel oil back to the suction of the related pump and reduce the effectiveness accordingly, thus seat leakage testing is required.

Test Requirement: SLT-B

FO-03922 (M-219)
Boiler Day Tank Inlet Valve

These valves open to provide flow paths from the fuel oil transfer pumps to the boiler day tanks and, in the event of an accident, close to ensure fuel oil is directed from the fuel oil transfer pumps to the EDG day tanks and not to the boiler day tanks. Excessive leakage through this valve could divert fuel oil from the discharge of the fuel oil transfer pumps to the boiler day tanks instead of replenishing the diesel generator day tanks. For this reason seat leakage testing is required.

Test Requirement: BT-C SLT-B FST PIT

FO-03923 (M-219)
EDG Fuel Oil Supply Valve

This valve opens to provide a gravity feed flow path for fuel oil from the fuel oil storage tanks to the emergency fuel tank. Since the fuel oil storage tanks are not required (inventory in the emergency tank is adequate for immediate actions during an accident) and the line from the Fuel Oil Storage Tanks is not "classed", testing is not required.

Test Requirement: None

FO-03930 and FO-03931 (M-219)
Fuel Oil Day Tank Inlet Valves

These valves open to provide flow paths from the fuel oil transfer pumps to the respective day tanks. They close, as required, to direct fuel oil flow to the appropriate day tank. Excessive leakage of one of these valves or its failure to close promptly when a tank is full could cause the affected tank to overflow, losing fuel inventory to spillage. Thus, seat leakage testing and closure exercising are required.

Test Requirement: BT-O BT-C SLT-B PIT

FO-03940 & FO-03941 (M-219)
Fuel Oil Transfer Pump Discharge Pressure Control Valves

These valves operate to control fuel oil transfer pump discharge pressure and provide a flow path to prevent pump or piping damage after pump start before the day tank inlet valves are fully opened. Since they are essentially back-pressure regulating valves requiring no outside source of power to operate, they are exempt from testing per IWV-1300. However, in consideration of their importance, testing will be performed to ensure each valve is operating properly in their controlling mode. After flow is established to the day tanks, these valves close to prevent diversion of fuel oil back to the emergency fuel tank. Excessive leakage of these valves could reduce the capacity of the related fuel oil transfer pump with respect to its capability of refilling the day tanks, thus seat leakage testing is required.

Test Requirement: BT-O/C (Regulating Operation) SLT-B

No Number Assigned (M-219)
Fuel Oil Storage Tank Vacuum Breaker Vent Valves

These valves open to provide vacuum relief when the level in the respective tank is drawn down, thus preventing tank collapse. Since the fuel tanks are not required (inventory in the emergency tank is adequate for immediate actions during an accident) and the line from the fuel oil storage tanks is not "classed", testing is not required.

Test Requirement: None

No Number Assigned (M-219)
Fuel Oil Storage Tank Internal Safety Valves

The function of these valves is unknown. Since the fuel tanks are not required (inventory in the emergency tank is adequate for immediate actions during an accident) and the line from the fuel oil storage tanks is not "classed", testing is not required.

Test Requirement: None

Safety Function:

The control room/cable spreading room (CRCSR) HVAC system provides chilled water to the control and cable spreading rooms to ensure that electrical equipment vital to post-accident recovery activities is properly cooled and appropriate habitability requirements are met.

The service water system provides cooling water to the various areas throughout the plant where equipment vital to post-accident recovery activities is located to ensure they are properly cooled and appropriate habitability requirements are met.

The HVAC components associated with containment integrity are included since they are leak tested in accordance with Appendix J.

Components:

P-111 A&B (M-214, Sh 2)
Cable Spreading Room Chilled Water Pumps

These pumps circulate chilled water through the system chillers and thence to the respective air handling cooling coils to effect cooling of the cable spreading rooms.

Test Required: IWP-3000

P-112 A&B (M-214, Sh 2)
Control Room Chilled Water Pumps

These pumps circulate chilled water through the system chillers and thence to the respective air handling cooling coils to effect cooling of the control room.

Test Required: IWP-3000

SW-02929 A&B (M-144, Sh 1 and M-207, Sh 1)
AFW Pump Area Temperature Control Valve

(See Service Water System.)

