PUMP AND VALVE

INSERVICE TESTING PROGRAM

POINT BEACH NUCLEAR PLANT

REVISION 0

December 18, 1990

TABLE OF CONTENTS

1.0 INTRODUCTION

Revision 3 of the Point Beach (Units 1 & 2) ASME Inservice Inspection (IST) Program 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 inspection interval for both units begin on December 31, 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 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.

1.1 Interpretation

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

1.1.2 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.

1.1.3 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. Modifications to the plant, to accommodate changes in inservice testing requirements in later editions of the code are not specifically required.

1.1.4 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 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.

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 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 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. 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

Where required, full-stroke exercising of check valves to the open position using system flow requires that a test be performed whereby the predicted full accident condition flowrate through the valve be verified and measured. Any deviation to this requirement must satisfy the requirements of Reference 2.8, 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 XI and will be accompanied by equipment status declarations in accordance with plant administrative procedures.

APPENDIX A
UNIT 1 PUMP PROGRAM TABLE

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
UNIT 1 PUMP PROGRAM TABLE

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-1,2,9,10
P-002B	Charging Pump	684J741	Yes	Yes	PRR-14	PRR-14	Yes	PRR-7	PRR-8	PRR-1,2,9,10
P-002C	Charging Pump	684J741	Yes	Yes	PRR-14	PRR-14	Yes	PRR-7	PRR-8	PRR-1,2,9,10
P-004A	BA Transfer	684J741	No	N/A	PRR-12	PRR-12	PRR-12	PRR-12	PRR-8	PRR-,1,2,7, 9,10,11
P-004B	BA Transfer	684J741	No	N/A	PRR-12	PRR-12	PRR-12	PRR-12	PRR-8	PRR-1,2,7, 9,10,11
P-010A	RHR	110E018	Yes	N/A	Yes	Yes	PRR-4	PRR-7	PRR-8	PRR-1,2,9,10, 16,17
P-010B	RHR	110E018	Yes	N/A	Yes	Yes	PRR-4	PRR-7	PRR-8	PRR-1,2,9,10, 16,17
P-011A	CC	110E018	Yes	N/A	Yes	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9,10, 16
P-011B	CC	110E018	Yes	N/A	Yes	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9,10, 16
P-012A	SFP Cooling	110E018	Yes	N/A	Yes	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9,10, 16
P-012B	SFP Cooling	110E018	Yes	N/A	Yes	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9,10, 16
P-014A	Containment Spray	110E017	Yes	N/A	Yes	Yes	PRR-6	PRR-7	PRR-8	PRR-1,2,9,10, 16

APPENDIX A
UNIT 1 PUMP PROGRAM TABLE

Pump Number	Function	Dwg. No.	Lube Level	Speed	Inlet Press	Diff Press	Flow Rate	Bearing Vib	Temp	Remarks
P-014B	Containment Spray	110E017	Yes	N/A	Yes	Yes	PRR-6	PRR-7	PRR-8	PRR-1,2,9,10, 16
P-015A	Safety Injection	110E017	Yes	N/A	Yes	Yes	PRR-3	PRR-7	PRR-8	PRR-1,2,9,10, 16,17
P-015B	Safety Injection	110E017	Yes	N/A	Yes	Yes	PRR-3	PRR-7	PRR-8	PRR-1,2,9,10, 16,17
P-029	AFW	M-217	Yes	Yes	Yes	Yes	PRR-5	PRR-7	PRR-8	PRR-1,2,9,10, 16,18
P-032A	Service Water	M-207	No	N/A	PRR-13	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9,10, 16
P-032B	Service Water	M-207	No	N/A	PRR-13	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9,10, 16
P-032C	Service Water	M-207	No	N/A	PRR-13	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9,10, 16
P-032D	Service Water	M-207	No	N/A	PRR-13	Yes	Yes	PRR-7	-RR-8	PRR-1,2,9,10, 16
P-032E	Service Water	M-207	No	N/A	PRR-13	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9,10, 16
P-032F	Service Water	M-207	No	N/A	PRR-13	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9,10, 16
P-038A	AFW	M-217	Yes	N/A	Yes	Yes	PRR-5	PRR-7	PRR-8	PRR-1,2,9,10, 16,18
P-038B	AFW	M-217	Yes	N/A	Yes	Yes	PRR-5	PRR-7	PRR-8	PRR-1,2,9,10, 16,18

APPENDIX A
UNIT 1 PUMP PROGRAM TABLE

Pump Number	Function	Dwg. No.	Lube Level	Speed	Inlet Press	Diff Press	Flow Rate	Bearing Vib	Temp	Remarks
P-070A	FO Transfer	M-219	Yes	N/A	Yes	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9,10, 16
P-070B	FO Transfer	M-219	Yes	N/A	Yes	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9,10, 16
P-111A	CSR Ch Water	M-214	N/A	N/A	Yes	Yes	PRR-15	PRR-7	PRR-8	PRR-1,2,9,10
P-111B	CSR Ch Water	M-214	N/A	N/A	Yes	Yes	PRR-15	PRR-7	PRR-8	PRR-1,2,9,10
P-112A	CR Ch Water	M-214	N/A	N/A	Yes	Yes	PRR-15	PRR-7	PRR-8	PRR-1,2,9,10
P-112B	CR Ch Water	M-214	N/A	N/A	Yes	Yes	PRR-15	PRR-7	PRR-8	PRR-1,2,9,10

APPENDIX B
UNIT 2 PUMP PROGRAM TABLE

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
UNIT 2 PUMP PROGRAM TABLES

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-1,2,9,10
P-002B	Charging Pump	685J175	Yes	Yes	PRR-14	PRR-14	Yes	PRR-7	PRR-8	PRR-1,2,9,10
P-002C	Charging Pump	685J175	Yes	Yes	PRR-14	PRR-14	Yes	PRR-7	PRR-8	PRR-1,2,9,10
P-004A	BA Transfer	685J175	N/A	N/A	PRR-12	PRR-12	PRR-12	PRR-12	PRR-8	PRR-1,2,7,9,10,11
P-004B	BA Transfer	685J175	N/A	N/A	PRR-12	PRR-12	PRR-12	PRR-12	PRR-8	PRR-1,2,7,9,10,11
P-010A	RHR	110E029	Yes	N/A	Yes	Yes	PRR-4	PRR-7	PRR-8	PRR-1,2,9,10,16,17
P-010B	RHR	110E029	Yes	N/A	Yes	Yes	PRR-4	PRR-7	PRR-8	PRR-1,2,9,10,16,17
P-011A	CC	110E029	Yes	N/A	Yes	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9,10,16
P-011B	CC	110E029	Yes	N/A	Yes	Yes	Yes	PRR-7	PRR-8	PRR-1,2,9,10,16
P-014A	Containment Spray	119E035	Yes	N/A	Yes	Yes	PRR-6	PRR-7	PRR-8	PRR-1,2,9,10,16
P-014B	Containment Spray	119E035	Yes	N/A	Yes	Yes	PRR-6	PRR-7	PRR-8	PRR-1,2,9,10,16
P-015A	Safety Injection	119E035	Yes	N/A	Yes	Yes	PRR-3	PRR-7	PRR-8	PRR-1,2,9,10,16,17
P-015B	Safety Injection	119E035	Yes	N/A	Yes	Yes	PRR-3	PRR-7	PRR-8	PRR-1,2,9,10,16,17
P-029	AFW	M-217	Yes	Yes	Yes	Yes	PRR-5	PRR-7	PRR-8	PRR-1,2,9,10,16,18

APPENDIX C
PUMP PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. PRR-1

COMPONENTS: Various

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: IST Program 1990

APPENDIX C
PUMP PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. PRR-2

COMPONENTS: Applicable to all pumps in the 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 startup 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: IST Program 1990

APPENDIX C
PUMP PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. PRR-3

UNITS: 1 and 2

COMPONENTS: Safety Injection Pumps, P-015 A&B

SECTION XI REQUIREMENT:

The resistance of the system shall be varied until either the differential pressure or the measured flowrate 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 value 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 flowrate. Under these test conditions flowrate measurements may not be indicative of pump performance.

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

The only practical means of establishing full or substantial flow and obtaining quantitative flowrate 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 de-pressurized, operation in such a mode is precluded by low-temperature over-pressurization 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 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.

APPENDIX C
PUMP PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

At least once during each reactor refueling when significant flow can be established through an instrumented (flowrate) test circuit, an inservice test will be performed where all required pump parameters will be measured and recorded at three (3) points along the pump curve. Test data taken at these points 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 flowrate) 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 flowrate) measured and evaluated with respect to IWP-3111.

Status: IST Program 1980; VRR-3 (Approved via GL 89-04)

APPENDIX C
PUMP PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. PRR-4

UNITS: 1 and 2

COMPONENTS: Residual Heat Removal Pumps, P-010 A&B

SECTION XI REQUIREMENT:

The resistance of the system shall be varied until either the differential pressure or the measured flowrate 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 value 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 flowrate 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 pressures. 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 in the flat (horizontal) region of the pump characteristic curve where pump head is relatively independent of flowrate. In addition, the range and accuracy of the flow instrumentation do not provide adequate repeatability at the reduced flowrate available in this flow scheme. Under such test conditions, flowrate measurements may not be indicative of pump performance.

NRC Generic Letter 89-04, Position 9, allows elimination of flowrate measurements during testing where flowrate instrumentation is unavailable provided that appropriate inservice tests are performed during cold shutdowns or refueling where full or substantial flow conditions can be established and flowrates 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 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 (flowrate) test circuit, an inservice test will be performed where all required pump parameters will be measured and recorded at three (3) points along the pump curve. Test data taken at these points will be evaluated in accordance with IWP-3200.

APPENDIX C
PUMP PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

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 flowrate) 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 flowrate) measured and evaluated with respect to IWP-3111.

Status: IST Program 1980; VRR-4 (Approved via GL 89-04)

APPENDIX C
PUMP PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. PRR-5

UNITS: 1 and 2

COMPONENTS: Auxiliary Feedwater Pumps, P-029(2 pumps) and P-038 A&B

SECTION XI REQUIREMENT:

The resistance of the system shall be varied until either the differential pressure or the measured flowrate 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 value 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 flowrate 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 flowrate. In addition, flow instrumentation is not provided in this test scheme. Thus, under these test conditions, flowrate measurements are neither practical nor would they provide any meaningful information if available.

NRC Generic Letter 89-04, Position 9, allows elimination of flowrate measurements during quarterly testing where flowrate instrumentation is unavailable provided that appropriate inservice tests are performed during cold shutdowns or refueling where full or substantial flow conditions can be established and flowrates 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 pump to perform its safety function.

ALTERNATE TESTING:

During each quarterly 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 flowrate) 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 flowrate) 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 at three (3) points along the pump curve. Test data taken at these points 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: IST Program 1980; VRR-5 (Approved via GL 89-04)

APPENDIX C
PUMP PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. PRR-6

UNITS: 1 and 2

COMPONENTS: Containment Spray Pumps, P-014 A&B

SECTION XI REQUIREMENT:

The resistance of the system shall be varied until either the differential pressure or the measured flowrate 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 flowrate 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 is in the flat (horizontal) region of the pump characteristic curve where pump head is relatively independent of flowrate. 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, flowrate measurements are not possible.

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: IST Program 1980; VRR-6 (Approved via GL 89-04)

APPENDIX C
PUMP PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. PRR-7

UNITS: 1 and 2

COMPONENTS: All pumps in the IST Program

SECTION XI REQUIREMENTS:

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, as well, caused by misalignment, imbalance, or minor bearing wear.

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/ANSI OMa-1987, Operation and Maintenance Of Nuclear Power Plants, Part 6, Section 4.6.4 has adopted the concept of measuring vibration at two mutually perpendicular locations and comparing subsequent test data to the reference value at that specific location.

Measuring vibration in velocity units is permitted by the most recent version of OM-b - 1989 Standard For Inservice Testing At Nuclear Power Plants, Part 6.

ALTERNATIVE TESTING:

Pump vibration measurements may be taken in either displacement or velocity units. Acceptance criteria for velocity measurements will conform to those set forth in OM-b-1989, Part 6, Tables 3 and 3a.

For centrifugal and rotary (non-reciprocating) positive displacement pumps vibration readings will be taken in a plane perpendicular to the operating shaft in two (2) mutually perpendicular directions. Test data shall be evaluated per IWP-3100 with successive vibration readings compared to reference values previously taken at that specific location.

Status: Proposed to NRC March 2, 1990 as PRR-11

APPENDIX C
PUMP PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. PRR-8

UNITS: 1 and 2

COMPONENTS: All pumps in the Program

SECTION XI REQUIREMENT:

The temperature of all centrifugal pump bearings outside the main flowpath 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, 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 the pump bearings are water-cooled and thus, bearing temperature is 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 program are subjected to vibration measurements in accordance with IWP-4500.

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, increased motor current, etc.

Any potential gain from taking bearing measurements, which in most cases would be done locally using portable instrumentation, cannot offset the cost in terms of dilution of operator effort, distraction of operators from other primary duties, excessive operating periods for standby pumps especially under minimum flow conditions, and unnecessary personnel radiation exposure.

ALTERNATE TESTING:

Vibration monitoring will be performed using units of velocity via state-of-the-art data analysis equipment provided Relief Request No. 7 is approved. Such vibration monitoring will provide adequate monitoring and evaluation of the material condition of the pump bearings.

Status: Proposed to NRC March 2, 1990 as PRR-12

APPENDIX C
PUMP PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. PRR-9

UNITS: 1 and 2

COMPONENTS: All pumps in the Program

SECTION XI REQUIREMENT:

"The presence or absence of liquid in a gage line could produce a difference of more than 0.25% 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 relative low levels, the 0.25% limit is overly restrictive and oftentimes results in complicated venting procedures and unnecessary health physics risks associated with handling and disposal of radioactive contaminated water 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 .25% error introduced into the suction pressure measurement results in an error of .05% in the differential pressure calculation. This is insignificant in light of the potential 6% error allowance applied to both the suction and discharge pressure instruments (Ref IWP-4110).

ALTERNATE TESTING:

If the presence or absence of liquid in a gage line used for sensing pump suction pressure could produce a difference of more than 0.25% 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.

Status: IST Program 1990

APPENDIX C
PUMP PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. PRR-10

UNITS: 1 and 2

COMPONENTS: All pumps in the Program

SECTION XI REQUIREMENT:

Instrument accuracy shall be within the limits of Table IWP-4110-1. (For pressure and flowrate 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 Articles 4110 and 4120 is to ensure that the recorded test parameters are accurate within certain bounds, thereby providing assurance of accuracy and repeatability.

The articles 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 in our facility utilize remote indicators without redundant, local indication.

ALTERNATE TESTING:

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

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

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

Status: IST Program 1980: PRR-10 (Approved via GL 89-04)

APPENDIX C
PUMP PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. PRR-11

UNITS: 1 and 2

COMPONENTS: Boric Acid Transfer Pumps, P-004 A&B

SECTION XI REQUIREMENT:

The resistance of the system shall be varied until either the differential pressure or the measured flowrate 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 flowrate can be measured however it requires injection of highly concentrated boric acid solution into the reactor coolant system. During plant operation, this is not practical since it would upset the reactor coolant boric acid balance and adversely effect 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 the RCS and associated potential operating difficulties during the subsequent plant startup.

