TENNESSEE VALLEY AUTHORITY

SEQUOYAH NUCLEAR PLANT

ASME INSERVICE VALVE TESTING

PROGRAM BASIS DOCUMENT

This document is to be used only for the second ten year inspection interval for ASME Section XI

REVISION NO 0

SUBMITTED BY _____ DATE 10-23-95
PROGRAM ENGINEER

APPROVED BY _____ DATE 10-24-95
ASME SECTION XI & SPECIAL PROGRAMS SUPV.

APPROVED BY _____ DATE 10/30/95
MECHANICAL/NUCLEAR LEAD ENGINEER

REVISION LOG

REVISION	DESCRIPTION OF REVISION	DATE
0	Initial Issue	

TABLE OF CONTENTS

I. CHARTER

Note: This document has been prepared for the Second Ten Year ASME Section XI Inspection Interval. Positions or commitments regarding the first ten year inspection interval should be based on existing FSAR, SER, and other system documents.

A. MISSION STATEMENT

The ASME Section XI Section shall incorporate TVA policies and standards to support safe and reliable operation of Sequoyah Nuclear Plant through the following:

1. Establishing and maintaining a listing of all valves subject to the ASME Section XI Inservice Test Program.

2. Establishing and maintaining the ASME Section XI Inservice Valve test program to ensure the requirements of 10CFR50.55a and Technical Specifications are met.

3. For all cases where ASME valve test requirements are not met, provide a documented relief request with subsequent NRC approval.

4. Developing and implementing an Augmented Valve Test Program.

The Program Engineer and Program Test Engineer shall hold responsibility, accountability, and authority for accomplishing this mission and maintaining the program.

B. OBJECTIVES

The Objectives of the ASME Section XI Inservice Valve Test Program are as follows:

1. Perform ASME valve tests in accordance with ASME Section XI, Subsection IWV, which involks OM-1 and OM-10.

2. Perform Augmented Valve Tests in accordance with 10CFR50, Generic Letter 89-04, and accepted industry standards.

3. Maintain OPERABILITY of applicable valves to support tech spec requirements.

4. Maintain clearly defined responsibilities of organizations involved with valve testing.

5. Maintain applicable procedures, test equipment, and methods to current industry standards or better.

6. No NRC violations due to the ASME or Augmented Valve Testing Program

7. No INPO findings due to the ASME or Augmented Valve Testing Program

II. HISTORY - PURPOSE - BASES

ASME setup a committee in 1911 to establish standard rules for the fabrication of steam boilers and other pressure vessel. This committee, now called the Boiler and Pressure Vessel Committee, has also established suggested rules or good practices for inservice inspection/testing. The rules for the inservice inspection/testing for Nuclear Power Plant Components are contained in the ASME Boiler and Pressure Vessel Code, Division 1, Section XI. 10CFR50.55a of the federal law and Sequoyah's technical specifications requires that ASME Section XI be met throughout the service life of the nuclear power plant and updated at each 10 year interval.

Under the provisions of 10 CFR 50.55a, inservice testing of safety-related valves will be performed in accordance with a specific edition of Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda. The interval dates applicable edition and addenda for the first 10 year interval was as follows"

First Interval Start Unit 1: 7/1981
First Interval Start Unit 2: 6/1982
Unit 1: 1974 Edition through the Summer 1975 Addenda
Unit 2: 1977 Edition through the Summer 1978 Addenda

As required by 10 CFR 50.55a (b), the effective edition of Section XI with regard to the second ten year interval is as follows:

Second Interval Start Units 1 & 2: Estimated 12/15/1995
Unit 1 & 2: 1989 Edition (Must be verified to still be in effect 12 months prior to start of interval)

ASME valve tests will be performed in accordance with ASME/ANSI OM-10 (OMa-1988 Addenda to the OM-1987 Edition) and ASME/ANSI OM-1 (OM-1987 Edition) using Generic Letter 89-04 as guidance. This program identifies the valve inservice testing that will be performed at the Sequoyah Nuclear Plant to comply with the requirements of 10 CFR 50.55a.

The safety-related valves that are outside the scope of ASME Section XI, IWV (and therefore outside the scope of 10CFR50.55a) will be tested at a level commensurate with their intended function in the Augmented Test Program per Appendix B. Generic letter 89-04 will be used as guidance for the Augmented Valve Test Program.

III. REFERENCES

1. 10CFR50.55a Codes and Standards.

2. NRC Documents
   a. Inspection Manual, Temporary Instruction 2515/114, Inspection Requirements for Generic Letter 89-04, Acceptable Inservice Testing Programs.
   b. NRC Generic Letter 89-04, Guidance on Developing Acceptable Inservice Testing Programs. April 3, 1989.
   c. NRC letter on the "Minutes of the Public Meetings on Generic Letter 89-04 Oct 25, 1989.
   d. NRC Draft NUREG 1482, Guidelines for Inservice Testing at Nuclear Power Plants, November 1993

3. Reserved

4. Reserved

5. CODES and STANDARDS
   a. ASME Boiler and Pressure Vessel Code, Division 1, Section XI, 1989 Edition.
   b. ASME/ANSI OM-1, Requirements for Inservice Performance Testing of Nuclear Power Plant Pressure Relief Devices, OM-1987 Edition.
   c. ASME/ANSI OM-10, Inservice Testing of Valves in Light-Water Reactor Power Plants, OMa-1988 Addenda to the OM-1987 Edition.
   d. ANSI/ASME N45.2.6-1978, Qualification of Inspection Examination and Testing Personnel for Nuclear Power Plants.

6. TVA Calculation SQN-SQTP-001, ASME Section XI Inservice Code Class Boundaries for the Second 10 Year Interval.

7. TVA Calculation SQN-SQTP-003, ASME Section XI Valve and Augmented Valve Identification for the Second 10 Year Interval.

8. Sequoyah Site Standard Practice SSP-8.6, ASME Section XI Inservice Testing of Pumps and Valves.

9. Sequoyah Nuclear Plant Technical Specifications

10. Sequoyah Nuclear Plant FSAR 6.8

11. Sequoyah Nuclear Plant Design Criteria and Design Guides:
   a. SQ-DC-V-3.0 Classification of Piping, Pumps, Valves and Vessels.
   b. SQ-DC-V-2.16 Single Failure Criteria
   c. SQ-DC-V-3.2 Classification of HVAC Systems

12. TVA submittals to the NRC

Reserved

13. NRC documents to TVA

a. Safety Evaluation Report NUREG-1232 Volume 2,
b. Safety Evaluation Report NUREG-1232 Volume 2, Supplement 1
c. Safety Evaluation Report NUREG-0011 and its Supplements ,
d. Safety Evaluation Report on Sequoyah Inservice Test Program for Pumps and Valves (IST) April 5, 1985 (L44 850416 402).
e. Request for Relief from ASME Boiler and Pressure Vessel Code, Section XI, Inservice Testing Program (TAC 61835, 61836), Oct 23, 1987 (A02 871029 014).
f. Request for Relief from ASME Boiler and Pressure Vessel Code, Section XI, Inservice Testing Program (TAC 61835, 61836), Jan 19, 1988.
g. Request for Relief from ASME Boiler and Pressure Vessel Code, Section XI, Inservice Testing Program - Ultrasonic Flow Measurement (TAC 61835, 61836) - Sequoyah Nuclear Plant, Units 1 & 2. Sept 15, 1988.
h. Request for Relief from ASME Boiler and Pressure Vessel Code, Section XI, Inservice Testing Program - Boric Acid Transfer Pump Flow Rate Measurement (TAC R00479/R00480) - Sequoyah Nuclear Plant, Units 1 & 2. Mar 23, 1989 (A02 890327 014).

IV. DEFINITIONS

OPERABLE - OPERABILITY: A system, subsystem, train, component or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified function(s), and all necessary attendant instrumentation, controls, a normal and emergency electrical power source, cooling or seal water, lubrication or other auxiliary equipment that are required for the system, subsystem, train, component or device t perform its function(s) are also capable of performing their related support function(s).

ASME VALVE TEST PROGRAM: The valve test program required by 10CFR50.55a(f) which delineates the testing requirements of ASME Code Class 1, 2, and 3 valves by using the ASME Boiler and Pressure Vessel Code, Division 1, Section XI. This ASME VALVE TEST PROGRAM is further defined by ASME Section XI, Article IWV, and ASME/ANSI OM Parts 1 and 10. Those valves that are required in shutting down the reactor to the safe shutdown condition, maintaining the safe shutdown condition, or mitigating the consequences of an accident are to be tested per OM-1 and 10.

AUGMENTED VALVE TEST PROGRAM: The valves that are outside the scope of ASME Section XI, IWV (and therefore outside the scope of 10CFR50.55a) but will be tested at a level commensurate with their intended function. The intent of 10CFR50 Appendix A, GDC-1, and Appendix B, Criterion XI is that all components,such as valves, necessary for safe operation are to be tested to demonstrate that they will perform satisfactory in service. Therefore, while 10CFR50.55a delineates the testing requirements for ASME Code Class 1, 2, and 3 valves, the testing of valves is not to be limited to only those covered by 10CFR50.55a. (refer to item 11 of Generic Letter 89-04)

V. PROGRAM SCOPE & PLAN

SCOPE

ASME Section XI, Article IWA 1000 "Scope and Responsibility" paragraph IWA-1310 calls for the selection of components subject to the inservice program. Article IWV invokes OM-1 and 10. OM-1 and 10 covers those valves and pressure relief devices that are required in shutting down the reactor to the safe shutdown condition, maintaining the safe shutdown condition, or mitigating the consequences of an accident. OM-1 Section 9.0 and OM-10 Section 6.0 requires each valve that is to be tested to be identified and listed in the plants records. Valves subject to testing per 10CFR50.55a and ASME Section XI (OM-1 and 10) are identified in reference 7 and are included within the scope of this program.

PLAN

A. The ASME Inservice Valves and Pressure Relief Devices subjected to testing shall be identified, documented, and the selection controlled by reference 7.
B. The ASME Inservice Valve and Pressure Relief Device Tests shall be performed in accordance with OM-1 and 10.
C. The ASME Inservice Valve and Pressure Relief Device Tests shall be reviewed and approved by the Program Engineer.
D. The ASME Inservice Valve and Pressure Relief Device Test records shall be maintained in accordance with SSP-8.6 and SSP-2.9.

VI. REGULATORY REQUIREMENTS

Technical Specification 4.0.5 requires inservice testing of ASME Code Class 1, 2, and 3 components as required by 10CFR50.55a. 10CFR50.55a (f) requires the inservice testing of ASME Code Class 1, 2, and 3 valves per the 1989 Edition of ASME Section XI. 10CFR50.55a and ASME Section XI Subsection IWV involkes ASME/ANSI OM-1 and 10 (OMa-1988 Addenda to the OM-1987 Edition). OM-1 requires the testing of pressure relief devices that are needed for the safe shutdown of the reactor, maintaining safe shutdown, and mitigating the consequences of an accident. OM-10 requires the testing of valves that are needed for the safe shutdown of the reactor, maintaining safe shutdown, and mitigating the consequences of an accident. Therefore the valves and pressure relief devices identified in reference 7 subject to the OM-1 and 10 test program shall be tested to satisfy 10CFR50.55a requirements unless specific relief is granted by the NRC.

The valves that are outside the scope of ASME Section XI, IWV (and therefore outside the scope of 10CFR50.55a) are to be tested at a level commensurate with their intended function. The intent of 10CFR50 Appendix A, GDC-1, and Appendix B, Criterion XI is that all components,such as valves, necessary for safe operation are to be tested to demonstrate that they will perform satisfactory in service. Therefore, while 10CFR50.55a delineates the testing requirements for ASME Code Class 1, 2, and 3 valves, the testing of valves is not to be limited to only those covered by 10CFR50.55a. (refer to item 11 of Generic Letter 89-04). These valves will be tested per the Augmented Test Program per Appendix F. Relief is not required from the NRC if testing is not in accordance with OM-10. These pumps are to be tested at a level commensurate with their intended function.

The Type C Containment Isolation Valves shall also be subject to the analysis and corrective action of ASME/ANSI OM-10 (OMa-1988) as required by 10CFR50.55a(b)(2)(vii). Containment isolation valves or valve combination shall have a permissible leakage rate specified by the owner. This requirement is handled by the Appendix J containment isolation valve leak test program.

RELIEF REQUESTS - IDENTIFICATION OF CODE NONCOMPLIANCE

Technical Specification 4.0.5 *(revision needed to reflect Standard Tech Specs prior to start of second 10 year interval)* and 10CFR50.55a reflect the position that relief requests from impractical code requirements do not have to be granted by the NRC before they are implemented. Relief Requests are to be identified in advance and submitted to the NRC well in advance of their implementation (minimum of 90 days suggested) where possible. 10CFR50.55a recognizes that it will not be possible in all cases to determine in advance that any particular ASME Code requirement is impractical and allows up to a full year after the beginning of an updated interval to inform the NRC and request relief. It is also recognized that, during the interval, certain ASME Code requirements may be identified as impractical due to unforeseen circumstances and relief may be requested at that time. Relief Requests identified during the interval should be submitted to the NRC within approximately two weeks of identification, after completion of the plants review/approval process. The review/approval process includes 1) preparation of the Relief Request and incorporation into this program basis document by approval of a revision hereto, 2) the appropriate 10CFR50.59 reviews for this program basis document revision in accordance with the plants Safety Assessment/Safety Evaluation process, and 3) review by PORC and approval of the Plant Manager of the change denote via the 10CFR50.59 evaluation. This methodology will avoid situations where compliance with the technical specifications cannot be achieved for the period between the time of preparation/review/approval and submittal of a relief request until the NRC has granted the relief.

When noncompliance with a code requirement is identified and testing with technical specification allowable action times is not practical (e.g. test configuration/setup, cold shutdown or refueling required to test, etc.) it may be possible to reference other tests performed in justifying continued operation. A Relief Request or a deferred test justification (cold shutdown or refueling outage) may be required. The operability of the component could be assessed using the guidance provided in Generic Letter 91-18 which discusses the need for obtaining a Temporary Waiver of Compliance or exigent relief from the ASME Code requirements. Use of the guidance provided by the NRC within ref 2.d should help avoid denial by the NRC. *Note that any alternate testing specified by the Relief Request is not to be implemented until authorized by the NRC.*

VII. DESCRIPTION

Under the provisions of 10 CFR 50.55a, inservice testing of safety-related valves will be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda. As required by 10 CFR 50.55a (b), the effective edition of Section XI with regard to the second ten year interval is the 1989 Edition. ASME valve tests will be performed in accordance with ASME/ANSI OM-1 (OM-1987 Edition) and OM-10 (OMa-1988 Addenda to the OM-1987 Edition). This program identifies the valve inservice testing that will be performed at the Sequoyah Nuclear Plant to comply with the requirements of 10 CFR 50.55a.

The valve test program shall be conducted in accordance with Subsection IWV of Section XI of the ASME Boiler and Pressure Vessel Code (applicable Edition and Addenda) except for relief requested under the provisions of 10 CFR 50.55a. Subsection IWV as modified by 10CFR50.55a(b)(2)(viii) invokes OM-1 and 10 for the performance testing of valves and pressure relief devices. Appendix A details the inservice testing program for applicable ASME safety-related valves at Sequoyah Nuclear Plant. Appendix A lists each valve required to be tested and the actual testing to be performed in accordance with OM-1 and 10.

Valve Testing Frequency

ASME Section XI inservice valve testing (in the as found condition where practical) shall be conducted quarterly (at least once every 92 days) except where reduced frequency testing is justified per Appendix C. Specific tests that cannot be performed per Section XI are documented in the Relief Requests contained in Appendix D. Valve testing shall continue through shutdown periods on operable equipment. Valves that are out of service are not required to be tested but will be tested prior to returning them to OPERABLE status. Valves in systems out of service for an extended period of time shall be tested within the last 92 days of the outage or prior to being returned to service. Valves tested during power ascension due to maintenance performed during the outage shall be considered inoperable until the post maintenance tests are completed.

The start of the second interval will include all tests that are to be performed during cold shutdowm and refueling prior to startup. For extended test programs, such as the check valve disassembly and inspection program, credit for similar inspections during the first interval may be taken.

Relief Requests

In the event specific test requirements of 10CFR50.55a and OM-1 and 10 are impractical and cannot be met, specific relief may be granted by the NRC. Each relief request is identified as to whether it follows the guidance of Generic Letter 89-04, a relief request in the first interval, and/or if it is a new relief request. Relief Requests are to be submitted prior to the start of the second interval where possible, and in any case, by the end of 12 months following the new interval start date in accordance with 10CFR50.55a(f)(5)(iv).

Deferred Test Justifications

OM-10 permits the delay of testing from a quarterly frequency to a cold shutdown or refueling frequency. Additionally, OM-10 allows the disassembly of check valves during refueling outages if flow testing cannot be performed. When valves are exercised anytime other than on a quarterly frequency, or when check valve disassembly is performed in lieu of flow testing, justification shall be provided by a Deferred Test Justification. Appendix C contains all associated Deferred Test Justifications. The Valve Test Table contains "CSJ" and "ROJ" numbers for Cold Shutdown Justifications and Refueling Outage Justifications that are contained within Appendix C. In addition, various tests require the Reactor Coolant Pumps to be removed from service. These tests will be performed similar to the cold shutdown tests and are coded "RCPJ" in Appendix C.

Category AC containment isolation check valves that cannot be verified closed quarterly or during cold shutdown due to lack of remote position indication, inaccessible containment locations or other inaccessible locations, no practical means of verifing check valve closure, possible extension of cold shutdown outages, and/or inability to remove the system from service for testing, will be verified closed during refueling outages via the seat leakage test. This position is in accordance with reference 2.d Section 4.1.3 and these valves have a ROJ in Appendix C.

Valve Exemptions

The following types of valves are exempt from the requirements of the ASME inservice test program, as allowed by OM-10 paragraph 1.2, provided they do not perform a specific safety function.

Valves used only for operating convenience such as vent, drain, instrument and test valves.
Valves used only for system control, such as pressure regulating valves.
Valves used only for system or component maintenance.
Valves within external control and protection systems responsible for sensing plant conditions and providing signals for valve operation.

Cold Shutdown Valve Testing

For valves in which testing is deferred to cold shutdown, testing will commence within 48 hours after cold shutdown is acheived and will continue until all tests are complete or the plant is ready to return to power. The unit will not be kept in cold shutdown solely to complete cold shutdown testing. Any testing not completed at one shutdown will be performed at subsequent cold shutdowns per the above schedule. For planned shutdowns in which sufficient time exists to complete the testing of all the valves identified to be tested at cold shutdown, exception may be taken to the 48 hour rule. As a minimum, all cold shutdown valves will be tested each refueling outage, however, valve testing will not be performed at a frequency greater than quarterly for Category A, B, and C valves. For outages greater than 92 days, all cold shutdown testing shall be completed in the last 92 days of the outage. For valves that fail their associated acceptance criteria during cold shutdown testing and which can only be tested at cold shutdown, corrective action shall be performed prior to restart.

Valves associated with Reactor Coolant Pump Operation

Valves necessary for Reactor Coolant Pump (RCP) operation will be tested during Cold Shutdowns if the RCPs are stopped. The RCPs will not be stopped and then restarted solely to test valves that supply support services to the RCPs. The stopping and starting of RCPs solely to allow valve testing produces unnecessary challenges, wear, stress, and increases the number of cycles on plant equipment. The length of cold shutdown outages may also be extended resulting in undue burden. These valves are coded for a frequency of "RCP" in the Valve Test Table on Appendix A. All the rules for Cold Shutdown testing applies to the RCP frequency. When the plant is ready for RCP startup to support the plant's return to service, the remaining RCP associated tests need not be completed but will be completed in subsequent RCP out of service periods.

Check Valve Full / Partial Stroke

In most cases, system design flow through a check valve requires less than full mechanical valve movement. As used in this program, the term full stroke refers to the ability of the valve to pass system design flow or a full mechanical stroke. Any test that verifies less than system design flow capability or full mechanical movement is considered a partial stroke test.

Safety Position and Testing Required

The safety position and function of valves is contained within reference 7. The "Testing Required" column of the Valve Test Table in Appendix A denotes the safety position as part of the code for the testing required (e.g. CVC, STO, etc.). These codes are explained in Appendix B. Valves with multiple safety positions are exercised to each position.

Valve Position Indicator Verification

Verification of proper remote position indication (OM-10 paragraph 4.1) will normally be accomplished by locally observing the position of the valve and comparing it with the remote indication at least once every two years. Some valves are not equipped with a local means to verify position, therefore, position will be verified by the observation of system parameters such as flow and pressure during valve cycling or by other nonintrusive methods. The remote position indicator in the main control room and the remote position indicator used for valve exercising and stroke timing will be verified for accuracy. For valves having remote position indicator at multiple locations that include the main control room and the main control room indication is used for exercise testing and stroke timing, then only the main control room remote position indicator need be verified for accuracy.

Fail - Safe Testing

For fail-safe valves, whereby placing the control switch in the open for fail-open valves, and the closed position for fail-closed valve, results in the loss of actuator power, the fail-safe testing requirements of OM-10 paragraph 4.2.1.6 will be satisfied by the exercise testing required by paragraph 4.2.1.2.

Establishing Reference Stroke Time Values

For this second 10 year interval, power operated valves will have an initial reference stroke time established by averaging at least 3 stroke times from previous tests to establish a baseline stroke time for comparison to subsequent testing as required by OM-10 paragraph 4.2.1.8. Subsequent changes to this reference stroke time will be documented in the record of tests.

Stroke Time Tests

Power operated valves shall have their stroke time measured while traveling to the position(s) denoted in Appendix A. This position is the automatic response direction or initial response direction for MOVs. MOVs are not stroked timed in both directions of travel (except for DC powered MOVs). Other power operated valves are stroked timed to each safety position (open and/or close) as denoted by Appendix A.

The 480 volt three phase AC powered MOVs are exercised in both directions of travel but not stroked timed in both directions since the stroke time is essentially the same in both directions because AC motor actuator speed is mostly dependent on the line frequency. The same components operate within the valve with a phase change to change the direction of valve travel. The ASME valve testing is not performed with any pre-established fluid service conditions (flow, differential pressure, etc.) so the impact of these fluid service conditions on valve stroke time is not reflected in the allowable stroke times. The Generic Letter 89-10 MOV Program is a more comprehensive valve test methodology that considers valve operation and thrust in both directions. The scope of the Generic Letter 89-10 MOV Program includes all of the motor actuated valves that are required for safe operation or safe shutdown of the plant. Therefore, the ASME Inservice Valve Test Program will exercise MOVs in both directions and stroke time test MOVs in the direction most representive of the valve safety function.

Analysis of Valve Leakage Rates

Valve leakage rates shall be subject to the analysis and corrective action of ASME/ANSI OM-10 (OMa-1988). This is also required by 10CFR50.55a(b)(2)(vii) for Containment Isolation Valves. Category A valves or valve combination shall have a permissible leakage rate specified by the owner. Valves or valve combinations with leakage rates exceeding the permissible rate shall be declared inoperable and either repaired or replaced. A retest demonstrating satisfactory performance shall be performed prior to declaring the valve operable. This requirement is satisfied within the Appendix J program for containment isolation valves.

Thermal Relief Valves

Thermal relief valves and thermal relief check valves of nominal size 1 inch or smaller are excluded from valve testing in so far as their opening function is concerned. The function of these valves to open is to avoid an overpressure condition in isolated components in the event the boundary isolation valves are zero leakage. The likelyhood of zero leakage boundary valves and the failure of the thermal relief valve or thermal relief check valve to pass any fluid does not warrent inclusion in the test program.

Data Analysis and Evaluation

If a valve fails to exhibit the required change of disk position or exceeds the Maximun Allowable Stroke Time, the valve shall be declared inoperable immediately. Valves with measured stroke times which exceed the Calculated Maximun Allowable Stroke Time range (CMAST) shall be immediately retested or declared inoperable. If the valve is retested and the second set of data also exceeds the CMAST, the data shall be analyzed within 96 hours to verify that the new stroke time represents acceptable operation, or the valve shall be declared inoperable. If the second set of test data does not exceed the CMAST, then the cause of the initial deviation shall be analyzed and the results documented in the test record within 96 hours.

Subsequent to declaring a valve inoperable and entry into appropriate action statements of technical specifications, the test results may be reviewed and compared to previous test data to decide if a condition has or has not developed that will further degrade the valve and exceed the safety analysis limit. If the valve is found not in danger of further degradation over an acceptable period of time, an analysis may be an acceptable alternative to valve repair or replacement until such time as repairs can be effected, as allowed by the code. If the analysis determines that the valve will soon degrade further, immediate action is required.

The first analysis may be a preliminary analysis (by the Program and/or System Engineers) until particular expertise is available (Vendors, Nuclear Engineering, etc.). The preliminary analysis must establish a basis for meeting the safety analysis limits/licensing basis and must assess the condition of the redundant train. The period the valve can be considered operable based on the preliminary analysis must be determined and limited in the event a more complete analysis determines the valve is inoperable. This period should allow adequate time to perform a thorough engineering analysis beginning without delay.

Check Valve Sample Disassembly and Inspection Program

Several check valves in this inservice test program require disassembly during refueling outages as an alternate method of verifying check valve full-stroke capabilities and operational readiness. To minimize the number of check valves that are disassembled during refueling outages, a check valve sample disassembly schedule and inspection program is implemented. This program complies with the requirements of Generic Letter 89-04 Position 2 and meets the NRC guidelines set forth within the generic letter. These guidelines are summarized below.

Identical valves shall be grouped and one valve from each group shall be tested during each refueling outage.

Identical valve groups include those valves that are of the same design (i.e. same manufacturer, size, model number, and material of construction); have the same service condition (i.e. water, condensate, steam) and have the same valve orientation (i.e. horizontially or vertically mounted).

Valve groupings shall not exceed more than four valves per group.

At each disassembly, the full stroke capability being tested shall be verified and the internals inspected to ensure the valve is structurally sound with no loose or corroded parts.

If the disassembled valve is unable to be full stroke exercised, or is binding, or failure of the valve internals is observed (loose or corroded parts), the valve shall be repaired as necessary and the remaining valves in the group shall be disassembled, inspected, and manually full stroked exercised.

Each valve included in the scope of the sample disassembly and inspection program shall be disassembled at least once every eight years. Any deviation from this interval shall require a revision to this disassembly and inspection program and Generic Letter 89-04 Positions 2.a, 2.b, and 2.c shall be addressed and documented in the record of tests.

Augmented Valve Testing

The inservice operability testing of safety-related valves associated with non OM-1 and 10 valve systems are not tested per the ASME inservice test program. These valves as identified in ref 7 are tested per the Augmented Valve test program. For example, the inservice operability testing of valves associated with the emergency diesels, are excluded from the ASME valve test program. The fuel oil transfer valves, and lube oil valves are tested per the augmented test program. These components are an integral part of the Emergency Diesel System and are functionally tested by the Diesel tests. Thus, the functional operability testing of these valves are performed at a frequency equal to that required by Section XI for valves. Additionally, the failure of a valve to perform its intended function will be identified by the failure of the associated Emergency Diesel to meet its functional requirements.