SW-02976 (M-144, Sh 1)
Containment Spray Pump Area Temperature Control Valve

This valve is positioned by instrument air to control the bypass flow around the containment spray pump area coolers and thus the service water flow through the respective coolers. In the event of a loss of control air, it fails to the position such that all flow is through the coolers. Per NRC Generic Letter 89-04, control valves are exempt from testing except in those cases where a control valve has a "fail safe" position.

Test Requirement: FST

SW-02977 (M-144, Sh 1 and M-207, Sh 3)
RHR Pump Area Temperature Control Valve

(See Service Water System.)

1-RM-03200A (M-215, Sh 2)
2-RM-03200A (M-2215, Sh 2)
Containment Atmosphere Sample Return Isolation Valves

These valves are opened to provide a return pathway from the containment atmosphere monitoring system (non-safety-related function). They are closed to provide containment isolation and are leak tested in accordance with Appendix J.

Test Requirement: BT-C FST SLT-A PIT

1-RM-03200AA (M-215, Sh 2)
2-RM-03200AA (M-2215, Sh 2)
Containment Atmosphere Sample Return Check Valves

These valves are opened to provide a return pathway from the containment atmosphere monitoring system (non-safety-related function). They are closed to provide containment isolation and are leak tested in accordance with Appendix J.

Test Requirement: CV-C SLT-A

1-RM-03200 B&C (M-215, Sh 2)
2-RM-03200 B&C (M-2215, Sh 2)
Containment Atmosphere Sample Supply Isolation Valves

These valves are opened to provide a pathway from the containment to the containment atmosphere monitoring system (non-safety-related function). They are closed to provide containment isolation and are leak tested in accordance with Appendix J.

Test Requirement: BT-C FST SLT-A PIT

1-VNPSE-03212 and 1-VNPSE-03213 (M-215, Sh 1)
2-VNPSE-03212 and 2-VNPSE-03213 (M-2215, Sh 1)
Containment Purge Exhaust Valves

These valves are normally closed during plant operation, and as such are considered passive. Their primary safety function is to serve as containment isolation valves, and they are leak tested in accordance with Appendix J. Stroke tests are not required by Code, but are performed as a matter of good engineering practice.

Test Requirement: BT-C FST SLT-A PIT

1-VNPSE-03244 and 1-VNPSE-03245 (M-215, Sh 1)
2-VNPSE-03244 and 2-VNPSE-03245 (M-2215, Sh 1)
Containment Purge Exhaust Valves

These valves are normally closed during plant operation, and as such are considered passive. Their primary safety function is to serve as containment isolation valves, and they are leak tested in accordance with Appendix J. Stroke tests are not required by Code, but are performed as a matter of good engineering practice.

Test Requirement: BT-C FST SLT-A PIT

VNCR-04639 (M-144, Sh 2)
Control Room Temperature Control Valve

These valves are positioned by instrument air to control the bypass flow around the control room coolers and thus the chilled water flow through the respective coolers. In the event of a loss of control air, they fail to the position such that all flow is through the coolers. Per NRC Generic Letter 89-04, control valves are exempt from testing except in those cases where a control valve has a "fail safe" position.

Test Requirement: FST

VNCSR-04640 (M-144, Sh 2)
Cable Spreading Room Temperature Control Valve

This valve is positioned by instrument air to control the bypass flow around the cable spreading room coolers and thus the chilled water flow through the respective coolers. In the event of a loss of control air, it fails to the position such that all flow is through the coolers. Per NRC Generic Letter 89-04, control valves are exempt from testing except in those cases where a control valve has a "fail safe" position.

Test Requirement: FST

HV-00898A and HV-00900A (M-214, Sh 2)
Control Room Chilled Water Pump Discharge Check Valves

These valves open to provide pathways for chilled water from the respective chilled water pumps to the system chillers and air handling units. They close to prevent recirculation back through an idle pump. If a valve associated with the idle pump should leak excessively, it would detract from the functional acceptability of the operating train. Thus, these valves are subjected to a functional leakage test.

Test Requirement: CV-O CV-C SLT-B

HV-00914A and HV-00916A (M-214, Sh 2)
Cable Spreading Room Chilled Water Pump Discharge Check Valves

These valves open to provide pathways for chilled water from the respective chilled water pumps to the system chillers and air handling units. They close to prevent recirculation back through an idle pump. If a valve associated with the idle pump should leak excessively, it would detract from the functional acceptability of the operating train. Thus, these valves are subjected to a functional leakage test.

