Nuclear Operating Company
South Texas Project Electric Generating Station P.O. Box 289 Wadsworth, Texas 77483

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U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
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South Texas Project
Units 1 & 2
Docket Nos. STN 50-498, STN 50-499
Inservice Testing Program Description for the Third 10-Year Interval

Pursuant to 10 CFR 50.55a(f), STP Nuclear Operating Company (STPNOC) submits the South Texas Project inservice testing (IST) program for the third 10-year interval applicable to Class 1, 2, and 3 pumps and valves. The IST program plan describes the programmatic aspects of IST examination of pumps and valves. Included are requests to use alternative examination or test requirements in place of certain examination or test requirements of the 2004 ASME OM Code.

The IST program has been developed in accordance with the requirements of the 2004 Edition, no addenda, of the ASME OM Code. STP Units 1 and 2 will also comply with the limitations and modifications to these requirements stated in 10 CFR 50.55a(b) related to implementation of the 2004 ASME OM Code. In addition, STPNOC requests approval of the following proposed alternatives:

- PRR-01 Use of Code Case OMN-18 (Attachment 2, page 46 of 204)
- PRR-02 Use of Pump Curves for the Essential Cooling Water Pumps (Attachment 2, page 49 of 204) (This was previously approved by the NRC for the Second 10-Year Interval as PRR-1 – ML0311220730.)
- PRR-03 Alternate Test Frequency for the Residual Heat Removal Pumps (Attachment 2, page 53 of 204) (This was previously approved by the NRC for the First 10-Year Interval as RR-11 (Unit 1) and RR-10 (Unit 2) – ML021300134.)
- VRR-01 Use of Code Case OMN-1 (Attachment 7, page 203 of 204)

The remaining portions of the IST program are within the provisions of the ASME OM Code and require no NRC approval for implementation.

A047
NRR

STI: 32608247

There are no commitments included with this request.

NRC approval is requested by July 31, 2010, to support implementation of code requirements for the third test interval.

If there are any questions, please contact either Mr. P. L. Walker at (361) 972-8392 or me at (361) 972-7904.

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PLW
Enclosure: Inservice Testing Program Description for the Third 10-Year Interval

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Revision 13
September 25, 2010

SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION

INSERVICE TESTING PROGRAM
UNIT 1 AND 2 PUMP AND VALVE INSERVICE TEST PLAN
THIRD TEN-YEAR INTERVAL

SOUTH TEXAS PROJECT
UNITS 1 AND 2

DOCKET NOS. STN 50-498, STN 50-499
FACILITY OPERATING LICENSE NOS. NPF-76/80

COMMERCIAL OPERATING DATES
Unit 1: 8/25/1988
Unit 2: 6/19/1989

THIRD TEN-YEAR INTERVAL DATES
9/25/2010 THROUGH 9/25/2020

Approved by: _____ _____
IST Program Coordinator Date

Approved by: _____ _____
Testing/Programs Supervisor Date

Approved by: _____ _____
Testing/Programs Manager Date

Revision 13
(Effective Date September 25, 2010)

TABLE OF CONTENTS

1.0 INTRODUCTION 4
- **1.1 Program Plan** 4
- **1.2 Bases Document** 4
- **1.3 Implementing Procedures** 5

2.0 SCOPE 5
- **2.1 Pump Exclusions** 6
- **2.2 Valve Exclusions** 6
- **2.3 Safe Shutdown Condition** 6
- **2.4 Special Treatment Exemption for IST Program** 7

3.0 METHOD OF EVALUATING COMPONENTS 7

4.0 INSERVICE TESTING OF PUMPS 8
- **4.1 Pump Reference Values** 10
- **4.2 Inservice Tests** 10
- **4.3 Pump Relief Requests** 10

5.0 INSERVICE TESTING OF VALVES 11
- **5.1 Valve Categories** 12
- **5.2 Active/Passive Status** 12
- **5.3 Reference Values** 13
- **5.4 Category A and B Required Tests** 13
  - **5.4.1 Valve Position Verification** 13
  - **5.4.2 Valve Exercise Test** 13
  - **5.4.3 Stroke Time Measurement** 15
  - **5.4.4 Fail-Safe Test** 16
  - **5.4.5 Seat Leakage Rate Test** 16
- **5.5 Category C Required Tests** 17
  - **5.5.1 Check Valve Exercise Test** 17
  - **5.5.2 Check Valve Exercise Test Using System Flow** 18
  - **5.5.3 Check Valve Exercise Test Using A Non-intrusive Testing Program** 18
  - **5.5.4 Check Valve Exercise Test Using A Disassembly and Inspection Program** 19

5.5.5 Check Valve Condition Monitoring 19
5.5.6 Safety and Relief Valve Required Tests 20
5.6 Justifications and Relief Requests 22
5.6.1 Cold Shutdown Justification (CSJ) 22
5.6.2 Refueling Outage Justification (ROJ) 23
5.6.3 Refueling Cycle Justification (RCJ) 23
5.6.4 Condition Monitoring Plans 24
5.6.5 Valve Relief Requests 25
5.7 Valve List Symbols 27
6. 0 PROGRAM IMPLEMENTATION 29
6.1 Testing Skid Mounted Components 29
6.2 Valve Normal Position 30
6.3 Unit 1 and Unit 2 Designation 30
6.4 Corrective Actions 30
7. 0 PROGRAM CONFIGURATION CONTROL 30
8. 0 PROGRAM ATTACHMENTS 30
8.1 Attachment 1, IST Pump List 32
8.2 Attachment 2, Pump Relief Requests 44
8.3 Attachment 3, IST Valve List 55
8.4 Attachment 4, Cold Shutdown Justifications 142
8.5 Attachment 5, Refueling Outage Justifications 158
8.6 Attachment 6, Condition Monitoring Plans 164
8.7 Attachment 7, Valve Relief Requests 201

1.0 INTRODUCTION

Title 10, Part 50.55a of the Code of Federal Regulations and the South Texas Project Technical Specification 4.0.5 invoke, by reference, the requirement for inservice testing (IST) of pumps and valves per Section XI of the ASME Boiler and Pressure Vessel Code. Part 50.55a establishes the requirements that each nuclear power plant must develop and implement an inservice inspection and testing program. Specifically, 10 CFR 50.55a, paragraph (f) states that all Code class pumps and valves shall be designed and provided with access to enable the performance of inservice testing. Inservice tests are used to verify operational readiness of pumps and valves whose function is required for safety. The tests conducted during successive 120-month intervals must comply with the requirements of the latest edition and addenda of the Code that is in effect 12 months prior to the start of the interval and is subject to Commission approval.

The South Texas Project (STP) has begun its third 10-year interval of commercial plant operation. To ensure compliance with the latest edition and addenda of the Code it is necessary to revise the IST Program implemented at STP. Commercial operation for Unit 1 began in August 1988. STP has elected to upgrade both units simultaneously. By taking the maximum extensions allowed by the Code (IWA-2430, 1983 Edition) and subsequently aligning Unit 2, the third 10-year interval would commence in September 2010. STP was also granted an additional extension to the beginning of the second 10-year test interval for the express purpose of adopting a risk-informed IST Plan. The second 10-year update was implemented by December 1, 2001 (See ST-AE-NOC-000358 dated 3/15/99). The Risk-Informed IST Plan was implemented upon NRC approval of the RI-IST Program submittal (letter NOC-AE-01001088, dated 5/21/2001). The NRC approved the implementation of the RI-IST Program via SER dated 08/03/01. The edition and addenda of the Code for the IST Program for the third 10-year interval is the 2004 Edition of the OM Code, Code for Operation and Maintenance of Nuclear Power Plants.

The Pump and Valve Program consists of three parts; the Program Plan, Program Bases Document, and Program Implementing Procedures.

1.1 Program Plan

Since the period of time that the requirement for inservice testing was first incorporated into the Code of Federal Regulations, the NRC, ASME, and the nuclear industry have provided additional interpretations to the Code requirements. These interpretations have been documented through various mechanisms such as Code cases, generic letters, program review meetings, site inspections, and others. It is the intent of the Program Plan to:

- Establish a set criteria and philosophy for determining the Program Scope, and
- Evaluate each of the plant systems and related components in a consistent manner to identify which components should be included in the testing program and to identify the extent of testing required for each component.

1.2 Bases Document

The IST Bases Document provides a unique method and location for recording the results of evaluations conducted to determine if a pump or valve within a Class 1, 2, or 3 boundary should be included in or excluded from the IST Program. Additionally, it documents the basis for inclusion or exclusion of that component. The Bases Document should provide sufficient information about the above evaluations to ensure it will not be necessary to re-evaluate the same components at a later date. It should be noted that a change in plant configuration or code requirements may require that the component be evaluated for impact on its status within the IST Program.

The scope of the IST Bases Document is a direct reflection of the IST Program Plan. It should include those components that are required to perform a specific function in shutting down a reactor to the safe shutdown condition, in maintaining the safe shutdown condition, or in mitigating the consequences of an accident.

Refer to the Program Bases Document for a complete description of the scope and content of the Bases Document.

1.3 Implementing Procedures

Program inservice tests required by the Code shall be implemented using the Surveillance Test Program or the Preventive Maintenance Program. As a result of the performed tests, any identified corrective actions and subsequent retests shall be made per the requirements of the effective OM Code, Technical Specifications, and the Section XI Repair and Replacement Program. The Condition Reporting (CR) process at South Texas Project provides a method to document material deficiencies and engineering evaluations required to comply with the ASME Code. Work orders initiated by the CR process will be used to implement corrective maintenance on valves and pumps identified for Inservice Testing and will allow for recording and tracking component history.

2.0 SCOPE

The scope of the IST Program includes those pumps that are provided with an emergency power source. It also includes those pumps and valves that are required to perform a specific function in shutting down a reactor to the safe shutdown condition, in maintaining the safe shutdown condition, or in mitigating the consequences of an accident and pressure relief devices that protect systems or portions of systems that perform one or more of these three functions. In addition to the above OM Code requirements, guidance established in NUREG 1482, Rev.1 was also used, as a reference for determining which components should be included in the IST Program.

NUREG-1482, Rev.1, Table 2.1, provides a list of systems that are typically included in IST Programs but provides little guidance on the criteria for determining which components are safety-related. The IST Program scope should not be limited solely to those components required to mitigate the consequences of the postulated design basis accidents defined in Chapter 15, Accident Analysis, of the UFSAR. Although the required IST Program scope has not been precisely delineated, the NRC has stated their position that the sole criteria for component selection should not be limited to design basis accidents. These accidents are the worst case scenarios which do not define all the component response requirements necessary to prevent core damage and protect the health and safety of the public.

This program was developed to encompass system safety requirements defined in 10 CFR 50 as well as component functions required in response to the abnormal operational transients and accidents defined in the UFSAR. The program is not limited to the postulated accidents of Chapter 15. The UFSAR, Technical Specifications, and related design basis documents are the primary references used to determine which components are required to perform specific functions related to the spectrum of postulated accidents. Although several other plant source documents identify various components that may be important to plant safety or are to be operated in conjunction with recovery from an accident, unless specific credit is taken or implied for a pump or valve, the component need not be included in the IST Program.

2.1 Pump Exclusions

OM Code Subsection ISTB excludes the following from the IST Program:

- Pump drivers, except where the pump and the driver form an integral unit and the pump bearings are in the driver, and
- Pumps that are supplied with emergency power solely for operating convenience.
- Skid-mounted pumps that are tested as part of the major component and are justified by the Owner to be adequately tested.

2.2 Valve Exclusions

OM Code Subsection ISTC excludes the following from the IST Program:

- Valves used only for:
  - operating convenience (such as vents, drains, instrument and test valves),
  - system control (such as pressure regulating valves),
  - system or component maintenance, and
  - skid-mounted valves that are tested as part of the major component and are justified by the Owner to be adequately tested.

- External control and protection systems responsible for sensing plant conditions and providing signals for valve operation.

2.3 Safe Shutdown Condition

In NUREG-1482, Rev.1, the NRC recognizes that some plants are licensed for a safe shutdown condition of hot standby or hot shutdown rather than cold shutdown. In some instances the equipment needed to achieve cold shutdown may not be classified as safety related or subject to a Quality Assurance Program. The NRC has acknowledged that the scope may be limited to those components credited to achieve the safe shutdown condition in the plant safety analyses. If the plant was not licensed to cold shutdown, then the program should identify that the plant is not designed to the safe shutdown condition of cold shutdown and may limit the inclusion of components accordingly. The South Texas Project is licensed on the basis that a safe shutdown is the hot standby condition.

UFSAR Section 5.4 demonstrates that STP has the capability to achieve cold shutdown using only safety grade equipment. However, this capability and the equipment functions to bring the plant to cold shutdown are considered to be outside the scope of the IST program. Additionally, while the specific components needed to bring the plant to cold shutdown have been designed and installed as ASME equipment with applicable quality assurance requirements, only those which have an accident mitigation function have been included in the present program.

2.4 Special Treatment Exemption for IST Program

STP has been granted an exemption from Inservice Testing Requirements of the ASME OM Code for low risk and non-risk significant components. Once these valves are removed from the regulatory IST program, reasonable confidence must be maintained that these valves will continue to satisfy their design functional requirements when demanded. A reference to the reasonable confidence evaluation has been included in this IST Plan document for each applicable pump or valve. Additions to the IST Scope, based on changes in the risk significance ranking, will be controlled by the Comprehensive Risk Management and Inservice Testing Program procedure at STP. Scope additions will be added to the IST Program in a timely manner and testing requirements will commence from the time the component is added to the program.

3.0 METHOD OF EVALUATING COMPONENTS

The UFSAR, Technical Specifications, and the system design basis documents were reviewed to determine which systems include components that encompass system safety requirements defined in 10 CFR 50 as well as component functions required in response to the abnormal operational transients and accidents defined in the UFSAR. This review was not limited to the postulated accidents of Chapter 15.

Each system was reviewed in the following manner:

3.1 The Piping & Instrument Diagram (P&ID) for each system was reviewed to identify the system pumps and valves that perform a specific function in shutting down a reactor to the safe shutdown condition, maintaining the safe shutdown condition, or in mitigating the consequences of an accident.

3.2 Each component was reviewed against the ASME OM Code, IST exclusion criteria.

3.3 If excluded, the Bases Document was reviewed to ensure that the component was included in the exclusion list and that the basis for exclusion was correct.

3.4 If not excluded, the UFSAR and the applicable system DBD were reviewed to determine the safety function performed by the component in shutting down the reactor to the safe shutdown condition, maintaining the safe shutdown condition, or in mitigating the consequences of an accident. The following information was then verified to be correct in the IST Program Plan and Bases Document:

a. Component specific data such as valve category, code class, valve type, P&ID coordinates, etc.

b. Safety function performed by the component and its bases,

c. Code required tests to assess the operational readiness of the component to ensure it can perform its intended function,

d. Applicable cold shutdown justifications, refueling outage justifications, or relief requests, and

e. References used to develop the above items.

4.0 INSERVICE TESTING OF PUMPS

The IST Pump List identifies each pump to be tested in accordance with the requirements of the OM Code. The IST Pump List, Attachment 1 to the Program Plan, is provided in a table format and contains the following specific information about each pump:

- Pump name and TPNS number,
- ASME Code class,
- Pump Group (A, or B),
- P&ID grid coordinates,
- Inservice tests required (A, B, or Comprehensive)
- Inservice test parameters,
- Test interval,
- Applicable relief requests, and
- Applicable remarks.

Pump test parameters will be abbreviated as follows:

N	Speed
ΔP	Differential Pressure
P	Discharge Pressure

Q	Flow Rate
Vib	Vibration

Pump test types will be abbreviated as follows:

A	Quarterly Group A Test. If quarterly full flow testing is possible, then the Group A test may be performed per Code Case OMN-18 and Relief Request PRR-01.
B	Quarterly Group B Test
CPT	Biennial Comprehensive Pump Test

4.1 Pump Reference Values

Pump reference values shall be:

- Determined from the results of pre-service tests or from the results of the first inservice test following maintenance that could affect the pump reference values.
- Established only when the pump is known to be operating acceptably.
- Established at a point(s) of operation (reference point) readily duplicated during subsequent tests.
- Established in a region(s) of relatively stable pump flow.
- Established within ±20% of design flow when performing a Comprehensive test or Group A test, in lieu of a Comprehensive test per the guidelines provided in Code Case OMN-18 and relief request PRR-1.

When a reference value or set of values may have been affected by repair, replacement, or routine servicing of a pump, a new reference value or set of values shall be determined or the previous value reconfirmed by an Inservice test run before declaring the pump operable. Deviations between the previous and new set of reference values shall be evaluated and verification that the new values represent acceptable pump operation shall be placed in the record of tests.

If it is necessary or desirable, for some reason other than the above paragraph, to establish an additional set of reference values, an Inservice test shall be run at the conditions of an existing set of reference values and the results analyzed. If operation is acceptable, an additional set of reference values may be established. A test shall be run to verify the new reference values before their implementation. The reasons for establishing a new set of reference values shall be justified and documented in the record of tests.

4.2 Inservice Tests

Inservice tests shall be conducted with the pump operating at a specified reference point. The test parameters for the associated test shall be determined and recorded and all deviations from the reference values shall be compared to the established ranges and corrective action taken as required.

4.3 Pump Relief Requests

Relief from the requirements of the OM Code shall be requested where full compliance with the Code will not be achieved. Relief requests are submitted to the NRC for approval pursuant to the requirements of 10 CFR 50.55a. . Guidelines for preparation of relief requests are provided in NEI White Paper, Entitled "Standard Format for Requests from Commercial Reactor Licensees Pursuant to 10 CFR 50.55a", Rev. 1, dated June 2004. These guidelines are provided in Attachment 1 of NUREG-1482, Rev. 1.

Relief is requested in accordance with:

- 10 CFR 50.55a(a)(3)(i), Alternative Provides Acceptable Level of Quality and Safety, or
- 10 CFR 50.55a(a)(3)(ii), Hardship or Unusual Difficulty without Compensating Increase in Level of Quality or Safety

The following information should be provided in the request for relief:

- ASME Code Component(s) Affected,
- Component Function,
- Applicable Code Edition and Addenda
- Applicable Code Requirement,
- Reason for Request
- Proposed Alternative and Basis for Use,
- Duration of Proposed Alternative, and
- Precedents

Requests for relief based on;

- 10 CFR 50.55a(a)(f)(5)(iii), Inservice Testing Impracticality

The following information should be provided in the request for relief:

- ASME Code Component(s) Affected,
- Component Function,
- Applicable Code Edition and Addenda,
- Applicable Code Requirement,
- Impracticality of Compliance,
- Burden Caused by Compliance
- Proposed Alternative and Basis for Use
- Duration of Proposed Alternative, and
- Precedents

Relief requests are to be numbered as follows:

- PRR-xx, where PRR is the acronym for pump relief request and xx is the sequential number.

Attachment 2 contains the relief requests applicable to the IST Pump List.

5.0 INSERVICE TESTING OF VALVES

The IST Valve List identifies each valve to be tested in accordance with the requirements of the OM Code. The IST Valve List, Attachment 3 to the Program Plan, is provided in a table format and contains the following specific information about each valve:

- The P&ID that shows the associated system valves,
- Valve ID (TPNS number) for each valve to be tested,
- ASME code class for the valve,
- P&ID grid coordinates,
- IST valve category and designation of its active/passive status,
- Valve size,
- Type of valve,
- Valve actuator,
- Valve position during normal plant operation,
- Fail-safe position of the valve,
- Code required tests,
- Applicable cold shutdown justifications, refueling outage justifications, and relief requests, and
- Tests performed.

5.1 Valve Categories

Category A - valves for which seat leakage is limited to a specific maximum amount in the closed position for fulfillment of their required safety function.

Category B - valves for which seat leakage in the closed position is inconsequential for fulfillment of the required safety function.

Category C - valves that are self-actuating in response to some system characteristic, such as pressure (relief valves) or flow direction (check valves) for fulfillment of the required safety function.

Category D - valves that are actuated by an energy source capable of only one operation, such as rupture disks or explosively actuated valves.

Valves within the scope of the OM Code shall be placed in one or more of the above valve categories. When more than one distinguishing category characteristic is applicable, all requirements of each individual category are applicable, although duplication or repetition of common testing requirements is not necessary.

5.2 Active/Passive Status

Active Valves - valves that are required to change obturator position to accomplish their required safety function.

Passive Valves - valves that maintain obturator position and are not required to change obturator position to accomplish their required safety function.

A valve's status may vary based on the operating/safety function of the valve. Valves that are temporarily removed from service or removed from its safety position for a short period of time,

such as manually opening a sample valve to take a sample, while maintaining administrative control over the valve should not be considered active valves. The position of passive valves may be changed without imposing IST requirements on the valve during operating plant modes that do not require a passive valve to be maintained in its safety position. Valves that are routinely repositioned during power operation shall be categorized as an active valve. Valves that are repositioned to create a new valve alignment may require an evaluation to consider the impact on the IST Program prior to alignment to ensure operational readiness. These valves should be evaluated on a case by case basis.

5.3 Reference Values

Valve reference values shall be determined from the results of preservice tests or from the results of the first inservice test. These tests shall be performed under conditions as near as possible to those expected during subsequent inservice testing. Reference values shall be established only when the valve is known to be operating acceptably. If the particular parameter being measured can be significantly influenced by other related conditions, then these conditions shall be analyzed.

When a valve or its control system has been replaced, repaired, or has undergone routine maintenance that could affect the valve's performance, a new reference value shall be determined or the previous value reconfirmed by an inservice test run before it is returned to service or immediately if it is not removed from service. Deviations between the previous and new set of reference values shall be evaluated and verification that the new values represent acceptable operation shall be placed in the record of tests.

If it is necessary or desirable, for some reason other than the above paragraph, to establish an additional set of reference values, an inservice test shall be run at the conditions of an existing set of reference values, or if impractical, at the conditions for which the new reference values are required, and the results analyzed. If operation is acceptable, a second test shall be performed under the new conditions as soon as possible and the results of the second test shall establish the additional reference values. The reasons for establishing an additional set of reference values shall be justified and documented in the record of tests.

5.4 Category A and B Required Tests

5.4.1 Valve Position Verification

Valves with remote position indicators shall be observed locally at least once every 2 years (except where extended per OMN-1) to verify that valve operation is accurately indicated. Where possible, this local observation should be supplemented by other indications such as flow or other suitable instrumentation to verify obturator position. Where local observation is not possible, other indications shall be used for verification of valve operation.

5.4.2 Valve Exercise Test

Active Category A and B valves (with the exception of manual valves) shall be full stroke exercised nominally every 3 months during plant operation to the position required to fulfill their safety function. If full-stroke exercising during plant operation is not practical, the valve may be full-stroke exercised during cold shutdown. If it is not practical to full-stroke exercise at cold shutdown, the valve may be full-stroke exercised during refueling outages. Certain valves may be exercised or tested during specific system outage windows called Extended Allowed Outage Times (EAOT). Testing of these valves will be at a refueling cycle frequency which will ensure component operability while minimizing safety system unavailability.

Valves that are full-stroke exercised at cold shutdown shall be exercised at each cold shutdown unless the period of time since the previous full-stroke exercise is less than 3 months.

Valve exercising during cold shutdown shall commence within 48 hours of achieving cold shutdown and continue until all testing is complete or the plant is ready to return to power. For extended outages, testing need not be commenced in 48 hours provided all valves required to be tested during cold shutdown will be tested before plant startup; however, it is not the intent of Subsection ISTC to keep the plant in cold shutdown solely to complete cold shutdown testing. Cold shutdown justifications (CSJ) shall document the basis for deferring the required exercise test to a cold shutdown frequency.

All valve testing required to be performed during a refueling outage shall be completed before returning the plant to operation. Refueling outage justifications (ROJ) shall document the basis for deferring the required exercise test to a refueling outage frequency.

Whenever valve testing is practicable during normal operations but only if train or equipment outage is of sufficient duration that a refueling cycle justification is acceptable, then with the approval of the Nuclear Regulatory Commission testing can be performed during extended allowed outages. Refueling cycle justifications (RCJ) shall document the basis for deferring the required testing to a refueling cycle frequency.

Manual Valves

Although ISTC-3540 permits manual valves to be full-stroke exercised at least once every 5 years, pursuant to 10 CFR 50.55a(b)(3)(vi), manual valves within the IST program scope that perform an active safety function shall be exercised through a complete cycle at least once every 2 years. Exercise testing shall be considered acceptable if valve stem travel exhibits unrestricted movement with no abnormal resistance or binding through one complete cycle. Where practical, process parameters may be utilized to verify obturator movement. However, where process parameters are utilized to verify obturator movement

it is not necessary to be performed simultaneous to manual exercising. This testing methodology is consistent with the discussion provided in NUREG-1482, Rev.1, Section 4.4.4. If a valve fails to exhibit the required change of obturator position, the valve shall immediately declared inoperable.

The use of a valve persuader (cheater) for additional mechanical advantage will not invalidate the test, as it is recognized that larger valves may exhibit increased packing friction and/or increased friction associated with the disk to seat interface. In addition, a valve persuader may be used for personnel safety depending on a valve's service application (i.e. main steam).

5.4.3 Stroke Time Measurement

For power-operated valves, the full-stroke time shall be measured to at least the nearest second.

The acceptance criteria for the full stroke of power operated valves will be in accordance with the values specified in the following paragraphs of the OM Code:

NOTE

As an alternative to the requirements of paragraph ISTC-5120 of the ASME OM Code-2004 Edition, Code Case OMN-1 "Alternative Rules for Preservice and Inservice Testing of Certain Electric Motor-Operated Valve Assemblies in LWR Power Plants" provides an alternative to MOV stroke time testing requirements. Code Case OMN-1 shall be implemented in conjunction with the implementation of the JOG periodic verification program around 2011.

- ISTC-5114, Power Operated Relief Valves
- ISTC-5122, Motor-Operated Valves
- ISTC-5132, Pneumatically Operated Valves
- ISTC-5142, Hydraulically Operated Valves
- ISTC-5152, Solenoid-Operated Valves

The limiting values of full stroke times of each power operated valve will be determined by multiplying the acceptance criteria percent allowable change by a factor of two. The limiting values of full stroke times shall in no case exceed any design basis stroke time value.

Rapid acting valves are valves with stroke times of two seconds or less and are exempted from the comparison to a reference value requirement of the OM Code. Stroke times for rapid acting valves are compared to the stroke time limit of two seconds.

STPEGS shall adopt the alternative test requirements specified in ASME OM Code Case OMN-1, Rev.1, in lieu of stroke timing certain motor operated valves (MOVs) in accordance with the requirements specified in paragraph ISTC-5120 and position indication testing in accordance with the requirements specified in paragraph ISTC-3700. Code Case OMN-1 shall be implemented in conjunction with the implementation of the JOG periodic verification program around 2011. The STPEGS MOV Program satisfies the criteria specified in ASME OM Code Case OMN-1 and the conditional acceptance specified in Reg. Guide 1.192, "Operation and Maintenance Code Case Acceptability, ASME OM Code". Paragraph 3.6 of OMN-1 requires MOVs to be full stroke exercised (not timed) to the position(s) required to fulfill their function(s) on an interval not to exceed one year or one refueling cycle (which ever is longer). Full stroke exercising is based on the practicality of exercising during power operation, cold shutdown, or refueling. Justification for extended full stroke exercising of ASME OM Code Case OMN-1 scoped MOVs beyond a quarterly frequency are provided in Attachments 4 and 5 of this document. Further guidance regarding the use of ASME OM Code Case OMN-1 is provided in NUREG-1482, Revision 1, Section 4.2.5, "Alternatives to Stoke-Time Testing". Refer to Valve Relief Request VRR-01 for further discussion regarding the implementation of Code Case OMN-1.

Since certain valves included in OMN-1 are not required to follow the stroke time requirements of ISTC-5120, stroke timing to the position(s) required to fulfill their function(s) will only be performed during diagnostic testing. The stroke times during diagnostic testing will only be compared to a reference value and a limiting value of full-stroke time for trending purposes. Acceptable Range limits specified in ISTC-5122 are not required to be used.

5.4.4 Fail-Safe Test

Active and passive Category A and B valves with fail-safe actuators shall be tested by observing the operation of the actuator upon loss of valve actuating power at least every 3 months during plant operation. At STP valves with fail-safe actuators are designed such that remote valve operation during the exercise test removes actuator power from the valve. This method of testing valves with fail-safe actuators is consistent with the requirements of the OM Code.

5.4.5 Seat Leakage Rate Test

Active and passive Category A valves shall be seat leakage tested per the requirements of ISTC-3600 of the OM Code. Valve closure prior to seat leakage testing shall be by using the valve operator with no additional closing force applied. Valves that are identified in the UFSAR as containment isolation valves (CIV) and are subject to 10CFR50 Appendix J Type C Leakage Tests shall be listed as Category A valves and included in the IST Program. Valves that are identified in Technical Specifications as pressure isolation valves (PIV) shall be listed as Category A valves and included in the IST Program.

Pressure Isolation Valves

These valves provide a boundary/interface between high pressure and low pressure systems and shall be seat leakage tested at least once every 2 years. The seat leakage rate for PIVs shall be per the Reactor Coolant System leakage limits specified in the plant Technical Specifications.

Containment Isolation Valves

Category A CIVs shall be seat leakage tested to verify their leak-tight integrity per the frequency, testing methods and leakage rate requirements of 10CFR50, Appendix J, Option B.

5.5 Category C Required Tests

5.5.1 Check Valve Exercise Test

Active Category C check valves shall be exercised nominally every 3 months during plant operation per the requirements of ISTC-3510 of the OM Code. Each check valve shall be exercised or examined in a manner that verifies obturator travel to the closed, full-open, or partially open position required to fulfill its safety function. If full-stroke exercising during plant operation is not practical, the valve may be full-stroke exercised during cold shutdown or if it is not practical to full-stroke exercise at cold shutdown, the valve may be full-stroke exercised during refueling outages. Certain valves may be exercised or tested during specific system outage windows called Extended Allowed Outage Times (EAOT). Testing of these valves will be at a refueling cycle frequency which will ensure component operability while minimizing safety system unavailability.

Valves that are full-stroke exercised at cold shutdown shall be exercised at each cold shutdown unless the period of time since the previous full-stroke exercise is less than 3 months.

Valve exercising during cold shutdown shall commence within 48 hours of achieving cold shutdown and continue until all testing is complete or the plant is ready to return to power. For extended outages, testing need not be commenced in 48 hours provided all valves required to be tested during cold shutdown will be tested before plant startup; however, it is not the intent of Subsection ISTC to keep the plant in cold shutdown solely to complete cold shutdown testing. Cold shutdown justifications (CSJ) shall document the basis for deferring the required exercise test to a cold shutdown frequency.

All valve testing required to be performed during a refueling outage shall be completed before returning the plant to operation. Refueling outage justifications (ROJ) shall document the basis for deferring the required exercise test to a refueling outage frequency.

Whenever valve testing is practicable during normal operations but only if train or equipment outage is of sufficient duration that a refueling cycle justification is acceptable, then with the approval of the Nuclear Regulatory Commission testing can be performed during extended allowed outages.. Refueling cycle justifications (RCJ) shall document the basis for deferring the required testing to a refueling cycle frequency.

5.5.2 Check Valve Exercise Test Using System Flow

A check valve's full-stroke exercise to the open position may be verified by passing the maximum required accident condition flow through the valve. Any flow rate less than this will be considered a partial-stroke exercise; although, partial stroke exercising is no longer a Code requirement for check valves. A valid full-stroke exercise by flow also requires that the flow through the valve be known. Knowledge of only total flow through multiple parallel lines does not provide verification of flow rates through the individual valves and is not a valid full-stroke exercise.

The necessary valve obturator movement shall be demonstrated by exercising the valve and observing that either the obturator travels to the seat upon cessation or reversal of flow, or opens to the position required to fulfill its function. Both an open and close exercise test shall be performed.

Full flow testing of a check valve is the preferred method for testing however, it may be impractical to perform for certain valves. It is possible to qualify other positive means and techniques to confirm that the valve is exercised to the position required to perform its safety function. As an alternative to full flow testing, ISTC-5221(c) provides the guidelines for implementing a sample disassembly and examination program. As stated in NUREG-1482, Rev.1, Section 4.1.2, the NRC recognizes a non-intrusive testing program as an acceptable alternative to the full flow exercise testing. However, if the recommended alternative methods are implemented, the method used for testing and implementation must be described in the IST Program document.

5.5.3 Check Valve Exercise Test Using A Non-intrusive Testing Program

Some check valves in the IST Program will be tested using non-intrusive testing techniques as an alternate method of verifying check valve full-stroke open capabilities and operational readiness at less than the accident flow rate. Non-intrusive testing techniques may be used in a sampling plan such that similar valves in the same service condition are grouped for testing purposes. The check valves in the sample program are separated into groups to include valves that are of the same design manufacturer, size, model number, and materials of construction, that have the same service condition, and that have the same valve orientation.

