Progress Energy

BRUNSWICK STEAM ELECTRIC PLANT

BNP-TR-014

IST PROGRAM PLAN
FOURTH TEN-YEAR INSPECTION INTERVAL
Revision 1

Brunswick Steam Electric Plant
8470 River Road SE
Southport, NC 28461

Progress Energy Services Company, LLC
410 South Wilmington Street
Raleigh, NC 27601-1748

Prepared By:
Alion Science and Technology Corporation
Engineering and Technical Programs Division
Warrenville, Illinois

ALION
SCIENCE AND TECHNOLOGY

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PREPARED TRANSMITTAL

PREPARED: / 10.25.07
Craig D. Sellers.
Alion Program Manager

REVIEWED: / 10/25/07
Megan A. Stachowiak
Alion Programs Engineer

APPROVED: / 10.25.07
Daniel W. Lamond
Alion Project Manager

PROGRESS ENERGY ACCEPTANCE

APPROVED: 10/25/07
Heather Siler
IST and Check Valve Program Manager

REVISION APPROVAL SHEET

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PROGRESS ENERGY PROGRAM ACCEPTANCE

REVIEWED: / 11/6/07
Heather Siler
IST and Check Valve Program Manager

REVIEWED: / 11/6/07
Patrick Godsey
Peer Reviewer

APPROVED: / 11-6-07
John McIntyre
Equipment Performance Supervisor

Each time this document is revised, the Revision Approval Sheet will be signed and the following Revision Control Sheet should be completed to provide a detailed record of the revision history. The signatures above apply only to the changes made in the revision noted. If historical signatures are required, Brunswick Steam Electric Plant archives should be retrieved.

REVISION CONTROL SHEET

Major changes should be outlined within the table below.

REVISION	DATE	REVISION SUMMARY
0	10/25/07	**Initial issuance. (This IST Program Plan was developed by Alion Science and Technology Corporation as part of the Fourth Interval IST Program update.)** Prepared: C. Sellers Reviewed: M. Stackowiak Approved: D. Lamond
1	11/5/07	Changed test type from remote position indication verification V to None for 1(2)-C11-SV-120, 121, 122, 123, and 1(2)-E11-V40, change the test type of remote position verification, V, to full stroke test, ST, for 1(2)-E11-V39, change the safety position field from closed, C, to open, O, for the 1-E11-V39, change the safety position field from open, O, to closed, C, for 2-E11-V40, removed 2-CAC-SV-1216B from valve tables, changed procedure referenced for check valve closure tests to 0PT-20.9 for 1(2)-RNA-V305, V307, V313, V314, 1-RNA-IV-2620, 2622, 2-RNA-IV-2641, and 2643, changed procedure referenced for check valve open tests to 0PT-20.9 for 1(2)-RNA-IV-2315, 1-RNA-IV-2621, and 2-RNA-IV-2647, changed full stroke test frequency for 1(2)-G41-F011 from quarterly to refueling, changed procedure reference for check valve open test from 0PT-14.1.2a to 0PT-14.2.1 for the 1(2)-C11(C12)-115, changed test frequency from refueling to 2Y for 1(2)-C51-J004A,B,C,D-SHE, 2-DSA-RV10, 12, 14, 15, 17, 19, 2, 20 4, 5, 7, and 9, added program remark V-15 for 1(2)-E41-PSE-D003, D004, and 1(2)-E51-PSE-D001, D002, and revised RFJ-12 to delete reference to check valve closure testing for 1(2)-RNA-V313 and V314.

Note:
1. This IST Program Plan (Sections 1 - 9 inclusive) is controlled by the Brunswick Steam Electric Plant Equipment Performance Group.
2. Revision 0 of this document was issued as the Fourth Interval IST Program Plan and was submitted to the USNRC for review, including approval of the initial Fourth IST Interval Relief Requests. Future revisions of this document made within the Fourth IST Interval will be maintained and controlled at the station; however, they are not required to be and will not be submitted to the USNRC for approval. The exception to this is that new or revised Relief Requests shall be submitted to the USNRC for review and approval.

REVISION SUMMARY

SECTION	EFFECTIVE PAGES	REVISION	DATE
Preface	i to v	1	11/06/07
1.0	1-1 to 1-14	0	10/25/07
2.0	2-1 to 2-9	0	10/25/07
3.0	3-1 to 3-7	0	10/25/07
4.0	4-1 to 4-14	0	10/25/07
5.0	5-1 to 5-268	1	11/06/07
6.0	6-1 to 6-26	1	11/06/07
7.0	7-1 to 7-22	0	10/25/07
8.0	8-1 to 8-19	0	10/25/07
9.0	9-1 to 9-24	1	11/06/07

TABLE OF CONTENTS

SECTION	DESCRIPTION	PAGE
1.0	INTRODUCTION	1-1
2.0	PUMP TESTING	2-1
3.0	PUMP TABLES	3-1
4.0	VALVE TESTING	4-1
5.0	VALVE TABLES	5-1
6.0	PROGRAM REMARKS	6-1
7.0	RELIEF REQUESTS	7-1
8.0	COLD SHUTDOWN JUSTIFICATIONS	8-1
9.0	REFUELING OUTAGE JUSTIFICATIONS	9-1

1.0 INTRODUCTION

This Inservice Testing Program Plan, referenced elsewhere as the "Plan" details the technical basis and provides the overall description of the Inservice Pump and Valve Testing Program (IST Program) for the Brunswick Steam Electric Plant fourth ten-year interval. The fourth ten-year interval for Brunswick Steam Electric Plant starts on May 11, 2008 and runs through May 10, 2018. This program has been updated to the latest edition and addenda of ASME Code for Operation and Maintenance of Nuclear Power Plants (referred to in this Plan as simply the "Code") approved by the Nuclear Regulatory Commission by incorporation into the Code of Federal Regulation (10 CFR 50.55a) 12 months prior to the start of the fourth 120 month testing interval. The 2001 Edition through the 2003 Addenda is the latest edition of the Code referenced in Paragraph 50.55a(b)(3) as of 12 months prior to the start of the Brunswick Steam Electric Plant fourth ten-year interval.

1.1 Purpose

The purpose of this IST Program is to verify operational readiness of 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, as identified within various plant safety analyses.

This Program Plan describes the IST Program which is implemented by referenced procedures. This Plan is not an implementing document for performing inservice testing of components. It is intended to provide guidance and reference to those implementing procedures and is intended for use in maintaining the program status, providing reference to Operations, Maintenance Planning, and Inservice Testing personnel, and to provide a description of the content of the program and established technical positions to regulatory authorities.

The controlling reference for this Plan is Plant Operating Manual, Volume XX, Engineering Procedure, 0ENP-17 Pump and Valve Inservice Testing (IST).

1.2 Program Description

This Program Plan specifies the components included in the Inservice Testing Program, the applicable surveillance/testing procedures, and associated testing requirements and frequencies. Relief Requests are provided for those components where; 1) the proposed alternative inspection/test provides an acceptable level of quality and safety, 2) compliance with the Code requirements would result in a hardship without a corresponding increase in safety, 3) complying with the Code requirements is impractical. Cold Shutdown and Refueling Outage Justifications are also included to justify the extended testing frequency for those components that can only be tested at either Cold Shutdown or Refueling Outage plant conditions.

Inservice pump and valve testing shall be performed in accordance with the 2001 Edition of the OM Code through the 2003 Addenda, OMb Code, to the extent practicable within limits of design, geometry, and materials of construction of the components. The guidance of Nuclear Regulatory Commission NUREG-1482 Revision 1, Guidelines for Inservice Testing at Nuclear Power Plants, has been used in the development of this program.

In addition to those pumps and valves required to be tested by the Code, other components may be included in the program from a good engineering and management practice standpoint. These components need not be tested to specific Code criteria and are identified as "Augmented" requirements.

The interpretation of the IST Program is the responsibility of Supervisor, Equipment Performance.

This Plan is divided into additional sections, as follows:

- **Section 2.0, Pump Testing** - Provides a general discussion of the Brunswick Steam Electric Plant inservice pump testing program and implementation of Code requirements. Technical positions for the Brunswick Steam Electric Plant pump testing program are also provided in this section.

- **Section 3.0, Pump Tables** - Provides a listing of the pumps included in the Brunswick Steam Electric Plant IST Program. These tables include information on component data, required test methods, parameters monitored, implementing surveillance procedures, surveillance frequency and applicable Relief Requests and/or applicable Cold Shutdown or Refueling Outage Justifications.

- **Section 4.0, Valve Testing** - Provides a general discussion of the Brunswick Steam Electric Plant inservice valve testing program and implementation of Code requirements. Technical positions for the Brunswick Steam Electric Plant valve testing program are also provided in this section.

- **Section 5.0, Valve Tables** - Provides a listing of the valves included in the Brunswick Steam Electric Plant IST Program. These tables include information on component data, required test methods, implementing surveillance procedures, surveillance frequency and applicable Relief Requests and/or applicable Cold Shutdown or Refueling Outage Justifications.

- **Section 6.0, Program Remarks** - Generic program remarks provide specific detail to better explain and justify the basis for IST program positions taken. Program Remarks are uniquely numbered and components within the IST program affected by specific Program Remarks reference the unique number within pump and valve tables.

- **Section 7.0, Relief Requests** - Provides a listing and includes Relief Requests for those pumps and valves which cannot be tested in accordance with specific Code requirements. It states why the test cannot be performed and provides a description and schedule for alternative testing.

- **Section 8.0, Cold Shutdown Justifications** - Provides the listing and includes Cold Shutdown Justifications for the valves that cannot be tested during normal operation and can only be tested during cold shutdown periods. It also provides the basis for not testing these valves during operation and describes the alternate testing being performed.

- **Section 9.0, Refueling Outage Justifications** - Provides the listing and includes Refueling Outage Justifications for the valves that cannot be tested during normal operation or cold shutdown conditions. It also provides the basis for not testing these valves during operation and describes the alternate testing being performed.

1.3 Definitions

Acceptance Criteria: measurable values that define the acceptability of specific performance parameters for the associated component.

Cold Shutdown Justification (CSJ): document providing adequate technical justification for testing specific valves at cold shutdown frequency instead of at quarterly frequency. This frequency is allowed by ISTC-3520.

Examination: observing, visual monitoring, or measuring to determine conformance to specified requirements.

Exercising: demonstration based on direct visual or indirect positive indications that the moving parts of a component function.

Inservice Test: a special test for obtaining, through measurement or observation, information to determine the operational readiness of a pump or valve. These tests are not designed to establish complete component performance. They are to determine the general condition of a component such as the performance of a pump at one operating point from test to test.

IST Basis Document: document consisting of the specific Inservice Testing Program information necessary to determine the components that require testing and justifications for those that are excluded from the Inservice Testing Program. Reference NUREG-1482, Revision 1, Paragraph 2.4.4.

Maintenance: routine servicing or work that does not change the design of the item undertaken to correct or prevent an abnormal or unsatisfactory condition.

Monitoring: continuous or periodic observation or measurement to ascertain the performance or obtain characteristics of a pump or valve.

Nonintrusive testing: testing performed on a pump or valve without disassembly or disturbing the boundary of the component.

Obturator: valve closure member (disk, gate, plug, etc.).