NRC Generic Letter 89-04, Position 9, allows elimination of flowrate measurements during quarterly testing where flowrate instrumentation is unavailable provided that appropriate inservice tests are performed during cold shutdowns or refueling where full or substantial flow conditions can be established and flowrates 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: IST Program 1990

APPENDIX C
PUMP PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. PRR-12

UNITS: 1 and 2

COMPONENTS: Boric Acid Transfer Pumps, P-004 A&B

SECTION XI REQUIREMENTS:

An inservice test shall be run on each pump nominally every 3 months during normal plant operation. (IWP-3400(a))

Each inservice test shall include the measurement and observation of all quantities in Table IWP-3100-1 except 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 flowrate during normal plant operation. The only practical method of determining pump flowrate is to pump to the 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 crystallation each of these pumps 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 (2 in each unit) 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 of testing of these pumps is adequate.

ALTERNATE TESTING:

During reactor refueling outages each of these pumps will be tested and flowrate 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: IST Program 1990

APPENDIX C
PUMP PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. PRR-13

UNITS: 1 and 2

COMPONENTS: Service Water Pumps, P-032 A through F

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:

The pumps listed above 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, as input, the measured height of water above the pump inlet as measured at the intake.

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.

Status: IST Program 1990 (formerly IST Program 1980 Pump Note 4)

APPENDIX C
PUMP PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. PRR-14

UNITS: 1 and 2

COMPONENTS: CVCS Charging Pumps, P-002 A through C

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.

The Charging 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/ANSI OMa-1987, Operation and Maintenance Of Nuclear Power Plants, Part 6 (Tables 2 and 3b) where this new standard requires measurement and evaluation of pump discharge pressure as opposed to differential pressure. Further, suction pressure measurements are not required.

ALTERNATE TESTING:

During inservice testing of the Charging Pumps, suction and differential pressures will not be measured nor recorded. In lieu of this, pump discharge pressure will be measured and evaluated per IWP-3200 and IWP-6000.

Status: IST Program 1990

APPENDIX C
PUMP PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. PRR-15

UNITS: 1 and 2

COMPONENTS: Cable Spreading Room Chilled Water Pumps, P-111 A&B Control Room Chilled Water Pumps, P-112 A&B

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 chilled water system configuration is such that there is no installed instrumentation provided for measuring flowrate, however, the installation does provide for the capability of operation under a constant (fixed) resistance mode such that pump 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: IST Program 1990

APPENDIX C
PUMP PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. PRR-16

UNITS: 1 and 2

COMPONENTS: All pumps in the program for which differential pressure is determined.

SECTION XI REQUIREMENT: Differential pressure is a measured parameter (IWP-3100, 3110)

BASIS FOR RELIEF:

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

ALTERNATE TESTING:

Differential pressure will be a calculated value based on the values of suction an discharge pressure.

APPENDIX C
PUMP PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. PRR-17

UNITS: 1 and 2

COMPONENTS: Safety injection pumps, P-015A&B
Residual Heat Removal Pumps, P-010A&B

SECTION XI REQUIREMENTS:

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 three data point fully instrumented, significant flowrate test at refueling shutdown conditions, the pumps use the 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.

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

ALTERNATE TESTING:

When performing three data point pump curve testing, which includes reference point data, 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.

APPENDIX C
PUMP PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. PRR-18

UNITS: 1 and 2

COMPONENTS: Auxiliary Feedwater Pumps, P-029 (2 pumps) and P-038A&B

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 such that all required pump parameters will be measured and recorded at three (3) points along the pump curve.

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

ALTERNATE TESTING:

When performing three data point pump curve testing, which includes reference point data, 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.

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

CONTENTS

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

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-2200.

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.

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

	BT-PV	Exercise of pneumatic pilot valve. Proper operation of the associated main valve verifies operability.
	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 per IWV-3521.
	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 per IWV-3521.

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)
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)

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

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.

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

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-5	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-5	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 SLT-5	CS 2Y	CSJ-1
AF-00107	D8	AFW to 1B S/G	2	A/C	3	CK	SA	A/C	CV-O SLT-5	CS 2Y	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
AF-00112	E5	P-38A Suct Ck	3	C	4	CK	SA	C	CV-PO CV-O	QR CS	CSJ-3

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

SYSTEM: Auxiliary Feedwater
DRAWING NO.: M-217

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
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 FST PIT	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 FST PIT	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	
AF-04014	E6	P-38B Mini-flow	3	B	1	GA	AO	O	BT-C FST PIT	QR QR 2Y	
AF-04016	F5	P-38B Ser Wtr Sup	3	B	4	GA	MO	O	BT-O PIT	QR 2Y	

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

SYSTEM: Auxiliary Feedwater
DRAWING NO.: M-217

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
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	P-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	

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

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	2Y	VRR-23 Passive
HV-00633	A7	Aux Stm Cond Ret	2	A	1.5	GA	MA	C	SLT-1	2Y	VRR-23 Passive
HV-00808	B7	Aux Stm Cond Ret	2	A	1.5	GA	MA	C	SLT-1	2Y	VRR-23 Passive
HV-00809	A7	Aux Stm Cond Ret	2	A	1.5	GA	MA	C	SLT-1	2Y	VRR-23 Passive
HV-00818	C7	Aux Steam to Cont	2	A	3	GA	MA	C	SLT-1	2Y	VRR-23 Passive

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-00898A	C8	Pump P-112A Disc Ck	NC	A/C	3	CK	SA	O	CV-PO CV-C SLT-5 INSP	QR QR QR SP	VRR-31 VRR-31
HV-00900A	B8	Pump P-112B Disc Ck	NC	A/C	3	CK	SA	O	CV-PO CV-C SLT-5 INSP	QR QR QR SP	VRR-31 VRR-31
HV-00914A	B8	Pump P-111A Disc Ck	NC	A/C	3	CK	SA	O	CV-PO CV-C SLT-5 INSP	QR QR QR SP	VRR-31 VRR-31
HV-00916A	A8	Pump P-111B Disc Ck	NC	A/C	3	CK	SA	O	CV-PO CV-C SLT-5 INSP	QR QR QR SP	VRR-31 VRR-31

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	QR 2Y	
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-00300A	A14	RCP Seal Inj Thrtl	2	A	1	NE	MA	T	BT-C SLT-1	RR 2Y	VRR-19
CV-00300B	A15	RCP Seal Inj Thrtl	2	A	1	NE	MA	T	BT-C SLT-1	RR 2Y	VRR-19
CV-00304C	A14	RCP Seal Wtr Sup	1	A/C	2	CK	SA	O	CV-C SLT-1	RR 2Y	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 2Y	CSJ-6

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

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
CV-00313A	C13	RCP Seal Wtr Ret	2	A	3	GL	AO	O	BT-C FST PIT SLT-1	CS CS 2Y 2Y	CSJ-6 CSJ-6
CV-00323A	A12	Aux Charging Isol	2	A	2	GL	MA	C	SLT-1	2Y	Passive
CV-00323B	C12	Chg HCV Bypass	2	A	2	GL	MA	C	SLT-1	2Y	VRR-23 Passive
CV-00333A	A6	BA Transfer Pump Disch	2	A/C	2	CK	SA	C	CV-PO CV-O CV-C SLT-5	QR RR QR 2Y	VRR-26 VRR-26
CV-00333B	A6	BA Transfer Pump Disch	2	A/C	2	CK	SA	C	CV-PO CV-O CV-C SLT-5	QR RR QR 2Y	VRR-26 VRR-26
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	QR	
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
UNIT 1 VALVE PROGRAM TABLES

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 2Y	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 2Y	CSJ-7 CSJ-7
CV-00384B	C12	Chg Line HCV Out	2	A	3	GL	MA	O	BT-C SLT-1	CS 2Y	CSJ-8 VRR-23
CV-01296	A14	Aux Charging Iso	1	A	2	GL	AO	C	PIT SLT-1	2Y 2Y	Passive

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

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-00738	G2	RHR Cooling Water Sup	3	B	10	GA	MO	C	BT-O PIT	QR 2Y	

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

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 2Y 2Y	CSJ-10
CC-00754B	F10	RCP Clg Water Sup	2	A	4	GA	MO	O	BT-C SLT-1 PIT	CS 2Y 2Y	CSJ-10
CC-00755A	E13	RCP Clg Wtr Sup Ck	2	A/C	4	CK	SA	O	CV-C SLT-1	2Y 2Y	VRR-10 VRR-23
CC-00755B	E10	RCP Clg Wtr Sup Ck	2	A/C	4	CK	SA	O	CV-C SLT-1	2Y 2Y	VRR-10 VRR-23
CC-00759A	F11	RCP Clg Wtr Ret	2	A	4	GA	MO	O	BT-C SLT-1 PIT	CS 2Y 2Y	CSJ-10 VRR-23
CC-00759B	F8	RCP Clg Wtr Ret	2	A	4	GA	MO	O	BT-C SLT-1 PIT	CS 2Y 2Y	CSJ-10 VRR-23

SYSTEM: Compone. ooling 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 2Y	

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	A/C	10	CK	SA	O	CV-O CV-C SLT-5	QR QR QR	
CC-00724B	H8	CCW Pump Disch Check	3	A/C	:0	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-6	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-6	2Y	Passive

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

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

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

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

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	CS CS 2Y	CSJ-11 CSJ-11
SI-00836B	E7	NaOH Supply	2	B	2	GL	AO	C	BT-O FST PIT	CS CS 2Y	CSJ-11 CSJ-11
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-PO INSP	QR SP	VRR-8 VRR-8
SI-00858B	C3	RWST to CS Pump P14B	2	C	6	CK	SA	C	CV-PO INSP	QR SP	VRR-8 VRR-8
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	
SI-00860C	C10	CS Pump 1-P14B Disch	2	B	6	GA	MO	C	BT-O PIT	QR QR	

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

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
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	INSP SLT-1	SP RR	VRR-9 VRR-23, 29
SI-00862B	C11	CS Pump 1-P14B Disch	2	A/C	6	CK	SA	C	INSP SLT-1	SP RR	VRR-9 VRR-23, 29
SI-00864A	H11	CS Pump Test Recirc	2	A	.75	GL	MA	C	SLT-1	2Y	Passive VRR-23
SI-00864B	C11	CS Pump Test Recirc	2	A	.75	GL	MA	C	SLT-1	2Y	Passive VRR-23
SI-00870A	I3	RWST to CS Pump P14A	2	A	6	GA	MO	O	BT-O BT-C SLT-6 PIT	CS CS 2Y 2Y	CSJ-29 CSJ-29, Note 3 Note 2
SI-00870B	C3	RWST to CS Pump P14B	2	A	6	GA	MO	O	BT-O BT-C SLT-6 PIT	CS CS 2Y 2Y	CSJ-29 CSJ-29, Note 3 Note 2
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	

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	2Y	Passive
DI-00011	C10	DI Water Sup to Cont	2	A	2	DI	MA	C	SLT-1	2Y	Passive

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

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	SRV	10Y	
DA-03055B	C6	Reciever T60B Relief	3	C	.5	RV	SA	C	SRV	10Y	
DA-03055C	C6	Receiver T60C Relief	3	C	.5	RV	SA	C	SRV	10Y	
DA-03055D	C3	Receiver T60D Relief	3	C	.5	RV	SA	C	SRV	10Y	

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

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-03055E	C3	Receiver T60E Relief	3	C	.5	RV	SA	C	SRV	10Y	
DA-03055F	C3	Receiver T60F Relief	3	C	.5	RV	SA	C	SRV	10Y	
DA-03056A	C6	Receiver T61A Relief	3	C	.5	RV	SA	C	SRV	10Y	
DA-03056B	C6	Receiver T61B Relief	3	C	.5	RV	SA	C	SRV	10Y	
DA-03056C	C6	Receiver T61C Relief	3	C	.5	RV	SA	C	SRV	10Y	
DA-03056D	C3	Receiver T61D Relief	3	C	.5	RV	SA	C	SRV	10Y	
DA-03056E	C3	Reciever T61E Relief	3	C	.5	RV	SA	C	SRV	10Y	
DA-03056F	C3	Receiver T61F Relief	3	C	.5	RV	SA	C	SRV	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	DT-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

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-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
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

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	A/C	2	CK	SA	C	CV-O CV-C SLT-5	QR QR 2Y	
FO-00019	B9	DFO Pump P-70B Disc	3	A/C	2	CK	SA	C	CV-O CV-C SLT-5	QR QR 2Y	
FO-00024	D8	DFO Pumpout Isol	3	A	2	GA	MA	C	SLT-5	2Y	Passive
FO-00034	H2	Fire Pump Fuel Sup	3	A	2	GA	MA	C	SLT-5	2Y	Passive
FO-03910	C9	DFO Pump P-70A S/R	3	A/C	.75	SRV	SA	C	SLT-5	2Y	Passive
FO-03911	C9	DFO Pump P-70B S/R	3	A/C	.75	SRV	SA	C	SLT-5	2Y	Passive
FO-03922	H4	Boiler Day Tk Inlet	3	A	1	GA	AO	C	BT-C FST SLT-5 PIT	QR QR 2Y 2Y	
FO-03930	G3	EDG Day Tk T31A In	3	A	1	GA	MO	C	BT-C BT-O SLT-5 PIT	QR QR 2Y 2Y	
FO-03931	G2	EDG Day Tk T31B In	3	A	1	GA	MO	C	BT-C BT-O SLT-5 PIT	QR QR QR 2Y	

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

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	A/C	1	GL	SA	C	BT-EE SLT-5	QR 2Y	VRR-33
FO-03941	C9	DFO Pump Press Cont	3	A/C	1	GL	SA	C	BT-EE SLT-5	QR 2Y	VRR-33

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

SYSTEM: Heating and Ventilation
DRAWING NO.: M-144, Sheet 1 and M-2207, 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	

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

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	

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 CSJ-12 VRR-23, 29
VNPSE-03213	H4	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
VNPSE-03244	F3	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
VNPSE-03245	F4	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

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

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 2Y 2Y	
RM-03200B	F8	Cont Atmos Samp Sup	2	A	1	GA	AO	O	BT-C FST SLT-1 PIT	QR QR 2Y 2Y	
RM-03200C	G8	Cont Atmos Samp Sup	2	A	1	GA	AO	O	BT-C FST SLT-1 PIT	QR QR 2Y 2Y	

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

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	QR QR 2Y	
IA-00645	C5	Purge Vlv 3212 Sup	NC	A/C	.25	CK	SA	C	CV-O CV-C SLT-3	QR QR 2Y	

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

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 2Y	VRR-23
IA-01184	B5	Inst Air to Cont	2	A	1	GA	MA	C	SLT-1	2Y	VRR-23 Passive
IA-01192	B5	Inst Air to Cont	2	A/C	2	CK	SA	C	CV-C SLT-1	QR 2Y	
IA-03047	B4	Inst Air to Cont	2	A	2	GA	AO	O	BT-C FST SLT-1 PIT	QR QR 2Y 2Y	
IA-03048	B4	Inst Air to Cont	2	A	2	GA	AO	O	BT-C FST SLT-1 PIT	QR QR 2Y 2Y	