VIII. PROCEDURES

A. Administrative: Sequoyah Site Standard Practice SSP-8.6, ASME Section XI Inservice Testing of Valves and Valves.

B. Summary Listing of Valve Tests - Refer to TVA Calculation SQN-SQTP-003.

C. Listing of Valve Surveillance Instructions:

0-SI-SXV-001-266.0 ASME SECTION XI VALVE TESTING
0-SI-SXV-003-266.0 ASME SECTION XI VALVE TESTING
0-SI-SXV-026-266.0 ASME SECTION XI VALVE TESTING
0-SI-SXV-030-266.0 ASME SECTION XI VALVE TESTING
0-SI-SXV-31C-266.0 ASME SECTION XI VALVE TESTING
0-SI-SXV-032-266.0 ASME SECTION XI VALVE TESTING
0-SI-SXV-043-266.0 ASME SECTION XI VALVE TESTING
0-SI-SXV-061-266.0 ASME SECTION XI VALVE TESTING
0-SI-SXV-062-266.0 ASME SECTION XI VALVE TESTING
0-SI-SXV-063-266.0 ASME SECTION XI VALVE TESTING
0-SI-SXV-067-266.0 ASME SECTION XI VALVE TESTING
0-SI-SXV-068-266.0 ASME SECTION XI VALVE TESTING
0-SI-SXV-070-266.0 ASME SECTION XI VALVE TESTING
0-SI-SXV-072-266.0 ASME SECTION XI VALVE TESTING
0-SI-SXV-074-266.0 ASME SECTION XI VALVE TESTING
0-SI-SXV-077-266.0 ASME SECTION XI VALVE TESTING
0-SI-SXV-081-266.0 ASME SECTION XI VALVE TESTING
0-SI-SXV-090-266.0 ASME SECTION XI VALVE TESTING

1-SI-SXV-000-201.0 FULL STROKING OF CATEGORY A AND B VALVES DURING OPERATION

2-SI-SXV-000-201.0 FULL STROKING OF CATEGORY A AND B VALVES DURING OPERATION

1-SI-SXV-003-219.0 AUXILIARY FEEDWATER CHECK VALVE TEST DURING OPERATION

2-SI-SXV-003-219.0 AUXILIARY FEEDWATER CHECK VALVE TEST DURING OPERATION

1-SI-SXV-001-201.0 MAIN STEAM CHECK VALVE TEST DURING SHUTDOWN

2-SI-SXV-001-201.0 MAIN STEAM CHECK VALVE TEST DURING SHUTDOWN

1-SI-SXV-003-231.0 FEEDWATER CHECK VALVE TEST DURING COLD SHUTDOWN

2-SI-SXV-003-231.0 FEEDWATER CHECK VALVE TEST DURING COLD SHUTDOWN

1-SI-SXV-000-201.1 FULL STROKING OF CATEGORY A AND B VALVES REQUIRED IN ALL MODES

2-SI-SXV-000-201.1 FULL STROKING OF CATEGORY A AND B VALVES REQUIRED IN ALL MODES

1-SI-SXV-000-203.0 FULL STROKING OF CATEGORY A AND B VALVES DURING COLD SHUTDOWN

2-SI-SXV-000-203.0 FULL STROKING OF CATEGORY A AND B VALVES DURING COLD SHUTDOWN

1-SI-SXV-000-203.1 FULL STROKING OF POWER OPERATED VALVES REQUIRED OPERABLE DURING ALL MODES

2-SI-SXV-000-203.1 FULL STROKING OF POWER OPERATED VALVES REQUIRED OPERABLE DURING ALL MODES

0-SI-SXV-000-221.0 FULL STROKING OF THE COMMON ERCW AND CCS CATEGORY A AND B VALVES DURING OPERATION

1-SI-SXV-074-203.2 FULL STROKING OF RHR VALVES 1-FCV-74-1 AND 1-FCV-74-2

2-SI-SXV-074-203.2 FULL STROKING OF RHR VALVES 2-FCV-74-1 AND 2-FCV-74-2

1-SI-SXV-001-202.0 PARTIAL STROKING OF MAIN STEAM ISOLATION VALVES DURING OPERATION

2-SI-SXV-001-202.0 PARTIAL STROKING OF MAIN STEAM ISOLATION VALVES DURING OPERATION

1-SI-SXV-068-201.0 PRESSURIZER PORV OPERABILITY TEST

2-SI-SXV-068-201.0 PRESSURIZER PORV OPERABILITY TEST

0-SI-SXV-000-206.0 TESTING OF CATEGORY A AND B VALVES AFTER MAINTENANCE OR UPON RELEASE FROM A HOLD ORDER

1-SI-SXV-068-202.0 RCS HEAD VENT VALVE STROKE TEST DURING REFUELING

2-SI-SXV-068-202.0 RCS HEAD VENT VALVE STROKE TEST DURING REFUELING

1-SI-SXV-063-202.0 SAFETY INJECTION HOT LEG SECONDARY CHECK VALVE INTEGRITY TEST

2-SI-SXV-063-202.0 SAFETY INJECTION HOT LEG SECONDARY CHECK VALVE INTEGRITY TEST

1-SI-SXV-063-203.0 RESIDUAL HEAT REMOVAL HOT LEG SECONDARY CHECK VALVE INTEGRITY TEST

2-SI-SXV-063-203.0 RESIDUAL HEAT REMOVAL HOT LEG SECONDARY CHECK VALVE INTEGRITY TEST

1-SI-SXV-063-204.0 SI/RHR PRIMARY CHECK VALVE INTEGRITY TEST

2-SI-SXV-063-204.0 SI/RHR PRIMARY CHECK VALVE INTEGRITY TEST

1-SI-SXV-063-205.0 SAFETY INJECTION COLD LEG SECONDARY CHECK VALVE INTEGRITY TEST

2-SI-SXV-063-205.0 SAFETY INJECTION COLD LEG SECONDARY CHECK VALVE INTEGRITY TEST

1-SI-SXV-063-206.0 RESIDUAL HEAT REMOVAL COLD LEG PRIMARY AND SECONDARY CHECK VALVE INTEGRITY TEST

2-SI-SXV-063-206.0 RESIDUAL HEAT REMOVAL COLD LEG PRIMARY AND SECONDARY CHECK VALVE INTEGRITY TEST

1-SI-SXV-063-207.0 SAFETY INJECTION COLD LEG ACCUMULATOR SECONDARY CHECK VALVE INTEGRITY TEST

2-SI-SXV-063-207.0 SAFETY INJECTION COLD LEG ACCUMULATOR SECONDARY CHECK VALVE INTEGRITY TEST

1-SI-SXV-062-246.0 NORMAL CHARGING LINE CHECK VALVE TEST DURING COLD SHUTDOWN

2-SI-SXV-062-246.0 NORMAL CHARGING LINE CHECK VALVE TEST DURING COLD SHUTDOWN

1-SI-SXV-070-216.0 COMPONENT COOLING SYSTEM CHECK VALVE TEST DURING COLD SHUTDOWN

2-SI-SXV-070-216.0 COMPONENT COOLING SYSTEM CHECK VALVE TEST DURING COLD SHUTDOWN

0-SI-SXV-070-226.0 COMPONENT COOLING SYSTEM CHECK VALVE TEST DURING OPERATION

1-SI-SXV-070-215.0 CONTAINMENT SPRAY CHECK VALVE TEST DURING OPERATION

2-SI-SXV-070-215.0 CONTAINMENT SPRAY CHECK VALVE TEST DURING OPERATION

0-SI-SXV-067-238.0 INSPECTION OF DG ERCW DISCHARGE CHECK VALVES

0-SI-SXV-067-245.0 FULL STROKING OF THE DG ERCW CHECK VALVES

0-SI-SXV-067-237.1 INSPECTION OF DG 1A-A ERCW SUPPLY CHECK VALVES

0-SI-SXV-067-237.2 INSPECTION OF DG 2A-A ERCW SUPPLY CHECK VALVES

0-SI-SXV-067-237.3 INSPECTION OF DG 1B-B ERCW SUPPLY CHECK VALVES

0-SI-SXV-067-237.4 INSPECTION OF DG 2B-B ERCW SUPPLY CHECK VALVES

1-SI-SXV-074-201.0 RESIDUAL HEAT REMOVAL CHECK VALVE OPENING TEST

2-SI-SXV-074-201.0 RESIDUAL HEAT REMOVAL CHECK VALVE OPENING TEST

1-SI-SXV-074-242.0 RHR PUMP CHECK VALVE OPENING TEST

2-SI-SXV-074-242.0 RHR PUMP CHECK VALVE OPENING TEST

1-SI-SXV-063-208.0 SAFETY INJECTION SYSTEM CHECK VALVE OPENING TEST

2-SI-SXV-063-208.0 SAFETY INJECTION SYSTEM CHECK VALVE OPENING TEST

1-SI-SXV-063-210.0 CHARGING PUMP INJECTION CHECK VALVE OPENING TEST DURING COLD SHUTDOWN

2-SI-SXV-063-210.0 CHARGING PUMP INJECTION CHECK VALVE OPENING TEST DURING COLD SHUTDOWN

1-SI-SXV-081-227.0 PRIMARY WATER CHECK VALVE TEST DURING COLD SHUTDOWN

2-SI-SXV-081-227.0 PRIMARY WATER CHECK VALVE TEST DURING COLD SHUTDOWN

1-SI-SXV-000-204.0 REMOTE VALVE POSITION INDICATION VERIFICATION

2-SI-SXV-000-204.0 REMOTE VALVE POSITION INDICATION VERIFICATION

D. Listing of Pump Surveillance Instructions that Test Valves

SURVEILLANCE INSTRUCTION	TRAIN	PUMP TESTED
0-SI-SXP-067-201.J	A	ERCW PUMP J-A
0-SI-SXP-067-201.K	A	ERCW PUMP K-A
0-SI-SXP-067-201.L	B	ERCW PUMP L-B
0-SI-SXP-067-201.M	B	ERCW PUMP M-B
0-SI-SXP-067-201.N	B	ERCW PUMP N-B
0-SI-SXP-067-201.P	B	ERCW PUMP P-B
0-SI-SXP-067-201.Q	A	ERCW PUMP Q-A
0-SI-SXP-067-201.R	A	ERCW PUMP R-A
0-SI-SXP-067-202.A	A	ERCW SCREEN WASH PUMP A-A
0-SI-SXP-067-202.B	B	ERCW SCREEN WASH PUMP B-B
0-SI-SXP-067-202.C	B	ERCW SCREEN WASH PUMP C-B
0-SI-SXP-067-202.D	A	ERCW SCREEN WASH PUMP D-A
0-SI-SXP-070-201.C	S	CCS PUMP C-S
1-SI-SXP-070-201.A	A	CCS PUMP 1A-A
1-SI-SXP-070-201.B	B	CCS PUMP 1B-B
2-SI-SXP-070-201.A	A	CCS PUMP 2A-A
2-SI-SXP-070-201.B	B	CCS PUMP 2B-B
1-SI-SXP-003-201.A	A	AFW MD PUMP 1A-A
1-SI-SXP-003-201.B	B	AFW MD PUMP 1B-B
1-SI-SXP-003-201.S	S	AFW TD PUMP 1A-S
2-SI-SXP-003-201.A	A	AFW MD PUMP 2A-A
2-SI-SXP-003-201.B	B	AFW MD PUMP 2B-B
2-SI-SXP-003-201.S	S	AFW TD PUMP 2A-S
0-SI-SXP-313-201.A	A	SDB RM CW PUMP A-A
0-SI-SXP-313-201.B	B	SDB RN CW PUMP B-B
1-SI-SXP-063-201.A	A	SIS PUMP 1A-A
1-SI-SXP-063-201.B	B	SIS PUMP 1B-B
2-SI-SXP-063-201.A	A	SIS PUMP 2A-A
2-SI-SXP-063-201.B	B	SIS PUMP 2B-B
1-SI-SXP-062-201.A	A	CCP PUMP 1A-A
1-SI-SXP-062-201.B	B	CCP PUMP 1B-B
2-SI-SXP-062-201.A	A	CCP PUMP 2A-A
2-SI-SXP-062-201.B	B	CCP PUMP 2B-B
1-SI-SXP-062-202.A	A	BAT PUMP 1A-A
1-SI-SXP-062-202.B	B	BAT PUMP 1B-B
2-SI-SXP-062-202.A	A	BAT PUMP 2A-A
2-SI-SXP-062-202.B	B	BAT PUMP 2B-B
1-SI-SXP-072-201.A	A	CS PUMP 1A-A
1-SI-SXP-072-201.B	B	CS PUMP 1B-B
2-SI-SXP-072-201.A	A	CS PUMP 2A-A
2-SI-SXP-072-201.B	B	CS PUMP 2B-B
1-SI-SXP-074-201.A	A	RHR PUMP 1A-A
1-SI-SXP-074-201.B	B	RHR PUMP 1B-B
2-SI-SXP-074-201.A	A	RHR PUMP 2A-A
2-SI-SXP-074-201.B	B	RHR PUMP 2B-B

RESPONSIBILITIES

1. Program Engineer (Nuclear Engineering)
   Overall Program Ownership
   Initiate Design Changes
   Ensure compliance with existing regulations and standards and update as required
   Maintenance of Design Basis Calculations, Program Basis Documents, and IST Drawings

2. Program Test Engineer (Technical Support)
   Site Contact for all ASME and Augmented Valve testing
   Initiate maintenance requests based on test results and trends
   Maintaining state of the art technologies in the program
   Procure services and equipment necessary to perform the valve tests
   Coordinate test schedules with Operating and Outage schedules
   Coordinate valve tests
   Prepare appropriate Reports (PERs, Periodic Test Reports)
   Review and approve test results
   Maintain valve test procedures
   Maintain tabulations and trends of valve test results
   Ensuring periodic tests are performed on schedule
   Specifing post-maintenence test requirements
   Establish and maintain a database of historical data and trend results
   Ensure compliance with existing regulations and standards and update as require
   Maintain instrumentation and test equipment necessary to perform valve tests

3. Corporate
   Preparation and Maintenance of corporate standards
   Interpretation and coordination of ASME Code interpreatations and application of generic programs
   Coordinate, review and assist in preparation of request for relief and submittals
   Periodic assessments of site code programs

4. Others
   Operations shall support the valve tests with valve lineups and equipment operation as required
   Operations shall perform their portion of the valve test procedures
   Instrument Maintenance shall provide for calibration of necessary instrumentation
   The Maintenance organizations shall provide corrective maintenance as neessary

X. TRAINING

1. Program Engineer & Program Test Engineer
   Understanding of valve operation and their application.
   Understanding of 10CFR50.55a.
   Knowledge of test instrumentation used to perform valve tests.
   Knowledge of industry standards ASME Section XI and OM-1 & 10.

2. Test Performers
   Basic understanding of valve operation and their application.
   Understanding of 10CFR50.55a.
   Knowledge of test instrumentation used to perform valve tests.
   Knowledge of industry standards ASME Section XI and OM-1 & 10.

APPENDIX A:
ASME INSERVICE VALVE TEST TABLES

Summary of Information Provided

The following Tables use the format referenced in the 1978 "NRC Staff Guidance for Preparing Pump and Valve Test Program Descriptions and Associated Relief Requests Pursuant to 10 CFR 50.55a(g)", the non-mandatory Appendix F "Prreparation of Inspection Plans" of the 1989 Edition of ASME Section XI, and the Draft NUREG 1482 "Guidelines for Inservice Testing at Nuclear Power Plants" November 1993. The following information is provided:

1. System Name and Number

2. Drawing Number

3. Valve Number

4. ASME Section XI Classification

5. Drawing Coordinates of Valve

6. Valve Category

7. Valve Size

8. Valve Type

9. Actuator Type

10. Normal Position

11. Testing Required and Frequency per Section XI. Valves are tested to the Safety Position denoted by the applicable test code (e.g. CVO, STC, etc.)

12. Relief Request Required

13. Alternate Testing

14. Remarks (Including Relief Request Numbers, Specific Valve Data, etc.)

SYSTEM: (1) MAIN STEAM DRAWING NO: 47W801-1

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FCV-1-4	2	C-4	B-ACT	32	GL	CYL	O	FSC/CSD **/RO STC/CSD			CSJ-1 **INDIVIDUAL TRAIN SOLENOID TEST
PCV-1-5	2	C-2	BC-ACT	6	GA	DIA	C	STC/CSD FSC/CSD			CSJ-4
FCV-1-11	2	E-4	B-ACT	32	GL	CYL	O	FSC/CSD **/RO STC/CSD			CSJ-1 **INDIVIDUAL TRAIN SOLENOID TEST
PCV-1-12	2	D-2	BC-ACT	6	GA	DIA	C	STC/CSD FSC/CSD			CSJ-4
FCV-1-22	2	G-4	B-ACT	32	GL	CYL	O	FSC/CSD **/RO STC/CSD			CSJ-1 **INDIVIDUAL TRAIN SOLENOID TEST
PCV-1-23	2	F-2	BC-ACT	6	GA	DIA	C	STC/CSD FSC/CSD			CSJ-4
FCV-1-29	2	A-4	B-ACT	32	GL	CYL	O	FSC/CSD **/RO STC/CSD			CSJ-1 **INDIVIDUAL TRAIN SOLENOID TEST
PCV-1-30	2	A-2	BC-ACT	6	GA	DIA	C	STC/CSD FSC/CSD			CSJ-4
FCV-1-147	2	C-4	B-ACT	2	GL	DIA	C	STC/Q, FSC/Q			
FCV-1-148	2	E-4	B-ACT	2	GL	DIA	C	STC/Q, FSC/Q			
FCV-1-149	2	G-4	B-ACT	2	GL	DIA	C	STC/Q, FSC/Q			
FCV-1-150	2	A-4	B-ACT	2	GL	DIA	C	STC/Q, FSC/Q			
1-619*	2	C-2	B-ACT	6	GL	M	O	MS/RO			ROJ-18
1-620*	2	E-2	B-ACT	6	GL	M	O	MS/RO			ROJ-18
1-621*	2	F-2	B-ACT	6	GL	M	O	MS/RO			ROJ-18
1-622*	2	A-2	B-ACT	6	GL	M	O	MS/RO			ROJ-18

SYSTEM: (1) MAIN AND REHEAT STEAM DRAWING NO: 47W801-1

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
1-512	2	F-3	C	6	REL	SA	C	RV/RVF			
1-513	2	F-3	C	6	REL	SA	C	RV/RVF			
1-514	2	F-3	C	6	REL	SA	C	RV/RVF			
1-515	2	F-3	C	6	REL	SA	C	RV/RVF			
1-516	2	F-3	C	6	REL	SA	C	RV/RVF			
1-517	2	D-3	C	6	REL	SA	C	RV/RVF			
1-518	2	D-3	C	6	REL	SA	C	RV/RVF			
519	2	D-3	C	6	REL	SA	C	RV/RVF			
1-520	2	D-3	C	6	REL	SA	C	RV/RVF			
1-521	2	D-3	C	6	REL	SA	C	RV/RVF			
1-522	2	C-3	C	6	REL	SA	C	RV/RVF			
1-523	2	C-3	C	6	REL	SA	C	RV/RVF			
1-524	2	C-3	C	6	REL	SA	C	RV/RVF			
1-525	2	C-3	C	6	REL	SA	C	RV/RVF			

SYSTEM: (1) MAIN AND REHEAT STEAM DRAWING NO: 47W801-1

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
1-526	2	C-3	C	6	REL	SA	C	RV/RVF			
1-527	2	A-3	C	6	REL	SA	C	RV/RVF			
1-528	2	A-3	C	6	REL	SA	C	RV/RVF			
1-529	2	A-3	C	6	REL	SA	C	RV/RVF			
1-530	2	A-3	C	6	REL	SA	C	RV/RVF			
1-531	2	A-3	C	6	REL	SA	C	RV/RVF			
2-1-623	2	C-4	C	32	CK	SA	O	CVC/CSD			CSJ-2
2-1-624	2	E-4	C	32	CK	SA	O	CVC/CSD			CSJ-2
2-1-625	2	G-4	C	32	CK	SA	O	CVC/CSD			CSJ-2
2-1-626	2	A-4	C	32	CK	SA	O	CVC/CSD			CSJ-2

SYSTEM: (1) STEAM GENERATOR BLOWDOWN DRAWING NO: 47W...1-2

VALVE NUMBER	ASME CLASS	CODE DRAWING NOTES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FCV-1-7	2	C-3	B-ACT	2	AN	DIA	O	STC/Q, FSC/Q			
FCV-1-14	2	E-3	B-ACT	2	AN	DIA	O	STC/Q, FSC/Q			
FCV-1-25	2	F-3	B-ACT	2	AN	DIA	O	STC/Q, FSC/Q			
FCV-1-32	2	B-3	B-ACT	2	AN	DIA	O	STC/Q, FSC/Q			
FCV-1-181	2	C-2	B-ACT	2	GL	DIA	O	STC/Q, FSC/Q			
FCV-1-182	2	E-2	B-ACT	2	GL	DIA	O	STC/Q, FSC/Q			
FCV-1-183	2	F-2	B-ACT	2	GL	DIA	O	STC/Q, FSC/Q			
FCV-1-184	2	B-2	B-ACT	2	GL	DIA	O	STC/Q, FSC/Q			

SYSTEM: (1) MAIN STEAM DRAWING NO: 47W803-2

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FCV-1-15	2	B-9	B-ACT	4	GA	MO	O	STC/Q			
FCV-1-16	2	A-9	B-ACT	4	GA	MO	C	STO/Q			
FCV-1-17	3	B-8	B-ACT	4	GA	MO	O	STC/CSD			CSJ-3
FCV-1-18	2	B-8	B-ACT	4	GA	MO	O	STC/CSD			CSJ-3
FCV-1-51	3	H-7	B-ACT	3	PLG	MO	C	STO/Q			

SYSTEM: (3) FEEDWATER DRAWING NO: 47W803-1

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FCV-3-33	2	C-3	B-ACT	18	GA	MO	O	STC/CSD			CSJ-5
FCV-3-47	2	E-3	B-ACT	18	GA	MO	O	STC/CSD			CSJ-5
FCV-3-87	2	G-3	B-ACT	18	GA	MO	O	STC/CSD			CSJ-5
FCV-3-100	2	B-3	B-ACT	18	GA	MO	O	STC/CSD			CSJ-5
3-508	2	G-2	C	16	CK	SA	-	CVC/CSD			CSJ-5
3-509	2	E-2	C	16	CK	SA	-	CVC/CSD			CSJ-5
3-510	2	C-2	C	16	CK	SA	-	CVC/CSD			CSJ-5
3-511	2	B-2	C	16	CK	SA	-	CVC/CSD			CSJ-5

SYSTEM: (3) AUXILIARY FEEDWATER DRAWING NO: 47W803-2

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FCV-3-116A	3	F-6	B-ACT	8	GA	MO	C	STO/Q			
FCV-3-116B	3	F-6	B-ACT	8	GA	MO	C	STO/Q			
FCV-3-126A	3	F-7	B-ACT	8	GA	MO	C	STO/Q			
FCV-3-126B	3	F-7	B-ACT	8	GA	MO	C	STO/Q			
FCV-3-136A	3	G-5	B-ACT	10	GA	MO	C	STO/Q			
FCV-3-136B	3	G-5	B-ACT	10	GA	MO	C	STO/Q			
LCV-3-148	3	F-8	B-ACT	4	GA	DIA	C	FSO/Q STO/Q, STC/Q			
LCV-3-148A	3	F-8	B-ACT	2	GA	DIA	C	FSC/Q STO/Q, STC/Q			
LCV-3-156	3	E8	B-ACT	4	GA	DIA	C	FSO/Q STO/Q, STC/Q			
LCV-3-156A	3	E8	B-ACT	2	GA	DIA	C	FSC/Q STO/Q, STC/Q			
LCV-3-164	3	C8	B-ACT	4	GA	DIA	C	FSO/Q STO/Q, STC/Q			
LCV-3-164A	3	C8	B-ACT	2	GA	DIA	C	FSC/Q STO/Q, STC/Q			

SYSTEM: (3) AUXILIARY FEEDWATER DRAWING NO: 47W803-2

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
LCV-3-171	3	A-8	B-ACT	4	GA	DIA	C	FSO/Q STO/Q, STC/Q			
LCV-3-171A	3	B-8	B-ACT	2	GA	DIA	C	FSC/Q STO/Q, STC/Q			
LCV-3-172	3	F-8	B-ACT	3	GL	DIA	C	FSC/Q STO/Q, STC/Q			MOD PENDING TO FSO/Q
LCV-3-173	3	D-8	B-ACT	3	GL	DIA	C	FSC/Q STO/Q, STC/Q			MOD PENDING TO FSO/Q
LCV-3-174	3	C-8	B-ACT	3	GL	DIA	C	FSC/Q STO/Q, STC/Q			MOD PENDING TO FSO/Q
LCV-3-175	3	A-8	B-ACT	3	GL	DIA	C	FSC/Q STO/Q, STC/Q			MOD PENDING TO FSO/Q
FCV-3-179A	3	G-5	B-ACT	10	GA	MO	C	STO/Q			
FCV-3-179B	3	G-5	B-ACT	10	GA	MO	C	STO/Q			
FCV-3-400	3	F-5	B-ACT	2	DIA	MO	C	STC/Q			
FCV-3-401	3	F-5	B-ACT	2	DIA	MO	C	STC/Q			

SYSTEM: (3) AUXILIARY FEEDWATER DRAWING NO: 47W803-2

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
3-805	3	F-5	C	8	CK	SA	-	CVFO/HSD CVC/Q, CVPO/Q			CSJ-6
3-806	3	F-6	C	8	CK	SA	-	CVFO/HSD CVC/Q, CVPO/Q			CSJ-6
3-810	3	G-4	C	10	CK	SA	-	CVFO/HSD CVC/Q, CVPO/Q			CSJ-6
3-814	3	F-5	C	1-1/2	CK	SA	-	CVFO/Q			
3-815	3	F-6	C	1-1/2	CK	SA	-	CVFO/Q			
3-818	3	G-7	C	1-1/2	CK	SA	-	CVFO/Q			
3-820	3	F-5	C	6	CK	SA	-	CVPO/Q CVFO/HSD			CSJ-7
3-821	3	F-6	C	6	CK	SA	-	CVPO/Q CVFO/HSD			CSJ-7
3-830	2	F-9	C	4	CK	SA	-	DI/DIF CVFO/HSB	YES	YES	RV-1 ROJ-21
3-831	2	E-9	C	4	CK	SA	-	DI/DIF CVFO/HSB	YES	YES	RV-1 ROJ-21
3-832	2	C-9	C	4	CK	SA	-	CVC/Q CVFO/HSB			CSJ-8
3-833	2	A-9	C	4	CK	SA	-	CVC/Q CVFO/HSB			CSJ-8
3-861	2	F-10	C	4	CK	SA	-	DI/DIF CVFO/HSB	YES	YES	RV-1 ROJ-20 CSJ-9
3-862	2	E-10	C	4	CK	SA	-	DI/DIF CVFO/HSB	YES	YES	RV-1 ROJ-20 CSJ-9
3-864	3	G-6	C	6	CK	SA	-	CVFO/HSB			CSJ-7

SYSTEM: (3) AUXILIARY FEEDWATER DRAWING NO: 47W803-2

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
3-871	2	F-9	C	4	CK	SA	-	DI/DIF CVFO/HSB	YES	YES	RV-1 ROJ-21
3-872	2	D-9	C	4	CK	SA	-	DI/DIF CVFO/HSB	YES	YES	RV-1 ROJ-21
3-873	2	C-9	C	4	CK	SA	-	CVC/Q CVFO/HSB			CSJ-8
3-874	2	A-9	C	4	CK	SA	-	CVC/Q CVFO/HSB			CSJ-8
3-891	2	B-8	C	4	CK	SA	-	CVPO/Q DI/DIF CVFO/HSB	YES	YES	RV-1 ROJ-17
3-892	2	A-8	C	4	CK	SA	-	CVPO/Q DI/DIF CVFO/HSB	YES	YES	RV-1 ROJ-17
3-894	3	A-6	C-ACT	3	CK	SA	-	CVFO/Q			
3-895	3	A-6	C-ACT	3	CK	SA	-	CVFO/Q			
3-921	2	G-10	C	4	CK	SA	-	DI/DIF CVFO/HSB	YES	YES	RV-1 ROJ-20 CSJ-9
3-922	2	E-10	C	4	CK	SA	-	DI/DIF CVFO/HSB	YES	YES	RV-1 ROJ-20 CSJ-9
3-937*	3	F-4	C	2	CK	SA	-	CVFO/Q			
3-941*	3	F-6	C	2	CK	SA	-	CVFO/Q			

SYSTEM: (26) FIRE PROTECTION DRAWING NO: 47W850-10

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FCV-26-240	2	A-9	A-ACT	4	GA	MO	O	STC/Q, SLTJ/J			
FCV-26-243	2	B-3	A-ACT	4	GA	MO	O	STC/Q, SLTJ/J			
26-1260	2	A-10	AC-PAS	4	CK	SA	C	SLTJ/J			
26-1296	2	B-3	AC-PAS	4	CK	SA	C	SLTJ/J			

SYSTEM: (30) HEATING AND VENTILATING AIR FLOW

DRAWING NO: 47W866-1

VALVE NUMBER	ASME CLASS	COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FCV-30-7	2	C-1	A-ACT	24	BUT	CYL	C	FSC/Q STC/Q, SLTJ/J			
FCV-30-8	2	C-2	A-ACT	24	BUT	CYL	C	FSC/Q STC/Q, SLTJ/J			
FCV-30-9	2	C-1	A-ACT	24	BUT	CYL	C	FSC/Q STC/Q, SLTJ/J			
FCV-30-10	2	C-2	A-ACT	24	BUT	CYL	C	FSC/Q STC/Q, SLTJ/J			
FCV-30-14	2	E-1	A-ACT	24	BUT	CYL	C	FSC/Q STC/Q, SLTJ/J			
FCV-30-15	2	E-2	A-ACT	24	BUT	CYL	C	FSC/Q STC/Q, SLTJ/J			
FCV-30-16	2	F-1	A-ACT	24	BUT	CYL	C	FSC/Q STC/Q, SLTJ/J			
FCV-30-17	2	F-2	A-ACT	24	BUT	CYL	C	FSC/Q STC/Q, SLTJ/J			
FCV-30-19	2	G-1	A-ACT	12	BUT	CYL	C	FSC/Q STC/Q, SLTJ/J			
FCV-30-20	2	G-2	A-ACT	12	BUT	CYL	C	FSC/Q STC/Q, SLTJ/J			
FCV-30-37	2	D-10	A-ACT	8	BUT	CYL	C	FSC/Q STC/Q, SLTJ/J			
FCV-30-40	2	D-9	A-ACT	8	BUT	CYL	C	FSC/Q STC/Q, SLTJ/J			
FCV-30-46	2	B-4	A-ACT	24	BUT	CYL	C	STO/Q, FSO/Q STC/Q, SLTJ/J			INDIVIDUAL TRAIN A AND B HANDSWITCH TEST
FCV-30-47	2	B-4	A-ACT	24	BUT	CYL	C	STO/Q, FSO/Q STC/Q, SLTJ/J			INDIVIDUAL TRAIN A AND B HANDSWITCH TEST

SYSTEM: (30) HEATING AND VENTILATING AIR FLOW

DRAWING NO: 47W866-1 (R23)

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FCV-30-48	2	B-4	A-ACT	24	BUT	CYL	C	STO/Q, FSO/Q STC/Q, SLTJ/J			INDIVIDUAL TRAIN A AND B HANDSWITCH TEST
FCV-30-50	2	C-10	A-ACT	24	BUT	CYL	C	FSC/Q STC/Q, SLTJ/J			
FCV-30-51	2	C-10	A-ACT	24	BUT	CYL	C	FSC/Q STC/Q, SLTJ/J			
FCV-30-52	2	C-10	A-ACT	24	BUT	CYL	C	FSC/Q STC/Q, SLTJ/J			
FCV-30-53	2	C-10	A-ACT	24	BUT	CYL	C	FSC/Q STC/Q, SLTJ/J			
FCV-30-56	2	E-9	A-ACT	24	BUT	CYL	C	FSC/Q STC/Q, SLTJ/J			
FCV-30-57	2	E-10	A-ACT	24	BUT	CYL	C	FSC/Q STC/Q, SLTJ/J			
FCV-30-58	2	G-9	A-ACT	12	BUT	CYL	O	FSC/Q STC/Q, SLTJ/J			
FCV-30-59	2	G-10	A-ACT	12	BUT	CYL	O	FSC/Q STC/Q, SLTJ/J			
FSV-30-134	3	F-9	A-ACT	3/8	GA	SO	O	FSC/Q STC/Q, SLTJ/J			
FSV-30-135	2	F-9	A-ACT	3/8	GA	SO	O	FSC/Q STC/Q, SLTJ/J			
30-571	2	B-4	AC-ACT	24	CK	SA	C	RV/RVF, SLTJ/J			
30-572	2	B-5	AC-ACT	24	CK	SA	C	RV/RVF, SLTJ/J			
30-573	2	B-7	AC-ACT	24	CK	SA	C	RV/RVF, SLTJ/J			

SYSTEM: (31) AIR CONDITIONING CHILLED WATER (INCORE INST RM) DRAWING NO: 47W865-5

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FCV-31C-222	2	A-7	A-ACT	2	PLG	DIA	O	STC/Q, SLTJ/J			
FCV-31C-223	2	A-8	A-ACT	2	PLG	DIA	O	STC/Q, SLTJ/J			
FCV-31C-224	2	B-7	A-ACT	2	PLG	DIA	O	STC/Q, SLTJ/J			
FCV-31C-225	2	B-8	A-ACT	2	PLG	DIA	O	STC/Q, SLTJ/J			
FCV-31C-229	2	D-7	A-ACT	2	PLG	DIA	O	STC/Q, SLTJ/J			
FCV-31C-230	2	D-8	A-ACT	2	PLG	DIA	O	STC/Q, SLTJ/J			
FCV-31C-231	2	E-7	A-ACT	2	PLG	DIA	O	STC/Q, SLTJ/J			
FCV-31C-232	2	E-8	A-ACT	2	PLG	DIA	O	STC/Q, SLTJ/J			
31C-697	2	F-8	AC-PAS	1/2	SK	SA	C	SLTJ/J			TRCV
31C-715	2	E-8	AC-PAS	1/2	SK	SA	C	SLTJ/J			TRCV
31C-734	2	C-8	AC-PAS	1/2	SK	SA	C	SLTJ/J			TRCV
31C-752	2	B-8	AC-PAS	1/2	SK	SA	C	SLTJ/J			TRCV