Test Requirement: CV-O CV-C SLT-B

AUXILIARY STEAM, HEATING STEAM, AND HOT WATER

Safety Function:

The auxiliary steam system components do not perform a safety function, but are seat leak tested in accordance with Appendix J.

Components:

HV-00632 and HV-00818 (M-214, Sh 1)
Auxiliary Steam Supply To Containment

These manual valves are normally maintained closed and are seat leak tested in accordance with Appendix J.

Test Requirement: SLT-A

HV-00633, HV-00808, and HV-00809 (M-214, Sh 1)
Condensate Return From Containment

These manual valves are normally maintained closed and are seat leak tested in accordance with Appendix J.

Test Requirement: SLT-A

INSTRUMENT AIR, SERVICE AIR AND NITROGEN GAS

Safety Function:

The safety function of each component is discussed in their individual evaluations. Appropriate test requirements are determined based on component functions. Three systems are grouped in this appendix because they are all compressed gas systems.

Components:

NOTE: Many valves in the instrument air system are unit specific, but do not follow the conventional numbering system for unit specific valves. Many unit specific valves have unique valve numbers with no unit identifier, as opposed to the normal convention of like valves on opposite units having the same numerical valve number with separate unit identifiers to provide distinction.

UNIT 1: IA-00644 and IA-00645 (M-209, Sh 5)
UNIT 1: IA-01280 and IA-01281 (M-209, Sh 11)
UNIT 2: IA-00876 and IA-00877 (M-209, Sh 7)
UNIT 2: IA-01401 and IA-01402 (M-209, Sh 11)
Purge Supply and Exhaust Accumulator Check Valves

These open to provide inflating air to the purge valve boot seals and to charge the associated accumulators. Upon the loss of air pressure in the plant instrument air system, they will close to trap air in the accumulators and allow pressurization of the boot seals for an extended time. Since the back-leakage through these valves will determine the length of time seal pressure is available, a leakage limit is established and leak testing is performed.

Test Requirement: CV-O CV-C SLT-A

UNIT 1: IA-01182 and IA-01192 (M-209, Sh 7)
UNIT 2: IA-01314 and IA-01324 (M-209, Sh 7)
Instrument Air Supply to Containment Check Valves

These valves close to establish containment isolation and are leak tested in accordance with Appendix J.

Test Requirement: CV-C SLT-A

UNIT 1: IA-01184 (M-209, Sh 7)
UNIT 2: IA-01316 (M-209, Sh 7)
Instrument Air Supply to Drain Valves

These valves are normally-closed and considered passive. Leak testing is in accordance with Appendix J.

Test Requirement: SLT-A

UNIT 1: IA-01206, IA-01209, IA-01605 and IA-01606 (M-209, Sh 11)
UNIT 2: IA-01335, IA-01338, IA-01652 and IA-01653 (M-209, Sh 11)
PORV Instrument Air Supply Check Valves

These check valves open to provide instrument air for operation of the PORV's. In the event the normal instrument air supply is lost, they close and must maintain leak tight integrity to allow valve operation with the backup nitrogen supply. Since these are components in non-classed lines, testing is not required per IWV-1100. They are included for tracking purposes in response to NRC Generic Letter 90-06.

Test Requirement: CV-O CV-C SLT-B

UNIT 1: IA-01301 and IA-01302 (M-209, Sh 11)
UNIT 2: IA-01418 and IA-01419 (M-209, Sh 11)
PORV Nitrogen Supply Check Valves

These valves open to provide nitrogen for operation of the PORV's in the event the normal instrument air supply is lost. They close and must maintain leak tight integrity in the event of an upstream piping failure. Since these are components in non-classed lines, testing is not required per IWV-1100. They are included for tracking purposes in response to NRC Generic Letter 90-06.

Test Requirement: CV-O CV-C SLT-B

1-IA-03047 and 1-IA-03048 (M-209, Sh 7)
2-IA-03047 and 2-IA-03048 (M-209, Sh 7)
Instrument Air Supply To Containment

These valves are shut for containment isolation and are leak tested under Appendix J. Note that these are the only instrument air valves listed in this appendix which are labeled with a unit specific valve number.