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

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

VALVE	COOD	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 VRR-32 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 VRR-32 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
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
IA-01301	G10	Nit. Sup to PORV	NC	A/C		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		CK	SA	C	CV-O CV-C SLT-3	CS CS 2Y	CSJ-28 CSJ-28 NOTE 1
IA-01600	G9	Inst Air to PORV	NC	A/C		CK	SA	C	CV-O CV-C SLT-3	CS CS 2Y	CSJ-28 CSJ-28 VRR-32 NOTE 1

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

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 VRR-32 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		GL	SA	O/C	BT-EE	CS	CSJ-28
IA-6311	F10	PORV 431C Nit Sup Reg	NC	C		GL	SA	O/C	BT-EE	CS	CSJ-28

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

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	RR RR	VRR-21 VRR-21
CS-00466BB	C9	S/G 1A Feedwtr C..	2	A/C	16	CK	SA	O	CV-C SLT-6	RR RR	VRR-21 VRR-21
CS-00476AA	G9	S/G 1B Feedwtr Ck	2	A/C	16	CK	SA	O	CV-C SLT-6	RR RR	VRR-21 VRR-21
CS-00476BB	G9	S/G 1B Feedwtr ck	2	A/C	16	CK	SA	O	CV-C SLT-6	RR RR	VRR-21 VRR-21

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

SYSTEM: Main and Reheat Steam
DRAWING NO.: M0-201, 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	SRV	5Y	
MS-02006	G8	Main Steam Safety	2	C	6	RV	SA	C	SRV	5Y	
MS-02007	G7	Main Steam Safety	2	C	6	RV	SA	C	SRV	5Y	
MS-02008	G7	Main Steam Safety	2	C	6	RV	SA	C	SRV	5Y	
MS-02010	D8	Main Steam Safety	2	C	6	RV	SA	C	SRV	5Y	
MS-02011	D8	Main Steam Safety	2	C	6	RV	SA	C	SRV	5Y	
MS-02012	D7	Main Steam Safety	2	C	6	RV	SA	C	SRV	5Y	
MS-02013	D7	Main Steam Safety	2	C	6	RV	SA	C	SRV	5Y	
MS-02015	H7	MS Atmos Stm Dmp	2	B	6	GL	AO	C	BT-C BT-O PIT	CS CS 2Y	CSJ-14 CSJ-14
MS-02016	E7	MS Atmos Stm Dmp	2	B	6	GL	AO	C	BT-C BT-O PIT	CS CS 2Y	CSJ-14 CSJ-14
MS-02017	G7	Main Steam Isolation	2	B	30	SCK	AO	O	BT-C PIT FST	CS 2Y CS	CSJ-15 CSJ-15
MS-02017A	G4	Main Steam NonReturn	2	C	30	CK	SA	O	CV-C	CS	CSJ-16
MS-02017CS	H6	MSIV 2017 Air Pilot	NC	B	1	AP	SO	C	BT-PV	CS	CSJ-17
MS-02017DS	H5	MSIV 2017 Air Pilot	NC	B	1	AP	SO	C	BT-PV	CS	CSJ-17

SYSTEM: Main and Reheat Steam
DRAWING NO.: M0-201, Sheet 1

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
MS-02018	D9	Main Steam Isolation	2	B	30	SCK	AO	O	BT-C PIT FST	CS 2Y CS	CSJ-15 CSJ-15
MS-02018A	D4	Main Steam Nonreturn	2	C	30	CK	SA	O	CV-C	CS	CSJ-16
MS-02018CS	E6	MSIV 2018 Air Pilot	NC	B	1	AP	SO	C	BT-PV	CS	CSJ-17
MS-02018DS	E5	MSIV 2018 Air Pilot	NC	B	1	AP	SO	C	BT-PV	CS	CSJ-18
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
MS-02083	C9	S/G Sample Isol	2	A	.75	DI	AO	O	BT-C FST SLT-1 PIT	QR QR 2Y 2Y	
MS-02084	F9	S/G Sample Isol	2	A	.75	DI	AO	O	BT-C FST SLT-1 PIT	QR QR 2Y 2Y	

SYSTEM: Main and Reheat Steam
DRAWING NO.: M0-201, Sheet 1

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
MS-02090	C8	SW to AFW Pump P-029	3	B	1	GL	SO	O	BT-O FST	QR QR	VRR-29
MS-05958	B10	S/G Blowdown Isol	2	A	2	GA	AO	O	BT-C FST SLT-1 PIT	QR QR 2Y 2Y	
MS-05959	E10	S/G Blowdown Isol	2	A	2	GA	AO	O	BT-C FST SLT-1 PIT	QR QR 2Y 2Y	
RS-SA-09	F7	Radwaste Steam Supply	2	B	3	GA	AO	O	BT-C FST PIT	QR QR 2Y	

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	QR 2Y	VRR-23
H2-V-05	D6	Post-Acc Purge Disch	2	A	2	DI	MA	C	BT-O SLT-1	QR 2Y	VRR-23
H2-V-06	D6	Post-Acc Purge Drain	2	A	.75	GA	MA	C	SLT-1	2Y	VRR-23 Passive
H2-V-07	D6	Post-Acc Purge Drain	2	A	.75	GA	MA	C	SLT-1	2Y	VRR-23 Passive
H2-V-08	E6	Post-Acc Atmos. Samp	2	A	.75	DI	MA	C	SLT-1	2Y	Passive
H2-V-09	E6	Post-Acc Atmos. Samp	2	A	.75	DI	MA	C	SLT-1	2Y	Passive
H2-V-12	D6	Post-Acc Service Air Sup	2	A	2	DI	MA	C	BT-O SLT-1	QR 2Y	VRR-23
H2-V-13	D6	Post-Acc Service Air Sup	2	A	2	DI	MA	C	BT-O SLT-1	QR 2Y	VRR-23
H2-V-19	D7	Post-Acc Alt Vent	2	A	2	DI	MA	C	SLT-1	2Y	VRR-23 Passive
H2-V-20	D7	Post-Acc Alt Vent	2	A	2	DI	MA	C	SLT-1	2Y	VRR-23 Passive
H2-V-22	D7	Post-Acc Sup Drain	2	A	2	DI	MA	C	SLT-1	2Y	VRR-23 Passive

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

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

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	PEOMT	FREQ	REMARKS
H2-V-23	D7	Post Acc Sup Drain	2	A	2	DI	MA	C	SLT-1	2Y	VRR-23 Passive

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

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 2Y 2Y	
SC-00953	F12	Press Liq Sample	1	A	.375	GL	AO	C	BT-C FST SLT-1 PIT	QR QR 2Y 2Y	
SC-00955	E12	Hot Leg Sample	1	A	.375	GL	AO	O/C	BT-C FST SLT-1 PIT	QR QR 2Y 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 2Y 2Y	
SC-00966B	F10	Press Liq Sample	1	A	.375	GL	AO	C	BT-C FST SLT-1 PIT	QR QR 2Y 2Y	

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

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 2Y 2Y	

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

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	
RC-00435	I6	Pressurizer Safety	1	C	3	SRV	SA	C	RVT	5Y	
RC-00515	I5	PORV Block Valve	1	B	3	GA	MO	O	BT-C PIT	OR 2Y	Note 4
RC-00516	H5	PORV Block valve	1	B	3	GA	MO	O	BT-C PIT	OR 2Y	Note 4

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

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 2Y 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 2Y 2Y	
RC-00539	E3	PRT Sample	2	A	.375	GL	AO	O	BT-C FST SLT-1 PIT	QR QR 2Y 2Y	
RC-00570A	F5	RX Vessel Vent	1	B	1	GL	SO	C	BT-O PIT	CS 2Y	CSJ-19
RC-00570B	F5	RX Vessel Vent	1	B	1	GL	SO	C	BT-O PIT	CS 2Y	CSJ-19
RC-00575A	F5	RX Vess/Press Vent	1	B	1	GL	SO	C	BT-O PIT	CS 2Y	CSJ-19
RC-00575B	F5	RX Vess/Press Vent	1	B	1	GL	SO	C	BT-O PIT	CS 2Y	CSJ-19

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

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

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

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

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-834A	H7	SIS Accum Vent	2	B	1	GL	AO	C	BT-O FST PIT	CS CS 2Y	CSJ-30 CSJ-30
SI-834B	D7	SIS Accum Vent	2	B	1	GL	AO	C	BT-O FST PIT	CS CS 2Y	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
SI-00845A	F8	SIS Cold Leg Inj	1	A/C	2	CK	SA	C	CV-O CV-C SLT-2	RR RR 2Y	VRR-2 VRR-2 VRR-22

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

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-00845B	D8	SIS Cold Leg Inj	1	A/C	2	CK	SA	C	CV-O CV-C SLT-2	RR RR 2Y	VRR-2 VRR-2 VRR-22
SI-00845C	E8	SIS Core Deluge	1	A/C	2	CK	SA	C	CV-O CV-C SLT-2	RR RR 2Y	VRR-2 VRR-2 VRR-22
SI-00845D	F8	SIS Core Deluge	1	A/C	2	CK	SA	C	CV-O CV-C SLT-2	RR RR 2Y	VRR-2 VRR-2 VRR-22
SI-00845E	F8	SIS Cold Leg Inj	1	A/C	2	CK	SA	C	CV-O CV-C SLT-2	RR RR 2Y	VRR-2 VRR-2 VRR-22
SI-00845F	E8	SIS Cold leg Inj	1	A/C	2	CK	SA	C	CV-O CV-C SLT-2	RR RR 2Y	VRR-2 VRR-2 VRR-22
SI-00846	H3	Accum Nit Supply	2	A	1	GL	AO	C	BT-C FST PIT SLT-1	QR QR 2Y 2Y	
SI-00850A	A4	Cont Sump Hyd Isol	2	B	10	GA	HO	C	BT-O PIT	QR 2Y	
SI-00850B	B6	Cont Sump Hyd Isol	2	B	10	GA	HO	C	BT-O PIT	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

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-00852B	A7	RHR/LH Core Deluge	2	B	6	GA	MO	C	BT-O BT-C P;T	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 2Y	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 2Y	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 2Y	VRR-3 VRR-3 VRR-3 VRR-3 VRR-22
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 2Y	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	

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

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-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 2Y	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	CS 2Y RR RR SP 2Y	VRR-4 VRR-4 VRR-4
SI-00875A	F6	SIS Test Recirc Ck	2	A/C	.75	CK	SA	C	CV-O CV-C SLT-5	QR QR 2Y	
SI-00875B	F5	SIS Test Recirc Ck	2	A/C	.75	CK	SA	C	CV-O CV-C SLT-5	QR QR 2Y	
SI-00878A	E8	RX Vessel Safety Inj	2	B	2	GL	MO	C	BT-O BT-C PIT	CS CS 2Y	CSJ-22 CSJ-22
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	CS CS 2Y	CSJ-22 CSJ-22

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

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-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 2Y 2Y	CSJ-30, CSJ-30

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

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

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	CS CS 2Y	CSJ-24 CSJ-24
SI-00826C	G7	SIS Pump Rendunt Suct	2	B	8	GA	MO	C	BT-O BT-C PIT	CS CS 2Y	CSJ-24 CSJ-24
SI-00851A	B4	Cont Sump Isol	2	B	10	GA	MO	C	BT-O PIT	QR 2Y	
SI-00851B	B4	Cont Sump Isol	2	B	10	GA	MO	C	BT-O PIT	QR 2Y	
SI-00854A	D3	RHR Pump Suct Ck	2	A/C	10	CK	SA	C	CV-O CV-C SLT-6	RR RR RR	VRR-6 VRR-6 VRR-6
SI-00854B	C3	RHR Pump Suct Ck	2	A/C	10	CK	SA	C	CV-O CV-C SLT-6	RR RR RR	VRR-6 VRR-6 VRR-6
SI-00856A	D3	RHR Pump Suct	2	B	10	GA	MO	O	BT-C PIT	CS 2Y	CSJ-31
SI-00856B	C3	RHR Pump Suct	2	B	10	GA	MO	O	BT-C PIT	CS 2Y	CSJ-31

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

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

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
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 QR	
SI-00889A	F8	SIS Pump Disch Ck	2	A/C	6	CK	SA	C	CV-PO CV-C CV-O SLT-5	QR RR RR 2Y	VRR-7 VRR-7 VRR-7
SI-00889B	F8	SIS Pump Disch Ck	2	A/C	6	CK	SA	C	CV-PO CV-C CV-O SLT-5	QR RR RR 2Y	VRR-7 VRR-7 VRR-7
SI-00891A	E8	SIS Pump Mini-rec Ck	2	C	2	CK	SA	C	CV-PO INSP	QR SP	VRR-27 VRR-27
SI-00891B	E8	SIS Pump Mini-rec Ck	2	C	2	CK	SA	C	CV-PO INSP	QR SP	VRR-27 VRR-27
SI-00895	E5	SIS Pump Mini-rec Ck	2	C	2	CK	SA	C	CV-O	QR	

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

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

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SI-00896A	F6	SIS Pump Suction	2	B	6	GA	MO	O	BT-C PIT	QR 2Y	
SI-00896B	E6	SIS Pump Suction	2	B	6	GA	MO	O	BT-C PIT	QR 2Y	
SI-00897A	E2	SIS Test Line Ret	2	A	2	GL	AO	O	BT-C FST SLT-5 PIT	CS CS 2Y 2Y	CSJ-25 CSJ-25
SI-00897B	E2	SIS Test Line Ret	2	A	2	GL	AO	O	BT-C FST SLT-5 PIT	CS CS 2Y 2Y	CSJ-25 CSJ-25

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

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-PO CV-O SLT-5	QR CS 2Y	CSJ-26
RH-00710B	B4	RHR Pump Disch Ck	2	C	8	CK	SA	C	CV-PO CV-O SLT-5	QR CS 2Y	CSJ-26
RH-00742	H6	RHR/RWST Isol	2	A	8	GA	MA	C	SLT-5	2Y	
RH-00742A	H6	RHR/RWST Isol	2	A	2	GL	MA	C	SLT-5	2Y	
SI-00624	G7	RHR HX Outlet	2	B	8	BTF	AO	O	PIT	2Y	Passive
SI-00625	G7	RHR HX Outlet	2	B	8	BTF	AO	O	PIT	2Y	Passive

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

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

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SA-00015	F7	Serv Air Cont Sup	2	A	4	GA	MA	C	SLT-1	2Y	Passive
SA-00017	F7	Serv Air Cont Sup	2	A/C	4	CK	SA	C	CV-C SLT-1	QR 2Y	

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

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	A/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	A/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	A/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	A/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	A/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	A/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-02818A	F6	Cable Sp Rm Clr T/C	3	B	1.5	GL	AO	O	FST	QR	

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

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

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SW-02818B	F6	Cable Sp Rm Clr T/C	3	B	1.5	GL	AO	O	FST	QR	
SW-02819	D6	Control Rm Clr Sup	3	B	3	GL	MO	O	BT-O PIT	QR 2Y	
SW-02819A	C6	Control Rm Clr T/C	3	B	1.5	GL	AO	O	FST	QR	
SW-02819B	D6	Control Rm Clr T/C	3	B	1.5	GL	AO	O	FST	QR	
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 T/C	3	B	2	GL	AO	O	FST	QR	