SYSTEM: (31) AIR CONDITIONING CHILLED WATER (6.9 KV SDB RM) DRAWING NO: 47W865-8

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
0-31C-985 *	3	E-8	C	6	SK	SA	O	CVFO/Q			PUMP TEST
0-31C-1027 *	2	E-3	C	6	SK	SA	O	CVFO/Q			PUMP TEST

SYSTEM: (32) COMPRESSED AIR

DRAWING NO: 47W848-1

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
1-FCV-32-80	2	C-9	A-ACT	2	GA	DIA	O	FSC/CSD STO/CSD STC/CSD SLTJ/J			CSJ-10
2-FCV-32-81	2	F-9	A-ACT	2	GA	DIA	O	FSC/CSD STO/CSD STC/CSD SLTJ/J			CSJ-10
1-FCV-32-102	2	D-9	A-ACT	2	GA	DIA	O	FSC/CSD STO/CSD STC/CSD SLTJ/J			CSJ-10
2-FCV-32-103	2	E-9	A-ACT	2	GA	DIA	O	FSC/CSD STO/CSD STC/CSD SLTJ/J			CSJ-10
1-FCV-32-110	2	A-9	A-ACT	2	GA	DIA	O	FSC/CSD STO/CSD STC/CSD SLTJ/J			CSJ-10
2-FCV-32-111	2	G-9	A-ACT	2	GA	DIA	O	FSC/CSD STO/CSD STC/CSD SLTJ/J			CSJ-10

SYSTEM: (43) SAMPLING DRAWING NO: 47W625-1

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FSV-43-2	2	C-4	A-ACT	3/8	GA	SO	O	FSC/Q STC/Q SLTJ/J			
1-FSV-43-3	2	C-5	A-ACT	3/8	GA	SO	O	FSC/Q STC/Q SLTJ/J			
2-FCV-43-3	2	C-5	A-ACT	3/8	GA	DIA	O	FSC/Q STC/Q SLTJ/J			
FSV-43-11	2	C-4	A-ACT	3/8	GA	SO	C	FSC/Q STC/Q SLTJ/J			
1-FSV-43-12	2	C-5	A-ACT	3/8	GA	SO	C	FSC/Q STC/Q SLTJ/J			
2-FCV-43-12	2	C-5	A-ACT	3/8	GA	DIA	C	FSC/Q STC/Q SLTJ/J			
FSV-43-22	2	F-5	A-ACT	3/8	GA	SO	O	FSC/Q STC/Q SLTJ/J			
1-FSV-43-23	2	D-5	A-ACT	3/8	GA	SO	O	FSC/Q STC/Q, SLTJ/J			
2-FCV-43-23	2	D-5	A-ACT	3/8	GA	DIA	O	FSC/Q STC/Q, SLTJ/J			
FCV-43-5 *	2	B-3	B-PAS	3/8	GA	DIA	C	RPI			

SYSTEM: (43) SAMPLING DRAWING NO: 47W625-2

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FCV-43-34	2	C-2	A-ACT	3/8	GA	SO	C	FSC/Q STC/Q SLTJ/J			
1-FSV-43-35	2	C-3	A-ACT	3/8	GA	SO	C	FSC/Q STC/Q SLTJ/J			
2-FCV-43-35	2	C-3	A-ACT	3/8	GA	DIA	C	FSC/Q STC/Q SLTJ/J			
FSV-43-55	3	C-8	B-ACT	3/8	GA	SO	O	FSC/Q STC/Q			
FSV-43-58	3	C-8	B-ACT	3/8	GA	SO	O	FSC/Q STC/Q			
FSV-43-61	3	C-8	B-ACT	3/8	GA	SO	O	FSC/Q STC/Q			
FSV-43-64	3	D-8	B-ACT	3/8	GA	SO	O	FSC/Q STC/Q			
FCV-43-30 *	2	B-5	B-PAS	3/8	GA	DIA	C	RPI			
FCV-43-31 *	2	A-6	B-PAS	3/8	GA	DIA	C	RPI			
FCV-43-32 *	2	A-9	B-PAS	3/8	GA	DIA	C	RPI			
FCV-43-33 *	2	A-1	B-PAS	3/8	GA	DIA	C	RPI			

SYSTEM: (43) SAMPLING

DRAWING NO: 47W625-7

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FSV-43-75	2	D-6	A-ACT	3/8	GA	SO	C	FSC/Q STC/Q, SLTJ/J			
1-FSV-43-77	2	D-7	A-ACT	3/8	GA	SO	C	FSC/Q STC/Q, SLTJ/J			
2-FCV-43-77	2	D-7	A-ACT	3/8	GA	DIA	C	FSC/Q STC/Q, SLTJ/J			

SYSTEM: (43) SAMPLING

DRAWING NO: 47W625-15

VALVE NUMBER	ASME CLASS	COORDINATES	CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FSV-43-250	2	D-1	A-ACT	3/8	GA	SO	C	STC/CSD FSC/CSD SLTJ/J			CSJ-11
FSV-43-251	2	C-1	A-ACT	3/8	GA	SO	C	STC/CSD FSC/CSD SLTJ/J			CSJ-11
FSV-43-309	2	D-2	A-ACT	3/8	GA	SO	C	STC/CSD FSC/CSD SLTJ/J			CSJ-11
FSV-43-310	2	C-2	A-ACT	3/8	GA	SO	C	STC/CSD FSC/CSD SLTJ/J			CSJ-11
FSV-43-317	2	G-6	A-ACT	3/8	GA	SO	C	STC/CSD FSC/CSD SLTJ/J			CSJ-11
FSV-43-341	2	H-6	A-ACT	3/8	GA	SO	C	STC/CSD FSC/CSD SLTJ/J			CSJ-11
43-461	2	G-5	AC-ACT	3/8	CK	SA	C	CVC/CSD SLTJ/J			CSJ-11

SYSTEM: (59) DEMINERALIZED WATER & CASK DECONTAMINATION DRAWING NO: 47W856-1

VALVE NUMBER	ASME CLASS	CODE DRAWING NOTES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
59-522	2	F-3	A-PAS	2	GA	M	LC	SLTJ/J			
59-529	2	F-3	A-PAS	3/4	BUT	M	C	SLTJ/J			
59-633	2	F-3	AC-PAS	2	CK	SA	-	SLTJ/J			

SYSTEM: (61) ICE CONDENSER DRAWING NO: 47W814-2

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FCV-61-96	2	G-10	A-ACT	2	DIA	DIA	O	FSC/Q STC/Q, SLTJ/J			
FCV-61-97	2	G-10	A-ACT	2	DIA	DIA	O	FSC/Q STC/Q, SLTJ/J			
FCV-61-110	2	H-10	A-ACT	2	DIA	DIA	O	FSC/Q STC/Q, SLTJ/J			
FCV-61-122	2	H-10	A-ACT	2	DIA	DIA	O	FSC/Q STC/Q, SLTJ/J			
FCV-61-191	2	A-5	A-ACT	4	DIA	DIA	O	FSC/Q STC/Q, SLTJ/J			
FCV-61-192	2	A-5	A-ACT	4	DIA	DIA	O	FSC/Q STC/Q, SLTJ/J			
FCV-61-193	2	A-5	A-ACT	4	DIA	DIA	O	FSC/Q STC/Q, SLTJ/J			
FCV-61-194	2	A-5	A-ACT	4	DIA	DIA	O	FSC/Q STC/Q, SLTJ/J			
61-533	2	A-5	AC-PAS	3/8	SK	SA	C	SLTJ/J			TRCV
61-680	2	A-5	AC-PAS	3/8	SK	SA	C	SLTJ/J			TRCV
61-692	2	G-10	AC-PAS	3/8	SK	SA	C	SLTJ/J			TRCV
61-745	2	H-10	AC-PAS	3/8	SK	SA	C	SLTJ/J			TRCV

SYSTEM: (62) CHEMICAL & VOLUME CONTROL SYSTEM DRAWING NO: 47W809-1

VALVE NUMBER	ASME CLASS	CODE CATEGORY	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FCV-62-61	2	B-7	A-ACT	4	GA	MO	O	STC/RCP SLTJ/J			RCPJ-1
FCV-62-63	2	B-8	A-ACT	4	GL	MO	O	STC/RCP SLTJ/J			RCPJ-1
FCV-62-72	2	A-5	A-ACT	2	GL	DIA	C	FSC/CSD STC/CSD SLTJ/J			CSJ-14
FCV-62-73	2	A-4	A-ACT	2	GL	DIA	C	FSC/CSD STC/CSD SLTJ/J			CSJ-14
FCV-62-74	2	A-4	A-ACT	2	GL	DIA	C	FSC/CSD STC/CSD SLTJ/J			CSJ-14
FCV-62-77	2	A-7	A-ACT	2	GL	DIA	O	FSC/CSD STC/CSD SLTJ/J			CSJ-14
FCV-62-90	2	D-7	B-ACT	3	GA	MO	O	STC/CSD			CSJ-14
FCV-62-91	2	D-8	B-ACT	3	GA	MO	O	STC/CSD			CSJ-14
LCV-62-132	2	E-10	B-ACT	4	GA	MO	O	STC/CSD			CSJ-12
LCV-62-133	2	E-10	B-ACT	4	GA	MO	O	STC/CSD			CSJ-12
LCV-62-135	2	H-10	B-ACT	8	GA	MO	C	STO/CSD			CSJ-12
LCV-62-136	2	H-10	B-ACT	8	GA	MO	C	STO/CSD			CSJ-12
FCV-62-69*	1	A-2	B-ACT	3	GL	DIA	O	STC/CSD FSC/CSD			CSJ-14
FCV-62-70*	1	A-2	B-ACT	3	GL	DIA	O	STC/CSD FSC/CSD			CSJ-14

SYSTEM: (62) CHEMICAL & VOLUME CONTROL SYSTEM DRAWING NO: 47W809-1

VALVE NUMBER	ASME CLASS	COORDINATES DRAWING	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FCV-62-9*	2	D-3	B-ACT	2	GL	DIA	O	FSO/RCP STC/RCP			RCPJ-2
FCV-62-22*	2	D-2	B-ACT	2	GL	DIA	O	FSO/RCP STC/RCP			RCPJ-2
FCV-62-35*	2	D-2	B-ACT	2	GL	DIA	O	FSO/RCP STC/RCP			RCPJ-2
FCV-62-48*	2	F-4	B-ACT	2	GL	DIA	O	FSO/RCP STC/RCP			RCPJ-2
FCV-62-54*	2	B-2	B-ACT	1	GL	DIA	C	FSC/Q STC/Q			
FCV-62-55*	2	B-3	B-ACT	1	GL	DIA	C	FSC/Q STC/Q			
FCV-62-83*	2	A-7	B-ACT	2	GL	DIA	C	FSC/Q STC/Q STO/Q			NO RPI
FCV-62-84*	2	B-2	B-ACT	2	GL	DIA	C	FSC/CSD STC/CSD			CSJ-13
FCV-62-85*	2	B-2	B-ACT	3	GL	DIA	C	FSO/CSD STO/CSD			CSJ-14
FCV-62-86*	2	A-2	B-ACT	3	GL	DIA	O	FSO/CSD STO/CSD			CSJ-14
62-504	2	H-10	C	8	CK	SA	-	CVFO/RO CVC/Q CVPO/CSD			ROJ-2
62-505	2	F-10	C	3/4	REL	SA	C	RV/RVF			
62-518	2	F-9	C	3/4	REL	SA	C	RV/RVF			NOT REQUIRED IF PD PUMP REMOVED/ISOL
62-519	2	F-9	C-ACT	3	CK	SA	C	CVC/Q			NOT REQUIRED IF PD PUMP REMOVED/ISOL
62-523	2	H-9	C	2	CK	SA	-	CVFO/RO CVPO/Q, CVC/Q			PUMP TEST ROJ-19

SYSTEM: (62) CHEMICAL & VOLUME CONTROL SYSTEM DRAWING NO: 47W809-1

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
62-525	2	H-9	C	4	CK	SA	C	CVFO/RO CVC/Q, CVPO/Q			PUMP TEST ROJ-1
62-530	2	G-9	C	2	CK	SA	-	CVFO/RO CVPO/Q, CVC/Q			PUMP TEST ROJ-19
62-532	2	G-9	C	4	CK	SA	C	CVFO/RO CVC/Q, CVPO/Q			PUMP TEST ROJ-1
62-543	2	A-7	C	3	CK	SA	O	CVFO/Q, CVC/CSD			CSJ-13
62-576*	2	E-3	C	2	CK	SA	O	CVFO/Q			ROJ-14
62-577*	2	E-2	C	2	CK	SA	O	CVFO/Q			ROJ-14
62-578*	2	G-2	C	2	CK	SA	O	CVFO/Q			ROJ-14
62-579*	2	G-3	C	2	CK	SA	O	CVFO/Q			ROJ-14
62-660*	2	A-2	C	3	CK	SA	C	CVFO/CSD			CSJ-15
62-717*	2	A-2	C	3	CK	SA	C	CVFO/CSD			CSJ-15
62-659*	2	B-2	C	3	CK	SA	O	CVFO/CSD			CSJ-15
62-716*	2	B-2	C	3	CK	SA	O	CVFO/CSD			CSJ-15
62-712*	2	A-9	C	3/4	CK	SA	C	CVC/Q			NOT REQUIRED IF GFFD ISOLATED 62-713

SYSTEM: (62) CHEMICAL & VOLUME CONTROL SYSTEM DRAWING NO: 47W809-1

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
62-560	1	F-7	C	2	CK	SA	O	CVC/RO, CVFO/Q			ROJ-14
62-561	1	F-7	C	2	CK	SA	O	CVC/RO, CVFO/Q			ROJ-14
62-562	1	H-6	C	2	CK	SA	O	CVC/RO, CVFO/Q			ROJ-14
62-563	1	H-6	C	2	CK	SA	O	CVC/RO, CVFO/Q			ROJ-14
62-636	2	B-6	C	2	REL	SA	C	RV/RVF			
62-639	2	C-7	AC-PAS	3/4	SK	SA	-	SLTJ/J			TRCV
62-649	2	C-9	C	2	REL	SA	C	RV/RVF			
62-662	2	A-3	AC-ACT	2	REL	SA	C	RV/RVF, SLTJ/J			
62-675	2	A-10	C	2	REL	SA	C	RV/RVF			
62-688	NNCC	C-10	C	3	REL	SA	C	RV/RVF			
62-697	2	E-10	C-ACT	4	CK	SA	-	CVO/Q			

SYSTEM: (62) CHEMICAL & VOLUME CONTROL SYSTEM DRAWING NO: 47W809-2

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FCV-62-138	3	A-4	B-ACT	3	GA	MO	C	STO/Q			
62-928 *	3	A-3	C	1	CK	SA	C	CVFO/CSD			CSJ-34
62-929 *	3	A-3	B-ACT	1	GL	M	C	MS/RO			ROJ-18
62-930 *	3	C-7	C	3	CK	SA	C	CVFO/CSD			CSJ-34
62-932 *	2	C-4	B-ACT	2	GL	M	C	MS/RO			ROJ-18
62-944 *	2	D-3	B-ACT	1	GL	M	C	MS/RO			ROJ-18

SYSTEM: (62) CHEMICAL & VOLUME CONTROL SYSTEM DRAWING NO: 47W809-3

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
62-955	3	C-7	C	4	REL	SA	C	RV/RVF			
62-1081 *	3	C-7	C	4	REL	SA	C	RV/RVF			

SYSTEM: (62) CHEMICAL & VOLUME CONTROL SYSTEM DRAWING NO: 47W809-5

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
62-1052A *	3	F-7	C	2	CK	SA	O	CVFO/Q			
62-1052B *	3	F-6	C	2	CK	SA	O	CVFO/Q			
FCV-62-237*	3	D-7	B-ACT	2	GL	DIA	O	FSC/Q STC/Q			NO RPI
FCV-62-241*	3	D-4	B-ACT	2	GL	DIA	O	FSC/Q STC/Q			NO RPI

SYSTEM: (63) SAFETY INJECTION SYSTEM DRAWING NO: 47W811-1

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FCV-63-1	2	F-10	B-ACT	12	GA	MO	O	STC/CSD			CSJ-16
FCV-63-3	2	D-8	B-ACT	2	GL	MO	O	STC/CSD			CSJ-17
FCV-63-4	2	D-8	B-ACT	2	GL	MO	O	STC/Q			
FCV-63-5	2	D-10	B-ACT	8	GA	MO	O	STC/CSD			CSJ-18
FCV-63-6	2	F-10	B-ACT	4	GA	MO	C	STO/Q			
FCV-63-7	2	F-10	B-ACT	4	GA	MO	C	STO/Q			
FCV-63-8	2	H-9	B-ACT	8	GA	MO	C	STO/CSD			CSJ-20
FCV-63-11	2	F-9	B-ACT	8	GA	MO	C	STO/CSD			CSJ-20
FCV-63-21 *	2	F-6	B-PAS	1	GL	DIA	C	RPI			
FCV-63-22	2	D-6	B-ACT	4	GA	MO	O	STC/CSD			CSJ-19
FCV-63-23	2	D-6	A-ACT	3/4	GA	DIA	O	FSC/Q STC/Q, SLTJ/J			
FCV-63-24 *	2	C-6	B-PAS	1	GL	DIA	C	RPI			
FCV-63-25	2	A-7	B-ACT	4	GA	MO	C	STO/Q			
FCV-63-26	2	B-7	B-ACT	4	GA	MO	C	STO/Q			
FCV-63-39	2	B-9	B-ACT	4	GA	MO	C	STO/Q			
FCV-63-40	2	C-9	B-ACT	4	GA	MO	C	STO/Q			

SYSTEM: (63) SAFETY INJECTION SYSTEM DRAWING NO: 47W811-1

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FCV-63-47	2	E-10	B-ACT	6	GA	MO	O	STO/CSD			CSJ-35
FCV-63-48	2	D-10	B-ACT	6	GA	MO	O	STO/Q			
FCV-63-63 *	2	A-5	B-ACT	1	GL	DIA	C	FSC/CSD STO/CSD			CSJ-33
FCV-63-67 *	2	B-5	B-ACT	10	GA	MO	O	STO/CSD			CSJ-32
FCV-63-68*	2	C-5	B-PAS	3/4	GL	DIA	C	RPI			
FCV-63-69*	2	H-2	B-PAS	3/4	GL	DIA	C	RPI			
FCV-63-70*	2	B-6	B-PAS	1	GL	DIA	C	RPI			
FCV-63-71	2	C-6	A-ACT	3/4	GL	DIA	C	FSC/Q STC/Q, SLTJ/J			
FCV-63-72	2	H-6	B-ACT	18	GA	MO	C	STO/CSD			CSJ-20
FCV-63-73	2	H-6	B-ACT	18	GA	MO	C	STO/CSD			CSJ-20
FCV-63-77 *	2	B-4	B-PAS	1	GL	DIA	C	RPI			
FCV-63-78 *	2	C-4	B-PAS	3/4	GL	DIA	C	RPI			
FCV-63-79 *	2	G-5	B-PAS	3/4	GL	DIA	C	RPI			
FCV-63-80 *	2	B-4	B-ACT	3/10	GA	MO	O	STO/CSD			CSJ-32
FCV-63-84	2	C-6	A-ACT	3/4	GL	DIA	C	FSC/Q STC/Q, SLTJ/J			
FCV-63-87 *	2	A-4	B-ACT	1	GL	DIA	C	FSC/CSD STO/CSD			CSJ-33

SYSTEM: (63) SAFETY INJECTION SYSTEM DRAWING NO: 47W811-1

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FCV-63-93	2	G-7	B-ACT	8	GA	MO	O	STC/CSD			CSJ-21
FCV-63-94	2	G-7	B-ACT	8	GA	MO	O	STC/CSD			CSJ-21
FCV-63-95 *	2	B-3	B-PAS	1	GL	DIA	C	RPI			
FCV-63-96 *	2	C-2	B-PAS	3/4	GL	DIA	C	RPI			
FCV-63-97 *	2	H-4	B-PAS	3/4	GL	DIA	C	RPI			
FCV-63-98 *	2	B-2	B-ACT	10	GA	MO	O	STO/CSD			CSJ-32
FCV-63-107*	2	A-2	B-ACT	1	GL	DIA	C	FSC/CSD STO/CSD			CSJ-33
FCV-63-111*	2	H-6	B-PAS	3/4	GL	DIA	C	RPI			
FCV-63-112*	2	H-6	B-PAS	3/4	GL	DIA	C	RPI			
FCV-63-115*	2	B-2	B-PAS	1	GL	DIA	C	RPI			
FCV-63-116*	2	C-1	B-PAS	3/4	GL	DIA	C	RPI			
FCV-63-117*	2	H-1	B-PAS	3/4	GL	DIA	C	RPI			
FCV-63-113 *	2	B-1	B-ACT	10	GA	MO	O	STO/CSD			CSJ-32
FCV-63-121*	2	E-5	B-PAS	3/4	GL	DIA	C	RPI			
FCV-63-127*	2	A-2	B-ACT	1	GL	DIA	C	FSC/CSD STO/CSD			CSJ-33

SYSTEM: (63) SAFETY INJECTION SYSTEM DRAWING NO: 47W811-1

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FCV-63-152	2	D-7	B-ACT	4	GA	MO	O	STC/Q			
FCV-63-153	2	E-7	B-ACT	4	GA	MO	O	STC/Q			
FCV-63-156	2	E-6	B-ACT	4	GA	MO	C	STO/Q			
FCV-63-157	2	D-6	B-ACT	4	GA	MO	C	STO/Q			
FCV-63-158*	2	F-5	B-PAS	3/4	GL	DIA	C	RPI			
FCV-63-163*	2	G-5	B-PAS	3/4	GL	DIA	C	RPI			
FCV-63-164*	2	F-4	B-PAS	3/4	GL	DIA	C	RPI			
FCV-63-165*	2	C-3	B-PAS	3/4	GL	DIA	C	RPI			
FCV-63-166*	2	E-5	B-PAS	3/4	GL	DIA	C	RPI			
FCV-63-167*	2	D-5	B-PAS	3/4	GL	DIA	C	RPI			
FCV-63-172	2	F-5	B-ACT	12	GA	MO	C	STO/CSD			CSJ-21
FCV-63-174*	2	C-6	B-PAS	3/4	GL	DIA	C	RPI			
FCV-63-175	2	D-8	B-ACT	2	GL	MO	O	STC/Q			

SYSTEM: (63) SAFETY INJECTION SYSTEM DRAWING NO: 47W811-1

VALVE NUMBER	ASME CLASS	COORDINATES DRAWING	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
63-344E	2	C-6	A-PAS	1/8	GA	M	C	SLTJ/J			
63-502	2	F-10	C	12	CK	SA	-	CVC/CSD CVFO/RO			ROJ-3
63-510	2	D-10	C	8	CK	SA	-	CVPO/Q CVC/CSD CVFO/RO			ROJ-4 CSJ-22 PUMP TEST
63-511	2	D-10	C	3/4	REL	SA	C	RV/RVF			
63-524	2	E-8	C	4	CK	SA	-	CVPO/CSD CVC/Q CVFO/RO			ROJ-10 PUMP TEST
63-526	2	D-8	C	4	CK	SA	-	CVPO/CSD CVC/Q CVFO/RO			ROJ-10 PUMP TEST
63-528	2	E-8	C	3/4	CK	SA	-	CVC/Q CVFO/Q			PUMP TEST
63-530	2	D-8	C	3/4	CK	SA	-	CVC/Q CVFO/Q			PUMP TEST
63-534	2	E-7	C	3/4	REL	SA	C	RV/RVF			
63-535	2	D-7	C	3/4	REL	SA	C	RV/RVF			
63-536	2	D-7	C	3/4	REL	SA	C	RV/RVF			
63-543	1	F-4	AC-ACT	2	CK	SA	-	CVPO/CSD9 CVFO/RO SLTP/TS			ROJ-5
63-545	1	E-4	AC-ACT	2	CK	SA	-	CVPO/CSD9 CVFO/RO SLTP/TS			ROJ-5
63-547	1	D-4	AC-ACT	2	CK	SA	-	CVPO/CSD9 CVFO/RO SLTP/TS			ROJ-5
63-549	1	E-4	AC-ACT	2	CK	SA	-	CVPO/CSD9 CVFO/RO SLTP/TS			ROJ-5

SYSTEM: (63) SAFETY INJECTION SYSTEM DRAWING NO: 47W811-1

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
63-551	1	G-1	AC-ACT	2	CK	SA	-	CVPO/CSD9 CVFO/RO SLTP/TS			ROJ-5
63-553	1	H-3	AC-ACT	2	CK	SA	-	CVPO/CSD9 CVFO/RO SLTP/TS			ROJ-5
63-555	1	G-3	AC-ACT	2	CK	SA	-	CVPO/CSD9 CVFO/RO SLTP/TS			ROJ-5
63-557	1	G-2	AC-ACT	2	CK	SA	-	CVPO/CSD9 CVFO/RO SLTP/TS			ROJ-5
63-558	1	E-3	AC-ACT	6	CK	SA	-	CVPO/CSD9 CVFO/RO SLTP/TS			ROJ-5
63-559	1	D-1	AC-ACT	6	CK	SA	-	CVPO/CSD9 CVFO/RO SLTP/TS			ROJ-5
63-560	1	E-1	AC-ACT	10	CK	SA	-	CVPO/CSD9 DI/DIF SLTP/TS	X	YES	SEE RV-1 ROJ-11 CSJ-23
63-561	1	D-2	AC-ACT	10	CK	SA	-	CVPO/CSD9 DI/DIF SLTP/TS	X	YES	SEE RV-1 ROJ-11 CSJ-23
63-562	1	D-3	AC-ACT	10	CK	SA	-	CVPO/CSD9 DI/DIF SLTP/TS	X	YES	SEE RV-1 ROJ-11 CSJ-23

SYSTEM: (63) SAFETY INJECTION SYSTEM DRAWING NO: 47W811-1

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
63-563	1	F-2	AC-ACT	10	CK	SA	-	CVPO/CSD9 DI/DIF SLTP/TS	X	YES	SEE RV-1 ROJ-11 CSJ-23
63-577	2	A-8	C	3/4	REL	SA	C	RV/RVF			
63-581	1	B-7	C	3	CK	SA	-	CVPO/CSD CVC/Q, CVFO/RO			ROJ-6
63-586	1	E-1	C	1-1/2	CK	SA	-	CVPO/CSD CVC/Q, CVFO/RO			ROJ-6
63-587	1	D-2	C	1-1/2	CK	SA	-	CVPO/CSD CVC/Q, CVFO/RO			ROJ-6
63-588	1	D-3	C	1-1/2	CK	SA	-	CVPO/CSD CVC/Q, CVFO/RO			ROJ-6
63-589	1	E-2	C	1-1/2	CK	SA	-	CVPO/CSD CVC/Q, CVFO/RO			ROJ-6
63-602	3	A-1	C	1	REL	SA	C	RV/RVF			
63-603	3	A-3	C	1	REL	SA	C	RV/RVF			
63-604	3	A-4	C	1	REL	SA	C	RV/RVF			
63-605	3	A-6	C	1	REL	SA	C	RV/RVF			
63-622	1	C-1	AC-ACT	10	CK	SA	-	CVPO/CSD9 DI/DIF SLTP/TS	X	YES	SEE RV-1 ROJ-7
63-623	1	C-2	AC-ACT	10	CK	SA	-	CVPO/CSD9 DI/DIF SLTP/TS	X	YES	SEE RV-1 ROJ-7
63-624	1	C-3	AC-ACT	10	CK	SA	-	CVPO/CSD9 DI/DIF SLTP/TS	X	YES	SEE RV-1 ROJ-7

SYSTEM: (63) SAFETY INJECTION SYSTEM DRAWING NO: 47W811-1

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
63-625	1	C-3	AC-ACT	10	CK	SA	-	CVPO/CSD9 DI/DIF SLTP/TS	X	YES	SEE RV-1 ROJ-7
63-626	2	G-7	C	2	REL	SA	C	RV/RVF			
63-627	2	G-7	C	2	REL	SA	C	RV/RVF			
63-632	1	G-3	AC-ACT	6	CK	SA	-	CVPO/CSD9 DI/DIF SLTP/TS	X	YES	SEE RV-1 ROJ-8 CSJ-23
63-633	1	G-2	AC-ACT	6	CK	SA	-	CVPO/CSD9 DI/DIF SLTP/TS	X	YES	SEE RV-1 ROJ-8 CSJ-23
63-634	1	G-3	AC-ACT	6	CK	SA	-	CVPO/CSD9 DI/DIF SLTP/TS	X	YES	SEE RV-1 ROJ-8 CSJ-23
63-635	1	G-2	AC-ACT	6	CK	SA	-	CVPO/CSD9 DI/DIF SLTP/TS	X	YES	SEE RV-1 ROJ-8 CSJ-23
63-637	2	F-6	C	3/4	REL	SA	C	RV/RVF			
63-640	1	F-4	AC-ACT	8	CK	SA	-	CVPO/CSD9 DI/DIF SLTP/TS	X	YES	SEE RV-1 ROJ-8 CSJ-23
63-641	1	F-2	AC-ACT	6	CK	SA	-	CVPO/CSD9 DI/DIF SLTP/TS	X	YES	SEE RV-1 ROJ-8 CSJ-23
63-643	1	F-4	AC-ACT	8	CK	SA	-	CVPO/CSD9 DI/DIF SLTP/TS	X	YES	SEE RV-1 ROJ-8 CSJ-23
63-644	1	D-2	AC-ACT	6	CK	SA		CVPO/CSD9 DI/DIF SLTP/TS	X	YES	SEE RV-1 ROJ-8 CSJ-23

SYSTEM: (63) SAFETY INJECTION SYSTEM

DRAWING NO: 47W830-6

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FCV-63-64	N	B-6	A-ACT	1	GL	DIA	C	FSC/Q STC/Q, SLTJ/J			

SYSTEM: (67) ESSENTIAL RAW COOLING WATER DRAWING NO: 47W845-1

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FCV-67-66	3	C-11	B-ACT	6	BUT	MO	C	STO/Q			
FCV-67-67	3	C-7	B-ACT	6	BUT	MO	C	STO/Q			
67-508A	3	C-11	C-ACT	6	CK	SA	-	CVFO/Q,			
67-508B	3	C-8	C-ACT	6	CK	SA	-	CVFO/Q,			
67-512A	3	C-10	C-ACT	8	CK	SA	-	CVFO/Q, DI/DIF	X	YES	IEB 83-03, DG TEST, SEE RV-1 ROJ-16
67-512B	3	C-9	C-ACT	8	CK	SA	-	CVFO/Q, DI/DIF	X	YES	IEB 83-03, DG TEST, SEE RV-1 ROJ-16
67-517A	3	C-8	C-ACT	8	CK	SA	-	CVFO/Q, DI/DIF	X	YES	IEB 83-03, DG TEST, SEE RV-1 ROJ-16
67-517B	3	C-10	C-ACT	8	CK	SA	-	CVFO/Q, DI/DIF	X	YES	IEB 83-03, DG TEST, SEE RV-1 ROJ-16

SYSTEM: (67) ESSENTIAL RAW COOLING WATER DRAWING NO: 47W845-2

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FCV-67-123	3	C-9	B-ACT	24	BUT	MO	C	STO/**			ROJ-15
FCV-67-124	3	E-8	B-ACT	18	BUT	MO	C	STO/**			ROJ-15
FCV-67-125	3	C-8	B-ACT	18	BUT	MO	C	STO/**			ROJ-15
FCV-67-126	3	D-7	B-ACT	18	BUT	MO	C	STO/**			ROJ-15
FCV-67-146	3	C-7	B-ACT	24	BUT	MO	O	STO/CSD			CSJ-25
0-FCV-67-152	3	C-7	B-ACT	24	BUT	MO	C	STO/Q			

**Full stroke exercise these valves at least once each refueling outage or each time the heat exchanger chemistry requires cleanup/layup operations, but at a frequency not to exceed once per quarter (92 days).