Operational Readiness: the capability of a pump or valve to fulfill its specified functions.

Overpressure protection: the means by which components are protected from overpressure by the use of pressure-relieving devices or other design provisions as required by the ASME Boiler & Pressure Vessel Code, Section III, or other applicable construction codes.

Preservice Test: test performed before the component is initially placed in service.

Preservice Test Period: the period of time prior to the component being initially placed in service.

Reference Point: a point of operation at which reference values are established and inservice test parameters are measured for comparison with applicable acceptance criteria.

Reference Values: one or more values of parameters as measured or determined when the equipment is known to be operating acceptably.

Refueling Outage Justification (ROJ): document providing adequate technical justification for testing specific valves at a refueling outage frequency instead of at quarterly or cold shutdown frequency. This frequency is allowed by ISTC-3520.

Relief Requests: documents submitted to the Nuclear Regulatory Commission requesting permission to deviate from the testing requirements stipulated in the ASME Code. Relief Requests must provide adequate justification and require approval prior to implementing in the Inservice Testing Program. These requests can also be pre-approved by the Nuclear Regulatory Commission, in which case they can be adopted without express permission being granted.

Required Action Range: range of test values indicating that the associated component is not in a state of operational readiness. Corrective action shall be initiated immediately for components with test results that fall in this range.

Safe Shutdown: Brunswick Steam Electric Plant Units 1 and 2 are licensed with Hot Shutdown as the safe shutdown condition.

Skid-Mounted Pumps and Valves: pumps and valves integral to or that support operation of major components, even though these pumps and valves may not be located directly on the skid.

Trending: a comparison of current data to previous data obtained under similar conditions for the same equipment.

Valves, Active: valves that are required to change obturator position to accomplish a specific function in shutting down a reactor to the safe shutdown condition, maintaining the safe shutdown condition, or mitigating the consequences of an accident.

Valves, Passive: valves that maintain obturator position and are not required to change obturator position to accomplish the required function(s) in shutting down a reactor to the safe shutdown condition, maintaining the safe shutdown condition, or mitigating the consequences of an accident.

1.4 Background - Program Development

Each pump and valve installed in ASME Class 1, 2 and 3 systems was evaluated to determine the applicability of the requirements of 10 CFR 50.55a(f) and Plant Technical Specifications.

In accordance with ASME OM CODE-2001 with ASME OMb-2003 Addenda, the following are required to be included in the testing program in accordance with Subsection ISTA:

(a) 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;
(b) pressure relief devices that protect systems or portions of systems that perform one or more of these three functions; and
(c) dynamic restraints (snubbers) used in systems that perform one or more of these three functions, or to ensure the integrity of the reactor coolant pressure boundary.

Subsection ISTB, "Inservice Testing of Pumps in Light-Water Reactor Nuclear Power Plants" applies to certain centrifugal and positive displacement pumps that have an emergency power source. The application of these requirements and the pump to which these requirements apply are described in Section 2.0 and 3.0 of this Plan.

Subsection ISTC, "Inservice Testing of Valves in Light-Water Reactor Nuclear Power Plants" applies to certain valves and pressure relief devices (and their actuating and position-indicating systems). Mandatory Appendix I, "Inservice Testing of Pressure Relief Devices in Light-Water Reactor Nuclear Power Plants" augments the rules of Subsection ISTC for certain pressure relief devices included in Section III of the ASME Boiler and Pressure Vessel Code and Mandatory Appendix II, "Check Valve Condition Monitoring Program" augments the rules of Subsection ISTC and establishes the requirements for implementing and maintaining a check valve condition monitoring program. The application of these requirements and the valves and pressure relief devices to which these requirements apply are described in Section 4.0 and 5.0 of this Plan.

Subsection ISTD, "Preservice and Inservice Examination and Testing of Dynamic Restraints (Snubbers) in Light-Water Reactor Nuclear Power Plants" applies to certain dynamic restraints (snubbers). The application of these requirements is addressed in the Brunswick Steam Electric Plant Fourth Interval Inservice Inspection (ISI) Program Plan.

Pump and valves installed in ASME Safety Class 1, 2 and 3 systems were first evaluated to determine if any of the exclusion criteria of ISTB-1200 or exemption criteria of ISTC-1200 were applicable. A standardized, step-by-step approach was then used to determine the applicability of the requirements of the Code to each remaining pump and valve which was not clearly exempt. First, a determination was made as to whether the component was located in a system or portion of a system (i.e. a flow path) which is required to be operable in order to shutdown the reactor to the safe shutdown condition, in maintaining the safe shutdown condition, or in mitigating the consequences of an accident. Those which did not perform a specific function were identified as being outside the scope of the Code as defined in ISTA-1100. These components are identified and documented in the Brunswick Steam Electric Plant Inservice Testing Basis Document and are not included in this Plan.

If a valve was determined to be in a safety-related flow path, or in a branch line coming off a safety related flow path, a determination was made to determine what function or functions the valve was required to perform for safe shutdown, accident mitigation, or overpressure protection. The valve was then categorized according to its type and function (Category A, AC, B, C, D) and as to whether it had to change position in order to accomplish any of the safety functions identified (Active vs. Passive). Table ISTC-3500-1, then prescribes which testing requirements should be applied to each specific valve.

1.5 Technical Positions - General

1.5.1 Basis for Program Scope

The Brunswick Steam Electric Plant Updated Final Safety Analysis Report (UFSAR), related design basis documents, and other relevant published accident analyses will be the primary references for determining which components are subject to the requirements of ASME OM Code Inservice Testing requirements. Although several other plant source documents (e.g., Emergency Operating Procedures, vendor's information) identify various components that may be important to plant safety or may be operated in conjunction with recovery from an accident, unless specific credit is taken or assumed in the plant safety analyses for a pump or valve, the component need not be included in the Inservice Testing Program (NUREG-1482, Revision 1, Paragraph 2.2).

1.5.2 Inservice Test Frequency

Brunswick Steam Electric Plant Technical Specifications, Surveillance Requirement 3.0.2, specifies the frequency for each surveillance requirement is met if the surveillance is performed within 1.25 times the interval specified as measured from the previous surveillance performance. This 25% extension will not be used to permanently extend specified test intervals.

1.5.3 Redundant Components

When multiple components are capable of performing the same specified function (e.g., multiple check valves closing in series) only one need be included in the Program. This technical position only applies where licensing documents do not specifically take credit for the designed redundancy. (NUREG-1482, Revision 1, Paragraph 4.1.1)

1.5.4 Passive Failure Protection

In cases where protection of critical systems from passive failures is a commitment as discussed in the UFSAR or other licensing documents, components providing redundancy or isolation of failed components shall be included in the testing program. Valve operation in the case of passive failures will be to isolate the break or condition for inventory retention and as well as flooding prevention (where safety related equipment is in jeopardy) or to provide alternate means of performing the safety function of the affected system (if rendered inoperable).

1.5.5 Accident

For the purpose of this program, an accident is defined as a series of events that could occur in the reactor plant with the ultimate possibility of causing undue risk to the general public as established by 10 CFR 50.67 (Alternate Source Term) for Design Basis Accidents. These accidents are typically discussed and analyzed in Chapter 15 of the Brunswick Steam Electric Plant UFSAR. Other accident analyses described elsewhere in the UFSAR are also considered. Specifically, system and component response to fires (10 CFR 50 Appendix R), and Station Blackout events were not included for inservice testing requirements. 10 CFR 50 Appendix R was excluded due to the defense in depth philosophy used in establishing required component response and Station Blackout was excluded based on exceeding single failure scenarios to enter this condition. Both scenarios were considered as outside the scope of Code inservice testing requirements.

1.5.6 Records and Reports

1.5.6.1 <u>Component Records</u>

This Code requirement is satisfied by the IST Program Basis Document and other plant design documents.

1.5.6.2 <u>Test Plans and Record of Tests</u>

This Code requirement is satisfied by the components applicable surveillance procedures and Engineering Data Sheets.

1.5.6.3 Record of Corrective Action

This Code requirement is satisfied by periodic test procedures, 0ENP-16.1, IST Valve and Pump Data, evaluations and CAP-NGGC-0200, "Corrective Action Program" evaluations.

1.5.7 Preconditioning

NRC Information Notice 97-16 "Preconditioning of Plant Structures, Systems, and Components" stressed the importance of obtaining meaningful results during IST in order to determine the degree to which a component has degraded, if at all, and to determine the component's ability to perform its intended function when required. To obtain meaningful results, it is important to test the components in the as-found condition and to avoid unacceptable preconditioning.

Unacceptable preconditioning is defined as any activity that:

- Is performed to ensure the pump or valve will meet the test acceptance criteria,
- Is performed to prevent the pump or valve from failing the test,
- Will bypass or mask the as-found condition of the pump or valve,
- Is preventive maintenance that is routinely performed on the pump or valve just before testing, or
- Is preventive maintenance on a pump or valve performed only for scheduling convenience.

Acceptable preconditioning includes such activities as:

- periodic venting of pumps, which is not routinely scheduled directly prior to testing but may occasionally be performed before testing;
- pump venting directly prior to testing, provided that the venting operation has proper controls with a technical evaluation to establish that the amount of gas vented would not adversely affect pump operation;
- occasional lubrication of a valve stem prior to testing of the valve, where stem lubrication is not typically performed prior to testing; and
- unavoidable movement attributable to the setup and connection of test equipment.

1.5.8 Basis of Inservice Testing System Requirements

This Section identifies the primary function or functions of each system at Brunswick Steam Electric Plant which bring some or all of its components within the Scope of the Inservice Testing Program. Specific functions for each component can be found in the Inservice Testing Program Basis Document.

1.5.8.1 NSSS: Nuclear Steam Supply System (Nuclear Boiler), System No. 1005

Valves of the Nuclear Boiler System are illustrated on Piping Diagrams D-2520, D-2521, D-2522, D-7007, D-7206, D-25020, D-25021, D-25022, D-70007, and D-72006. Functional requirements are identified in multiple design basis documents, system descriptions, and the UFSAR. The valves in the IST Program provide multiple functions including Containment Isolation, steam supply, and system injection.

1.5.8.2 TIP: Traversing Incore Probe, System No. 1050

Valves of the Traversing Incore Probe System include the TIP ball valves. Functional requirements of Containment Isolation are identified in Section 1.2.1.3 of Design Basis Document 09.

1.5.8.3 CRD: Control Rod Drive Hydraulic System, System No. 1070

Valves of the Control Rod Drive Hydraulic System are shown on Piping Diagrams D-2517 and D-25017. Functional requirements of the CRD Hydraulic System are identified in the Design Basis Document 08. As discussed in Program Remark V-01, for convenience, the respective valve listing only identifies one of each type and application of valves. This should be considered to be typical of each of the 137 hydraulic control units - each one associated with these typical valves.

1.5.8.4 RWCU: Reactor Water Cleanup System, System No. 2010

Valves in the RWCU system are shown on Piping Diagrams D-2527 and D-25027. Their only safety-related function is Containment Isolation.

1.5.8.5 RECIRC: Reactor Coolant Recirculation System, System No. 2020

Valves in the RECIRC System are illustrated on Piping Diagrams D-2518, D-2548, D-25018 and D-25048. Functional requirements are stated in Design Basis Document 02.