During the initial test of all valves within the group identified per previous paragraph, non-intrusive testing will be used to verify that the system pressures and flow conditions specified in the test procedures cause the valves to fully stroke to the required safety

function position. During subsequent testing, if the system conditions are repeatable, each valve will be considered to be fully stroked; however, the non-intrusive verification only needs to be performed for one valve of the group on a rotating schedule. Under the sampling program, one valve in the group would be non-intrusively tested and the balance of the group would be flow tested each time testing is required. If problems are found with the sample valve that are determined to affect the operational readiness of the valve, all valves in the group must be tested using non-intrusive techniques during the same test cycle.

Some check valves in the IST Program will be tested using non-intrusive testing techniques as an alternate method of verifying check valve closure capabilities and operational readiness. Nonintrusive testing techniques may be used in a sampling plan such that similar valves in the same service condition are grouped for testing purposes. The check valves in the sample program are separated into groups to include valves that are of the same design manufacturer, size, model number, and materials of construction, that have the same service condition, and that have the same valve orientation.

5.5.4 Check Valve Exercise Test Using A Disassembly and Inspection Program

Where non-intrusive verification of check valve exercise to the intended safety function (open and/or closed) is not practicable, check valves will require disassembly and inspection during refueling outages or on a refueling cycle frequency to prove operational readiness. The refueling outage or refueling cycle justifications are included in the plan, as appropriate, to document the effected valves. To minimize the number of check valves that are disassembled during refueling outages a Check Valve Sample Disassembly and Inspection Program has been implemented. The check valves in the sample program are separated into groups to include valves that are of the same design manufacturer, size, model number, and materials of construction, that have the same service condition, and that have the same valve orientation.

At each disassembly the full-stroke capability of the valve being tested shall be verified by manually exercising the valve disc to the full open and closed position and the internals inspected to verify that the valve is structurally sound with no loose or corroded parts. If the disassembled valve is unable to be full-stroke exercised for any reason an evaluation shall be conducted to determine if the failure is of a generic nature that would affect operational readiness of the other valves in that group. If affected, the remaining valves in the group shall be disassembled, inspected, and manually full-stroke exercised.

5.5.5 Check Valve Condition Monitoring

As an alternative to the check valve testing requirements described above, IST-5222 of the OM Code allows owners to establish a condition monitoring program. The requirements for a check valve condition monitoring program are describe in Mandatory Appendix II of the OM Code. The process controls for the Check Valve Condition Monitoring Program are detailed in plant general procedure 0PGP03-ZE-0016.

5.5.6 Safety and Relief Valve Required Tests

Appendix I of the OM Code establishes different test frequencies and sample number for Class 1, 2, and 3 safety/relief valves. Periodic testing of all pressure relief devices is required. No maintenance, adjustment, disassembly, or other activity that could affect the "as-found" set-pressure or seat tightness data is permitted. When on-line testing is performed to satisfy periodic testing requirements the visual examination may be performed out of sequence.

Class 1 Pressure Relief Valves

A 5 year test interval for periodic testing shall be established. No maximum limit is specified for the number of valves to be tested within each interval. A minimum of 20% of the valves from each valve group shall be tested within any 24 month interval. This 20% shall consist of valves that have not been tested during the current 5-year interval, if they exist. The test interval for any valve shall not exceed 5 years.

For Class 1 Safety Valves, tests before maintenance or set-pressure adjustment, or both, shall be performed for a, b, and c in sequence. The remaining tests shall be performed in sequence after maintenance or set-pressure adjustment.

a. Visual examination,
b. Seat tightness determination, if practical,
c. Set-pressure determination,
d. Determination of compliance with seat tightness criteria.
e. Determination of operation and electrical characteristics of bellows alarm switch,
f. Verification of the integrity of the balancing device on balanced valves,
g. Determination of operation and electrical characteristics of position indicators, and

For Class 1 Power Actuated Relief Valves, tests before maintenance shall be performed for a, b, and c in sequence. The remaining tests shall be performed in sequence after maintenance or set-pressure adjustment.

a. Visual examination,
b. Seat tightness determination, if practical,
c. Set-pressure determination,
d. Determination of operability of pressure sensing and valve actuating equipment
e. Determination of compliance with seat tightness criteria,
f. Verification of the integrity of the balancing device on balanced valves,
g. Determination of operation and electrical characteristics of position indicators.

For other Class 1 Pressure Relief Valves, tests before maintenance shall be performed for a, b, and c in sequence. The remaining tests shall be performed in sequence after maintenance or set-pressure adjustment.

a. Visual examination,
b. Seat tightness determination, if practical,
c. Set-pressure determination,
d. Determination of compliance with seat tightness criteria,
e. Verification of the integrity of the balancing device on balanced valves,
f. Determination of operation and electrical characteristics of position indicators.

Class 2 and 3 Pressure Relief Valves

A 10-year test interval for periodic testing, with the exception of the Main Steam Safety Valves, shall be established. No maximum limit is specified for the number of valves to be tested within any single plant operating cycle. A minimum of 20% of the valves from each valve group shall be tested within any 48 month interval. This 20% shall consist of valves that have not been tested during the current 10-year interval, if they exist. The test interval for any valve shall not exceed 10 years. The Main Steam Safety valves shall be tested per the requirements of Class 1 Pressure Relief valves.

For Class 2 and 3 Main Steam Safety Valves, tests before maintenance or set-pressure adjustment, or both, shall be performed for a, b, and c in sequence. The remaining tests shall be performed in sequence after maintenance or set-pressure adjustment.

a. Visual examination,
b. Seat tightness determination, if practical,
c. Set-pressure determination,
d. Determination of compliance with seat tightness criteria,
e. Verification of the integrity of the balancing device on balanced valves,

For other Class 2 and 3 Pressure Relief Valves, tests before maintenance shall be performed for a, b, and c in sequence. The remaining tests shall be performed in sequence after maintenance or set-pressure adjustment.

a. Visual examination,
b. Seat tightness determination, if practical,
c. Set-pressure determination,
d. Determination of compliance with seat tightness criteria,
e. Verification of the integrity of the balancing device on balanced valves,

Requirements for Testing Additional Valves

If the as-found set-pressure exceeds the greater of either the owner's set-pressure acceptance criteria or +/- 3% of the valve nameplate set-pressure, then two additional

valves shall be tested from the same valve group. If any additional valve exceeds the above limits, all remaining valves in the group shall be tested. The cause and effect of valves to comply with the set-pressure acceptance criteria or the acceptance criteria for other required tests shall be evaluated. Based upon this evaluation the need for testing in addition to the minimum required tests shall be determined to address any generic concerns which could apply to valves in the same or other valve groups.

Class 2 and 3 Pressure Relief Devices in a Thermal Relief Application

Tests shall be performed on all Class 2 and 3 relief valves used in a thermal relief application every 10 years, unless performance data indicate more frequent testing is necessary. In lieu of tests, the relief devices may be replaced every 10 years, unless performance data indicate more frequent testing is necessary. Percentage of valves requiring tests and scope expansion, subsequent to failure, do not apply.

5.6 Justifications and Relief Requests

5.6.1 Cold Shutdown Justification (CSJ)

The OM Code permits the delay of valve testing that is impractical during power operation to be performed at cold shutdown. Justification for the delay of testing to the cold shutdown frequency shall be documented using a CSJ. Approval by the NRC of the CSJs is not required; however, they will be reviewed by the NRC as an integral part of the plan submittal.

The CSJ shall be formatted to contain the following information:

- Cold shutdown justification number,
- System name and designation,
- Valve identification number,
- Valve category,
- Valve function,
- Deferred testing requirements,
- Justification for deferred testing, and
- Alternate testing.

CSJs shall be ordered numerically using the following methodology and sequentially numbered as follows:

- CSJ-xx, where CSJ is the acronym for cold shutdown justification and xx is the sequential number.

Attachment 4 contains the CSJs that are applicable to the IST Valve List.

5.6.2 Refueling Outage Justification (ROJ)

The OM Code permits the delay of valve testing that is impractical during power operation or cold shutdown to be performed at each refueling. Justification for the delay of testing to the refueling frequency shall be documented using a ROJ. Approval by the NRC of the ROJs is not required; however, they will be reviewed by the NRC as an integral part of the plan submittal.

The ROJ shall be formatted to contain the following information:

- Refueling outage justification number,
- System name and designation,
- Valve identification number,
- Valve category,
- Valve function,
- Deferred testing requirements,
- Justification for deferred testing, and
- Alternate testing.

ROJs shall be ordered numerically using the following methodology and sequentially numbered as follows:

- ROJ-xx, where ROJ is the acronym for refueling outage justification and xx is the sequential number.

Attachment 5 contains the ROJs that are applicable to the IST Valve List.

5.6.3 Refueling Cycle Justification (RCJ)

To minimize shutdown risk, STP has elected to perform certain tests at power by entering an LCO. These components will be scheduled on a refueling cycle frequency not to exceed a refueling cycle, instead of a Refueling Outage Frequency, and will be performed during the fuel cycle.

The OM Code permits the delay of valve testing that is impractical during power operation or cold shutdown to be performed at each refueling. Justification for the delay of testing to a refueling cycle frequency shall be documented using a RCJ. Approval by the NRC of the RCJs is required. However, pursuant to NUREG-1482, Rev.1, Section 4.1.8, check valves contained in a check valve condition monitoring program may have a test interval established during a fuel cycle without NRC approval.

The RCJ shall be formatted to contain the following information:

- Refueling cycle justification number,

- System name and designation,
- Valve identification number,
- Valve category,
- Valve function,
- Deferred testing requirements,
- Justification for deferred testing, and
- Alternate testing.

RCJs shall be ordered numerically using the following methodology and sequentially numbered as follows:

- RCJ-xx, where RCJ is the acronym for refueling outage justification and xx is the sequential number.

5.6.4 Condition Monitoring Plans

As an alternative to examination and testing of the OM Code, ISTC-5222 allows the implementation of a check valve condition monitoring program. The guidelines provided in Appendix II of the OM Code requires that condition monitoring test plans to document the optimized condition monitoring program activities and the associated intervals be included in plant documentation. The condition monitoring plans identified in the IST Plan are derived from advisory panel deliberations. These plans describe the testing plan for each IST check valve group that is included in the Check Valve Condition Monitoring Program.

The Condition Monitoring Plan shall be formatted to contain the following information:

- Condition Monitoring Plan number,
- CM Plan revision,
- System designator,
- IST Group and Check Valve Group number,
- Valves in the IST Group
- Valve function,
- Importance remarks,
- Condition monitoring discussion including Failure patterns, expected failure modes, and past failure causes
- Condition monitoring testing requirements
- Test frequency description.

Condition Monitoring Plans shall be ordered alpha-numerically using the following methodology and sequentially numbered as follows:

- CM-XX00, where CM is the acronym for condition monitoring and XX00 is the IST valve group number. (XX is system and 00 is a numerical sequence number)

Attachment 6 contains the Condition Monitoring Plans that are applicable to the IST Valve List.

5.6.5 Valve Relief Requests

Relief from the requirements of the OM Code shall be requested where full compliance with the code is not practical. Relief Requests are submitted per the requirements of 10CFR50.55a for approval by the NRC. Guidelines for preparation of relief requests are provided in NEI White Paper, Entitled "Standard Format for Requests from Commercial Reactor Licensees Pursuant to 10 CFR 50.55a", Rev. 1, dated June 2004. These guidelines are provided in Attachment 1 of NUREG-1482, Rev. 1.

Relief is requested in accordance with:

- 10 CFR 50.55a(a)(3)(i), Alternative Provides Acceptable Level of Quality and Safety, or
- 10 CFR 50.55a(a)(3)(ii), Hardship or Unusual Difficulty without Compensating Increase in Level of Quality or Safety

The following information should be provided in the request for relief:

- ASME Code Component(s) Affected,
- Component Function,
- Applicable Code Edition and Addenda
- Applicable Code Requirement,
- Reason for Request
- Proposed Alternative and Basis for Use,
- Duration of Proposed Alternative, and
- Precedents

Requests for relief based on;

- 10 CFR 50.55a(a)(f)(5)(iii), Inservice Testing Impracticality

The following information should be provided in the request for relief:

- ASME Code Component(s) Affected,
- Component Function,
- Applicable Code Edition and Addenda,
- Applicable Code Requirement,
- Impracticality of Compliance,
- Burden Caused by Compliance
- Proposed Alternative and Basis for Use
- Duration of Proposed Alternative, and

- Precedents

Relief requests are to be numbered as follows:

- VRR-xx, where VRR is the acronym for valve relief request and xx is the sequential number.

Attachment 7 contains the relief requests that are applicable to the IST Valve List.

5.7 Valve List Symbols

Symbols Used To Designate Valve Type

Symbol	Meaning
A	Angle
ARC	Auto Re-circulation Check
B	Butterfly
BL	Ball
CK	Check
D	Diaphragm
GL	Globe
GT	Gate
PRV	Pressure Relief or Safety Valve
SCK	Stop Check

Symbols Used To Designate Actuator Type

Symbol	Meaning
AO	Air Operated
HO	Hydraulic Operated
M	Manually Operated
MO	Motor Operated
SA	Self-Actuated
SO	Solenoid Operated

Symbols Used To Designate Valve Position

Symbol	Meaning
LC	Locked Closed
LO	Locked Open
NC	Normally Closed
NO	Normally Open
NT	Throttled or Controlling
C	Closed
O	Open
FC	Fails Open
FO	Fails Closed
FAI	Fails As-Is

Symbols Used To Designate Test Requirements

Symbol	Meaning
FSE	Quarterly Stroke Exercise (ISTC-3510)
FSC	Cold Shutdown Stroke Exercise (ISTC-3521b&c & 3522b)
FSR	Refueling Stroke Exercise (ISTC-3521d&e & 3522c)
FSJ	Stroke Exercise per Appendix J, Option B Frequency
ST	Stroke Time Measurement Required (ISTC-5113, 5121, 5131, 5141 & 5151)
FST	Fail Safe Test (ISTC-3560)
PI	Position Indicator (ISTC-3700)
LJ	Leak Test per 10CFR50 Appendix J (ISTC-3620)
LK	Leak Test (ISTC-3630)
SP	Relief Valve Set-Pressure Test (ISTC-5240)
VE	Relief Valve Visual Exam (ISTC-5240)
DI	Check Valve Disassemble and Inspect (ISTC-5221c)
CM	Condition Monitoring test to evaluate degradation (ISTC-5222)
BD	Bi-Directional functionality test (ISTC-3522, ISTC-5221)
NI(AC)	Non-intrusive (acoustic) test
NI(CR)	Non-intrusive (computerized radiography) test
LR	Leak rate test
FO	Open functionality test (typically using flow)
LJO	Open functionality test (during App. J test)
OMN-1	Stroke timing and position indication verification performed in conjunction with MOV diagnostic testing

Symbols Used To Designate Valve Category and Its Active/Passive Status

Symbol	Meaning
A-1	Category A/Active
A-2	Category A/Passive
B-1	Category B/Active
B-2	Category B/Passive
C-1	Category C/Active
C-2	Category C/Passive

Notes Used to Designate Safety Position and Additional Test Information

Note 1	Augmented Test for Appendix R
Note 2	Passive Safety Function – Augmented Test for Appendix R
Note 3	Passive Safety Function – Augmented Test Performed
Note 4	Passive Safety Function – Stroked but not Timed
Note 5	Augmented Test Performed
Note 6	Skid Mounted Component tested with Diesel Testing Protocol
Note 7	Skid Mounted Component tested with the Personnel Air Lock Testing required by the Technical Specifications
Note 8	Skid Mounted Component tested with the Auxiliary Air Lock Testing required by the Technical Specifications

6.0 PROGRAM IMPLEMENTATION

Program inservice tests required by the Code shall be implemented using the Surveillance Test Program or the Preventive Maintenance Program. The plant surveillance test program and procedures shall be used to identify the test method for verifying operational readiness of the component, to identify the frequency of the required tests, to establish plant conditions for performing component tests, and to document the results of component testing. The procedures act as the record of testing required by the OM Code.

The surveillance test procedures implement the requirements of the plant technical specifications. The IST procedures are integral part of the Surveillance Test Program and procedures. At times, testing of a component required by technical specifications will meet the intent of testing required by the IST Program. In this instance no additional testing of the component is required; however, the IST Program Bases Document must identify that the tests required by the plant technical specifications will be used to document the required testing of the IST Program.

6.1 Testing Skid Mounted Components

ISTB-1200(c) and ISTC-1200(c) address the acceptability of verifying the operational readiness of certain components and component subassemblies by means of testing the major component. STP will verify the operational readiness of certain valves and pumps by taking credit for the testing of

the major component required by plant technical specifications. When credit is taken for testing of the major component, it will be identified as part of the required testing portion of the IST Program Bases Document. Further discussion pertaining to the testing skid-mounted components and component subassemblies is provided in NUREG-1482, Rev.1, Sections 3.4, Skid-Mounted Components and Component Subassemblies, and 4.1.10, Skid-Mounted Valves and Component Subassemblies.

6.2 Valve Normal Position

The normal position of system valves was determined by identifying the operational status of a system for plant 100% normal power operation. The normal position of the valve was established based on the position required to support plant 100% normal power operation.

6.3 Unit 1 and Unit 2 Designation

The IST Program Plan is written as Unit 1 with Unit 2 designators in parenthesis. Any differences between the units will be identified with a Unit 1 or Unit 2 only inside parenthesis next to the applicable component.

6.4 Corrective Actions

As a result of the performed tests, any identified corrective actions and subsequent retests shall be made per the requirements of the OM Code, Technical Specifications, the Corrective Action Program, and the IST Repair and Replacement Program.

7.0 PROGRAM CONFIGURATION CONTROL

As a minimum the program will be reviewed and revised as necessary for compliance with the ASME Code in effect as referenced by 10CFR50.55a(f) 12 months prior to the end of the third 120-month interval of commercial operation. Additionally, the scope of the program is subject to revision due to changes in system design, changes in design that affect the component safety function, or revisions to the applicable code requirements. In order to accommodate these changes STP reserves the right to submit program revisions that will enhance or improve the program at any time within the effective interval.

8.0 PROGRAM ATTACHMENTS

Attachment 1, IST Pump List
Attachment 2, Pump Relief Requests
Attachment 3, IST Valve List
Attachment 4, Cold Shutdown Justifications
Attachment 5, Refueling Outage Justifications
Attachment 6, Condition Monitoring Plans

Attachment 7, Valve Relief Requests

ATTACHMENT 1

Unit 1 and 2 IST Pump List

Attachment 1, Unit 1 and 2 IST Pump List

System: Auxiliary Feedwater - AF

P&ID: 5S141(2)F00024, Sheet 1

Pump Name & TPNS No.	Grid Coord	Pump Group	Code Class	Test Parameters					Test Interval-Type	Relief Requests	Remarks
				ΔP	Q	P	Vib	N			
Auxiliary Feedwater Pump 3S141(2)MPA01	F7	A	3	X	X		X		Quarterly-A	PRR-1	OMN-18
Auxiliary Feedwater Pump 3S141(2)MPA02	D7	A	3	X	X		X		Quarterly-A	PRR-1	OMN-18
Auxiliary Feedwater Pump 3S141(2)MPA03	B7	A	3	X	X		X		Quarterly-A	PRR-1	OMN-18
Auxiliary Feedwater Pump 3S141(2)MPA04	H7	A	3	X	X		X	X	Quarterly-A	PRR-1	OMN-18

Attachment 1, Unit 1 and 2 IST Pump List

System: Component Cooling Water - CC

P&ID: 5R209F05017 #1(2)

Pump Name & TPNS No.	Grid Coord	Pump Group	Code Class	Test Parameters					Test Interval-Type	Relief Requests	Remarks
				ΔP	Q	P	Vib	N			
Component Cooling Wtr Pump 3R201(2)NPA1(2)01A	B7	A	3	X	X		X		Quarterly-A	PRR-01	OMN-18

P&ID: 5R209F05018 #1(2)

Pump Name & TPNS No.	Grid Coord	Pump Group	Code Class	Test Parameters					Test Interval-Type	Relief Requests	Remarks
				ΔP	Q	P	Vib	N			
Component Cooling Wtr Pump 3R201(2)NPA1(2)01B	B7	A	3	X	X		X		Quarterly-A	PRR-01	OMN-18

P&ID: 5R209F05019 #1(2)

Pump Name & TPNS No.	Grid Coord	Pump Group	Code Class	Test Parameters					Test Interval-Type	Relief Requests	Remarks
				ΔP	Q	P	Vib	N			
Component Cooling Wtr Pump 3R201(2)NPA1(2)01C	B7	A	3	X	X		X		Quarterly-A	PRR-01	OMN-18

Attachment 1, Unit 1 and 2 IST Pump List

System: Essential Chilled Water - CH

P&ID: 5V119V10001 #1(2)

Pump Name & TPNS No.	Grid Coord	Pump Group	Code Class	Test Parameters					Test Interval-Type	Relief Requests	Remarks
				ΔP	Q	P	Vib	N			
Essential Chilled Water Pump 3V111(2)VPA004	F7	A	3	X	X		X		Quarterly-A	PRR-01	OMN-18
Essential Chilled Water Pump 3V111(2)VPA005	D7	A	3	X	X		X		Quarterly-A	PRR-01	OMN-18
Essential Chilled Water Pump 3V111(2)VPA006	A7	A	3	X	X		X		Quarterly-A	PRR-01	OMN-18

Attachment 1, Unit 1 and 2 IST Pump List

System: Containment Spray - CS (Pumps Not Grouped due to EXEMPTION)

P&ID: 5N109F05037 #1(2)

Pump Name & TPNS No.	Grid Coord	Code Class	Test Parameters					Test Interval	Relief Requests	Remarks
			ΔP	Q	P	Vib	N			
Containment Spray Pump *2N101(2)NPA1(2)01A	G3	2	X	X		X		Semi-annual		CR 05-1321-91
Containment Spray Pump *2N101(2)NPA1(2)01B	E3	2	X	X		X		Semi-annual		CR 05-1321-91
Containment Spray Pump *2N101(2)NPA1(2)01C	C3	2	X	X		X		Semi-annual		CR 05-1321-91

* These pumps are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

Attachment 1, Unit 1 and 2 IST Pump List

System: Chemical and Volume Control - CV

P&ID: 5R179F05007 #1(2)

Pump Name & TPNS No.	Grid Coord	Pump Group	Code Class	Test Parameters					Test Interval-Type	Relief Requests	Remarks
				ΔP	Q	P	Vib	N			
Centrifugal Charging Pump 2R171(2)NPA1(2)01A	D5	A	2	X X	X X		X X		Quarterly-A Biennially-CPT		
Centrifugal Charging Pump 2R171(2)NPA1(2)01B	B5	A	2	X X	X X		X X		Quarterly-A Biennially-CPT		

P&ID: 5R179F05009 #1(2) (Pumps Not Grouped due to EXEMPTION)

Pump Name & TPNS No.	Grid Coord	Code Class	Test Parameters					Test Interval	Relief Requests	Remarks
			ΔP	Q	P	Vib	N			
Boric Acid Transfer Pump *3R171(2)NPA1(2)03A	D5	3	X	X		X		Quarterly		CR 05-1321-92
Boric Acid Transfer Pump *3R171(2)NPA1(2)03B	C5	3	X	X		X		Quarterly		CR 05-1321-92

* These pumps are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

System: Essential Cooling Water - EW

P&ID: 5R289F05038, Sheet 1 #1(2)

Pump Name & TPNS No.	Grid Coord	Pump Group	Code Class	Test Parameters					Test Interval-Type	Relief Requests	Remarks
				ΔP	Q	P	Vib	N			
Essential Cooling Water Pump 3R281(2)NPA1(2)01A	C3	A	3	X	X		X		Quarterly-A	PRR-02 PRR-01	Use of Pump Curve OMN-18

P&ID: 5R289F05038, Sheet 2 #1(2)

Pump Name & TPNS No.	Grid Coord	Pump Group	Code Class	Test Parameters					Test Interval-Type	Relief Requests	Remarks
				ΔP	Q	P	Vib	N			
Essential Cooling Water Pump 3R281(2)NPA1(2)01B	C3	A	3	X	X		X		Quarterly-A	PRR-02 PRR-01	Use of Pump Curve OMN-18

P&ID: 5R289F05038, Sheet 3 #1(2)

Pump Name & TPNS No.	Grid Coord	Pump Group	Code Class	Test Parameters					Test Interval-Type	Relief Requests	Remarks
				ΔP	Q	P	Vib	N			
Essential Cooling Water Pump 3R281(2)NPA1(2)01C	C3	A	3	X	X		X		Quarterly-A	PRR-02 PRR-01	Use of Pump Curve OMN-18

System: Essential Cooling Water - EW (Pumps Not Grouped due to EXEMPTION)

P&ID: 5R289F05039 #1(2)

Pump Name & TPNS No.	Grid Coord	Code Class	Test Parameters					Test Interval	Relief Requests	Remarks
			ΔP	Q	P	Vib	N			
ECW Screen Wash Bster Pump *3R281(2)NPA1(2)02A	D7	3	X	X		X		Quarterly		CR 05-1321-93
ECW Screen Wash Bster Pump *3R281(2)NPA1(2)02B	D4	3	X	X		X		Quarterly		CR 05-1321-93
ECW Screen Wash Bster Pump *3R281(2)NPA1(2)02C	D2	3	X	X		X		Quarterly		CR 05-1321-93

* These pumps are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

Attachment 1, Unit 1 and 2 IST Pump List

System: Spent Fuel Pool Cooling and Cleanup - FC

P&ID: 5R219F05028 #1(2)

Pump Name & TPNS No.	Grid Coord	Pump Group	Code Class	Test Parameters					Test Interval-Type	Relief Requests	Remarks
				ΔP	Q	P	Vib	N			
Spent Fuel Pool Cooling Pump 3R211(2)NPA1(2)01A	F3	A	3	X	X		X		Quarterly-A	PRR-01	OMN-18
Spent Fuel Pool Cooling Pump 3R211(2)NPA1(2)01B	D3	A	3	X	X		X		Quarterly-A	PRR-01	OMN-18

Attachment 1, Unit 1 and 2 IST Pump List

System: Residual Heat Removal - RH

P&ID: 5R169F20000 #1(2)

Pump Name & TPNS No.	Grid Coord	Pump Group	Code Class	Test Parameters					Test Interval-Type	Relief Requests	Remarks
				ΔP	Q	P	Vib	N			
Residual Heat Removal Pump 2R161(2)NPA1(2)01A	B6	A	2	X X	X X		X X		Semi-annual-A Biennially-CPT	PRR-03	
Residual Heat Removal Pump 2R161(2)NPA1(2)01B	D6	A	2	X X	X X		X X		Semi-annual-A Biennially-CPT	PRR-03	
Residual Heat Removal Pump 2R161(2)NPA1(2)01C	G6	A	2	X X	X X		X X		Semi-annual-A Biennially-CPT	PRR-03	

Attachment 1, Unit 1 and 2 IST Pump List

System: Safety Injection - SI

P&ID: 5N129F05013 #1(2)

Pump Name & TPNS No.	Grid Coord	Pump Group	Code Class	Test Parameters					Test Interval-Type	Relief Requests	Remarks
				ΔP	Q	P	Vib	N			
HH Safety Injection Pump 2N121(2)NPA1(2)01A	F4	B	2	X X	X X		 X		Quarterly-B Biennially-CPT		
LH Safety Injection Pump 2N121(2)NPA1(2)02A	C3	B	2	X X	X X		 X		Quarterly-B Biennially-CPT		

P&ID: 5N129F05014 #1(2)

Pump Name & TPNS No.	Grid Coord	Pump Group	Code Class	Test Parameters					Test Interval	Relief Requests	Remarks
				ΔP	Q	P	Vib	N			
HH Safety Injection Pump 2N121(2)NPA1(2)01B	G3	B	2	X X	X X		 X		Quarterly-B Biennially-CPT		
LH Safety Injection Pump 2N121(2)NPA1(2)02B	D3	B	2	X X	X X		 X		Quarterly-B Biennially-CPT		

Attachment 1, Unit 1 and 2 IST Pump List

System: Safety Injection - SI

P&ID: 5N129F05015 #1(2)

Pump Name & TPNS No.	Grid Coord	Pump Group	Code Class	Test Parameters					Test Interval-Type	Relief Requests	Remarks
				ΔP	Q	P	Vib	N			
HH Safety Injection Pump 2N121(2)NPA1(2)01C	F3	B	2	X X	X X		 X		Quarterly-B Biennially-CPT		
LH Safety Injection Pump 2N121(2)NPA1(2)02C	C3	B	2	X X	X X		 X		Quarterly-B Biennially-CPT		

ATTACHMENT 2

Pump Relief Requests

Attachment 2, Pump Relief Requests

Pump Relief Request Index

Number	Components	Status
PRR-01	Use of Code Case OMN-18	Requires Approval
PRR-02	Use of Pump Curves for the Essential Cooling Water Pumps	Valid
PRR-03	Alternate Test Frequency for the Residual Heat Removal Pumps	Valid

PUMP RELIEF REQUEST PRR-01

Use of Code Case OMN-18

Proposed Alternative In Accordance with 10CFR50.55a(a)(3)(i)
On the basis that the proposed alternative provides an acceptable level of quality and safety.

Component(s) Affected:

3S141(2)MPA01, Auxiliary Feedwater Pump (Class 3)
3S141(2)MPA02, Auxiliary Feedwater Pump (Class 3)
3S141(2)MPA03, Auxiliary Feedwater Pump (Class 3)
3S141(2)MPA04, Auxiliary Feedwater Pump (Class 3)
3R201(2)NPA1(2)01A, Component Cooling Water Pump (Class 3)
3R201(2)NPA1(2)01B, Component Cooling Water Pump (Class 3)
3R201(2)NPA1(2)01C, Component Cooling Water Pump (Class 3)
3V111(2)VPA004, Essential Chilled Water Pump (Class 3)
3V111(2)VPA005, Essential Chilled Water Pump (Class 3)
3V111(2)VPA006, Essential Chilled Water Pump (Class 3)
3R281(2)NPA1(2)01A, Essential Cooling Water Pump (Class 3)
3R281(2)NPA1(2)01B, Essential Cooling Water Pump (Class 3)
3R281(2)NPA1(2)01C, Essential Cooling Water Pump (Class 3)
3R211(2)NPA1(2)01A, Spent Fuel Pool Cooling Pump (Class 3)
3R211(2)NPA1(2)01B, Spent Fuel Pool Cooling Pump (Class 3)

Component/ System Function:

The above pumps are required to perform a specific function in shutting down the reactor to a safe shutdown, maintaining a safe shutdown condition or in mitigating the consequences of an accident.

Applicable Code Edition and Addenda:

ASME OM Code-2004, no Addenda

Applicable Code Requirement(s):

ISTB-3400, "Frequency of Inservice Tests", states that an inservice test shall be run on each pump as specified in Table ISTB-3400-1.

Table ISTB-3400-1 requires Group A and Group B tests to be performed quarterly and a comprehensive test to be performed biennially.

Reason for Request:

The ASME Code committees have approved Code Case OMN-18, Alternative Testing Requirements for Pumps Tested Quarterly within ± 20% of Design Flow. This Code Case has not been approved for use in Regulatory Guide 1.192, Operation and Maintenance Code Case Acceptability, ASME OM Code, June 2003.

This Code Case allows the Owner to not perform the Comprehensive test with the associated acceptance criteria, if the quarterly test is performed at ± 20% of design flow and the instrumentation meets the accuracy requirements of Table ISTB-3500-1 for the comprehensive and preservice tests.

Further, ISTB allows the Owner to categorize the pumps in their program. As such, an Owner could categorize a pump that otherwise meets the requirements of Group B, as a Group A pump, and test according to the provision of Code Case OMN-18. However, in doing so additional data (vibration and flow or differential pressure) are obtained quarterly, rather than once every two years.

Proposed Alternative and Basis for Use:

STPEGS proposes to utilize the provisions of Code Case OMN-18 and perform a quarterly Group A test in lieu of performing a biennial comprehensive test and utilizing the acceptance criteria associated with the Group A test. As an alternative to utilizing the acceptance criteria associated with the Group A test, STPEGS will specify the acceptance criteria associated with the upper limit as 1.06% in lieu of the 1.10% allowed by Table ISTB-5121-1. This alternative testing is applicable to only those pumps with full flow testing capability. The pressure instrumentation utilized during the tests shall have an accuracy of at least 0.5%.