SYSTEM: (67) ESSENTIAL RAW COOLING WATER DRAWING NO: 47W845-2

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
67-544 *	3	C-10	B-ACT	3	BUT	M	C	MS/RO			ROJ-18
67-543A*	3	C-10	B-ACT	3	BUT	M	C	MS/RO			ROJ-18
67-543B*	3	C-10	B-ACT	3	BUT	M	C	MS/RO			ROJ-18

SYSTEM: (67) ESSENTIAL RAW COOLING WATER DRAWING NO: 47W845-3

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FCV-67-83	2	G-4	A-ACT	6	BUT	MO	O	STC/CSD, SLTJ/J			CSJ-24
FCV-67-84	3	H-4	B-ACT	4	GL	DIA	O/C	FSO/Q, STO/Q			
FCV-67-87	2	G-4	A-ACT	6	BUT	MO	O	STC/CSD, SLTJ/J			CSJ-24
FCV-67-88	2	G-4	A-ACT	6	BUT	MO	O	STC/CSD, SLTJ/J			CSJ-24
FCV-67-89	2	D-4	A-ACT	6	BUT	MO	O	STC/CSD, SLTJ/J			CSJ-24
FCV-67-90	2	E-4	A-ACT	6	BUT	MO	O	STC/CSD, SLTJ/J			CSJ-24
FCV-67-91	2	F-4	A-ACT	6	BUT	MO	O	STC/CSD, SLTJ/J			CSJ-24
FCV-67-92	3	G-4	B-ACT	4	GL	DIA	O/C	FSO/Q, STO/Q			
FCV-67-95	2	F-4	A-ACT	6	BUT	MO	O	STC/CSD, SLTJ/J			CSJ-24
FCV-67-96	2	F-4	A-ACT	6	BUT	MO	O	STC/CSD, SLTJ/J			CSJ-24
FCV-67-99	2	E-4	A-ACT	6	BUT	MO	O	STC/CSD, SLTJ/J			CSJ-24
FCV-67-100	3	F-4	B-ACT	4	GL	DIA	O/C	FSO/Q, STO/Q			
FCV-67-103	2	E-4	A-ACT	6	BUT	MO	O	STC/CSD, SLTJ/J			CSJ-24
FCV-67-104	2	E-4	A-ACT	6	BUT	MO	O	STC/CSD, SLTJ/J			CSJ-24
FCV-67-105	2	F-4	A-ACT	6	BUT	MO	O	STC/CSD, SLTJ/J			CSJ-24
FCV-67-106	2	G-4	A-ACT	6	BUT	MO	O	STC/CSD, SLTJ/J			CSJ-24
FCV-67-107	2	D-4	A-ACT	6	BUT	MO	O	STC/CSD, SLTJ/J			CSJ-24

SYSTEM: (67) ESSENTIAL RAW COOLING WATER DRAWING NO: 47W845-3

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FCV-67-111	2	D-4	A-ACT	6	BUT	MO	O	STC/CSD, SLTJ/J			CSJ-24
FCV-67-112	2	D-4	A-ACT	6	BUT	MO	O	STC/CSD, SLTJ/J			CSJ-24
FCV-67-130	2	C-4	A-ACT	2	GA	MO	O	STC/Q, SLTJ/J			
FCV-67-131	2	C-4	A-ACT	2	GA	MO	O	STC/Q, SLTJ/J			
FCV-67-133	2	B-4	A-ACT	2	GA	MO	O	STC/Q, SLTJ/J			
FCV-67-134	2	C-4	A-ACT	2	GA	MO	O	STC/Q, SLTJ/J			
FCV-67-138	2	B-4	A-ACT	2	GA	MO	O	STC/Q, SLTJ/J			
FCV-67-139	2	B-4	A-ACT	2	GA	MO	O	STC/Q, SLTJ/J			
FCV-67-141	2	A-4	A-ACT	2	GA	MO	O	STC/Q, SLTJ/J			
FCV-67-142	2	A-4	A-ACT	2	GA	MO	O	STC/Q, SLTJ/J			
FCV-67-295	2	C-4	A-ACT	2	GA	MO	O	STC/Q, SLTJ/J			
FCV-67-296	2	C-4	A-ACT	2	GA	MO	O	STC/Q, SLTJ/J			
FCV-67-297	2	B-4	A-ACT	2	GA	MO	O	STC/Q, SLTJ/J			
FCV-67-298	2	A-4	A-ACT	2	GA	MO	O	STC/Q, SLTJ/J			
FCV-67-108	3	E-4	B-ACT	4	GL	DIA	O/C	FSO/Q, STO/Q			

SYSTEM: (67) ESSENTIAL RAW COOLING WATER DRAWING NO: 47W845-3

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
67-575A	2	G-4	AC-PAS	1/2	CK	SA	-	SLTJ/J			TRCV
67-575B	2	E-4	AC-PAS	1/2	CK	SA	-	SLTJ/J			TRCV
67-575C	2	F-4	AC-PAS	1/2	CK	SA	-	SLTJ/J			TRCV
67-575D	2	D-4	AC-PAS	1/2	CK	SA	-	SLTJ/J			TRCV
67-580A	2	C-3	AC-ACT	2	CK	SA	-	CVC/Q, SLTJ/J			
67-580B	2	B-3	AC-ACT	2	CK	SA	-	CVC/Q, SLTJ/J			
67-580C	2	B-3	AC-ACT	2	CK	SA	-	CVC/Q, SLTJ/J			
67-580D	2	A-3	AC-ACT	2	CK	SA	-	CVC/Q, SLTJ/J			
67-585A	2	C-4	AC-PAS	1/2	CK	SA	-	SLTJ/J			TRCV
67-585B	2	B-4	AC-PAS	1/2	CK	SA	-	SLTJ/J			TRCV
67-585C	2	C-4	AC-PAS	1/2	CK	SA	-	SLTJ/J			TRCV
67-585D	2	A-4	AC-PAS	1/2	CK	SA	-	SLTJ/J			TRCV
67-1523A	2	H-5	AC-PAS	1/2	CK	SA	-	SLTJ/J			TRCV
67-1523B	2	F-5	AC-PAS	1/2	CK	SA	-	SLTJ/J			TRCV
67-1523C	2	G-5	AC-PAS	1/2	CK	SA	-	SLTJ/J			TRCV
67-1523D	2	D-5	AC-PAS	1/2	CK	SA	-	SLTJ/J			TRCV

SYSTEM: (67) ESSENTIAL RAW COOLING WATER DRAWING NO: 47W845-4

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
2-FCV-67-176	3	D-7	B-ACT	1-1/2	GA	DIA	C	STO/Q FSO/Q			No remote indicator
2-FCV-67-182	3	D-9	B-ACT	1-1/2	GA	DIA	C	STO/Q FSO/Q			No remote indicator
2-FCV-67-184	3	D-7	B-ACT	1-1/2	GA	DIA	C	STO/Q FSO/Q			No remote indicator
2-FCV-67-186	3	D-9	B-ACT	1-1/2	GA	DIA	C	STO/Q FSO/Q			No remote indicator
2-FCV-67-217	3	B-2	B-ACT	2	GA	DIA	O	STO/Q FSO/Q			No remote indicator
2-FCV-67-219	3	B-4	B-ACT	2	GA	DIA	O	STO/Q FSO/Q			No remote indicator
2-FCV-67-336	3	A-2	B-ACT	1	GA	DIA	O	STO/Q FSO/Q			No remote indicator
2-FCV-67-338	3	A-4	B-ACT	1	GA	DIA	O	STO/Q FSO/Q			No remote indicator
2-FCV-67-342	3	G-7	B-ACT	2	GA	DIA	O	STO/Q FSO/Q			No remote indicator
2-FCV-67-344	3	G-9	B-ACT	2	GA	DIA	C	STO/Q FSO/Q			No remote indicator

SYSTEM: (67) ESSENTIAL RAW COOLING WATER DRAWING NO: 47W845-4

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
2-FCV-67-346	3	E-8	B-ACT	1-1/2	GA	DIA	O	STO/Q FSO/Q			No remote indicator
2-FCV-67-348	3	E-9	B-ACT	1-1/2	GA	DIA	C	STO/Q FSO/Q			No remote indicator
2-FCV-67-350	3	E-7	B-ACT	1-1/2	GA	DIA	O	STO/Q FSO/Q			No remote indicator
2-FCV-67-352	3	E-9	B-ACT	1-1/2	GA	DIA	C	STO/Q FSO/Q			No remote indicator
2-FCV-67-354	3	F-7	B-ACT	1-1/2	GA	DIA	O	STO/Q FSO/Q			No remote indicator
2-FCV-67-356	3	F-9	B-ACT	1-1/2	GA	DIA	C	STO/Q FSO/Q			No remote indicator
FSV-32-87 *	3	B-7	B-ACT	1	GA	SO	C	ST/Q FSO/Q	RV-2	YES	No remote indicator
2-67-1521	3	A-7	C	3/4	REL	SA	C	RV/RVF			

SYSTEM: (67) ESSENTIAL RAW COOLING WATER DRAWING NO: 4 4845-5

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
0-FCV-67-205	3	G-9	B-ACT	6	BUT	MO	O	STC/Q			
0-FCV-67-208	3	G-10	B-ACT	6	BUT	MO	O	STC/Q			
FCV-67-489 *	3	B-4	B-ACT	24	BUT	MO	O	STC/CSD			CSJ-31
FCV-67-492 *	3	D-4	B-ACT	24	BUT	MO	O	STC/CSD			CSJ-31
FCV-67-491A *	3	C-5	B-ACT	4	BUT	MO	C	STO/Q			
FCV-67-491D *	3	C-5	B-ACT	4	BUT	MO	C	STO/Q			
FCV-67-490A *	3	D-5	B-ACT	4	BUT	MO	C	STO/Q			
FCV-67-490D *	3	D-5	B-ACT	4	BUT	MO	C	STO/Q			
67-723A	3	B-3	C	24	CK	SA	-	CVFO/Q, CVC/Q			PUMP TEST
67-723B	3	D-3	C	24	CK	SA	-	CVFO/Q, CVC/Q			PUMP TEST
67-724A	3	B-3	C	24	CK	SA	-	CVFO/Q, CVC/Q			PUMP TEST
67-724B	3	D-3	C	24	CK	SA	-	CVFO/Q, CVC/Q			PUMP TEST

SYSTEM: (67) ESSENTIAL RAW COOLING WATER DRAWING NO: 47W845-5

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
67-743A	3	G-3	C	24	CK	SA	-	CVFO/Q, CVC/Q			PUMP TEST
67-743B	3	E-3	C	24	CK	SA	-	CVFO/Q, CVC/Q			PUMP TEST
67-744A	3	G-3	C	24	CK	SA	-	CVFO/Q, CVC/Q			PUMP TEST
67-744B	3	E-3	C	24	CK	SA	-	CVFO/Q, CVC/Q			PUMP TEST
67-719A *	3	B-3	C	2	CK	SA	-	CVFO/Q, CVC/Q	RV-5	YES	PUMP TEST
67-719B *	3	C-3	C	2	CK	SA	-	CVFO/Q, CVC/Q	RV-5	YES	PUMP TEST
67-720A *	3	B-3	C	2	CK	SA	-	CVFO/Q, CVC/Q	RV-5	YES	PUMP TEST
67-720B *	3	D-3	C	2	CK	SA	-	CVFO/Q, CVC/Q	RV-5	YES	PUMP TEST
67-739A *	3	F-3	C	2	CK	SA	-	CVFO/Q, CVC/Q	RV-5	YES	PUMP TEST
67-739B *	3	D-3	C	2	CK	SA	-	CVFO/Q, CVC/Q	RV-5	YES	PUMP TEST
67-740A *	3	G-3	C	2	CK	SA	-	CVFO/Q, CVC/Q	RV-5	YES	PUMP TEST
67-740B *	3	E-3	C	2	CK	SA	-	CVFO/Q, CVC/Q	RV-5	YES	PUMP TEST

SYSTEM: (67) ESSENTIAL RAW COOLING WATER DRAWING NO: 47W845-5

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
67-743A	3	G-3	C	24	CK	SA	-	CVFO/Q, CVC/Q			PUMP TEST
67-743B	3	E-3	C	24	CK	SA	-	CVFO/Q, CVC/Q			PUMP TEST
67-744A	3	G-3	C	24	CK	SA	-	CVFO/Q, CVC/Q			PUMP TEST
67-744B	3	E-3	C	24	CK	SA	-	CVFO/Q, CVC/Q			PUMP TEST
67-719A *	3	B-3	C	2	CK	SA	-	CVFO/Q, CVC/Q			PUMP TEST
67-719B *	3	C-3	C	2	CK	SA	-	CVFO/Q, CVC/Q			PUMP TEST
67-720A *	3	B-3	C	2	CK	SA	-	CVFO/Q, CVC/Q			PUMP TEST
67-720B *	3	D-3	C	2	CK	SA	-	CVFO/Q, CVC/Q			PUMP TEST
67-739A *	3	F-3	C	2	CK	SA	-	CVFO/Q, CVC/Q			PUMP TEST
67-739B *	3	D-3	C	2	CK	SA	-	CVFO/Q, CVC/Q			PUMP TEST
67-740A *	3	G-3	C	2	CK	SA	-	CVFO/Q, CVC/Q			PUMP TEST
67-740B *	3	E-3	C	2	CK	SA	-	CVFO/Q, CVC/Q			PUMP TEST

SYSTEM: (67) ESSENTIAL RAW COOLING WATER DRAWING NO: 47W845-6

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
1-FCV-67-162	3	B-7	B-ACT	2	GA	DIA	O	STO/Q FSO/Q			No remote indicator
1-FCV-67-164	3	B-9	B-ACT	2	GA	DIA	C	STO/Q FSO/Q			No remote indicator
1-FCV-67-176	3	D-7	B-ACT	1-1/2	GA	DIA	C	STO/Q FSO/Q			No remote indicator
1-FCV-67-182	3	D-9	B-ACT	1-1/2	GA	DIA	C	STO/Q FSO/Q			No remote indicator
1-FCV-67-184	3	D-7	B-ACT	1-1/2	GA	DIA	C	STO/Q FSO/Q			No remote indicator
1-FCV-67-186	3	D-9	B-ACT	1-1/2	GA	DIA	C	STO/Q FSO/Q			No remote indicator
1-FCV-67-213	3	B-7	B-ACT	1-1/2	GA	DIA	O	STO/Q FSO/Q			No remote indicator
1-FCV-67-215	3	B-9	B-ACT	1-1/2	GA	DIA	C	STO/Q FSO/Q			No remote indicator
1-FCV-67-342	3	G-7	B-ACT	2	GA	DIA	O	STO/Q FSO/Q			No remote indicator
1-FCV-67-344	3	G-9	B-ACT	2	GA	DIA	C	STO/Q FSO/Q			No remote indicator

SYSTEM: (67) ESSENTIAL RAW COOLING WATER DRAWING NO: 47W845-6

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
1-FCV-67-346	3	E-8	B-ACT	1-1/2	GA	DIA	O	STO/Q FSO/Q			No remote indicator
1-FCV-67-348	3	E-9	B-ACT	1-1/2	GA	DIA	C	STO/Q FSO/Q			No remote indicator
1-FCV-67-350	3	E-7	B-ACT	1-1/2	GA	DIA	O	STO/Q FSO/Q			No remote indicator
1-FCV-67-352	3	E-9	B-ACT	1-1/2	GA	DIA	C	STO/Q FSO/Q			No remote indicator
1-FCV-67-354	3	F-7	B-ACT	1-1/2	GA	DIA	O	STO/Q FSO/Q			No remote indicator
1-FCV-67-356	3	F-9	B-ACT	1-1/2	GA	DIA	C	STO/Q FSO/Q			No remote indicator
1-67-1521	3	A-7	C	3/4	REL	SA	C	RV/RVF			
FSV-32-61 *	3	A-4	B-ACT	1	GA	SO	C	ST/Q FSO/Q	RV-2	YES	No remote indicator

SYSTEM: (68) REACTOR COOLANT SYSTEM DRAWING NO: 47W830-6

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FCV-68-305	NNCC	G-6	A-ACT	3/4	GL	DIA	C	FSC/Q STC/Q, SLTJ/J			

SYSTEM: (68) REACTOR COOLANT SYSTEM DRAWING NO: 47W625-8

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FCV-68-307	NNCC	G-2	A-ACT	3/8	GA	DIA	C	FSC/Q STC/Q, SLTJ/J			SEE 47W813-1 ALSO
FCV-68-308	NNCC	F-1	A-ACT	3/8	GA	DIA	C	FSC/Q STC/Q, SLTJ/J			SEE 47W813-1 ALSO

SYSTEM: (68) REACTOR COOLANT SYSTEM DRAWING NO: 47W813-1

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FCV-68-307	NNCC	A-9	A-ACT	3/8	GA	DIA	C	FSC/Q STC/Q, SLTJ/J			SEE 47W625-8
FCV-68-308	NNCC	A-10	A-ACT	3/8	GA	DIA	C	FSC/Q STC/Q, SLTJ/J			SEE 47W625-8
FCV-68-332	1	B-3	B-ACT	3	GA	MO	O	STC/Q			
FCV-68-333	1	B-3	B-ACT	3	GA	MO	O	STC/Q			
PCV-68-334	1	B-3	B-ACT	3	GL	SO	C	STO/CSD FSC/CSD STC/CSD			CSJ-26
PCV-68-340A	1	B-3	B-ACT	3	GL	SO	C	STO/CSD FSC/CSD STC/CSD			CSJ-26
FSV-68-394	1	C-7	B-ACT	1	GL	SO	C	STO/CSD FSC/CSD STC/CSD			CSJ-26, ROJ-13
FSV-68-395	1	C-7	B-ACT	1	GL	SO	C	STO/CSD FSC/CSD STC/CSD			CSJ-26, ROJ-13
FSV-68-396	1	C-7	B-ACT	1	GL	SO	C	STO/CSD FSC/CSD STC/CSD	RV-6	YES	CSJ-26, ROJ-13
FSV-68-397	1	C-7	B-ACT	1	GL	SO	C	STO/CSD FSC/CSD STC/CSD	RV-6	YES	CSJ-26, ROJ-13
68-559	1	C-9	C	4	CK	SA	-	DI/DIF	X		See RV-1 ROJ-12
68-563	1	A-3	C	6	REL	SA	C	RV/RVF			
68-564	1	A-4	C	6	REL	SA	C	RV/RVF			
68-565	1	A-4	C	6	REL	SA	C	RV/RVF			
FCV-68-22	2	D-6	B-ACT	3/8	GL	DIA	O/C	ST/Q RPI/2Y			

SYSTEM: (70) COMPONENT COOLING SYSTEM DRAWING NO: 47W859-1

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
0-FCV-70-1	3	H-6	B-ACT	12	BUT	MO	O	STO/Q			
1-FCV-70-9 *	3	C-5	B-ACT	20	BUT	MO	C	STO/Q			
1-FCV-70-10 *	3	C-5	B-ACT	20	BUT	MO	C	STO/Q			
0-FCV-70-11	3	H-5	B-ACT	12	BUT	MO	O	STO/Q			

SYSTEM: (70) COMPONENT COOLING SYSTEM DRAWING NO: 47W859-1

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
0-FCV-70-40 *	3	G-4	B-PAS	12	BUT	MO	O	RPI			
0-FCV-70-41 *	3	G-5	B-PAS	12	BUT	MO	O	RPI			
LCV-70-63 *	3	G-2	B-ACT	3	GL	DIA	C	FSC/Q STO/Q			
FCV-70-66	3	F-3	B-ACT	2	AN	DIA	O	FSC/Q STC/Q			

SYSTEM: (70) COMPONENT COOLING SYSTEM DRAWING NO: 47W859-1

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
0-FCV-70-193	3	B-4	B-ACT	20	BUT	MO	O	STC/Q			
0-FCV-70-194	3	B-4	B-ACT	20	BUT	MO	O	STC/Q			
0-FCV-70-197	3	B-6	B-ACT	20	BUT	MO	O	STC/Q			
0-FCV-70-198	3	B-6	B-ACT	20	BUT	MO	O	STC/Q			
0-FCV-70-206	3	G-10	B-ACT	10	BUT	MO	O	STC/Q			
FCV-70-207	3	A-2	B-ACT	10	BUT	MO	O	STC/Q			
0-FCV-70-208	3	B-1	B-ACT	10	BUT	MO	O	STC/Q			

SYSTEM: (70) COMPONENT COOLING SYSTEM DRAWING NO: 47W859-1

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
70-504	3	E-8	C	16	CK	SA	-	CVFO/Q, CVC/Q			PUMP TEST
70-504A	3	C-8	C	16	CK	SA	-	CVFO/Q, CVC/Q			PUMP TEST
70-504B	3	D-8	C	16	CK	SA	-	CVFO/Q, CVC/Q			PUMP TEST

SYSTEM: (70) COMPONENT COOLING SYSTEM DRAWING NO: 47W859-1

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
70-531 *	3	D-9	B-ACT	16	BUT	M	O	MS/RO			ROJ-18
70-535 *	3	H-7	C	1 1/4	CK	SA	C	CVC/Q			
70-538	3	F-3	C	3	REL	SA	C	RV/RVF			
70-539 *	3	F-3	C	3	REL	SA	C	RV/RVF			
70-540 *	3	F-2	B-ACT	3	GA	M	O	MS/RO			ROJ-18
70-541 *	3	F-2	C	3	CK	SA	C	DI			DISASSEMBLE EVERY REFUELING OUTAGE PER OM-10 4.3.2.4(c)
70-542 *	3	G-2	B-ACT	3	BUT	M	C	MS/RO			ROJ-18
70-753	3	F-9	C	8	CK	SA	-	CVC/Q			
70-719 *	3	H-7	C	3/4	REL	SA	C	RV/RVF			VERIFY CLOSED

SYSTEM: (70) COMPONENT COOLING SYSTEM DRAWING NO: 47W859-2 & -3

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FCV-70-85	2	D-10	A-ACT	6	BUT	DIA	O	STC/Q, SLTJ/J			
FCV-70-87	2	H-9	A-ACT	3	GA	MO	O	STC/RCP, SLTJ/J			RCPJ-3
FCV-70-89	2	E-9	A-ACT	6	BUT	MO	O	STC/RCP, SLTJ/J			RCPJ-4
FCV-70-90	2	E-10	A-ACT	3	BUT	MO	O	STC/RCP, SLTJ/J			RCPJ-3
FCV-70-92	2	E-10	A-ACT	6	BUT	MO	O	STC/RCP, SLTJ/J			RCPJ-4
FCV-70-133 *	3	H-2	B-ACT	3	GA	MO	O	STC/RCP			RCPJ-3
FCV-70-134	2	H-3	A-ACT	3	GA	MO	O	STC/RCP, SLTJ/J			RCPJ-3
FVC-70-140	2	G-3	A-ACT	6	BUT	MO	O	STC/RCP, SLTJ/J			RCPJ-4
FCV-70-141	2	G-4	A-ACT	6	BUT	MO	O	STC/RCP, SLTJ/J			RCPJ-4
FCV-70-143	2	E-3	A-ACT	6	BUT	MO	O	STC/Q, SLTJ/J			
70-671 *	3	F-1	C	4	CK	SA	O	CVFO/Q			
70-676A *	3	G-2	C	3	CK	SA	O	CVFO/Q			
70-676B *	3	G-2	C	3	CK	SA	O	CVFO/Q			
70-679	2	H-4	AC-ACT	3	CK	SA	-	CVFO/Q CVC/RCP, SLTJ/J			RCPJ-5
FCV-70-139	3	G-2	B-PAS	6	BUT	MO	O	RPI			

SYSTEM: (70) COMPONENT COOLING SYSTEM DRAWING NO: 47W859-2 & -3

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
70-681A *	3	G-8	C	1 1/2	CK	SA	O	CVFO/Q, DI/DIF	RV-1	YES	ROJ-22
70-681B *	3	F-8	C	1 1/2	CK	SA	O	CVFO/Q, DI/DIF	RV-1	YES	ROJ-22
70-681C *	3	E-8	C	1 1/2	CK	SA	O	CVFO/Q, DI/DIF	RV-1	YES	ROJ-22
70-681D *	3	G-8	C	1 1/2	CK	SA	O	CVFO/Q, DI/DIF	RV-1	YES	ROJ-22
70-682A *	3	G-8	C	1 1/2	CK	SA	O	CVFO/Q, DI/DIF	RV-1	YES	ROJ-22
70-682B *	3	F-8	C	1 1/2	CK	SA	O	CVFO/Q, DI/DIF	RV-1	YES	ROJ-22
70-682C *	3	E-8	C	1 1/2	CK	SA	O	CVFO/Q, DI/DIF	RV-1	YES	ROJ-22
70-682D *	3	G-8	C	1 1/2	CK	SA	O	CVFO/Q, DI/DIF	RV-1	YES	ROJ-22
70-687	2	H-9	AC-PAS	1/2	CK	SA	-	SLTJ/J			TRCV
70-698	2	E-9	AC-PAS	1/2	CK	SA	-	SLTJ/J			TRCV
70-703	3	D-4	AC-ACT	3	REL	SA	C	RV/RVF, SLTJ/J			
70-791	2	G-4	AC-PAS	1/2	CK	SA	-	SLTJ/J			TRCV

SYSTEM: (70) COMPONENT COOLING SYSTEM DRAWING NO: 47W859-4

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FCV-70-153	3	F-3	B-ACT	18	BUT	MO	C	STO/Q			
FCV-70-156	3	F-4	B-ACT	18	BUT	MO	C	STO/Q			

SYSTEM: (72) CONTAINMENT SPRAY SYSTEM DRAWING NO: 47W812-1

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FCV-72-2	2	B-4	A-ACT	12	GA	MO	C	STO/Q, SLTJ/J			
FCV-72-13	2	B-7	B-ACT	2	GA	MO	C	STO/Q			
FCV-72-20	2	B-9	B-ACT	12	GA	MO	C	STO/Q			
FCV-72-21	2	B-10	B-ACT	12	GA	MO	O	STC/Q			
FCV-72-22	2	D-10	B-ACT	12	GA	MO	O	STC/Q			
FCV-72-23	2	D-9	B-ACT	12	GA	MO	C	STO/Q			
FCV-72-34	2	C-7	B-ACT	2	GA	MO	C	STO/Q			
FCV-72-39	2	D-4	A-ACT	12	GA	MO	C	STO/Q, SLTJ/J			
FCV-72-40	2	E-4	A-ACT	8	GA	MO	C	STO/CSD, SLTJ/J			CSJ-27
FCV-72-41	2	F-4	A-ACT	8	GA	MO	C	STO/CSD, SLTJ/J			CSJ-27

SYSTEM: (72) CONTAINMENT SPRAY SYSTEM DRAWING NO: 47W812-1

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
72-506	2	D-9	C	12	CK	SA	-	CVFO/Q, CVC/Q			PUMP TEST
72-507	2	B-9	C	12	CK	SA	-	CVFO/Q, CVC/Q			PUMP TEST
72-512	2	B-9	C	3/4	REL	SA	C	RV/RVF			
72-513	2	A-9	C	3/4	REL	SA	C	RV/RVF			
72-528	2	D-7	C	12	CK	SA	-	CVFO/Q			PUMP TEST
72-529	2	B-7	C	12	CK	SA	-	CVFO/Q			PUMP TEST
72-547	2	D-3	C	12	CK	SA	-	DI/DIF	X		See RV-1 ROJ-9
72-548	2	B-3	C	12	CK	SA	-	DI/DIF	X		See RV-1 ROJ-9
72-555	2	F-3	C	8	CK	SA	-	DI/DIF	X		See RV-1 ROJ-9
72-556	2	E-3	C	8	CK	SA	-	DI/DIF	X		See RV-1 ROJ-9

SYSTEM: (74) RESIDUAL HEAT REMOVAL SYSTEM DRAWING NO: 47W810-1

VALVE NUMBER	ASME CLASS	COORDINATES	CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FCV-74-1	1	F-3	A-ACT	14	GA	MO	C	STC/CSJ SLTP/TS	X	YES	See RV-3 CSJ-28
FCV-74-2	1	F-3	A-ACT	14	GA	MO	C	STC/CSD SLTP/TS	X	YES	See RV-3 CSJ-28
FCV-74-3	3	D-10	B-ACT	14	GA	MO	O	STC/Q			
FCV-74-12	2	F-7	B-ACT	2	GA	MO	C	STO/Q			
FCV-74-16	2	E-5	B-ACT	8	BUT	DIA	O	STC/Q STO/Q, FSO/Q			
FCV-74-21	2	B-10	B-ACT	14	GA	MO	O	STC/Q			
FCV-74-24	2	A-7	B-ACT	2	GA	MO	C	STO/Q			
FCV-74-28	2	B-5	B-ACT	8	BUT	DIA	O	STC/Q STO/Q, FSO/Q			
FCV-74-32 *	2	D-5	B-ACT	8	BUT	DIA	C	STC/Q STO/Q, FSO/Q			NO RPI
FCV-74-33	2	D-5	B-ACT	8	GA	MO	O	STC/CSD			CSJ-21
FCV-74-35	2	B-5	B-ACT	8	GA	MO	O	STC/CSD			CSJ-21
HCV-74-36 *	2	D-7	B-ACT	8	GA	M	C	MS/RO			ROJ-18
HCV-74-37 *	2	D-7	B-ACT	8	GA	M	C	MS/RO			ROJ-18