1.5.8.6 CS: Core Spray System, System No. 2035

Components of the Core Spray System are shown on Piping Diagrams D-2524 and D-25024. Functional requirements of the Core Spray System are identified in the Design Basis Document 18. The following primary functions comprise the basis for its inclusion in the Inservice Testing Program:

- The CS System shall provide adequate cooling for all intermediate and large line break LOCAs up to, and including, the design-basis double ended recirculation line break, without assistance from any other core standby cooling system.
- The portions of the CS System connected to the reactor process system shall be designed such that, upon gross rupture of piping or equipment external to the Primary Containment, the most restrictive of the following conditions can be met:
  - o The core damage caused by overheating shall not result in fission product release beyond the limits permitted by 10 CFR 50.67.

- o The off-site dose from the steam cloud shall be within limits permitted by 10 CFR 50.67.

1.5.8.7 SLC: Standby Liquid Control System, System No. 2040

Components of the SLC System are illustrated on Piping Diagrams D-2547 and D-25047. Functional requirements are identified in the Design Basis Document 05. The primary functions of the SLC System which comprise the basis for its inclusion in the Inservice Testing Program are:

- The Standby Liquid Control System shall provide a redundant, independent and different way from the use of control rods to bring the reactor subcritical and to maintain it subcritical as the reactor cools.

- The time required to actuate and effect the backup control shall be consistent with the nuclear reactivity rate of change predicted between rated operating and cold shutdown conditions.

1.5.8.8 RHR: Residual Heat Removal System, System No. 2045

The components in the RHR System are illustrated on Piping Diagrams D-2525, D-2526, D-2537, D-2549, D-25025, D-25026, D-25037, and D-25049. Functional requirements are identified in the Design Basis Document 17. The primary functions of the RHR System which comprise the basis for its inclusion in the Inservice Testing Program are:

- Low Pressure Coolant Injection (LPCI) - The LPCI mode of RHR shall provide sufficient makeup to restore and maintain the coolant inventory in the Reactor Vessel to the jet pump inlet (two-thirds core height) following a Design Basis LOCA (RCR line break) so that the core is adequately cooled.

- Containment Cooling (Suppression Pool Cooling Portion) - The RHR System shall provide removal of heat from the Primary Containment so that condensation of the steam resulting from the blowdown due to the design basis LOCA is ensured, and Primary Containment pressure is limited.

- Containment Cooling (Drywell Spray Cooling Portion) - The RHR System provides Drywell spray that condenses steam and cools non-condensable gases in the Containment to aid in reducing Containment pressure and temperature after a LOCA.

1.5.8.9 CAC: Containment Atmosphere Control, System No. 2070

Components of the CAC System are illustrated on Piping Diagrams D-2515, D-7218, D-7326, D-25015, D-72018, and D-73026. Functional requirements are identified in the Design Basis Document 24.

The Containment Atmospheric Control System is divided into the following subsystems:

- Containment Inerting Subsystem
- Containment Atmospheric Dilution (CAD) Subsystem
- Containment Atmospheric Makeup Subsystem
- Containment Atmospheric Monitoring Subsystem
- Containment Vent/Purge Subsystem
- Hardened Wetwell Vent
- CAC Vacuum Breakers

1.5.8.10 HPCI: High Pressure Coolant Injection System, System No. 2095

The HPCI System is illustrated on Piping Diagrams D-2523 and D-25023. Functional requirements are identified in Design Basis Document 19. The HPCI function is not credited in design basis accident mitigation. HPCI is the preferred method of responding to very small line breaks and is a backup system for RCIC with respect to the loss of feedwater and vessel isolation events.

1.5.8.11 RCIC: Reactor Core Isolation Cooling System, System No. 2100

The RCIC System is illustrated on Piping Diagrams D-2529 and D-25029. Functional requirements of the RCIC System are identified in Design Basis Document 12. The RCIC System functions to maintain sufficient coolant in the reactor vessel to prevent overheating of the reactor fuel in the event of reactor isolation accompanied by loss of feedwater flow.

1.5.8.12 RXS: Reactor Building Sampling, System No. 2115 and Post-Accident Sampling System, System No. 2117

Valves in the RXS system are shown on Piping Diagrams D-7327 and D-73027. The only safety-related function for these valves is Containment Isolation.

1.5.8.13 TD: Torus Drain System, System No. 2190

Valves in the TD system are shown on Piping Diagrams D-2698 and D-26098. The only safety-related function for these valves is Containment Isolation.

1.5.8.14 SW: Service Water System, System No. 4060

Service Water System components are shown on Piping Diagrams D-2041, D-2537, D-2274, D-20041, and D-25037. Functional requirements are identified in Design Basis Documents 43. The SW System serves as a heat sink for the general cooling requirements of the RHR System, the Reactor Building Ventilation System (RBVS) ECCS room coolers, and the EDG System.

1.5.8.15 RCC: Reactor Building Closed Cooling Water System, System No. 4070

Valves in the RCC System are shown on Piping Diagrams D-2538 and D-25038. The RCC system has no safety-related design basis. The only safety function of this system is for Containment Isolation.

1.5.8.16 FOD: Diesel Fuel Oil System, System No. 5100

Components of the FOD System are illustrated on Piping Diagrams D-2268 and D-2269. Functional requirements are identified in Design Basis Document 39. The components of the FOD system are considered to be common to both units, with the individual components listed under the BSEP Unit 2 testing program.

1.5.8.17 DSA: Diesel Generator Starting Air System, System No. 5112

Components of the DSA System are illustrated on Piping Diagrams D-2265 and D-2266. Functional requirements are identified in Design Basis Document 39. The components of the DSA system are considered to be common to both units, with the individual components listed under the BSEP Unit 2 testing program.

1.5.8.18 RNA: Instrument Air Supply System, System No. 6135

Valves in the RNA System are shown on Piping Diagrams D-7007, D-7029, D-7077, D-7207, D-7368, D-70007, D-70029, D-70077, D-72007, and D-73068. Functional requirements are identified in Design Basis Document 46.

1.5.8.19 FLR DRN & EQUIP DR: Drywell Drains, System Nos. 6235 and 6240

Valves in the FLR DRN and EQUIP DR Systems are illustrated on Piping Diagrams D-2545 and D-25045. Functional requirements of the valves are identified in Design Basis Document 12. Their only safety-related function is Containment Isolation.

1.5.8.20 SGT: Standby Gas Treatment System, System No. 7071

Components of the SGT System are shown on Flow Diagrams F-4073 and F-40073. Functional requirements are identified in Design Basis Document 10.

1.5.8.21 FPC: Fuel Pool Cooling System, System No. 7110

Components of the FPC System are illustrated on Piping Diagrams D-2549 and D-25049. Functional requirements are identified in UFSAR and Design Basis Document 38.

1.5.8.22 CB VA: HVAC Control Building, System No. 8220

The valves in the CB VA system in the IST Program are illustrated on Flow Diagram F-4080. Functional requirements of the CB VA System are identified in Design Basis Document 37. The tornado check dampers are designed to close against a pressure drop of 3 psi in 3 seconds for 20 seconds.

1.5.8.23 <u>SECONDARY: Reactor Building System, System No. 8240</u>

The valves in the SECONDARY system in the IST Program are illustrated on Flow Diagrams F-4073 and F-40073. Functional requirements of the SECONDARY System are identified in Design Basis Document 58.

1.5.9 Program Remarks

Generic program remarks provide specific detail to better explain and justify the basis for IST program positions taken. Program Remarks are uniquely numbered and components within the IST program affected by specific Program Remarks reference the unique number within pump and valve tables.

1.5.10 Plan Revision

The guidance provided in NUREG 1482, Revision 1, Guidelines for Inservice Testing at Nuclear Power Plants, Paragraph 3.3.3 will be followed for determination of Program changes.

The Plan and/or implementing procedures shall be revised as necessary following applicable changes to Technical Specifications, or plant modifications. Revisions shall be in accordance with 0PRO-NGGC-0204, Procedure Review and Approval. It is not necessary that the Plan be revised prior to the implementing procedures.

If the revised program conflicts with Technical Specifications, an amendment of Technical Specifications shall be submitted to eliminate the conflict. If a proposed change to the Plan involves a Technical Specification change, then the Plan shall not be revised to include the proposed change until the Technical Specification amendment has been approved.

The Inservice Testing Program Plan will be maintained and controlled as a technical report per PRO-NGGC-0204, Procedure Review and Approval.

Preparation and revision of Relief Requests will be performed in accordance of 0ENP-17, Pump and Valve Inservice Testing.

1.6 References

Those Codes, Standards, regulatory documents and correspondence that were instrumental in the development of the current program definition and requirements are as follows:

- Code of Federal Regulations, Title 10, Part 50 Paragraph 55a, Codes and Standards

- American Society of Mechanical Engineers, Code for Operation and Maintenance of Nuclear Power Plants, ASME OMb Code-2003 Addenda to ASME OM Code-2001
- NUREG-1482, Revision 1, Guidelines for Inservice Testing at Nuclear Power Plants, dated April 2004.
- Brunswick Steam Electric Plant Technical Specifications.
- Brunswick Steam Electric Plant Updated Final Safety Analysis Report.
- Brunswick Steam Electric Plant Design Basis Documents.
- Brunswick Steam Electric Plant Inservice Testing Basis Document.
- NRC Information Notice 97-16
- Brunswick Steam Electric Plant Technical Requirements Manual
- NRC Regulatory Issue Summary 2005-20

2.0 PUMP TESTING

2.1 Scope

The Inservice Pump Testing Program includes all centrifugal and positive displacement type pumps installed in ASME Class 1, 2 and 3 systems that are provided with an emergency power source, that are not exempt by Paragraph 2.2 of this section, and which function to:

a) mitigate the consequences of an accident or,

b) place the reactor in a safe shutdown condition and/or maintain the plant in a safe shutdown condition. (The Brunswick Steam Electric Plant Unit 1 and Unit 2 licenses define safe shutdown as hot shutdown.)

2.2 Exemptions

The following are exempt from requirements of this program:

a) pumps that are supplied with emergency power solely for operating convenience.

b) drivers of pumps, except where the pump and driver form an integral unit and the pump bearings are in the driver.

2.3 Definitions

The following definitions are provided to ensure a uniform understanding of select terms associated with pump testing:

Alert Range: range of test results indicating that the associated component, although in a state of operational readiness, is exhibiting degraded performance. Testing of pumps with test results that fall in this range shall be doubled until the cause of the deviation is determined and the condition is corrected. Reference ISTB-6200(a).

Group A Pumps: pumps that are operated continuously or routinely during normal operation, cold shutdown, or refueling operations.

Group B Pumps: pumps in standby systems that are not operated routinely except for testing.

Instrument Loop: two or more instruments or components working together to provide a single output.

Instrument Loop Accuracy: accuracy of an instrument loop based on the square root of the sum of the squares of the inaccuracies of each instrument or component in the loop when considered separately. Alternatively, the allowable inaccuracy of the instrument loop may be based on the output for a known input into the instrument loop.

Pump: a mechanical device used to move fluid.

Pump Design Flow: a point on the pump curve, at substantial flow, where detecting degradation is effective and that is greater than or equal to design basis accident flow.

System Resistance: hydraulic resistance to flow.