Using the provisions of this relief request as an alternative to the requirements of ISTB-3400 provides a reasonable alternative to the Code requirements. Based on the determination that the proposed alternative provides an acceptable level of quality and safety.

In addition, Code applicability for Code Case OMN-18 includes the Third Interval Code of Record, OM Code-2004.

Duration of Proposed Alternative:	The proposed alternative identified in this relief request shall be utilized during the Third Ten Year IST Interval
Precedents:	None
References:	Code Case OMN-18, Alternative Testing Requirements for Pumps Tested Quarterly within ± 20% of Design Flow.

PUMP RELIEF REQUEST – PRR – 02

Use of Pump Curves for the Essential Cooling Water Pumps

Proposed Alternative In Accordance with 10CFR50.55a(a)(3)(ii)

On the basis that Code required testing presents a hardship or unusual difficulty without a compensating increase in the level of quality or safety.

Component(s) Affected:

3R281(2)NPA1(2)01A, Essential Cooling Water Pump A (Class 3)
3R281(2)NPA1(2)01B, Essential Cooling Water Pump B (Class 3)
3R281(2)NPA1(2)01C, Essential Cooling Water Pump C (Class 3)

Component Function:

The ECW pumps take their suction from the Essential Cooling Pond (ECP) and deliver cooling water to Emergency Diesel Generator heat exchangers, Essential Chillers, and Component Cooling Water heat exchangers during normal operating, shutdown, and accident conditions. The ECW pumps receive an automatic start signal on receipt of an SI initiation signal. Design flow is 19,280 gpm (per DBD).

Applicable Code Edition and Addenda:

ASME OM Code-2004 Edition, no Addenda

Applicable Code Requirement(s):

ISTB-5221, "Group A Test Procedure", states: Group A tests shall be conducted with the pump operating at a specific reference point. ISTB-5221(b) states: The resistance of the system shall be varied until the flow rate equals the reference value. The pressure shall then be determined and compared to its reference value. Alternatively, the flow rate can be varied until the pressure equals the reference value and the flow rate shall be determined and compared to the reference flow rate value. ISTB-5221(c) states: Where system resistance cannot be varied, flow rate and pressure shall be determined and compared to their respective reference values.

ISTB-5223, "Comprehensive Test Procedure", states: Comprehensive tests shall be conducted with the pump operating at a specific reference point. ISTB-5223(b) states: The resistance of the system shall be varied until the flow rate equals the reference value. The pressure shall then be determined and compared to its reference value. Alternatively, the flow rate can be varied until the pressure equals the reference value and the flow rate shall be determined and compared to the reference flow rate value. ISTB-5223(c) states: Where system resistance cannot

Applicable Code Requirement(s): (Cont.)

be varied, flow rate and pressure shall be determined and compared to their respective reference values.

Reason for Request:

The Essential Cooling Water System is designed so that total pump flow can not be readily adjusted to one reference value for testing without adversely affecting the operating system flow balance or utilizing excessive operator resources which would be better utilized to monitor the safe operation of the plant. These pumps must be tested in a manner that does not adversely affect the flow balance and system operability.

System resistance is not fixed since each load has an acceptable flow range. Adjusting system total flow to meet a specific reference value may change the individual load flow rates and may cause one or more of the loads to move outside its respective operating range possibly requiring an entry into an LCO. Additionally, STP has specific "Cold" and "Warm" weather lineups for operation of the essential chillers creating a different system resistance. Consequently, adjusting flow to one specific value on a quarterly basis to perform pump testing conflicts with system design and challenges system operability.

Proposed Alternative and Basis for Use:

As discussed above, it is a hardship or unusual difficulty without a compensating increase in the level of quality or safety to return to a specific value of flow rate or discharge pressure to test these pumps. As stated in NUREG-1482, Rev 1, Section 5.2, some system designs do not allow for testing at a single reference point or a set of reference points. In such cases, it may be necessary to plot pump curves to use as the basis for variable reference points. Code Case OMN-16, "Use of Pump Curves for Testing," is included in the issuance of ASME OMb-2006. This Code Case has not been accepted by the NRC staff in USNRC Regulatory Guide (RG) 1.192; "Operation and Maintenance Code Case Acceptability, ASME OM Code"; however, Code Case OMN-9 "Use of Pump Curves for Testing" has been conditionally accepted by RG 1.192. The conditions imposed on OMN-9 as stated in RG 1.192 have been incorporated into OMN-16. In addition, Code applicability for the use of OMN-16 includes OM Code-2004 which is the third interval Code of Record for STPEGS. As an alternative to the testing requirements of ISTB-5221 and ISTB-5223, STP will assess pump performance and operational readiness through the use of reference pump curves per the guidelines provided in Code Case OMN-16. Flow rate and pump differential

Proposed Alternative and Basis for Use: (Cont.)

pressure will be measured during inservice testing in the as found condition of the system and compared to an established reference curve. The following elements will be used in the development of the reference pump curves:

1. A reference pump curve (flow rate versus discharge pressure) will be established for each of the ECW pumps from the data taken when these pumps are known to be operating acceptably.

2. Pump curves will be established from measurements taken with instrumentation meeting or exceeding the accuracy requirements of Table ISTB-3510-1.

3. Each pump curve will be based on at least 5 points beyond the flat portion of the pump curve in the normal operating range of the pumps (at a flow greater than 15,700 gpm). Rated capacity of these pumps is 19,280 gpm. The pumps will be tested over the range of their full design flow rates, 15,700 gpm minimum to 20,610 gpm maximum. This range is sufficient to bound the points of operation expected during subsequent tests and is within ±20% of design flow at any given point.

4. The reference pump curves will be based on flow rate versus discharge pressure. The acceptance criteria (acceptable, alert and required action ranges) curves will be based on the differential pressure limits of Table ISTB-5221-1, as appropriate for the type of test being performed.

5. Vibration levels for the Group A and Comprehensive tests will be measured at each of the reference points ISTB-5221(d) or ISTB-5223(d). If negligible variation readings are observed over the range of pump conditions, a single reference value may be assigned to each vibration measurement location. If vibration levels change over the range of pump conditions, appropriate acceptance criteria will be assigned to regions of the pump curve.

6. After any maintenance or repair that may affect the existing reference pump curve, a new reference curve shall be determined or the existing pump curve revalidated by an inservice test. A new pump curve shall be established based on at least 5 points beyond

Proposed Alternative and Basis for Use: (Cont.)

the flat portion of the pump curve. Since the proposed alternative to establish a reference curve is consistent with the NRC staff guidance provided in NUREG-1482, Rev.1, Section 5.2 and Code Case OMN-16 it will provide reasonable assurance of pump operational readiness.

Duration of Proposed Alternative:

The proposed alternative identified in this relief request shall be utilized during the Third Ten Year IST Interval.

Precedents:

NRC Safety Evaluation of Relief Requests for Second 10-Year Interval of the IST Program for South Texas Project (STP), Units Nos. 1 and 2 (TAC. Nos.MB2136 and MB2137). May 2, 2003. Previously approved as PRR-01.

PUMP RELIEF REQUEST – PRR – 03

Alternate Test Frequency for the Residual Heat Removal Pumps

Proposed Alternative In Accordance with 10CFR50.55a(a)(3)(i)

On the basis that the proposed alternative provides an acceptable level of quality and safety

Component(s) Affected:

2R161(2)NPA1(2)01A, Residual Heat Removal Pump A (Class 2)
2R161(2)NPA1(2)01B, Residual Heat Removal Pump B (Class 2)
2R161(2)NPA1(2)01C, Residual Heat Removal Pump C (Class 2)

Component Function:

Circulate 3,000 gpm of RCS flow from the hot legs to the cold legs for the final phase of a reactor cooldown following a SBLOCA, SGTR, MSLB, or FWLB accident condition.

Applicable Code Edition and Addenda:

ASME OM Code-2004 Edition, no Addenda

Applicable Code Requirement(s):

Table ISTB-3400-1 requires a Group A inservice test to be run on each pump every 3 months.

Reason for Request:

STPEGS has three RHR pump trains used only for long-term cooldown events following auxiliary feedwater operation. The RHR system does not serve the LHSI function as required to do at other nuclear plants and is therefore not critical to the immediate accident mitigation function. Due to the residual heat removal's negligible impact on core damage frequency and large early release frequency, less emphasis should be placed on the quarterly testing of these pumps at power. Refer to ST-HL-AE-4544, Risk Based Evaluation of Technical Specification, for the detailed evaluation.

Proposed Alternative and Basis for Use:

A Group A inservice test will be run on each RHR pump nominally every six (6) months during normal plant operation. This test frequency will be maintained during plant shutdown periods if it can reasonably be accomplished per the requirements of ISTB-5121. A Comprehensive test per ISTB-5123 may be performed in lieu of a Group A test.

Proposed Alternative and Basis for Use: (Cont.)

Since the proposed change in the RHR pumps surveillance interval represents an insignificant change in system unavailability and no change in core damage frequency, the alternative testing frequency for the IST requirements will provide an essentially equivalent level of safety for these pumps.

Duration of Proposed Alternative:

The proposed alternative identified in this relief request shall be utilized during the Third Ten Year IST Interval.

Precedents:

NRC Safety Evaluation for South Texas Project (STP) Related to Amendment Nos. 59 and 47 to Facility Operating License, Units Nos. 1 and 2. February 17, 1994. Previously approved as RR-11 (Unit 1) and RR-10 (Unit 2).

ATTACHMENT 3

Unit 1 and 2 IST Valve List

Attachment 3, Unit 1 and 2 IST Valve List

SYSTEM: Auxiliary Feedwater - AF

P&ID: 5S141(2)F00024, Sheet 1

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
3S141(2)TAF0011	H5	3	C-1	4	CK	SA	NC	O	N/A	CM, DB	CM-AF07	NI(AC), FO
2S141(2)TAF0019	G2	2	B-1	4	SCK	MO	NC	C	FAI	FSE, ST, PI	CM-AF02 VRR-01	FSE, ST, PI OMN-1 when implemented
			C-1			SA	NC	O	N/A	CM, BD	CM-AF02	NI(AC), FO
3S141(2)TAF0036	F6	3	C-1	4	CK	SA	NC	O	N/A	CM, BD	CM-AF07	NI(AC), FO
2S141(2)TAF0048	F2	2	B-1	4	SCK	MO	NC	C	FAI	FSE, ST, PI	CM-AF02 VRR-01	FSE, ST, PI OMN-1 when implemented
			C-1			SA	NC	O	N/A	CM, BD	CM-AF02	NI(AC), FO
3S141(2)TAF0058	D6	3	C-1	4	CK	SA	NC	O	N/A	CM, BD	CM-AF07	NI(AC), FO
2S141(2)TAF0065	D2	2	B-1	4	SCK	MO	NC	C	FAI	FSE, ST, PI	CM-AF02 VRR-01	FSE, ST, PI OMN-1 when implemented
			C-1			SA	NC	O	N/A	CM, BD	CM-AF02	NI(AC), FO
2S141(2)TAF0085	B2	2	B-1	4	SCK	MO	NC	C	FAI	FSE, ST, PI	CM-AF02 VRR-01	FSE, ST, PI OMN-1 when implemented

Attachment 3, Unit 1 and 2 IST Valve List

SYSTEM: Auxiliary Feedwater - AF

P&ID: 5S141(2)F00024, Sheet 1

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
			C-1			SA	NC	O	N/A	CM, BD	CM-AF02	NI(AC), FO
3S141(2)TAF0091	B6	3	C-1	4	CK	SA	NC	O	N/A	CM, BD	CM-AF07	NI(AC), FO
2S141(2)TAF0119	F1	2	C-1	8	CK	SA	NC	O	N/A	CM, BD	CM-AFO1	NI(AC), BD
2S141(2)TAF0120	D1	2	C-1	8	CK	SA	NC	O	N/A	CM, BD	CM-AF01	NI(AC), BD
2S141(2)TAF0121	C1	2	C-1	8	CK	SA	NC	O	N/A	CM, BD	CM-AF01	NI(AC), BD
2S141(2)TAF0122	H1	2	C-1	8	CK	SA	NC	O	N/A	CM, BD	CM-AF01	NI(AC), BD
2S141(2)TMS0143	G8	2	B/C-1	4	SCK	MO	NO	O/C	FAI	FSE, ST, PI, CM, BD	CM-AF08 VRR-01	FSE, ST, PI, NI(AC), FO OMN-1 when implemented
*D1(2)AFFV0143	G8	2	B-1	1	GL	SO	NC	C	FC	FSE, ST, PI, FST		CR 05-1321-60
3S141(2)XMS0514	G7	3	B-1	4	GL	MO	NC	O/C	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented
C1(2)AFFV7515	B5	3	B-1	4	GL	AO	NC	O N/C	FC	FSE, ST, PI, FST		FSE, ST, PI, FST
B1(2)AFFV7516	D5	3	B-1	4	GL	AO	NC	O N/C	FC	FSE, ST, PI, FST		FSE, ST, PI, FST

Attachment 3, Unit 1 and 2 IST Valve List

SYSTEM: Auxiliary Feedwater - AF

P&ID: 5S141(2)F00024, Sheet 1

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
A1(2)AFFV7517	F5	3	B-1	4	GL	AO	NC	O N/C	FC	FSE, ST, PI, FST		FSE, ST, PI, FST
D1(2)AFFV7518	G4	3	B-1	4	GL	AO	NC	O N/C	FC	FSE, ST, PI, FST		FSE, ST, PI, FST
3S141(2)ZAF7523	B4	3	B-1	4	GL	MO	NO	O	FAI	FSE, ST, PI	VRR-1	FSE, ST, PI OMN-1 when implemented
3S141(2)ZAF7524	D4	3	B-1	4	GL	MO	NO	O	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented
3S141(2)ZAF7525	F4	3	B-1	4	GL	MO	NO	O	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented
3S141(2)ZAF7526	G3	3	B-1	4	GL	MO	NO	O	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

SYSTEM: Post Accident Sampling - AP
P&ID: 5Z549Z47501 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*A1(2)APFV2453	G7	2	A-1	1	GT	SO	NC	C	FC	FSE, ST, PI, LJ, FST		CR 05-1321-62
*A1(2)APFV2454	F7	2	A-1	1	GT	SO	NC	C	FC	FSE, ST, PI, LJ, FST		CR 05-1321-63
*B1(2)APFV2455	E7	2	A-1	1	GT	SO	NC	C	FC	FSE, ST, PI, LJ, FST		CR 05-1321-61
*B1(2)APFV2455A	E7	2	A-1	1	GT	SO	NC	C	FC	FSE, ST, PI, LJ, FST		CR 05-1321-61
*C1(2)APFV2456	D7	2	A-1	1	GT	SO	NC	C	FC	FSE, ST, PI, LJ, FST		CR 05-1321-65
*C1(2)APFV2457	H2	2	A-1	1	GT	SO	NC	C	FC	FSE, ST, PI, LJ, FST		CR 05-1321-65
*C1(2)APFV2458	C3	2	A-1	1	GT	SO	NC	C	FC	FSE, ST, PI, LJ, FST		CR 05-1321-64

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

SYSTEM: Low Pressure Breathing Air - BA
P&ID: 5Q129F05044 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*2Q121(2)TBA0004	G4	2	A-2	1	BL	M	LC	C	N/A	LJ		CR 01-11507
*2Q121(2)TBA0006	H4	2	A/C-2	1	CK	SA	NC	C	N/A	LJ		CR 05-1321-94

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

Attachment 3, Unit 1 and 2 IST Valve List

SYSTEM: Component Cooling Water - CC

P&ID: 5R209F05017 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*2R201(2)TCC0012	E2	2	A-1	16	B	MO	NO	Oℑ/C	FAI	FSE, ST, PI, LJ		CR 05-1321-32
2R201(2)TCC0013	E2	2	A/C-1	16	CK	SA	NC	C/O	N/A	CM, BD, LJ	CM-CC29	FO, LJ
*2R201(2)TCC0049 Pen. M-34	G4	2	A-1	16	B	MO	NO	Oℑ/C	FAI	FSE, ST, PI, LJ		CR 05-1321-34
*2R201(2)TCC0050 Pen. M-34	G4	2	A-1	16	B	MO	NO	Oℑ/C	FAI	FSE, ST, PI, LJ		CR 05-1321-34
*2R201(2)TCC0057 Pen. M-25	D2	2	A-1	14	B	MO	NC	O/C	FAI	FSE, ST, PI, LJ		CR 05-1321-33
*2R201(2)TCC0058 Pen. M-25	D2	2	A/C-1	14	CK	SA	NO	C/O	N/A	FSE, LJ		CR 05-1321-97
*2R201(2)TCC0059 Pen. M-25	D2	2	A-1	8	B	MO	NO	C	FAI	FSE, ST, PI, LJ		CR 05-1321-36

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

Attachment 3, Unit 1 and 2 IST Valve List

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*2R201(2)TCC0068 Pen. M-26	D4	2	A-1	14	B	MO	NO	O/C	FAI	FSE, ST, PI, LJ		CR 05-1321-30
*2R201(2)TCC0069 Pen. M-26	D4	2	A	14	B	MO	NC	O/C	FAI	FSE, ST, PI, LJ		CR 05-1321-31
*2R201(2)TCC0070 Pen. M-26	C4	2	A-1	8	B	MO	NO	C	FAI	FSE, ST, PI, LJ		CR 05-1321-35
3R201(2)TCC0642	A6	3	B-1	16	B	MO	NC	O/C	FAI	FSE, ST, PI		FSE, ST, PI
3R201(2)TCC0643	B5	3	B-1	24	B	MO	NO	O	FAI	FSE, ST, PI		FSE, ST, PI
*B1(2)CCFV0862 Pen. M-26	B4	2	A-1	8	B	AO	NO	C	FC	FSE, ST, PI, LJ, FST		CR 05-1321-3
*N1(2)CCPSV4511	B5	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
A1(2)CCFV4531	G2	3	B-1	16	B	AO	NC	O	FO	FSE, ST, PI, FST		FSE, ST, PI, FST
*N1(2)CCPSV4532	G2	3	C-1	2.5	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)CCPSV4533	G3	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)CCPSV4537	E4	3	C-1	2.5	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)CCPSV4539	C4	3	C-1	2.5	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

SYSTEM: Component Cooling Water - CC
P&ID: 5R209F05018 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*2R201(2)TCC0122	F2	2	A-1	16	B	MO	NO	Oℑ/C	FAI	FSE, ST, PI, LJ		CR 05-1321-32
2R201(2)TCC0123	F2	2	A/C-1	16	CK	SA	NC	C/O	N/A	CM, BD, LJ	CM-CC29	FO, LJ
*2R201(2)TCC0129 Pen. M-36	G4	2	A-1	16	B	MO	NO	Oℑ/C	FAI	FSE, ST, PI, LJ		CR 05-1321-34
*2R201(2)TCC0130 Pen. M-36	G4	2	A-1	16	B	MO	NO	Oℑ/C	FAI	FSE, ST, PI, LJ		CR 05-1321-34
*2R201(2)TCC0136 Pen. M-27	D2	2	A-1	14	B	MO	NC	O/C	FAI	FSE, ST, PI, LJ		CR 05-1321-33
*2R201(2)TCC0137 Pen. M-27	D2	2	A-1	8	B	MO	NO	C	FAI	FSE, ST, PI, LJ		CR 05-1321-36
*2R201(2)TCC0138 Pen. M-27	D2	2	A/C-1	14	CK	SA	NO	C/O	N/A	FSE, LJ		CR 05-1321-97

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

SYSTEM: Component Cooling Water - CC
P&ID: 5R209F05018 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*2R201(2)TCC0147 Pen. M-28	D4	2	A-1	14	B	MO	NO	O~~C~~/C	FAI	FSE, ST, PI, LJ		CR 05-1321-30
*2R201(2)TCC0148 Pen. M-28	D4	2	A-1	14	B	MO	NC	O/C	FAI	FSE, ST, PI, LJ		CR 05-1321-31
*2R201(2)TCC0149 Pen. M-28	C4	2	A-1	8	B	MO	NO	C	FAI	FSE, ST, PI, LJ		CR 05-1321-35
3R201(2)TCC0644	B6	3	B-1	16	B	MO	NC	O/C	FAI	FSE, ST, PI		FSE, ST, PI
3R201(2)TCC0645	B5	3	B-1	24	B	MO	NO	O	FAI	FSE, ST, PI		FSE, ST, PI
*C1(2)CCFV0863 Pen. M-28	C4	2	A-1	8	B	AO	NO	C	FC	FSE, ST, PI, LJ, FST		CR 05-1321-3
*N1(2)CCPSV4516	B6	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
B1(2)CCFV4548	G2	3	B-1	16	B	AO	NC	O	FO	FSE, ST, PI, FST		FSE, ST, PI, FST
*N1(2)CCPSV4549	G2	3	C-1	2.5	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)CCPSV4550	G3	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)CCPSV4554	E4	3	C-1	2.5	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)CCPSV4556	C4	3	C-1	2.5	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

SYSTEM: Component Cooling Water - CC
P&ID: 5R209F05019 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*2R201(2)TCC0182	E1	2	A-1	16	B	MO	NO	Oℑ/C	FAI	FSE, ST, PI, LJ		CR 05-1321-32
2R201(2)TCC0183	E2	2	A/C-1	16	CK	SA	NC	C/O	N/A	CM, BD, LJ	CM-CC29	FO, LJ
*2R201(2)TCC0189 Pen. M-38	H4	2	A-1	16	B	MO	NO	Oℑ/C	FAI	FSE, ST, PI, LJ		CR 05-1321-34
*2R201(2)TCC0190 Pen. M-38	H4	2	A-1	16	B	MO	NO	Oℑ/C	FAI	FSE, ST, PI, LJ		CR 05-1321-34
*2R201(2)TCC0197 Pen. M-24	D2	2	A-1	14	B	MO	NC	O/C	FAI	FSE, ST, PI, LJ		CR 05-1321-33
*2R201(2)TCC0198 Pen. M-24	D2	2	A/C-1	14	CK	SA	NO	C/O	N/A	FSE, LJ		CR 05-1321-97
*2R201(2)TCC0199 Pen. M-24	D1	2	A-1	8	B	MO	NO	C	FAI	FSE, ST, PI, LJ		CR 05-1321-36

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

SYSTEM: Component Cooling Water - CC
P&ID: 5R209F05019 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*2R201(2)TCC0208 Pen. M-23	D4	2	A-1	14	B	MO	NO	Oℑ/C	FAI	FSE, ST, PI, LJ		CR 05-1321-30
*2R201(2)TCC0209 Pen. M-23	C4	2	A-1	8	B	MO	NO	C	FAI	FSE, ST, PI, LJ		CR 05-1321-35
*2R201(2)TCC0210 Pen. M-23	D4	2	A-1	14	B	MO	NC	O/C	FAI	FSE, ST, PI, LJ		CR 05-1321-31
3R201(2)TCC0646	B6	3	B-1	16	B	MO	NC	O/C	FAI	FSE, ST, PI		FSE, ST, PI
3R201(2)TCC0647	B5	3	B-1	24	B	MO	NO	O	FAI	FSE, ST, PI		FSE, ST, PI
*A1(2)CCFV0864 Pen. M-23	C4	2	A-1	8	B	AO	NO	C	FC	FSE, ST, PI, LJ, FST		CR 05-1321-3
*N1(2)CCPSV4521	B6	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
C1(2)CCFV4565	G2	3	B-1	16	B	AO	NC	O	FO	FSE, ST, PI, FST		FSE, ST, PI, FST
*N1(2)CCPSV4566	G2	3	C-1	2.5	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)CCPSV4567	G3	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)CCPSV4571	E4	3	C-1	2.5	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)CCPSV4573	C3	3	C-1	2.5	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

SYSTEM: Component Cooling Water - CC
P&ID: 5R209F05020 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*3R201(2)TCC0032	E6	3	B-1	18	B	MO	NO	C	FAI	FSE, ST, PI		CR 05-1321-37
3R201(2)TCC0051	C7	3	C-1	24	CK	SA	O/C	O/C	N/A	CM, BD	CM-CC26	NI(AC), BD
3R201(2)TCC0052	C7	3	B-1	24	B	MO	O/C	O/C	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented
3R201(2)TCC0131	C7	3	C-1	24	CK	SA	O/C	O/C	N/A	CM, BD	CM-CC26	NI(AC), BD
3R201(2)TCC0132	C7	3	B-1	24	B	MO	O/C	O/C	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented
3R201(2)TCC0191	B7	3	C-1	24	CK	SA	O/C	O/C	N/A	CM, BD	CM-CC26	NI(AC), BD
3R201(2)TCC0192	C7	3	B-1	24	B	MO	O/C	O/C	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented
*3R201(2)TCC0235	D7	3	B-1	18	B	MO	NO	C	FAI	FSE, ST, PI		CR 05-1321-38
*3R201(2)TCC0236	D6	3	B-1	18	B	MO	NO	C	FAI	FSE, ST, PI		CR 05-1321-38
3R201(2)TCC0311	E7	3	C-1	24	CK	SA	O	O	N/A	CM, BD	CM-CC27	NI(AC), BD
3R201(2)TCC0312	E7	3	B-1	24	B	MO	O/C	O/C	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented
3R201(2)TCC0313	E7	3	C-1	24	CK	SA	O	O	N/A	CM, BD	CM-CC27	NI(AC), BD

Attachment 3, Unit 1 and 2 IST Valve List

SYSTEM: Component Cooling Water - CC
P&ID: 5R209F05020 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
3R201(2)TCC0314	E7	3	B-1	24	B	MO	O/C	O/C	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

SYSTEM: Component Cooling Water - CC
P&ID: 5R209F05020 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
3R201(2)TCC0315	F7	3	C-1	24	CK	SA	O	O	N/A	CM, BD	CM-CC27	NI(AC), BD
3R201(2)TCC0316	F7	3	B-1	24	B	MO	O/C	O/C	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented
*3R201(2)TCC0447	E7	3	B-1	18	B	MO	NO	C	FAI	FSE, ST, PI		CR 05-1321-37

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

Attachment 3, Unit 1 and 2 IST Valve List

SYSTEM: Component Cooling Water - CC

P&ID: 5R209F05020 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*3R201(2)TCC0768	F7	3	B-1	6	B	MO	O/C	O/C	FAI	FSE, ST, PI		CR 05-1321-40
*3R201(2)TCC0770	G7	3	B-1	6	B	MO	O/C	O/C	FAI	FSE, ST, PI		CR 05-1321-40
*3R201(2)TCC0771	G7	3	B-1	6	B	MO	O/C	O/C	FAI	FSE, ST, PI		CR 05-1321-40
*3R201(2)TCC0772	B7	3	B-1	6	B	MO	O/C	O/C	FAI	FSE, ST, PI		CR 05-1321-41
*3R201(2)TCC0774	B7	3	B-1	6	B	MO	O/C	O/C	FAI	FSE, ST, PI		CR 05-1321-41
*3R201(2)TCC0775	A7	3	B-1	6	B	MO	O/C	O/C	FAI	FSE, ST, PI		CR 05-1321-41
*N1(2)CCPSV4492	B7	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*A1(2)CCFV4540	D7	3	B-1	1.5	GT	SO	NO	C	FC	FSE, ST, PI, FST		CR 05-1321-66
*B1(2)CCFV4541	D8	3	B-1	1.5	GT	SO	NO	C	FC	FSE, ST, PI, FST		CR 05-1321-66

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

SYSTEM: Component Cooling Water - CC
P&ID: 5R209F05020 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*N1(2)CCPSV4580	G6	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)CCPSV4582	G4	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)CCPSV4584	G5	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)CCPSV4586	G3	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)CCPSV4588	G5	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)CCPSV4613	E2	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

Attachment 3, Unit 1 and 2 IST Valve List

SYSTEM: Component Cooling Water - CC

P&ID: 5R209F05021 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*A1(2)CCFV4656	G7	3	B-1	6	B	AO	NO	C	FC	FSE, ST, PI, FST		CR 05-1321-4
*A1(2)CCFV4657	A7	3	B-1	6	B	AO	NO	C	FC	FSE, ST, PI, FST		CR 05-1321-4
*2R201(2)TCC0291 Pen. M-39	H8	2	A-1	12	B	MO	NO	C	FAI	FSE, ST, PI, LJ		CR 05-1321-44
*3R201(2)TCC0297	G7	3	B-1	6	B	MO	NO	C	FAI	FSE, ST, PI		CR 05-1321-42
*2R201(2)TCC0318 Pen. M-39	H8	2	A-1	12	B	MO	NO	C	FAI	FSE, ST, PI, LJ		CR 05-1321-44
*2R201(2)TCC0319 Pen. M-39	G8	2	A/C-1	12	CK	SA	NO	C	N/A	FSE, LJ		CR 05-1321-100

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

SYSTEM: Component Cooling Water - CC
P&ID: 5R209F05021 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*3R201(2)TCC0321	E5	3	C-1	2	CK	SA	NO	O/C	N/A	FSE		CR 05-1321-96
*3R201(2)TCC0327	B8	3	C-1	2	CK	SA	NO	O/C	N/A	FSE		CR 05-1321-96
*3R201(2)TCC0346	E7	3	C-1	2	CK	SA	NO	O/C	N/A	FSE		CR 05-1321-96
*3R201(2)TCC0363	B5	3	C-1	2	CK	SA	NO	O/C	N/A	FSE		CR 05-1321-96
*3R201(2)TCC0392	G3	3	B-1	4	GT	MO	NO	C	FAI	FSE, ST, PI		CR 05-1321-43
*3R201(2)TCC0393	G3	3	B-1	6	B	MO	NO	C	FAI	FSE, ST, PI		CR 05-1321-39
*3R201(2)TCC0402	C2	3	C-1	6	CK	SA	NO	C	N/A	FSE		CR 05-1321-99
*2R201(2)TCC0403 Pen. M-40	B1	2	A-1	12	B	MO	NO	C	FAI	FSE, ST, PI, LJ		CR 05-1321-45
*2R201(2)TCC0404 Pen. M-40	H1	2	A-1	12	B	MO	NO	C	FAI	FSE, ST, PI, LJ		CR 05-1321-45
*2R201(2)TCC0446 Pen. M-40	B1	2	A/C-1	1	CK	SA	NC	O/C	N/A	FSE, LJ		CR 05-1321-95

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

SYSTEM: Component Cooling Water - CC
P&ID: 5R209F05021 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*3R201(2)TCC0540	D1	3	C-1	4	CK	SA	NO	C	N/A	FSE		CR 05-1321-98
*3R201(2)TCC0541	D1	3	C-1	4	CK	SA	NO	C	N/A	FSE		CR 05-1321-98
*2R201(2)TCC0542 Pen. M-40	B1	2	A-1	12	B	MO	NO	C	FAI	FSE, ST, PI, LJ		CR 05-1321-45
*3R201(2)TCC0756	E4	3	C-1	2	CK	SA	NO	O/C	N/A	FSE		CR 05-1321-96
*3R201(2)TCC0757	B5	3	C-1	2	CK	SA	NO	O/C	N/A	FSE		CR 05-1321-96
*3R201(2)TCC0758	E7	3	C-1	2	CK	SA	NO	O/C	N/A	FSE		CR 05-1321-96
*3R201(2)TCC0759	B8	3	C-1	2	CK	SA	NO	O/C	N/A	FSE		CR 05-1321-96
*3R201(2)TCC0763	C2	3	C-1	6	CK	SA	NO	C	N/A	FSE		CR 05-1321-99
*D1(2)CCFV4493 Pen. M-40	H1	2	A-1	12	B	AO	NO	C	FC	FSE, ST, PI, LJ, FST		CR 05-1321-2

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

Attachment 3, Unit 1 and 2 IST Valve List

SYSTEM: Component Cooling Water - CC

P&ID: 5R209F05021 #1(#2)

Valve TPNS Number	Grid Coord	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*N1(2)CCPSV4616	C6	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)CCPSV4618	B6	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)CCPSV4620	A6	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
N1(2)CCFV4620	B6	3	C-1	3	GL	SA	NO	O**/C	FO	FST,FSE	ROJ-02	FST,FSR
N1(2)CCFV4621	B6	3	C-1	3	GL	SA	NO	O**/C	FO	FST,FSE,	ROJ-02	FST,FSR
*N1(2)CCPSV4622	C3	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)CCPSV4624	B3	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)CCPSV4626	A3	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
N1(2)CCFV4626	B3	3	C-1	3	GL	SA	NO	O**/C	FO	FST,FSE	ROJ-02	FST,FSR
N1(2)CCFV4627	B3	3	C-1	3	GL	SA	NO	O**/C	FO	FST,FSE	ROJ-02	FST,FSR
*N1(2)CCPSV4628	F3	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)CCPSV4630	E3	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)CCPSV4632	D3	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
N1(2)CCFV4632	E3	3	C-1	3	GL	SA	NO	O**/C	FO	FST,FSE	ROJ-02	FST,FSR

*These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

** Passive function with augmented testing

SYSTEM: Component Cooling Water - CC
P&ID: 5R209F05021 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
N1(2)CCFV4633	E3	3	C-1	3	GL	SA	NO	O**/C	FO	FST,FSE	ROJ-02	FST,FSR
*N1(2)CCPSV4634	F6	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)CCPSV4636	E6	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)CCPSV4638	D6	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
N1(2)CCFV4638	E6	3	C-1	3	GL	SA	NO	O**/C	FO	FST,FSE	ROJ-02	FST,FSR
N1(2)CCFV4639	E6	3	C-1	3	GL	SA	NO	O**/C	FO	FST,FSE	ROJ-02	FST,FSR
*N1(2)CCPSV4639	C2	3	C-1	3	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)CCPSV4645	D7	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)CCPSV4645A	C7	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)CCPSV4646	D3	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)CCPSV4646A	C3	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)CCPSV4647	G3	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)CCPSV4647A	F3	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)CCPSV4648	G6	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)CCPSV4648A	F6	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2

*These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.
** Passive function with augmented testing

SYSTEM: Essential Chilled Water - CH
P&ID: 5V119V10001 #1(2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*N1(2)CHPSV9471	H7	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)CHPSV9471A	H7	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)CHPSV9481	E7	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)CHPSV9481A	E7	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)CHPSV9491	C7	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)CHPSV9491A	C7	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)CHPSV9502	G4	3	C-1	4	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)CHPSV9508	E4	3	C-1	4	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)CHPSV9514	B4	3	C-1	4	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

SYSTEM: Essential Chilled Water - CH

P&ID: 3V119V10002 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*A1(2)CHTV9476A	F6	3	B-1	2	B	AO	NT	O	FO	FSE, ST, PI, FST		05-1321-5
*A1(2)CHTV9476B	E6	3	B-1	2	B	AO	NT	C	FC	FSE, ST, PI, FST		05-1321-5
#A1(2)CHTV9477A	C6	3	B-1	4	B	AO	NT	O	FO	FSE, ST, PI, FST		FSE, ST, PI, FST
#A1(2)CHTV9477B	C6	3	B-1	4	B	AO	NT	C	FC	FSE, ST, PI, FST		FSE, ST, PI, FST
*B1(2)CHTV9486A	F4	3	B-1	2	B	AO	NT	O	FO	FSE, ST, PI, FST		05-1321-5
*B1(2)CHTV9486B	E4	3	B-1	2	B	AO	NT	C	FC	FSE, ST, PI, FST		05-1321-5
#B1(2)CHTV9487A	C4	3	B-1	4	B	AO	NT	O	FO	FSE, ST, PI, FST		FSE, ST, PI, FST
#B1(2)CHTV9487B	C4	3	B-1	4	B	AO	NT	C	FC	FSE, ST, PI, FST		FSE, ST, PI, FST
*C1(2)CHTV9496A	F1	3	B-1	2	B	AO	NT	O	FO	FSE, ST, PI, FST		05-1321-5

*These valves are EXEMPT from the In-service Testing Program. See the corresponding Condition Report Engineering Evaluation.
#These valves were previously exempted from IST Program per 05-1321-6. Added back to IST Program by risk rank change per CR 06-12310.