SYSTEM: (74) RESIDUAL HEAT REMOVAL SYSTEM

DRAWING NO: 47W810-1

VALVE NUMBER	ASME CLASS	CODE DRAWING NOTES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
74-505	2	G-4	C	3	REL	SA	C	RV/RVF			
74-514	2	E-9	C	8	CK	SA	-	CVFO/CSD CVPO/Q, CVC/Q			PUMP TEST CSJ-29
74-515	2	B-9	C	8	CK	SA	-	CVFO/CSD CVPO/Q, CVC/Q			PUMP TEST CSJ-29
74-520 *	2	E-8	B-ACT	8	GA	M	O	MS/RO			ROJ-18
74-521 *	2	B-8	B-ACT	8	GA	M	O	MS/RO			ROJ-18
74-530 *	2	D-6	B-ACT	2	GA	M	C	MS/RO			ROJ-18
74-531 *	2	B-6	B-ACT	2	GA	M	C	MS/RO			ROJ-18
74-554	2	E-6	C	8	CK	SA	-	CVFO/CSD CVPO/Q, CVC/Q			PUMP TEST CSJ-29
74-555	2	B-6	C	8	CK	SA	-	CVFO/CSD CVPO/Q, CVC/Q			PUMP TEST CSJ-29

SYSTEM: (77) WASTE DISPOSAL SYSTEM DRAWING NO: 47W830-1

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FCV-77-9	2	D-1	A-ACT	3	DIA	DIA	O	FSC/Q STC/Q, SLTJ/J			
FCV-77-10	2	E-1	A-ACT	3	DIA	DIA	O	FSC/Q STC/Q, SLTJ/J			
FCV-77-18	2	B-5	A-ACT	1	DIA	DIA	O	FSC/Q STC/Q, SLTJ/J			
FCV-77-19	2	B-6	A-ACT	1	DIA	DIA	O	FSC/Q STC/Q, SLTJ/J			
FCV-77-20	2	C-6	A-ACT	1	DIA	DIA	C	FSC/Q STC/Q, SLTJ/J			

SYSTEM: (77) WASTE DISPOSAL - FLOOR AND EQUIPMENT DRAINS DRAWING NO: 47W851-1

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FCV-77-127	2	F-7	A-ACT	2	DIA	DIA	O	FSC/Q STC/Q, SLTJ/J			
FCV-77-128	2	F-7	A-ACT	2	DIA	DIA	O	FSC/Q STC/Q, SLTJ/J			

SYSTEM: (78) FUEL POOL COOLING

DRAWING NO: 47W855-1

VALVE NUMBER	ASME CLASS	CODE CONDITIONS	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
78-513 *	2	C-7	B-ACT	10	GA	M	O	MS/RO			ROJ-18
78-557	2	G-8	A-PAS	4	GA	M	C	SLTJ/J			
78-558	2	G-8	A-PAS	4	GA	M	C	SLTJ/J			
78-560	2	G-8	A-PAS	6	GA	M	C	SLTJ/J			
78-561	2	G-8	A-PAS	6	GA	M	C	SLTJ/J			

SYSTEM: (81) PRIMARY WATER DRAWING NO: 47W819-1

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FCV-81-12	2	G-4	A-ACT	3	GA	DIA	O	FSC/Q STC/Q, SLTJ/J			
81-502	2	G-4	AC-ACT	3	CK	SA	-	CVC/CSD, SLTJ/J			CSJ-30

SYSTEM: (84) FLOOD MODE BORATION DRAWING NO: 47W809-7

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
84-511	2	F-8	A-PAS	1	GA	M	LC	SLTJ/J			

SYSTEM: (90) RADIATION MONITORING SYSTEM DRAWING NO: 47W610-90-3

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FCV-90-107	2	A-9	A-ACT	1-1/2	GA	DIA	O	FSC/Q STC/Q, SLTJ/J			
FCV-90-108	2	C-9	A-ACT	1-1/2	GA	DIA	O	FSC/Q STC/Q, SLTJ/J			
FCV-90-109	2	C-9	A-ACT	1-1/2	GA	DIA	O	FSC/Q STC/Q, SLTJ/J			
FCV-90-110	2	C-9	A-ACT	1-1/2	GA	DIA	O	FSC/Q STC/Q, SLTJ/J			
FCV-90-111	2	D-9	A-ACT	1-1/2	GA	DIA	O	FSC/Q STC/Q, SLTJ/J			
FCV-90-113	2	A-6	A-ACT	1-1/2	GA	DIA	O	FSC/Q STC/Q, SLTJ/J			
FCV-90-114	2	C-5	A-ACT	1-1/2	GA	DIA	O	FSC/Q STC/Q, SLTJ/J			
FCV-90-115	2	C-5	A-ACT	1-1/2	GA	DIA	O	FSC/Q STC/Q, SLTJ/J			
FCV-90-116	2	C-5	A-ACT	1-1/2	GA	DIA	O	FSC/Q STC/Q, SLTJ/J			
FCV-90-117	2	D-6	A-ACT	1-1/2	GA	DIA	O	FSC/Q STC/Q, SLTJ/J			

APPENDIX B

EXPLANATION OF SYMBOLS USED IN THE SEQUOYAH VALVE INSERVICE TESTING PROGRAM

This Appendix defines the meaning of all symbols used in the valve test program..

SYMBOLS USED TO DESIGNATE VALVE TYPE

VALVE TYPES	
SYMBOL	Meaning
BUT	Butterfly
BAL	Ball
CK	Check
DIA	Diaphragm
GA	Gate
GL	Globe
ND	Needle
AN	Angle
PLG	Plug
RD	Rupture Disk
REL	Relief
SC	Stop Check
SK	Spring Check

Note: TRCV in the Remarks column indicates a Thermal Relief Check Valve in a Containment Penetration.

SYMBOLS USED TO DESIGNATE VALVE ACTUATOR TYPE

VALVE ACTUATOR TYPES	
SYMBOL	Meaning
DIA	Diaphragm Air Operator
M	Manual Operator
MO	Motor Operator
SA	Self Actuated
SO	Solenoid Operator
CYL	Cylinder/Hydraulic Operator
RD	Rupture Disc

SYMBOLS USED TO DESIGNATE VALVE POSITION

VALVE POSITIONS	
SYMBOL	Meaning
O	Open
C	Closed
LO	Locked Open
LC	Locked Closed
TH	Throttled
-	Valve position determined by other system parameters as in the case of any check valve.

SYMBOLS USED TO DESIGNATE TESTING REQUIREMENTS

CATEGORY A OR B VALVES	
MS	Manual Stroke
FSC	Fail Safe close actuator test in accordance with OMa-1988, Part 10, Paragraph 4.2.1.6.
FSO	Fail Safe open actuator test in accordance with OMa-1988, Part 10, Paragraph 4.2.1.6.
PST	Exercise valve (part stroke) for operability, in accordance with OMa-1988, Part 10, Paragraph 4.2.1.
RPI	This symbol is used only to designate those B-Passive valves that have a remote position indicator that is energized. These valves will be verified that their remote position indicator agrees with the actual valve position at least once every two years in accordance with OMa-1988, part 10, Table 1 and Paragraph 4.1.
SLTJ	Perform a Seat Leak Test per 10CFR50 Appendix J, but not less than once every 2 years. Leak rate limits will be estabished by the licensee in accordance with 10CFR50 Appendix J, and OMa-1988, Part 10, Paragraph 4.2.2.3(e), (Re: 10CFR50.55a(b)(2)(vii).
SLTP	Perform a Seat Leak Test for pressure isolation function as required by Technical Specifications, and OMa-1988, Part 10, Paragraph 4.2.2.3.
ST	Exercise valve (full stroke test and without timing) for operability, in accordance with OMa-1988, Part 10, Paragraph 4.2.1.
STC	Exercise valve (full stroke test and time to the close position) for operability, in accordance with OMa-1988, Part 10, Paragraph 4.2.1. Verified that their remote position indicator agrees with the actual valve position at least once every two years in accordance with OMa-1988, part 10, Table 1 and Paragraph 4.1.
STO	Exercise valve (full stroke test and time to the open position) for operability, in accordance with OMa-1988, Part 10, Paragraph 4.2.1. Verified that their remote position indicator agrees with the actual valve position at least once every two years in accordance with OMa-1988, part 10, Table 1 and Paragraph 4.1

SYMBOLS USED TO DESIGNATE TESTING REQUIREMENTS (Continued)

CATEGORY C VALVES	
CVC	Exercise check valve to the closed position for operability, in accordance with OMa-1988, Part 10, Paragraph 4.3.2.
CVPO	Exercise check valve to the partial open position for operability, in accordance with OMa-1988, Part 10, Paragraph 4.3.2.
CVFO	Exercise check valve to the full open position for operability, in accordance with OMa-1988, Part 10, Paragraph 4.3.2.
SLTJ	Perform a Seat Leak Test per 10CFR50 Appendix J, but not less than once every 2 years. Leak rate limits will be established by the licensee in accordance with 10CFR50 Appendix J, and OMa-1988, Part 10, Paragraph 4.2.2.3(e), (Re: 10CFR50.55a(b)(2)(vii).
SLTP	Perform a Seat Leak Test for pressure isolation function as required by Technical Specifications, and OMa-1988, Part 10, Paragraph 4.2.2.3.
RV	Test safety and relief valves in accordance with OM-1987, Part 1. (Re: OMa-1988, Part 10, Paragraph 4.3.1).
DI	Disassembly and Inspection per Relief Request RV-1. This includes a full stroke open and close manual exercise test.

SYMBOLS USED TO DESIGNATE TESTING REQUIREMENTS (Continued)

CATEGORY D	
RDI	Inspection of rupture discs shall be performed in accordance with OM-1987, Part 1. (Re: OMa-1988, Part 10, Paragraph 4.4.2)
RDR	Replacement of rupture discs shall be performed in accordance with OM-1987, Part 1. (Re: OMa-1988, Part 10, Paragraph 4.4.2)

CSJ-22
System: Safety Injection System
Valves: 63-510
Class: 2
Category: C-ACT
Function:
Impractical Requirement: Verify closure quarterly.
Basis for Deferred Test: Exercising (closing) this valve during operation isolates both SIS pump suction lines from the refueling water storage tank placing the unit in a condition outside the design and licensing basis.
Alt Testing/Frequency: Verify check valve closure during cold shutdown. Partial stroke exercise quarterly during the SIP tests and full stroke each refueling outage.

CSJ-23
System: Safety Injection System
Valves: 63-560, 63-561, 63-562, 63-563, 63-632, 63-633, 63-634, 63-635, 63-640, 63-641, 63-643, 63-644
Class: 2
Category: AC-ACT
Function: These valves open to allow for RHRP injection and close to prevent an intersystem LOCA.
Impractical Requirement: Full or partial stroke quarterly.
Basis for Deferred Test: These valves are in the residual heat removal pump injection lines, and RHR pumps do not develop sufficient head to open the valves during operation. Injection through these lines using another pump would result in over pressurization of the RHR lines behind the check valves and could cause an undesirable transient in the RCS which could cause a safety injection. In addition, injection during operation results in thermal fatigue to the branch connections at the RCS. Technical Specifications require these valves to be leak tested following valve actuation or during cold shutdown but not more often than once every nine months. Full or partial stroke exercising these valves at a frequency more often than once every nine months would result in additional leak testing requirements without an increase in safety due to the potential for intersystem LOCAs.
Alt Testing/Frequency: Partial stroke exercise during cold shutdown but not more often than once every nine months. Leak rate test for pressure isolation function as required by technical specifications. Disassemble and inspect during refueling per Relief Request RV-1.

CSJ-24
System: Essential Raw Cooling Water System
Valves: FCV-67-83, FCV-67-87, FCV-67-88, FCV-67-89, FCV-67-90, FCV-67-91, FCV-67-95, FCV-67-96, FCV-67-99, FCV-67-103, FCV-67-104, FCV-67-105, FCV-67-106, FCV-67-107, FCV-67-111, FCV-67-112
Class: 2
Category: A-ACT
Function: These valves allow cooling flow to lower containment heat removal system and close for containment isolation.
Impractical Requirement: Full or partial stroke quarterly.
Basis for Deferred Test: Exercising valve quarterly causes a loss of flow to lower compartment coolers, control rod system drive coolers and reactor coolant pump motor coolers leading to undesirable temperature transients inside the various compartments of the Sequoyah ice condenser containment. The FCV valve control circuit is not designed for partial stroke capability.
Alt Testing/Frequency: Full stroke during cold shutdown.

CSJ-25
System: Essential Raw Cooling Water System
Valves: FCV-67-146
Class: 2
Category: B-ACT
Function: This valve isolates and throttles the ERCW flow through the CCS plate heat exchangers for Train A and loads necessary for continued safe operation of the unit.
Impractical Requirement: Full or partial stroke quarterly.
Basis for Deferred Test: Exercising valve quarterly causes a loss of cooling water flow to the CCS plate heat exchangers for Train A and all the loads necessary to support operation of the unit (e.g. RCP oil coolers, RCP thermal barriers, letdown and seal return heat exchangers, and various pump seal coolers. The FCV valve control circuit is not designed for partial stroke capability.
Alt Testing/Frequency: Full stroke during cold shutdown.

CSJ-26
System: Reactor Coolant System
Valves: PCV-68-340A, PCV-68-334, FSV-68-394, FSV-68-395, FSV-68-396, FSV-68-397
Class: 1
Category: B-ACT
Function: These valves open to allow for RCS venting/depressurization and close for RCPB isolation.
Impractical Requirement: Full or partial stroke quarterly.
Basis for Deferred Test: NRC has requested that pressurizer PORVs and Reactor Vessel Head Vents be tested during cold shutdown rather than during power operation. Stroking these valves at power could result in depressurization of the RCS and resulting unit trip and safety injection. Failure of these valves open could result in a LOCA.
Alt Testing/Frequency: Full stroke during cold shutdown.

CSJ-27
System: Containment Spray System
Valves: FCV-72-40, FCV-72-41
Class: 2
Category: B-ACT
Function: These valves allow flow to the RHR spray headers inside upper containment.
Impractical Requirement: Full or partial stroke quarterly.
Basis for Deferred Test: These valves are interlocked with the containment sump valves. Exercising these valves during operation could result in flooding of lower containment or would result in inoperability of both trains of low head safety injection since operation results in less than the required RHR cold leg injection flow capability; placing the unit in a condition outside the design and licensing basis. The FCV valve control circuit is not designed for partial stroke capability.
Alt Testing/Frequency: Full stroke exercise during cold shutdown.

CSJ-28
System: Residual Heat Removal System
Valves: FCV-74-1, FCV-74-2
Class: 2
Category: A-ACT
Function: These valves allow flow from the RCS to the RHR system for normal cooldown and during shutdown for removal of decay heat. They are opened to provide suction from the RCS for the Residual Heat Removal pumps when RCS pressure is below setpoint. They are maintained closed during operation to isolate the high pressure RCS from the low pressure RHR system.
Impractical Requirement: Full or partial stroke quarterly.
Basis for Deferred Test: Valves have interlocks to prevent opening them when RCS is above the RHR design temperature and pressure. Exercising valve during operation results in over pressurizing RHR. Full stroking of RHR return valves during shutdown isolates decay heat removal capacity, mixing capacity needed to maintain uniform boron concentration within the RCS, and ability to produce gradual reactivity changes during boron concentration reductions in the RCS. It is generally not considered prudent to remove a valve from its safety related position to perform a periodic code test when that testing places the unit in an LCO and an overall degraded condition. With respect to these specific valves, it is deemed additionally ill-advised in consideration of Unresolved Safety Issues (USI) A-31, "Residual Heat Removal Shutdown Requirements" and A-45, "Shutdown Decay Heat Removal Requirements" which address concerns regarding loss of residual heat removal capability leading to core damage. Reliability of performing heat removal functions is specifically identified as being dependent on the frequency of events that jeopardize decay heat removal operations. Alternative testing will provide an acceptable level of quality and safety and the increase in the level of safety by normal testing is not commensurate with the difficulties or risks involved. Extended outages of greater than 3 months are not normally anticipated. The FCV valve control circuit is not designed for partial stroke capability.
Alt Testing/Frequency: These valves will be full stroke exercised while shutting down (when going on RHR) if not exercised in the last 3 months or the projected outage duration would cause valves to require testing prior to startup. If not stroked during shutdown, the surveillance interval expires during outage, or if outage duration exceeds 3 months, valves need not be exercised until startup when coming off RHR.

CSJ-29
System: Residual Heat Removal System
Valves: 74-514, 74-515, 74-554, 74-555
Class: 2
Category: C
Function: These valves open to allow flow from the RHRPs and close to prevent reverse flow through an idle pump or miniflow competition (e.g. a stronger pump causing a parallel weaker pump to be deadheaded).
Impractical Requirement: Full stroke quarterly.
Basis for Deferred Test: These valves cannot be full stroked quarterly since the RHR pumps do not develop enough pressure to overcome normal RCS pressure. The refueling dewatering line cannot be used because opening HCV-74-34 would cause degradation of both trains of RHR and placing the unit outside the design and licensing basis.
Alt Testing/Frequency: These valves will be part stroked open quarterly during the pump test and full stroked open during cold shutdown, but not more often than once per three months. These valves will be verified closed quarterly.

CSJ-30
System: Primary Water System
Valves: 81-502
Class: 2
Category: AC
Function: This valve closes for containment isolation.
Impractical Requirement: Full or partial stroke quarterly.
Basis for Deferred Test: Exercising this valve results in loss of primary water to the RCP standpipes and PRT. Personnel radiation exposures and valve inaccessibility also prohibit exercising these valves quarterly.
Alt Testing/Frequency: These valves will be verified closed during cold shutdown.

CSJ-31
System: Essential Raw Cooling Water System
Valves: FCV-67-489, FCV-67-492
Class: 3
Category: B-ACT
Function: These valves must operate to isolate header ruptures within the ERCW system or a loss of CCS .
Impractical Requirement: Full or partial stroke quarterly.
Basis for Deferred Test: Exercising these valves results in loss of or diversion of ERCW to/from loads essential to continued operation of the units. The FCV valve control circuit is not designed for partial stroke capability.
Alt Testing/Frequency: These valves will be full stroke exercised during cold shutdown.

CSJ-32
System: Safety Injection System
Valves: FCV-63-67, FCV-63-80, FCV-63-98, FCV-63-118
Class: 2
Category: B-ACT
Function: These valves are on the outlet of the SIS cold leg accumulators and are maintained open while the RCS is above 1000 psig. In addition, they will auto open on increasing pressure and on an SI signal if closed. These valves are closed to isolate the accumulator after blowdown following a LOCA and on decreasing RCS pressure during shutdown following a non-LOCA event.
Impractical Requirement: Full or partial stroke exercise quarterly.
Basis for Deferred Test: Exercising (closing) this valve quarterly during operation isolates a passive cold leg accumulator placing the unit in a condition outside the design and licensing basis since all 4 accumulators are assumed available for the large break LOCA. The FCV valve control circuit is not designed for partial stroke capability.
Alt Testing/Frequency: Full stroke exercise during cold shutdown.

CSJ-33
System: Safety Injection System
Valves: FCV-63-63, FCV-63-87, FCV-63-107, FCV-63-127
Class: 2
Category: B-ACT
Function: Normally closed valve that may be opened to vent nitrogen from the associated cold leg accumulator if unisolated following a LOCA or non-LOCA shutdown.
Impractical Requirement: Full or partial stroke exercise quarterly.
Basis for Deferred Test: Exercising this valve quarterly during operation connects an ASME Code Class 2 passive cold leg accumulator with non nuclear code class piping/components. This could cause a loss of the accumulator nitrogen pressure placing the unit in a condition outside the design and licensing basis since all 4 accumulators are assumed available for the large break LOCA. The FCV valve control circuit is not designed for partial stroke capability.
Alt Testing/Frequency: Full stroke exercise during cold shutdown.

CSJ-34
System: Chemical and Volume Control System
Valves: 62-928, 62-930
Class: 3
Category: C-ACT
Function: These valves open to allow boric acid flow to the centrifugal charging pumps suction.
Impractical Requirement: Full or partial stroke exercise quarterly.
Basis for Deferred Test: Stroking these valves during power operation would cause unacceptable boron transients leading to RCS temperature and power transients which could result in unit trip.
Alt Testing/Frequency: Full stroke exercise during cold shutdown.

CSJ-35
System: Safety Injection System
Valves: FCV-63-47
Class: 2
Category: B-ACT
Function: Required to close for isolation of passive failure. Required to open for shutdown LOCA and loss of RHR.
Impractical Requirement: Full or partial stroke exercise quarterly.
Basis for Deferred Test: Exercising valve during operation results in the loss of two independent trains of ECCS and placing the unit in a condition outside the design and licensing basis. The FCV valve control circuit is not designed for partial stroke capability.
Alt Testing/Frequency: Full stroke exercise during cold shutdown.

APPENDIX C: DEFERRED TEST JUSTIFICATIONS

Valves listed below are therein specifically identified by the Licensee as valves which cannot be exercised during power operation, per OM-10 Sections 4.2.1.2 and 4.3.2.2. The table lists the System, Valve Number, Code Class, Basis for Cold Shutdown Testing when the RCPs are stopped for each valve which is being tested on a reactor coolant pump shutdown frequency, and alternate testing/frequency. The reactor coolant pump shutdown frequency is described in detail in the Description section of this document.

RCPJ-1
System: Chemical and Volume Control System
Valves: FCV-62-61, FCV-62-63
Class: 2
Category: A-ACT
Function: There valves are in the RCP seal water return path and isolate on a containment isolation signal.
Impractical Requirement: Full or partial stroke exercise quarterly during Reactor Coolant Pump operation.
Basis for Deferred Test: Exercising these valves during RCP operation challenges a seal water return relief valve and could cause loss of seal water return and probable damage to the reactor coolant pump seals. The FCV valve control circuit is not designed for partial stroke capability.
Alt Testing/Frequency: Full stroke exercise during cold shutdown when the RCPs are stopped.

RCPJ-2
System: Chemical and Volume Control System
Valves: FCV-62-9, FCV-62-22, FCV-62-35, FCV-62-48
Class: 2
Category: B-ACT
Function: There valves are in the RCP #1 seal water leakoff return path.
Impractical Requirement: Full or partial stroke exercise quarterly during Reactor Coolant Pump operation.
Basis for Deferred Test: Exercising these valves during RCP operation isolates the leakoff from the #1 seal and challenges the #2 seal which could cause damage to the reactor coolant pump seals and a LOCA. The FCV valve control circuit is not designed for partial stroke capability.
Alt Testing/Frequency: Full stroke exercise during cold shutdown when the RCPs are stopped.

RCPJ-3
System: Component Cooling System
Valves: FCV-70-133, FCV-70-134, FCV-70-87, FCV-70-90
Class: 3
Category: B-ACT or A-ACT
Function: These valves allow flow to the RCP thermal barriers and close for containment isolation and to isolate a thermal barrier flow mismatch (except FCV-70-133 which closes to isolate a thermal barrier flow mismatch only).
Impractical Requirement: Full or partial stroke quarterly during RCP operation.
Basis for Deferred Test: Exercising these valves during operation of the RCP results in loss of cooling water flow to all four reactor coolant pump thermal barrier coolers introducing the possibility of seal failure, loss of a RCP and a LOCA or a unit trip. The FCV valve control circuit is not designed for partial stroke capability.
Alt Testing/Frequency: Full stroke exercise during cold shutdown when the RCPs are stopped.

APPENDIX C: DEFERRED TEST JUSTIFICATIONS

Valves listed below are therein specifically identified by the Licensee as valves which cannot be exercised during power operation, per OM-10 Sections 4.2.1.2 and 4.3.2.2. The table lists the System, Valve Number, Code Class, Basis for Cold Shutdown Testing when the RCPs are stopped for each valve which is being tested on a reactor coolant pump shutdown frequency, and alternate testing/frequency. The reactor coolant pump shutdown frequency is described in detail in the Description section of this document.

RCPJ-1
System: Chemical and Volume Control System
Valves: FCV-62-61, FCV-62-63
Class: 2
Category: A-ACT
Function: There valves are in the RCP seal water return path and isolate on a containment isolation signal.
Impractical Requirement: Full or partial stroke exercise quarterly during Reactor Coolant Pump operation.
Basis for Deferred Test: Exercising these valves during RCP operation challenges a seal water return relief valve and could cause loss of seal water return and probable damage to the reactor coolant pump seals. The FCV valve control circuit is not designed for partial stroke capability. Stopping the RCP's for testing would increase the wear and stress on the RCP's, increase the number of cycles on other plant equipment, and would extend the length of cold shutdown outages.
Alt Testing/Frequency: Full stroke exercise during cold shutdown when the RCPs are stopped.

RCPJ-2
System: Chemical and Volume Control System
Valves: FCV-62-9, FCV-62-22, FCV-62-35, FCV-62-48
Class: 2
Category: B-ACT
Function: There valves are in the RCP #1 seal water leakoff return path.
Impractical Requirement: Full or partial stroke exercise quarterly during Reactor Coolant Pump operation.
Basis for Deferred Test: Exercising these valves during RCP operation isolates the leakoff from the #1 seal and challenges the #2 seal which could cause damage to the reactor coolant pump seals and a LOCA. The FCV valve control circuit is not designed for partial stroke capability. Stopping the RCP's for testing would increase the wear and stress on the RCP's, increase the number of cycles on other plant equipment, and would extend the length of cold shutdown outages.
Alt Testing/Frequency: Full stroke exercise during cold shutdown when the RCPs are stopped.

RCPJ-3
System: Component Cooling System
Valves: FCV-70-133, FCV-70-134, FCV-70-87, FCV-70-90
Class: 3
Category: B-ACT or A-ACT
Function: These valves allow flow to the RCP thermal barriers and close for containment isolation and to isolate a thermal barrier flow mismatch (except FCV-70-133 which closes to isolate a thermal barrier flow mismatch only).
Impractical Requirement: Full or partial stroke quarterly during RCP operation.
Basis for Deferred Test: Exercising these valves during operation of the RCP results in loss of cooling water flow to all four reactor coolant pump thermal barrier coolers introducing the possibility of thermal barrier failure. The FCV valve control circuit is not designed for partial stroke capability. Stopping the

RCP's for testing would increase the wear and stress on the RCP's, increase the number of cycles on other plant equipment, and would extend the length of cold shutdown outages.
Alt Testing/Frequency: Full stroke exercise during cold shutdown when the RCPs are stopped.

RCPJ-4
System: Component Cooling System
Valves: FCV-70-140, FCV-70-141, FCV-70-89, FCV-70-92
Class: 3
Category: A-ACT
Function: These valves allow flow to the RCP oil coolers and close for containment isolation.
Impractical Requirement: Full or partial stroke quarterly during RCP operation.
Basis for Deferred Test: Exercising these valves during operation of the RCPs results in loss of cooling water flow to all eight reactor coolant pump oil coolers introducing the possibility of loss of a RCP and a LOCA or a unit trip. The FCV valve control circuit is not designed for partial stroke capability. Stopping the RCP's for testing would increase the wear and stress on the RCP's, increase the number of cycles on other plant equipment, and would extend the length of cold shutdown outages.
Alt Testing/Frequency: Full stroke exercise during cold shutdown when the RCPs are stopped.

RCPJ-5
System: Component Cooling System
Valve: 70-679
Class: 2
Category: C-ACT
Function: This valve allows flow to the RCP thermal barriers and closes for containment isolation.
Impractical Requirement: Full or partial stroke closed quarterly during RCP operation.
Basis for Deferred Test: Exercising this valve during operation of the RCPs results in loss of cooling water flow to the reactor coolant pump thermal barriers introducing the possibility of loss of a RCP seal and a LOCA or a unit trip. Stopping the RCP's for testing would increase the wear and stress on the RCP's, increase the number of cycles on other plant equipment, and would extend the length of cold shutdown outages.
Alt Testing/Frequency: Full stroke exercise during cold shutdown when the RCPs are stopped.

APPENDIX C: DEFERRED TEST JUSTIFICATIONS

Valves listed below are therein specifically identified by the Licensee as valves which cannot be exercised during power operation, per OM-10 Sections 4.2.1.2 and 4.3.2.2. The table lists the System, Valve Number, Code Class, Basis for Refueling Outage Testing for each valve which is being tested on a refueling outage frequency, and alternate testing/frequency.

ROJ-1
System: Chemical and Volume Control System
Valve: 62-525, 62-532
Class: 2
Category: C
Function: These valves open to supply charging pump flow from RWST for safety injection.
Impractical Requirement: Exercise valve quarterly at full flow
Basis for Deferred Test: The Centrifugal Charging Pumps cannot be run at full flow during normal operation
due to the resulting undesirable temperature transients and boron concentration changes. Operation of the CCPs during cold shutdown is undesirable due to the inability to letdown that full flow and the potential for cold over pressurization.
Alt Testing: These valves will be verified closed quarterly, part stroked open quarterly and full stroked open refueling.
Frequency for Alt. Testing: These valves will be part stroked quarterly and full stroked refueling.

ROJ-2
System: Chemical and Volume Control System
Valve: 62-504
Class: 2
Category: C
Function: Opens to admit flow from refueling water storage tank to the centrifugal charging pumps and closes to prevent back flow to RWST during recirculation mode of ECCS.
Impractical Requirement: Exercise quarterly at full flow or partial stroke quarterly.
Basis for Deferred Test: Charging pumps cannot be run at full flow or reduced flow taking suction from the RWST without causing undesirable RCS temperature and/or boron concentration changes resulting in boration and power changes and could result in a plant trip. Full flow cannot be obtained during CSD with Reactor vessel head in place (See V-1) due to the inability to letdown full flow and the potential for cold over pressurization of the RCS.
Alt. Testing: Exercise at full flow at refueling during system performance tests and part stroke at reduced flow during cold shutdown. Exercise valve closed quarterly.
Frequency for Alt. Testing: Full stroke once per refueling and part stroke during cold shutdown (but not more often than once every three months). Exercise valve closed quarterly.

ROJ-3
System: Safety Injection System
Valve: 63-502
Class: 2
Category: C
Function: Opens to admit flow from RWST to the RHR pumps during safety injection. Closes to prevent flow to RWST during recirculation mode of ECCS.
Impractical Requirement: Exercise valve quarterly at full flow or partial stroke quarterly.
Basis for Deferred Test: The RHR pumps do not develop sufficient head to pump to the reactor at normal operating pressures. Part stroke exercising is not possible since the pump recirculation flow path does not include this check valve. The refueling cavity dewatering line cannot be used because the valve alignment required to use it results in degrading both trains of RHR. Capabilities of the CVCS letdown system preclude use during cold shutdowns. Exercising 63-502 closed during power operations would require closure of FCV-63-1 and inoperability of both trains of low head SIS.
Alternate Testing: Exercise at refueling outages during system performance tests. Exercise valve closed during cold shutdowns.
Frequency for Alt. Testing: Full stroke once per refueling outage. Exercise valve closed during cold shutdowns (but not more often than once every three months).