2.3 General Program Requirements

Inservice pump tests shall be conducted in accordance with ASME OMb Code-2003 Addenda to ASME OM Code-2001 Code for Operation and Maintenance of Nuclear Power Plants, Subsections ISTA and ISTB, unless specific relief is granted by the Nuclear Regulatory Commission. This Fourth Interval Code of Record has incorporated significant changes to those requirements of the Third Interval Code of Record OMa-1988, Part 6. The Code requires the grouping of pumps as either Group A or Group B with different quarterly test requirements imposed on each Group. Group A pumps are defined as pumps that operate continuously or routinely during normal operation, cold shutdown, or refueling operations. Group B pumps are defined as pumps in standby systems that are not operated routinely except for testing. The Code has also adopted the biennial Comprehensive pump test which has more stringent acceptance criteria for the hydraulic parameters as well as more stringent accuracy requirements for pressure instrumentation.

Inservice pump tests shall be conducted nominally every three months during normal plant operation, with Comprehensive pump tests performed biennially, except as provided below:

- Group A pumps that are operated more frequently than every three months need not be run or stopped for a special test provided the plant records show the pump was operated at least once every 3 months at reference conditions, and the quantities specified were determined , recorded, and analyzed per ISTB-6000.

- The Code requires performing pump tests throughout extended shutdown periods for operable equipment. For a pump in a system declared inoperable or not required to be operable, the test schedule need not be followed. Within 3 months prior to placing the system into an operable status, the pump shall be tested and the test schedule resumed. For pumps which can only be tested during plant startup or operation, the pump shall be tested within one week following plant startup unless more restrictive Technical Specification provisions apply.

2.4 Specific Testing Requirements

This Section defines requirements for Group A, Group B, and Comprehensive inservice tests, and preservice tests. When a Group A test is required, a Comprehensive test may be substituted. When a Group B test is required, a Group A or Comprehensive test may be substituted. A preservice test may be substituted for any inservice test. The parameters to be measured are specified in Table ISTB-3000-1.

2.4.1 Test Duration

For the Group A and the Comprehensive test, after pump conditions are as stable as the system permits, each pump shall be run for at least 2 minutes. At the end of this time at least one measurement or determination of each of the quantities required shall be made and recorded.

For the Group B test, after pump conditions are stable, at least one measurement or determination of each of the quantities required shall be made and recorded.

2.4.2 Preservice Testing (Centrifugal and Vertical Line Shaft)

In systems where resistance can be varied, flow rate and differential pressure shall be measured at a minimum of five points. If practicable, these points shall be from pump minimum flow to at least pump design flow. A pump curve shall be established based on the measured points. At least one point shall be designated as the reference point(s). Data taken at the reference point will be used to compare the results of inservice tests. A pump curve need not be established for pumps in systems where resistance cannot be varied. Vibration measurements are only required to be taken at the reference point(s).

2.4.3 Preservice Testing (Positive Displacement)

For positive displacement pumps, reference values shall be taken at or near pump design pressure for the required parameters. Vibration measurements are only required to be taken at the reference point(s).

2.4.4 Group A Inservice Test and Comprehensive Test

Group A and Comprehensive tests shall be conducted with the pump operating at a specified reference point. The test parameters shall be determined or measured as follows:

The pump shall be operated at nominal motor speed for constant speed drives or at speed adjusted to the reference point (± 1%) for variable speed drives.

> Note: For positive displacement pumps discharge pressure shall be substituted for differential pressure.

The resistance of the system shall be varied until the flow rate equals the reference point. The differential pressure shall then be determined and compared to its reference value. Alternatively, the flow rate shall be varied until the differential pressure equals the reference point and the flow rate determined and compared to the reference flow rate value.

Where it is not practical to vary system resistance, flow rate and pressure shall be determined and compared to their respective reference values.

Vibration (displacement or velocity) shall be determined and compared to the reference value. Vibration measurements shall be broad band (unfiltered). If velocity measurements are used, they shall be peak. If displacements amplitudes are used, they shall be peak-to-peak.

All deviations from the reference values shall be compared with the ranges of Tables ISTB-5100-1, ISTB-5200-1, or ISTB-5300-1, as applicable and corrective action taken as specified in ISTB-6200. Vibration measurements shall be compared to both the relative and absolute criteria shown in the alert and required action ranges of Tables ISTB-5100-1, ISTB-5200-1, or ISTB-5300-1, as applicable. For example, if vibration exceeds either 6Vr or 0.7 in/sec the pump is in the required action range.

2.4.5 Group B Inservice Test

Group B tests shall be conducted with the pump operating at a specified reference point. The test parameters shall be determined or measured as follows:

The pump shall be operated at nominal motor speed for constant speed drives or at speed adjusted to the reference point (± 1 %) for variable speed drives.

> Note: For positive displacement pumps discharge pressure shall be substituted for differential pressure.

The differential pressure or flow rate shall be determined and compared to its reference value. System resistance may be varied as necessary to achieve the reference point.

All deviations from the reference values shall be compared with the ranges of Tables ISTB-5100-1, ISTB-5200-1, or ISTB-5300-1, as applicable, and corrective action taken as specified in ISTB-6200.

2.5 Allowable Ranges of Test Parameters

The allowable ranges, specified in the OM Code, used for pressure, flow, and vibration measurements except as provided in relief requests are identified in the following Tables:

Table ISTB-5100-1 - Centrifugal Pump Test Acceptance Criteria
Table ISTB-5200-1 - Vertical Line Shaft and Centrifugal Pump Test Acceptance Criteria
Table ISTB-5300-1 - Positive Displacement Pump (Except Reciprocating) Test Acceptance Criteria
Table ISTB-5300-2 - Reciprocating Positive Displacement Pump Test Acceptance Criteria

In some cases, the performance of a pump may be adequate to fulfill its safety function even though there may be a measurement that falls outside the allowable range. Should this situation occur, an operability determination may be performed, in accordance with NRC Regulatory Issue Summary 2005-20, NUREG-1482, Revision 1, Section 5.6, and Brunswick Steam Electric Plant administrative procedures.

2.6 Testing of Non-Code Components

The HPCI pumps (1-E41-C001 and 2-E41-C001), RCIC pumps (1-E51-C001 and 2-E51-C001), and Diesel Fuel Oil Transfer Pumps (2-DGFO-1A, 1B, 2A, 2B, 3A, 3B, 4A, and 4B) are non-Code class augmented components. These pumps are tested to the same OM Code requirements as Code class components to the extent practicable. The HPCI and RCIC pumps are classified as Group B pumps and will receive a group 'B' and Comprehensive test. The FOD pumps are classified as Group B pumps and will receive a group 'B' and Comprehensive test. This is noted in the Pump tables. (Reference NUREG 1482 Rev. 1, section 2.2.3)

2.7 Instrumentation

Instrumentation used in the IST Program will conform to the requirements of the Code except where specific relief is requested. Two or more instruments or components working together to provide a single output are considered an instrument loop. The allowable inaccuracy of an instrument loop is based on the square root of the sum of the squares of the inaccuracies of each instrument in the loop. The instrument accuracy requirements refer to the calibration of the instrument. The Code does not require consideration of other factors which could contribute to measurement error such as orifice wear, instrument location, etc. (Ref. Code Interpretation 95-7) However, excessive measurement error would be detected by erratic or unacceptable test results which would require corrective action. If test results are due to out of calibration instruments, the instruments may be recalibrated and the test rerun. If it is determined that unacceptable test results are due to other instrument problems, corrective action shall be by repair or replacement of the instrument system.

The Code requires that flow rate be measured using a rate or quantity meter installed in or on the pump test circuit. Differential pressure may be measured using a dP gauge or transmitter, or may be determined by the difference between the pressure at the inlet and outlet of the pump. Per NUREG-1482, Revision 1, Section 5.5.3, suction pressure may be calculated based on inlet tank or bay level.

Vibration instrumentation shall be calibrated over the required frequency response range of one third minimum pump speed to at least 1000 HZ except where specific relief is requested.

Pursuant to NUREG-1482, Revision 1, Section 5.5, Brunswick Steam Electric Plant shall adopt Code Case OMN-6, "Alternative Rules for Digital Instruments"; whereas, digital instruments may be selected such that the reference value does not exceed 90% of the calibrated range of the instrument in lieu of the OM Code required 70%. The use of this Code Case is discussed in Program Remark P-01.

2.8 Reference Values

Reference values are determined from the results of the preservice or first inservice test. Reference values will only be established when the pump is known to be operating properly.

When any reference value may have been affected by repair, replacement, or routine servicing of a pump, a new reference value or set of reference values shall be determined, or the previous values(s) reconfirmed by a Comprehensive or Group A test run prior to declaring the pump operable. Deviations between the previous and new reference value(s) shall be evaluated and verification that the new reference values represent acceptable pump operation shall be documented by a completed 0ENP-16.1, IST Pump and Valve Data, Attachment 2. This review shall consider the minimum design basis performance criteria as established by the Inservice Test Engineer for the affected pump.

Pumps may be tested at more than one point of pump operation. Additional reference values must be established for these points in accordance with ISTB-3310, ISTB-3320, or ISTB-6200(c). Whenever an additional set of reference values is established, the reasons for doing so shall be documented in the record of tests.

Reference values shall be established in a region(s) of relatively stable pump flow. Reference values shall be established within ± 20% of pump design flow rate for the Comprehensive pump test. Reference values shall be established within ± 20% of pump design flow rate for the Group A and Group B pump tests, if practicable. If not practicable, the reference point flow rate shall be established at the highest practical flow rate.

The Code requires that reference values be established at points of pump operation that can be readily duplicated during subsequent tests. It may not be possible, or it may be extremely difficult, to vary system resistance such that the reference conditions are duplicated exactly. NUREG-1482, Revision 1, Section 5.3, allows variation in the setting of a fixed reference value of either differential pressure or flow rate, provided the combination of this variation and the associated instrument error does not exceed ± 2 percent for Group A and Group B tests. For Preservice and Comprehensive tests, the allowable total tolerance is ±1/2 percent for pressure and differential pressure, ± 2 percent for flow. For a tolerance greater than previously stated (which may be necessary depending on the precision of the instrument), a corresponding adjustment to acceptance criteria may be made to compensate for the uncertainty, or an evaluation would be performed and documented justifying a greater tolerance. For tolerances greater than those previously discussed, a relief request may be required. In using this guidance, the variance and the method for establishing the variance must be documented in the IST program documents or implementing procedures.

2.9 Pump Design Flow

The definition of pump design flow is the subject of a significant difference of opinion between the ASME OM committee and the NRC. ASME intended design flow to mean a point on the pump curve, at substantial flow, where detecting degradation is effective. NRC has made a clear interpretation that design flow was intended to mean design basis accident flow.

Pump design flow is defined at BSEP as a point on the pump curve, at substantial flow, where detecting degradation is effective and that is greater than or equal to design basis accident flow.

2.10 Maintenance Requiring/Not Requiring Surveillance Test

A pump may or may not require the surveillance procedures referenced in this Plan as the required post-maintenance testing prior to being returned to service. Each instance will be evaluated separately to determine if surveillance procedure performance is required as the post-maintenance test. The following procedures are used to determine post maintenance test requirements for pumps

- PLP-20, Post Maintenance Testing Program, and BNP-TR-008, Inservice Inspection/Testing Guideline

Typical maintenance activities that may require surveillance procedure performance as the post-maintenance test include the following:

- Partial or complete disassembly of pump.
- Disconnection of coupling.
- Disassembly of pump suction or discharge piping
- Disassembly of pump bearing housing and/or removal of bearing.
- Replacement or readjustment of pump packing/seal.