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

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
UNIT 1 VALVE PROGRAM TABLES

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 HX-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 HX-12D Outlet	3	B	2	GL	AO	O	FST	QR	
SW-00307	E5	CCW HX-12D Outlet	3	B	12	GA	MA	C	BT-O	QR	
SW-00315	E5	CCW HX-12C Outlet	3	B	12	GA	MA	C	BT-O	QR	
SW-00322	E7	CCW HX-12A Outlet	3	B	12	GA	MA	C	BT0O	QR	
SW-00360	E6	CCW HX-12B Outlet	3	B	12	GA	MA	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	
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	

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

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SW-LW-61	G4	BDE/Vent Cond In	3	B	8	GA	AO	O	BT-C FST PIT	QR QR 2Y	
SW-W2-62	G3	BDE/Vent Cond Out	3	B	8	GA	AO	O	BT-C FST PIT	QR QR 2Y	

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

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
UNIT 1 VALVE PROGRAM TABLES

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

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SF-000009A	F6	SFP Pp P-12A Disc Ch	3	A/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	A/C	8	CK	SA	O/C	CV-O CV-C SLT-5	QR QR 2Y	

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

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	2Y	VRR-23 Passive
WL-01003A	C6	RCDT Pump Suction	2	A	3	DI	AO	C/C	BT-C FST SLT-1 PIT	QR QR 2Y 2Y	VRR-23
WL-01003B	C6	RCDT Pump Suction	2	A	3	DI	AO	O/C	BT-C FST SLT-1 PIT	QR QR 2Y 2Y	VRR-23
WL-01698	C6	RCDT to -19' Sump	2	A	2	DI	AO	C	SLT-1 PIT	2Y 2Y	VRR-23 Passive
WL-01721	C6	RCDT Pumps Suct Con	2	A	3	DI	AO	O/C	BT-C FST SLT-1 PIT	QR QR 2Y 2Y	
WL-01723	C6	Cont Sump Dr	2	A	3	DI	AO	O/C	BT-C FST SLT-1 PIT	QR QR 2Y 2Y	VRR-23
WL-01728	C6	Cont Sump Dr	2	A	3	DI	AO	O/C	BT-C FST SLT-1 PIT	QR QR 2Y 2Y	VRR-23

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

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 2Y 2Y	
WF-01787	B5	RCDT Vent	2	A	1	DI	AO	O	BT-C FST SLT-1 PIT	QR QR 2Y 2Y	
WG-01788	B5	RCDT Sample	2	A	.75	DI	AO	O/C	BT-C FST SLT-1 PIT	QR QR 2Y 2Y	
WG-01789	B5	RCDT Sample	2	A	.75	DI	AO	O/C	BT-C FST SLT-1 PIT	QR QR 2Y 2Y	

APPENDIX D
UNIT 1 VALVE PROGRAM TABLES

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 must not necessarily satisfy the corresponding requirements of Subsection IWV or NRC Generic Letter 89-04.

2. (11-08-90) Physical modifications are required to allow testing. Testing will commence upon completion of modifications.

3. (11-08-90) These valves fail in a position opposite of that required. Manual stroke capability will be demonstrated.

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

APPENDIX E
UNIT 2 VALVE PROGRAM TABLES

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-2200.
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 meaurements. Requires observation of system parameters or local observation of valve operation.
BT-PV	Exercise of pneumatic pilot valve. Proper operation of the associated main valve verifies operability.

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 position.
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 per IWV-3521.
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 per IWV-3521.

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)
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
UNIT 2 VALVE PROGRAM TABLE

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 1A S/G	2	A/C	3	CK	SA	C	CV-O CV-C SLT-5	CS 2Y	CSJ-1
AF-00105	G8	AFW to 1B S/G	2	A/C	3	CK	SA	C	CV-O CV-C SLT-5	CS 2Y	CSJ-1
AF-00106	E8	AFW to 2A S/G	2	A/C	3	CK	SA	C	CV-O CV-C SLT-5	CS 2Y	CSJ-1
AF-00107	G8	AFW to 2B S/G	2	A/C	3	CK	SA	C	CV-O CV-C SLT-5	CS 2Y	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
UNIT 2 VALVE PROGRAM TABLE

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 FST PIT	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
UNIT 2 VALVE PROGRAM TABLE

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	2Y	VRR-23 Passive
HV-00286	C2	Aux Steam Cond Ret	2	A	1.5	GA	MA	C	SLT-1	2Y	VRR-23 Passive
HV-00287	C2	Aux Steam Cond Ret	2	A	1.5	GA	MA	C	SLT-1	2Y	VRR-23 Passive
HV-00636	D2	Aux Steam to Cont	2	A	3	GA	MA	C	SLT-1	2Y	VRR-23 Passive
HV-00637	C3	Aux Steam Cond Ret	2	A	1.5	GA	MA	C	SLT-1	2Y	VRR-23 Passive

APPENDIX E
UNIT 2 VALVE PROGRAM TABLE

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	QR 2Y	
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	[illegible]	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-00300A	C10	RCP Seal Inj Thrtl	2	A	1	NE	MA	T	BT-C SLT-1	RR 2Y	VRR-19
CV-00300B	C11	RCP Seal Inj Thrtl	2	A	1	NE	MA	T	BT-C SLT-1	RR 2Y	
CV-00304C	C10	RCP Seal Wtr Sup	1	A/C	2	CK	SA	O	CV-C SLT-1	RR 2Y	VRR-12
CV-00304D	C11	RCP Seal Wtr Sup	1	A/C	2	CK	SA	O	CV-C SLT-1	RR 2Y	VRR-12
CV-00313	C8	RCP Seal Wtr Ret	2	A	3	GA	MO	O	BT-C PIT SLT-1	CS 2Y 2Y	CSJ-6

APPENDIX E
UNIT 2 VALVE PROGRAM TABLE

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

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
CV-00313A	C9	RCP Seal Wtr Ret	2	A	3	GL	AO	O	BT-C FST PIT SLT-1	CS CS 2Y 2Y	CSJ-6 CSJ-6
CV-00323A	A9	Aux Chrging Isol	2	A	2	GL	MA	C	SLT-1	2Y	Passive
CV-00323B	C9	Chg HCV Bypass	2	A	2	GL	MA	C	SLT-1	2Y	VRR-23 Passive
CV-00333A	A3	BA Xfer Pump Disch	2	A/C	2	CK	SA	C	CV-PO CV-O CV-C SLT-5	QR RR QR 2Y	VRR-26 VRR-26
CV-00333B	A3	BA Xfer Pump Disch	2	A/C	2	CK	SA	C	CV-PO CV-O CV-C SLT-5	QR RR QR 2Y	VRR-26 VRR-26
CV-00350	A5	Emerg Boration	2	B	2	GA	MO	C	BT-O PIT	QR 2Y	

APPENDIX E
UNIT 2 VALVE PROGRAM TABLE

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	VRP-24
CV-00357	B6	RWST to Chg Pump	2	C	4	CK	SA	C	CV-O	QR	
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 2Y	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 2Y	CSJ-7 CSJ-7
CV-00384B	C8	Chg Line HCV Out	2	A	3	GL	MA	O	BT-C SLT-1	CS 2Y	CSJ-8 VRR-23
CV-01296	A8	Aux Charging Iso	1	A	2	GL	AO	C	PIT SLT-1	2Y 2Y	Passive

APPENDIX E
UNIT 2 VALVE PROGRAM TABLE

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
UNIT 2 VALVE PROGRAM TABLE

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 2Y 2Y	CSJ-10
CC-00754B	F10	RCP Clg Water Sup	2	A	4	GA	MO	O	BT-C SLT-1 PIT	CS 2Y 2Y	CSJ-10
CC-00755A	E13	RCP Clg Wtr Sup Ck	2	A/C	4	CK	SA	O	CV-C SLT-1	2Y 2Y	VRR-10 VRR-23
CC-00755B	E10	RCP Clg Wtr Sup Ck	2	A/C	4	CK	SA	O	CV-C SLT-1	2Y 2Y	VRR-10 VRR-23
CC-00759A	F11	RCP Clg Water Ret	2	A	4	GA	MO	O	BT-C SLT-1 PIT	CS 2Y 2Y	CSJ-10 VRR-23
CC-00759B	F8	RCP Clg Water Ret	2	A	4	GA	MO	O	BT-C SLT-1 PIT	CS 2Y 2Y	CSJ-10 VRR-23
CC-00763A	E12	RCP Clg Wtr Ret S/R	2	C	2	SRV	SA	C	RVT	10Y	
CC-00763B	E9	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
UNIT 2 VALVE PROGRAM TABLE

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 2Y	

APPENDIX E
UNIT 2 VALVE PROGRAM TABLE

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	A/C	10	CK	SA	O	CV-O CV-C SLT-5	QR QR QR	
CC-00724B	F7	CCW Pump Disch Check	3	A/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-6	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-6	2Y	Passive

APPENDIX E
UNIT 2 VALVE PROGRAM TABLE

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	CS CS 2Y	CSJ-11 CSJ-11
SI-00836B	E7	NaOH Supply	2	B	2	GL	AO	C	BT-O FST PIT	CS CS 2Y	CSJ-11 CSJ-11
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-PO INSP	QR SP	VRR-8 VRR-8
SI-00858B	C3	RWST to CS Pump P14B	2	C	6	CK	SA	C	CV-PO INSP	QR SP	VRR-8 VRR-8
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
UNIT 2 VALVE PROGRAM TABLE

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	INSP SLT-1	SP RR	VRR-9 VRR-23, 29
SI-00862B	C11	CS Pump 1-P14B Disch	2	A/C	6	CK	SA	C	INSP SLT-1	SP RR	VRR-9 VRR-23, 29
SI-00864A	H11	CS Pump Test Recirc	2	A	.75	GL	MA	C	SLT-1	2Y	Passive VRR-23
SI-00864B	C11	CS Pump Test Recirc	2	A	.75	GL	MA	C	SLT-1	2Y	Passive VRR-23
SI-00870A	I3	RWST to CS Pump P14A	2	A	6	GA	MO	O	BT-O BT-C SLT-6 PIT	CS CS 2Y 2Y	CSJ-29 CSJ-29,Note 3 Note 2
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	CSJ-29 CSJ-29,Note 3 Note 2
SI-00871A	I5	RHR to CS Pump P14A	2	B	6	GA	MO	C	BT-O BT-C PIT	QR QR 2Y	

APPENDIX E
UNIT 2 VALVE PROGRAM TABLE

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

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
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
UNIT 2 VALVE PROGRAM TABLE

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	2Y	Passive
DI-00011	E1	DI Water Sup to Cont	2	A	2	DI	MA	C	SLT-1	2Y	Passive

APPENDIX E
UNIT 2 VALVE PROGRAM TABLE

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
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
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
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

APPENDIX E
UNIT 2 VALVE PROGRAM TABLE

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	C	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 2Y 2Y	
RM-03200B	F8	Cont Atmos Samp Sup	2	A	1	GA	AO	O	BT-C FST SLT-1 PIT	QR QR 2Y 2Y	
RM-03200C	G8	Cont Atmos Samp Sup	2	A	1	GA	AO	O	BT-C FST SLT-1 PIT	QR QR 2Y 2Y	

APPENDIX E
UNIT 2 VALVE PROGRAM TABLE

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

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	QR QR 2Y	
IA-00877	E8	Purge Vlv 3212 Sup	NC	A/C	.25	CK	SA	C	CV-O CV-C SLT-3	QR QR 2Y	
IA-01315	E3	Inst Air to Cont	2	A/C	2	CK	SA	C	CV-C SLT-1	QR 2Y	VRR-23
IA-01316	E4	Inst Air to Cont	2	A	1	GA	MA	C	SLT-1	2Y	VRR-23 Passive
IA-01324	F3	Inst Air to Cont	2	A/C	2	CK	SA	C	CV-C SLT-1	QR 2Y	
IA-03047	E3	Inst Air to Cont	2	A	2	GA	AO	O	BT-C FST SLT-1 PIT	QR QR 2Y 2Y	
IA-03048	F3	Inst Air to Cont	2	A	2	GA	AO	O	BT-C FST SLT-1 PIT	QR QR 2Y 2Y	

APPENDIX E
UNIT 2 VALVE PROGRAM TABLE

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 VRR-32 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 VRR-32 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
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
IA-01418	F4	Nit Sup to PORV	NC	A/C		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		CK	SA	C	CV-O CV-C SLT-3	CS CS 2Y	CSJ-28 CSJ-38 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 VRR-32 Note 1

APPENDIX E
UNIT 2 VALVE PROGRAM TABLE

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 VRR-32 Note 1
IA-06308	F4	PORV Nit Sup S/R	NC	C		SRV	SA	C	RVT	10Y	Note 1
IA-06309	G4	PORV Nit Sup S/R	NC	C		SRV	SA	C	RVT	10Y	Note 1
IA-06310	F5	PORV 430 Nit Sup Reg	NC	C		GL	SA	O/C	BT-EE	CS	CSJ-28
IA-06311	G5	PORV 431C Nit Sup Reg	NC	C		GL	SA	O/C	BT-EE	CS	CSJ-28

APPENDIX E
UNIT 2 VALVE PROGRAM TABLE

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	RR RR	VRR-21 VRR-21
CS-00466BB	D1	S/G 1A FW Ck	2	A/C	16	CK	SA	O	CV-C SLT-6	RR RR	VRR-21 VRR-21
CS-00476AA	G2	S/G 1B FW Ck	2	A/C	16	CK	SA	O	CV-C SLT-6	RR RR	VRR-21 VRR-21
CS-00476BB	H1	S/G 1B FW Ck	2	A/C	16	CK	SA	O	CV-C SLT-6	RR RR	VRR-21 VRR-21

APPENDIX E
UNIT 2 VALVE PROGRAM TABLE

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	SRV	5Y	
MS-02006	G4	Main Stm Safety	2	C	6	RV	SA	C	SRV	5Y	
MS-02007	G4	Main Stm Safety	2	C	6	RV	SA	C	SRV	5Y	
MS-02008	G4	Main Stm Safety	2	C	6	RV	SA	C	SRV	5Y	
MS-02010	D3	main Stm Safety	2	C	6	RV	SA	C	SRV	5Y	
MS-02011	D4	Main Stm Safety	2	C	6	RV	SA	C	SRV	5Y	
MS-02012	D4	Main Stm Safety	2	C	6	RV	SA	C	SRV	5Y	
MS-02013	D4	Main Stm Safety	2	C	6	RV	SA	C	SRV	5Y	
MS-02015	H5	MS Atmos Stm Dmp	2	B	6	GL	AO	C	BT-C BT-O PIT	CS CS 2Y	CSJ-14 CSJ-14
MS-02016	E5	MS Atmos Stm Dmp	2	B	6	GL	AO	C	BT-C BT-O PIT	CS CS 2Y	CSJ-14 CSJ-14
MS-02017	G5	Main Stm Isolation	2	B	30	SCK	AO	O	BT-C PIT FST	CS 2Y CS	CSJ-15 CSJ-15
MS-02017A	G7	Main Stm Nonreturn	2	C	30	CK	SA	O	CV-C	CS	CSJ-16
MS-02017CS	H6	MSIV 2017 Air Pilot	NC	B	1	AP	SO	C	BT-PV	CS	CSJ-17
MS-02017DS	H6	MSIV 2017 Air Pilot	NC	B	1	AP	SO	C	BT-PV	CS	CSJ-17