ROJ-4
System: Safety Injection System
Valve: 63-510
Class: B
Category: C
Function: Opens to admit flow from RWST to the SIS pumps during safety injection. Closes to prevent flow to RWST during recirculation mode of ECCS.
Impractical Requirement: Exercise valve quarterly at full flow.
Basis for Deferred Test: The intermediate head SIS pumps do not develop sufficient head to pump to the RCS at normal operating pressures, and the pump recirculation line will not pass full pump flow. RCS letdown capability will not allow pumps to be run at full flow during cold shutdown. Exercising 63-510 closed during power operations would require closure of FCV-63-5 and inoperability of both trains of SIS.
Alternate Testing: Exercise valve at reduced flow once per quarter during SIS pump test and at full flow once per refueling during system performance test. Verify check valve closes during cold shutdowns.
Frequency for Alt. Testing: Part stroke quarterly, full stroke each refueling outage. Exercise valve closed during cold shutdowns (but not more often than once every three months).

ROJ-5
System: Safety Injection System
Valves: 63-543, 63-545, 63-547, 63-549, 63-551, 63-553, 63-555, 63-557, 63-558, 63-559.
Class: 1
Category: AC
Function: Opens to admit flow from SI pumps to RCS during LOCA and closes to prevent intersystem LOCA.
Impractical Requirement: Exercise quarterly at full flow or partial stroke quarterly.
Basis for Deferred Test: SIS pumps do not develop sufficient head to overcome normal RCS pressure. Use of another pump would result in an undesirable temperature transient on RCS components. Letdown capability will not allow full flow testing with reactor head on.
Technical Specification 4.4.6.2.2 requires these valves to be leak tested following valve actuation and during cold shutdown if they have not been leak tested in the last nine months. The first four valves are aligned in parallel in groups of two. Individual branch lines flow is only measured during refueling outage testing since plant instrumentation is not available to measure individual branch flows. Therefore, justification is provided to allow partial stroking of these valves during cold shutdown (but not more often than once per nine months) and full stroke exercising during refueling outages.
Valve closure will be verified during cold shutdown, not to exceed once per nine months when the pressure isolation boundary leak test required by Technical Specification 4.4.6.2.2 is performed.
Alternate Testing: Part stroke valves during cold shutdown and full stroke exercise during refueling outages. Leak test as required by Technical Specification 4.4.6.2.2.
Frequency for Alt. Testing: Part stroke every cold shutdown not more often than once per nine months and full stroke each refueling outage. Leak test at the frequencies required by Technical Specification 4.4.6.2.2.

ROJ-6
System: Safety Injection System
Valve: 63-581, 63-586, 63-587, 63-588, 63-589
Class: 1
Category: C
Function: Open to admit flow from cent. charging pump(s) to the RCS cold legs during safety injection. Closes for RCPB isolation.
Impractical Requirement: Exercise valve on a quarterly basis at full flow or partial stroke quarterly.
Basis for Deferred Test: RCS letdown capacity will not allow full flow injection with the reactor vessel head on. Valve cannot be part stroked without discharging cold, borated water into the reactor. This would cause an undesirable temperature and boron concentration transients which could result in a safety injection or unit trip. Cold water causes thermal stratification stresses at injection nozzles. The last 4 valves are in parallel and individual branch line flows are only measured during refueling testing since instrumentation is not available to measure the individual branch flows.
Alternate Testing: Part stroke valve (63-581) during cold shutdown and exercise valve at full flow during refueling during system performance tests. Part stroke the combination of parallel valves (63-586, 587, 588, 589) during CSD and full stroke them during refueling during system performance tests. Verify check valves are closed quarterly.
Frequency for Alt. Testing: Part stroke valve during cold shutdown (but not more often than every three months), full stroke once per refueling. Verify check valves are closed quarterly.

ROJ-7
System: Safety Injection System
Valve: 63-622, 63-623, 63-624, 63-625
Class: 1
Category: AC
Function: Opens to admit flow from cold leg accumulators to the RCS during safety injection and closes to prevent intersystem LOCA.
Impractical Requirement: Exercise quarterly at full flow or partial stroke quarterly.
Basis for Deferred Test: These valves cannot be cycled at full flow without removing the fuel from the core, removing the internals package and decreasing the RCS from above 650 psig to atmospheric pressure in a short period of time. This is an unreasonable burden and could cause damage to the reactor vessel. The cold leg accumulators do not have sufficient head to overcome normal RCS pressure and the use of another pump would cause thermal fatigue to RCS components.
Technical Specification 4.4.6.2.2 requires these valves to be leak tested following valve actuation and during cold shutdown if they have not been leak tested in the last nine months. Therefore, deferred testing is requested to allow partial stroking of these valves during cold shutdown (but not more often than once per nine months), so as not to impose additional leak testing requirements. Valve closure will be verified during cold shutdown not to exceed once per nine months when the pressure isolation boundary leak test required by 4.4.6.2.2 is performed.
Alternate Testing: Disassemble and inspect one (1) valve each refueling outage on a rotating basis in accordance with Relief Request RV-1.
Part stroke exercise using SIs or RHR pump and CV test system during CSDs and after disassembly.
Verify valve closure when the pressure isolation boundary leak test required by SR 4.4.6.2.2 is performed.
Frequency for Alt. Testing: Disassemble and inspect one valve each refueling outage per RV-1. Part stroke during CSD (but not more often than once per nine months) and after disassembly. Leak test as required by SR 4.4.6.2.2.

ROJ-8

System: Safety Injection System

Valve: 63-632, 63-633, 63-634, 63-635; 63-640, 63-641, 63-643, 63-644.

Class: 1

Category: AC

Function: Opens to allow flow from RHRPs to RCS and closes to prevent intersystem LOCA.

Impractical Requirement: Exercise quarterly at full flow or partial stroke quarterly.

Basis for Deferred Test: RHR pumps do not develop sufficient head to overcome normal RCS pressure. Use of another pump would result in an undesirable temperature transient in the RCS and possible reactor trip.

Technical Specification 4.4.6.2.2 requires these valves to be leak tested following valve actuation and during cold shutdown if they have not been leak tested in the last nine months. The eight valves are aligned and stroked in parallel in groups of two. Plant instrumentation is not available to measure individual branch flow rates. Verification of full flow (i.e., assumed flow rate) provides good assurance that both valves have stroked to perform their required safety function. Therefore, deferred testing is requested to allow full stroking these valves during cold shutdown (but not more often than once per nine months).

Valve closure will be verified during cold shutdown (but not more often than once per nine months) when the pressure isolation boundary leak test required by 4.4.6.2.2 is performed. Disassemble and inspect (1) one RHR cold leg secondary and (1) one RHR hot leg valve each refueling outage in accordance with RV-1.

Alternate Testing: Partial stroke exercise the parallel combination during cold shutdown and after reassemble. Leak test as required by Technical Specification 4.4.6.2.2. Disassemble and inspect per RV-1.

Frequency for Alt. Testing: Partial stroke exercise during cold shutdown (but not more often than once per nine months) and after disassembly. Leak test at the frequencies required by Technical Specification 4.4.6.2.2. Disassemble and inspect one valve from each group every refueling outage per RV-1.

ROJ-9
System: Containment Spray
Valve: 72-547, 72-548, 72-555, 72-556
Class: 2
Category: C
Function: Opens to admit flow from the containment spray and RHR pumps to the spray headers.
Impractical Requirement: Exercise quarterly at full flow or partial stroke quarterly.
Basis for Deferred Test: Testing these valves with water (full or partial stroke) will deluge the containment. Testing with air could cause an SI, unit trip, and containment isolation signal from high containment pressure.
Alternate Testing: Disassemble and inspect one (1) valve each refueling outage on a rotating basis per RV-1. These valves cannot be partial stroked after disassembly.
Frequency for Alt. Testing: Disassemble and inspect one valve each refueling outage per RV-1

ROJ-10
System: Safety Injection System
Valve: 63-524, 63-526
Class: 2
Category: C
Function: Opens to admit flow from SIS pumps to RCS during LOCA. Closes to prevent flow through idle pump.
Impractical Requirement: Exercise quarterly at full flow or partial stroke quarterly.
Basis for Deferred Test: SIS pumps do not develop sufficient head to pump to the RCS during normal operation.
Alt. Testing: Part stroke valves during cold shutdown and full stroke exercise valves during refueling. Verify valve closed quarterly during pump test.
Frequency for Alt. Testing: Verify closed quarterly, part stroke during cold shutdown (but not more often than once per nine months) and full stroke during refueling.

ROJ-11
System: Safety Injection System
Valve: 63-560, 63-561, 63-562, 63-563
Class: 1
Category: AC
Function: Opens to admit flow from cold leg accumulators, safety injection pumps, and RHR pumps to the RCS cold legs during safety injection and close to prevent intersystem LOCA.
Impractical Requirement: Exercise quarterly at full flow or partial stroke quarterly.
Basis for Deferred Test: These valves cannot be exercised at full flow without removing the fuel from the core, removing the internals package, and decreasing the RCS from above 650 psig to atmospheric pressure in a short period of time. This is an unreasonable burden and could cause damage to the reactor vessel. These valves cannot be partial stroked during operation since the RHRPs/SIPs/Cold Leg Accumulators do not have sufficient head to overcome RCS pressure.
Technical Specification 4.4.6.2.2 requires these valves to be leak tested following valve actuation and during CSD if they have not been leak tested in the last nine months. Therefore, relief is requested to allow partial stroking of these valves during CSD not to exceed once per nine months so as not to impose additional leak testing requirements.
Alt. Testing: Disassemble and inspect one valve each refueling outage on a rotating basis per RV-1.
Part stroke exercise using RHR pump during CSDs and after disassembly.
Verify valve closure when the pressure isolation boundary leak test required by SR 4.4.6.2.2 is performed.
Frequency for Alt. Testing: Disassemble and inspect one valve each refueling outage per RV-1. Parts stroke during CSD not to exceed once per nine months and after disassembly. Leak test at the frequencies required by Technical Specification 4.4.6.2.2.

ROJ-12
System: Reactor Coolant System
Valve: 68-559
Class: 2
Category: C
Function: Opens to admit SIS and CS relief valve discharge to the PRT.
Impractical Requirement: Exercise quarterly at full flow, partial stroke quarterly, or exercise during cold shutdown.
Basis for Deferred Test: Full flow exercising, by definition, is not possible due to the nature of the system. Partial stroke exercising would present unacceptable hazards unless all interacting systems were removed from service; these systems include RCS, CVCS charging/ seal flow/letdown, RHR, SIS, and CS systems. Removal from service of both trains of the affected systems would require entry into LCOs and an overall degraded plant condition beyond the design/licensing basis, regardless of operating mode. Plant operating experience has shown that this CV does function to provide release to the PRT as indicated by PRT temperature, pressure, and level increases.
Alt. Testing: Disassemble and inspect per RV-1. This valve cannot be part stroke exercised after disassembly.
Frequency for Alt. Testing: Every third refueling outage. In the event of unacceptable indications, test at the next refueling outage.

ROJ-13
System: Reactor Coolant System
Valve: FSV-68-394, FSV-68-395, FSV-68-396, FSV-68-397
Class: 2
Category: B
Function: Operates to provide a reactor vessel head vent path; to vent non-condensable from head during an accident to promote natural circulation and prevent gases from impeding reactor coolant circulation flow through the core.
Impractical Requirement: Exercise valve quarterly and during cold shutdown (full or partial). Refer to RV-2 also.
Basis for Deferred Test: These valves are Target Rock valves (similar to the pressurizer PORVs) and have a probability of sticking open. Inappropriate or inadvertent operation of this system (resulting from valves sticking open) could create an unanalyzed condition or worsen the severity of an analyzed faulted condition. Due to the risk of stroking these valves, the licensee requests relief to exercise these valves at refueling outages only.
Alt. Testing: Full stroke exercise at refueling outages. See RV-6 for additional details on FSV-68-396 and -397.
Frequency for Alt. Testing: Every refueling outage.

ROJ-14
System: CVCS
Valves: 62-560, 62-561, 62-562, 62-563, 62-576, 62-577, 62-578, 62-579
Class: 1
Category: C
Function: Opens to admit flow to RCP seals and closes to prevent RCS back flow (intersystem LOCA) and containment integrity (62-560, 62-561, 62-562, 62-563).
Impractical Requirement: Verify closure quarterly or during cold shutdown (full or partial stroke).
Basis for Deferred Test: These valves cannot be exercised closed without terminating seal flow to the RCPs, depressurizing and draining down the RCS. This is not normally done unless the plant is in mode 6 and testing the valves during operation results in "hardship and unusual difficulty without a compensating increase in the level of quality and safety." For these reasons, justification is provided to allow stroking of these valves to the closed position during refueling.
Alternate Testing: Verify valves full open quarterly and full stroke exercise to the closed position during refueling outages.
Frequency for Alt. Testing: Each Refueling Outage.

ROJ-15
System: Essential Raw Cooling Water System (ERCW)
Valves: FCV-67-123, FCV-67-124, FCV-67-125, FCV-67-126
Class: 3
Category: B-Active
Function: Open to provide ERCW cooling water flow to the containment spray heat exchanger shell side.
Impractical Requirement: Exercise valve on a quarterly basis (full or partial stroke).
Basis for Deferred Test: The raw water of the ERCW system contains chlorides which can cause heat exchanger tube pitting, and organisms which can produce micro biologically induced corrosion in the heat exchanger piping and shell. To preserve their integrity, these heat exchangers are placed in wet lay-up with demineralized water and corrosion inhibitors, and their chemistry is monitored. Whenever the chemistry specifications are exceeded, the heat exchangers are drained, flushed, and again placed in lay-up.

During modes 1, 2, 3, and 4, Technical Specification 3.6.2.1 requires that the plant maintain two independent Containment Spray Systems operable or enter an LCO. When a containment spray heat exchanger is drained during the cleanup/lay-up operation, that containment spray loop is declared inoperable placing the unit in an LCO.

Chemistry data demonstrates that the quarterly cycling of the inlet and outlet heat exchanger valves increases the intrusion of raw water, thus forcing the plant to enter the LCO more often to preserve the integrity of the heat exchangers.

Alt Testing: Full stroke exercise these valves as required on an alternate frequency.
Frequency for Alt. Testing: Full stroke exercise these valves:

1. at least once each refueling outage
2. each time the heat exchanger chemistry requires cleanup/lay-up operations, but at a frequency not to exceed once per quarter.

ROJ-16
System: Essential Raw Cooling Water System (ERCW)
Valves: 67-512A, 67-512B, 67-517A, 67-517B
Class: 3
Category: C-Active
Function: Open to provide ERCW cooling water discharge form the DG coolers and closes to prevent flooding of the DG building in the event of a break upstream of the check valve.
Impractical Requirement: Exercise valve closed on a quarterly or cold shutdown basis (full or partial stroke).
Basis for Deferred Test: These valves are part of the IE Bulletin 83-03 program for disassembly and inspection. A meaningful closure test is not possible on a quarterly basis due to the inability to provide sufficient back pressure for check valve closure.
Alt Testing: Disassemble and inspect per RV-1
Frequency for Alt. Testing: Each refueling outage per RV-1

ROJ-17
System: Auxiliary Feedwater System
Valves: 3-891, 3-892
Class: 2
Category: C-ACT
Function: These check valves are located in the individual steam lines supplying the AFWP turbine. The safety function in the open position is to allow steam flow to the pump turbine. Additionally, the valves must be capable of closure to prevent blowdown of the adjacent steam generator due to a line fault occurring upstream of the valve.
Impractical Requirement: Full stroke exercise quarterly.
Basis for Deferred Test: Full stroke exercising these valves during power operation could result in severe thermal shock to the auxiliary feedwater nozzles and cause SG level transients and a unit trip. Full exercising these valves to the closed position during normal plant operation would require closing the upstream motor operated valve and depressurizing between the closed valve and the check valve being tested. This is not possible because of the inability to depressurize due to the lack of vents or drains located within the isolated boundary. The use of an outside pressure source to overcome the SG pressure is not practical due to the high pressure involved. Additionally, isolation of both the SG 1 and 4 steam supply lines will result in the loss of all AFW for the loss of all AC power event. Exercising during cold shutdown would require the use of an outside air or nitrogen pressure source to exceed the SG pressure. This method is undesirable due to the energy involved and the personnel hazards. Also, this method provides minimal assurance of valve reliability and operational readiness.
Alt Testing/Frequency: These valves will be part stroked during the associated pump test and full stroked during hot shutdown or hot standby (but not more often than once per three months). These valves are in the check valve disassembly program to satisfy the recommendations of SOER 86-03. 3-891, 3-892 will be disassembled and inspected per the disassembly and inspection program (one valve each refueling outage per RV-1) to satisfy the check valve closing test.

ROJ-18
System: Various Systems
Valves: All "B-ACT" Valves with an "Actuator Type" of "M' in Appendix A - ASME Inservice Valve Testing Tables (approximately 32 valves per unit and 9 common valves)

1-619, 1-620, 1-621, 1-622
62-929, 62-932, 62-944
67-543A, 67-543B, 67-544,
70-531, 70-540, 70-542,
HCV-74-36, HCV-74-37, 74-520, 74-521, 74-530, 74-531
78-513

Class: 2 or 3
Category: B-ACT
Function: These valves are manual valves subject to local handwheel operation only.
Impractical Requirement: Full or partial stroke exercise quarterly or cold shutdown.
Basis for Deferred Test: These valves are only operated locally in the plant via the manual handwheel. Access to the valve requires entry into remote areas of the plant where 1) extreme environmental conditions exist (e.g. main steam valve vault upper elevations where the ambient temperature is excessive), 2) areas where personnel radiation exposure challenges the ALARA approach (e.g. CVCS blender area on elevation 690), 3) valve operation causes a change in the system flow path that cannot be tolerated due to the length of time required for the manual handwheel stroke exercise (e.g. CCS pump isolation valves and ERCW outlet of the CCS heat exchangers), 4) valve operation causes an alignment that places the system in a configuration that is outside the design/licensing basis (e.g. RHR heat exchanger bypass valves and letdown to CVCS path), and 5) administrative controls such as unlocking a normally locked valve must be bypassed in order to exercise the valve (e.g. RHR pump discharge). Exercising these valves during cold shutdown is not practical due to the length of time necessary to stroke the valves may extend the outage creating undue burden. Since these valves are simple manual valves without the complex power operators and are used infrequently in the course of operation, quarterly or cold shutdown exercising is not necessary to ensure a degree of operational readiness commensurate with their safety function. Quarterly exercising would, in essence, result in over testing the valve and causing unwarranted degradation, above that normally expected, due to the infrequency of use.
Alt Testing/Frequency: These manual valves will be full stroke exercised during refueling.

ROJ-19
System: Chemical and Volume Control System
Valves: 62-523, 62-530
Class: 2
Category: C-ACT
Function: Opens for miniflow path for its associated CCP and closes to prevent reverse flow through its idle CCP.
Impractical Requirement: Full stroke exercise quarterly.
Basis for Deferred Test: Verification that this valve strokes full open quarterly is not possible because flow instrumentation is not available on the CCP miniflow lines. The installation of external flow measurement devices quarterly or during cold shutdown is an excessive burden and increases personnel radiation exposure. These valves are tested quarterly in the CCP tests and an acceptable quarterly CCP miniflow test in accordance with OM-6 provides confidence that these check valves have been exercised to the extent necessary for them to perform their safety function.
Alt Testing/Frequency: Partial stroke open quarterly and verify closure quarterly during the associated CCP tests. Full stroke open during refueling with the miniflow line instrumented with an external flow measurement device.

ROJ-20
System: Auxiliary Feedwater System
Valves: 3-861, 3-862, 3-921, 3-922
Class: 2
Category: C-ACT
Function: These check valves are located in the AFW lines supplying SGs 2 and 3. The safety function in the open position is to allow AFW flow to the SGs. Additionally, the valves must be capable of closure to prevent blowdown a steam generator into the Reactor Building annnulus due to a line fault occurring upstream of the check valves in the annulus.
Impractical Requirement: Full stroke exercise quarterly.
Basis for Deferred Test: Full stroke exercising these valves during power operation could result in severe thermal shock to the auxiliary feedwater nozzles and cause SG level transients and a unit trip. Full exercising these valves to the closed position during normal plant operation would require entry into containment, operation of manual containment isolation valves violating containment integrity, and depressurizing upstream of the closed valve. The test of the outboard check valve requires an outside pressure source to pressurize between the series check valves. This pressure source would have to be qualified for SG pressure conditions. The use of an outside pressure source to overcome the SG pressure is not practical due to the high pressure involved and the resulting personnel hazards involved.
Alt Testing/Frequency: These valves will be full stroked during hot shutdown or hot standby (but not more often than once per three months). These valves are in the check valve disassembly program to satisfy the recommendations of SOER 86-03. 3-891, 3-892 will be disassembled and inspected per the disassembly and inspection program (one valve each refueling outage per RV-1) to satisfy the check valve closing test.

ROJ-21
System: Auxiliary Feedwater System
Valves: 3-830, 3-831, 3-871, 3-872
Class: 2
Category: C-ACT
Function: These check valves are located in the AFW lines supplying SGs 2 and 3. The safety function in the open position is to allow AFW flow to the SGs. Additionally, the valves must be capable of closure to prevent reverse flow through an idle pump.
Impractical Requirement: Full stroke exercise quarterly.
Basis for Deferred Test: Full stroke exercising these valves during power operation could result in severe thermal shock to the auxiliary feedwater nozzles and cause SG level transients and a unit trip. Full exercising these valves to the closed position during normal plant operation would require an outside pressure source to pressurize between the series check valves and the check valve being tested. This pressure source would have to be qualified for SG pressure conditions. The use of an outside pressure source to overcome the SG pressure is not practical due to the high pressure involved and the resulting personnel hazards involved.
Alt Testing/Frequency: These valves will be full stroked during hot shutdown or hot standby (but not more often than once per three months). These valves are in the check valve disassembly program to satisfy the recommendations of SOER 86-03 and will be disassembled and inspected per the disassembly and inspection program (one valve each refueling outage per RV-1) to satisfy the check valve closing test.

ROJ-22
System: Component Cooling System
Valves: 70-681A, 70-681B, 70-681C, 70-681D, 70-682A, 70-682B, 70-682C, 70-682D
Class: 3
Category: C
Function: These valves allow flow to the RCP thermal barriers and close for isolation of a thermal barrier breach.
Impractical Requirement: Full or partial stroke closed quarterly.
Basis for Deferred Test: Exercising these valves during operation of the RCPs results in loss of cooling water flow to the reactor coolant pump thermal barriers introducing the possibility of loss of a RCP thermal barrier. Stopping the RCP's for testing would increase the wear and stress on the RCP's, increase the number of cycles on other plant equipment, and would extend the length of cold shutdown outages.
Alt Testing/Frequency: Verify full open capability quarterly. These valves will be disassembled and inspected per the disassembly and inspection program (one valve each refueling outage per RV-1) to satisfy the check valve closing test.

APPENDIX D: RELIEF REQUESTS

RELIEF REQUEST RV-1
CHECK VALVE DISASSEMBLY AND INSPECTION

System: Safety Injection System
Valve Group # 1: 63-622, 63-623, 63-624, 63-625
Class: 1
Category: AC
Function: Opens to admit flow from cold leg accumulators to the RCS during safety injection and closes to prevent intersystem LOCA.

System: Safety Injection System
Valve Group #2: 63-560, 63-561, 63-562, 63-563
Class: 1
Category: AC
Function: Opens to admit flow from cold leg accumulators, safety injection pumps, and RHR pumps to the RCS cold legs during safety injection and close to prevent intersystem LOCA.

System: Containment Spray
Valve Group # 3: 72-547, 72-548, 72-555, 72-556 NOTE: This valve group consists of two pairs of identical valves. The two pairs are not all the same size but constituted an approved Relief Request (PV-10) in the first 10 interval. This justification remains valid since these valve are in the same inaccessible location (upper containment dome) and remain passive through out the fuel cycle.
Class: 2
Category: C
Function: Opens to admit flow from the containment spray and RHR pumps to the spray headers. Close for containment isolation.

System: Upper Head Injection System
Valve Group # 4: SYSTEM DELETED - NOT USED

System: Safety Injection System
Valve Group # 5: 63-632, 63-633, 63-634, 63-635;
Valve Group # 6: 63-640, 63-641, 63-643, 63-644.
Class: 1
Category: AC
Function: Opens to allow flow from RHRPs to RCS and closes to prevent intersystem LOCA.

System: Reactor Coolant System
Valve Group 7: 68-559 NOTE: This valve is grouped by itself and will be disassembled and inspected every third refueling outage. This was an approved relief request (PV-17) in the first 10 year interval. Additionally, in the event of unacceptable indications, the valve will be restored to an acceptable condition and retested at the next refueling outage.
Class: 2
Category: C
Function: Opens to admit SIS and CS relief valve discharge to the PRT.

System: ERCW
Valves Group #8: 67-512A, 67-512B, 67-517A, 67-517B
Class: 3
Category: C-Active
Function: Open to allow ERCW discharge from the DG and close to prevent flooding of the DGB on a line break.

System: Auxiliary Feedwater System
Valve Group #9: 3-891, 3-892
Class: 2
Category: C-ACT
Function: These check valves are located in the individual steam lines supplying the AFWP turbine. The safety function in the open position is to allow steam flow to the pump turbine. Additionally, the valves must be capable of closure to prevent blowdown of the adjacent steam generator due to a line fault occurring upstream of the valve.

System: Component Cooling System
Valve Group #10: 70-681A, 70-681B, 70-681C, 70-681D,
Valve Group #11: 70-682A, 70-682B, 70-682C, 70-682D
Class: 3
Category: C
Function: These valves allow flow to the RCP thermal barriers and close for isolation of a thermal barrier breach.

System: Auxiliary Feedwater System
Valve Group #12: 3-861, 3-862, 3-921, 3-922
Class: 2
Category: C-ACT
Function: These check valves are located in the AFW lines supplying SGs 2 and 3. The safety function in the open position is to allow AFW flow to the SGs. Additionally, the valves must be capable of closure to prevent blowdown a steam generator into the Reactor Building annulus due to a line fault occurring upstream of the check valves in the annulus.

System: Auxiliary Feedwater System
Valve Group #13: 3-830, 3-831, 3-871, 3-872
Class: 2
Category: C-ACT
Function: These check valves are located in the AFW lines supplying SGs 2 and 3. The safety function in the open position is to allow AFW flow to the SGs. Additionally, the valves must be capable of closure to prevent reverse flow through an idle pump.

Impractical Requirement: OM-1, Section 4.3.2.1; Exercising Test Frequency - Exercise every 3 months

Basis for Relief: In Generic Letter 89-04 Position 2, the NRC staff established a position reguarding valve disassembly and inspection as an approved alternate method to be used as a means of determining that a valve disc will full stroke exercise open or of verifying closure capability. When direct or indirect methods of exercising check valves are not available or when it is impractical to demonstrate opening or closing capabilities by other means, the disassembly and inspection method will be used to fulfill the inservice testing requirements. Several check valves in this inservice test program require disassembly during refueling outages as an alternate method of verifying check valve full-stroke capabilities and operational readiness. To minimize the number of check valves that are disassembled during refueling outages, a check valve sample disassembly schedule and inspection program is implemented. This program complies with the requirements of Generic Letter 89-04 Position 2 and meets the NRC guidelines set forth within the generic letter. These guidelines are summarized below.

- Identical valves shall be grouped and one valve from each group shall be tested during each refueling outage.

- Identical valve groups include those valves that are of the same design (i.e. same manufacturer, size, model number, and material of construction); have the same service condition (i.e. water, condensate, steam) and have the same valve orientation (i.e. horizontally or vertically mounted).

- Valve groupings shall not exceed more than four valves per group.

- At each disassembly, the full stroke capability shall be manually verified and the internals inspected to ensure the valve is structurally sound with no loose or corroded parts.

- If the disassembled valve is unable to be full stroke exercised, or is binding, or failure of the valve internals is observed (loose or corroded parts), the valve shall be repaired as necessary and the remaining valves in the group shall be disassembled, inspected, and manually full stroked exercised.

- Each valve included in the scope of the sample disassembly and inspection program shall be disassembled at least once every eight years. Any deviation from this interval shall require a revision to this disassembly and inspection program and Generic Letter 89-04 Positions 2.a, 2.b, and 2.c shall be addressed and documented in the record of tests.

Alt Testing: When practical, partial valve stroking quarterly or during cold shutdown will be performed. Valves will be disassembled during refueling outages on a rotating basis. Additionally, partial exercising shall be performed upon reassembly when practical.

Frequency for Alt. Testing: When practical, partial valve stroking quarterly or during cold shutdown will be performed. Valves will be disassembled during refueling outages on a rotating basis.

RELIEF REQUEST RV-2
ALTERNATE TO AUXILIARY AIR COMPRESSOR ERCW VALVE STROKE TIMING

System: ERCW to Compressed Air System
Valve: FSV-32-61, FSV-32-87
Class: 3
Category: B-ACT
Function: Opens to provide ERCW to the auxiliary control air compressors.

Impractical Requirement: Stroke time test.

Basis for Relief: These solenoid valves are part of the auxiliary air compressor package, have no position indication and are totally enclosed, preventing visual confirmation of valve position. Satisfactory operation of the auxiliary air compressors verifies that FSV-32-61 and 87 operates. Alternative testing will provide an acceptable level of safety.

Alt. Testing: Exercise by observing the auxiliary air compressors to ensure the solenoid valve opens to supply ERCW cooling by ensuring auxiliary air compressor temperature is acceptable.

Frequency for Alt. Testing: Quarterly

RELIEF REQUEST RV-3
RHR VALVE EXERCISING DURING COLD SHUTDOWN

System: Residual Heat Removal (RHR)
Valve: FCV-74-1, FCV-74-2

Class: 1
Category: A-Active
Function: Open to provide suction from the RCS for the Residual Heat Removal pumps when RCS pressure is below setpoint.
Close to act as pressure isolation valves to prevent overpressurization of the RHR system.

Impractical Requirement: Full stroke exercise every 3 months while in cold shutdown or refueling when RHR is required to be operable.

Basis for Relief: Full stroking of RHR return valves during shutdown isolates decay heat removal capacity, mixing capacity needed to maintain uniform boron concentration within the RCS, and ability to produce gradual reactivity changes during boron concentration reductions in the RCS. It is generally not considered prudent to remove a valve from its safety related position to perform a periodic code test when that testing places the unit in an overall degraded condition. With respect to these specific valves, it is deemed additionally ill-advised in consideration of Unresolved Safety Issues (USI) A-31, "Residual Heat Removal Shutdown Requirements" and A-45, "Shutdown Decay Heat Removal Requirements" which address concerns regarding loss of residual heat removal capability leading to core damage. Reliability of performing heat removal functions is specifically identified as being dependent on the frequency of events that jeopardize decay heat removal operations.

Alternative testing will provide an acceptable level of quality and safety and the increase in the level of safety by normal testing is not commensurate with the difficulties or risks involved. Extended outages of greater than 3 months are not normally anticipated.