Typical activities not requiring post-maintenance pump testing include the following.

- Maintenance limited to the driver unless the coupling has been disconnected or the pump's bearings are located in the driver.
- Maintenance limited to any gear box, unless couplings have been disconnected or gears have been adjusted or replaced.
- Maintenance limited to support systems (lube oil coolers, cyclone separators, etc.).

2.11 Pump Fixed Reference Variance

NUREG-1482, Revision 1, Section 5.3 recognizes that certain plant designs are not conducive to adjusting system resistance to obtain an exact fixed reference value. The staff has determined that, if establishing and maintaining flow at an exact value is not possible, achieving a steady flow rate or differential pressure at approximately the set value does not require relief for establishing pump curves.

When system design does not support setting flow rate at a specific reference value, an allowable tolerance shall be determined based on the applicable instrument precision. The allowable variance from the reference value will not exceed ± 2% without a corresponding adjustment to acceptance criteria or evaluation being performed to justify the greater variance.

Any adjustments to acceptance criteria or evaluations to increase the allowable tolerance must be documented in the inservice testing program documents.

2.12 Pump Speed

The HPCI (1-E41-C001 & 2-E41-C001) and RCIC (1-E51-C001 & 2-E51-C001) pumps are variable speed turbine driven pumps. During applicable surveillances, the pump speed will be adjusted to the reference speed.

Except for HPCI and RCIC pumps, the pumps tested by the Brunswick Steam Electric Plant IST Program are directly coupled to a constant speed induction-type driver, and measurement of pump speed is not required by the Code.

2.13 Minimum Design Basis Verification

Inservice Testing is intended to monitor degradation of components. The Code does not require that pumps be tested at design-basis conditions. The Code allows a specific percentage of degradation of pump hydraulic performance from an established reference value before action must be taken. At the Brunswick Steam Electric Plant, if the minimum design performance as specified in the plant design documentation is more stringent than the Code acceptance criteria, then the test acceptance criteria shall be adjusted to avoid the actual pump performance being allowed to degrade below the minimum acceptable design performance.

2.14 Test Deviations Within the Required Action Range

Code, Paragraph ISTB 6200(b) allows that "if the measured test parameter values fall within the required action range of Table ISTB 5100-1, Table ISTB 5200-1, Table ISTB 5300-1 or Table ISTB 5300-2, as applicable, the pump shall be declared inoperable until either the cause of the deviation has been determined and the condition is corrected, or an analysis of the pump is performed and new reference values are established in accordance with paragraph ISTB 6200(c)." This paragraph allows that: "In cases where the pump's test parameters are within either the alert or required action ranges of Table ISTB 5100-1, Table ISTB 5200-1, Table ISTB 5300-1 or Table ISTB 5300-2, as applicable, and the pump's continued use at the changed values is supported by an analysis, a new set of reference values may be established. This analysis shall include verification of the operational readiness of the pump. The analysis shall include both a pump level and system level evaluation of operational readiness, the cause of the change in pump performance, and an evaluation of all trends indicated by available data. The results of this analysis shall be documented in the record of tests."

To use an analysis as described above, one must know the cause of the degradation, the rate of degradation, and the minimum allowed pump performance that will still satisfy the safety function of the pump in question.

Returning a pump to service by analysis should be done cautiously, rather than regularly, when evaluating pumps in the Required Action range. Repeated application of analysis could lead to "stair stepping" the Code action range limit downward to the safety limit of the pump. The available margin of pumps will be the determining factor in whether or not continued operation is acceptable. The analysis, which should include detailed justification and discussion of changes in the pump reference values, must be documented in accordance with Code requirements. If this provision is used for vibration, the absolute limits continue to apply, as these are not dependent on reference values. Additionally, caution must be taken when using the alternative for vibration, as there are no defined safety margins related to pump vibration.

2.15 Pump Table Information

The Pump Table contains the following information:

- Pump No. - pump identification numbers.
- Flow Diagram and Coordinates - This identifies the flow diagram number, sheet, and coordinates to locate the pump.
- Pump Type - pump design type as identified by the following:
    - Centrifugal
    - Positive Displacement
    - Vertical Line Shaft
- Code Class - ASME Class 1, 2, 3, or S (Non Class)
- Pump Group – Group A or Group B
- Test Type – Test Type & Parameter required to be measured:
    - CPT – Comprehensive Pump Test
    - S – Speed
    - DP – Differential Pressure
    - P – Discharge Pressure
    - Q – Flow Rate
    - V – Vibration
- Freq - Frequency of test performance as identified by the following abbreviations:
    - Q Quarterly
    - 2Y Biennial
- Procedure - Procedure used to perform the test.
- Relief Request

3.0 PUMP TABLE

Unit 1 IST Pumps

Pump No	Flow Diagram/ Coordinate	Pump Type	Code Class	Pump Group	Test Type	Frequency	Procedure	Relief/ Justification/ Remark
Core Spray System; System No. 2035								
1-E21-C001A	D-25024 sh.2 / C-1	Centrifugal	2	B	CPT DP	2Y Q	0PT-07.2.4a 0PT-07.2.4a	PRR-01, PRR-03 & P-03 PRR-01 & PRR-03
1-E21-C001B	D-25024 sh.1 /C-2	Centrifugal	2	B	CPT DP	2Y Q	0PT-07.2.4b 0PT-07.2.4b	PRR-01, PRR-03 & P-03 PRR-01 & PRR-03
Standby Liquid Control System; System No. 2040								
1-C41-C001A	D-25047 / C-5	Positive Displacement	2	B	CPT Q	2Y Q	0PT-06.1 0PT-06.1	P-01
1-C41-C001B	D-25047 / B-5	Positive Displacement	2	B	CPT Q	2Y Q	0PT-06.1 0PT-06.1	P-01
Residual Heat Removal System; System No. 2045 – RHR Service Water Pumps								
1-E11-C001A	D-25037 sh.1 / E-5	Centrifugal	3	A	CPT DP Q V	2Y Q Q Q	0PT-08.1.4a 0PT-08.1.4a 0PT-08.1.4a 0PT-08.1.4a	PRR-02 PRR-02
1-E11-C001B	D-25037 sh.2 / E-2	Centrifugal	3	A	CPT DP Q V	2Y Q Q Q	0PT-08.1.4b 0PT-08.1.4b 0PT-08.1.4b 0PT-08.1.4b	PRR-02 PRR-02
1-E11-C001C	D-25037 sh.1 / E-7	Centrifugal	3	A	CPT DP Q V	2Y Q Q Q	0PT-08.1.4a 0PT-08.1.4a 0PT-08.1.4a 0PT-08.1.4a	PRR-02 PRR-02
1-E11-C001D	D-25037 sh.2 / E-4	Centrifugal	3	A	CPT DP Q V	2Y Q Q Q	0PT-08.1.4b 0PT-08.1.4b 0PT-08.1.4b 0PT-08.1.4b	PRR-02 PRR-02

Pump No	Flow Diagram/ Coordinate	Pump Type	Code Class	Pump Group	Test Type	Frequency	Procedure	Relief/ Justification/ Remark
Residual Heat Removal System; System No. 2045 – RHR (LPCI) Pumps								
1-E11-C002A	D-25025 sh.1B / B-6	Centrifugal	2	A	CPT	2Y	0PT-08.2.2b	PRR-01 & P-03
					DP	Q	0PT-08.2.2b	
					Q	Q	0PT-08.2.2b	PRR-01
					V	Q	0PT-08.2.2b	P-03
1-E11-C002B	D-25026 sh.2B / A-5	Centrifugal	2	A	CPT	2Y	0PT-08.2.2c	PRR-01 & P-03
					DP	Q	0PT-08.2.2c	
					Q	Q	0PT-08.2.2c	PRR-01
					V	Q	0PT-08.2.2c	P-03
1-E11-C002C	D-25025 sh.1B / B-3	Centrifugal	2	A	CPT	2Y	0PT-08.2.2b	PRR-01 & P-03
					DP	Q	0PT-08.2.2b	
					Q	Q	0PT-08.2.2b	PRR-01
					V	Q	0PT-08.2.2b	P-03
1-E11-C002D	D-25026 sh.2B / A-8	Centrifugal	2	A	CPT	2Y	0PT-08.2.2c	PRR-01 & P-03
					DP	Q	0PT-08.2.2c	
					Q	Q	0PT-08.2.2c	PRR-01
					V	Q	0PT-08.2.2c	P-03
High Pressure Coolant Injection System; System No. 2095								
1-E41-C001	D-25023 sh.1 / C-5&6	Centrifugal	S	B	CPT	2Y	0PT-09.2	Augmented, P-02
					S	Q	0PT-09.2	Augmented
					DP	Q	0PT-09.2	Augmented, P-02
Reactor Core Isolation Cooling System; System No. 2100								
1-E51-C001	D-25029 sh.1 / B-4	Centrifugal	S	B	CPT	2Y	0PT-10.1.1	Augmented
					DP	Q	0PT-10.1.1	
					S	Q	0PT-10.1.1	

Pump No	Flow Diagram/ Coordinate	Pump Type	Code Class	Pump Group	Test Type	Frequency	Procedure	Relief/ Justification/ Remark
Service Water System; System No. 4060								
1-SW-1A-CONV-PMP	D-20041 sh.1 / B-2	Centrifugal	3	A	CPT DP Q V	2Y Q Q Q	1PT-24.1-1 1PT-24.1-1 1PT-24.1-1 1PT-24.1-1	
1-SW-1B-CONV-PMP	D-20041 sh.1 / B-4	Centrifugal	3	A	CPT DP Q V	2Y Q Q Q	1PT-24.1-1 1PT-24.1-1 1PT-24.1-1 1PT-24.1-1	
1-SW-1C-CONV-PMP	D-20041 sh.1 / B-7	Centrifugal	3	A	CPT DP Q V	2Y Q Q Q	1PT-24.1-1 1PT-24.1-1 1PT-24.1-1 1PT-24.1-1	
1-SW-1A-NUC-PMP	D-20041 sh.2 / B-4	Centrifugal	3	A	CPT DP Q V	2Y Q Q Q	1PT-24.1-1 1PT-24.1-1 1PT-24.1-1 1PT-24.1-1	
1-SW-1B-NUC-PMP	D-20041 sh.2 / B-7	Centrifugal	3	A	CPT DP Q V	2Y Q Q Q	1PT-24.1-1 1PT-24.1-1 1PT-24.1-1 1PT-24.1-1	