SYSTEM: Essential Chilled Water - CH

P&ID: 3V119V10002 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*C1(2)CHTV9496B	E1	3	B-1	2	B	AO	NT	C	FC	FSE, ST, PI, FST		05-1321-5
#C1(2)CHTV9497A	C1	3	B-1	4	B	AO	NT	O	FO	FSE, ST, PI, FST		FSE, ST, PI, FST
#C1(2)CHTV9497B	C1	3	B-1	4	B	AO	NT	C	FC	FSE, ST, PI, FST		FSE, ST, PI, FST

*These valves are EXEMPT from the In-service Testing Program. See the corresponding Condition Report Engineering Evaluation.
#These valves were previously exempted from IST Program per 05-1321-6. Added back to IST Program by risk rank change per CR 06-12310.

SYSTEM: Containment Hydrogen Monitoring - CM
P&ID: 5Z169Z00046 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*A1(2)CMFV4100	G6	2	B-1	1	GT	SO	NC	O	FC	FSE, ST, PI, FST		CR 05-1321-67
*A1(2)CMFV4101	F4	2	A-1	1	GT	SO	NC	O/C	FC	FSE, ST, PI, LJ, FST		CR 05-1321-68
*C1(2)CMFV4103	E6	2	B-1	1	GT	SO	NC	O	FC	FSE, ST, PI, FST		CR 05-1321-67
*C1(2)CMFV4104	D4	2	A-1	1	GT	SO	NC	O/C	FC	FSE, ST, PI, LJ, FST		CR 05-1321-68
*A1(2)CMFV4124	F6	2	B-1	1	GT	SO	NC	O	FC	FSE, ST, PI, FST		CR 05-1321-67
*A1(2)CMFV4125	F6	2	B-1	1	GT	SO	NC	O	FC	FSE, ST, PI, FST		CR 05-1321-67
*A1(2)CMFV4126	E6	2	B-1	1	GT	SO	NC	O	FC	FSE, ST, PI, FST		CR 05-1321-67
*A1(2)CMFV4127	E4	2	A-1	1	GT	SO	NC	O/C	FC	FSE, ST, PI, LJ, FST		CR 05-1321-68
*A1(2)CMFV4128	E5	2	A-1	1	GT	SO	NC	O/C	FC	FSE, ST, PI, LJ, FST		CR 05-1321-68
*C1(2)CMFV4129	D6	2	B-1	1	GT	SO	NC	O	FC	FSE, ST, PI, FST		CR 05-1321-67

Attachment 3, Unit 1 and 2 IST Valve List

SYSTEM: Containment Hydrogen Monitoring - CM

P&ID: 5Z169Z00046 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*C1(2)CMFV4130	D6	2	B-1	1	GT	SO	NC	O	FC	FSE, ST, PI, FST		CR 05-1321-67
*C1(2)CMFV4131	C6	2	B-1	1	GT	SO	NC	O	FC	FSE, ST, PI, FST		CR 05-1321-67
*C1(2)CMFV4133	C4	2	A-1	1	GT	SO	NC	O/C	FC	FSE, ST, PI, LJ, FST		CR 05-1321-68
*C1(2)CMFV4134	C5	2	A-1	1	GT	SO	NC	O/C	FC	FSE, ST, PI, LJ, FST		CR 05-1321-68
*C1(2)CMFV4135	F5	2	A-1	1	GT	SO	NC	O/C	FC	FSE, ST, PI, LJ, FST		CR 05-1321-68
*C1(2)CMFV4136	D5	2	A-1	1	GT	SO	NC	O/C	FC	FSE, ST, PI, LJ, FST		CR 05-1321-68

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

SYSTEM: Containment Spray - CS
P&ID: 5N109F05037 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*2N101(2)XCS0001A	G5	2	A-1	8	GT	MO	NC	O/C	FAI	FSE, ST, PI, LJ		CR 05-1321-46
*2N101(2)XCS0001B	E5	2	A-1	8	GT	MO	NC	O/C	FAI	FSE, ST, PI, LJ		CR 05-1321-46
*2N101(2)XCS0001C	C5	2	A-1	8	GT	MO	NC	O/C	FAI	FSE, ST, PI, LJ		CR 05-1321-46
*2N101(2)XCS0002	G7	2	A/C-1	8	CK	SA	NC	O/C	N/A	FSE, LJ		CR 05-1321-101
*2N101(2)XCS0004	E8	2	A/C-1	8	CK	SA	NC	O/C	N/A	FSE, LJ		CR 05-1321-101
*2N101(2)XCS0005	D8	2	A/C-1	8	CK	SA	NC	O/C	N/A	FSE, LJ		CR 05-1321-101
*2N101(2)XCS0006	C7	2	A/C-1	8	CK	SA	NC	O/C	N/A	FSE, LJ		CR 05-1321-101

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

SYSTEM: Chemical and Volume Control - CV
P&ID: 5R179F05005 #1(2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
1R171(2)XCV0001	G8	1	C-1	4	CK	SA	NO	O/C	N/A	CM, BD	CM-CV38	NI(AC), BD
1R171(2)XCV0002	G8	1	C-1	4	CK	SA	NO	O/C	N/A	CM, BD	CM-CV38	NI(AC), BD
2R171(2)XCV0003	G7	2	B-1	4	GT	MO	NO	O/C	FAI	FSE, ST, PI	ROJ-03 VRR-01	FSR, ST, PI OMN-1 when implemented
1R171(2)XCV0004	F8	1	C-1	4	CK	SA	NC	O/C	N/A	CM, BD	CM-CV38	NI(AC), BD
1R171(2)XCV0005	F8	1	C-1	4	CK	SA	NC	O/C	N/A	CM, BD	CM-CV38	NI(AC), BD
2R171(2)XCV0006	F7	2	B-1	4	GT	MO	NC	O/C	FAI	FSE, ST, PI	ROJ-03 VRR-01	FSR, ST, PI OMN-1 when implemented
1R171(2)TCV0009	F8	1	C-1	2	CK	SA	NC	O	N/A	CM, BD	CM-CV10	NI(CR), FO
C1(2)CVFV0011	G6	2	B-1	3	GL	AO	NO	C	FC	FSE, ST, PI, FST	CSJ-01	FSC, ST, PI, FST
*2R171(2)TCV0022	H3	2	A/C-1	¾	CK	SA	NC	O/C	N/A	FSE, LJ		CR 05-1321-102
*2R171(2)XCV0023	H3	2	A-1	4	GT	MO	NO	C	FAI	FSE, ST, PI, LJ		CR 05-1321-50
*2R171(2)XCV0024	H3	2	A-1	4	GT	MO	NO	C	FAI	FSE, ST, PI, LJ		CR 05-1321-50
2R171(2)XCV0025	G3	2	A-1	4	GT	MO	NO	O/C	FAI	FSE, ST, PI, LJ	CSJ-01	FSC, ST, PI, LJ

Attachment 3, Unit 1 and 2 IST Valve List

SYSTEM: Chemical and Volume Control - CV

P&ID: 5R179F05005 #1(2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
2R171(2)XCV0026	G3	2	A/C-1	4	CK	SA	NO	O/C	N/A	CM, BD, LJ	CM-CV40	FO, LJ
2R171(2)TCV0033A	C8	2	A-1	2	GL	MO	NO	O℘/C	FAI	FSE, ST, PI, LJ	ROJ-01	FSR, ST, PI, LJ
2R171(2)TCV0033B	C8	2	A-1	2	GL	MO	NO	O℘/C	FAI	FSE, ST, PI, LJ	ROJ-01	FSR, ST, PI, LJ
2R171(2)TCV0033C	C8	2	A-1	2	GL	MO	NO	O℘/C	FAI	FSE, ST, PI, LJ	ROJ-01	FSR, ST, PI, LJ
2R171(2)TCV0033D	C8	2	A-1	2	GL	MO	NO	O℘/C	FAI	FSE, ST, PI, LJ	ROJ-01	FSR, ST, PI, LJ
2R171(2)TCV0034A	C8	2	A/C-1	2	CK	SA	NO	C/O	N/A	CM, BD, LJ	CM-CV07	FO, LJ
2R171(2)TCV0034B	C8	2	A/C-1	2	CK	SA	NO	C/O	N/A	CM, BD, LJ	CM-CV07	FO, LJ
2R171(2)TCV0034C	C8	2	A/C-1	2	CK	SA	NO	C/O	N/A	CM, BD, LJ	CM-CV07	FO, LJ
2R171(2)TCV0034D	C8	2	A/C-1	2	CK	SA	NO	C/O	N/A	CM, BD, LJ	CM-CV07	FO, LJ
1R171(2)TCV0036A	C7	1	C-1	2	CK	SA	NO	C/O	N/A	CM, BD	CM-CV06	NI(AC), BD
1R171(2)TCV0036B	C7	1	C-1	2	CK	SA	NO	C/O	N/A	CM, BD	CM-CV06	NI(AC), BD
1R171(2)TCV0036C	C7	1	C-1	2	CK	SA	NO	C/O	N/A	CM, BD	CM-CV06	NI(AC), BD
1R171(2)TCV0036D	C7	1	C-1	2	CK	SA	NO	C/O	N/A	CM, BD	CM-CV06	NI(AC), BD
1R171(2)TCV0037A	C7	1	C-1	2	CK	SA	NO	C/O	N/A	CM, BD	CM-CV06	NI(AC), BD
1R171(2)TCV0037B	C7	1	C-1	2	CK	SA	NO	C/O	N/A	CM, BD	CM-CV06	NI(AC), BD

Attachment 3, Unit 1 and 2 IST Valve List

SYSTEM: Chemical and Volume Control - CV

P&ID: 5R179F05005 #1(2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
1R171(2)TCV0037C	C7	1	C-1	2	CK	SA	NO	C/O	N/A	CM, BD	CM-CV06	NI(AC), BD
1R171(2)TCV0037D	C7	1	C-1	2	CK	SA	NO	C/O	N/A	CM, BD	CM-CV06	NI(AC), BD
*2R171(2)TCV0077	E3	2	A-1	2	GL	MO	NO	C	FAI	FSE, ST, PI, LJ		CR 05-1321-52
*2R171(2)TCV0078	F3	2	A/C-1	¾	CK	SA	NC	O/C	N/A	FSE, LJ		CR 05-1321-103
*2R171(2)TCV0079	E3	2	A-1	2	GL	MO	NO	C	FAI	FSE, ST, PI, LJ		CR 05-1321-52
1R171(2)TCV0082	F5	1	B-1	2	GL	MO	NC	C	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented
1R171(2)TCV0083	F5	1	B-1	2	GL	MO	NC	C	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented
1R171(2)XCV0465	G8	1	B-1	4	GT	MO	NO	C	FAI	FSE, ST, PI	CSJ-01 VRR-01	FSC, ST, PI OMN-1 when implemented
1R171(2)XCV0468	G7	1	B-1	4	GT	MO	NO	C	FAI	FSE, ST, PI	CSJ-01 VRR-01	FSC, ST, PI OMN-1 when implemented
N1(2)CVLV3119	F7	1	B-1	2	GL	AO	NC	O/CR	FC	FSE, ST, PI, FST	CSJ-03	FSC, ST, PI, FST

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

SYSTEM: Chemical and Volume Control - CV
P&ID: 5R179F05006 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*2R171(2)XCV0157	E3	2	A-2	4	GT	M	LC	C	N/A	LJ		CR 05-1321-80
2R171(2)XCV0158	E2	2	A/C-2	4	CK	SA	NC	C	N/A	LJ		LJ

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

SYSTEM: Chemical and Volume Control - CV
P&ID: 5R179F05007 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
2R171(2)XCV0112B	E4	2	B-1	6	GT	MO	NO	O℘/C	FAI	FSE, ST, PI	CSJ-02 VRR-01	FSC, ST, PI OMN-1 when implemented
*2R171(2)XCV0112C	C4	2	B-1	6	GT	MO	NC	O	FAI	FSE, ST, PI		CR 05-1321-48
2R171(2)XCV0113A	E4	2	B-1	6	GT	MO	NO	O℘/C	FAI	FSE, ST, PI	CSJ-02 VRR-01	FSC, ST, PI OMN-1 when implemented
*2R171(2)XCV0113B	C4	2	B-1	6	GT	MO	NC	O	FAI	FSE, ST, PI		CR 05-1321-48
*N1(2)CVFCV0201	C6	2	B-1	2	GL	AO	O/C	O	FO	FSE, ST, PI, FST		CR 05-1321-7
*N1(2)CVFCV0202	D6	2	B-1	2	GL	AO	O/C	O	FO	FSE, ST, PI, FST		CR 05-1321-7
A1(2)CVFCV0205	E7	2	B-1	3	GL	AO	NT	O	FO	FSE, ST, PI, FST	CSJ-01	FSC, ST, PI, FST
*A1(2)CVHCV0206	D6	2	B-1	1	GL	SO	NC	O	FC	FSE, ST, PI, FST		CR 05-1321-69
*2R171(2)XCV0217	B3	2	C-1	4	CK	SA	NC	O	N/A	FSE		CR 05-1321-111
*2R171(2)XCV0218	B3	2	B-1	4	GT	MO	NC	O	FAI	FSE, ST, PI		CR 05-1321-49

Attachment 3, Unit 1 and 2 IST Valve List

SYSTEM: Chemical and Volume Control - CV

P&ID: 5R179F05007 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*C1(2)CVHCV0218	B7	2	B-1	2	GL	AO	NT	O	FO	FSE, ST, PI, FST		CR 05-1321-8
2R171(2)XCV0224	C4	2	C-1	6	CK	SA	NC	O	N/A	FSE	CSJ-04	FSE
2R171(2)TCV0226	D4	2	B-1	3	BL	M	LC	O	N/A	FSE		FSC
*2R171(2)TCV0234A	C6	2	C-1	2	CK	SA	NC	O	N/A	FSE		CR 05-1321-106
*2R171(2)TCV0234B	D6	2	C-1	2	CK	SA	NC	O	N/A	FSE		CR 05-1321-106
*2R171(2)XCV0235A	C6	2	C-1	3	CK	SA	O/C	O/C	N/A	FSE		CR 05-1321-109
								O		FSE		CR 05-1321-109
*2R171(2)XCV0235B	D6	2	C-1	3	CK	SA	O/C	O/C	N/A	FSE		CR 05-1321-109
								O		FSE		CR 05-1321-109
*3R171(2)XCV0639	E4	2	C	2	CK	SA	NC	O/C	N/A	FSE		CR 05-1321-107
2R171(2)XCV0670	D6	2	C-1	4	CK	SA	NO	O/C	N/A	CM, BD	CM-CV37	NI(AC), FO
*2R171(2)XCV0671	B6	2	C-1	4	CK	SA	NO	O	N/A	FSE		CR 05-1321-108
								C		FSE		CR 05-1321-108

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

Attachment 3, Unit 1 and 2 IST Valve List

SYSTEM: Chemical and Volume Control - CV

P&ID: 5R179F05007 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
2R171(2)TCV0707	F6	2	C-1	1	CK	SA	NC	O	N/A	FSE	CSJ-04	FSC
*2R171(2)XCV8348	B6	2	B-1	2	GL	MO	NC	O	FAI	FSE, ST, PI		CR 05-1321-51
*2R171(2)XCV8377A	C6	2	B-1	3	GT	MO	NO	OℜC	FAI	FSE, ST, PI		CR 05-1321-47
*2R171(2)XCV8377B	D6	2	B-1	3	GT	MO	NO	OℜC	FAI	FSE, ST, PI		CR 05-1321-47

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

Attachment 3, Unit 1 and 2 IST Valve List

SYSTEM: Chemical and Volume Control - CV

P&ID: 5R179F05009 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
3R171(2)TCV0333	E4	3	B-1	3	BL	M	NC	O	N/A	FSE		FSE
*3R171(2)XCV0334	E4	3	C-1	3	CK	SA	NC	O	N/A	FSE		CR 05-1321-110
3R171(2)TCV0335A	D4	3	B-1	3	BL	M	NC	O	N/A	FSE		FSE
3R171(2)TCV0335B	D4	3	B-1	3	BL	M	NC	O	N/A	FSE		FSE
*3R171(2)XCV0338	D6	3	C-1	4	CK	SA	O/C	O/C	N/A	FSE		CR 05-1321-112
*3R171(2)TCV0346	D5	3	C-1	¾	CK	SA	O/C	O	N/A	FSE		CR 05-1321-104
*3R171(2)XCV0349	C6	3	C-1	4	CK	SA	O/C	O/C	N/A	FSE		CR 05-1321-112
*3R171(2)TCV0351	E6	3	C-1	¾	CK	SA	O/C	O	N/A	FSE		CR 05-1321-104
*3R171(2)TCV0635	E5	3	C-1	2	CK	SA	O/C	C	N/A	FSE		CR 05-1321-105
*3R171(2)TCV0636	E5	3	C-1	2	CK	SA	O/C	C	N/A	FSE		CR 05-1321-105
*3R171(2)TCV0637	G5	3	C-1	2	CK	SA	O/C	C	N/A	FSE		CR 05-1321-105
*3R171(2)TCV0638	G6	3	C-1	2	CK	SA	O/C	C	N/A	FSE		CR 05-1321-105
*A1(2)CVFV8400A	D8	3	B-1	2	D	AO	NC	C	FC	FSE, ST, PI, FST		CR 05-1321-9
*A1(2)CVFV8400B	C8	3	B-1	2	D	AO	NC	C	FC	FSE, ST, PI, FST		CR 05-1321-9

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

SYSTEM: Diesel Generator Fuel Oil Storage and Transfer - DO
P&ID: 5Q159F00045 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
3Q151(2)TDO0126	F6	3	C-1	1	CK	SA	NC	O	N/A	FSE		FSE
3Q151(2)TDO0127	F4	3	C-1	1	CK	SA	NC	O	N/A	FSE		FSE
3Q151(2)TDO0128	F1	3	C-1	1	CK	SA	NC	O	N/A	FSE		FSE

SYSTEM: Demineralized Water - DW
P&ID: 5S199F05034 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*2S191(2)TDW0501	F4	2	A-2	2	D	M	LC	C	N/A	LJ		CR 05-1321-81
*2S191(2)TDW0502	F3	2	A/C-2	2	CK	SA	NC	C	N/A	LJ		CR 05-1321-116

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

SYSTEM: Equipment and Floor Drains - ED
P&ID: 5Q069F05030 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*2Q061(2)TED0064	G7	2	A-1	3	GT	MO	O/C	C	FAI	FSE, ST, PI, LJ		CR 05-1321-53 and LJ
*A1(2)EDFV7800	G6	2	A-1	3	GL	AO	O/C	C	FC	FSE, ST, PI, FST, LJ		CR 05-1321-10 and LJ

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

SYSTEM: Essential Cooling Water - EW
P&ID: 5R289F05038, Sheet 1 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
3R281(2)TEW0006	C3	3	C-1	30	CK	SA	O/C	O	N/A	CM, BD	CM-EW08	DI, NI(AC)
3R281(2)TEW0121	C2	3	B-1	30	B	MO	O/C	O	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented
*3R281(2)TEW0188	C2	3	B-1	6	B	M	NO	O/C	N/A	FSE		CR 05-1321-82
*3R281(2)TEW0277	C2	3	B-1	6	B	M	NC	O/C	N/A	FSE		CR 05-1321-83
*3R281(2)TEW0370A	C3	3	C-1	3	CK	SA	O/C	O/C	N/A	FSE		CR 05-1321-117
*3R281(2)TEW0403	C3	3	C-1	6	CK	SA	NC	O/C	N/A	FSE		CR 05-1321-119
*N1(2)EWPSV6853	G7	3	C-1	1.5	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)EWPSV6855	G2	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)EWPSV6856	G8	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)EWPSV6904	G4	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*A1(2)EWFV6935	E5	3	B-1	4	GL	AO	O/C	C	FC	FSE, ST, PI, FST		CR 05-1321-11

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

Attachment 3, Unit 1 and 2 IST Valve List

SYSTEM: Essential Cooling Water - EW

P&ID: 5R289F05038, Sheet 2 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
3R281(2)TEW0042	C3	3	C-1	30	CK	SA	O/C	O	N/A	CM, BD	CM-EW08	DI, NI(AC)
3R281(2)TEW0137	C2	3	B-1	30	B	MO	O/C	O	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented
*3R281(2)TEW0189	C2	3	B-1	6	B	M	NO	O/C	N/A	FSE		CR 05-1321-82
*3R281(2)TEW0278	C2	3	B-1	6	B	M	NC	O/C	N/A	FSE		CR 05-1321-83
*3R281(2)TEW0370B	C3	3	C-1	3	CK	SA	O/C	O/C	N/A	FSE		CR 05-1321-117
*3R281(2)TEW0404	C3	3	C-1	6	CK	SA	NC	O/C	N/A	FSE		CR 05-1321-119
*N1(2)EWPSV6863	G7	3	C-1	1.5	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)EWPSV6865	G2	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)EWPSV6866	G8	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)EWPSV6905	G4	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*B1(2)EWFV6936	E5	3	B-1	4	GL	AO	O/C	C	FC	FSE, ST, PI, FST		CR 05-1321-11

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

Attachment 3, Unit 1 and 2 IST Valve List

SYSTEM: Essential Cooling Water - EW

P&ID: 5R289F05038, Sheet 3 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
3R281(2)TEW0079	C3	3	C-1	30	CK	SA	O/C	O	N/A	CM, BD	CM-EW08	DI, NI(AC)
3R281(2)TEW0151	C2	3	B-1	30	B	MO	O/C	O	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented
*3R281(2)TEW0190	C2	3	B-1	6	B	M	NO	O/C	N/A	FSE		CR 05-1321-82
*3R281(2)TEW0279	C2	3	B-1	6	B	M	NC	O/C	N/A	FSE		CR 05-1321-83
*3R281(2)TEW0370C	C3	3	C-1	3	CK	SA	O/C	O/C	N/A	FSE		CR 05-1321-117
*3R281(2)TEW0405	C3	3	C-1	6	CK	SA	NC	O/C	N/A	FSE		CR 05-1321-119
*N1(2)EWPSV6873	G7	3	C-1	1.5	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)EWPSV6875	G2	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)EWPSV6876	G8	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)EWPSV6906	G4	3	C-1	1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*C1(2)EWFV6937	E5	3	B-1	4	GL	AO	O/C	C	FC	FSE, ST, PI, FST		CR 05-1321-11

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

SYSTEM: Essential Cooling Water - EW

P&ID: 5R289F05039

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*3R281(2)TEW0253	D7	3	C-1	3	CK	SA	O/C	O	N/A	FSE		CR 05-1321-118
*3R281(2)TEW0254	D5	3	C-1	3	CK	SA	O/C	O	N/A	FSE		CR 05-1321-118
*3R281(2)TEW0255	D2	3	C-1	3	CK	SA	O/C	O	N/A	FSE		CR 05-1321-118
*A1(2)EWFV6914	D7	3	B-1	3	GL	AO	O/C	O	FO	FSE, ST, PI, FST		CR 05-1321-12
*B1(2)EWFV6924	D5	3	B-1	3	GL	AO	O/C	O	FO	FSE, ST, PI, FST		CR 05-1321-12
*C1(2)EWFV6934	D3	3	B-1	3	GL	AO	O/C	O	FO	FSE, ST, PI, FST		CR 05-1321-12

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

SYSTEM: Spent Fuel Pool Cooling and Cleanup - FC
P&ID: 5R219F05028 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*2R211(2)XFC0013E Pen. M-69	B6	2	A-2	10	GT	M	LC	C	N/A	LJ		CR 05-1321-85
*2R211(2)XFC0013F Pen. M-69	B6	2	A-2	10	GT	M	LC	C	N/A	LJ		CR 05-1321-85
*2R211(2)XFC0050 Pen. M-69	B6	2	A-2	3	GT	M	LC	C	N/A	LJ		CR 05-1321-84
*2R211(2)XFC0006 C Pen. M-70	B5	2	A-2	10	GT	M	LC	C	N/A	LJ		CR 05-1321-85
*2R211(2)XFC0007 C Pen. M-70	B4	2	A-2	10	GT	M	LC	C	N/A	LJ		CR 05-1321-85

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

SYSTEM: Containment Building Fire Protection - FP

P&ID: 5Q279F05047 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
2Q271(2)TFP0756	E8	2	A-1	6	GT	MO	NC	C	FAI	FSE, ST, PI, LJ		FSE, ST, PI, LJ
2Q271(2)TFP0943	E8	2	A/C-1	6	CK	SA	NC	C	N/A	CM, BD, LJ	CM-FP01	LJO, LJ

SYSTEM: Feedwater - FW
P&ID: 5S139F00063 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*N1(2)FWFCV0551	D8	NNS	B-1	16	GL	AO	NO	C	FC	FSE, ST, PI, FST		CR 05-1321-13
*N1(2)FWFCV0552	D6	NNS	B-1	16	GL	AO	NO	C	FC	FSE, ST, PI, FST		CR 05-1321-13
*N1(2)FWFCV0553	D4	NNS	B-1	16	GL	AO	NO	C	FC	FSE, ST, PI, FST		CR 05-1321-13
*N1(2)FWFCV0554	D2	NNS	B-1	16	GL	AO	NO	C	FC	FSE, ST, PI, FST		CR 05-1321-13
A1(2)FWFV7141	G8	2	B-1	18	GT	HO	NO	C	FC	FSE, ST, PI, FST	CSJ-05	FSC, ST, PI, FST
A1(2)FWFV7142	G6	2	B-1	18	GT	HO	NO	C	FC	FSE, ST, PI, FST	CSJ-05	FSC, ST, PI, FST
A1(2)FWFV7143	G4	2	B-1	18	GT	HO	NO	C	FC	FSE, ST, PI, FST	CSJ-05	FSC, ST, PI, FST
A1(2)FWFV7144	G2	2	B-1	18	GT	HO	NO	C	FC	FSE, ST, PI, FST	CSJ-05	FSC, ST, PI, FST
B1(2)FWFV7145A	G1	2	B-1	2	GL	AO	NC	C	FC	FSE, ST, PI, FST		FSE, ST, PI, FST
B1(2)FWFV7146A	G3	2	B-1	2	GL	AO	NC	C	FC	FSE, ST, PI, FST		FSE, ST, PI, FST

Attachment 3, Unit 1 and 2 IST Valve List

SYSTEM: Feedwater - FW

P&ID: 5S139F00063 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
A1(2)FWFV7147A	G5	2	B-1	2	GL	AO	NC	C	FC	FSE, ST, PI, FST		FSE, ST, PI, FST
A1(2)FWFV7148A	G7	2	B-1	2	GL	AO	NC	C	FC	FSE, ST, PI, FST		FSE, ST, PI, FST
*N1(2)FWFV7151	D7	NNS	B-1	4	GL	AO	NC	C	FC	FSE, ST, PI, FST		CR 05-1321-14
*N1(2)FWFV7152	D5	NNS	B-1	4	GL	AO	NC	C	FC	FSE, ST, PI, FST		CR 05-1321-14
*N1(2)FWFV7153	D3	NNS	B-1	4	GL	AO	NC	C	FC	FSE, ST, PI, FST		CR 05-1321-14
*N1(2)FWFV7154	D1	NNS	B-1	4	GL	AO	NC	C	FC	FSE, ST, PI, FST		CR 05-1321-14
A1(2)FWFV7189	E8	2	B-1	3	GL	AO	NC	C	FC	FSE, ST, PI, FST	CSJ-06	FSC, ST, PI, FST
A1(2)FWFV7190	E6	2	B-1	3	GL	AO	NC	C	FC	FSE, ST, PI, FST	CSJ-06	FSC, ST, PI, FST
A1(2)FWFV7191	E4	2	B-1	3	GL	AO	NC	C	FC	FSE, ST, PI, FST	CSJ-06	FSC, ST, PI, FST
A1(2)FWFV7192	E2	2	B-1	3	GL	AO	NC	C	FC	FSE, ST, PI, FST	CSJ-06	FSC, ST, PI, FST

- These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

SYSTEM: Reactor Containment Purge - HC
P&ID: 5V149V00018 #1(#2)

Valve TPNS Number	Grid Coord	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
2V141(2)ZHC0007	G3	2	A-1	48	B	MO	LC	C	FAI	FSE, ST, PI, LK	CSJ-07	FSC, ST,PI, LK
2V141(2)ZHC0008	G2	2	A-1	48	B	MO	LC	C	FAI	FSE, ST, PI, LK	CSJ-07	FSC, ST,PI, LK
2V141(2)ZHC0009	B7	2	A-1	48	B	MO	LC	C	FAI	FSE, ST, PI, LK	CSJ-07	FSC, ST,PI, LK
2V141(2)ZHC0010	B6	2	A-1	48	B	MO	LC	C	FAI	FSE, ST, PI, LK	CSJ-07	FSC, ST,PI, LK

SYSTEM: Reactor Containment Purge - HC
P&ID: 5V149V00019 #1(#2)

Valve TPNS Number	Grid Coord	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
2V141(2)THC0003	F3	2	A-1	18	B	MO	O/C	C	FAI	FSE, ST, PI, LK		FSE, ST, PI, LK
2V141(2)THC0005	C7	2	A-1	18	B	MO	O/C	C	FAI	FSE, ST, PI, LK		FSE, ST, PI, LK
A1(2)HCFV9776	F4	2	A-1	18	B	AO	O/C	C	FC	FSE, ST, PI, FST, LK		FSE, ST, PI, FST, LK
A1(2)HCFV9777	C6	2	A-1	18	B	AO	O/C	C	FC	FSE, ST, PI, FST, LK		FSE, ST, PI, FST, LK

SYSTEM: Instrument Air - IA
P&ID: 5Q119F05040 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*B1(2)IAFV8565 Pen. M-58	D4	2	A-1	2	BL	AO	NO	C	FC	FSE, ST, PI, FST, LJ		CR 05-1321-15
*2Q111(2)TIA0541 Pen. M-58	D4	2	A/C-1	2	CK	SA	NO	C	N/A	FSE, LJ		CR 05-1321-120

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

SYSTEM: Standby Diesel Generator Jacket Water - JW
P&ID: 5Q159F22540 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
3Q151(2)SJW3036	E7	3	C-1	6	CK	SA	NC	C	N/A	FSE	PP6.1 ⊕	FSE
3Q151(2)SJW3037	E4	3	C-1	6	CK	SA	NC	C	N/A	FSE	PP6.1 ⊕	FSE
3Q151(2)SJW3038	E1	3	C-1	6	CK	SA	NC	C	N/A	FSE	PP6.1 ⊕	FSE
3Q151(2)SJW3042	C7	3	C-1	3	CK	SA	O/C	C	N/A	FSE	PP6.1 ⊕	FSE
3Q151(2)SJW3043	C4	3	C-1	3	CK	SA	O/C	C	N/A	FSE	PP6.1 ⊕	FSE
3Q151(2)SJW3044	C2	3	C-1	3	CK	SA	O/C	C	N/A	FSE	PP6.1 ⊕	FSE

⊕ Paragraph 6.1 of this plan describes skid mounted valve testing.