Alt. Testing: Full stroke exercise while shutting down when going on RHR as required. Full stroke exercise during startup when coming off RHR as required.

Frequency for Alt. Testing: Full stroke exercise while shutting down (when going on RHR) if not exercised in the last 3 months or the projected outage duration would cause valves to require testing prior to startup. If not stroked during shutdown the surveillance interval expires during outage, or if outage duration exceeds 3 months, valves need not be exercised until startup when coming off RHR.

RELIEF REQUEST RV-4

This relief request has been deleted.

RELIEF REQUEST RV-5
ERCW PUMP AIR RELEASE CHECK VALVE EXERCISING DURING PUMP TEST

System: Essential Raw Cooling Water
Valves: 67-719A, 67-719B, 67-720A, 67-720B, 67-739A, 67-739B, 67-740A, 67-740B

Class: 3
Category: C-Active
Function: Valves open to admit air to pump column to allow the water in the pump column to drain back to the pump pit upon stopping the pump. These valves also remain open for a period of time upon starting the pump to provide a vent path for the air in the pump columns and discharge head. Then the valves close to provide a flow boundary after the pump starts and water reaches the pump discharge head and the check valve. The valves are located in a horizontal run of pipe and are installed upside down (i.e., the valve bonnets face downward) so that gravity will assist in opening the valve.

Impractical Requirement: Verify that valves full stroke open.

Basis for Relief: There is no required flow rate for these valves and no practical way to determine the flow rate through these small diameter valves. The rules of OM Part 10 and NUREG-1482 were developed with liquid flow in mind and not compressible gaseous flow. Attempting to measure an air flow rate this small will result in very inaccurate and unrepeatable results. Additionally, the nature of the flow through these valves is such that it will not be at a steady state long enough to quantify. The flow will rapidly accelerate to a maximum and then steadily decrease as the driving force of the water column level above the river elevation decreases.

Alternate Testing: Verify that the valves open after stopping the pumps by use of a smoke test to verify that the valves at least partially stroke open. This will be indicated by the smoke being drawn into the piping by the vacuum caused by the water in the pump column when it starts to drain back to the pump pit. The closing function of the valves will be demonstrated during each pump test.

Frequency for Alternate Testing: Once per quarter.

RELIEF REQUEST RV-6
ALTERNATE TO REACTOR HEAD VENT VALVE STROKE TIMING

System: Reactor Coolant System
Valve: FSV-68-396, FSV-68-397
Class: 1
Category: B-Active
Function: Valves are opened manually to provide a reactor vessel head vent path; to vent non-condensables from the head during an accident to promote natural circulation; and to prevent gases from impeding reactor coolant circulation flow through the core.

Impractical Requirement: Quarterly stroke time test.

Basis for Relief: These solenoid valves have no position indication and are totally enclosed which prevents visual confirmation of the valve position and therefore the inability to measure the time that it takes the valve to stroke.

Alternate Testing: Verify that the valve operate properly through the use of acoustic monitoring.

Frequency: Every refueling outage.

Note: This is similar to relief which was approved for the first interval testing program.

APPENDIX E:
CATEGORY B - PASSIVE VALVES WITHOUT REMOTE POSITION INDICATION

Summary of Information Provided

The following Tables use the format referenced in the 1978 "NRC Staff Guidance for Preparing Pump and Valve Test Program Descriptions and Associated Relief Requests Pursuant to 10 CFR 50.55a(g)" to give valve descriptions. The following information is provided:

1. System Name and Number

2. Drawing Number

3. Valve Number

4. ASME Section XI Classification

5. Drawing Coordinates of Valve

6. Valve Category Per Section XI, Article IWV-2100

7. Valve Size

8. Valve Type

9. Actuator Type

10. Normal Position

11. Testing Required Per Section XI

12. Relief Request Required

13. Alternate Testing

14. Remarks (Including Relief Request Numbers, Specific Valve Data, etc.)

SYSTEM: (1) MAIN STEAM DRAWING NO: 47W801-1

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
1-1-532	2	G-4	B-PAS	2	GL	M	LC	None			
2-1-532	2	G-4	B-PAS	2	GL	M	LC	None			
1-1-534	2	E-4	B-PAS	2	GL	M	LC	None			
2-1-534	2	E-4	B-PAS	2	GL	M	LC	None			
1-1-536	2	C-4	B-PAS	2	GL	M	LC	None			
2-1-536	2	C-4	B-PAS	2	GL	M	LC	None			
1-1-538	2	A-4	B-PAS	2	GL	M	LC	None			
2-1-538	2	A-4	B-PAS	2	GL	M	LC	None			

SYSTEM: (2) CONDENSATE DRAWING NO: 47W804-1

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
2-504	NNCC	G-2	B-PAS	12"	GA	M	LO	None			
2-505	NNCC	G-3	B-PAS	12"	GA	M	LO	None			

SYSTEM: (3) FEEDWATER

DRAWING NO: 47W803-1

VALVE NUMBER	ASME CLASS	COORDINATES DRAWING	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
1-3-609	2	C-3	B-PAS	2	GL	M	LC	None			
2-3-609	2	C-3	B-PAS	2	GL	M	LC	None			
1-3-610	2	E-3	B-PAS	2	GL	M	LC	None			
2-3-610	2	E-3	B-PAS	2	GL	M	LC	None			
1-3-611	2	G-3	B-PAS	2	GL	M	LC	None			
2-3-611	2	G-3	B-PAS	2	GL	M	LC	None			
1-3-612	2	B-3	B-PAS	2	GL	M	LC	None			
2-3-612	2	B-3	B-PAS	2	GL	M	LC	None			

SYSTEM: (3) AUXILIARY FEEDWATER

DRAWING NO: 47W803-2

VALVE NUMBER	ASME CLASS	COORDINATES DRAWING	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
3-800	NNCC	B-4	B-PAS	16"	GA	M	LO	None			
1-3-803	NNCC	E-5	B-PAS	8"	GA	M	LO	None			
2-3-803	NNCC	D-5	B-PAS	8"	GA	M	LO	None			
1-3-804	NNCC	F-6	B-PAS	8"	GA	M	LO	None			
2-3-804	NNCC	D-6	B-PAS	8"	GA	M	LO	None			
1-3-809	NNCC	F-4	B-PAS	10"	GA	M	LO	None			
2-3-809	NNCC	B-4	B-PAS	10"	GA	M	LO	None			
1-3-816	NNCC	F-5	B-PAS	1-1/2	GL	M	LO	None			
2-3-816	NNCC	F-5	B-PAS	1-1/2	GL	M	LO	None			
1-3-817	NNCC	F-6	B-PAS	1-1/2	GL	M	LO	None			
2-3-817	NNCC	F-6	B-PAS	1-1/2	GL	M	LO	None			
1-3-819	NNCC	B-7	B-PAS	1-1/2	GL	M	LO	None			
2-3-819	NNCC	B-7	B-PAS	1-1/2	GL	M	LO	None			
1-3-826	3	F-3	B-PAS	4	GA	M	LO	None			

SYSTEM: (3) AUXILIARY FEEDWATER DRAWING NO: 47W803-2

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
2-3-826	3	F-3	B-PAS	4	GA	M	LO	None			
1-3-827	3	E-3	B-PAS	4	GA	M	LO	None			
2-3-827	3	E-3	B-PAS	4	GA	M	LO	None			
1-3-828	3	C-3	B-PAS	4	GA	M	LO	None			
2-3-828	3	C-3	B-PAS	4	GA	M	LO	None			
1-3-829	3	B-3	B-PAS	4	GA	M	LC	None			
2-3-829	3	B-3	B-PAS	4	GA	M	LO	None			
1-3-834	2	F-3	B-PAS	4	GA	M	LO	None			
2-3-834	2	F-3	B-PAS	4	GA	M	LO	None			
1-3-835	2	E-3	B-PAS	4	GA	M	LO	None			
2-3-835	2	E-3	B-PAS	4	GA	M	LO	None			
1-3-836	2	C-3	B-PAS	4	GA	M	LO	None			
2-3-836	2	C-3	B-PAS	4	GA	M	LO	None			
1-3-837	2	B-3	B-PAS	4	GA	M	LO	None			

SYSTEM: (3) AUXILIARY FEEDWATER DRAWING NO: 47W803-2

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
2-3-837	2	B-3	B-PAS	4	GA	M	LO	None			
1-3-867	3	F-3	B-PAS	4	GL	M	LO	None			
2-3-867	3	F-3	B-PAS	4	GL	M	LO	None			
1-3-868	3	D-3	B-PAS	4	GL	M	LO	None			
2-3-868	3	D-3	B-PAS	4	GL	M	LO	None			
1-3-869	3	C-3	B-PAS	4	GL	M	LO	None			
2-3-869	3	C-3	B-PAS	4	GL	M	LO	None			
1-3-870	3	A-3	B-PAS	4	GA	M	LO	None			
2-3-870	3	A-3	B-PAS	4	GA	M	LO	None			

SYSTEM: (3) AUXILIARY FEEDWATER DRAWING NO: 47W803-2

VALVE NUMBER	ASME CLASS	COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
1-3-875	3	F-3	B-PAS	4	GA	M	LO	None			
2-3-875	2	F-3	B-PAS	4	GA	M	LO	None			
1-3-876	2	D=3	B-PAS	4	GA	M	LO	None			
2-3-876	2	D-3	B-PAS	4	GA	M	LO	None			
1-3-877	2	C-3	B-PAS	4	GL	M	LO	None			
2-3-877	2	C-3	B-PAS	4	GL	M	LO	None			
1-3-878	2	A-3	B-PAS	4	GL	M	LO	None			
2-3-878	2	A-3	B-PAS	4	GL	M	LO	None			
0-3-923	NNCC	B-7	B-PAS	3"	GA	M	LO	None			
0-3-927	NNCC	B-6	B-PAS	3"	GA	M	LO	None			

SYSTEM: (62) CHEMICAL & VOLUME CONTROL SYSTEM DRAWING NO: 47W809-1

VALVE NUMBER	ASME CLASS	CODE DRAWING	CODE INATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FCV-62-98	3	D-9	B-PAS	2"	GA	MO	O	None				
FCV-62-99	3	D-9	B-PAS	2"	GA	MO	O	None				
62-509	2	G-10	B-PAS	6"	GA	M	O	None				
62-510	2	G-10	B-PAS	6"	GA	M	O	None				
62-527	2	G-8	B-PAS	4"	GA	M	O	None				
62-533	2	G-8	B-PAS	4"	GA	M	O	None				
62-535	2	F-8	B-PAS	3"	GA	M	O	None				
62-536	2	F-8	B-PAS	3"	GA	M	O	None				
62-537	2	D-8	B-PAS	3"	GA	M	O	None				
62-539	NNCC	D-8	B-PAS	3"	GA	M	O	None				
62-696	NNCC	E-10	B-PAS	2"	GA	M	O	None				
62-713	NNCC	A-10	B-PAS	3/4"	GL	M	C	None				ISOLATE GFFD
62-709	2	B-7	B-PAS	1"	GL	M	C	None				

SYSTEM: (62) CHEMICAL AND VOLUME CONTROL SYSTEM DRAWING NO: 47W809-2

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
62-927	2	A-3	B-PAS	1"	GA	M	O	None			
62-936	NNCC	C-2	B-PAS	2"	GA	M	C	None			

SYSTEM: (62) CHEMICAL & VOLUME CONTROL SYSTEM DRAWING NO: 47W809-5

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
1-62-1047	NNCC	H-6	B-PAS	2"	GA	M	C	None			
2-62-1047	NNCC	H-5	B-PAS	2"	GA	M	C	None			
1-62-1048A	2	H-7	B-PAS	3"	GA	M	C	None			
2-62-1048A	2	H-4	B-PAS	3"	GA	M	C	None			
1-62-1048B	2	H-6	B-PAS	3"	GA	M	O	None			
2-62-1048B	2	H-5	B-PAS	3"	GA	M	O	None			
1-62-1049	2	H-8	B-PAS	3"	GA	M	O	None			
2-62-1049	2	H-3	B-PAS	3"	GA	M	O	None			
0-62-1040	2	H-5	B-PAS	3"	GA	M	O	None			
1-62-1050A	2	H-7	B-PAS	3"	GA	M	O	None			
2-62-1050A	2	H-4	B-PAS	3"	GA	M	O	None			
1-62-1050B	2	G-6	B-PAS	3"	GA	M	O	None			
2-62-1050B	2	G-4	B-PAS	3"	GA	M	O	None			

SYSTEM: (62) CHEMICAL & VOLUME CONTROL SYSTEM

DRAWING NO: 47W809-5

VALVE NUMBER	ASME CLASS	COORDINATES DRAWING	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
1-62-1051A	2	G-7	B-PAS	2"	GA	M	C	None			
2-62-1051A	2	G-4	B-PAS	2"	GA	M	C	None			
1-62-1051B	2	G-6	B-PAS	2"	GA	M	C	None			
2-62-1051B	2	G-4	B-PAS	2"	GA	M	C	None			
1-62-1053A	NNCC	F-7	B-PAS	2"	GA	M	O	None			
2-62-1053A	NNCC	F-4	B-PAS	2"	GA	M	O	None			
1-62-1053B	2	F-6	B-PAS	2"	GA	M	C	None			
2-62-1053B	2	F-4	B-PAS	2"	GA	M	C	None			
1-62-1054A	2	F-7	B-PAS	2"	GA	M	O	None			
2-62-1054A	2	F-4	B-PAS	2"	GA	M	O	None			
1-62-1054B	2	F-6	B-PAS	2"	GA	M	O	None			
2-62-1054B	2	F-5	B-PAS	2"	GA	M	O	None			

SYSTEM: (62) CHEMICAL & VOLUME CONTROL SYSTEM

DRAWING NO: 47W809-5

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
1-62-1055A	2	E-7	B-PAS	2"	GA	M	O	None			
2-62-1055A	2	E=4	B-PAS	2"	GA	M	O	None			
1-62-1055B	2	E-7	B-PAS	2"	GA	M	C	None			
2-62-1055B	2	E-4	B-PAS	2"	GA	M	C	None			
1-62-1057	2	D-6	B-PAS	3/4"	GA	M	O	None			
2-62-1057	2	D-3	B-PAS	3/4"	GA	M	O	None			
0-62-1057	2	D-5	B-PAS	3/4"	GA	M	O	None			
1-62-1059	2	E-10	B-PAS	1"	GA	M	O	None			
2-62-1059	2	E-1	B-PAS	1"	GA	M	O	None			
1-62-1060	2	F-9	B-PAS	2"	GA	M	O	None			
2-62-1060	2	F-2	B-PAS	2"	GA	M	O	None			
1-62-1061	2	F-9	B-PAS	2"	GA	M	O	None			
2-62-1061	2	F-2	B-PAS	2"	GA	M	O	None			

SYSTEM: (63) SAFETY INJECTION SYSTEM DRAWING NO: 47W811-1

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FCV-63-67	2	B-6	B-PAS	10	GA	MO	O	None			
FCV-63-80	2	B-4	B-PAS	10	GA	MO	O	None			
0-63-98	2	B-3	B-PAS	10	GA	MO	O	None			
0-63-118	2	B-1	B-PAS	10	GA	MO	O	None			
0-63-525	2	E-8	E	4	GA	M	LO	None			
0-63-527	2	D-8	E	4	GA	M	LO	None			
0-63-531	2	E-10	E	4	GA	M	LO	None			
0-63-525	2	E-8	B-PAS	4	GA	M	LO	None			
0-63-527	2	D-8	B-PAS	4	GA	M	LO	None			
0-63-531	2	E-10	B-PAS	4	GA	M	LO	None			

SYSTEM: (67) ESSENTIAL RAW COOLING WATER

DRAWING NO: 47W845-1 (R10)

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FCV-67-12	3	E-1	B-PAS	36	BUT	MO	O	None			RPI Unavailable AERCW Deleted - Appendix R Denergized
FCV-67-14	3	D-1	B-PAS	36	BUT	MO	O	None			RPI Unavailable AERCW Deleted - Appendix R Denergized
FCV-67-22	3	F-10	B-PAS	30	BUT	MO	O	None			RPI Unavailable AERCW Deleted - Appendix R Denergized
FCV-67-24	3	E-10	B-PAS	30	BUT	MO	O	None			RPI Unavailable AERCW Deleted - Appendix R Denergized
FCV-67-364	3	E-1	B-PAS	36	BUT	MO	O	None			RPI Unavailable AERCW Deleted - Appendix R Denergized
FCV-67-365	3	D-1	B-PAS	36	BUT	MO	O	None			RPI Unavailable AERCW Deleted - Appendix R Denergized
FCV-67-366	NNCC	E-3	B-PAS	24	BUT	MO	O	None			RPI Unavailable AERCW Deleted - Appendix R Denergized
FCV-67-367	NNCC	E-3	B-PAS	24	BUT	MO	O	None			RPI Unavailable AERCW Deleted - Appendix R Denergized

SYSTEM: (67) ESSENTIAL RAW COOLING WATER DRAWING NO: 47W845-1

VALVE NUMBER	ASME CLASS	COORDINATES	CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
1-67-505A	3	F-10	B-PAS	30"	BUT	M	LC	None			
2-67-505A	3	F-7	B-PAS	30"	BUT	M	LC	None			
1-67-505B	3	E-10	B-PAS	30"	BUT	M	LC	None			
2-67-505B	3	E-7	B-PAS	30"	BUT	M	LC	None			
1-67-506A	3	F-10	B-PAS	24"	BUT	M	LC	None			
2-67-506A	3	F-6	B-PAS	24"	BUT	M	LC	None			
1-67-506B	3	E-10	B-PAS	24"	BUT	M	LC	None			
2-67-506B	3	E-6	B-PAS	24"	BUT	M	LC	None			
1-67-507A	3	A-12	B-PAS	14"	BUT	M	LO	None			
2-67-507A	3	F-6	B-PAS	14"	BUT	M	LO	None			
1-67-507B	3	A-11	B-PAS	14"	BUT	M	LO	None			
2-67-507B	3	C-6	B-PAS	14"	BUT	M	LO	None			

SYSTEM: (67) ESSENTIAL RAW COOLING WATER DRAWING NO: 47W845-1

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
1-67-510A	3	C-11	B-PAS	6"	BUT	M	O	None			
2-67-510A	3	C-9	B-PAS	6"	BUT	M	O	None			
1-67-510B	3	C-8	B-PAS	6"	BUT	M	O	None			
2-67-510B	3	C-6	B-PAS	6"	BUT	M	O	None			
1-67-511A	3	B-11	B-PAS	8"	BUT	M	O	None			
2-67-511A	3	B-9	B-PAS	8"	BUT	M	O	None			
1-67-511B	3	B-9	B-PAS	8"	BUT	M	O	None			
2-67-511B	3	B-7	B-PAS	8"	BUT	M	O	None			
1-67-515A	3	C-11	B-PAS	6"	BUT	M	O	None			
2-67-515A	3	C-11	B-PAS	6"	BUT	M	O	None			
1-67-515B	3	C-8	B-PAS	6"	BUT	M	O	None			
2-67-515B	3	C-8	B-PAS	6"	BUT	M	O	None			

SYSTEM: (67) ESSENTIAL RAW COOLING WATER

DRAWING NO: 47W845-1

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
1-67-516A	3	B-9	B-PAS	8"	BUT	M	O	None			
2-67-516A	3	B-7	B-PAS	8"	BUT	M	O	None			
1-67-516B	3	B-11	B-PAS	8"	BUT	M	O	None			
2-67-516B	3	B-9	B-PAS	8"	BUT	M	O	None			
1-67-518A	3	F-12	B-PAS	30"	BUT	M	O	None			
2-67-518A	3	F-6	B-PAS	30"	BUT	M	O	None			
1-67-518B	3	E-12	B-PAS	30"	BUT	M	O	None			
2-67-518B	3	E-6	B-PAS	30"	BUT	M	O	None			
0-67-672A	3	H-3	B-PAS	24"	BUT	M	C	None			AERCW Deleted
0-67-672B	3	H-4	B-PAS	24"	BUT	M	C	None			AERCW Deleted

SYSTEM: (67) ESSENTIAL RAW COOLING WATER DRAWING NO: 47W845-2 (R15)

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FCV-67-127	3	B-10	B-PAS	8"	BUT	MO	O	None			Appendix R Denergized/RPI Unavailable
FCV-67-128	3	B-10	B-PAS	8"	BUT	MO	O	None			Appendix R Denergized/RPI Unavailable
FCV-67-478	3	B-7	B-PAS	6"	BUT	MO	O	None			Appendix R Denergized/RPI Unavailable
1-67-520A	3	G-9	B-PAS	6"	BUT	M	LO	None			
2-67-520A	3	G-2	B-PAS	6"	BUT	M	LO	None			
1-67-520B	3	H-9	B-PAS	6"	BUT	M	LO	None			
2-67-520B	3	H-2	B-PAS	1-1/2	BUT	M	LO	None			

SYSTEM: (67) ESSENTIAL RAW COOLING WATER DRAWING NO: 47W845-2

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
1-67-527A	3	F-8	B-PAS	1-1/2	GL	M	O	None			
2-67-527A	3	F-4	B-PAS	1-1/2	GL	M	O	None			
1-67-527B	3	F-8	B-PAS	1-1/2	GL	M	O	None			
2-67-527B	3	F-4	B-PAS	3"	GL	M	O	None			
1-67-537A	3	D-7	B-PAS	18"	BUT	M	O	None			
2-67-537A	3	D-4	B-PAS	18"	BUT	M	O	None			
1-67-537B	3	B-8	B-PAS	18"	BUT	M	O	None			
2-67-537B	3	D-3	B-PAS	18"	BUT	M	O	None			
1-67-540A	3	B-9	B-PAS	4"	BUT	M	LC				
2-67-540A	3	B-2	B-PAS	4"	BUT	M	LC				
1-67-540B	3	A-8	B-PAS	4"	BUT	M	LC				
2-67-540B	3	B-2	B-PAS	4"	BUT	M	LC				

SYSTEM: (67) ESSENTIAL RAW COOLING WATER DRAWING NO: 47W845-2

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
0-67-552	3	C-6	B-PAS	24"	BUT	M	O	None			
0-67-553	3	C-6	B-PAS	24"	BUT	M	O	None			
0-67-555A	3	G-6	B-PAS	6"	BUT	M	O	None			
0-67-555B	3	H-5	B-PAS	6"	BUT	M	O	None			
1-67-718A	3	G-6	B-PAS	6"	BUT	M	O	None			
2-67-718A	3	G-5	B-PAS	6"	BUT	M	O	None			
1-67-718B	3	H-6	B-PAS	6"	BUT	M	O	None			
2-67-718B	3	H-5	B-PAS	6"	BUT	M	O	None			

SYSTEM: (67) ESSENTIAL RAW COOLING WATER DRAWING NO: 47W845-3

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
1-67-564A	3	H-4	B-PAS	4"	BUT	M	O	None			
2-67-564A	3	H-4	B-PAS	4"	BUT	M	O	None			
1-67-564B	3	E-4	B-PAS	4"	BUT	M	O	None			
2-67-564B	3	E-4	B-PAS	4"	BUT	M	O	None			
1-67-564C	3	F-4	B-PAS	4"	BUT	M	O	None			
2-67-564C	3	F-4	B-PAS	4"	BUT	M	O	None			
1-67-564D	3	D-4	B-PAS	4"	BUT	M	O	None			
2-67-564D	3	D-4	B-PAS	4"	BUT	M	O	None			

SYSTEM: (67) ESSENTIAL RAW COOLING WATER DRAWING NO: 47W845-3

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
1-67-567A	3	H-2	B-PAS	3"	GA	M	O	None			
2-67-567A	3	G-2	B-PAS	3"	GA	M	O	None			
1-67-567B	3	F-2	B-PAS	3"	GA	M	O	None			
2-67-567B	3	F-2	B-PAS	3"	GA	M	O	None			
1-67-567C	3	G-2	B-PAS	3"	GA	M	O	None			
2-67-567C	3	G-2	B-PAS	3"	GA	M	O	None			
1-67-567D	3	E-2	B-PAS	3"	GA	M	O	None			
2-67-567D	3	E-2	B-PAS	3"	GA	M	O	None			
1-67-572A	3	G-3	B-PAS	3"	GA	M	O	None			
2-67-572A	3	G-3	B-PAS	3"	GA	M	O	None			
1-67-572B	3	E-3	B-PAS	3"	GA	M	O	None			
2-67-572B	3	E-3	B-PAS	3"	GA	M	O	None			

SYSTEM: (67) ESSENTIAL RAW COOLING WATER DRAWING NO: 47W845-3

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
1-67-572C	3	F-3	B-PAS	3"	GA	M	O	None			
2-67-572C	3	F-3	B-PAS	3"	GA	M	O	None			
1-67-572D	3	D-3	B-PAS	3"	GA	M	O	None			
2-67-572D	3	D-3	B-PAS	3"	GA	M	O	None			
1-67-583A	3	C-1	B-PAS	2"	GA	M	O	None			
2-67-583A	3	C-1	B-PAS	2"	GL	M	O	None			
1-67-583B	3	B-1	B-PAS	2"	GL	M	O	None			
2-67-583B	3	B-1	B-PAS	2"	GL	M	O	None			
1-67-583C	3	B-1	B-PAS	2"	GL	M	O	None			
2-67-583C	3	B-1	B-PAS	2"	GL	M	O	None			
1-67-583D	3	A-1	B-PAS	2"	GL	M	O	None			
2-67-583D	3	A-1	B-PAS	2"	GL	M	O	None			

SYSTEM: (67) ESSENTIAL RAW COOLING WATER DRAWING NO: 47W845-4 / -6

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FCV-67-168	3	C-7	B-PAS	1-1/2	GA	DIA	O	None			Appendix R Deleted
FCV-67-170	3	C-9	B-PAS	1-1/2	GA	DIA	O	None			Appendix R Deleted
FCV-67-172	3	D-7	B-PAS	1-1/2	GA	DIA	C	None			PD PUMP ISOLATED
FCV-67-188	3	E-7	B-PAS	1	GA	DIA	O	None			Appendix R Deleted
FCV-67-190	3	E-9	B-PAS	1	GA	DIA	O	None			Appendix R Deleted
1-67-601A	3	C-2	B-PAS	2	GL	M	O	None			
2-67-601A	3	C-2	B-PAS	2	GL	M	O	None			
1-67-601B	3	B-9	B-PAS	2	GL	M	O	None			
2-67-601B	3	B-9	B-PAS	2	GL	M	O	None			
1-67-604A	3	D-1	B-PAS	2	GL	M	O	None			
2-67-604A	3	D-1	B-PAS	2	GL	M	O	None			
1-67-604B	3	D-9	B-PAS	2	GL	M	O	None			
2-67-604B	3	D-9	B-PAS	2	GL	M	O	None			
1-67-605A	3	D-1	B-PAS	2	GL	M	O	None			
2-67-605A	3	D-1	B-PAS	2	GL	M	O	None			

SYSTEM: (67) ESSENTIAL RAW COOLING WATER DRAWING NO: 47W845-4 / -6

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
1-67-605B	3	D-9	B-PAS	2	GL	M	O	None			
2-67-605B	3	D-9	B-PAS	2	GL	M	O	None			
1-67-606A	3	D-2	B-PAS	1-1/2	GL	M	O	None			
2-67-606A	3	D-2	B-PAS	1-1/2	GL	M	O	None			
1-67-606B	3	D-9	B-PAS	1-1/2	GL	M	O	None			
2-67-606B	3	D-9	B-PAS	1-1/2	GL	M	O	None			
1-67-607A	3	E-5	B-PAS	4	BUT	M	O	None			
2-67-607A	3	E-5	B-PAS	4	BUT	M	O	None			
1-67-607B	3	E-6	B-PAS	4	BUT	M	O	None			
2-67-607B	3	E-6	B-PAS	4	BUT	M	O	None			
1-67-608A	3	E-2	B-PAS	2	GL	M	O	None			
2-67-608A	3	E-2	B-PAS	2	GL	M	O	None			
1-67-608B	3	E-9	B-PAS	2	GL	M	O	None			
2-67-608B	3	E-9	B-PAS	2	GL	M	O	None			

SYSTEM: (67) ESSENTIAL RAW COOLING WATER

DRAWING NO: 47W845-4 / -6

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
1-67-609A	3	E-2	B-PAS	2	GL	M	O	None			
2-67-609A	3	E-2	B-PAS	2	GL	M	O	None			
1-67-609B	3	E-9	B-PAS	2	GL	M	O	None			
2-67-609B	3	E-9	B-PAS	2	GL	M	O	None			
1-67-610A	3	F-2	B-PAS	2	GL	M	O	None			
2-67-610A	3	F-2	B-PAS	2	GL	M	O	None			
1-67-610B	3	F-9	B-PAS	2	GL	M	O	None			
2-67-610B	3	F-9	B-PAS	2	GL	M	O	None			
1-67-611A	3	F-2	B-PAS	2	GL	M	O	None			
2-67-611A	3	F-2	B-PAS	2	GL	M	O	None			
1-67-611B	3	F-9	B-PAS	2	GL	M	O	None			
2-67-611B	3	F-9	B-PAS	2	GL	M	O	None			

SYSTEM: (67) ESSENTIAL RAW COOLING WATER DRAWING NO: 47W845-4 / -6

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
0-67-618A	3	G-2	B-PAS	6	BUT	M	O	None			
0-67-618B	3	G-9	B-PAS	6	BUT	M	O	None			
0-67-623B	3	G-2	B-PAS	5	BUT	M	O	None			
0-67-623B	3	G-9	B-PAS	5	BUT	M	O	None			
1-67-639	3	C-6	B-PAS	1-1/2	GL	M	O	None			
2-67-639	3	C-6	B-PAS	1-1/2	GL	M	O	None			
1-67-640	3	C-9	B-PAS	1-1/2	GL	M	-	None			PD PUMP ISOLATED
2-67-640	3	C-9	B-PAS	1-1/2	GL	M	-	None			PD PUMP ISOLATED
0-67-643B	3	A-9	B-PAS	3	GL	M	O	None			
0-67-643A	3	A-2	B-PAS	3	GL	M	O	None			
0-67-646A	3	A-2	B-PAS	2	GL	M	O	None			
0-67-646B	3	A-9	B-PAS	2	GL	M	O	None			
0-67-673A	3	B-2	B-PAS	2	GL	M	O	None			
0-67-673B	3	C-10	B-PAS	2	GL	M	O	None			