APPENDIX E
UNIT 2 VALVE PROGRAM TABLE

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

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
MS-02018	D5	Main Stm Isolation	2	B	30	SCK	AO	O	BT-C PIT FST	CS 2Y CS	CSJ-15 CSJ-15
MS-02018A	D7	Main Stm Nonreturn	2	C	30	CK	SA	O	CV-C	CS	CSJ-16
MS-02018CS	E6	MSIV 2018 Air Pilot	NC	B	1	AP	SO	C	BT-PV	CS	CSJ-17
MS-02018DS	E6	MSIV 2018 Air Pilot	NC	B	1	AP	SO	C	BT-PV	CS	CSJ-18
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	B8	Main Steam to AFW Pump	2	B	3	GL	SA/ MA	O	BT-C BT-O PIT	QR QR 2Y	VRR-1
MS-02083	B2	S/G Sample Isol	2	A	.75	DI	AO	O	BT-C FST SLT-1 PIT	QR QR 2Y 2Y	

APPENDIX E
UNIT 2 VALVE PROGRAM TABLE

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

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
MS-02084	F2	S/G Sample Isol	2	A	.75	DI	AO	O	BT-C FST SLT-1 PIT	QR QR 2Y 2Y	
MS-02090	B9	SW to AFW Pump P-029	3	B	1	GL	SO	O	BT-O FST	QR QR	VRR-20
MS-05958	E2	S/G Blowdown Isol	2	A	2	GA	AO	O	BT-C FST SLT-1 PIT	QR QR 2Y 2Y	
MS-05959	B2	S/G Blowdown Isol	2	A	2	GA	AO	O	BT-C FST SLT-1 PIT	QR QR 2Y 2Y	
RS-SA-10	F9	RDW Steam Supply	2	B	3	GA	AO	O	BT-C FST PIT	QR QR 2Y	

APPENDIX E
UNIT 2 VALVE PROGRAM TABLE

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	QR 2Y	VRR-23
H2-V-05	D5	Post-Acc Purge Disch	2	A	2	DI	MA	C	BT-O SLT-1	QR 2Y	VRR-23
H2-V-06	D5	Post-Acc Purge Drain	2	A	.75	GA	MA	C	SLT-1	2Y	VRR-23 Passive
H2-V-07	D5	Post-Acc Purge Drain	2	A	.75	GA	MA	C	SLT-1	2Y	VRR-23 Passive
H2-V-08	E5	Post-Acc Atmos Samp	2	A	.75	DI	MA	C	SLT-1	2Y	Passive
H2-V-09	E5	Post-Acc Atmos Samp	2	A	.75	DI	MA	C	SLT-1	2Y	Passive
H2-V-12	D5	Post-Acc Svc Air Sup	2	A	2	DI	MA	C	BT-O SLT-1	QR 2Y	VRR-23
H2-V-13	D5	Post-Acc Svc Air Sup	2	A	2	DI	MA	C	BT-O SLT-1	QR 2Y	VRR-23
H2-V-19	D5	Post-Acc Alt Vent	2	A	2	DI	MA	C	SLT-1	2Y	VRR-23 Passive
H2-V-20	D5	Post-Acc Alt Vent	2	A	2	DI	MA	C	SLT-1	2Y	VRR-23 Passive
H2-V-22	D4	Post-Acc Sup Drain	2	A	2	DI	MA	C	SLT-1	2Y	VRR-23 Passive

APPENDIX E
UNIT 2 VALVE PROGRAM TABLE

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	QR 2Y	VRR-23
H2-V-23	D4	Post-Acc Sup Drain	2	A	2	DI	MA	C	SLT-1	2Y	VRR-23 Passive

APPENDIX E
UNIT 2 VALVE PROGRAM TABLE

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 2Y 2Y	
SC-00953	E9	Press Liq Sample	1	A	.375	GL	AO	C	BT-C FST SLT-1 PIT	QR QR 2Y 2Y	
SC-00955	E9	Hot Leg Sample	1	A	.375	GL	AO	O/C	BT-C FST SLT-1 PIT	QR QR 2Y 2Y	
SC-00959	D9	RHR 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 2Y 2Y	
SC-00966B	E8	Press Liq Sample	1	A	.375	GL	AO	C	BT-C FST SLT-1 PIT	QR QR 2Y 2Y	

APPENDIX E
UNIT 2 VALVE PROGRAM TABLE

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 2Y 2Y	

APPENDIX E
UNIT 2 VALVE PROGRAM TABLE

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	
RC-00435	I6	Pressurizer Safety	1	C	3	SRV	SA	C	RVT	5Y	
RC-00515	I5	PORV Block Valve	1	B	3	GA	MO	O	BT-C PIT	QR 2Y	
RC-00516	H5	PORV Block Valve	1	B	3	GA	MO	O	BT-C PIT	QR 2Y	

APPENDIX E
UNIT 2 VALVE PROGRAM TABLE

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 2Y 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 2Y 2Y	
RC-00539	E2	PRT Sample	2	A	.375	GL	AO	O	BT-C FST SLT-1 PIT	QR QR 2Y 2Y	
RC-00570A	F5	RX Vess Vent	1	B	1	GL	SO	C	BT-O PIT	CS 2Y	CSJ-19
RC-00570B	F5	RX Vess Vent	1	B	1	GL	SO	C	BT-O PIT	CS 2Y	CSJ-19
RC-00575A	F5	RX Vess/Press Vent	1	B	1	GL	SO	C	BT-O PIT	CS 2Y	CSJ-19
RC-00575B	F4	RX Vess/Press Vent	1	B	1	GL	SO	C	BT-O PIT	CS 2Y	CSJ-19

APPENDIX E
UNIT 2 VALVE PROGRAM TABLE

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

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

APPENDIX E
UNIT 2 VALVE PROGRAM TABLE

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-PO CV-O SLT-5	QR CS 2Y	CSJ-26
RH-00710B	B4	RHR Pump Disch Ck	2	C	8	CK	SA	C	CV-PO CV-O SLT-5	QR SC 2Y	CSJ-26
RH-00742	H6	RHR/RWST Isol	2	A	8	GA	MA	C	SLT-5	2Y	
RH-00742A	H6	RHR/RWST Isol	2	A	2	GL	MA	C	SLT-5	2Y	
SI-00624	G7	RHR HX Outlet	2	B	8	BTF	AO	O	PIT	2Y	Passive
SI-00625	G7	RHR HX Outlet	2	B	8	BTF	AO	O	PIT	2Y	Passive

APPENDIX E
UNIT 2 VALVE PROGRAM TABLE

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-O FST PIT	CS CS 2Y	CSJ-30 CSJ-30
SI-00834B	D7	SIS Accum Vent	2	B	1	GL	AO	C	BT-O FST PIT	CS CS 2Y	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
UNIT 2 VALVE PROGRAM TABLE

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 2Y	VRR-2 VRR-2 VRR-22
SI-00845B	D12	SIS Cold Leg Inj	1	A/C	2	CK	SA	C	CV-O CV-C SLT-2	RR RR 2Y	VRR-2 VRR-2 VRR-22
SI-00845C	G12	SIS Core Deluge	1	A/C	2	CK	SA	C	CV-O CV-C SLT-2	RR RR 2Y	VRR-2 VRR-2 VRR-22
SI-00845D	D12	SIS Core Deluge	1	A/C	2	CK	SA	C	CV-O CV-C SLT-2	RR RR 2Y	VRR-2 VRR-2 VRR-22
SI-00845E	E12	SIS Cold Leg Inj	1	A/C	2	CK	SA	C	CV-O CV-C SLT-2	RR RR 2Y	VRR-2 VRR-2 VRR-22
SI-00845F	G12	SIS Cold Leg Inj	1	A/C	2	CK	SA	C	CV-O CV-C SLT-2	RR RR 2Y	VRR-2 VRR-2 VRR-22
SI-00846	J5	Accum Nit Supply	2	A	1	GL	AO	C	BT-C FST PIT SLT-1	QR QR 2Y 2Y	
SI-00850A	B7	Cont Sump Hyd Isol	2	B	10	GA	HO	C	BT-O PIT	QR 2Y	

APPENDIX E
UNIT 2 VALVE PROGRAM TABLE

SYSTEM: Safety Injection and Residual Heat Removal
DRAWING NO.: 11023035, 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-O PIT	QR 2Y	
SI-00851A	B5	Cont Sump Isol	2	B	10	GA	MO	C	BT-O PIT	QR 2Y	
SI-00851B	A5	Cont Sump Isol	2	B	10	GA	MO	C	BT-O PIT	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 2Y	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 2Y	VRR-3 VRR-3 VRR-3 VRR-3 VRR-22

APPENDIX E
UNIT 2 VALVE PROGRAM TABLE

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 2Y	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 2Y	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 PIT	QR 2Y	
SI-00866B	H5	SIS Pump Disch	2	B	4	GA	MO	O	BT-O PIT	QR QR	
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 2Y	VRR-4 VRR-4 VRR-4 VRR-4 VRR-4 VRR-22

APPENDIX E
UNIT 2 VALVE PROGRAM TABLE

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	CS 2Y RR RR SP 2Y	VRR-4 VRR-4 VRR-4 VRR-4 VRR-4 VRR-22
SI-00875A	F7	SIS Test Recirc Ck	2	A/C	.75	CK	SA	C	CV-O CV-C SLT-5	QR QR 2Y	
SI-00875B	F7	SIS Test Recirc Ck	2	A/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	CS CS 2Y	CSJ-22 CSJ-22
SI-00878B	D12	SIS Loop Inj	2	B	2	GL	MO	O	BT-O PIT	CS 2Y	CSJ-23
SI-00878C	G12	RX Vessel Safety Inj	2	B	2	GL	MO	C	BT-O BT-C PIT	CS CS 2Y	CSJ-22 CSJ-22
SI-00878D	H12	SIS Loop Inj	2	B	2	GL	MO	O	BT-O PIT	CS 2Y	CSJ-23
SI-00887	F6	Test Line S/R	2	C	.75	SRV	SA	C	RVT	10Y	

APPENDIX E
UNIT 2 VALVE PROGRAM TABLE

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 2Y 2Y	CSJ-30 CSJ-30

APPENDIX E
UNIT 2 VALVE PROGRAM TABLE

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	CS CS 2Y	CSJ-24 CSJ-24
SI-00826C	I7	SIS Pump Rendunt Suct	2	B	8	GA	MO	C	BT-O BT-C PIT	CS CS 2Y	CSJ-24 CSJ-24
SI-00854A	E4	RHR Pump Suct Ck	2	A/C	10	CK	SA	C	CV-O CV-C SLT-6	RR RR RR	VRR-6 VRR-6 VRR-6
SI-00854B	E4	RHR Pump Suct Ck	2	A/C	10	CK	SA	C	CV-O CV-C SLT-6	RR RR RR	VRR-6 VRR-6 VRR-6
SI-00856A	E4	RHR Pump Suct	2	B	10	GA	MO	O	BT-C PIT	CS 2Y	CSJ-31
SI-00856B	E4	RHR PUMP Suct	2	B	10	GA	MO	O	BT-C PIT	CS 2Y	CSJ-31
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	

APPENDIX E
UNIT 2 VALVE PROGRAM TABLE

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-00889A	I10	SIS Pump Disch Ck	2	C	6	CK	SA	C	CV-PO CV-O SLT-5	QR RR 2Y	VRR-7 VRR-7
SI-00889B	H10	SIS Pump Disch Ck	2	C	6	CK	SA	C	CV-PO CV-O SLT-5	QR RR 2Y	VRR-7 VRR-7
SI-00891A	G9	SIS Pump Mini-rec Ck	2	C	2	CK	SA	C	CV-PO INSP	QR SP	VRR-27 VRR-27
SI-00891B	G9	SIS Pump Mini-rec Ck	2	C	2	CK	SA	C	CV-PO INSP	QR SP	VRR-27 VRR-27
SI-00895	H5	SIS Pump Mini-Rec Ck	2	C	2	CK	SA	C	CV-O	QR	
SI-00896A	I7	SIS Pump Suction	2	B	6	GA	MO	O	BT-C PIT	QR 2Y	
SI-00896B	H7	SIS Pump Suction	2	B	6	GA	MO	O	BT-C PIT	QR 2Y	
SI-00897A	I2	SIS Test Line Ret	2	A	2	GL	AO	O	BT-C FST SLT-5 PIT	CS CS 2Y 2Y	CSJ-25 CSJ-25
SI-00897B	H2	SIS Test Line Ret	2	A	2	GL	AO	O	BT-C FST SLT-5 PIT	CS CS 2Y 2Y	CSJ-25 CSJ-25

APPENDIX E
UNIT 2 VALVE PROGRAM TABLE

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

VALVE	CORD	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARKS
SA-00015	F4	Service Air Cont Sup	2	A	4	GA	MA	C	SLT-1	2Y	Passive
SA-00017	F4	Service Air Cont Sup	2	A/C	4	CK	SA	C	CV-C SLT-1	QR 2Y	

APPENDIX E
UNIT 2 VALVE PROGRAM TABLE

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

APPENDIX E
UNIT 2 VALVE PROGRAM TABLE

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
UNIT 2 VALVE PROGRAM TABLE

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
UNIT 2 VALVE PROGRAM TABLE

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

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	2Y	VRR-23 Passive
WL-01003B	C6	RCDT Pump Suction	2	A	3	DI	AO	O/C	BT-C FST SLT-1 PIT	QR QR 2Y 2Y	VRR-23
WL-01003B	C6	RCDT Pump Suction	2	A	3	DI	AO	O/C	BT-C FST SLT-1 PIT	QR QR 2Y 2Y	VRR-23
WL-01698	C6	RCDT to El -19' Sump	2	A	2	DI	AO	C	SLT-1 PIT	2Y 2Y	VRR-23 Passive
WL-01721	C6	RCDT Pumps Suct Con	2	A	3	DI	AO	O/C	BT-C FST SLT-1 PIT	QR QR 2Y 2Y	
WL-01723	C6	Containment Sump Dr	2	A	3	DI	AO	O/C	BT-C FST SLT-1 PIT	QR QR 2Y 2Y	VRR-23
WL-01728	C6	Containment Sump Dr	2	A	3	DI	AO	O/C	BT-C FST SLT-1 PIT	QR QR 2Y 2Y	VRR-23

APPENDIX E
UNIT 2 VALVE PROGRAM TABLE

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

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 2Y 2Y	
WG-01787	B5	RCDT Vent	2	A	1	DI	AO	O	BT-C FST SLT-1 PIT	QR QR 2Y 2Y	
WG-01788	B5	RCDT Sample	2	A	.75	DI	AO	O/C	BT-C FST SLT-1 PIT	QR QR 2Y 2Y	
WG-01789	B5	RCDT Sample	2	A	.75	DI	AO	O/C	BT-C FST SLT-1 PIT	QR QR 2Y 2Y	

APPENDIX E
UNIT 2 VALVE PROGRAM TABLE

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 must not necessarily satisfy the corresponding requirements of Subsection IWV or NRC Generic Letter 89-04.