Attachment 3, Unit 1 and 2 IST Valve List

SYSTEM: Standby Diesel Generator Lube Oil - LU

P&ID: 5Q159F22542 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
3Q151(2)SLU3081	E7	3	C-1	6	CK	SA	NC	C	N/A	FSE	PP6.1 ⊕	FSE
3Q151(2)SLU3082	E4	3	C-1	6	CK	SA	NC	C	N/A	FSE	PP6.1 ⊕	FSE
3Q151(2)SLU3083	E2	3	C-1	6	CK	SA	NC	C	N/A	FSE	PP6.1 ⊕	FSE
3Q151(2)SLU3084	E7	3	C-1	3	CK	SA	O/C	C	N/A	FSE	PP6.1 ⊕	FSE
3Q151(2)SLU3085	E4	3	C-1	3	CK	SA	O/C	C	N/A	FSE	PP6.1 ⊕	FSE
3Q151(2)SLU3086	E2	3	C-1	3	CK	SA	O/C	C	N/A	FSE	PP6.1 ⊕	FSE

⊕ Paragraph 6.1 of this plan describes skid mounted valve testing.

SYSTEM: Main Steam - MS
P&ID: 5S109F00016 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
N1(2)MSPSV7410	H6	2	C-1	6x10	PRV	SA	NC	O	N/A	VE, LK, SP		VE, LK, SP
N1(2)MSPSV7410A	H6	2	C-1	6x10	PRV	SA	NC	O	N/A	VE, LK, SP		VE, LK, SP
N1(2)MSPSV7410B	H5	2	C-1	6x10	PRV	SA	NC	O	N/A	VE, LK, SP		VE, LK, SP
N1(2)MSPSV7410C	H5	2	C-1	6x10	PRV	SA	NC	O	N/A	VE, LK, SP		VE, LK, SP
N1(2)MSPSV7410D	H5	2	C-1	6x10	PRV	SA	NC	O	N/A	VE, LK, SP		VE, LK, SP
A1(2)MSPV7411	H6	2	B-1	8x10	GL	HO	NC	O/C	N/A	FSE, ST, PI		FSE, ST, PI
A1(2)MSFV7412	G4	2	B-1	4	GL	AO	NC	C	FC	FSE, ST, PI, FST		FSE, ST, PI, FST
A1(2)MSFSV7414	G4	2	B-1	30	GT	AO	NO	C	FC	FSE, ST, PI, FST	CSJ-08	FSC, ST, PI, FST
N1(2)MSPSV7420	F6	2	C-1	6x10	PRV	SA	NC	O	N/A	VE, LK, SP		VE, LK, SP
N1(2)MSPSV7420A	F6	2	C-1	6x10	PRV	SA	NC	O	N/A	VE, LK, SP		VE, LK, SP
N1(2)MSPSV7420B	F5	2	C-1	6x10	PRV	SA	NC	O	N/A	VE, LK, SP		VE, LK, SP
N1(2)MSPSV7420C	F5	2	C-1	6x10	PRV	SA	NC	O	N/A	VE, LK, SP		VE, LK, SP
N1(2)MSPSV7420D	F5	2	C-1	6x10	PRV	SA	NC	O	N/A	VE, LK, SP		VE, LK, SP
B1(2)MSPV7421	F6	2	B-1	8x10	GL	HO	NC	O/C	N/A	FSE, ST, PI		FSE, ST, PI
A1(2)MSFV7422	F4	2	B-1	4	GL	AO	NC	C	FC	FSE, ST, PI, FST		FSE, ST, PI, FST

Attachment 3, Unit 1 and 2 IST Valve List

SYSTEM: Main Steam - MS

P&ID: 5S109F00016 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
A1(2)MSFSV7424	F4	2	B-1	30	GT	AO	NO	C	FC	FSE, ST, PI, FST	CSJ-08	FSC, ST, PI, FST
N1(2)MSPSV7430	E6	2	C-1	6x10	PRV	SA	NC	O	N/A	VE, LK, SP		VE, LK, SP
N1(2)MSPSV7430A	E6	2	C-1	6x10	PRV	SA	NC	O	N/A	VE, LK, SP		VE, LK, SP
N1(2)MSPSV7430B	E5	2	C-1	6x10	PRV	SA	NC	O	N/A	VE, LK, SP		VE, LK, SP
N1(2)MSPSV7430C	E5	2	C-1	6x10	PRV	SA	NC	O	N/A	VE, LK, SP		VE, LK, SP
N1(2)MSPSV7430D	E5	2	C-1	6x10	PRV	SA	NC	O	N/A	VE, LK, SP		VE, LK, SP
C1(2)MSPV7431	E6	2	B-1	8x10	GL	HO	NC	O/C	N/A	FSE, ST, PI		FSE, ST, PI
A1(2)MSFV7432	D4	2	B-1	4	GL	AO	NC	C	FC	FSE, ST, PI, FST		FSE, ST, PI, FST
A1(2)MSFSV7434	D4	2	B-1	30	GT	AO	NO	C	FC	FSE, ST, PI, FST	CSJ-08	FSC, ST, PI, FST
N1(2)MSPSV7440	C6	2	C-1	6x10	PRV	SA	NC	O	N/A	VE, LK, SP		VE, LK, SP
N1(2)MSPSV7440A	C6	2	C-1	6x10	PRV	SA	NC	O	N/A	VE, LK, SP		VE, LK, SP
N1(2)MSPSV7440B	C5	2	C-1	6x10	PRV	SA	NC	O	N/A	VE, LK, SP		VE, LK, SP
N1(2)MSPSV7440C	C5	2	C-1	6x10	PRV	SA	NC	O	N/A	VE, LK, SP		VE, LK, SP
N1(2)MSPSV7440D	C5	2	C-1	6x10	PRV	SA	NC	O	N/A	VE, LK, SP		VE, LK, SP
D1(2)MSPV7441	C6	2	B-1	8x10	GL	HO	NC	O/C	N/A	FSE, ST, PI		FSE, ST, PI

Attachment 3, Unit 1 and 2 IST Valve List

SYSTEM: Main Steam - MS

P&ID: 5S109F00016 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
A1(2)MSFV7442	C4	2	B-1	4	GL	AO	NC	C	FC	FSE, ST, PI, FST		FSE, ST, PI, FST
A1(2)MSFSV7444	C4	2	B-1	30	GT	AO	NO	C	FC	FSE, ST, PI, FST	CSJ-08	FSC, ST, PI, FST

SYSTEM: RCP Oil Changing - PO
P&ID: 5R379F05042 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*2R371(2)TPO0217	B3	2	A-2	2	D	M	LC	C	N/A	LJ		CR 05-1321-86
*2R371(2)TPO0218	B3	2	A-2	2	D	M	LC	C	N/A	LJ		CR 05-1321-86

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

SYSTEM: Primary Sampling - PS
P&ID: 5Z329Z00045 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*B1(2)PSFV4450 Pen. M-85A	H8	2	A-1	1	GT	SO	NC	C	FC	FSE, ST, PI, FST, LJ		CR 05-1321-70
*B1(2)PSFV4451 Pen. M-85B	G8	2	A-1	1	GT	SO	NC	C	FC	FSE, ST, PI, FST, LJ		CR 05-1321-71
*C1(2)PSFV4451 B Pen. M-85B	F7	2	A-1	1	GL	AO	NC	C	FC	FSE, ST, PI, FST, LJ		CR 05-1321-16
*C1(2)PSFV4452 Pen. M-85A	G7	2	A-1	1	GL	AO	NC	C	FC	FSE, ST, PI, FST, LJ		CR 05-1321-17
*C1(2)PSFV4454	F8	2	A-1	1	GT	SO	NC	C	FC	FSE, ST, PI, FST, LJ		CR 05-1321-71
*C1(2)PSFV4455	E8	2	A-1	1	GT	SO	NC	C	FC	FSE, ST, PI, FST, LJ		CR 05-1321-71
*B1(2)PSFV4456	F7	2	A-1	1	GL	A0	NC	C	FC	FSE, ST, PI, FST, LJ		CR 05-1321-18

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

SYSTEM: Primary Sampling - PS
P&ID: 5Z329Z00045 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*C1(2)PSFV4461	D7	2	A-1	1	GL	AO	NC	C	FC	FSE, ST, PI, FST, LJ		CR 05-1321-18
*B1(2)PSFV4466 Pen. M-29	C7	2	A-1	1	GL	AO	NC	C	FC	FSE, ST, PI, FST, LJ		CR 05-1321-18
*B1(2)PSFV4823	D7	2	A-1	1	GT	SO	NC	C	FC	FSE, ST, PI, FST, LJ		CR 05-1321-72
*C1(2)PSFV4824 Pen. M-29	C7	2	A-1	1	GT	SO	NC	C	FC	FSE, ST, PI, FST, LJ		CR 05-1321-72

*These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

SYSTEM: Radiation Monitoring - RA
P&ID: 5V149V00017 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*2V141(2)TRA0001 Pen. M-80A	G4	2	A-1	1	BL	MO	NO	C	FAI	FSE, ST, PI, LJ		CR 05-1321-55
*2V141(2)TRA0003 Pen. M-80F	F4	2	A-1	1	BL	MO	NO	C	FAI	FSE, ST, PI, LJ		CR 05-1321-55
*2V141(2)TRA0004 Pen. M-80A	G3	2	A-1	1	BL	MO	NO	C	FAI	FSE, ST, PI, LJ		CR 05-1321-55
*2V141(2)TRA0006 Pen. M-80F	F3	2	A-1	1	BL	MO	NO	C	FAI	FSE, ST, PI, LJ		CR 05-1321-55

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

SYSTEM: Reactor Coolant - RC

P&ID: 5R149F05001 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
A1(2)RCHCV0601	E3	2	B-1	1	GL	SO	NC	O/C	FC	FSE, ST, PI, FST	ROJ-04	FSR, ST, PI, FST
B1(2)RCHCV0602	D3	2	B-1	1	GL	SO	NC	O/C	FC	FSE, ST, PI, FST	ROJ-04	FSR, ST, PI, FST
A1(2)RCHV3657A	E4	1	B-1	1	GL	SO	NC	O/C	FC	FSE, ST, PI, FST	ROJ-04	FSR,ST, PI, FST
B1(2)RCHV3657B	D4	1	B-1	1	GL	SO	NC	O/C	FC	FSE, ST, PI, FST	ROJ-04	FSR,ST, PI, FST
A1(2)RCHV3658A	E4	1	B-1	1	GL	SO	NC	O/C	FC	FSE, ST, PI, FST	ROJ-04	FSR,ST, PI, FST
B1(2)RCHV3658B	D4	1	B-1	1	GL	SO	NC	O/C	FC	FSE, ST, PI, FST	ROJ-04	FSR,ST, PI, FST

SYSTEM: Reactor Coolant - RC
P&ID: 5R149F05003 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
1R141(2)XRC0001A	D7	1	B-1	3	GT	MO	NO	C	FAI	FSE, ST, PI	CSJ-13* VRR-01	FSE, ST, PI OMN-1 when implemented
1R141(2)XRC0001B	E8	1	B-1	3	GT	MO	NO	C	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented
A1(2)RCPCV0655A	D8	1	B-1	3	GL	SO	NC	O/C ℘	FC	FSE, ST, PI, FST	ISTC-3510	FSC, ST, PI, FST
B1(2)RCPCV0656A	E8	1	B-1	3	GL	SO	NC	O/C ℘	FC	FSE, ST, PI, FST	ISTC-3510	FSC, ST, PI, FST
N1(2)RCPSV3450	F7	1	C-1	6x8	PRV	SA	NC	O	N/A	VE, LK, SP		VE, LK, SP
N1(2)RCPSV3451	F6	1	C-1	6x8	PRV	SA	NC	O	N/A	VE, LK, SP		VE, LK, SP
N1(2)RCPSV3452	F4	1	C-1	6x8	PRV	SA	NC	O	N/A	VE, LK, SP		VE, LK, SP

* CSJ-13 is being applied for 1R142XRC0001A only. (Ref. CR 04-6255)

SYSTEM: Reactor Coolant - RC
P&ID: 5R149F05004

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*2R141(2)XRC0046	F4	2	A/C-1	3	CK	SA	NO	C	N/A	FSE, LJ		CR 05-1321-121
*B1(2)RCFV3651	F2	2	A-1	3	BL	AO	NO	C	FC	FSE, ST, PI, FST, LJ		CR 05-1321-20
*B1(2)RCFV3652 Pen. M-68C	F4	2	A-1	1	BL	AO	NC	C	FC	FSE, ST, PI, FST, LJ		CR 05-1321-19
*A1(2)RCFV3653 Pen. M-68C	F4	2	A-1	1	GT	SO	NC	C	FC	FSE, ST, PI, FST, LJ		CR 05-1321-73

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

SYSTEM: RCS Vacuum Degassing - RD
P&ID: 5R349F05046 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*2R341(2)TRD0008	E7	2	A-2	3	BL	M	LC	C	N/A	LJ		CR 05-1321-87
*2R341(2)TRD0010	E7	2	A-2	3	BL	M	LC	C	N/A	LJ		CR 05-1321-87

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

SYSTEM: Residual Heat Removal - RH

P&ID: 5R169F20000 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
2R161(2)XRH0019A	C3	2	B-1	8	GT	MO	NC	O	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented
2R161(2)XRH0019B	E3	2	B-1	8	GT	MO	NC	O	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented
2R161(2)XRH0019C	H3	2	B-1	8	GT	MO	NC	O	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented
1R161(2)XRH0020A	C2	1	A/C-1	8	CK	SA	NC	O/C	N/A	CM, BD, LK	CM-RH07	FO, LK, LR
1R161(2)XRH0020B	E2	1	A/C-1	8	CK	SA	NC	O/C	N/A	CM, BD, LK	CM-RH07	FO, LK, LR
1R161(2)XRH0020C	H2	1	A/C-1	8	CK	SA	NC	O/C	N/A	CM, BD, LK	CM-RH07	FO, LK, LR
2R161(2)XRH0031A	B3	2	B-1	8	GT	MO	NO	OR/C	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented
2R161(2)XRH0031B	D3	2	B-1	8	GT	MO	NO	OR/C	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented
2R161(2)XRH0031C	G3	2	B-1	8	GT	MO	NO	OR/C	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented

Attachment 3, Unit 1 and 2 IST Valve List

SYSTEM: Residual Heat Removal - RH

P&ID: 5R169F20000 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
1R161(2)XRH0032A	B2	1	A/C-1	8	CK	SA	NC	O/C	N/A	CM, BD, LK	CM-RH08	FO, LR, LK
1R161(2)XRH0032B	D2	1	A/C-1	8	CK	SA	NC	O/C	N/A	CM, BD, LK	CM-RH08	FO, LR, LK
1R161(2)XRH0032C	G2	1	A/C-1	8	CK	SA	NC	O/C	N/A	CM, BD, LK	CM-RH08	FO, LR, LK
1R161(2)XRH0060A	B8	1	A-1	12	GT	MO	NC	O/C	FAI	FSE, ST, PI, LK	CSJ-10 VRR-01	FSC, ST, PI, LK OMN-1 when implemented
1R161(2)XRH0060B	D8	1	A-1	12	GT	MO	NC	O/C	FAI	FSE, ST, PI, LK	CSJ-10 VRR-01	FSC, ST, PI, LK OMN-1 when implemented
1R161(2)XRH0060C	G8	1	A-1	12	GT	MO	NC	O/C	FAI	FSE, ST, PI, LK	CSJ-10 VRR-01	FSC, ST, PI, LK OMN-1 when implemented
1R161(2)XRH0061A	B7	1	A-1	12	GT	MO	NC	O/C	FAI	FSE, ST, PI, LK	CSJ-10 VRR-01	FSC, ST, PI, LK OMN-1 when implemented
1R161(2)XRH0061B	D7	1	A-1	12	GT	MO	NC	O/C	FAI	FSE, ST, PI, LK	CSJ-10 VRR-01	FSC, ST, PI, LK OMN-1 when implemented

Attachment 3, Unit 1 and 2 IST Valve List

SYSTEM: Residual Heat Removal - RH

P&ID: 5R169F20000 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
1R161(2)XRH0061C	G7	1	A-1	12	GT	MO	NC	O/C	FAI	FSE, ST, PI, LK	CSJ-10 VRR-01	FSC, ST, PI, LK OMN-1 when implemented
2R161(2)XRH0063B	D6	2	A-2	8	GT	M	LC	C	N/A	LJ		LJ
2R161(2)XRH0063C	F6	2	A-2	8	GT	M	LC	C	N/A	LJ		LJ
2R161(2)XRH0064B	D5	2	A-2	8	GT	M	LC	C	N/A	LJ		LJ
2R161(2)XRH0064C	F5	2	A-2	8	GT	M	LC	C	N/A	LJ		LJ
2R161(2)XRH0065A	B6	2	C-1	8	CK	SA	NC	O	N/A	CM, BD	CM-RH06	NI(AC), BD
2R161(2)XRH0065B	D6	2	C-1	8	CK	SA	NC	O	N/A	CM, BD	CM-RH06	NI(AC), BD
2R161(2)XRH0065C	G6	2	C-1	8	CK	SA	NC	O	N/A	CM, BD	CM-RH06	NI(AC), BD
2R161(2)XRH0066A	A4	2	B-1	4	GT	MO	NC	O⊗/C	FAI	FSE,PI, ST		FSE,PI, ST
2R161(2)XRH0066B	D2	2	B-1	4	GT	MO	NC	O⊗/C	FAI	FSE,PI, ST		FSE,PI, ST
2R161(2)XRH0067A	A6	2	B-1	4	GT	MO	NC	O/C	FAI	FSE, ST, PI		FSE, ST, PI
2R161(2)XRH0067B	C6	2	B-1	4	GT	MO	NC	O/C	FAI	FSE, ST, PI		FSE, ST, PI
2R161(2)XRH0067C	F6	2	B-1	4	GT	MO	NC	O/C	FAI	FSE, ST, PI		FSE, ST, PI
2R161(2)XRH0068A	A6	2	C-1	4	CK	SA	NC	O	N/A	CM, BD	CM-RH05	NI(AC), BD
2R161(2)XRH0068B	C6	2	C-1	4	CK	SA	NC	O	N/A	CM, BD	CM-RH05	NI(AC), BD
2R161(2)XRH0068C	F6	2	C-1	4	CK	SA	NC	O	N/A	CM, BD	CM-RH05	NI(AC), BD

Attachment 3, Unit 1 and 2 IST Valve List

SYSTEM: Residual Heat Removal - RH

P&ID: 5R169F20000 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
A1(2)SIFCV0851	C5	2	B-1	8	B	AO	NC	C	FC	FSE, ST, PI, FST	CSJ-11	FSC, ST, PI, FST
B1(2)SIFCV0852	E5	2	B-1	8	B	AO	NC	C	FC	FSE, ST, PI, FST	CSJ-11	FSC, ST, PI, FST
C1(2)SIFCV0853	H5	2	B-1	8	B	AO	NC	C	FC	FSE, ST, PI, FST	CSJ-11	FSC, ST, PI, FST
A1(2)RHHCV0864	B4	2	B-1	8	B	AO	NO	O	FO	FSE, ST, PI, FST	CSJ-11	FSC, ST, PI, FST
B1(2)RHHCV0865	D4	2	B-1	8	B	AO	NO	O	FO	FSE, ST, PI, FST	CSJ-11	FSC, ST, PI, FST
C1(2)RHHCV0866	G4	2	B-1	8	B	AO	NO	O	FO	FSE, ST, PI, FST	CSJ-11	FSC, ST, PI, FST
N1(2)RHPSV3851	C6	2	C-1	3x4	PRV	SA	NC	O	N/A	VE, LK, SP		VE, LK, SP
N1(2)RHPSV3852	E6	2	C-1	3x4	PRV	SA	NC	O	N/A	VE, LK, SP		VE, LK, SP

Attachment 3, Unit 1 and 2 IST Valve List

SYSTEM: Residual Heat Removal - RH

P&ID: 5R169F20000 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
N1(2)RHPSV3853	H6	2	C-1	3x4	PRV	SA	NC	O	N/A	VE, LK, SP		VE, LK, SP
*N1(2)RHPSV3934	C4	2	C-1	3/4x1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)RHPSV3943	F4	2	C-1	3/4x1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)RHPSV3944	H4	2	C-1	3/4x1	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

SYSTEM: Reactor Makeup Water - RM
P&ID: 5R279F05033 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*C1(2)RMFV7659	F7	3	B-1	4	GL	AO	NO	C	FC	FSE, ST, PI, FST		CR 05-1321-21
*B1(2)RMFV7663	F7	3	B-1	4	GL	AO	NO	C	FC	FSE, ST, PI, FST		CR 05-1321-21

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

SYSTEM: Service Air - SA
P&ID: 5Q109F05041 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*2Q101(2)TSA0504	C4	2	A-2	2	BL	M	LC	C	N/A	LJ		CR 05-1321-88
*2Q101(2)TSA0505	D4	2	A/C-2	2	CK	SA	NC	C	N/A	LJ		CR 05-1321-122

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

SYSTEM: Steam Generator Blowdown - SB

P&ID: 5S209F20001 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
A12(S)BFV4150	C5	2	B-1	4	GL	AO	NO	C	FC	FSE, ST, PI, FST		FSE, ST, PI, FST
C1(2)SBFV4151	C2	2	B-1	4	GL	AO	NO	C	FC	FSE, ST, PI, FST		FSE, ST, PI, FST
B1(2)SBFV4152	G2	2	B-1	4	GL	AO	NO	C	FC	FSE, ST, PI, FST		FSE, ST, PI, FST
A1(2)SBFV4153	G5	2	B-1	4	GL	AO	NO	C	FC	FSE, ST, PI, FST		FSE, ST, PI, FST
*A1(2)SBFV4186	D5	2	B-1	3/8	GT	AO	NC	C	FC	FSE, ST, PI, FST		CR 05-1321-22
*C1(2)SBFV4187	D1	2	B-1	3/8	GT	AO	NC	C	FC	FSE, ST, PI, FST		CR 05-1321-22
*B1(2)SBFV4188	H1	2	B-1	3/8	GT	AO	NC	C	FC	FSE, ST, PI, FST		CR 05-1321-22
*A1(2)SBFV4189	H5	2	B-1	3/8	GT	AO	NC	C	FC	FSE, ST, PI, FST		CR 05-1321-22

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

Attachment 3, Unit 1 and 2 IST Valve List

SYSTEM: Standby Diesel Generator Starting Air - SD

P&ID: 5Q159F22544 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
N1(2)SDFV5434	C7	NS	B-1	2.5	GT	AO	NC	O	FC	None	PP6.1 ⊕	FSE, FST
N1(2)SDFV5435	G7	NS	B-1	2.5	GT	AO	NC	O	FC	None	PP6.1 ⊕	FSE, FST
N1(2)SDFV5534	C4	NS	B-1	2.5	GT	AO	NC	O	FC	None	PP6.1 ⊕	FSE, FST
N1(2)SDFV5535	G4	NS	B-1	2.5	GT	AO	NC	O	FC	None	PP6.1 ⊕	FSE, FST
N1(2)SDFV5634	C2	NS	B-1	2.5	GT	AO	NC	O	FC	None	PP6.1 ⊕	FSE, FST
N1(2)SDFV5635	G2	NS	B-1	2.5	GT	AO	NC	O	FC	None	PP6.1 ⊕	FSE, FST

⊕ Paragraph 6.1 of this plan describes skid mounted valve testing.

SYSTEM: Standby Diesel Generator Starting Air - SD
P&ID: 5Q159F22546 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
3Q151(2)XSD0003A	F8	3	C-1	1	CK	SA	NC	C	N/A	CM, BD	CM-SD01	FO, PDR
3Q151(2)XSD0003B	F5	3	C-1	1	CK	SA	NC	C	N/A	CM, BD	CM-SD01	FO, PDR
3Q151(2)XSD0003C	F2	3	C-1	1	CK	SA	NC	C	N/A	CM, BD	CM-SD01	FO, PDR
3Q151(2)XSD0004A	F7	3	C-1	1	CK	SA	NC	C	N/A	CM, BD	CM-SD02	FO, PDR
3Q151(2)XSD0004B	F4	3	C-1	1	CK	SA	NC	C	N/A	CM, BD	CM-SD02	FO, PDR
3Q151(2)XSD0004C	F1	3	C-1	1	CK	SA	NC	C	N/A	CM, BD	CM-SD02	FO, PDR
N1(2)SDPSV5432	F7	3	C-1	¾	PRV	SA	NC	O	N/A	VE, LK, SP		VE, LK, SP
N1(2)SDPSV5433	F8	3	C-1	¾	PRV	SA	NC	O	N/A	VE, LK, SP		VE, LK, SP
N1(2)SDPSV5532	F4	3	C-1	¾	PRV	SA	NC	O	N/A	VE, LK, SP		VE, LK, SP
N1(2)SDPSV5533	F5	3	C-1	¾	PRV	SA	NC	O	N/A	VE, LK, SP		VE, LK, SP
N1(2)SDPSV5632	F1	3	C-1	¾	PRV	SA	NC	O	N/A	VE, LK, SP		VE, LK, SP
N1(2)SDPSV5633	F2	3	C-1	¾	PRV	SA	NC	O	N/A	VE, LK, SP		VE, LK, SP

Attachment 3, Unit 1 and 2 IST Valve List

SYSTEM: Safety Injection - SI

P&ID: 5N129F05013 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
2N121(2)XSI0001A	G3	2	B-1	16	GT	MO	NO	O~~N~~/C	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented
2N121(2)XSI0002A	G3	2	C-1	16	CK	SA	NC	O/C	N/A	CM, BD	CM-SI25	NI(AC), BD
2N121(2)XSI0004A	F5	2	A-1	6	GT	MO	NO	O~~N~~/C	FAI	FSE, ST, PI, LJ		FSE, ST, PI, LJ
2N121(2)XSI0005A	F6	2	A/C-1	6	CK	SA	NC	O/C	N/A	CM, BD, LJ	CM-SI18	LJ, LJO
2N121(2)XSI0006A	E7	2	B-1	6	GT	MO	NO	O~~N~~/C	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented
1N121(2)XSI0007A	E7	1	A/C-1	6	CK	SA	NC	O/C	N/A	CM, BD, LK	CM-SI19	LK, LR, FO
2N121(2)XSI0008A	F7	2	B-1	6	GT	MO	NC	O/C~~N~~	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented
1N121(2)XSI0009A	F7	1	A/C-1	6	CK	SA	NC	O/C	N/A	CM, BD, LK	CM-SI20	LK, LR, FO
1N121(2)XSI0010A	F8	1	A/C-1	8	CK	SA	NC	O/C	N/A	CM, BD, LK	CM-SI22	LK, LR, FO

Attachment 3, Unit 1 and 2 IST Valve List

SYSTEM: Safety Injection - SI

P&ID: 5N129F05013 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
2N121(2)XSI0011A	G4	2	B-1	2	D	MO	NO	O~~N~~/C	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented
2N121(2)XSI0012A	G4	2	B-1	2	D	MO	NO	O~~N~~/C	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented
2N121(2)XSI0013A	D3	2	B-1	2	D	MO	NO	O~~N~~/C	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented
2N121(2)XSI0014A	D3	2	B-1	2	D	MO	NO	O~~N~~/C	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented
2N121(2)XSI0016A	B5	2	A-1	16	GT	MO	NC	O/C~~N~~	FAI	FSE, ST, PI, LJ		FSE, ST, PI, LJ
2N121(2)XSI0018A	C4	2	A-1	8	GT	MO	NO	O~~N~~/C	FAI	FSE, ST, PI, LJ		FSE, ST, PI, LJ
2N121(2)XSI0030A	D5	2	A/C-1	8	CK	SA	NC	O/C	N/A	CM, BD, LJ	CM-SI21	LJ, LJO
*N1(2)SIPSV3935	C2	2	C-1	¾	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2

Attachment 3, Unit 1 and 2 IST Valve List

SYSTEM: Safety Injection - SI

P&ID: 5N129F05013 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*A1(2)SIFV3936	F2	2	B-1	3	GL	AO	NC	C	FC	FSE, ST, PI, FST		CR 05-1321-25
*B1(2)SIFV3937	F2	2	B-1	3	GL	AO	NC	C	FC	FSE, ST, PI, FST		CR 05-1321-25
*N1(2)SIPSV3938	G6	2	C-1	¾	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

Attachment 3, Unit 1 and 2 IST Valve List

SYSTEM: Safety Injection - SI

P&ID: 5N129F05014 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
2N121(2)XSI0001B	H2	2	B-1	16	GT	MO	NO	O/C	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented
2N121(2)XSI0002B	H2	2	C-1	16	CK	SA	NC	O/C	N/A	CM, BD	CM-SI25	NI(AC), BD
2N121(2)XSI0004B	G4	2	A-1	6	GT	MO	NO	O/C	FAI	FSE, ST, PI, LJ		FSE, ST, PI, LJ
2N121(2)XSI0005B	G4	2	A/C-1	6	CK	SA	NC	O/C	N/A	CM, BD, LJ	CM-SI18	LJ, LJO
2N121(2)XSI0006B	F7	2	B-1	6	GT	MO	NO	O/C	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented
1N121(2)XSI0007B	F7	1	A/C-1	6	CK	SA	NC	O/C	N/A	CM, BD, LK	CM-SI19	LK, LR, FO
2N121(2)XSI0008B	G7	2	B-1	6	GT	MO	NC	O/C	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented
1N121(2)XSI0009B	G7	1	A/C-1	6	CK	SA	NC	O/C	N/A	CM, BD, LK	CM-SI20	LK, LR, FO
1N121(2)XSI0010B	G8	1	A/C-1	8	CK	SA	NC	O/C	N/A	CM, BD, LK	CM-SI22	LK, LR, FO

Attachment 3, Unit 1 and 2 IST Valve List

SYSTEM: Safety Injection - SI

P&ID: 5N129F05014 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
2N121(2)XSI0011B	H3	2	B-1	2	D	MO	NO	O/C	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented
2N121(2)XSI0012B	H3	2	B-1	2	D	MO	NO	O/C	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented
2N121(2)XSI0013B	E3	2	B-1	2	D	MO	NO	O/C	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented
2N121(2)XSI0014B	E3	2	B-1	2	D	MO	NO	O/C	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented
2N121(2)XSI0016B	B4	2	A-1	16	GT	MO	NC	O/C	FAI	FSE, ST, PI, LJ		FSE, ST, PI, LJ
2N121(2)XSI0018B	D4	2	A-1	8	GT	MO	NO	O/C	FAI	FSE, ST, PI, LJ		FSE, ST, PI, LJ
2N121(2)XSI0030B	D4	2	A/C-1	8	CK	SA	NC	O/C	N/A	CM, BD, LJ	CM-SI21	LJ, LJO
*N1(2)SIPSV3939	D2	2	C-1	¾	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)SIPSV3940	F6	2	C-1	¾	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