SYSTEM: (67) RESSENTIAL RAW COOLING WATER DRAWING NO: 47W845-4 / -6

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
1-67-683	3	A-2	B-PAS	1	GA	M	O	None			
2-67-683	3	A-2	B-PAS	1	GA	M	O	None			
0-67-685A	3	A-1	B-PAS	1	GL	M	O	None			
0-67-685B	3	A-10	B-PAS	1	GL	M	O	None			
1-67-764B	3	B-9	B-PAS	2	GL	M	O	None			
2-67-764B	3	B-9	B-PAS	2	GL	M	O	None			
1-67-766A	3	B-2	B-PAS	2	GL	M	O	None			
2-67-766A	3	B-2	B-PAS	2	GL	M	O	None			
1-67-1553A	3	B-5	B-PAS	6	BUT	M	O	None			
2-67-1553A	3	B-5	B-PAS	6	BUT	M	O	None			
1-67-1553B	3	B-6	B-PAS	6	BUT	M	O	None			
1-67-1553B	3	9-6	B-PAS	6	BUT	M	O	None			

SYSTEM: (67) ESSENTIAL RAW COOLING WATER DRAWING NO: 47W845-5

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
1-67-728A	3	B-7	B-PAS	3"	BUT	M	LC	None			
2-67-728A	3	G-7	B-PAS	3"	BUT	M	LC	None			
1-67-728B	3	D-7	B-PAS	3"	BUT	M	LC	None			
2-67-728B	3	E-7	B-PAS	3"	BUT	M	LC	None			

SYSTEM: (68) REACTOR COOLANT SYSTEM DRAWING NO: 47W813-1

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
1-68-579	1	F-8	B-PAS	1"	GL	M	LO	None			
2-68-579	1	F-8	B-PAS	1"	GL	M	LO	None			
1-68-580	1	F-9	B-PAS	3"	GL	M	LO	None			
2-68-580	1	F-9	B-PAS	3"	GL	M	LO	None			
1-68-598	1	D-7	B-PAS	1"	GL	M	LO	None			
2-68-598	1	D-7	B-PAS	1"	GL	M	LO	None			
1-68-603	1	D-7	B-PAS	1"	GL	M	LO	None			
2-68-603	1	D-7	B-PAS	1"	GL	M	LO	None			

SYSTEM: (70) COMPONENT COOLING SYSTEM DRAWING NO: 47W859-1

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
2-FCV-70-16	3	E-7	B-PAS	20"	BUT	M	O	None			POWER DEENERGIZED
1-FCV-70-25	3	C-7	B-PAS	20"	BUT	M	O	None			POWER DEENERGIZED
0-70-510A	3	D-5	B-PAS	20"	BUT	M	O	None			
1-70-510A	3	D-6	B-PAS	20"	BUT	M	O	None			
2-70-510A	3	D-4	B-PAS	20"	BUT	M	O	None			
0-70-510B	3	D-5	B-PAS	20"	BUT	M	O	None			
1-70-510B	3	D-6	B-PAS	20"	BUT	M	O	None			
2-70-510B	3	D-4	B-PAS	20"	BUT	M	O	None			
0-70-529A	3	H-5	B-PAS	12"	BUT	M	O	None			
0-70-529B	3	H-6	B-PAS	12"	BUT	M	O	None			

SYSTEM: (70) COMPONENT COOLING SYSTEM DRAWING NO: 47W859-2 /-3

VALVE NUMBER	ASME CLASS	COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
FCV-70-111	3	C-4	B-PAS	6"	BUT	MO	C	None			POWER DEENERGIZED

SYSTEM: (70) COMPONENT COOLING SYSTEM

DRAWING NO: 47W859-4

VALVE NUMBER	ASME CLASS	COORDINATES DRAWING	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
1-70-545A	3	D-6	B-PAS	18"	BUT	M	O	None			
2-70-545A	3	D-12	B-PAS	18"	GUT	M	O	None			
1-70-545B	3	E-1	B-PAS	18"	BUT	M	O	None			
2-70-545B	3	E-7	B-PAS	18"	BUT	M	O	None			
1-70-546A	3	D-5	B-PAS	18"	BUT	M	O	None			
2-70-546A	3	D-11	B-PAS	18"	BUT	M	O	None			
1-70-546B	3	F-2	B-PAS	18"	BUT	M	O	None			
2-70-546B	3	F-7	B-PAS	18"	BUT	M	O	None			
1-70-552A	3	B-6	B-PAS	3"	GA	M	O	None			
2-70-552A	3	B-12	B-PAS	3"	GA	M	O	None			
1-70-552B	3	B-1	B-PAS	3"	GA	M	O	None			
2-70-552B	3	B-7	B-PAS	3"	GA	M	O	None			
1-70-553A	3	B-5	B-PAS	1"	GL	M	O	None			
2-70-553A	3	B-11	B-PAS	1"	GL	M	O	None			

SYSTEM: (70) COMPONENT COOLING SYSTEM DRAWING NO: 47W859-4

VALVE NUMBER	ASME CLASS	COORDINATES DRAWING	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
1-70-553B	3	B-2	B-PAS	1"	GL	M	O	None			
2-70-553B	3	B-8	B-PAS	1"	GL	M	O	None			
1-70-557A	3	B-4	B-PAS	3"	GL	M	O	None			
2-70-557A	3	B-10	B-PAS	3"	GL	M	O	None			
1-70-557B	3	B-3	B-PAS	3"	GA	M	O	None			
2-70-557B	3	B-9	B-PAS	3"	GA	M	O	None			
1-70-558A	3	C-6	B-PAS	1"	GA	M	O	None			
2-70-558A	3	C-12	B-PAS	1"	GA	M	O	None			
1-70-558B	3	B-1	B-PAS	1-1/2	GA	M	O	None			
2-70-558B	3	B-7	B-PAS	1-1/2	GA	M	O	None			
1-70-560A	3	C-5	B-PAS	1-1/2	GL	M	O	None			
2-70-560A	3	C-11	B-PAS	1-1/2	GL	M	O	None			
1-70-560B	3	C-2	B-PAS	1-1/2	GL	M	O	None			
2-70-560B	3	C-8	B-PAS	1-1/2	GL	M	O	None			

SYSTEM: (70) COMPONENT COOLING SYSTEM DRAWING NO: 47W859-4

VALVE NUMBER	ASME CLASS	COORDINATES	CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
1-70-562A	3	B-4	B-PAS	1-1/2	GA	M	O	None			
2-70-562A	3	B-10	B-PAS	1-1/2	GA	M	O	None			
1-70-562B	3	C-3	B-PAS	1-1/2	GA	M	O	None			
2-70-562B	3	C-8	B-PAS	1-1/2	GA	M	O	None			
1-70-564A	3	D-6	B-PAS	1"	GA	M	O	None			
2-70-564A	3	D-12	B-PAS	1"	GA	M	O	None			
1-70-564B	3	D-1	B-PAS	1"	GA	M	O	None			
2-70-564B	3	D-7	B-PAS	1"	GA	M	O	None			
1-70-566A	3	D-4	B-PAS	1"	GL	M	O	None			
2-70-566A	3	D-10	B-PAS	1"	GL	M	O	None			
1-70-566B	3	D-3	B-PAS	1"	GL	M	O	None			
2-70-566B	3	D-8	B-PAS	1"	GL	M	O	None			

SYSTEM: (70) COMPONENT COOLING SYSTEM DRAWING NO: 47W859-4

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
1-70-567A	3	D-4	B-PAS	1"	GA	M	O	None			
2-70-567A	3	D-10	B-PAS	1"	GA	M	O	None			
1-70-567B	3	D-3	B-PAS	1"	GA	M	O	None			
2-70-567B	3	D-9	B-PAS	1"	GA	M	O	None			
1-70-569A	3	D-6	B-PAS	1"	GA	M	O	None			
2-70-569A	3	D-12	B-PAS	1"	GA	M	O	None			
1-70-569B	3	D-1	B-PAS	1"	GA	M	O	None			
2-70-569B	3	D-7	B-PAS	1"	GA	M	O	None			
1-70-571A	3	D-4	B-PAS	1"	GL	M	O	None			
2-70-571A	3	D-10	B-PAS	1"	GL	M	O	None			
1-70-571B	3	D-3	B-PAS	1"	GL	M	O	None			
2-70-571B	3	D-8	B-PAS	1"	GL	M	O	None			
1-70-572A	3	D-4	B-PAS	1"	GA	M	O	None			
2-70-572A	3	D-10	B-PAS	1"	GA	M	O	None			

SYSTEM: (70) COMPONENT COOLING SYSTEM DRAWING NO: 47W859-4

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
1-70-572B	3	D-3	B-PAS	1"	GA	M	O	None			
2-70-572B	3	D-9	B-PAS	1"	GA	M	O	None			
1-70-707A	3	B-6	B-PAS	1"	GA	M	O	None			
2-70-707A	3	B-11	B-PAS	1"	GA	M	O	None			
1-70-707B	3	B-1	B-PAS	1"	GA	M	O	None			
2-70-707B	3	B-7	B-PAS	1"	GA	M	O	None			
1-70-709A	3	B-5	B-PAS	1"	GA	M	O	None			
2-70-709A	3	B-11	B-PAS	1"	GA	M	O	None			
1-70-709B	3	B-2	B-PAS	1"	GA	M	O	None			
2-70-709B	3	B-7	B-PAS	1"	GA	M	O	None			
1-70-712A	3	C-5	B-PAS	3/4"	GA	M	O	None			
2-70-712A	3	C-11	B-PAS	3/4"	GA	M	O	None			

SYSTEM: (70) COMPONENT COOLING SYSTEM DRAWING NO: 47W859-4

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
1-70-712B	3	B-2	B-PAS	3/4"	GA	M	O	None			
2-70-712B	3	B-7	B-PAS	3/4"	GA	M	O	None			
1-70-713A	3	C-5	B-PAS	1"	GA	M	O	None			
2-70-713A	3	C-11	B-PAS	1"	GA	M	O	None			
1-70-713B	3	B-2	B-PAS	1"	GA	M	O	None			
2-70-713B	3	B-8	B-PAS	1"	GA	M	O	None			
1-70-725A	3	B-4	B-PAS	3"	GA	M	O	None			
2-70-725A	3	B-9	B-PAS	3"	GA	M	O	None			
1-70-725B	3	B-3	B-PAS	3"	GA	M	O	None			
2-70-725B	3	B-9	B-PAS	3"	GA	M	O	None			

SYSTEM: (72) CONTAINMENT SPRAY DRAWING NO: 47W812-1

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
1-72-502	2	C-8	B-PAS	8"	GA	M	LC	None			
2-72-502	2	C-8	B-PAS	8"	GA	M	LC	None			
1-72-503	2	C-5	B-PAS	8"	GA	M	LC	None			
2-72-503	2	C-5	B-PAS	8"	GA	M	LC	None			
1-72-504	2	B-5	B-PAS	8"	GA	M	LC	None			
2-72-504	2	B-5	B-PAS	8"	GA	M	LC	None			
1-72-533	2	D-7	B-PAS	12"	GA	M	LO	None			
2-72-533	2	D-7	B-PAS	12"	GA	M	LO	None			
1-72-534	2	B-7	B-PAS	12"	GA	M	LO	None			
2-72-534	2	B-7	B-PAS	12"	GA	M	LO	None			

SYSTEM: (72) CONTAINMENT SPRAY DRAWING NO: 47W812-1

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
1-72-545	2	C-3	B-PAS	2"	GA	M	LC	None			
2-72-545	2	C-3	B-PAS	2"	GA	M	LC	None			
1-72-546	2	B-3	B-PAS	2"	GA	M	LC	None			
2-72-546	2	B-3	B-PAS	2"	GA	M	LC	None			
1-72-553	2	G-3	B-PAS	2"	GA	M	LC	None			
2-72-553	2	G-3	B-PAS	2"	GA	M	LC	None			
1-72-554	2	F-3	B-PAS	2"	GA	M	LC	None			
2-72-554	2	F-3	B-PAS	2"	GA	M	LC	None			

SYSTEM: (74) RESIDUAL HEAT REMOVAL DRAWING NO: 47W810-1

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
1-HCV-74-34	2	C-5	B-PAS	3/4	GL	M	LC	None			
2-HCV-74-34	2	C-5	B-PAS	3/4	GL	M	LC	None			
1-74-512	2	D-9	B-PAS	3/4	GL	M	LC	None			
2-74-512	2	D-9	B-PAS	3/4	GL	M	LC	None			
1-74-513	2	C-9	B-PAS	3/4	GL	M	LC	None			
2-74-513	2	C-9	B-PAS	3/4	GL	M	LC	None			
1-74-516	2	E-8	B-PAS	3/4	GL	M	LC	None			
2-74-516	2	E-8	B-PAS	3/4	GL	M	LC	None			
1-74-517	2	B-8	B-PAS	3/4	GL	M	LC	None			
2-74-517	2	B-8	B-PAS	3/4	GL	M	LC	None			

SYSTEM: (74) RESIDUAL HEAT REMOVAL

DRAWING NO: 47W810-1

VALVE NUMBER	ASME CLASS	CODE DRAWING	CODE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
1-74-524	2	E-7	B-PAS	8	GA	M	LO	None			
2-74-524	2	E-7	B-PAS	8	GA	M	LO	None			
1-74-525	2	B-7	B-PAS	8	GA	M	LO	None			
2-74-525	2	B-7	B-PAS	8	GA	M	LO	None			
1-74-542	2	B-6	B-PAS	3/4	GL	M	LC	None			
2-74-542	2	B-6	B-PAS	3/4	GL	M	LC	None			
1-74-544	2	B-6	B-PAS	3/4	GL	M	LC	None			
2-74-544	2	B-6	B-PAS	3/4	GL	M	LC	None			

SYSTEM: (74) RESIDUAL HEAT REMOVAL DRAWING NO: 47W810-1

VALVE NUMBER	ASME CLASS	DRAWING COORDINATES	VALVE CATEGORY	SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	TESTING REQUIRED	RELIEF REQUEST	ALTERNATIVE TESTING	REMARKS
1-74-546	2	F-6	B-PAS	3/4	GL	M	LC	None			
2-74-546	2	F-6	B-PAS	3/4	GL	M	LC	None			
1-74-547	2	F-6	B-PAS	3/4	GL	M	LC	None			
2-74-547	2	F-6	B-PAS	3/4	GL	M	LC	None			
1-74-550	NNCC	G-3	B-PAS	3/4	GA	M	LO	None			
2-74-550	NNCC	G-3	B-PAS	3/4	GA	M	LO	None			

SYMBOLS USED TO DESIGNATE TESTING FREQUENCY REQUIREMENTS

FREQUENCY CODES	
CSD	These valves have been specifically identified as valves which cannot be tested during power operation. These valves shall be full stroke tested during cold shutdowns according to the CSD rules (but not more often than once every three months). Note: 3 months equals 92 days.
CSD9	These valves have been specifically identified as valves which cannot be tested during power operation. These valves shall be full stroke tested during cold shutdowns (but not more often than once every nine months). Note: 9 months equals 276 days.
DIF	At the disassembly and inspection program frequency
J	As required by 10CFR50 Appendix J.
Q	Quarterly (at least once per 92 days)
RCP	These valves have been specifically identified as valves which cannot be tested during operation of the Reactor Coolant Pumps (RCPs). These valves shall be full stroke tested during cold shutdowns according to the CSD and RCP rules only of the RCPs are stopped (but not more often than once every three months). Note: 3 months equals 92 days.
RO	Exercise full stroke at refueling only. These valves are identified as valves which cannot be full staroke tested during power operation or cold shutdown or relief is requested for an alternate frequency. These valves shall be full stroke tested during refueling.
RVF	At the relief valve test plan frequency per OM-1987, Part 1. (Re: OMa-1988, Part 10, Paragraph 4.3.1).
TS	Technical Specification Frequency
Y	Yearly (at least once per 366 days)
2Y	Two Years (at least once per 24 months)
xY	x Years where x is the number of years
18	18 months

NOTE: Some frequencies are defined by Technical Specification 4.0.5. A 25% extension can be applied to these intervals as allowed by Technical Specifications.

SYMBOLS USED TO DESIGNATE TESTING FREQUENCY REQUIREMENTS

FREQUENCY CODES	
HSB	Testing is to be performed while the unit is at Hot Shutdown. See Technical Specifications for definition.
HSD	Testing is to be performed while the unit is at Hot Standby. See Technical Specifications for definition.

APPENDIX C: DEFERRED TEST JUSTIFICATIONS

APPENDIX C: DEFERRED TEST JUSTIFICATIONS

Valves listed below are therein specifically identified by the Licensee as valves which cannot be exercised during power operation, per OM-10 Sections 4.2.1.2 and 4.3.2.2. The table lists the System, Valve Number, Code Class, Basis for Cold Shutdown Testing for each valve which is being tested on a cold shutdown frequency, and alternate testing/frequency. The cold shutdown frequency is described in detail in the Description section of this document.

CSJ-1
System: Main Steam System
Valves: FCV-1-4, FCV-1-11, FCV-1-22, FCV-1-29
Class: 2
Category: B-ACT
Function: Isolate the Main Steam Line
Impractical Requirement: Full Stroke and Part Stroke exercise quarterly
Basis for Deferred Test: Full stroke exercising of these valves during operation could cause SG level transients which could result in a plant trip. Part stroke excercising of the these valves also can cause SG transients. Additionally, the revised standard technical specifications state that "MSIV's should not be tested at power, since even a part-stroke exercise increases the risk of a valve closure when the unit is generating power."
Alt Testing/Frequency: These valves will be full stroke exercised during cold shutdown.

CSJ-2
System: Main Steam System
Valves: 2-1-623, 2-1-624, 2-1-625, 2-1-626
Class: 2
Category: C-ACT
Function: Isolate the Main Steam Line on reverse flow in the event of failure of a MSIV to close.
Impractical Requirement: Full Stroke or part stroke exercise quarterly
Basis for Deferred Test: Full or part stroke exercising of these valves during operation could cause SG level transients, which could result in a plant trip. In addition, it is not possible to manually full or part stroke these large check valves using the external arm under steam flow conditions.
Alt Testing/Frequency: These valves will be full stroke exercised by manual manipulation during cold shutdown.

CSJ-3
System: Main Steam System
Valves: FCV-1-17, FCV-1-18
Class: 3, 2
Category: B-ACT
Function: Isolate on terry turbine steam line break via high temperature signal from TD AFW Pump Room.
Impractical Requirement: Full or partial stroke exercise quarterly
Basis for Deferred Test: Closing either of these valves during power causes loss of steam to the steam driven auxiliary feedwater pump. Failure of either of these two normally open valves in the closed position will result in no heat sink for the loss of all AC power accident. The valve control circuit is not designed for partial stroke capability.
Alt Testing/Frequency: Full stroke exercise during cold shutdown.

CSJ-4
System: Main Steam System
Valves: PCV-1-5, PCV-1-12, PCV-1-23, PCV-1-30
Class: 2
Category: BC-ACT
Function: Must isolate for Steam Generator isolation and for containment isolation. Must operate for RCS temperature control and cooldown to cold shutdown.
Impractical Requirement: Full or partial stroke exercise quarterly.
Basis for Deferred Test: Opening valve during power operation (full or partial stroke) will cause steam blowdown to the atmosphere and a steam generator level transient which could result in an inadvertent safety injection signal and/or plant trip. Closure of the manual isolation valve in series with the PCV is not practical during operation due to high temperatures inside the main steam valve room.
Alt Testing/Frequency: Full Stroke exercise during cold shutdown.

CSJ-5
System: Feedwater System
Valves: FCV-3-33, FCV-3-47, FCV-3-87, FCV-3-100, 3-508, 3-509, 3-510, 3-511
Class: 2
Category: B-ACT and C
Function: The FCVs must close for feedwater isolation, containment isolation and Steam Generator (SG) isolation. The check valves must close to prevent reverse AFW flow or SG blowdown.
Impractical Requirement: Full or partial stroke exercise quarterly.
Basis for Deferred Test: Exercising these valves during power operation (full or partial) causes a loss of feedwater to the loop they supply. When feedwater flow is restored, the resulting SG level shrink could cause a reactor trip. The FCV valve control circuit is not designed for partial stroke capability.
Alt Testing/Frequency: Full stroke the FCVs during cold shutdown and verify the checks closed during cold shutdown.

CSJ-6
System: Auxiliary Feedwater System
Valves: 3-805, 3-806, 3-810
Class: 3
Category: C-ACT
Function: 3-805, 3-806, and 3-810 open to admit auxiliary feedwater flow from the condensate storage tank to the auxiliary feedwater pump's suction; they also close when the ERCW is aligned to auxiliary feedwater pump suction.
Impractical Requirement: Full stroke exercise quarterly.
Basis for Deferred Test: Full stroke exercising these valves during power operation could result in severe thermal shock to the auxiliary feedwater nozzles and cause SG level transients and a unit trip.
Alt Testing/Frequency: These valves will be part stroked quarterly during the associated pump test and full stroked during hot shutdown or hot standby (but not more often than once per three months). 3-805, 3-806, and 3-810 will be verified closed quarterly.

CSJ-7
System: Auxiliary Feedwater System
Valves: 3-820, 3-821, 3-864
Class: 3
Category: C
Function: Open to allow AFW Pump discharge flow.
Impractical Requirement: Full stroke exercise quarterly. In addition, 3-864 cannot be partial stroke exercised.
Basis for Deferred Test: Full stroke exercising these valves (and partial stroke of 3-864) during power operation would result in severe thermal shock to the auxiliary feedwater nozzles and a unit trip.
Alt Testing/Frequency: Partial stroke exercise 3-820 and 3-821 during the quarterly pump test and full stroke exercise during operation of the auxiliary feedwater system during hot standby. Full stroke exercise 3-864 during operation of the auxiliary feedwater system during hot standby.

CSJ-8
System: Auxiliary Feedwater System
Valves: 3-832, 3-833, 3-873, 3-874
Class: 2
Category: C
Function: Open to allow AFW Pump discharge flow to SG and closes to prevent reverse AFW flow through idle pump.
Impractical Requirement: Full or partial stroke exercise quarterly.
Basis for Deferred Test: Full or partial stroke exercising these valves during power operation would result in severe thermal shock to the auxiliary feedwater nozzles and a unit trip.
Alt Testing/Frequency: Full stroke exercise during operation of the auxiliary feedwater system during hot standby. Verify closure quarterly.

CSJ-9
System: Auxiliary Feedwater System
Valves: 3-861, 3-862, 3-921, 3-922
Class: 2
Category: C
Function: Open to allow AFW Pump discharge flow to SG and closes to prevent blowdown of SG into annulus for an AFW line break in the annulus.
Impractical Requirement: Full stroke exercise quarterly.
Basis for Deferred Test: Full stroke exercising these valves during power operation would result in severe thermal shock to the auxiliary feedwater nozzles and a unit trip.
Alt Testing/Frequency: Full stroke exercise during operation of the auxiliary feedwater system during hot standby. Verify closure quarterly.

CSJ-10
System: Compressed Air System
Valves: 1-FCV-32-80, 2-FCV-32-81, 1-FCV-32-102, 2-FCV-32-103, 1-FCV-32-110, 2-FCV-32-111
Class: 2
Category: C
Function: Close on a phase B containment isolation signal. Open to supply control air to valves inside containment
Impractical Requirement: Full or partial stroke exercise quarterly.
Basis for Deferred Test: Exercising these valves during operations results in a loss of control air to control valves inside containment and could result in valves going to their failed position and resulting in a possible unit trip. The FCV valve control circuit is not designed for partial stroke capability.
Alt Testing/Frequency: Full stroke exercise during cold shutdown.

CSJ-11
System: Post Accident Sampling System
Valves: FSV-43-250, FSV-43-251, FSV-43-309, FSV-43-310, FSV-43-317, FSV-43-341, 43-461
Class: 2
Category: B-ACT and C
Function: Must close or remain closed for containment isolation.
Impractical Requirement: Full or partial stroke exercise quarterly.
Basis for Deferred Test: These FSVs are containment isolation valves that do not receive a containment isolation signal. Testing during operation would require a violation of Containment Integrity. The FCV valve control circuit is not designed for partial stroke capability. Testing 43-461 at power would also require entry into a high radiation area.
Alt Testing/Frequency: Full stroke exercise during cold shutdown and leak test per Appendix J.

CSJ-12
System: Chemical and Volume Control System
Valves: LCV-62-132, LCV-62-133, LCV-62-135, LCV-62-136
Class: 2
Category: B-ACT
Function: These valves operate to switch the centrifugal charging pumps suction from the VCT to the RWST on a safety injection or low VCT level signal.
Impractical Requirement: Full or partial stroke exercise quarterly.
Basis for Deferred Test: Stroking these valves during power operation would cause unacceptable boron transients leading to RCS temperature and power transients which could result in unit trip. The FCV valve control circuit is not designed for partial stroke capability.
Alt Testing/Frequency: Full stroke exercise during cold shutdown.

CSJ-13
System: Chemical and Volume Control System
Valves: 62-543, ~~62-661~~, FCV-62-84
Class: 2 and 1
Category: C and B-ACT
Function: 62-543 must open to allow charging flow and close for containment isolation. FCV-62-84 and 62-661 must close for RCPB isolation.
Impractical Requirement: Exercise full or partial closed quarterly.
Basis for Deferred Test: Full or partial stroking of these valves causes thermal cyclic fatigue to the letdown heat exchanger, charging connections to the RCS and, in the case of 62-661 and FCV-62-84, thermal cyclic fatigue to the Pressurizer spray nozzle. In addition, stroking of the check valves closed during power operation is not practical since performance of the closure test requires isolation of the normal charging path for a prolonged period of time. The FCV valve control circuit is not designed for partial stroke capability.
Alt Testing/Frequency: Verify 62-543 full stroke open quarterly. Verify closure of 62-543 and 62-661 during cold shutdown. Full stroke exercise FCV-62-84 during cold shutdown.

CSJ-14
System: Chemical and Volume Control System
Valves: FCV-62-69, FCV-62-70, FCV-62-72, FCV-62-73, FCV-62-74, FCV-62-77, FCV-62-85, FCV-62-86, FCV-62-90, FCV-62-91
Class: 1 and 2
Category: B-ACT
Function: These valves allow for charging and letdown flow from the CVCS to/from the RCS. FCV-62-72, FCV-62-73, FCV-62-74, FCV-62-77 and FCV-62-90 must close or be capable of closing for containment isolation. FCV-62-69 and 70 must close for RCPB isolation.
Impractical Requirement: Full stroke exercise quarterly.
Basis for Deferred Test: Full or partial stroking of these valves causes thermal cyclic fatigue to the letdown heat exchanger, letdown and charging connections to the RCS. The FCV valve control circuit is not designed for partial stroke capability.
Alt Testing/Frequency: Full stroke during cold shutdown.

CSJ-15
System: Chemical and Volume Control System
Valves: 62-659, 62-660, 62-716, 62-717
Class: 2
Category: C-Active
Function: Open to provide normal or auxiliary charging flow to the RCS.
Impractical Requirement: Exercise open (full or partial stroke)
Basis for Deferred Test: Full stroke opening of these valves is verified by establishment of normal charging flow or alternate charging flow. One path (either normal or alternate charging) is normally in service at all times during operation. Valve realignment to verify full stroking of the opposite path causes thermal cyclic fatigue to the letdown heat exchanger, letdown and charging connections to the RCS.
Alt. Testing/Frequency: Exercise full open during cold shutdown.

CSJ-16
System: Safety Injection System
Valves: FCV-63-1
Class: 2
Category: B-ACT
Function: Allows flow from the RWST to both trains of RHRPs. Closes during recirculation mode of ECCS
Impractical Requirement: Full or partial stroke exercise quarterly.
Basis for Deferred Test: Exercising valve during operation results in losing suction from RWST to both trains of residual heat removal and placing the unit in a condition outside the design and licensing basis. The FCV valve control circuit is not designed for partial stroke capability.
Alt Testing/Frequency: Full stroke exercise during cold shutdown.

CSJ-17
System: Safety Injection System
Valves: FCV-63-3
Class: 2
Category: B-ACT
Function: Allows recirculation of both SIPs miniflow back to the RWST. Closes during recirculation mode of ECCS
Impractical Requirement: Full or partial stroke exercise quarterly.
Basis for Deferred Test: Exercising valve during operation results in losing the miniflow recirculation flow path for both trains of safety injection pumps and placing the unit in a condition outside the design and licensing basis. If the pumps started without recirculation, severe damage to both pumps could occur. The FCV valve control circuit is not designed for partial stroke capability.
Alt Testing/Frequency: Full stroke exercise during cold shutdown.

CSJ-18
System: Safety Injection System
Valves: FCV-63-5
Class: 2
Category: B-ACT
Function: Allows flow from the RWST to both trains of SIPs. Closes during recirculation mode of ECCS
Impractical Requirement: Full or partial stroke exercise quarterly.
Basis for Deferred Test: Exercising valve during operation results in losing suction from RWST to both train of safety injection pumps and placing the unit in a condition outside the design and licensing basis. The FCV valve control circuit is not designed for partial stroke capability.
Alt Testing/Frequency: Full stroke exercise during cold shutdown.

CSJ-19
System: Safety Injection System
Valves: FCV-63-22
Class: 2
Category: B-ACT
Function: This valve is normally open and its closure isolates both trains of safety injection from their normal flow path to the cold legs.
Impractical Requirement: Full or partial stroke exercise quarterly.
Basis for Deferred Test: Exercising valve quarterly isolates both trains of safety injection from their normal flow path to the cold legs and places the unit in a condition outside the design and licensing basis. The FCV valve control circuit is not designed for partial stroke capability.
Alt Testing/Frequency: Full stroke exercise during cold shutdown.

CSJ-20
System: Safety Injection System
Valves: FCV-63-8, FCV-63-11, FCV-63-72, FCV-63-73
Class: 2
Category: B-ACT
Function: FCV-63-8 and 11 connect the discharge of the low head RHRPs to the suction of the higher head CCPs and SIPs during the recirculation mode of ECCS. FCV-63-72 and 73 are the containment ECCS sump isolation valves that open to provide the supply to the RHRP's suction during the recirculation mode of ECCS
Impractical Requirement: Full or partial stroke exercise quarterly.
Basis for Deferred Test: These valves are associated with the containment sump and their operation during power operation could cause loss of the RWST inventory and flooding of lower containment which would result in inoperability of both trains of safety injection; placing the unit in a condition outside the design and licensing basis. FCV-63-8 and -11 are interlocked with FCV-63-72 and -73. The FCV valve control circuit is not designed for partial stroke capability.
Alt Testing/Frequency: Full stroke exercise during cold shutdown.

CSJ-21
System: Safety Injection and Residual Heat Removal System
Valves: FCV-63-93, FCV-63-94, FCV-63-172, FCV-74-33, FCV-74-35
Class: 2
Category: B-ACT
Function: These valves are associated with the RHR flowpaths to the RCS hot and cold legs.
Impractical Requirement: Full or partial stroke exercise quarterly.
Basis for Deferred Test: Closing the normally open valves or opening the normally closed hot leg injection valve FCV-63-172 during operation results in less than the required RHR cold leg injection flow capability placing the unit in a condition outside the design and licensing basis. The FCV valve control circuit is not designed for partial stroke capability.
Alt Testing/Frequency: Full stroke exercise during cold shutdown.