2. (11-08-90) Physical modifications are required to allow testing. Testing will commence upon completion of modifications.

3. (11-08-90) These valves fail in a position opposite of that required. Manual stroke capability will be demonstrated.

4. If a PORV is Isolated in accordance with Technical specificatioins, the associated block valve will be exercised at cold shutdown.

APPENDIX F
VALVE PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. VRR-1

SYSTEM: Various

COMPONENTS: MS-02082

CATEGORY: Various

FUNCTION: This is a generic Request for Relief

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(a))

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 (eg. test conditions, operator reaction time). In accordance with Reference 2.8, Position 6, an alternate method of evaluating stroke times is considered acceptable.

ALTERNATE TESTING:

The stroke time evaluation for those valves designated in the IST Program Valve Tables (Appendices D & E) as "fast-acting" will not account for successive increases of measured stroke time per IWV-3417(a) 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 limit, a valve will be declared inoperable and corrective action taken in accordance with IWV-3417(b).

Status: IST Program 1990; Submitted as VRR-0 (Approved via GL 89-04)

APPENDIX F
VALVE PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. VRR-2

SYSTEM: Safety Injection (110E017, Sh 1 / 110E035, Sh 1)

COMPONENTS: IA through F

CATEGORY: A/C

FUNCTION:

These valves open with differential pressure to provide flowpaths from the safety injection pumps to the reactor coolant system for emergency core cooling. They close to prevent backflow from the associated SIS 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 safety injection pump at nominal accident flowrate and injecting into the reactor coolant system since no full flow recirculation path exists. During normal operation the safety injection discharge pressure of 1500 psig is insufficient to overcome reactor coolant system pressure. During shutdown conditions, injection via the SIS pumps is precluded by restrictions related to low-temperature over-pressurization protection concerns in accordance with Technical Specifications, Section 15.3.15.B.

The lack of a recirculation flowpath precludes partial stroking during operation and cold shutdown conditions. 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 operationally be left undisturbed, i.e., moved solely for test purposes. This reduction in plant safety is not warranted. Additionally, such testing occurs in radiation areas, thereby increasing personnel radiation exposure.

ALTERNATE TESTING:

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

Valve seat leak testing will be performed in accordance with Point Beach Technical Specification 15.3.16, "Reactor Coolant System Pressure Isolation Valve Leakage Tests."

Status: IST Program 1980; Submitted as VRR-2 (Approved via GL 89-04)

APPENDIX F
VALVE PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. VRR-3

SYSTEM: Safety Injection (110E017, Sh 1 / 110E035, Sh 1)

COMPONENTS: SI-00853 A through D

CATEGORY: A/C

FUNCTION:

Valves SI-00853A&B open with differential pressure to provide flowpaths from the low-head safety injection pumps to the reactor vessel for emergency core cooling. Valves SI-00853C&D open with differential pressure to provide flowpaths from the low- and high-head safety injection pumps to the reactor vessel 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 low-head safety injection pump discharge pressure is insufficient to overcome reactor coolant system pressure. Even if pump discharge pressure were adequate, any stroking would cause the injection of cold borated water into the system, resulting in power and thermal transients.

Stroke testing the subject valves during cold shutdowns is possible, however, not desirable unless "Event V" leak testing is also scheduled. The "Event V" testing 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 assurance that a valve is, in fact, properly seated, as established via the "Event V" testing.

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 "Event V" valve testing is required.

Seat leakage testing will be performed in accordance with Point Beach Technical Specification 15.3.16, "Reactor Coolant System Pressure Isolation Valve Leakage Tests."

Status: IST Program 1980; Submitted as VRR-3 (Approved via GL 89-04)

APPENDIX F
VALVE PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. VRR-4

SYSTEM: Safety Injection (110E017, Sh 1 / 110E035, Sh 1)

COMPONENTS: SI-00867 A&B
SI-00842 A&B

CATEGORY: A/C

FUNCTION:

These valves open with differential pressure to provide flowpaths from the safety injection pumps and/or the SI accumulators to the reactor coolant system cold legs during an accident. They are normally closed. In the closed position they serve as reactor coolant system 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 safety injection pump discharge pressure of 1500 psig nor accumulator pressure of 760 psig, are sufficient to overcome reactor coolant system pressure. Full or partial stroke testing is, therefore, not possible.

During cold shutdown, partial or full stroke testing of valves SI-00867A, SI-00842A, and SI-00842B via the use of the accumulators or safety injection pumps is not permitted so as to prevent the possibility of a low-temperature over-pressurization event. Partial stroking of SI-00867B is, however, possible using the RHR pumps.

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

BASIS FOR EXTENDED INSPECTION INTERVAL:

Our response to NRC Generic Letter (GL) 89-04 contained a justification of the long frequency surveillance intervals for 1-SI-00842A&B, 1-SI-00867A, and 2-SI-00842A&B, and 2-SI-00867A. Valves 1-SI-00842A, 1-SI-00867A&B, 2-SI-00842A, and 2-SI-00867A&B are opened and inspected every ten (10) years. Valves 1-SI-00842B and 2-SI-00842B are not periodically opened and inspected because they require a complete core offload and RCS draindown.

The NRC, in position 2 of GL 89-04, requested three items of information to support extension of the valve disassembly/inspection intervals to longer than once every six years. Two of these items, review of industry experience and review of the installation of each valve, were addressed in the response to the generic letter. Since this information is current, no additional response is necessary.

The third item requires a disassembly and inspection of each valve in the valve group. Valves 2-SI-00842A and 2-SI-00867A were disassembled in 1987. Valve 2-SI-842B was not disassembled for the reasons presented above in the basis discussion.

In response to NRC Information Notice 88-05, in 1989 the retaining block studs in each of the valves in Unit 2 were replaced, and in the process each of these valves was disassembled and inspected for freedom of motion as per the requirements of NRC Generic Letter 89-04, Position 2.

During all inspections that have been performed on these valves to date, no defects have been discovered that would signify that they were not fully functional and capable of performing their required function to full stroke. These valves have now performed acceptably at Point Beach for over 19 years with no indications of degradation. This is in agreement with industry experience that shows these valves to be extremely reliable. The extended frequency inspection is, therefore, considered to be adequate with respect to the capability of effectively detecting valve degradation.

The above justification satisfies the NRC's guidelines for extending the frequency for valve disassembly and inspection. It does not specifically address our need for extending this frequency, however. This need is based on such factors as man-hours required to perform this work, radiation exposure received, effect or potential effect on plant operation, and the cost-benefit value of the additional inspections.

ALTERNATE TESTING:

The following alternate testing will be performed:

1. A partial-stroke test of these valves will be performed during the transition from hot shutdown to cold shutdown. This test will be considered to be a "cold shutdown" test. This test will not be performed if it will disturb an "Event V" valve that is not required to be testing within the associated cold shutdown. At a minimum, however, this test will be performed once every reactor refueling outage. In the case of SI-00867B, a partial-stroke test will be performed at cold shutdown using an RHR pump.

2. Seat leakage tests of SI-00867A and SI-00867B 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-00842A and SI-00842B will be performed quarterly coincident with the SI pump tests. A seat leakage rate of 5 gpm or less will be considered acceptable.

APPENDIX F
VALVE PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

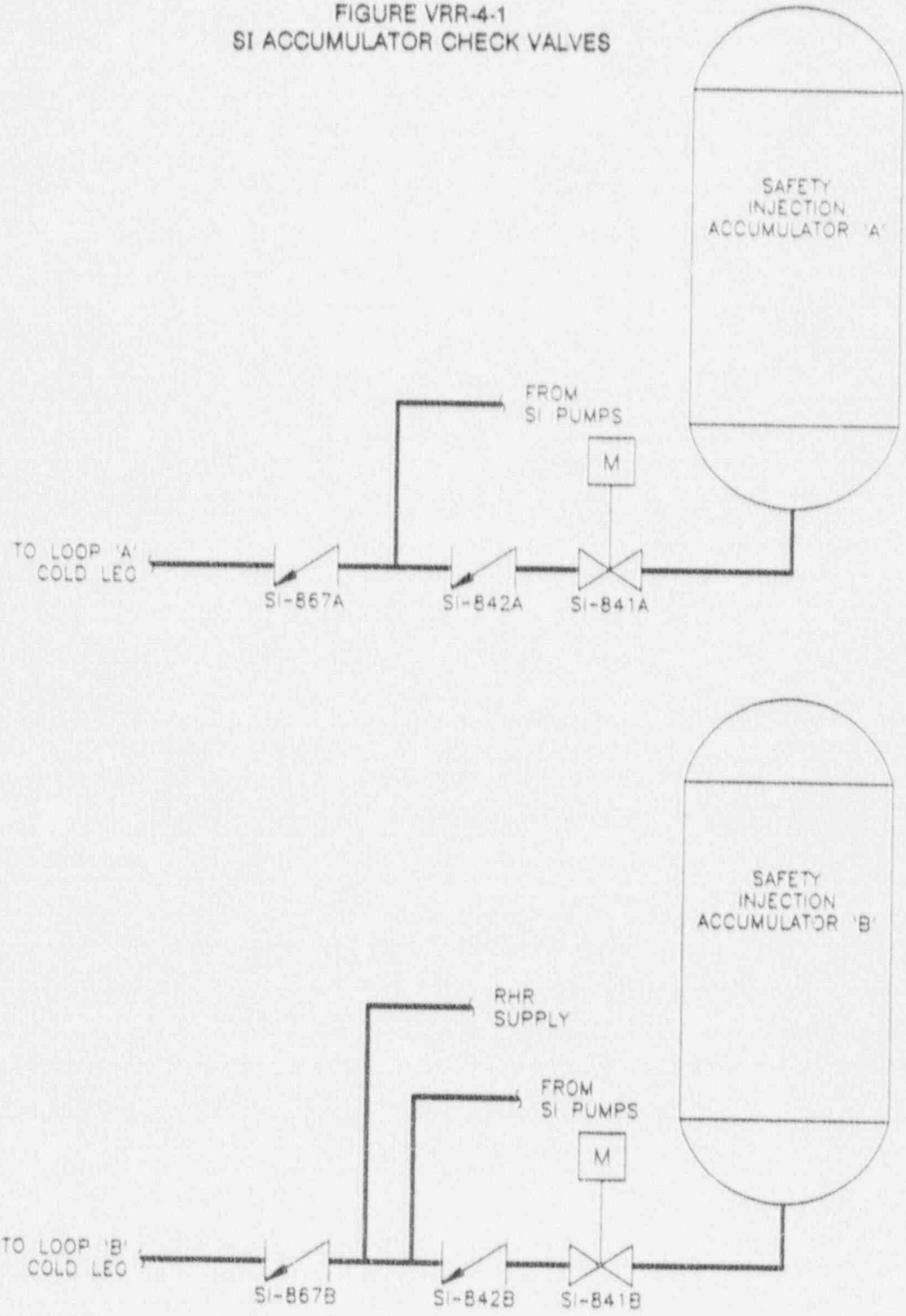
4. At least once within each 120-month inspection interval, valves 1-SI-00842A, 2-SI-00842A, 1-SI-00867A&B, and 2-SI-00867A&B will be opened and their discs will be checked to verify freedom of movement. The inspections will be staggered such that one valve from the group of six (including both Unit 1 and 2 valves) will be inspected approximately every two to three years.

   If a condition is discovered during an inspection of a given valve that would have prevented it from stroking full open, the inspection sample will be expanded. A second identical check valve in the same unit will be opened and inspected. Also, during the next refueling outage on the opposite unit, the sister valve to the inoperable valve will be inspected. If a second valve is found inoperable in the expanded sample, all six (6) remaining valves from the group of eight (8) like valves will be inspected.

   If the inspection must be expanded to include all eight valves, the inspections of those valves in the unit which is not in a refueling shutdown condition shall be performed during the next regularly scheduled refueling shutdown.

APPENDIX F
VALVE PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

FIGURE VRR-4-1
SI ACCUMULATOR CHECK VALVES



Status: IST Program 1990

APPENDIX F
VALVE PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. VRR-5

SYSTEM: Various

COMPONENTS: All valves tested during cold shutdown conditions.

CATEGORY: Various

FUNCTION: Various

SECTION XI REQUIREMENT:

Valves shall be exercised ... 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. 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 shutdown. (IWV-3412 and IWV-3522)

BASIS FOR RELIEF:

In many instances testing of all valves designated for testing during cold shutdown cannot be completed due to the brevity of an outage or the lack of plant conditions needed for testing specific valves. It has been the policy of the NRC that if testing commences in a reasonable time and reasonable efforts are made to test all valves, then outage extension or significant changes in plant conditions are not required when the only reason is to provide the opportunity for completion of valve testing.

ASME/ANSI OMa-1987, Operation and Maintenance Of Nuclear Power Plants, Part 10 (Paragraphs 4.2.1.2 and 4.3.2.2) recognizes this issue and allows deferred testing as set forth below.

ALTERNATE TESTING:

For those valves designated to be exercised or tested during cold shutdown, exercising shall commence as soon as practical after the plant reaches a stable cold shutdown condition as defined by the applicable Technical Specification but no later than 48 hours after reaching cold shutdown. If an outage is sufficiently long enough to provide for testing of all valves required to be tested during the cold shutdown period, then the 48-hour requirement need not apply if all valves are tested during the outage. Valve testing need not be performed more often than once every three (3) months except as provided for in IWP-3417(a) Completion of all valve testing during a cold shutdown outage is not required if plant conditions preclude testing of specific valves or if the length of the shutdown period is insufficient to complete all testing. Testing not completed prior to startup will be rescheduled for the next cold shutdown in a sequence such that the test schedule does not omit nor favor certain valves or groups of valves. For the purpose of this requirement, the term 'cold shutdown' refers to the respective condition as defined in the Technical Specifications. The program tables identify those valves to which cold shutdown testing applies.

Status: IST Program 1990

APPENDIX F
VALVE PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. VRR-6

SYSTEM: Safety Injection (110E017, Sh 2 / 110E035, Sh 2)

COMPONENTS: SI-00854 A&B

CATEGORY: A/C

FUNCTION:

These valves open with differential pressure to provide flowpaths from the Refueling Water Storage Tank (RWST) to the suctions of the Residual Heat Removal (RHR) Pumps for low-head safety injection into the reactor vessel. During post-LOCA recirculation, they 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 the RHR pump discharge pressure is insufficient to overcome reactor coolant system pressure during normal operation. During cold shutdown periods, full stroke testing of these valves is not possible because the reactor coolant system does not contain a sufficient expansion volume and there is no return flowpath to the refueling water storage tank for recirculation.

ALTERNATE TESTING:

At least once during each reactor refueling these valves will be full-stroke exercised (open and closed) and their leak tight integrity verified by means of a seat leak test.

Status: IST Program 1980; Submitted as VRR-6 (Approved via GL 89-04)

APPENDIX F
VALVE PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. VRR-7

SYSTEM: Safety Injection (110E017, Sh 2 / 110E035, Sh 2)

COMPONENTS: SI-00889 A&B

CATEGORY: C

FUNCTION:

These valves open with differential pressure to provide flowpaths from the safety injection pumps to the reactor coolant system 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 safety injection pump at nominal accident flowrate and injecting into the reactor coolant system since no full flow recirculation path exists. During normal operation the safety injection pump discharge pressure of 1500 psig is insufficient to overcome reactor coolant system pressure. During cold shutdown conditions, injection via the SIS pumps is precluded by restrictions related to low temperature over-pressurization protection concerns.