Unit 2 IST Pumps

Pump No	Flow Diagram/ Coordinate	Pump Type	Code Class	Pump Group	Test Type	Frequency	Procedure	Relief/ Justification/ Remark
Core Spray System; System No. 2035								
2-E21-C002A	D-2524 sh. 2 / C-1	Centrifugal	2	B	CPT DP	2Y Q	0PT-7.2.4a 0PT-7.2.4a	PRR-01, PRR-03 & P-03 PRR-01 & PRR-03
2-E21-C002B	D-2524 sh. 1 / C-2	Centrifugal	2	B	CPT DP	2Y Q	0PT-7.2.4b 0PT-7.2.4b	PRR-01, PRR-03 & P-03 PRR-01 & PRR-03
Standby Liquid Control System; System No. 2040								
2-C41-C002A	D-2547 / C-5	Positive Displacement	2	B	CPT Q	2Y Q	0PT-06.1 0PT-06.1	P-01
2-C41-C002B	D-2547 / B-5	Positive Displacement	2	B	CPT Q	2Y Q	0PT-06.1 0PT-06.1	P-01
Residual Heat Removal System; System No. 2045 – RHR Service Water Pumps								
2-E11-C001A	D-2537 sh. 2 / E-5	Centrifugal	3	A	CPT DP Q V	2Y Q Q Q	0PT-08.1.4a 0PT-08.1.4a 0PT-08.1.4a 0PT-08.1.4a	PRR-02 PRR-02
2-E11-C001B	D-2537 sh. 2 / E-2	Centrifugal	3	A	CPT DP Q V	2Y Q Q Q	0PT-08.1.4b 0PT-08.1.4b 0PT-08.1.4b 0PT-08.1.4b	PRR-02 PRR-02
2-E11-C001C	D-2537 sh. 1 / E-7	Centrifugal	3	A	CPT DP Q V	2Y Q Q Q	0PT-08.1.4a 0PT-08.1.4a 0PT-08.1.4a 0PT-08.1.4a	PRR-02 PRR-02
2-E11-C001D	D-2537 sh. 2 / E-4	Centrifugal	3	A	CPT DP Q V	2Y Q Q Q	0PT-08.1.4b 0PT-08.1.4b 0PT-08.1.4b 0PT-08.1.4b	PRR-02 PRR-02

Pump No	Flow Diagram/ Coordinate	Pump Type	Code Class	Pump Group	Test Type	Frequency	Procedure	Relief/ Justification/ Remark
Residual Heat Removal System; System No. 2045 – RHR (LPCI) Pumps								
2-E11-C002A	D-2525 sh. 1B / B-6	Centrifugal	2	A	CPT	2Y	0PT-08.2.2b	PRR-01 & P-03
					DP	Q	0PT-08.2.2b	
					Q	Q	0PT-08.2.2b	PRR-01
					V	Q	0PT-08.2.2b	P-03
2-E11-C002B	D-2526 sh. 2B / A-5	Centrifugal	2	A	CPT	2Y	0PT-08.2.2c	PRR-01 & P-03
					DP	Q	0PT-08.2.2c	
					Q	Q	0PT-08.2.2c	PRR-01
					V	Q	0PT-08.2.2c	P-03
2-E11-C002C	D-2525 sh. 1B / B-3	Centrifugal	2	A	CPT	2Y	0PT-08.2.2b	PRR-01 & P-03
					DP	Q	0PT-08.2.2b	
					Q	Q	0PT-08.2.2b	PRR-01
					V	Q	0PT-08.2.2b	P-03
2-E11-C002D	D-2526 sh. 2B / A-8	Centrifugal	2	A	CPT	2Y	0PT-08.2.2c	PRR-01 & P-03
					DP	Q	0PT-08.2.2c	
					Q	Q	0PT-08.2.2c	PRR-01
					V	Q	0PT-08.2.2c	P-03
High Pressure Coolant Injection System; System No. 2095								
2-E41-C001	D-2523 sh. 1 / C-3&4	Centrifugal	S	B	CPT	2Y	0PT-09.2	Augmented, P-02
					S	Q	0PT-09.2	Augmented
					DP	Q	0PT-09.2	Augmented, P-02
Reactor Core Isolation Cooling System; System No. 2100								
2-E51-C001	D-2529 sh. 1 / B-4	Centrifugal	S	B	CPT	2Y	0PT-10.1.1	Augmented
					DP	Q	0PT-10.1.1	
					S	Q	0PT-10.1.1	

Pump No	Flow Diagram/ Coordinate	Pump Type	Code Class	Pump Group	Test Type	Frequency	Procedure	Relief/ Justification/ Remark
Service Water System; System No. 4060								
2-SW-2A-CONV-PMP	D-2041 sh.1 / B-2	Centrifugal	3	A	CPT DP Q V	2Y Q Q Q	2PT-24.1-2 2PT-24.1-2 2PT-24.1-2 2PT-24.1-2	
2-SW-2B-CONV-PMP	D-2041 sh.1 / B-4	Centrifugal	3	A	CPT DP Q V	2Y Q Q Q	2PT-24.1-2 2PT-24.1-2 2PT-24.1-2 2PT-24.1-2	
2-SW-2C-CONV-PMP	D-2041 sh.1 / B-7	Centrifugal	3	A	CPT DP Q V	2Y Q Q Q	2PT-24.1-2 2PT-24.1-2 2PT-24.1-2 2PT-24.1-2	
2-SW-2A-NUC-PMP	D-2041 sh.2 / B-4	Centrifugal	3	A	CPT DP Q V	2Y Q Q Q	2PT-24.1-2 2PT-24.1-2 2PT-24.1-2 2PT-24.1-2	
2-SW-2B-NUC-PMP	D-2041 sh.2 / B-7	Centrifugal	3	A	CPT DP Q V	2Y Q Q Q	2PT-24.1-2 2PT-24.1-2 2PT-24.1-2 2PT-24.1-2	

Pump No	Flow Diagram/ Coordinate	Pump Type	Code Class	Pump Group	Test Type	Frequency	Procedure	Relief/ Justification/ Remark
Fuel Oil System; System No. 5100								
2-DGFO-1A	D-2268 sh. 1A / B-3	Positive Displacement	S	B	CPT Q V	2Y Q Q	0PT-12.4A 0PT-12.4A 0PT-12.4A	EER 90-0247 V-10
2-DGFO-1B	D-2268 sh. 1A / B-2	Positive Displacement	S	B	CPT Q V	2Y Q Q	0PT-12.4A 0PT-12.4A 0PT-12.4A	EER 90-0247 V-10
2-DGFO-2A	D-2268 sh. 1B / B-3	Positive Displacement	S	B	CPT Q V	2Y Q Q	0PT-12.4B 0PT-12.4B 0PT-12.4B	EER 90-0247 V-10
2-DGFO-2B	D-2268 sh. 1B / B-2	Positive Displacement	S	B	CPT Q V	2Y Q Q	0PT-12.4B 0PT-12.4B 0PT-12.4B	EER 90-0247 V-10
2-DGFO-3A	D-2269 sh. 2A / B-3	Positive Displacement	S	B	CPT Q V	2Y Q Q	0PT-12.4C 0PT-12.4C 0PT-12.4C	EER 90-0247 V-10
2-DGFO-3B	D-2269 sh. 2A / B-2	Positive Displacement	S	B	CPT Q V	2Y Q Q	0PT-12.4C 0PT-12.4C 0PT-12.4C	EER 90-0247 V-10
2-DGFO-4A	D-2269 sh. 2B / B-3	Positive Displacement	S	B	CPT Q V	2Y Q Q	0PT-12.4D 0PT-12.4D 0PT-12.4D	EER 90-0247 V-10
2-DGFO-4B	D-2269 sh. 2B / B-2	Positive Displacement	S	B	CPT Q V	2Y Q Q	0PT-12.4D 0PT-12.4D 0PT-12.4D	EER 90-0247 V-10

4.0 VALVE TESTING

4.1 Scope

The Inservice Valve Testing Program includes valves, pressure relief devices, and their actuating and position indicating systems installed in ASME Class 1, 2 or 3 systems that are not exempt by Paragraph 4.2 below. The active and passive valves included are those which are required to perform a specific function to:

a) mitigate the consequences of an accident or,

b) place the reactor in a safe shutdown condition and/or in maintaining the safe shutdown condition. (The Brunswick Steam Electric Plant Unit 1 and Unit 2 licenses define safe shutdown as hot shutdown.)

The pressure relief devices included are those required for protecting systems or portions of systems which perform a required function to:

a) mitigate the consequences of an accident or,

b) place the reactor in a safe shutdown condition and/or in maintaining the safe shutdown condition.

4.2 Exemptions

The following are exempt from requirements of this program provided that the valves are not required to perform a specific function as specified above:

a) Maintenance Valves - valves that are used only for system or component maintenance.

b) Operating Convenience Valves - valves used only for operating convenience, such as vent, drain, instrument, and test valves.

c) System Control Valves - valves used only for system control, such as pressure regulating, flow control, etc.

d) External Control and Protection Systems - valves in systems responsible for sensing plant conditions and providing signals for valve operation.

e) Relief Valves located in portions of safety related systems that are isolated or not required to function in mitigating the consequences of an accident or placing the plant in a safe shutdown condition.

4.3 Definitions

The following definitions are provided to ensure a uniform understanding of select terms associated with valve testing:

Exercising: the demonstration based on direct visual or indirect positive indications that the moving parts of a valve function.

Full-Stroke Time: the time interval from the initiation of the actuating signal to the indication of the end of the operating stroke (switch to light).

Power-Operated Relief Valve (PORV): a power-operated valve that can perform a pressure-relieving function and is remotely actuated by either a signal from a pressure-sensing device or a control switch. A power-operated relief valve is not capacity certified under ASME Section III overpressure protection requirements.

Rapid Acting: Valves with a stroke time of 2 seconds or less.

Reactor Coolant System Pressure Isolation: that function that prevents intersystem overpressurization between the reactor coolant system and connected low pressure systems.

Remote Position Indication Verification: verification that position indication devices, remote from the valve, indicate proper valve position.

Valve, Category A: valves for which seat leakage, in the closed position, is limited to a specific maximum amount for fulfillment of their required safety function(s).

Valve, Category B: valves for which seat leakage, in the closed position, is inconsequential for fulfillment of their required safety function(s).

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

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

4.4 General Program Requirements

Preservice and inservice valve tests shall be conducted in accordance with ASME OMb Code-2003 Addenda to ASME OM Code-2001 Code for Operation and Maintenance of Nuclear Power Plants, Subsections ISTA, ISTC, Mandatory Appendix I, and Mandatory Appendix II unless specific relief is granted by the Nuclear Regulatory Commission.

4.4.1 Preservice Testing

Each new valve shall be tested during the preservice test period as required by the provisions of ISTC (see Table 1, Section 4.4.2). These tests shall be conducted under conditions as near as practicable to those expected during subsequent inservice testing.

4.4.2 Inservice Testing

Inservice testing of active and passive valves shall be performed in accordance with ISTC as specified in Table 1 below:

TABLE 1
INSERVICE TEST REQUIREMENTS

Category	Valve Function	Leakage Test Procedure and Frequency.	Exercise Test Procedure and Frequency.	Special Test Procedure [Note 1]	Position Indication Verification and Frequency.
A	Active	ISTC-3600	ISTC-3510	None	ISTC-3700
A	Passive	ISTC-3600	None	None	ISTC-3700
B	Active	None	ISTC-3510	None	ISTC-3700
B	Passive	None	None	None	ISTC-3700
C (Safety and Relief) [Note 3]	Active	None [Notes 2&3]	ISTC-5230, ISTC-5240	None	ISTC-3700
C (Check) [Note 4]	Active	None [Note 3]	ISTC-3510	None	ISTC-3700
D	Active	None [Note 3]	None	ISTC-5250, ISTC-5260	None

NOTES:

(1) Note additional requirement for fail-safe valves, ISTC-3500.