SYSTEM: Safety Injection - SI
P&ID: 5N129F05015 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
2N121(2)XSI0001C	H-2	2	B-1	16	GT	MO	NO	O/C	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented
2N121(2)XSI0002C	H2	2	C-1	16	CK	SA	NC	O/C	N/A	CM, BD	CM-SI25	NI(AC), BD
2N121(2)XSI0004C	F4	2	A-1	6	GT	MO	NO	O/C	FAI	FSE, ST, PI, LJ		FSE, ST, PI, LJ
2N121(2)XSI0005C	F5	2	A/C-1	6	CK	SA	NC	O/C	N/A	CM, BD, LJ	CM-SI18	LJ, LJO
2N121(2)XSI0006C	E7	2	B-1	6	GT	MO	NO	O/C	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented
1N121(2)XSI0007C	E7	1	A/C-1	6	CK	SA	NC	O/C	N/A	CM, BD, LK	CM-SI19	LK, LR, FO
2N121(2)XSI0008C	F7	2	B-1	6	GT	MO	NC	O/C	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented
1N121(2)XSI0009C	F7	1	A/C-1	6	CK	SA	NC	O/C	N/A	CM, BD, LK	CM-SI20	LK, LR, FO
1N121(2)XSI0010C	F8	1	A/C-1	8	CK	SA	NC	O/C	N/A	CM, BD, LK	CM-SI22	LK, LR, FO

Attachment 3, Unit 1 and 2 IST Valve List

SYSTEM: Safety Injection - SI

P&ID: 5N129F05015 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
2N121(2)XSI0011C	G4	2	B-1	2	D	MO	NO	O/C	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented
2N121(2)XSI0012C	G3	2	B-1	2	D	MO	NO	O/C	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented
2N121(2)XSI0013C	D3	2	B-1	2	D	MO	NO	O/C	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented
2N121(2)XSI0014C	D3	2	B-1	2	D	MO	NO	O/C	FAI	FSE, ST, PI	VRR-01	FSE, ST, PI OMN-1 when implemented
2N121(2)XSI0016C	B4	2	A-1	16	GT	MO	NC	O/C	FAI	FSE, ST, PI, LJ		FSE, ST, PI, LJ
2N121(2)XSI0018C	D4	2	A-1	8	GT	MO	NO	O/C	FAI	FSE, ST, PI, LJ		FSE, ST, PI, LJ
2N121(2)XSI0030C	D4	2	A/C-1	8	CK	SA	NC	O/C	N/A	CM, BD, LJ	CM-SI21	LJ, LJO
*N1(2)SIPSV3941	C2	2	C-1	¾	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)SIPSV3942	F6	2	C-1	¾	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

Attachment 3, Unit 1 and 2 IST Valve List

SYSTEM: Safety Injection - SI

P&ID: 5N129F05016 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
1N121(2)XSI0038A	F7	1	A/C-1	12	CK	SA	NC	O/C	N/A	CM, BD, LK	CM-SI23	LK, LR, FO
1N121(2)XSI0038B	D7	1	A/C-1	12	CK	SA	NC	O/C	N/A	CM, BD, LK	CM-SI23	LK, LR, FO
1N121(2)XSI0038C	B7	1	A/C-1	12	CK	SA	NC	O/C	N/A	CM, BD, LK	CM-SI23	LK, LR, FO
2N121(2)XSI0039A	F5	2	B-1	12	GT	MO	NO	O/C	FAI	FSE, ST, PI	CSJ-12	FSC, ST, PI
2N121(2)XSI0039B	D5	2	B-1	12	GT	MO	NO	O/C	FAI	FSE, ST, PI	CSJ-12	FSC, ST, PI
2N121(2)XSI0039C	B5	2	B-1	12	GT	MO	NO	O/C	FAI	FSE, ST, PI	CSJ-12	FSC, ST, PI
1N121(2)XSI0046A	F6	1	A/C-1	12	CK	SA	NC	O/C	N/A	CM, BD, LK	CM-SI27	LK, LR, FO
1N121(2)XSI0046B	D7	1	A/C-1	12	CK	SA	NC	O/C	N/A	CM, BD, LK	CM-SI27	LK, LR, FO
1N121(2)XSI0046C	B7	1	A/C-1	12	CK	SA	NC	O/C	N/A	CM, BD, LK	CM-SI27	LK, LR, FO

SYSTEM: Safety Injection - SI
P&ID: 5N129F05016 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*2N121(2)TSI0058 Pen. M-68A	G2	2	A/C-1	1	CK	SA	NC	O/C	N/A	FSE, LJ		CR 05-1321-123
*B1(2)SIHV0899	F2	2	B-1	1	GL	SO	NC	O/CN	FC	FSE, ST, PI, FST		CR 05-1321-75
*A1(2)SIHV0900	G2	2	B-1	1	GL	SO	NC	O/CN	FC	FSE, ST, PI, FST		CR 05-1321-76
*A1(2)SIPV3928	C4	2	B-1	1	GL	SO	NC	O/CN	FC	FSE, ST, PI, FST		CR 05-1321-74
*C1(2)SIPV3929	E4	2	B-1	1	GL	SO	NC	O/CN	FC	FSE, ST, PI, FST		CR 05-1321-74
*B1(2)SIPV3930	G4	2	B-1	1	GL	SO	NC	O/CN	FC	FSE, ST, PI, FST		CR 05-1321-74
*B1(2)SIFV3970 Pen. M-68E	F7	2	A-1	¾	GL	AO	NC	C	FC	FSE, ST, PI, FST, LJ		CR 05-1321-23
*A1(2)SIFV3971 Pen. M-68E	F7	2	A-1	¾	GL	AO	NC	C	FC	FSE, ST, PI, FST, LJ		CR 05-1321-23

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

Attachment 3, Unit 1 and 2 IST Valve List

SYSTEM: Safety Injection - SI
P&ID: 5N129F05016 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*N1(2)SIPSV3977	C4	2	C-1	1x2	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)SIPSV3980	E4	2	C-1	1x2	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*N1(2)SIPSV3981	G4	2	C-1	1x2	PRV	SA	NC	O	N/A	VE, LK, SP		CR 02-285-2
*A1(2)SIFV3983 Pen. M-68A	G2	2	A-1	1	GL	AO	NC	C	FC	FSE, ST, PI, FST, LJ		CR 05-1321-24

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

SYSTEM: Steam Generator Sludge Lancing - SL
P&ID: 5S209F05057 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*2S201(2)TSL0002	B5	2	A-2	2	GT	M	LC	C	N/A	LJ		CR 05-1321-89
*2S201(2)TSL0004	B6	2	A-2	2	GT	M	LC	C	N/A	LJ		CR 05-1321-89
*2S201(2)TSL0012	E5	2	A-2	6	GT	M	LC	C	N/A	LJ		CR 05-1321-90
*2S201(2)TSL0014	E6	2	A-2	6	GT	M	LC	C	N/A	LJ		CR 05-1321-90
*2S201(2)TSL0027	G6	2	A-2	6	GT	M	LC	C	N/A	LJ		CR 05-1321-90
*2S201(2)TSL0029	G5	2	A-2	6	GT	M	LC	C	N/A	LJ		CR 05-1321-90

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

Attachment 3, Unit 1 and 2 IST Valve List

SYSTEM: Liquid Waste Processing - WL

P&ID: 5R309F05022 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
*2R301(2)TWL0312 Pen. M-56	E3	2	A-1	3	GT	MO	NO	C	FAI	FSE, ST, PI, LJ		CR 05-1321-58
*B1(2)WLFV4913 Pen. M-56	F3	2	A-1	3	GL	AO	NO	C	FC	FSE, ST, PI, FST, LJ		CR 05-1321-27
*B1(2)WLFV4919 Pen. M-30	G6	2	A-1	1	GL	AO	NO	C	FC	FSE, ST, PI, FST, LJ		CR 05-1321-26
*A1(2)WLFV4920 Pen. M-30	G6	2	A-1	1	GL	SO	NO	C	FC	FSE, ST, PI, FST, LJ		CR 05-1321-77

* These valves are EXEMPT from the Inservice Testing Program. See the corresponding Engineering Evaluation.

SYSTEM: Reactor Containment - XC
P&ID: 5C269F05060 #1(#2)

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
2C261(2)XXC0013	F6	2	C-1	1	CK	SA	NC	C	N/A	FSE	PP6.1∅	FSE
2C261(2)XXC0014	F5	2	C-1	1	CK	SA	NC	C	N/A	FSE	PP6.1∅	FSE
2C261(2)XXC0015	F8	2	C-1	1	CK	SA	NC	C	N/A	FSE	PP6.1∅	FSE
2C261(2)XXC0016	F7	2	C-1	1	CK	SA	NC	C	N/A	FSE	PP6.1∅	FSE
2C261(2)XXC0018	E5	2	A-2	1	BL	M	NC	C	N/A	LJ	PP6.1∅	LJ
2C261(2)XXC0019	E5	2	A-2	1	BL	M	NC	C	N/A	LJ	PP6.1∅	LJ
2C261(2)XXC0021	E8	2	A-2	1	BL	M	NC	C	N/A	LJ	PP6.1∅	LJ
2C261(2)XXC0022	E8	2	A-2	1	BL	M	NC	C	N/A	LJ	PP6.1∅	LJ
2C261(2)XXC0048	C7	2	A/C-1	1	CK	SA	NC	O/C	N/A	FSE, LJ		FSE, LJ
2C261(2)XXC0049	C7	2	A/C-1	1	CK	SA	NC	O/C	N/A	FSE, LJ		FSE, LJ
A1(2)XCFV1025	G4	2	A-1	½	GL	SO	NO	C	FC	FSE, ST, PI, FST, LJ		ST, PI, LJ
A1(2)XCFV1026	F4	2	A-1	½	GL	SO	NO	C	FC	FSE, ST, PI, FST, LJ		ST, PI, LJ
A1(2)XCFV1027	C4	2	A-1	½	GL	SO	NO	C	FC	FSE, ST, PI, FST, LJ		ST, PI, LJ
A1(2)XCFV1028	C4	2	A-1	½	GL	SO	NO	C	FC	FSE, ST, PI, FST, LJ		ST, PI, LJ

∅ Technical Specification 4.6.1.3

SYSTEM: Reactor Containment - XC
P&ID:

Valve TPNS Number	Grid Coor	Code Class	Valve Cat	Valve Size	Valve Type	Valve Act	Normal Position	Safety Position	Fail Position	Required Tests	Relief Requests	Tests Performed
2C501(2)XXC0060		2	A-2	1	BL	M	NC	C	N/A	LJ	PP6.1∩	LJ
2C501(2)XXC0061		2	A-2	1	BL	M	NC	C	N/A	LJ	PP6.1∩	LJ
2C501(2)XXC0070		2	A-2	1	BL	M	NC	C	N/A	LJ	PP6.1∩	LJ
2C501(2)XXC0071		2	A-2	1	BL	M	NC	C	N/A	LJ	PP6.1∩	LJ

∩ Note 8 – Skid Mounted Component tested with the Auxiliary Air Lock Testing required by Technical Specifications

ATTACHMENT 4

Cold Shutdown Justifications

Cold Shutdown Justification Index

Number	Components
CSJ-01	CVFV0011, CV0025, CVFCV0205, CV0465, CV0468
CSJ-02	CV0112B, CV0113A
CSJ-03	CVLV3119
CSJ-04	CV0224, CV0707
CSJ-05	FWFV7141, FWFV714, FWFV7143, FWFV7144
CSJ-06	FWFV7189, FWFV7190, FWFV7191, FWFV7192
CSJ-07	HC0007, HC0008, HC0009, HC0010
CSJ-08	MSFSV7414, MSFSV7424, MSFSV7434, MSFSV7444
CSJ-09	Not Used
CSJ-10	RH0060A/B/C, RH0061A/B/C
CSJ-11	RHHCV0864, RHHCV0865, RHHCV0866, SIFCV0851, SIFCV0852, SIFCV0853
CSJ-12	SI0039A/B/C
CSJ-13	1R142XRC0001A (Unit #1 Only)

CSJ No.: CSJ-01

System: Chemical and Volume Control (CV)

Valve ID: C1(2)CVFV0011, 2R171(2)XCV0025, A1(2)CVFCV0205, 1R171(2)XCV0465, and 1R171(2)XCV0468

Valve Category: B-1 and A-1

Valve Function: C1(2)CVFV0011, 2R171(2)XCV0025 have a closed safety function to isolate the letdown line or charging line in response to a Containment Phase A signal.

2R171(2)XCV0025 is a containment isolation valve and has a closed safety function to maintain containment integrity.

In addition to the above closed safety function, 2R171(2)XCV0025 also has an open safety function to provide a flow path to the RCS for boron and water inventory control once the Phase A signal has been reset.

A1(2)CVFCV0205 has an open safety function to provide a flow path to the RCS for boron and water inventory control.

1R171(2)XCV0465 and 1R171(2)XCV0468 have a closed safety function to isolate the letdown line in response to a pressurizer low level signal to maintain the RCS pressure boundary integrity.

Code Required Tests: ISTC-3510, "Exercise Test Frequency", requires that each active Category A, Category B, and Category C check valve be exercised nominally every 3 months.

Basis for Deferral: The operability testing (full stroke open and closed exercise) of these valves during normal power operation would require a momentary interruption of letdown and charging flow. Failure of any of these components in the closed position or interruptions to the letdown and charging flow has the potential to cause perturbations in RCS pressure and level control and could result in a plant shutdown. Isolation of letdown or charging during normal power operation would result in thermal shock and possible damage to the Regenerative Heat Exchanger and the Letdown Heat Exchanger.

Alternate Testing: These valves will be tested (full stroke open and closed exercise) at each cold shutdown not to exceed once every three months per the requirements of ISTC-3521(c)

CSJ No.: CSJ-02

System: Chemical and Volume Control (CV)

Valve ID: 2R171(2)XCV0112B and 2R171(2)XCV0113A

Valve Category: B-1

Valve Function: Valves 2R171(2)XCV0112B and 2R171(2)XCV0113A have a closed safety function to switch charging pump suction from the VCT to the RWST in response to a SI signal coincident with an open signal from the RWST isolation valves, MOV-0112C and MOV-0113B.

Code Required Tests: ISTC-3510, "Exercise Test Frequency", requires that each active Category A, Category B, and Category C check valve be exercised nominally every 3 months.

Basis for Deferral: The operability testing (full stroke close exercise) of valves 2R171(2)XCV0112B and 2R171(2)XCV0113A during normal power operation would require opening the RWST isolation valves to ensure charging pump suction is not lost. Opening the RWST isolation valves would affect the boron concentration of the RCS and cause an undesirable plant power transient.

Alternate Testing: Valves 2R171(2)XCV0112B and 2R171(2)XCV0113A will be tested (full stroke close exercise) at each cold shutdown not to exceed once every three months per the requirements ofISTC-3521(c).

CSJ No.: CSJ-03

System: Chemical and Volume Control (CV)

Valve ID: N1(2)CVLV3119

Valve Category: B-1

Valve Function: This valve has an open safety function to provide auxiliary spray to the pressurizer to stabilize RCS pressure and collapse the pressurizer steam bubble.

Valve N1(2)CVLV3119 also has a passive closed safety function to maintain the RCS pressure boundary integrity.

Code Required Tests: ISTC-3510, "Exercise Test Frequency", requires that each active Category A, Category B, and Category C check valve be exercised nominally every 3 months.

Basis for Deferral: The operability testing (full stroke open and close exercise) of these valves during normal power operation would subject the pressurizer auxiliary spray nozzle to cold water and could possibly thermal shock the nozzle. The introduction of the cold spray water into the pressurizer at power would create an undesired transient.

Alternate Testing: This valve will be tested (full stroke open and close exercise) at each cold shutdown not to exceed once every three months per the requirements of ISTC-3521(c).

CSJ No.: CSJ-04

System: Chemical and Volume Control (CV)

Valve ID: 2R171(2) XCV0224,

2R171(2)TCV0707

Valve Category: C-1

Valve Function: These valves have an open safety function to provide an emergency boration or an emergency alternate boration flow path to the RCS via the suction of the charging pumps.

Code Required Tests: ISTC-3510, "Exercise Test Frequency", requires that each active Category A, Category B, and Category C check valve be exercised nominally every 3 months.. ISTC-3522(a) requires that each check valve be exercised or examined in a manner that verifies obturator travel to the closed and open position required to fulfill its function.

Basis for Deferral: The operability testing (full stroke open exercise) of these valves during normal power operation would affect boron concentration in the RCS and cause an undesirable plant power transient and possible plant shutdown.

Alternate Testing: These valves will be tested (full stroke open exercise) at each cold shutdown not to exceed once every three months per the requirements of ISTC-3522(b).

CSJ No.: CSJ-05

System: Feedwater (FW)

Valve ID: A1(2)FWFV7141, A1(2)FWFV7142, A1(2)FWFV7143, and A1(2)FWFV7144

Valve Category: B-1

Valve Function: These valves have a closed safety function to stop feedwater flow to their respective steam generator upon receipt of a SG high-high level, low steam line pressure, safety injection initiation signal, a reactor trip in conjunction with low average reactor coolant system temperature, or an excessive cooldown signal.

Code Required Tests: ISTC-3510, "Exercise Test Frequency", requires that each active Category A, Category B, and Category C check valve be exercised nominally every 3 months.

Basis for Deferral: The operability testing (full stroke close exercise) of these valves during normal power operation would require an interruption of feedwater flow to the steam generators. Isolation of feedwater flow during normal power operation would cause an undesirable power transient and could possibly cause a turbine/reactor trip. The partial stroke exercise of these valves is undesirable because of the increased risk of a valve closure and subsequent plant transient. Any possible benefit from performing a partial stroke of these valves at power is outweighed by the increased risk of closing the valves and challenging plant systems. This position is consistent with NUREG-1482, Rev.1, Section 4.2.6. (ref. CR 02-10007, NOC-NOC-02007695)

Alternate Testing: These valves will be full-stroke close exercise tested at each cold shutdown not to exceed once every three months per the requirements of ISTC-3521(c).

CSJ No.: CSJ-06

System: Feedwater (FW)

Valve ID: A1(2)FWFV7189, A1(2)FWFV7190, A1(2)FWFV7191, and A1(2)FWFV7192

Valve Category: B-1

Valve Function: These valves have a closed safety function to stop feedwater flow to their respective steam generator upon receipt of a SG high-high level, safety injection initiation signal, or a reactor trip in conjunction with low average reactor coolant system temperature.

Code Required Tests: ISTC-3510, "Exercise Test Frequency", requires that each active Category A, Category B, and Category C check valve be exercised nominally every 3 months.

Basis for Deferral: The operability testing (full stroke close exercise) of these valves during normal power operation would require injecting Main Feedwater through the cooler Auxiliary Feedwater lines into the steam generator. Injecting the cooler water existing in the auxiliary feedwater lines followed immediately by the hotter Main Feedwater flow would cause thermal shock and possible damage to the Auxiliary Feedwater nozzles at the steam generator boundary.

Alternate Testing: These valves will be full-stroke close exercise tested at each cold shutdown not to exceed once every three months per the requirements of ISTC-3521 (c).

CSJ No.: CSJ-07

System: Reactor Containment Purge (HC)

Valve ID: 2V141(2)ZHC0007, 2V141(2)ZHC0008, 2V141(2)ZHC0009, and 2V141(2)ZHC0010

Valve Category: A-1

Valve Function: These valves have a leak tight, closed safety function to maintain containment integrity in response to a Phase A Containment Isolation signal.

Code Required Tests: ISTC-3510, "Exercise Test Frequency", requires that each active Category A, Category B, and Category C check valve be exercised nominally every 3 months.

Basis for Deferral: The 48 inch Containment Purge valves are required by Technical Specifications to be sealed closed during normal power operation.

Alternate Testing: These valves will be full-stroke close exercise tested at each cold shutdown not to exceed once every three months per the requirements of ISTC-3521(c).

CSJ No.: CSJ-08

System: Main Steam (MS)

Valve ID: A1(2)MSFSV7414, A1(2)MSFSV7424, A1(2)MSFSV7434, and A1(2)MSFSV7444

Valve Category: B-1

Valve Function: These valves have a closed safety function in response to a low steam line pressure, high negative steam line pressure rate, or a high containment pressure signal to prevent more than one steam generator from blowing down in the event of a main team line or feedwater line break, prevent containment over-pressurization from reverse flow due to a steam line break inside containment, and provide for isolation of the secondary side of the steam generators in the event of leakage (SGTR) or malfunctions (MSLB or FWLB) and to isolate non safety-related portions of the system.

Code Required Tests: ISTC-3510, "Exercise Test Frequency", requires that each active Category A, Category B, and Category C check valve be exercised nominally every 3 months.

Basis for Deferral: The operability testing (full stroke close exercise) of these valves during normal power operation would isolate main steam flow from the steam generators which would result in a severe transient to the steam generator causing a plant trip. The partial stroke test circuitry of these valves is not fault-tolerant and the failure of a single limit switch or solenoid valve could result in the MSIV stroking completely shut. The partial stroke exercise of these valves is undesirable because of the increased risk of a valve closure and subsequent plant transient. Any possible benefit from performing a partial stroke of these valves at power is outweighed by the increased risk of closing the valves and challenging plant systems. This position is consistent with NUREG-1482, Rev.1, Section 4.2.6.

Alternate Testing: These valves will be full-stroke close exercised, stroke timed, and their fail-safe actuation verified at each cold shutdown not to exceed once every three months per the requirements of ISTC-3521(c).

CSJ No.: CSJ-09 Not Used

CSJ No.: CSJ-10

System: Residual Heat Removal (RH)

Valve ID: 1R161(2)XRH0060A, 1R161(2)XRH0060B, 1R161(2)XRH0060C, 1R161(2)XRH0061A, 1R161(2)XRH0061B, and 1R161(2)XRH0061C

Valve Category: A-1

Valve Function: These valves have a leak tight, closed safety function to maintain RCS pressure boundary integrity. These valves also have an open safety function to allow a safety grade cold shutdown of the RCS following a SGTR, SBLOCA, MSLB, or FWLB accident condition.

Code Required Tests: ISTC-3510, "Exercise Test Frequency", requires that each active Category A, Category B, and Category C check valve be exercised nominally every 3 months.

Basis for Deferral: The operability testing (full stroke open exercise) of these valves during normal power operation can not be accomplished since these valves are interlocked with RCS pressure and can not be opened when RCS pressure is greater than 350 psig.

Alternate Testing: These valves will be stroke time tested (full stroke open and close exercise) at each cold shutdown not to exceed once every three months per the requirements of ISTC-3521(c).

CSJ No.: CSJ-11

System: Residual Heat Removal (RH)

Valve ID: A1(2)RHHCV0864, B1(2)RHHCV0865, C1(2)RHHCV0866, A1(2)SIFCV0851, B1(2)SIFCV0852, and C1(2)SIFCV0853

Valve Category: B-1

Valve Function: Valves A1(2)SIFCV0851, B1(2)SIFCV0852, and C1(2)SIFCV0853 have a closed safety function to ensure flow through the RHR Heat Exchanger during safety injection and long term recirculation.

Valves A1(2)RHHCV0864, B1(2)RHHCV0865, and C1(2)RHHCV0866 have an open safety function to ensure flow through the RHR Heat Exchanger and allow a safety grade cold shutdown of the RCS following a SGTR, SBLOCA, MSLB, or FWLB accident condition.

Code Required Tests: ISTC-3510, "Exercise Test Frequency", requires that each active Category A, Category B, and Category C check valve be exercised nominally every 3 months. **Basis for Deferral:** These valves are normally inaccessible during power operation. The operability testing (full stroke exercise) of these valves during normal power operation will require lifting electrical leads to ensure repeatable stroke times since the valves are normally controlled via a controller and not a handswitch.

Alternate Testing: Valves A1(2)SIFCV0851, B1(2)SIFCV0852, and C1(2)SIFCV0853 will be tested (full stroke close exercise) at each cold shutdown not to exceed once every three months per the requirements of ISTC-3521 (c).

Valves A1(2)RHHCV0864, B1(2)RHHCV0865, and C1(2)RHHCV0866 will be tested (full stroke open exercise) at each cold shutdown not to exceed once every three months per the requirements of ISTC-3521 (c).

CSJ No.: CSJ-12

System: Safety Injection (SI)

Valve ID: 2N121(2)XSI0039A, 2N121(2)XSI0039B, and 2N121(2)XSI0039C

Valve Category: B-1

Valve Function: These valves have an open safety function to provide a source of borated water to the RCS cold legs when the RCS pressure falls below the accumulator pressure. These valves also have a closed safety function to demonstrate the ability of the plant to achieve safety grade cold shutdown utilizing RHR.

Code Required Tests: ISTC-3510, "Exercise Test Frequency", requires that each active Category A, Category B, and Category C check valve be exercised nominally every 3 months.

Basis for Deferral: Testing these valves at power will place the plant at risk due to the possibility of these valves failing to reopen following the full stroke exercise. These motor operated accumulator isolation valves are required by technical specifications to be in the open position with power removed from their operator during Modes 1, 2, or 3 with pressurizer pressure above 1000 psig. Exercising these valves will require power to be restored to the motor operator. Failure of the breaker to function after testing or the valve to reopen after the stroke of the valve to the closed position would render the accumulator inoperable and place the plant in a 12 hour LCO. The trending of the valve's performance on a cold shutdown frequency will be sufficient to ensure that any valve degradation will be detected.

Alternate Testing: Per the requirements of ISTC-3521(c), these valves will be open and close exercised at each cold shutdown not to exceed once every three (3) months.

CSJ No.: CSJ-13

System: Reactor Coolant System (RC)

Valve ID: 1R142XRC0001A DESCRIPTION: RC PRZR PORV ISOL VLV

Valve Category: B-1

Valve Function: This valve closes to preserve the integrity of the reactor coolant pressure boundary and facilitates safe shutdown in the event a PORV becomes inoperative or experiences excessive leakage.

Code Required Tests: ISTC-3510, "Exercise Test Frequency", requires that each active Category A, Category B, and Category C check valve be exercised nominally every 3 months.

Basis for Deferral: The block valve is exercised with no differential pressure across the valve in the normal plant configuration. In the existing condition (ref. CR 04-6255) or in any situation when the block valve is closed, there is a differential pressure across the valve. Opening the valve will subject the downstream PORV to a sudden increase in pressure. The PORV is opened with a pressure-assisted pilot valve. The pilot valve will open when the pressure is increased when the block valve is opened. The PORV may also open partially. Stroking the block valve at power poses a challenge to the RCS pressure boundary since the PORV will most likely open due to the design of the valve.

Alternate Testing: Per the requirements of ISTC-3521(c), the block valve will be open and close exercised at each cold shutdown not to exceed once every three (3) months whenever a PORV block valve is closed.

ATTACHMENT 5

Refueling Outage Justifications

Refueling Outage Justification Index

Number	Components
ROJ-01	CV0033A/B/C/D
ROJ-02	CCFV4620, CCFV4421, CCFV4626, CCFV4627, CCFV4632, CCFV4633, CCFV4638, CCFV4639
ROJ-03	CV0003, CV0006
ROJ-04	RCHCV0601, RCHCV0602, RCHV3657A/B, RCHV3658A/B

ROJ No.: ROJ-01

System: Chemical and Volume Control (CV)

Valve ID: 2R171(2)TCV0033A, 2R171(2)TCV0033B, 2R171(2)TCV0033C, and 2R171(2)TCV0033D

Valve Category: A-1

Valve Function: These valves have a closed safety function to provide containment integrity in response to a Containment Phase A signal coincident with a charging header low pressure signal. These valves also have a passive open safety function to provide an alternate flow path to the RCS for boron control.

Code Required Tests: ISTC-3510, "Exercise Test Frequency", requires that each active Category A, Category B, and Category C check valve be exercised nominally every 3 months.

Basis for Deferral: Valves 2R171(2) TCV0033A, B, C, and D supply clean, cool water to the RCP seals providing lubrication, cooling, and pressurization of the pump seals. The operability testing (full stroke exercise) of these valves during normal power operation would require a momentary interruption of seal flow to the RCP seals. Failure of any of these components in the closed position while stroking the valve could significantly reduce seal life and possibly cause a plant outage.

NUREG 1482, Rev.1, Section 3.1.1.4, states that testing should be performed when RCPs can be stopped. All RCPs are not stopped unless the Reactor Coolant System is cooled and vented which is during Refueling Outages.

Alternate Testing: These valves will be tested (full stroke exercise) at each refueling outage per the requirements of ISTC-3521(e).

ROJ No.: ROJ-02

System: Component Cooling Water (CC)

Valve ID: N1(2)CCFV4620, N1(2)CCFV4621, N1(2)CCFV4626, N1(2)CCFV4627, N1(2)CCFV4632, N1(2)CCFV4633, N1(2)CCFV4638, and N1(2)CCFV4639

Valve Category: C-1

Valve Function: These valves are normally open and remain open to provide a CCW return flow path from the RCP thermal barrier Heat exchanger. These valves have a closed safety function to prevent over-pressurization of the CCW system in the event of a failure of the thermal barrier.

These valves are normally open, cylinder actuated, self-regulated globe valves. The process water is used as the input signal to the actuator. The valves start to close when the pressure of the process water reaches 120 psig. The valves are fully closed, but not seated at 150 psig. The valves shut off at a pressure of over 200 psig.

Code Required Tests: ISTC-3510, "Exercise Test Frequency", requires that each active Category A, Category B, and Category C check valve be exercised nominally every 3 months.

Basis for Deferral: The operability testing (full stroke open and closed exercise) of these valves during normal power operation requires isolating the CCW flow to the RCP thermal barrier heat exchanger. Isolating cooling water flow to the thermal barrier during RCP operation could cause a failure of the thermal barrier and a subsequent leak of the RCS into the CCW system. NUREG 1482, Rev.1, Section 3.1.1.4, states that testing should be performed when RCPs can be stopped. All RCPs are not stopped unless the Reactor Coolant System is cooled and vented which is during Refueling Outages.

Alternate Testing: These valves will be tested (full stroke open, fail safe open, close exercised and setpoint tested) at each refueling outage per the requirements of ISTC-3521(e).

ROJ No.: ROJ-03

System: Chemical and Volume Control (CV)

Valve ID: 2R171(2)XCV0003, 2R171(2)XCV0006

Valve Category: B-1

Valve Function: 2R171(2)XCV0003 and 2R171(2)XCV0006 have an open safety function to provide 190 gpm using the RWST or 30 gpm from the BAT for RCS boron and water inventory control for safe shutdown. These valves also have a closed safety function to mitigate a high energy line break.

Code Required Tests: ISTC-3510, "Exercise Test Frequency", requires that each active Category A, Category B, and Category C check valve be exercised nominally every 3 months.

Basis for Deferral: The operability testing (full stroke exercise) of power operated valves 2R171(2)XCV0003 and 2R171(2)XCV0006 during normal power operation requires alternating between the normal and alternate charging headers. Alternating charging headers at power would cause thermal shock and possible damage to the charging nozzles at the reactor coolant system boundary.

Alternate Testing: Valves 2R171(2)XCV0003 and 2R171(2)XCV0006 will be tested (full stroke open and closed exercised) at each refueling outage per the requirements of ISTC-3521(e).

ROJ No.: ROJ-04

System: Reactor Coolant (RC)

Valve ID: A1(2)RCHCV0601, B1(2)RCHCV0602, A1(2)RCHV3657A, B1(2)RCHV3657B, A1(2)RCHV3658A, and B1(2)RCHV3658B

Valve Category: B-1

Valve Function: These valves have a closed safety function to preclude a LOCA (Regulatory Guide 1.139 requirements). They also have an open safety function to vent steam and non-condensable gases from the reactor vessel head following a LOCA and to provide a safety grade letdown flow path to the PRT allowing the plant can achieve a safe shutdown condition.

Code Required Tests: ISTC-3510, "Exercise Test Frequency", requires that each active Category A, Category B, and Category C check valve be exercised nominally every 3 months..

Basis for Deferral: The head vent valves (hydraulic assisted, pilot-operated) and head vent block valves are normally closed during power operation. The operability testing (full stroke exercise) of these valves during normal power operation these valves exhibit a characteristic or phenomenon called burping. Burping occurs when the inboard valves are stroked open with the downstream valves closed. The downstream valves provide indications of opening during this phenomenon. This burping characteristic can continue for a period of up to 40 seconds and may over-pressurize the downstream piping.

Restrictions on head vent piping require venting to be performed at RCS pressures of less than 100 psig and less than 200 degrees Fahrenheit This in turn mandates that the RCPs be secured to prevent seal damage. NUREG 1482, Rev.1, Section 3.1.1.4, states that testing should be performed when RCPs can be stopped. All RCPs are not stopped unless the Reactor Coolant System is cooled and vented which is during Refueling Outages.

Alternate Testing: These valves will be full-stroke open and closed exercised, stroke timed, and their fail-safe actuation verified at each refueling outage not to exceed once every three months per the requirements of ISTC-3521(e).