ALTERNATE TESTING:

These valves will be part-stroke exercised quarterly.

At least once during each reactor refueling outage these valves will be full-stroke exercised to the open position.

Status: IST Program 1980; Submitted as VRR-7 (Approved via GL 89-04)

APPENDIX F
VALVE PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. VRR-8

SYSTEM: Containment Spray (110E017, Sh 3 / 110E035, Sh 3)

COMPONENTS: SI-00858 A&B

CATEGORY: C

FUNCTION:

These valves open with differential pressure to provide flowpaths from the refueling water storage tank 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 nominal accident flowrate 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 part-stroke exercised during plant operation.

Each of these valves will be disassembled and inspected for operability during refueling shutdowns.

Status: IST Program 1980; Submitted as VRR-8 (Approved via GL 89-04)

APPENDIX F
VALVE PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. VRR-9

SYSTEM: Containment Spray (110E017, Sh 3 / 110E035, Sh 3)

COMPONENTS: SI -00862 A&B

CATEGORY: A/C

FUNCTION:

These valves open with differential pressure to provide flowpaths from the refueling water storage tank to the suctions of the containment spray pumps.

In the closed position, these valves serve as containment 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:

Full or part-stroke exercising of these valves would require operating the containment spray pumps at nominal accident flowrate and spraying into the containment building since no recirculation path is available. 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 outages is impractical.

ALTERNATE TESTING:

During reactor refueling outages these valves will be seat leak tested in accordance with 10 CFR 50, Appendix J.

These valves will be disassembled and inspected for operability at reactor refueling outages.

Status: IST Program 1980; Submitted as VRR-9 (Approved via GL 89-04)

APPENDIX F
VALVE PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. VRR-10

SYSTEM: Component Cooling Water (110E018, Sh 2 / 110E029, Sh 2)

COMPONENTS: CC-00755 A&B

CATEGORY: A/C

FUNCTION:

These valves open to provide flowpaths for cooling water to the reactor coolant pumps (RCP's are non-safety related) and close to provide containment isolation for the component cooling water 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 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 RCP's which is not practical. Performing such tests of these valves involves considerable effort and system re-alignment such that routine testing during cold shutdown outages is impractical.

ALTERNATE TESTING:

These valves will be exercised to the closed position during seat leak tests performed in accordance with 10 CFR 50, Appendix J.

Status: IST Program 1980; Submitted as VRR-10 (Approved via GL 89-04)

APPENDIX F
VALVE PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. VRR-11

SYSTEM: Reactor Coolant (541F091, Sh 2 / 541E445, Sh 2)

COMPONENTS: RC-00528

CATEGORY: A/C

FUNCTION:

These valves open to provide flowpaths for nitrogen supply to the pressurizer relief tanks (PRT's are non-safety related) and close to provide containment isolation for the nitrogen 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:

Because nitrogen makeup to the PRT 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 re-alignment such that routine testing during plant operation or cold shutdown outages is impractical.

ALTERNATE TESTING:

During reactor refueling outages each of these valves will be full-stroke exercised to the closed position and seat leak tested in accordance with 10 CFR 50, Appendix J.

Status: IST Program 1980; Submitted as VRR-11 (Approved via GL 89-04)

APPENDIX F
VALVE PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. VRR-12

SYSTEM: Chemical and Volume Control (684J741 / 685J175)

COMPONENTS: CV-00304 C&D

CATEGORY: A/C

FUNCTION:

These valves open to provide flowpaths for seal water injection to the reactor coolant pumps (RCP's are non-safety related) and close to provide containment isolation for the 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 RCP's which is not practical. Performing such tests of these valves involves considerable effort and system re-alignment such that routine testing during cold shutdown outages is impractical.

ALTERNATE TESTING:

During reactor refueling outages these valves will be verified shut by means of seat leakage testing performed in accordance with 10 CFR 50, Appendix J.

Status: IST Program 1980; Submitted as VRR-12 (Approved via GL 89-04)

APPENDIX F
VALVE PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. VRR-13

SYSTEM: Chemical and Volume Control (684J741 / 685J175)

COMPONENT: CV-00370

CATEGORY: A/C

FUNCTION:

These valves open to provide flowpaths for charging water into the reactor coolant system from the charging pumps. They close to provide containment isolation for the 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:

This valve is normally open. It is a simple check valve 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 practical or prudent and could result in a plant trip if done. Performing such tests of these valves involves considerable effort and system re-alignment such that routine testing during cold shutdown outages is impractical.

ALTERNATE TESTING:

During reactor refueling outages these valves will be verified shut by means of seat leakage testing performed in accordance with 10 CFR 50, Appendix J.

Status: IST Program 1980; Submitted as VRR-13 (Approved via GL 89-04)

RELIEF REQUEST NO. VR-14

THIS PAGE INTENTIONALLY BLANK

APPENDIX F
VALVE PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. VRR-15

SYSTEM: Service Water (M-207, Sh 1)

COMPONENTS: SW-00112A (Unit 2)
SW-00135A (Unit 1)

CATEGORY: C

FUNCTION:

These valves open to provide flowpaths to the steam-driven auxiliary feedwater pumps (P-029) for bearing cooling water.

SECTION XI REQUIREMENTS:

Check valves shall be exercised to the position required to fulfill their function. Confirmation that the disc moves away from the seat shall be by visual observation, by electrical signal, by observation of substantially free flow through the valve, or by other positive means. (IWV-3522) Per NRC Generic Letter 89-04, if valve exercising is performed with system flow, there must be a quantitative measurement of flow to verify that full accident flow is attained.

BASIS FOR RELIEF:

There is no practical means of measuring flow through these check valves. In accordance with NRC Generic Letter, an acceptable alternative is a program of valve disassembly and inspection to verify operability.

ALTERNATE TESTING:

During quarterly testing of the related auxiliary feedwater pumps, the valves will be exercised and pump and turbine bearing temperatures will be monitored.

During reach reactor refueling outage, the valve associated with the unit undergoing refueling will be disassembled and inspected to verify operability.

Status: IST Program 1990

APPENDIX F
VALVE PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. VRR-16

SYSTEM: Heating and Ventilation (M-215, Sh 2,M-2215, Sh 2)

COMPONENTS: RM-03200AA

CATEGORY: A/C

FUNCTION:

These valves open to provide a return flowpath to the containment from the containment atmospheric monitoring system. They close for 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:

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 refueling outages each of these valves will be exercised to the closed position during seat leak tests performed in accordance with 10 CFR 50, Appendix J.

Status: IST Program 1980; Submitted as VRR-16 (Approved via GL 89-04)

APPENDIX F
VALVE PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. VRR-17

SYSTEM: Emergency Diesel Generator Air Start (M-209, Sh 12)

COMPONENTS: 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 air starting motors and to isolate air to the motors after startup.

SECTION XI REQUIREMENT:

The stroke time of all power operated valves shall be measured to ...., whenever such a valve is full-stroke tested.

(IWV-3413(b))

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(a))

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 diesel generators.

ALTERNATE TESTING:

Valve stroke testing will be performed monthly in conjunction with the associated emergency diesel generator 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 diesel generator corrective action.

Status: IST Program 1980; Submitted as VRR-17 (Approved via GL 89-04)

APPENDIX F
VALVE PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. VRR-18

SYSTEM: Reactor Coolant (541F091, Sh 2 / 541E445, Sh 2)

COMPONENTS: RC-00529

CATEGORY: A/C

FUNCTION:

These valves open to provide flowpaths for makeup water supply to the Pressurizer Relief Tanks (PRT's are non-safety related) and close to provide containment isolation 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 are simple, normally-closed, 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 re-alignment such that routine testing during plant operation or cold shutdown outages is impractical.

ALTERNATE TESTING:

During reactor refueling outages each of these valves will be exercised to the closed position during seat leak tests performed in accordance with 10 CFR 50, Appendix J.

Status: IST Program 1980; Submitted as VRR-18 (Approved via GL 89-04)

APPENDIX F
VALVE PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. VRR-19

SYSTEM: Chemical and Volume Control (684J741 / 685J175)

COMPONENTS: 1-CV-00300 A&B
2-CV-00300 A&B

CATEGORY: A

FUNCTION:

These normally-throttled open valves provide seal water to the RCP's during pump operation (RCPs are nonsafety-related.) and are closed upon direction of the operator for containment isolation.

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 RCP's in operation unless plant conditions required securing them. 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 and seat leak rate tested in accordance with 10CFR50, Appendix J.

Status: IST Program 1990

APPENDIX F
VALVE PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. VRR-20

SYSTEMS: Main Steam (M-201, M-2201)

COMPONENTS: 1-MS-02090
2-MS-02090

CATEGORY: B

FUNCTION:

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

SECTION XI REQUIREMENT:

The stroke time of all power operated valves shall be measured to ...., whenever such a valve is full-stroke tested. (IWV-3413(b)

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(a))

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 impractical.

Failure of a valve to operate properly would result in a lack of bearing 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: IST Program 1980; Submitted as VRR-20 (Approved via GL 89-04)

APPENDIX F
VALVE PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. VRR-21

SYSTEM: Main Feedwater (M-202, Sh 2 / M-2202, Sh 2)

COMPONENTS: CS-00466 AA&BB
CS-00476 AA&BB

CATEGORY: 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 closed 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 pipeline 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 disc travels to the seat promptly on cessation or reversal of flow. (IWV-522(a))

BASIS FOR RELIEF:

The main feed line to each steam generator consists of two series check valves. There are no position indicators on these valves nor are there any pressure taps between the valves. It is therefore not feasible, with the present plant configuration, to verify individual valve closure . Closure of at least one of the two series check valves can be verified by measuring the differential pressure across, or leakage past the combination of both valves. This is adequate to ensure the safety function of the valve combination is maintained and verified.

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 disc position is available.

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

ALTERNATE TESTING:

A valve exercise test of the main feedwater check valves will be conducted once each refueling outage. 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 series combination of valves.

Additionally, once every 10 years, the main feedwater check valves will be opened and inspected. The inspections will be distributed so that at least one valve is inspected every two-to-three years, and all valves are inspected within a 10-year interval.

APPENDIX F
VALVE PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

Since the split body construction of the second-off check valves 466AA and 476AA limits access to the valve internals, only those portions of the valve internals accessible from a side access port will be inspected. Complete disassembly of these valves is not practical since it would require that large pipe support structures would have to be cut and piping be moved.

The construction of the first-off check valves 466BB and 476BB permits access to valve internals for inspection with no known limitations.

Status: IST Program 1980; Submitted as VRR-21 (Approved via GL 89-04)

APPENDIX F
VALVE PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. VRR-22

UNITS: 1 and 2

SYSTEM: Safety Injection/Residual Heat Removal (110E017 & 110E035)

COMPONENTS: SI-00845 A through F
SI-00853 A through D
SI-00867 A&B

CATEGORY: A/C (Check Valves)

FUNCTION:

These check valves open to provide for high-pressure and low pressure safety injection to the RCS. The motor-operated valves open for residual heat removal recirculation during shutdown. Each of these valves is designated as a pressure isolation valve (PIV) and provides isolation of safeguard systems from the RCS.

SECTION XI REQUIREMENT:

The leakage rate for valves 6-inches or greater shall be evaluated per Subsection IWV-3427(b). (IWV-3521)

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 safety injection piping and components. In this regard, special leakage acceptance criteria is established and included in the Point Beach Technical Specifications 15.3.16 that addresses the question of valve integrity in a more appropriate manner for these valves. Satisfying both the Technical Specification and the Code acceptance criteria is not warranted and implementation would be difficult and confusing.

ALTERNATE TESTING:

The leakage rate acceptance criteria for these valves will be established per the Point Beach Technical Specifications,

1. Leakage rates less than or equal to 1.0 gpm are considered acceptable.

2. Leakage rates greater than 1.0 gpm but less than or equal to 5.0 gpm are considered acceptable if the latest measured rate has not exceed the rate determined by the previous test by an amount that reduces the margin between measured leakage rate and the maximum permissible rate of 5.0 gpm by 50% or greater.

3. Leakage rates greater than 1.0 gpm, but less than or equal to 5.0 gpm, are unacceptable if the latest measured rate exceeded the rate determined by the previous test by an amount that reduces the margin between measured leakage rate and the maximum permissible rate of 5.0 gpm by 50% or greater.

4. Leakage rates greater than 5.0 gpm are unacceptable.

APPENDIX F
VALVE PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. VRR-23

SYSTEM: Primary Containment

COMPONENTS: Containment Isolation Valves per Table VR-5-1

CATEGORY: A or A/C

FUNCTION: These valves are closed to provide containment isolation.

SECTION XI REQUIREMENT:

Category A valves shall be seat leak tested and a maximum permissible leakage rate shall be specified Individual valve leakage rates shall be evaluated per IWV-3426 and IWV-3427. (IWV-3426, IWV-3427, NRC Generic Letter 89-04)

BASIS FOR RELIEF:

Due to the configuration of the system piping and components, in many cases individual leakage rate tests are impractical. In these cases it is customary to perform tests with the test volume between valves in series or behind valves in parallel paths. This concept of testing and evaluation is consistent with the intent of 10CFR50, Appendix J

ALTERNATE TESTING:

In those cases where individual valves testing is impractical, valves will be leaktested simultaneously in multiple valve arrangements and a maximum permissible leakage rate will be applied to each combination of valves. Test results from tests of multiple valves will be evaluated in accordance with IWV-3426 and IWV-3427 and 10 CFR 50, Appendix J.

Status: GL 89-04 response submittal dated 10/3/89, Item 10

APPENDIX F
VALVE PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. VRR-23 (Cont.)

TABLE VR-5-1

SYSTEM	VALVES	
Auxiliary Steam	HV-00632	HV-00809
	HV-00633	HV-00818
	HV-00808	
Chemical & Vol. Control	CV-00323B	
	CV-00384B	
Component Cooling Water	CC-00755 A&B	
	CC-00759 A&B	
Containment Spray	SI-00862 A&B	
	SI-00864 A&B	
Heating & Ventilation	VNPSE-03212	VNPSE-03244
	VNPSE-03213	VNPSE-03245
Instrument Air	IA-01182	
	IA-01184	
Post-Acc Containment Vent/Monitoring	H2-V-04	H2-V-13
	H2-V-05	H2-V-19
	H2-V-06	H2-V-20
	H2-V-07	H2-V-22
	H2-V-12	H2-V-23
Waste Disposal	WL-00816	WL-01728
	WL-01698	WL-01003A
	WL-01723	WL-01003B

APPENDIX F
VALVE PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. VRR-24

SYSTEM: Chemical and Volume Control (684J971)

COMPONENTS: CV-00351

CATEGORY: C

FUNCTION:

These valves open to provide a flowpath for emergency boration from the boric acid transfer pumps to the suction of the charging pumps providing for emergency boration of the RCS.