(2) Leak test as required for Appendix I (OM-1)

(3) When more than one distinguishing category characteristic is applicable, all requirements of each of the individual categories are applicable, although duplication or repetition of common testing requirements is not necessary.

(4) If a check valve used for a pressure relief device is capacity certified, then it shall be classified as a pressure or vacuum relief device. If a check valve used to limit pressure is not capacity certified, then it shall be classified as a check valve.

Inservice valve exercise tests shall be conducted nominally every three months during normal plant operation except as provided below:

a) If practicable, active Category A and B valves shall be full-stroke exercised during plant operation to the position(s) required to fulfill their safety function(s).

b) If full-stroke exercising during plant operation is not practicable, it may be limited to part-stroke during plant operation and full stroke during cold shutdowns.

c) If exercising is not practicable during plant operation, it may be limited to full-stroke exercising at cold shutdowns

d) If exercising is not practicable during plant operation and full-stroke during cold shutdowns is also not practicable, it may be limited to part-stroke during cold shutdowns, and full-stroke during refueling outages.

e) If exercising is not practicable during operation or cold shutdowns, it may be limited to full-stroke during refueling outages.

f) Valves full-stroke exercised at cold shutdowns shall be exercised during each cold shutdown, except as specified in (g) below. Such exercise is not required if the time period since the previous full-stroke exercise is less than 3 months.

g) 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. If an outage is planed for a duration sufficient to allow testing of all valves required to be tested during cold shutdown, then the 48 hour requirement need not apply, provided all valves are tested prior to plant startup.

h) All valve testing required to be performed during a refueling outage shall be completed prior to returning the plant to operation.

i) Valves which operate in the course of operation at a frequency which would satisfy the exercising requirements of this Section need not be additionally exercised, provided that the observations otherwise required for testing are made and analyzed during such operation and are recorded at intervals as specified in this Section.

j) For a valve in a system declared inoperable or not required to be operable, the exercising test schedule need not be followed. Within 3 months prior to placing the system in an operable status, the valves shall be exercised and the schedule resumed in accordance with the requirements of this Section.

k) Manual valves shall be full-stroke exercised at least once every 2 years, except where adverse conditions (e.g. harsh service environment, lubricant hardening, corrosive or sediment-laden process fluid, or degraded valve components) may require the valve to be tested more frequently to ensure operational readiness. Any increased testing frequency shall be specified in the Valve Tables. The manual valves shall exhibit the required change of obturator position.

4.5 Specific Testing Requirements

The IST Plan Valve Tables identify the valves included in the Brunswick Steam Electric Plant IST Program, the inservice test parameters to be measured, the test requirements, the test frequencies, references to cold shutdown justifications, refueling outage justifications, valve relief requests, and other pertinent information. Specific test requirements and technical positions are presented in this section of the Plan

4.5.1 Cold Shutdown Testing

For those valves designated to be tested at cold shutdown, testing will commence as soon as practicable after the plant reaches a stable cold shutdown condition as defined in Technical Specifications, but no later than 48 hours after reaching cold shutdown. Valves tested at a cold shutdown frequency may also include valves tested while decreasing power to cold shutdown or while increasing power to steady state power operation. If an outage is planned for a duration sufficient to allow testing of all valves required to be tested during cold shutdown, then the 48 hour requirement need not apply, provided all valves are tested prior to plant startup. Valve testing will not necessarily be performed more often than once every three months; however, during extended periods of cold shutdown, testing will be performed quarterly. Completion of all valve testing during a cold shutdown outage will not be required if plant conditions preclude testing of specific valves or if the cold shutdown duration is insufficient to complete all testing provided testing commenced within 48 hours of reaching cold shutdown. Testing not completed before startup will be completed during subsequent cold shutdown outages in sequence such that scheduled testing does not omit or favor certain valves or groups of valves. All valves tested during cold shutdown shall also be tested before startup from refueling outages, unless testing has been completed within the previous 92 days. If an outage lasts beyond 92 days, all cold shutdown testing shall be completed within the last 92 days of the shutdown. The deferral of quarterly valve testing to a cold shutdown frequency shall be documented in a cold shutdown justification (CSJ). Additional restrictions may be applied as stated in specific cold shutdown justifications or relief requests. (Reference NUREG-1482, Revision 1, 3.1.1)

4.5.2 Refueling Outage Testing

Refueling Outage refers to a scheduled refueling outage at the end of an operating cycle. This definition should not be confused with the Technical Specification definition of "Refueling" (Mode 5). During a mid-cycle outage the plant may be placed in Mode 5, however this does not constitute a refueling outage for the purpose of inservice testing. The deferral of quarterly valve testing to a refueling outage frequency shall be documented in a refueling outage justification (RFJ). Additional restrictions may be applied as stated in specific refueling outage justifications or relief requests. (Reference NUREG-1482, Revision 1, section 3.1.1). Pursuant to ISTC-3510, power-operated relief valves shall be exercise tested once per fuel cycle. No deferred testing justification is included in the program for this testing frequency.

4.5.3 Reference Values

Stroke time reference values are determined from the results of preservice or inservice tests. Reference values will be reestablished following valve replacement. Reference values will only be established when the valve is known to be operating properly.

When any reference value may have been affected by repair or routine servicing of a valve or its control system, a new reference value shall be determined, or the previous values(s) reconfirmed by an inservice test run prior to declaring the valve operable.

Reference values are required for each direction of valve travel requiring stroke time testing as listed in the IST Plan Valve Tables (i.e. ST-O and/or ST-C).

Valves may be tested at more than one mode of plant operation or system operating conditions (i.e. static or dynamic). Additional reference values must be established for these points in accordance with Code requirements. Whenever an additional reference value is established, the reasons for doing so shall be documented in the record of tests.

4.5.4 Stroke Time Acceptance Criteria

The following criteria have been used in developing reference values of full-stroke time for power operated valves (POVs):

- Review of valve design specification and/or manufacturers test stroke times.
- Review of system response time requirements (Technical Specification, UFSAR, etc.)
- Valve historical stroke time values at various system conditions.

Code Paragraphs ISTC-5114, ISTC-5122, ISTC-5132, ISTC-5142 and ISTC-5152 are used for acceptability of stroke time test results. Should the plus or minus criteria be less restrictive than a required system or component response time from any source, the more restrictive time shall be used as the limiting value.

Any abnormality or erratic action shall be recorded, and an evaluation shall be made regarding need for corrective action.

4.5.5 Limiting Values of Full-Stroke Times

Where stroke time measurement of power-operated valves is required, the limiting values of full-stroke times are based on the valve's reference or average stroke time when it is known to be in good condition and operating properly. Brunswick Steam Electric Plant Design Basis Document, Technical Specifications, Final Safety Analysis Report or other applicable accident analyses stroke time limits will be used in lieu of the calculated limiting values of full-stroke time if they are more restrictive.

The limiting value of full-stroke time will be established based upon the more limiting value of A) or B) as determined below: (RV = Reference Value)

A)

Actuator Type	Reference Value	Limiting Stroke Time
Motor	RV > 10 seconds	RV ± 15%
	RV ≤ 10 seconds	RV ± max of 25% or 1 second
Other	RV > 10 seconds	RV ± 25%
	RV ≤ 10 seconds	RV ± 50%
All	RV < 2 seconds	2 seconds

B) The limiting value design basis stroke time as presented in the Brunswick Steam Electric Plant Design Basis Document, Technical Specifications, Final Safety Analysis Report or other applicable accident analyses.

In addition, stroke time acceptance criteria are assigned to each valve in accordance with the Code based on valve actuator type and reference stroke times.

4.5.6 Valve Exercising Requirements

Power Operated valves within the scope of the IST Program will be stroke time tested in accordance with ISTC-5100. For these valves, the stroke timing also satisfies ISTC-3520 requirements for exercising the valve and additional testing need not be performed. Exercise testing is therefore not listed in the valve tables as a separate test.

4.5.7 Valve Fail-Safe Testing

Valves within the scope of the IST Program which are equipped with fail-safe actuators will be tested by observing that the valve goes to its fail-safe position upon loss of actuator power. Those valves which have the actuator power removed during exercising via a control switch need not be additionally tested. A satisfactory exercise of the valve obturator to its fail-safe position via the control switch satisfies the fail-safe test requirement.

4.5.8 Valve or Actuator Replacement, Repair, or Maintenance

When a valve or its control system has been replaced, repaired, or has undergone maintenance that could affect the valve's performance, a new reference value shall be determined or the previous reference value. This is accomplished by an inservice test or post maintenance test prior to the time it is returned to service or immediately if not removed from service. This test is to demonstrate the performance parameters that could have been affected by the replacement, repair, or maintenance are within acceptable limits. Deviations between the previous and new reference values shall be identified and analyzed. The difference between post maintenance stroke time and the previous reference value will be evaluated to determine if the new stroke time is consistent with the maintenance activity performed. If the new stroke time is found to be consistent with the changes to the valve, a new reference value will be established. New reference values shall only be established following the installation and acceptable post-maintenance testing of the valve. Historical test results are not to be used to establish new reference values. If the changes in stroke times are inconsistent with the maintenance performed, the Inservice Testing Program Manager may elect to perform additional evaluations or testing prior to changing the reference value. Verification that new values represent acceptable operation shall be documented by Brunswick Steam Electric Plant procedure 0ENP-16.1, IST Pump and Valve Data.

- Maintenance performed on a valve that could affect the obturator's ability to move to the position required for fulfillment of the valves safety function require that an inservice test or post maintenance test be performed to demonstrate obturator movement capability has not been affected.

- Maintenance performed on a valve that could affect position indication of the valve obturator requires that an inservice or post maintenance test be performed to verify obturator position is accurately indicated.

- Maintenance performed on Category A valves that could affect seat leakage characteristics shall be followed by an inservice test or a post maintenance test to insure valve seat leakage is within acceptable limits. Category A valves which are also Containment Isolation Valves tested in accordance with the Brunswick Steam Electric Plant 10 CFR 50 Appendix J - Option B Program, shall have an "as-found" leakage test performed prior to any maintenance which could affect the valve's seat leakage characteristics.

- Refurbishment of safety and relief valves shall be followed by tests as delineated in Code Appendix I, Paragraph I-3400. During scheduled surveillance testing of safety and relief valves included in this program, an "as found" test must be performed prior to any maintenance, adjustment, disassembly, or other activity which could affect "as found" set pressure or seat tightness. If the extent of disassembly of the valve includes main disk components, then valve disk stroke capability shall be verified by mechanical inspection or tests.

4.5.9 Maintenance Requiring/Not Requiring Surveillance Test

A valve may or may not require the referenced surveillance procedure to be performed as the required post-maintenance test prior to being returned to normal service following maintenance. The Inservice Testing program engineer should be contacted if assistance is needed in making a determination. . The following procedures are used to determine post maintenance test requirements for pumps

- PLP-20, Post Maintenance Testing Program, and BNP-TR-008, Inservice Inspection/Testing Guideline

Typical maintenance activities requiring the surveillance procedure (or equivalent post maintenance test) performance as post-maintenance testing include:

- Removal/replacement;
- Disassembly/rebuild (e.g., removal of bonnet assembly, stem, etc.);
- Disconnection/removal of power operator (air or electric);
- Limit switch or torque switch adjustment;
- Packing adjustment/replacement.
- Adjustment, replacement, or repair of control system components;
- In general, any maintenance activity that could affect valve operating, leakage or position indication functions.