ATTACHMENT 6

Condition Monitoring Plans

CM-AF01 Rev.: 0 System: AF
IST Group: AF01 Check Valve Groups: 1AF03 and 2AF03
Valves: 2S141TAF0119, 2S141TAF0120, 2S141TAF0121, & 2S141TAF0122
2S142TAF0119, 2S142TAF0120, 2S142TAF0121, & 2S142TAF0122

IST Functions: 1. Open to allow 500 gpm (per Technical Specification 4.7.1.2.1) of auxiliary feedwater flow to Steam Generator.

Remarks:: These valves normally allow AFW flow to the SGs or FW to the SGs when utilizing the FW cross-connect during low load operations. The AFWS will be in operation during the normal operating modes of filling the steam generators, startup, shutdown, and hot standby. In addition, the AFWS is used as the normal supply of water to the steam generator during cooldown when the RCS temperature is above 350°F. The Auxiliary Feedwater Storage Tank (AFST) water quality will comply with the chemistry control requirements.

Condition Monitoring Discussion: Failure patterns - Brittle fracture of material, and normal wear causing leakage or improper seating

Expected failure modes - Leaking or improper seating.

Past failure causes - Debris and wear on the hinge pin roll pin.

Valves see very little use and therefore will be subject to minimal wear. Engineering analysis has estimated wear life at over 300 years based on current system design.

The SOER 86-03 program has performed several tests on valves in this group using non-intrusive testing (NIT). The NIT includes steady state flow during filling operations for the Steam Generators and a closure test. Performing analysis on the steady state and closure can determine the health of the valve. Analysis of the acoustic signals will include a comparison with previous testing results to evaluate a change in the quantity and magnitude of metal to metal impacts (rattles and rubs). Degradation in the valves cannot be quantitatively measured, however, the presence of an increase in looseness in the valves will be a leading indicator to allow disassembly and inspection prior to valve failure.

The bi-directional functionality of the valves will be shown during the non-intrusive testing since flow to the S/Gs will be indicated by the level increase in the S/G associated with the valve being tested. The close impact will be indicated by acoustic signal upon cessation of flow through the valve.

Testing Requirements: Perform open verification during the non-intrusive (acoustic) test at a consistent repeatable steady state flow rate. Analysis of the acoustic signals at the steady state flow condition will be used to monitor the condition of the valves. A closure test will also be performed during the NIT. Bi-directional functionality will be satisfied during the test sequence. Indication of increased valve looseness (rattles and rubs) will determine need to open and inspect the check valves.

Frequency Initial testing will start by performing a baseline test. The test frequency may be stepped out to every 18 months or 1R for one valve in the group following baseline. Test frequency extensions will be allowed based on the evaluation of the quantity and magnitude of (rattles and rubs) acoustic signals.

CM-AF02 Rev.: 0 System: AF
IST Group: AF02 Check Valve Groups: 1AF02 and 2AF02

Valves: 2S141TAF0019, 2S141TAF0085, 2S141TAF0048, & 2S141TAF0065
2S142TAF0019, 2S142TAF0085, 2S142TAF0048, & 2S142TAF0065

IST Functions: 1. Open upon receipt of: A. steam generator low water level, B. low feedwater flow signal from AMSAC, or C. SI initiation signal to allow 500 gpm (per Technical Specification 4.7.1.2.1) flow to Steam Generator.
NOTE: The ESF actuation signal allows the stop check valve to function normally through the self-actuating design of the check valve. Operation of the motor operator function is not required for the valve to fulfill its open safety function.
2. Close (remote manual) for Steam Generator isolation in response to SGTR, FWLB, and MSLB.

Remarks:: Normally closed stop check valve. There are 3 check valves in the line, affording much redundancy for the closing function. There are 4 available flowpaths leading to 4 steam generators. 2 of 4 trains required for immediate response. 1 train is required for long term decay heat removal.

Condition Monitoring Discussion: Failure patterns – Leaking
Expected failure modes - Leaking, or improper seating.
Past failure causes -Normal wear
These valves are currently being tested in the open direction during system testing at cold shutdown. Closure testing is required to verify bi-directional functionality of these valves.
Computerized radiography provides clear pictures of the valve internals. The condition of the valve can be evaluated without disassembly. The amount of misalignment of the valve disc on the seat as well as actual measurements of valve internals to determine wear rates will result in the early detection of the onset of degradation in these valves. Preventive maintenance can then be scheduled and performed prior to failure. This inspection process can also verify that the valves are in the closed position to satisfy the bi-directional functionality testing requirement. It also should be noted that this type of valve when radiography is used may be found in the slightly open position if sufficient DP is not applied. This situation does not mean that the valve is not performing its intended function. Acoustic testing is an equal test if Computed radiography is not performed.

Testing Requirements: Perform open verification during the non-intrusive (acoustic) test at a consistent repeatable steady state flow rate. Analysis of the acoustic signals at the steady state flow condition will be used to monitor the condition of the valves. A closure test will also be performed during the NIT. Bi-directional functionality will be satisfied during the test sequence. Indication of increased valve looseness (rattles and rubs) will determine need to open and inspect the check valves. As an alternative to the non-intrusive acoustic test, inspection of these valves may be performed using computerized radiography. Flow through the valve during normal operation or system/pump testing will be credited on the same frequency as the inspection. These testing activities will confirm the bi-directional functionality of these valves.

Frequency Initial testing will start by performing a baseline test. The test frequency may be

stepped out per procedure requirements following baseline. Test frequency extensions will be allowed based on the evaluation of the quantity and magnitude of (rattles and rubs) acoustic signals or based on acceptable trending of disc alignment and/or hinge pin wear.

CM-AF07 Rev.: 0 System: AF

IST Group: AF07 Check Valve Groups: 1AF01 and 2AF01

Valves: 3S141TAF0011, 3S141TAF0036, 3S141TAF0058, & 3S141TAF0091
3S142TAF0011, 3S142TAF0036, 3S142TAF0058, & 3S142TAF0091

IST Functions: 1. Open to allow a minimum flow of 100 - 130 gpm (per Aux Feedwater DBD 4.1.2.1) from the AFW pump in recirculation to the AFST and a flow of 550 - 640 gpm (per Aux Feedwater DBD 4.1.2.2) from the AFW pump to the steam generator.

Remarks:: There are 4 available flowpaths leading to 4 steam generators. There is high redundancy of flowpaths. 2 of 4 trains required for immediate response. 1 train is required for long term decay heat removal.

Condition Monitoring Discussion: Failure patterns – Leaking, stuck open, stuck closed, stuck mid position and binding
Expected failure modes - Stuck open/closed/mid-position or degraded seats (leaking).
Past failure causes - Debris, corrosion, improper water chemistry, not seating due to wear (guides and seats), wear in the pilot, and degraded seats.
These valves are currently being tested in the open direction during system/pump testing. Closure testing is required to verify bi-directional functionality of these valves.

Computerized radiography provides clear pictures of the valve internals. The condition of the valve can be evaluated without disassembly. The amount of misalignment of the valve disc on the seat as well as actual measurements of valve internals to determine wear rates will result in the early detection of the onset of degradation in these valves. Preventive maintenance can then be scheduled and performed prior to failure. This inspection process can also verify that the valves are in the closed position to satisfy the bi-directional functionality testing requirement
Acoustic testing may be substituted as an equal testing method.

Testing Requirements: Perform open verification during the non-intrusive (acoustic) test at a consistent repeatable steady state flow rate. Analysis of the acoustic signals at the steady state flow condition will be used to monitor the condition of the valves. A closure test will also be performed during the NIT. Bi-directional functionality will be satisfied during the test sequence. Indication of increased valve looseness (rattles and rubs) will determine need to open and inspect the check valves. As an alternative to the non-intrusive acoustic test, inspection of these valves may be performed using computerized radiography. Flow through the valve during normal operation or system/pump testing will be credited on the same frequency as the inspection. These testing activities will confirm the bi-directional functionality of these valves.

Frequency Initial testing will start by performing a baseline test. The test frequency may be stepped out per procedure requirements following baseline. Test frequency extensions will be allowed based on the evaluation of the quantity and magnitude of (rattles and rubs) acoustic signals or based on acceptable trending of disc alignment and/or hinge

pin wear.

CM-AF08 Rev.: 0 System: AF

IST Group: AF08 Check Valve Groups: 1MS02 and 2MS02

Valves: 2S141TMS0143, 2S142TMS0143

IST Functions:
1. Open (normally open) to allow steam flow to the AFW pump turbine trip/throttle valve in the event of a Lo-Lo S/G water level, SI initiation signal, or an AMSAC signal. The open self-actuating portion of this valve is a passive function since it is normally held open by the motor function of the valve and receives a confirmatory open signal from ESF Actuation.
2. Close (remote manual) to prevent a leak path following a SGTR.

Remarks::
Valve is normally open.
There are 4 available flowpaths leading to 4 steam generators. 2 of 4 trains required for immediate response. 1 train is required for long term decay heat removal. Pump provides decay heat removal during SBO.

Condition Monitoring Discussion:
Failure patterns – Leaking
Expected failure modes - Leaking, or improper seating.
Past failure causes - Normal wear
These valves are currently being tested in the open direction during system/pump testing. Closure testing is required to verify bi-directional functionality of these valves. Computerized radiography provides clear pictures of the valve internals. The condition of the valve can be evaluated without disassembly. The amount of misalignment of the valve disc on the seat as well as actual measurements of valve internals to determine wear rates will result in the early detection of the onset of degradation in these valves. Preventive maintenance can then be scheduled and performed prior to failure. This inspection process can also verify that the valves are in the closed position to satisfy the bi-directional functionality testing requirement. It also should be noted that this type of valve when radiography is used may be found in the slightly open position if sufficient DP is not applied. This situation does not mean that the valve is not performing its intended function. Acoustic testing may be substituted as an equal testing method.

Testing Requirements:
Perform open verification during the non-intrusive (acoustic) test at a consistent repeatable steady state flow rate. Analysis of the acoustic signals at the steady state flow condition will be used to monitor the condition of the valves. A closure test will also be performed during the NIT. Bi-directional functionality will be satisfied during the test sequence. Indication of increased valve looseness (rattles and rubs) will determine need to open and inspect the check valves. As an alternative to the non-intrusive acoustic test, inspection of these valves may be performed using computerized radiography. Flow through the valve during normal operation or system/pump testing will be credited on the same frequency as the inspection. These testing activities will confirm the bi-directional functionality of these valves.

Frequency
Initial testing will start by performing a baseline test. The test frequency may be

stepped out per procedure requirements following baseline. Test frequency extensions will be allowed based on the evaluation of the quantity and magnitude of (rattles and rubs) acoustic signals or based on acceptable trending of disc alignment and/or hinge pin wear.

CM-CC26 Rev.: 0 System: CC
IST Group: CC26 Check Valve Groups: 1CC02 and 2CC02

Valves: 3R201TCC0051, 3R201TCC0131, & 3R201TCC0191
3R201TCC0051, 3R201TCC0131, & 3R201TCC0191

IST Functions:
1. Close on reverse flow to ensure CCW Train separation.
2. Open to provide return flow path from the RCP thermal barrier heat exchangers, bearing lube oil coolers, and motor air coolers to the CCW Train A pump if it is operating for accident conditions per DBD 4.1.4.5.

Remarks:: The closing function of these valves is redundant to the function of upstream MOVs. Check valves are considered to be more reliable to close. In the case of flow diversion, there are supply MOVs and supply check valves, so the plant would isolate the supply. In the case of the opening function, there are 3 trains. STP typically runs one train, therefore, the plant only requires one set of valves).

Condition Monitoring Discussion: Failure patterns – Most of these failures were due to corrosion and debris in the system with dirty water causing leakage. Other failures included wearing of the hinge pin (in most cases normal wear), corrosion or damaged seating, and sticking open.
Expected failure modes - Leaking, improper seating, and stuck open.
Past failure causes - Debris, corrosion, broken springs & damaged seats.
The SOER 86-03 program has performed many tests on valves in this group using non-intrusive testing (NIT). The NIT includes steady state flow during normal system operation and a closure test. Performing analysis on the steady state and closure can determine the health of the valve. Analysis of the acoustic signals will include a comparison with previous testing results to evaluate a change in the quantity and magnitude of metal to metal impacts (rattles and rubs). Degradation in the valves cannot be quantitatively measured, however, the increase in looseness in the valves will be a leading indicator to allow disassembly and inspection prior to valve failure.
The bi-directional functionality of the valves will be shown during the non-intrusive testing since flow through the check valve will be indicated by the pump operation. The close impact will be detected by acoustic signal upon cessation of flow through the valve.

Testing Requirements: Perform open verification during the non-intrusive (acoustic) test at a consistent repeatable steady state flow rate. Analysis of the acoustic signals at the steady state flow condition will be used to monitor the condition of the valves. A closure test will also be performed during the NIT. Bi-directional functionality will be satisfied during the test sequence. Indication of increase valve looseness (rattles and rubs) will determine need to open and inspect the check valves.

Frequency Baseline testing of these valves has been completed. The test frequency may be stepped out to every 18 months or 1R for one valve in the group. Test frequency extensions will be allowed based on the evaluation of the quantity and magnitude of (rattles and rubs) acoustic signals.

CM-CC27 Rev.: 0 System: CC

IST Group: CC27 Check Valve Groups: 1CC04 and 2CC04

Valves: 3R201TCC0311, 3R201TCC0313, & 3R201TCC0315
3R202TCC0311, 3R202TCC0313, & 3R202TCC0315

IST Functions: 1. Open to provide CCW flow for CVCS and SFPCCS equipment

Remarks:: The closing function of these valves is redundant to the function of upstream MOVs. Check valves are considered to be more reliable to close. In the case of flow diversion, there are supply MOVs and supply check valves, so the plant would isolate the supply. In the case of the opening function, there are 3 trains. STP typically runs one train therefore, the plant only requires one set of valves).

Condition Monitoring Discussion: Failure patterns – Most of these failures were due to corrosion and debris in the system with dirty water causing leakage. Other failures included wearing of the hinge pin (in most cases normal wear), corrosion or damaged seating, and sticking open.
Expected failure modes - Leaking, improper seating, and stuck open.
Past failure causes - Debris, corrosion, broken springs & damaged seats.
The SOER 86-03 program has performed several tests on valves in this group using non-intrusive testing (NIT). The NIT includes steady state flow during CCW pump operation and a closure test when pumps are secured. Performing analysis on the steady state and closure can determine the health of the valve. Analysis of the acoustic signals will include a comparison with previous testing results to evaluate a change in the quantity and magnitude of metal to metal impacts (rattles and rubs). Degradation in the valves cannot be quantitatively measured however, the presence of an increase in looseness in the valves will be a leading indicator to allow disassembly and inspection prior to valve failure.
The bi-directional functionality of the valves will be shown during the non-intrusive testing since flow through the valve will result from pump operation. The close impact will be detected by acoustic signal upon cessation of flow through the valve.

Testing Requirements: Perform open verification during the non-intrusive (acoustic) test at a consistent repeatable steady state flow rate. Analysis of the acoustic signals at the steady state flow condition will be used to monitor the condition of the valves. A closure test will also be performed during the NIT. Bi-directional functionality will be satisfied during the test sequence. Indication of increase valve looseness (rattles and rubs) will determine need to open and inspect the check valves.

Frequency Initial testing will start by performing a baseline test. The test frequency may be stepped out to every 18 months or 1R for one valve in the group following baseline. Test frequency extensions will be allowed based on the evaluation of the quantity and magnitude of (rattles and rubs) acoustic signals.

CM-CC29 Rev.: 0 System: CC

IST Group: CC29 Check Valve Groups: 1CC01 and 2CC01

Valves: 2R201TCC0013, 2R201TCC0123, 2R201TCC0183
2R202TCC0013, 2R202TCC0123, 2R202TCC0183

IST Functions: 1. Open to provide flow path for CCW through RHR pump 1(2)A seal cooler and RHR 1(2)A heat exchanger (4906 gpm required per DBD Table T-7, Minimum or Maximum Safeguards).
2. Close and leak tight (CAT A) in accordance with UFSAR commitment (Section 6.2.6.3 and Figure 6.2.4-1, Sheet 35) to provide containment integrity.

Remarks:: There are 3 trains of flow paths available, only 1 train is required. CC10 (MOVs in line) are ranked low by GQA. MOVs in line provide redundant closing function.

Condition Monitoring Discussion: Failure patterns – Failures of this type valves includes worn seats, debris, sticking open, and excessive wear on the seats.
Expected failure modes - Leaking, improper seating, and stuck open.
Past failure causes - Debris, corrosion, broken springs & damaged seats.

Presently, these valves are being tested under the Appendix J local leak rate test (LLRT) program which will provide the first indication that the valve is degrading. Open flow verification can be performed during normal operations.
Open flow verification and trending leakage (LLRT) can be used to monitor the condition of these valves and establish the bi-directional functionality. The frequency of the check valve condition monitoring testing can be stepped out to code allowable limits based on trending of the leakage rate during the LLRT. Frequency may be limited by the leakage testing requirements for Appendix J. These valves will be scheduled as independent groups to comply with the Appendix J Program requirements.

Testing Requirements: CM Testing will take credit for normal operation for a open flow verification and trend leakage data from the LLRT for monitoring the condition of the valve and verification of bi-directional functionality.

Frequency Based on past performance move out test frequency for check valve condition monitoring to the Appendix J Option B frequency pursuant to NUREG-1482, Rev.1, Section 4.4.7.

CM-CV06 Rev.: 0 System: CV
IST Group: CV06 Check Valve Groups: 1CV04 and 2CV04

Valves: 1R171TCV0036A, 1R171TCV0036B, 1R171TCV0036C, & 1R171TCV0036D
1R172TCV0036A, 1R172TCV0036B, 1R172TCV0036C, & 1R172TCV0036D
1R171TCV0037A, 1R171TCV0037B, 1R171TCV0037C, & 1R171TCV0037D
1R172TCV0037A, 1R172TCV0037B, 1R172TCV0037C, & 1R172TCV0037D

IST Functions:
1. Open to provide 8 gpm of alternate RCS boration for safe shutdown
2. Close to maintain the RCS pressure boundary integrity in the event of a seal line rupture.

Remarks:: Valve is normally open (essentially a passive function). Effectively, the valve is tested during the course of normal operation (i.e., there are no hidden failures). The valve closes when flow stops (no automatic signal) during phase A. At phase B, RCPs are not credited (large LOCA scenario). Redundant closing function provided by other check valve in series.

Condition Monitoring Discussion: Failure patterns – Leaking, debris, wearing out, and misapplied.
Expected failure modes - Corrosion and debris in the system with dirty water causing leakage. Other failures included wearing of the hinge pin (in most cases normal wear), corrosion or damaged seating, and sticking open.
Past failure causes - Debris, worn internals, manufacture defects, poor design, misapplication, improper maintenance, improper design, and corrosion.
The SOER 86-03 program has performed many tests on valves in this group using non-intrusive testing (NIT). The NIT testing includes steady state during flow to the reactor coolant pump seal package. Analysis of the steady state data and closure can determine the health of the valve. Analysis of the acoustic signals will include a comparison with previous testing results to evaluate a change in the quantity and magnitude of metal to metal impacts (rattles and rubs). Degradation in the valves cannot be quantitatively measured however, the presence of an increase in looseness in the valves will be a leading indicator to allow disassembly and inspection prior to valve failure.
The bi-directional functionality of the valves will be shown during the non-intrusive testing since flow to the RCP seals is indicated in the Control room. The close impact will be indicated by acoustic signal upon cessation of flow through the valve. Valves will be divided into two four-valve subgroups and scheduled so that both valves in one train are tested together. Subgroup A – CV36s, Subgroup B – CV37s

Testing Requirements: Perform open verification during the non-intrusive (acoustic) test at a consistent repeatable steady state flow rate. Analysis of the acoustic signals at the steady state flow condition will be used to monitor the condition of the valves. A closure test will also be performed during the NIT. Bi-directional functionality will be satisfied during the test sequence. Indication of increase valve looseness (rattles and rubs) will determine need to open and inspect the check valves.

Frequency Baseline tests have been completed for these valves. Based on previous testing history the test frequency may be stepped out to every 36 months or 2R for one valve in each subgroup. No additional test frequency extensions are allowed by the Code.

CM-CV07 Rev.: 0 System: CV
IST Group: CV07 Check Valve Groups: 1CV03 and 2CV03

Valves: 2R171TCV0034A, 2R171TCV0034B, 2R171TCV0034C, 2R171TCV0034D
2R172TCV0034A, 2R172TCV0034B, 2R172TCV0034C, 2R172TCV0034D

IST Functions: 1. Close and leak tight (CAT A) to maintain containment integrity and to provide isolation in the event of a seal line rupture.
2. Open to provide 8 gpm of alternate RCS boration for safe shutdown (CVC DBD 3.2.2.1 4).

Remarks:: Close and leak tight (CAT A) to maintain containment integrity and to provide isolation in the event of a seal line rupture. Open to provide alternate RCS boration for safe shutdown. Valve is normally open (essentially a passive function). Effectively, the valve is tested during the course of normal operation (I.e., there are no hidden failures). The valve closes when flow stops (no automatic signal) during phase A. At phase B, RCPs are not credited (large LOCA scenario). Redundant closing function performed by outboard MOV.

Condition Monitoring Discussion: Failure patterns – Leaking, debris, wearing out, and miss applied.
Expected failure modes - Corrosion and debris in the system with dirty water causing leakage. Other failures included wearing of the hinge pin (in most cases normal wear), corrosion or damaged seating, and sticking open.
Past failure causes - Debris, worn internals, manufacture defects, poor design, miss-application, improper maintenance, improper design, and corrosion.
Presently, these valves are being tested under the Appendix J local leak rate test (LLRT) program which will provide the first indication that the valve is degrading. Open flow verification can be performed during normal operations.
Open flow verification and trending leakage (LLRT) can be used to monitor the condition of these valves and establish the bi-directional functionality. The frequency of the check valve condition monitoring testing can be stepped out to code allowable limits based on trending of the leakage rate during the LLRT. Frequency may be limited by the leakage testing requirements for Appendix J. These valves will be scheduled as independent groups to comply with the Appendix J Program requirements.

Testing Requirements: CM Testing will take credit for normal operation for a open flow verification and trend leakage data from the LLRT for monitoring the condition of the valve and verification of bi-directional functionality.

Frequency Based on past performance move out test frequency for check valve condition monitoring to the Appendix J Option B frequency pursuant to Section 4.4.7 of NUREG-1482, Rev.1.

CM-CV10 Rev.: 0 System: CV
IST Group: CV10 Check Valve Groups: 1CV09 and 2CV09
Valves: 1R171TCV0009, 1R172TCV0009
IST Functions: 1. Remain closed to preserve the integrity of the Reactor Coolant System pressure boundary.
2. Open to supply auxiliary spray to the pressurizer to collapse the steam bubble and cool the pressurizer during the final stages of plant cooldown when the reactor coolant pumps are shutdown and the normal spray is no longer available and to stabilize RCS pressure following SGTR.

Remarks:: Remain closed to preserve the integrity of the Reactor Coolant System pressure boundary. Open to supply auxiliary spray to the pressurizer to collapse the steam bubble and cool the pressurizer during the final stages of plant cooldown when the reactor coolant pumps are shutdown and the normal spray is no longer available or to stabilize RCS pressure following SGTR. Check valve is normally closed and reliable. Upstream AOV provides redundant closing capability.

Condition Monitoring Discussion: Failure patterns – Leaking, debris, wearing out, and miss applied.
Expected failure modes - Corrosion and debris in the system with dirty water causing leakage. Other failures included wearing of the hinge pin (in most cases normal wear), corrosion or damaged seating, and sticking open.
Past failure causes - Debris, worn internals, manufacture defects, poor design, miss-application, improper maintenance, improper design, and corrosion.
These valves are currently being tested in the open direction during system testing at cold shutdown. Closure testing is required to verify bi-directional functionality of these valves.

Computerized radiography provides clear pictures of the valve internals. The condition of the valve can be evaluated without disassembly. The amount of misalignment of the valve disc on the seat as well as actual measurements of valve internals to determine wear rates will result in the early detection of the onset of degradation in these valves. Preventive maintenance can then be scheduled and performed prior to failure. This inspection process can also verify that the valves are in the closed position to satisfy the bi-directional functionality testing requirement.

Testing Requirements: Perform inspection of these valves using computerized radiography. Flow through the valve during system testing will be credited on the same frequency as the inspection. These testing activities will confirm the bi-directional functionality of these valves.

Frequency Test frequency will start by performing a baseline on each valve. If valve condition is acceptable and there are no indications of wear then the frequency can be extended to one valve every 18 months. The frequency of the testing can be stepped out farther based on acceptable trending of disc alignment and/or hinge pin wear.

CM-CV37 Rev.: 0 System: CV

IST Group: CV37 Check Valve Groups: 1CV20 and 2CV20

Valves: 2R171XCV0670, 2R172XCV0670

IST Functions: 1. Open to provide charging RCS boration control flow path from discharge of centrifugal charging pump. A flow rate of 30 gpm is required per Technical Requirements Manual 4.1.2.2 d and 190 gpm if suction is from the RWST per CR 99-1380-3.
2. Close to prevent diversion of flow due to HELB in charging header with flow path established through valve HCV-206.

Remarks:: Open to provide RCS boration control flow path from discharge of centrifugal charging pumps. Close to prevent diversion of flow due to HELB in charging header with flow path established through valve HCV-0206. This valve is normally open. If this valve fails to close in the event of a HELB, the normal charging flowpaths are lost. The primary charging flowpath is isolated on safety injection.

Condition Monitoring Discussion: Failure patterns – Common failures include erosion and leakage due to seat degradation.
Expected failure modes - There are no common failure modes to this valve.
Past failure causes - Failure causes include leaking due to erosion and normal wear. These valves are currently being tested in the open direction during normal operation or system testing. Closure testing is required to verify bi-directional functionality of these valves.
Computerized radiography provides clear pictures of the valve internals. The condition of the valve can be evaluated without disassembly. The amount of misalignment of the valve disc on the seat as well as actual measurements of valve internals to determine wear rates will result in the early detection of the onset of degradation in these valves. Preventive maintenance can then be scheduled and performed prior to failure. This inspection process can also verify that the valves are in the closed position to satisfy the bi-directional functionality testing requirement. Acoustic testing may be substituted as an equal testing method.

Testing Requirements: Perform open verification during the non-intrusive (acoustic) test at a consistent repeatable steady state flow rate. Analysis of the acoustic signals at the steady state flow condition will be used to monitor the condition of the valves. A closure test will also be performed during the NIT. Bi-directional functionality will be satisfied during the test sequence. Indication of increase valve looseness (rattles and rubs) will determine need to open and inspect the check valves. As an alternative to the non-intrusive acoustic test, inspection of these valves may be performed using computerized radiography. Flow through the valve during normal operation or system/pump testing will be credited on the same frequency as the inspection. These testing activities will confirm the bi-directional functionality of these valves.

Frequency Initial testing will start by performing a baseline test. The test frequency may be

stepped out per procedure requirements following baseline. Test frequency extensions will be allowed based on the evaluation of the quantity and magnitude of (rattles and rubs) acoustic signals or based on acceptable trending of disc alignment and/or hinge pin wear.

CM-CV38 Rev.: 0 System: CV
IST Group: CV38 Check Valve Groups: 1CV01 and 2CV01, 1CV02 and 2CV02

Valves: 1R171XCV0001, 1R171XCV0002, 1R171XCV0004, 1R171XCV0005
1R172XCV0001, 1R172XCV0002, 1R172XCV0004, 1R172XCV0005

IST Functions:
1. Close to maintain RCS pressure boundary isolation in the event of a Class 2 CVCS line break.
2. Open to provide 30 gpm for RCS boron and water inventory (charging) control for safe shutdown per Technical Specification 4.1.2.2 d. Required flowrate is 190 gpm for RWST as water source per CR 99-1380-3.

Remarks:: Two check valves in series provide redundant closing capability. Check valves are considered to be reliable to perform their function.
Redundant flowpaths provided by parallel injection lines.

Condition Monitoring Discussion: Failure patterns – Common failures include erosion and leakage due to seat degradation.
Expected failure modes - There are no common failure modes to this valve.
Past failure causes - Common failures include erosion and leakage due to seat degradation.
The SOER 86-03 program has performed many tests on valves in this group using non-intrusive testing (NIT). The NIT testing includes steady state flow during charging operations. Performing analysis on the steady state and closure can determine the health of the valve. Analysis of the acoustic signals will include a comparison with previous testing results to evaluate a change in the quantity and magnitude of metal to metal impacts (rattles and rubs). Degradation in the valves cannot be quantitatively measured, however, the presence of an increase in looseness in the valves will be a leading indicator to allow disassembly and inspection prior to valve failure.
The bi-directional functionality of the valves will be shown during the non-intrusive testing since charging flow is indicated in the Control Room. The close impact will be indicated by acoustic signal upon cessation of flow through the valve.
Grouping the valves should be done to allow for train specific testing. CV-1 should be grouped with CV-4 and CV-2 should be grouped with CV-5. Valves will be divided into two two-valve subgroups and scheduled so that both valves in one train are tested together. Subgroup A – CV0001,4; Subgroup B – CV0002,5

Testing Requirements: Perform open verification during the non-intrusive (acoustic) test at a consistent repeatable steady state flow rate. Analysis of the acoustic signals at the steady state flow condition will be used to monitor the condition of the valves. A closure test will also be performed during the NIT. Bi-directional functionality will be satisfied during the test sequence. Indication of increase valve looseness (rattles and rubs) will determine need to open and inspect the check valves.

Frequency Baseline tests have been completed for these valves. Based on previous testing history the test frequency may be stepped out to every 36 months or 2R for one valve in each subgroup. No additional test frequency extensions are allowed by the Code.

CM-CV40 Rev.: 0 System: CV

IST Group: CV40 Check Valve Groups: 1CV11 and 2CV11

Valves: 2R171XCV0026, 2R172XCV0026

IST Functions:
1. Close and leak tight (CAT A) to maintain containment integrity.
2. Open to provide 30 gpm for RCS boron and water inventory (charging) control for safe shutdown per Technical Specification 4.1.2.2 d. Required flowrate is 190 gpm for RWST as water source per CR 99-1380-3.

Remarks:: Upstream MOV performs redundant closing function. Check valve is normally open and highly reliable.

Condition Monitoring Discussion:
Failure patterns – Common failures include erosion and leakage due to seat degradation.
Expected failure modes - There are no common failure modes to this valve.
Past failure causes - Failure causes include leaking due to erosion and normal wear.

Presently, these valves are being tested under the Appendix J local leak rate test (LLRT) program which will provide the first indication that the valve is degrading. Open flow verification can be verified during normal operations.
Open flow verification and trending leakage (LLRT) can be used to monitor the condition of these valves and establish the bi-directional functionality. The frequency of the check valve condition monitoring testing can be stepped out to code allowable limits based on trending of the leakage rate during the LLRT. Frequency may be limited by the leakage testing requirements for Appendix J.

Testing Requirements: CM Testing will take credit for normal operation for a open flow verification and trend leakage data from the LLRT for monitoring the condition of the valve and verification of bi-directional functionality.

Frequency Based on past performance move out test frequency for check valve condition monitoring to the Appendix J Option B frequency pursuant to Section 4.4.7 of NUREG-1482, Rev.1.

CM-EW08 Rev.: 0 System: EW

IST Group: EW08 Check Valve Groups: 1EW01 and 2EW01

Valves: 3R281TEW0006, 3R281TEW0042, & 3R281TEW0079
3R282TEW0006, 3R282TEW0042, & 3R282TEW0079

IST Functions: 1. Open to allow ECW Pump discharge flow to components cooled by ECW. ECW Pump design flow per DBD is 18,290 gpm per CR 98-19892-3 and CR 99-1380-2.

Remarks:: Open to allow ECW Pump discharge flow to components cooled by ECW. This system serves as the ultimate heat sink. Two of these valves (in 2 of the trains) are open all of the time. There are 3 independent trains. Any 1 train can provide the necessary cooling.

Condition Monitoring Discussion: Failure patterns – Failures of this type valves includes worn seats, debris, sticking open, and excessive wear on the seats.
Expected failure modes - Leaking, or improper seating.
Past failure causes - Debris, corrosion, broken springs & damaged seats.
Currently these valves are verified to perform open safety function during the ECW pump inservice test. Non-intrusive testing is performed periodically to evaluate condition of the valve per the SOER 86-03 reliability program.

Based on review of wear rates for the aluminum bronze material in the ECW system, a disassembly and inspection of one valve per refueling outage has been initiated. The inspections of these valves have found the there is wear inside the hinge and where the hinge pin is connected to the valve body. Additionally, there is corrosion on the outside of the hinge from the brackish water and the close proximity of the pump discharge resulting in turbulent flow conditions.
These check valves should continued to be monitored closely until these degradation mechanisms are better understood and controlled. By performing a disassembly on one valve in the group every 18 months will provide good baseline information and allow for good preventive maintenance for these valves. NIT (acoustic testing) should be performed on all the valves in the group every 18 months to establish a baseline for each valve following rebuilds. NIT monitoring will ensure that degradation in any of the valves will be identified so that preventive maintenance can be performed before failure.