Test Requirement: BT-C FST SLT-A PIT

UNIT 1: IA-06308 and IA-06309 (M-209, Sh 11)
UNIT 2: IA-06340 and IA-06341 (M-209, Sh 11)
PORV Nitrogen Supply Relief Valves

These valves open to protect the PORV pneumatic supply lines from over-pressurization in the event of malfunction of a nitrogen regulator.

Test Requirement: RVT

NON UNIT SPECIFIC: NG-01675, NG-01676 and NG-01677 (684J972, Sh 2)
Nitrogen Supply to BAST Level Bubbler Systems Check Valves

These valves open to allow N_2 to flow to the BAST level bubbler system. BAST level is used to determine the volume of 12% concentrated boric acid in the BAST. Based on indicated level, automatic transfer of the SI pump suction valves to the RWST will occur. The N_2 supply check valves close if system N_2 pressure decreases below the pressure of redundant N_2 gas cylinders. Should the check valves fail to shut, cylinder-supplied N_2 would be lost; BAST level would appear lower than actual. The low level is conservative for assurance of an adequate supply of inventory to the SI pumps. The concentration of 2000 ppm boric acid is sufficient to maintain the reactor safe during analyzed accident scenarios as discussed in the response to NCRs N-89-346 and N-89-286 (MSSM 90-23).

Test Requirement: None

UNIT 1: IA-06310 and IA-06311 (M-209, Sh 11)
UNIT 2: IA-06342 and IA-06343 (M-209, Sh 11)
PORV Nitrogen Supply Pressure Regulator Valves

These valves operate to reduce the nitrogen supply pressure from the supply bottles to the operating pressure of the PORV's. Since these are components in non-classed lines, testing is not required per IWV-1100. They are included for tracking purposes in response to NRC Generic Letter 90-06.

Test Requirement: BT-O (Verify proper operation)

1-SA-00017 and 1-SA-00027 (M-209, Sh 2)
2-SA-00017 and 2-SA-00027 (M-209, Sh 2)
Containment Service Air Supply Valves

These valves are normally-closed manual valves. They are considered passive, and thus, stroke testing is not required. They are leak tested in accordance with Appendix J.

Test Requirement: SLT-A

POST-ACCIDENT CONTAINMENT VENT/MONITORING

Safety Function:

This sub-system is used for sampling and purging the containment atmosphere of hydrogen following an accident.

Components:

1-H2-V-04 and 1-H2-V-05 (M-224)
2-H2-V-04 and 1-H2-V-05 (M-224)
Post-Accident Purge Discharge Valves

These manual valves are opened following containment pressurization to discharge air from the containment to the outside atmosphere. They are normally closed (passive) and are leak tested in accordance with Appendix J.

Test Requirement: BT-O SLT-A

1-H2-V-06 and 1-H2-V-07 (M-224)
2-H2-V-06 and 2-H2-V-07 (M-224)
Post-Accident Purge Drain Valves

These manual valves are opened following containment pressurization to drain discharge lines as necessary. This function is not considered to be critical. They are normally closed (passive) and are leak tested in accordance with Appendix J.

Test Requirement: SLT-A

1-H2-V-08 and 1-H2-V-09 (M-224)
2-H2-V-08 and 2-H2-V-09 (M-224)
Post-Accident Atmospheric Sampling Valves

These manual valves are opened as required to draw samples from the containment following an accident (non-critical function). They are normally closed (passive) and are leak tested in accordance with Appendix J.

Test Requirement: SLT-A

1-H2-V-12 and 1-H2-V-13 (M-224)
2-H2-V-12 and 2-H2-V-13 (M-224)
Post-Accident Service Air Supply Valves

These manual valves are opened to pressurized the containment :o provide for discharging air from the containment to the outside atmosphere. They are normally closed (passive) and are leak tested in accordance with Appendix J.

Test Requirement: BT-O SLT-A

1-H2-V-19 and 1-H2-V-20 (M-224)
2-H2-V-19 and 2-H2-V-20 (M-224)
Post-Accident Alternate Vent Path

These normally closed manual valves are opened as necessary to provide a vent path from the containment to a hydrogen recombiner following an accident. It is not expected that this would be required during accident recovery operations, but these valves will be tested. They are leak tested in accordance with Appendix J.