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

Testing these valves in the open direction requires the introduction of highly concentrated boric acid solution from the boric acid makeup tanks to the suction of the charging pumps. This, in turn, would result in the addition of excess boron to the RCS which would adversely affect plant power level and operational parameters with the potential for an undesirable plant transient and a plant trip or shutdown. During cold shutdown, the introduction of excess quantities of boric acid is undesirable from the aspect of maintaining proper plant chemistry and the inherent difficulties that may be encountered during the subsequent startup.

ALTERNATE TESTING:

These valves will be exercised as required during each reactor refueling outage.

Status IST Program 1990

APPENDIX F
VALVE PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. VRR-25

UNITS: 1 and 2

SYSTEM: Emergency Diesel Generator Air Start (M-209, Sh 12)

COMPONENTS:

DA-00125	DA-06316 A&B
DA-00126	DA-06317 A&B
DA-00225	DA-06318 A&B
DA-00226	DA-06319 A&B

CATEGORY: B/C

FUNCTION:

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

SECTION XI REQUIREMENT:

The stroke time of all power operated valves shall be measured to the nearest second, ..., whenever such a valve is full-stroke tested. (IWV-3413(b))

Check valves are to be full-stroke tested per Reference 2.8, Position 1 including quantitative measurements verifying design flow through a valve.

BASIS FOR RELIEF:

These valves are integral (skid-mounted) with the diesel air start system for each emergency diesel generator with no valve position indication mechanism and, as such, there is no practical method for measuring the stroke times or flowrates of each individual valve. If a valve were to fail to stroke as required it would be reflected in an unacceptable starting time and/or performance of the respective diesel generator.

ALTERNATE TESTING:

These valves will be exercised in conjunction with testing of the emergency diesel generators. Stroke times of Category B valves will not be measured nor will flowrates through check valves, but the starting time for each diesel generator will be verified to be acceptable.

Status: IST Program 1990

APPENDIX F
VALVE PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. VRR-26

UNITS: 1 and 2

SYSTEM: Chemical and Volume Control System (684J971)

COMPONENTS: CV-00333 A&B

CATEGORY: C

FUNCTION:

These valves open to provide a flowpath from the boric acid makeup pumps to the emergency boration header and close 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)

BASIS FOR RELIEF:

Full-stroke testing these valves requires operating the boric acid makeup 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 the 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 suction of the charging pumps. This, in turn, would result in the addition of excess boron to the RCS which would adversely affect plant power level and operational parameters with the potential for an undesirable plant transient and a plant trip or shutdown. During cold shutdown, the introduction of excess quantities of boric acid is undesirable from the aspect of maintaining proper plant chemistry and the inherent difficulties that may be encountered during the subsequent startup in over-boration of the RCS. In addition to the above, there is no flowrate measurement instrumentation installed in this flowpath.

ALTERNATE TESTING:

Each of these valves will be partial stroke exercised quarterly.

During testing of the boric acid makeup pumps performed during each reactor refueling, system flowrate will be measured to verify full stroke of these valves.

Status: IST Program 1990

APPENDIX F
VALVE PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. VRR-27

SYSTEM: Safety Injection (110E017, Sh 2 / 110E035, Sh 2)

COMPONENTS: SI-00891 A&B

CATEGORY: C

FUNCTION:

These valves open to provide flowpaths from the safety injection pumps to the refueling water storage tank 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)

BASIS FOR RELIEF:

There is no flowrate instrumentation available to verify valve full-stroke exercising as required by Reference 2.8, Position 1.

ALTERNATE TESTING:

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

During each reactor refueling outage at least one of these valves will be disassembled, inspected, and manually stroked to verify operability. Inspections shall be scheduled such that valves will be checked in a rotating sequence such that each valve is subject to inspection at least once every six (6) years. Should a valve under inspection be found to be inoperable, then the other valve in that unit will be inspected during the same outage, after which the rotational inspection schedule will be re-initiated. This satisfies the requirements of Generic Letter 89-04, Position 2.

Status: IST Program 1990 (Approved via GL 89-04)

RELIEF REQUEST NO. VRR-28

THIS PAGE INTENTIONALLY BLANK

APPENDIX F
VALVE PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. VRR-29

UNITS: 1 and 2

SYSTEM: Primary Containment

COMPONENTS: Valves 6-inches NPS and larger subject to leakage rate testing per 10 CFR 50, Appendix J.

CATEGORY: A/C (Check Valves)
A (Motor-operated valves)

FUNCTION:

Each of these valves is designated as a containment isolation valve maintaining the leakrate integrity of the primary containment in the case of an accident.

SECTION XI REQUIREMENT:

The leakage rate for valves 6-inches or greater shall be evaluated per Subsection IWV-3427(b). (IWV-3521)

BASIS FOR RELIEF:

The usefulness of applying this requirement does not justify the burden of compliance. This position is supported by NRC Generic Letter, Position 10

ALTERNATE TESTING:

Leakrate test results for valves 6-inches or greater (NPS) will be evaluated per IWV-3426 and IWV-3427(a) however, the requirements of IWV-3427(b) will not be applied. This satisfies the requirements of Generic Letter 89-04, Position 10.

Status: IST Program 1990 (Approved via GL 89-04)

APPENDIX F
VALVE PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. VRR-30

UNITS: 1 and 2

SYSTEM: Component Cooling Water (110E018, Sh 2 / 110E029, Sh 2)

COMPONENTS: 1-CC-00767
2-CC-00767

CATEGORY: A/C

FUNCTION:

These valves open to provide flowpaths for cooling water to the excess letdown heat exchangers which are non-safety related components. They also close to provide containment isolation for the component cooling water 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 are simple check valves with no external means of position indication, thus the only practical means of verifying closure is by performing a leaktest or backflow test. Performing such tests of these valves involves considerable effort and system re-alignment such that routine testing during plant operation or cold shutdown outages is impractical.

ALTERNATE TESTING:

During reactor refueling outages each of these valves will be exercised to the closed position during seat leak tests performed in accordance with 10 CFR 50, Appendix J.

Status: IST Program 1980; Submitted as VRR-15 (Approved via GL 89-04)

APPENDIX F
VALVE PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. VRR-31

SYSTEM: Chilled Water (M-214, Sh 2)

COMPONENTS: HV-00898A, HV-000900A, HV-00914A, HV-000916A

CATEGORY: A/C

FUNCTION:

These valves open with differential pressure to provide flowpaths from the control room and cable spreading room chilled water pumps to the respective 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)

BASIS FOR RELIEF:

There is no instrumentation available with which to measure system flowrate in order to satisfy the requirements of NRC Generic Letter (GL) 89-04, Position 1 for full-stroke exercising check valves.

ALTERNATE TESTING:

The following alternate testing will be performed:

1. A partial-stroke test of these valves will be performed during inservice testing of the associated chilled water pumps.

2. Each of these valves will be disassembled and inspected for operability at least once every six (6) years. Inspections will be scheduled on a staggered basis such that one valve be inspected every two years. If during a valve inspection a condition is discovered that would have prevented the subject valve from stroking full open, the inspection sample will be expanded to include the second identical check valve in the same chilled water system. If during an expanded sample inspection a condition is discovered that would have prevented the second subject valve from stroking full open, the inspection sample will be expanded to include the remainder of the valves.

Status: IST Program 1990; (Approved via GL 89-04)

APPENDIX F
VALVE PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. VRR-32

SYSTEM: Instrument Air (M-209, Sh 11)

COMPONENTS: 1-IA-01206, 1-IA-01209, 1-IA-01600, and 1-IA-01606
2-IA-01335, 2-IA-01338, 1-IA-01652, and 1-IA-01653

CATEGORY: A/C

FUNCTION:

These valves open with differential pressure to provide flowpaths for operating air from the plant instrument air system to PORV's. In the event of a loss of air pressure in the instrument air system they close to prevent diversion of the nitrogen backup pneumatic supply that provides gas for operation of the PORV's.

SECTION XI REQUIREMENT:

Category A valves shall be leak tested in accordance with Paragraph IWV-3420.

BASIS FOR RELIEF:

The 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 leaktight integrity, then the system remains fully functional.

Testing two valves in combination adequately demonstrates the functional adequacy of the system.

Note that these valves are included in the testing program for information and tracking purposes and do not strictly meet the requirements of IWV-1100 for inclusion.

ALTERNATE TESTING:

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

Status: IST Program 1990

APPENDIX F
VALVE PROGRAM REQUESTS FOR RELIEF
UNITS 1 AND 2

RELIEF REQUEST NO. VRR-33

SYSTEM: Emergency Diesel Generator Fuel Oil (M-219)

COMPONENTS: FO-03940 and FO-03941

CATEGORY: A/C

FUNCTION:

These valves operate to control fuel oil transfer Pump discharge pressure and provide a flowpath 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 Tank.

SECTION XI REQUIREMENT:

Valves shall be exercised (full-stroke) to the position required to fulfill their function. (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 per IWV-3413, however, it is not practical to perform a full-stroke test since the position of the valve disc cannot be determined visually or by any other practical means.

Considering the type and function of these valves, an operational (functional) test is an effective way of ascertaining the condition of the valves and proving their operability.

ALTERNATE TESTING:

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

Status: IST Program 1990

APPENDIX G
COLD SHUTDOWN JUSTIFICATIONS

This appendix is intended to provide the justification for performing valve exercising only at cold shutdown conditions as permitted by IWV-3412(a), 3415 and 5322. Specifically included in this category are the following:

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

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

* A valve whose failure in a position other than its normal position that 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.

Auxiliary Feedwater (M-217)

CSJ-1 AF-00100, AF-00101, AF-00102, AF-00104, AF-00106, and AF-00107
Auxiliary Feedwater Supply Check Valves

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.

CSJ-2 AF-00108, AF-00109 and AF-00110
Auxiliary Feedwater Pump Discharge Check Valves

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.

CSJ-3 AF-00111, AF-00112 and AF-00113
Auxiliary Feedwater Pump Suction Check Valves

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.

APPENDIX G
COLD SHUTDOWN JUSTIFICATIONS

Chemical & Volume Control (684J741)

CSJ-4 CV-00112C
Volume Control Tank Outlet Valve

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.

CSJ-5 CV-00142
Charging Flow Control Valve

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.

CSJ-6 CV-00313 and CV-313A
RCP Seal Water Return Valves

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.

CSJ-7 CV-00371 and CV-00371A
Letdown Line Isolation Valves

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.

CSJ-8 CV-00384B
Charging Line HCV Outlet Valves

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

Component Cooling Water (110E018)

CSJ-9 CC-00719
Containment Cooling Water Supply Valves

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.

APPENDIX G
COLD SHUTDOWN JUSTIFICATIONS

CSJ-10 CC-00754 A&B and CC-00759 A&B
RCP Cooling Water Supply/Return Isolation Valves

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.

Containment Spray System (110E017)

CSJ-11 SI-00836 A&B
Sodium Hydroxide (NaOH) Supply Valves

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.

CSJ-29 SI-00870A&B
RWST to Containment Spray Pumps

Exercising this valve 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.

Heating and Ventilation (M-215)

CSJ-12 VNPSE-03212, VNPSE-03213, VNPSE-03244, and VNPSE-03245
Containment Purge Supply and Exhaust Valves

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.

Instrument Air (M-209)

CSJ-13 Unit 1 IA-01280 and IA-01281, Unit 2 IA-01401 and IA-01402
Containment Purge Valve Air Supply Check Valves

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.

CSJ-28 Unit 1 IA-01206, 01209, 01301, 01302 and Unit 2 IA-01335, 01338, 01418, 01419, Instrument Air and Nitrogen Supply to PORVs and IA-06310 and IA-06311 Nitrogen Supply Pressure Regulators
PORV Pneumatic Supply Valves

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

APPENDIX G
COLD SHUTDOWN JUSTIFICATIONS

Main and Reheat Steam (M-201)

CSJ-14 MS-02015 and MS-02016
Main Steamline Atmospheric Dump Valves

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

CSJ-15 MS-02017 and MS-02018
Main Steam Isolation Valves

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.

CSJ-16 MS-02017A and MS-02018A
Main Steam Non-Return Valves

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.

CSJ-17 MS-02017CS, MS-02017DS, MS-02017CS, and MS-02017DS
MSIV Air Pilot Valves

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.

Reactor Coolant (541F091 / 541F445)

CSJ-18 RC-00430 and RC-00431C
Power-Operated Relief Valves (PORV's)

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 and at reduced reactor coolant system pressure.

CSJ-19 RC-00570 A&B, RC-00575 A&B, and RC-00580 A&B
Reactor Coolant System Vents

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 probably likely result in a plant shutdown.

APPENDIX G
COLD SHUTDOWN JUSTIFICATIONS

Safety Injection / Residual Heat Removal (110E017 / 110E018)

CSJ-20 SI-00841 A&B
Safety Injection Accumulator Discharge Valves

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.

CSJ-21 SI-00852 A&B
RHR/LH Core Deluge Motor-Operated Valves

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.

CSJ-22 SI-00878 A&C
Reactor Vessel Safety Injection Motor-Operated Valves

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.

CSJ-23 SI-00878 B&D
Safety Injection Loop Motor-Operated Valves

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

CSJ-24 SI-00826 B&C
SI Pump Redundant Suction From the BAST's

Exercising these valves requires closure of the downstream valve, SI-00826A or the mini-flow valve from the RWST to preclude overfilling the BAST's 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.

CSJ-25 SI-00897 A&B
Safety Injection Pump Mini-Recirc To RWST

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.

APPENDIX G
COLD SHUTDOWN JUSTIFICATIONS

CSJ-26 RH-00710 A&B
RHR Pump Discharge Check Valves

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.

CSJ-30 SI-00957 and SI-00834A&B
Accumulator Nitrogen Supply Vent Valve and Accumulator Vent Valve

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.

Service Water (M-207)

CSJ-27 SW-02880
Turbine Plan, Service Water Supply Valve

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

APPENDIX H
VALVE FAIL-SAFE TEST DESCRIPTION

ASME Section XI, Article IWV-3415, states the following for valves having fail-safe actuators.

> "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 its required position 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 will fail 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 to the actuator and/or loss of control power to its associated solenoid valve.

A fail-safe test can only be performed on solenoid-operated or air-operated valves. Upon loss of power, a motor-operated valve is incapable of moving and fails as is.

Fail-safe testing of motor operators will not be performed.

A fail-safe test of solenoid-operated valves will be conducted by deenergizing the solenoid and observing that the valve moves to its fail-safe position. Deenergization of the solenoid will be performed by operating the valve control switch to the position that corresponds to the fail-safe position (i.e., open or shut).

A fail-safe test of air-operated valves will be conducted by deenergizing the solenoid control valve, which will, in turn, vent air from the valve actuator and result in the valve moving to its fail-safe position. Operation of the AOV control switch to the position corresponding to the fail-safe position (i.e., open or shut) will deenergize the solenoid-operated valve and vent air from the AOV's actuator.

In some cases, a controller, I/P (electric/pneumatic) converter, and a positioner is used to control air to the actuator of an AOV. For these cases, one of the following methods will be used to perform a fail-safe test of the AOV.

1. Secure power to the I/P converter which in turn will secure air to the AOV actuator.

2. With the controller in manual, adjust the valve to its fail-safe position. Operation of a controller in this manner sends a minimum control signal to the I/P converter and causes the I/P converter to cut off air to the valve actuator. This is similar to securing control power to the I/P converter, except a small control signal is still present.