Testing Requirements: The CM Testing will take credit for disassembly for the bi-directional test requirements and for trending the valves condition. In addition NIT will be performed for making sure that early degradations do not occur.

Frequency Perform a disassembly on one valve in the group every 18 months and perform NIT (acoustic testing) on all valves every 18 months. Based on testing results the frequency of the testing can be stepped out farther not to exceed code allowable limits.

CM-FP01 Rev.: 0 System: FP

IST Group: FP01 Check Valve Groups: 1FP01 and 2FP01

Valves: 2Q271TFP0943, 2Q272TFP0943

IST Functions: 1. Close and leak tight (CAT A) to maintain containment integrity.

Remarks:: Normally closed. Redundant and diverse closing capability provided by other valve in series.

Condition Monitoring Discussion: Failure patterns – Leakage or sticking open.
Expected failure modes - Leaking, or improper seating.
Past failure causes - Debris, corrosion, damaged seats, and worn internals.

Presently, these valves are being tested under the Appendix J local leak rate test (LLRT) program which will provide the first indication that the valve is degrading. Open flow verification can be verified by adding steps to the LLRT procedure to exercise the valve to the open position.

Open exercising and trending leakage (LLRT) can be used to monitor the condition of these valves and establish the bi-directional functionality. The frequency of the check valve condition monitoring testing can be stepped out to code allowable limits based on trending of the leakage rate during the LLRT. Frequency may be limited by the leakage testing requirements for Appendix J.

Testing Requirements: CM Testing will trend leakage data from the LLRT for monitoring the condition of the valve. The Appendix J LLRT procedure will also include steps to exercise the valve to the open position to verify bi-directional functionality.

Frequency Based on past performance move out test frequency for check valve condition monitoring to the Appendix J Option B frequency pursuant to Section 4.4.7 of NUREG-1482, Rev.1.

CM-RH05 Rev.: 0 System: RH

IST Group: RH05 Check Valve Groups: 1RH04 and 2RH04

Valves: 2R161XRH0068A, 2R161XRH0068B, & 2R161XRH0068C
2R162XRH0068A, 2R162XRH0068B, & 2R162XRH0068C

IST Functions:
1. Open to provide minimum flow path during RHR pump start.
2. Open to limit the Component Cooling Water System temperature to less than its maximum value of 1200F for Appendix R FHA
3. Open to limit the RCS cooldown rate to the maximum allowable value of 1000F/hour for Appendix R FHA

Remarks:: Open to provide minimum flow path during RHR pump start.

Condition Monitoring Discussion: Failure patterns – Common failures include erosion and leakage due to seat degradation.
Expected failure modes - There are no common failure modes to this valve.
Past failure causes - Common failures include erosion and leakage due to seat degradation.

These valves are currently being tested in the open direction during system/pump testing. Closure testing is required to verify bi-directional functionality of these valves.

Computerized radiography provides clear pictures of the valve internals. The condition of the valve can be evaluated without disassembly. The amount of misalignment of the valve disc on the seat as well as actual measurements of valve internals to determine wear rates will result in the early detection of the onset of degradation in these valves. Preventive maintenance can then be scheduled and performed prior to failure. This inspection process can also verify that the valves are in the closed position to satisfy the bi-directional functionality testing requirement. Acoustic testing may be substituted as an equal testing method.

Testing Requirements: Perform open verification during the non-intrusive (acoustic) test at a consistent repeatable steady state flow rate. Analysis of the acoustic signals at the steady state flow condition will be used to monitor the condition of the valves. A closure test will also be performed during the NIT. Bi-directional functionality will be satisfied during the test sequence. Indication of increase valve looseness (rattles and rubs) will determine need to open and inspect the check valves. As an alternative to the non-intrusive acoustic test, inspection of these valves may be performed using computerized radiography. Flow through the valve during normal operation or system/pump testing will be credited on the same frequency as the inspection. These testing activities will confirm the bi-directional functionality of these valves.

Frequency Initial testing will start by performing a baseline test. The test frequency may be stepped out per procedure requirements following baseline. Test frequency extensions

will be allowed based on the evaluation of the quantity and magnitude of (rattles and rubs) acoustic signals or based on acceptable trending of disc alignment and/or hinge pin wear.

CM-RH06 Rev.: 0 System: RH

IST Group: RH06 Check Valve Groups: 1RH03 and 2RH03

Valves: 2R161XRH0065A, 2R161XRH0065B, & 2R161XRH0065C
2R162XRH0065A, 2R162XRH0065B, & 2R162XRH0065C

IST Functions: 1. Open to allow a safety grade cold shutdown of the RCS using RHR following a SBLOCA, SGTR, MSLB, or FWLB accident condition. A flow rate of 3,000 gpm is required per paragraph 4A.1.2.1 of the DBD.

Remarks:: Normally operate two trains of RHR during cooldown. Only one train is required. Valves open to allow flow to occur during RHR cooldown following SBLOCA, MSLB, FWLB, or in event of a fire. Redundancy of function provided by other trains.

Condition Monitoring Discussion: Failure patterns – Disc Seat leakage, Corrosion, erosion, seat leakage.
Expected failure modes - Leaking or improper seating.
Past failure causes - Normal wear, corrosion, debris, or not seating fully at lower pressures.

These valves are currently being tested in the open direction during system/pump testing. Closure testing is required to verify bi-directional functionality of these valves.

Computerized radiography provides clear pictures of the valve internals. The condition of the valve can be evaluated without disassembly. The amount of misalignment of the valve disc on the seat as well as actual measurements of valve internals to determine wear rates will result in the early detection of the onset of degradation in these valves. Preventive maintenance can then be scheduled and performed prior to failure. This inspection process can also verify that the valves are in the closed position to satisfy the bi-directional functionality testing requirement. Acoustic testing may be substituted as an equal testing method.

Testing Requirements: Perform open verification during the non-intrusive (acoustic) test at a consistent repeatable steady state flow rate. Analysis of the acoustic signals at the steady state flow condition will be used to monitor the condition of the valves. A closure test will also be performed during the NIT. Bi-directional functionality will be satisfied during the test sequence. Indication of increase valve looseness (rattles and rubs) will determine need to open and inspect the check valves. As an alternative to the non-intrusive acoustic test, inspection of these valves may be performed using computerized radiography. Flow through the valve during normal operation or system/pump testing will be credited on the same frequency as the inspection. These testing activities will confirm the bi-directional functionality of these valves.

Frequency Initial testing will start by performing a baseline test. The test frequency may be stepped out per procedure requirements following baseline. Test frequency extensions will be allowed based on the evaluation of the quantity and magnitude of (rattles and

rubs) acoustic signals or based on acceptable trending of disc alignment and/or hinge pin wear.

CM-RH07 Rev.: 0 System: RH

IST Group: RH07 Check Valve Groups: 1RH01 and 2RH01

Valves: 1R161XRH0020A, 1R161XRH0020B, & 1R161XRH0020C
1R162XRH0020A, 1R162XRH0020B, & 1R162XRH0020C

IST Functions:
1. Close and leak tight (CAT A) to maintain RCS pressure boundary, GDC 14 (PIV).
2. Open to provide sump recirculation flow to the RCS hot leg from LHSI for hot-leg recirculation

Remarks:: There are 2 check valves in series to provide redundant ability to maintain RCS pressure boundary. Closing function is backed up by upstream valves. Valves are closed and leak tested prior to startup.

Condition Monitoring Discussion:
Failure patterns – Disc Seat leakage, Corrosion, erosion, seat leakage.
Expected failure modes - Leaking or improper seating.
Past failure causes - Normal wear, corrosion, debris, or not seating fully at lower pressures.

Presently a leakage test is performed on these valves following reach refueling outage in accordance with TS 4.4.6.2.2. This requirement also satisfies the OM Code leakage test requirement. These valves are open during system testing and refueling operations. The condition of these valves can be monitored by trending leakage. Increasing leakage rates provide an early indication of degradation in the valve so that the valve does not seat properly. Verification of flow through the valves during operation or other testing will demonstrate the bi-directional functionality of the valves.

Testing Requirements: The CM testing will trend leakage data for determining the condition of the valve by continuing to perform the leak (PIV) test per TS 4.4.6.2.2. The open test will be performed by initiating flow through the valve to confirm the bi-directional functionality of these valves.

Frequency Flow through the valves will be established on the same frequency as the leakage test. Based on testing results the frequency of the flow test can be stepped out farther not to exceed code allowable limits.

CM-RH08 Rev.: 0 System: RH

IST Group: RH08 Check Valve Groups: 1RH02 and 2RH02

Valves: 1R161XRH0032A, 1R161XRH0032B, & 1R161XRH0032C
1R162XRH0032A, 1R162XRH0032B, & 1R162XRH0032C

IST Functions:
1. Close and leak tight (CAT A) to maintain RCS pressure boundary, GDC 14 (PIV).
2. Open to allow a safety grade cold shutdown of the RCS using RHR following a SBLOCA, SGTR, MSLB, or FWLB accident condition
3. Open to provide cold-leg injection during ECCS injection and recirculation phases.

Remarks:: NONE

Condition Monitoring Discussion: Failure patterns – Disc Seat leakage, Corrosion, erosion, seat leakage.
Expected failure modes - Leaking or improper seating.
Past failure causes - Normal wear, corrosion, debris, or not seating fully at lower pressures.

Presently a leakage test is performed on these valves following reach refueling outage in accordance with TS 4.4.6.2.2. This requirement also satisfies the OM Code leakage test requirement. These valves are open during system testing and refueling operations. The condition of these valves can be monitored by trending leakage. Increasing leakage rates provide an early indication of degradation in the valve so that the valve does not seat properly. Verification of flow through the valves during operation or other testing will demonstrate the bi-directional functionality of the valves.

Testing Requirements: The CM testing will trend leakage data for determining the condition of the valve by continuing to perform the leak (PIV) test per TS 4.4.6.2.2. The open test will be performed by initiating flow through the valve to confirm the bi-directional functionality of these valves.

Frequency Flow through the valves will be established on the same frequency as the leakage test. Based on testing results the frequency of the flow test can be stepped out farther not to exceed code allowable limits.

CM-SD01 Rev.: 0 System: SD

IST Group: SD01 Check Valve Groups: 1SD01 and 2SD01

Valves: 3Q151XSD0003A, 3Q151XSD0003B, & 3Q151XSD0003C
3Q152XSD0003A, 3Q152XSD0003B, & 3Q152XSD0003C

IST Functions: 1. Close to prevent the rapid depressurization of the air receiver in case of a pipe rupture upstream of the check valve.

Remarks:: Each diesel has two receivers; either receiver can start the diesel. One of three diesels is required to supply power.

Condition Monitoring Discussion: Failure patterns – Debris, corrosion, and rust caused a majority of the failures.
Expected failure modes - Leaking, or improper seating.
Past failure causes - Debris, worn internals, and misapplication.

Currently testing for these valves is verification that the pressure in the air receiver tanks does not decay after the compressor is secured. This test verifies that the check is closed. Recording the rate of pressure decay can provide a means to trend valve degradation such that the valve disc is not aligning to the valve seat. The check valve opens when the compressor is started to fill the receiver tank. These two activities can be performed to verify the bi-directional functionality of these valves.

Testing Requirements: The CM Testing will perform open flow verification during compressor starts and trend pressure decay rate data with valve in the closed position to monitor the condition of the check valves. These two activities will verify the bi-directional functionality of these valves.

Frequency Test frequency starts by performing a baseline pressure decay rate test. The test frequency after the baselines are established will be one valve in the group every 18 months. Based on testing results the frequency of the testing can be stepped out farther not to exceed code allowable limits.

CM-SD02 Rev.: 0 System: SD

IST Group: SD02 Check Valve Groups: 1SD02 and 2SD02

Valves: 3Q151XSD0004A, 3Q151XSD0004B, & 3Q151XSD0004C
3Q152XSD0004A, 3Q152XSD0004B, & 3Q152XSD0004C

IST Functions: 1. Close to prevent the rapid depressurization of the air receiver in case of a pipe rupture upstream of the check valve.

Remarks:: Each diesel has two receivers; either receiver can start the diesel. One of three diesels is required to supply power.

Condition Monitoring Discussion: Failure patterns – Debris, corrosion, and rust caused a majority of the failures.
Expected failure modes - Leaking, or improper seating.
Past failure causes - Debris, worn internals, and misapplication.

Currently testing for these valves is verification that the pressure in the air receiver tanks does not decay after the compressor is secured. This test verifies that the check is closed. Recording the rate of pressure decay can provide a means to trend valve degradation such that the valve disc is not aligning to the valve seat. The check valve opens when the compressor is started to fill the receiver tank. These two activities can be performed to verify the bi-directional functionality of these valves.

Testing Requirements: The CM Testing will perform open flow verification during compressor starts and trend pressure decay rate data with valve in the closed position to monitor the condition of the check valves. These two activities will verify the bi-directional functionality of these valves.

Frequency Test frequency starts by performing a baseline pressure decay rate test. The test frequency after the baselines are established will be one valve in the group every 18 months. Based on testing results the frequency of the testing can be stepped out farther not to exceed code allowable limits.

CM-SI18 Rev.: 0 System: SI

IST Group: SI18 Check Valve Groups: 1SI02 and 2SI02

Valves: 2N121XSI0005A, 2N121XSI0005B, & 2N121XSI0005C
2N122XSI0005A, 2N122XSI0005B, & 2N122XSI0005C

IST Functions:
1. Open to inject borated water from either the RWST or the containment sump to the RCS cold legs during the cold leg injection phase of safety injection.
2. Open to recirculate borated water from the containment sump to the RCS hot legs during the hot leg recirculation phase of safety injection.
3. Close and be leak tight (CAT A) to provide containment integrity.

Remarks:: There are 2 check valves in series to provide redundant ability to strengthen pressure boundary to minimize LERF impacts.
Open function is required for feed and bleed in addition to standard LOCA response.

Condition Monitoring Discussion:
Failure patterns – Leakage due to normal wear.
Expected failure modes - There are no common failure modes to this valve.
Past failure causes - Failure causes include leaking due to normal wear.

Presently, these valves are being tested under the Appendix J local leak rate test (LLRT) program which will provide the first indication that the valve is degrading. Open flow verification can be verified by adding steps to the LLRT procedure to exercise the valve to the open position.
Open flow verification and trending leakage (LLRT) can be used to monitor the condition of these valves and establish the bi-directional functionality. The frequency of the check valve condition monitoring testing can be stepped out to code allowable limits based on trending of the leakage rate during the LLRT. Frequency may be limited by the leakage testing requirements for Appendix J. These valves will be scheduled as independent groups to comply with the Appendix J Program requirements.

Testing Requirements: CM Testing will trend leakage data from the LLRT for monitoring the condition of the valve. The Appendix J LLRT procedure will also include steps to exercise the valve to the open position to verify bi-directional functionality. As an alternative, system flow through the check valves can be credited for verification of bi-directional functionality.

Frequency Based on past performance move out test frequency for check valve condition monitoring to the Appendix J Option B frequency pursuant to Section 4.4.7 of NUREG-1482, Rev.1. Based on tending of test results the CM frequency can be stepped out farther not to exceed code allowable limits when flow exercising.

CM-SI19 Rev.: 0 System: SI

IST Group: SI19 Check Valve Groups: 1SI03 and 2SI03

Valves: 1N121XSI0007A, 1N121XSI0007B, & 1N121XSI0007C
1N122XSI0007A, 1N122XSI0007B, & 1N122XSI0007C

IST Functions:
1. Open to inject borated water from either the RWST or the containment sump to the RCS cold legs during the cold leg injection phase of safety injection.
2. Close to prevent the diversion of flow from the accumulator or from the LHSI pump in the event that the corresponding HHSI pump is not running.
3. Close and be leak tight (CAT A) to maintain RCS pressure boundary, GDC 14 (PIV).

Remarks::
Close to prevent ISLOCA. There are 2 check valves in series to provide redundant ability to maintain pressure boundary.
Open function is required for feed and bleed in addition to standard LOCA response.
These valves are closed and leak tested prior to startup.

Condition Monitoring Discussion:
Failure patterns – Leakage due to normal wear.
Expected failure modes - There are no common failure modes to this valve.
Past failure causes - Failure causes include leaking due to normal wear.

Presently a leakage test is performed on these valves following reach refueling outage in accordance with TS 4.4.6.2.2. This requirement also satisfies the OM Code leakage test requirement. These valves are open during system testing and refueling operations. The condition of these valves can be monitored by trending leakage. Increasing leakage rates provide an early indication of degradation in the valve so that the valve does not seat properly. Verification of flow through the valves during operation or other testing will demonstrate the bi-directional functionality of the valves.

Testing Requirements:
The CM testing will trend leakage data for determining the condition of the valve by continuing to perform the leak (PIV) test per TS 4.4.6.2.2. The open test will be performed by initiating flow through the valve to confirm the bi-directional functionality of these valves.

Frequency
Flow through the valves will be established on the same frequency as the leakage test. Based on testing results the frequency of the flow test can be stepped out farther not to exceed code allowable limits.

CM-SI20 Rev.: 0 System: SI

IST Group: SI20 Check Valve Groups: 1SI04 and 2SI04

Valves: 1N121XSI0009A, 1N121XSI0009B, & 1N121XSI0009C
1N122XSI0009A, 1N122XSI0009B, & 1N122XSI0009C

IST Functions:
1. Open to recirculate borated water from the containment sump to the RCS hot legs during the hot leg recirculation phase of safety injection.
2. Close to prevent the diversion of flow from an LHSI pump in the event that the corresponding HHSI pump is not running during the hot leg recirculation phase.
3. Close and leak tight (CAT A) to maintain RCS pressure boundary, GDC 14 (PIV).

Remarks:: There are 2 check valves in series to provide redundant ability to maintain RCS pressure boundary. Closing function is backed up by upstream valves. Valves are closed and leak tested prior to startup.

Condition Monitoring Discussion:
Failure patterns – Leakage due to normal wear.
Expected failure modes - There are no common failure modes to this valve.
Past failure causes - Failure causes include leaking due to normal wear.

Presently a leakage test is performed on these valves following reach refueling outage in accordance with TS 4.4.6.2.2. This requirement also satisfies the OM Code leakage test requirement. These valves are open during system testing and refueling operations. The condition of these valves can be monitored by trending leakage. Increasing leakage rates provide an early indication of degradation in the valve so that the valve does not seat properly. Verification of flow through the valves during operation or other testing will demonstrate the bi-directional functionality of the valves.

Testing Requirements: The CM testing will trend leakage data for determining the condition of the valve by continuing to perform the leak (PIV) test per TS 4.4.6.2.2. The open test will be performed by initiating flow through the valve to confirm the bi-directional functionality of these valves.

Frequency Flow through the valves will be established on the same frequency as the leakage test. Based on testing results the frequency of the flow test can be stepped out farther not to exceed code allowable limits.

CM- SI21 Rev.: 0 System: SI
IST Group: SI21 Check Valve Groups: 1SI06 and 2SI06

Valves: 2N121XSI0030A, 2N121XSI0030B, & 2N121XSI0030C
2N122XSI0030A, 2N122XSI0030B, & 2N122XSI0030C

IST Functions:
1. Open to inject borated water from either the RWST or the containment sump to the RCS cold legs during the cold leg injection phase of safety injection
2. Open to recirculate borated water from the containment sump to the RCS hot legs during the hot leg recirculation phase of safety injection.
3. Close to prevent backflow from the RHR system during post accident recovery operations.
4. Close and be leak tight (CAT A) to maintain containment integrity.

Remarks:: Close to prevent ISLOCA
There are 3 check valves in series to provide redundant ability to strengthen pressure boundary. This valve may have LERF impacts.

Condition Monitoring Discussion:
Failure patterns – Disc Seat leakage, Corrosion, erosion, seat leakage.
Expected failure modes - Leaking or improper seating.
Past failure causes - Normal wear, corrosion, debris, or not seating fully at lower pressures.
Presently, these valves are being tested under the Appendix J local leak rate test (LLRT) program which will provide the first indication that the valve is degrading. Open flow verification can be verified by adding steps to the LLRT procedure to exercise the valve to the open position.
Open flow verification and trending leakage (LLRT) can be used to monitor the condition of these valves and establish the bi-directional functionality. The frequency of the check valve condition monitoring testing can be stepped out to code allowable limits based on trending of the leakage rate during the LLRT. Frequency may be limited by the leakage testing requirements for Appendix J. These valves will be scheduled as independent groups to comply with the Appendix J Program requirements.

Testing Requirements: CM Testing will trend leakage data from the LLRT for monitoring the condition of the valve. The Appendix J LLRT procedure will also include steps to exercise the valve to the open position to verify bi-directional functionality. As an alternative, system flow through the check valves can be credited for verification of bi-directional functionality.

Frequency Based on past performance move out test frequency for check valve condition monitoring to the Appendix J Option B frequency pursuant to NUREG-1482, Rev. 1, Section 4.4.7. Based on tending of test results the CM frequency can be stepped out farther not to exceed code allowable limits when flow exercising.

CM-SI22 Rev.: 0 System: SI

IST Group: SI22 Check Valve Groups: 1SI05 and 2SI05

Valves: 1N121XSI0010A, 1N121XSI0010B, & 1N121XSI0010C
1N122XSI0010A, 1N122XSI0010B, & 1N122XSI0010C

IST Functions:
1. Open to recirculate borated water from the containment sump to the RCS hot legs during the hot leg recirculation phase of safety injection.
2. Close to prevent RCS backflow into the low pressure SI systems.
3. Close and leak tight (CAT A) to maintain RCS pressure boundary, GDC 14 (PIV).

Remarks:: There are 2 check valves in series to provide redundant ability to maintain RCS pressure boundary. Closing function is backed up by upstream valves. Valves are closed and leak tested prior to startup. Common path for high head and low head injection.

Condition Monitoring Discussion:
Failure patterns – Disc Seat leakage, Corrosion, erosion, seat leakage.
Expected failure modes - Leaking or improper seating.
Past failure causes - Normal wear, corrosion, debris, or not seating fully at lower pressures.

Presently a leakage test is performed on these valves following reach refueling outage in accordance with TS 4.4.6.2.2. This requirement also satisfies the OM Code leakage test requirement. These valves are open during system testing and refueling operations. The condition of these valves can be monitored by trending leakage. Increasing leakage rates provide an early indication of degradation in the valve so that the valve does not seat properly. Verification of flow through the valves during operation or other testing will demonstrate the bi-directional functionality of the valves.

Testing Requirements: The CM testing will trend leakage data for determining the condition of the valve by continuing to perform the leak (PIV) test per 4.4.6.2.2. The open test will be performed by initiating flow through the valve to confirm the bi-directional functionality of these valves.

Frequency Flow through the valves will be established on the same frequency as the leakage test. Based on testing results the frequency of the flow test can be stepped out farther not to exceed code allowable limits.

CM- SI23 Rev.: 0 System: SI

IST Group: SI23 Check Valve Groups: 1SI07 and 2SI07

Valves: 1N121XSI0038A, 1N121XSI0038B, & 1N121XSI0038C
1N122XSI0038A, 1N122XSI0038B, & 1N122XSI0038C

IST Functions:
1. Open when the RCS pressure falls below the accumulator pressure to force borated water into the RCS cold legs.
2. Close to prevent backflow from the RCS into the low pressure SI system.
3. Close and be leak tight (CAT A) to maintain RCS pressure boundary, GDC 14 (PIV).

Remarks:: There are 2 check valves in series to provide redundant ability to maintain RCS pressure boundary. Closing function is backed up by upstream valves. Valves are closed and leak tested prior to startup. Common path for accumulator, high head, and low head injection.

Condition Monitoring Discussion:
Failure patterns – Disc Seat leakage, Corrosion, erosion, seat leakage.
Expected failure modes - Leaking or improper seating.
Past failure causes - Normal wear, corrosion, debris, or not seating fully at lower pressures.

Presently a leakage test is performed on these valves following reach refueling outage in accordance with TS 4.4.6.2.2. This requirement also satisfies the OM Code leakage test requirement. These valves are open during system testing and refueling operations. The condition of these valves can be monitored by trending leakage. Increasing leakage rates provide an early indication of degradation in the valve so that the valve does not seat properly. Verification of flow through the valves during operation or other testing will demonstrate the bi-directional functionality of the valves.

Testing Requirements: The CM testing will trend leakage data for determining the condition of the valve by continuing to perform the leak (PIV) test per 4.4.6.2.2. The open test will be performed by initiating flow through the valve to confirm the bi-directional functionality of these valves.

Frequency Flow through the valves will be established on the same frequency as the leakage test. Based on testing results the frequency of the flow test can be stepped out farther not to exceed code allowable limits.

CM- SI25	Rev.: 0	System: SI
IST Group: SI25	Check Valve Groups: 1SI01 and 2SI01	
Valves:	2N121XSI0002A, 2N121XSI0002B, & 2N121XSI0002C 2N122XSI0002A, 2N122XSI0002B, & 2N122XSI0002C	
IST Functions:	1. Open to provide a source of borated water to the suction of the LHSI, HHSI and CS pumps during the injection mode of accident mitigation. 2. Close to prevent backflow to the RWST when containment sump isolation valves are opened during switchover from the injection phase to the cold leg recirculation mode before SI-MOV001A, B, and C are closed.	
Remarks::	Active for both directions. Considered to be the primary isolation. MOV provides the same closing function. If the valve fails to open, the plant loses 1/3 of SI capacity. Procedurally, the plant needs 1 out of 3 trains for success.	
Condition Monitoring Discussion:	Failure patterns – Disc Seat leakage, Corrosion, erosion, seat leakage. Expected failure modes - Leaking or improper seating. Past failure causes - Normal wear, corrosion, debris, or not seating fully at lower pressures. Valves see very little use and therefore will be subject to minimal wear. Valves are exercised only during surveillance testing on SI pumps. The SOER 86-03 program has performed many tests on valves in this group using non-intrusive testing (NIT). The NIT testing includes steady state flow during SI pump inservice testing. Analysis on the steady state data and closure can determine the health of the valve. Analysis of the acoustic signals will include a comparison with previous testing results to evaluate a change in the quantity and magnitude of metal to metal impacts (rattles and rubs). Degradation in the valves cannot be quantitatively measured however, the presence of an increase in looseness in the valves will be a leading indicator to allow disassembly and inspection prior to valve failure. The bi-directional functionality of the valves will be shown during the non-intrusive testing since flow through the valve will be indicated by SI pump flow rate. The close impact will be detected by acoustic signal upon cessation of flow through the valve.	
Testing Requirements:	Perform open verification during the non-intrusive (acoustic) test at a consistent repeatable steady state flow rate. Analysis of the acoustic signals at the steady state flow condition will be used to monitor the condition of the valves. A closure test will also be performed during the NIT. Bi-directional functionality will be satisfied during the test sequence. Indication of increase valve looseness (rattles and rubs) will determine need to open and inspect the check valves.	
Frequency	Baseline tests have been completed for these valves. Based on previous testing history the test frequency may be stepped out to every 36 months or 2R for one valve in the group. No additional test frequency extensions are allowed by the Code.	

CM- SI27 Rev.: 0 System: SI

IST Group: SI27 Check Valve Groups: 1SI08 and 2SI08

Valves: 1N121XSI0046A, 1N121XSI0046B, & 1N121XSI0046C
1N122XSI0046A, 1N122XSI0046B, & 1N122XSI0046C

IST Functions:
1. Open when the RCS pressure falls below the accumulator pressure to force borated water into the RCS cold legs.
2. Close to prevent backflow from the RCS into the low pressure SI system.
3. Close and be leak tight (CAT A) to maintain RCS pressure boundary, GDC 14 (PIV)

Remarks:: There are 2 check valves in series to provide redundant ability to maintain RCS pressure boundary. Valves are closed and leak tested prior to startup.

Condition Monitoring Discussion:
Failure patterns – Disc Seat leakage, Corrosion, erosion, seat leakage.
Expected failure modes - Leaking or improper seating.
Past failure causes - Normal wear, corrosion, debris, or not seating fully at lower pressures.

Presently a leakage test is performed on these valves following reach refueling outage in accordance with TS 4.4.6.2.2. This requirement also satisfies the OM Code leakage test requirement. These valves are open during system testing by releasing water from the accumulator into the reactor cavity during refueling operations.
The condition of these valves can be monitored by trending leakage. Increasing leakage rates provide an early indication of degradation in the valve so that the valve does not seat properly. Verification of flow through the valves during refueling operations will demonstrate the bi-directional functionality of the valves.

Testing Requirements: The CM testing will trend leakage data for determining the condition of the valve by continuing to perform the leak (PIV) test per 4.4.6.2.2. The open test will be performed by initiating flow through the valve to confirm the bi-directional functionality of these valves.

Frequency Flow through the valves will be established on the same frequency as the leakage test. Based on testing results the frequency of the flow test can be stepped out farther not to exceed code allowable limits.

ATTACHMENT 7

Valve Relief Requests

Valve Relief Request Index

Number	Components	Status
VRR-01	Use of Code Case OMN-1 on Various Motor Operated Valves	Requires Approval

VALVE RELIEF REQUEST VRR-01

Use of Code Case OMN-1 on Various Motor Operated Valves

Proposed Alternative In Accordance with 10CFR50.55a(a)(3)(i)

On the basis that the proposed alternative provides an acceptable level of quality and safety.

Component(s) Affected: Certain motor-operated valve assemblies currently included in the STPEGS Motor-Operated Valve Program

Component/ System Function: The applicable motor operated valves are required to perform a specific function in shutting down the reactor to a safe shutdown, maintaining a safe shutdown condition or in mitigating the consequences of an accident.

Applicable Code Edition and Addenda: ASME OM Code-2004, with No Addenda

Applicable Code Requirement(s): ISTA-3130, "Application of Code Cases", ISTA-3130(b) states: Code Cases shall be applicable to the edition and addenda specified in the test plan.

ISTC-5120, "Motor-Operated Valves", ISTC-5121(a) states: Active valves shall have their stroke times measured when exercised in accordance with ISTC-3500.

ISTC-3700, "Position Indication Verification", states in part: Valves with remote position indicators shall be observed locally at least once every 2 years to verify that valve position is accurately indicated.

Reason for Request: NUREG-1482, Rev.1, Section 4.2.5 states in part: As an alternative to MOV stroke-time testing, ASME developed Code Case OMN-1, Rev.1, "Alternative Rules for Preservice and Inservice Testing of Certain Electric Motor-Operated Valve Assemblies in LWR Power Plants" which provides periodic exercising and diagnostic testing for use in assessing the operational readiness of MOVs. Section 4.2.5 recommends that the licensees implement ASME Code Case OMN-1 as accepted by the NRC (with certain conditions) in the regulations or RG 1.192, as alternatives to the stroke-time testing provisions in the ASME Code for MOVs. RG 1.192 allows licensees to implement ASME Code Case OMN-1 (in accordance with the provisions in the

regulatory guide) as an alternative to the Code provisions for MOV stroke-time testing in the ASME OM Code 1995 Edition through 2000 Addenda. The Code of Record for STPEGS Third 10-Year IST Interval is OM Code-2004 Edition with No Addenda.

Proposed Alternative and Basis for Use:

Pursuant to the guidelines provided in NUREG-1482, Rev.1, Section 4.2.5, STPEGS proposes to implement Code Case OMN-1, Rev.1, in lieu of the stroke-time provisions specified in ISTC-5120 for MOVs as well as the position verification testing in ISTC-3700. Code Case OMN-1, Rev.1 has been determined by the NRC to provide an acceptable level of quality and safety when implemented in conjunction with the conditions imposed in RG 1.192.

Using the provisions of this relief request as an alternative to the MOV stroke-time testing requirements of ISTC-5120 and position indication verification of ISTC-3700 provide an acceptable level of quality for determination of valve operational readiness. Code Case OMN-1, Rev.1 should be considered acceptable for use with ASME OM Code-2004 Edition with No Addenda as the Code of Record.

Duration of Proposed Alternative:

The proposed alternative identified in this relief request shall be implemented during the early stages of the Third Ten Year IST Interval. Code Case OMN-1 shall be implemented in conjunction with the implementation of the JOG periodic verification program around 2011 and continue through the duration of the Third Ten Year IST Interval.

Precedents:

NRC Safety Evaluation for Beaver Valley Power Station, Unit 2, Docket No. 50-412. Regarding the Third 10-Year Interval Inservice Testing Program Relief Requests (TAC Nos. MD5595 – MD5604), February 14, 2008