Test Requirement: BT-O SLT-A

1-H2-V-22 and 1-H2-V-23 (M-224)
2-H2-V-22 and 2-H2-V-23 (M-224)
Post-Accident Service Air Supply Drains

These valves are normally closed and are leak tested in accordance with Appendix J. They are opened as necessary to provide a vent path from the containment to a hydrogen recombiner following an accident.

Test Requirement: BT-O SLT-A

PRIMARY SAMPLING

Safety Function:

The valves associated with the sampling system are opened from time to time to draw samples from the RCS or the RHR systems.

Components:

1-SC-00951 and 1-SC-00966A (541F092)
2-SC-00951 and 2-SC-00966A (541F448)
Pressure Steam Space Sample Valves

These valves are used to draw samples from the pressurizer steam space. They are closed and leak tested in accordance with Appendix J for containment isolation.

Test Requirement: BT-C FST SLT-A PIT

1-SC-00953 and 1-SC-00966B (541F092)
2-SC-00953 and 2-SC-00966B (541F448)
Pressure Liquid Sample Valves

These valves are used to draw samples from the pressurizer liquid space. They are closed and leak tested in accordance with Appendix J for containment isolation.

Test Requirement: BT-C FST SLT-A PIT

1-SC-00955 and 1-SC-00966C (541F092)
2-SC-00955 and 2-SC-00966C (541F448)
Hot Leg Sample Valves

These valves are used to draw samples from the hot legs. They are closed and leak tested in accordance with Appendix J for containment isolation.

Test Requirement: BT-C FST SLT-A PIT

1-SC-00959 (541F092)
2-SC-00959 (541F448)
RHR Sample Valves

These valves are used to draw samples from the RHR System when required during post-LOCA recirculation. During plant operation they remain closed. Following the opening for sampling during recirculation, they must be able to close to ensure the integrity of the recirculation flowpath and to prevent inventory loss. Seat leak testing is also required. (Ref NCR No. N 88-049)

Test Requirement: BT-C SLT-A PIT

WASTE DISPOSAL

Safety Function:

Containment Isolation

Components:

1-WL-01003 A&B and 2-WL-01003 A&B (684J971, Sh 1)
RCDT and Cavity Drain To Drain Pumps

1-WL-01721 and 2-WL-01721 (684J971, Sh 1)
RCDT and Cavity Drain To Isolation

1-WL-01723, 1WL-01728, 2-WL-01723, and 2-WL-01728 (684J971, Sh 1)
Sump A Drain To Aux Bldg Sump

These valves associated with the waste disposal system are opened from time to time for the routine removal of liquid and gaseous wastes from the containment. Since there are occasions when they are opened during plant operation they should be exercised to the closed position and leak tested in accordance with Appendix J.

Test Requirement: BT-C FST SLT-A PIT

1-SF-00816 and 2-SF-00816 (684J971, Sh 1)
RCDT and Cavity Drain To Refueling Water Circulating System

These manual valves associated with the waste disposal system typically remain closed during plant operation and thus are considered to be passive. They are leak tested in accordance with Appendix J.

Test Requirement: SLT-A

1-WL-01786, 1-WL-01787, 2-WL-01786, and 2-WL-01787 (684J971, Sh 1)
RCDT To Vent Header

1-WL-01788, 1-WL-01789, 2-WL-01788, and 2-WL-01789 (684J971, Sh 1)
RCDT To Gas Analyzer

These valves associated with the waste disposal system are normally open and should be exercised to the closed position and leak tested in accordance with Appendix J.

Test Requirement: BT-C FST SLT-A PIT

1-WL-01698 and 2-WL-01698 (684J971, Sh 1)
RCDT and Cavity Drain to Aux Building Sump

These valves associated with the waste disposal system typically remain closed during operation, but may be opened if needed. To ensure functionality, they should be exercised to the closed position. They are leak tested in accordance with Appendix J.

Test Requirement: BT-C FST SLT-A PIT

DEIONIZED/REACTOR MAKEUP WATER

Safety Function:

This subsystem supplies water to the containment for various services.

Components:

1-DI-00009 and 11 (PBM-231, Sh 2)
2-DI-00009 and 11 (PBM-231, Sh 2)

These manual valves are typically shut during plant operation and thus, are considered to be passive. They are leak tested in accordance with Appendix J.

Test Requirement: SLT-A