Typical activities not requiring performance of the surveillance procedure as a post-maintenance valve test include the following:

- Removal/replacement of valve handwheel;
- Those minor maintenance activities, such as fuse replacement or tightening an air line fitting, or when adequate post-maintenance test requirements are included in the work package instructions to verify proper valve operation;
- In general, any maintenance activity that will not affect valve operating, leakage, set point, or position indication functions.

4.5.10 Containment Isolation Valves

Category A Valves, which are containment isolation valves, shall have seat leakage testing performed in accordance with 10 CFR 50, Appendix J per ISTC-3620. Brunswick Steam Electric Plant has amended the Brunswick Steam Electric Plant Technical Specifications on containment isolation valve testing so that Brunswick Steam Electric Plant can implement Option B of 10 CFR 50 Appendix J.

The valves that close to isolate Containment, but are exempt from leak rate testing per the 10 CFR 50 Appendix J guidance, still have a safety function to close. Although there is no specific leak rate criteria applied, these valves still have to functionally close. These valves will be tested in accordance with ISTC-3630.

In general, the Brunswick Steam Electric Plant Containment Leakage Rate Testing Program verifies the Containment structure is isolated following a loss of coolant accident. In the Brunswick Steam Electric Plant Containment Leakage Rate Testing Program, this is referred to as Containment Isolation.

A valve in a system with an open safety function during a loss of coolant accident is exempted from leak rate testing in accordance with the Brunswick Steam Electric Plant Containment Leakage Rate Testing Program. The open safety function has a higher priority than the containment isolation function. As long as the system is able to provide its safety function, it should not be closed for containment isolation. However, if the system is not able to perform its safety function, then containment isolation becomes the priority. This containment isolation is beyond the scope of the Brunswick Steam Electric Plant Containment Leakage Rate Testing Program. This is considered a closed safety function for the valve in the Brunswick Steam Electric Plant Inservice Testing Program. In the Brunswick Steam Electric Plant Inservice Testing Program, this is also referred to as Containment Isolation. These valves have no specified leak rate, so they are not categorized as A or AC valves, but they are tested in the closed position as category B or C valves.

4.5.11 Valve Position Indication Verification

Valves with remote position indicators shall be observed locally at least once every 2 years to verify that valve operation is accurately indicated. If it is determined that 90 to 95% of valve travel is the position required for the valve to perform its function, indication of this range of travel is acceptable. Where practicable, this local observation should be supplemented by other indications such as leakage, pressure, and flow or other suitable instrumentation to verify obturator position. These observations need not be concurrent. Where local observation is not possible, other indications shall be used for verification of valve operation. Position indication verification is only required by the Code for those indicator(s) used during the exercise test and stroke timing. The Code requires valve position indication verification for all Category A and B active and passive valves. The valve position indication verification requirements must be met, even for valves in systems out of service.

4.5.12 Instrumentation Requirements

Instrumentation accuracy shall be considered when establishing valve test acceptance criteria per ISTC-3800.

4.5.13 Active/Passive Valves

The determination of whether a valve has an active or passive safety function is based upon the normal valve position as specified in the related operating instructions or procedures under normal plant (power) operational modes as compared with the required post-accident valve positions. For the purpose of IST, active valves are defined as those which may be required to change obturator position to accomplish their required safety function(s). There is no account for inadvertent valve mis-positioning.

Passive valves are defined as those which are not required to change obturator position to accomplish any required safety function(s). Valves that are locked, sealed, or de-energized in their required position are passive. Valves that are not periodically repositioned and whose normal position is the required safety position are considered passive. Valves that are only occasionally repositioned from their safety position to support the performance of surveillance procedures or infrequent operations, and are administratively controlled while out of their safety position, are also considered passive.

A valve may have both a passive and active function if repositioning of the valve to its normal position would be required after the valve has traveled to its active safety position. For conservatism, the valve would be classified as having an active function.

4.5.14 Manual Valves

Manual valves within the scope of IST that perform an active safety function shall be exercised at least once every 2 years as required by 10 CFR 50.55a(b)(3)(vi).

4.5.15 Control Valves

Control valves are specifically excluded from testing per ISTC-1200(b) provided they are used only for system control (e.g. pressure regulating valves). If a valve must change position to perform a safety function and is operated by an external power source (air, hydraulic, electric, etc.), or has a required safety related fail safe position, then it is designated as Category A or B and stroke tested accordingly.

4.5.16 Skid-Mounted Valves

ISTC-1200 allows skid-mounted valves that are tested as part of the major component to be excluded from the Code IST requirements provided the valves are justified to be adequately tested. An example of skid-mounted valves tested as part of a major component and exempted from the IST Program are the Emergency Diesel Generator support systems where testing of the Emergency Diesel Generator provides adequate assurance of the valves proper operation. Documentation of this position is provided the Valve Tables of this Program Plan as recommended by NUREG 1482, Section 3.4.

4.5.17 Valves with Both Open and Closed Safety Functions

Where a valve performs a safety function in both directions (open and closed) exercising in both directions is required. If the valve is a power-operated valve, stroke time measurements in both directions are also required.

4.5.18 Relief Valve Testing

The pressure relief devices addressed in this program are those for protecting systems or portions of systems which perform a required 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.

ISTC-5240 requires safety and relief valves to be tested in accordance with Mandatory Appendix I. If the "as found" lift set point of a valve is out-of-tolerance, then two additional valves from the same sample group shall be tested. If any of these additional valves fail to meet the set point acceptance criteria, then all valves in that sample group shall be tested. Relief valve sample groups shall contain only valves of the same manufacturer, type, system application, and service media. All test failures shall be evaluated for generic concerns; however, additional testing of valves outside the sample group shall not be required unless the evaluation determines that the operability of other valves may be in question.

Tests shall be performed on all Class 2 and 3 relief devices used in a thermal relief application every 10 years, unless performance data indicate more frequent testing is necessary. In lieu of these tests, the thermal relief devices may be replaced at a frequency of every 10 years, unless performance data indicate more frequent replacements are necessary. Thermal relief devices are exempt from the grouping and sample testing requirements of Appendix I.

If a check valve used as a pressure relief device is capacity certified, then it shall be classified as a pressure or vacuum relief device. If a check valve used to limit pressure is not capacity certified, then it shall be classified as a check valve.

4.5.19 Vacuum Breaker Testing

Vacuum breakers shall meet the applicable inservice test requirements of Appendix I and Appendix II, as applicable.

4.6 Valve Table Information

The Valve Table contains the following information:

- Valve ID - valve identification number
- Diagram # and Coordinates - This identifies the flow diagram or other drawing number, sheet, and coordinates to locate the valve.
- Size - size of the valve in inches

- Type - valve design type as identified by the following abbreviations:

AN	Angle	PG	Plug
BC	Butterfly Check	RD	Rupture disc
BF	Butterfly	RL	Relief
BL	Ball	RG	Regulating
CK	Check	SC	Stop check
DA	Diaphragm	SH	Shear
EF	Excess Flow Check	SK	Swing Check
GA	Gate	SQUIB	Explosively actuated valve in SLC designed for zero leakage
GL	Globe		
N/A	Damper		
ND	Needle	VB	Vacuum Breaker

- Actuator Type - Type of actuator as identified by the following abbreviations:

AO	Air Operator	PV	Pilot Valve
HO	Hydraulic Operator	SA	Self-Actuated
MA	Manual	SO	Solenoid Operator
MO	Motor Operator	XP	Explosive Operator

- Class - ASME Class 1, 2, 3, or S (non Class)

- IST Category - A, B, C, D, A/C, B/C, N/A, or RL

- Active - Yes for Active, No for Passive

- Valve Positions – Normal, Fail and Safety Positions for the valve as identified by the following abbreviations:

C	Closed
CO	Closed except for sampling
LC	Locked Closed
LO	Locked Open
LT	Locked Throttled
O	Open
OC	Satisfies the function in both the Open and Closed positions
TH	Throttled
--	System Dependent

- Test - Required test as identified by the following abbreviations:

CV-C	Check valve close exercise	NONE	No test required
CV-O	Check valve open exercise	PIV	Pressure isolation valve test
CV-F	Excess flow check valve test per Technical Specifications	R	Relief or safety valve setpoint test
CV-P	Check valve partial exercise	REPL	Replacement
D	Explosive valve test	SKID	Skid mounted
DA	Disassembly and visual inspection	ST	Full stroke exercise test
F	Failsafe test	ST-C	Full stroke exercise test, including close stroke time
INSP	Visual inspection	ST-O	Full stroke exercise test, including open stroke time
LLRT	Type B&C Leak Test in accordance with Appendix J	ST-P	Partial stroke exercise test
L-XI	Valve leak rate test	V	Remote position indication verification
L-M	Miscellaneous leak test		
N/A	Exempt from program		

- Freq - Frequency of test performance as identified by the following abbreviations:

1.5Y	Every 1 ½ years	M	Monthly
2Y	Every 2 years (Biennial)	PB	Performance Based (Appendix J Option B)
5Y	Every 5 years		
6M	Every 6 months	Q	Quarterly, once every 92 days
10Y	Every 10 years	R	Refueling(s)
C	Cold Shutdown	SP	Special Interval

- Procedure - Procedure used to perform the test.

- CSJ/ROJ/Notes - Cold Shutdown Justification / Refuel Outage Justification / Relief Request / Pump and Valve Remarks

5.0 VALVE TABLES

The following report was generated from the IST database.

Unit 1 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-B21-F008	D-25021 Sht. 1C	E-6	.75	EF	SA	2	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV18R		VRR-4	
					V	5R	0MST-EFCV18R		VRR-4	
1-B21-F010A	D-25021 Sht. 1C	C-5	18	CK	SA	1	A/C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.3-B21		RFJ-01	
					CV-O	SP	N/A		VRR-2	
					LLRT	R	20.3-B21			
1-B21-F010B	D-25021 Sht. 1C	B-5	18	CK	SA	1	A/C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.3-B21		RFJ-01	
					CV-O	SP	N/A		VRR-2	
					LLRT	R	20.3-B21			
1-B21-F013A	D-25021 Sht. 1B	E-3	6	RL	SAAO	1	B/C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									VRR-01	
					R	2R	19.5			
					ST-O	R	11.1.2		RFJ-02	
1-B21-F013B	D-25021 Sht. 1B	E-2	6	RL	SAAO	1	B/C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									VRR-01	
					R	2R	19.5			
					ST-O	R	11.1.2		RFJ-02	

Unit 1 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-B21-F013C	D-25021 Sht. 1B	C-3	6	RL	SAAO	1	B/C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									VRR-01	
					R	2R	19.5			
					ST-O	R	11.1.2		RFJ-02	
1-B21-F013D	D-25021 Sht. 1B	C-2	6	RL	SAAO	1	B/C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									VRR-01	
					R	2R	19.5			
					ST-O	R	11.1.2		RFJ-02	
1-B21-F013E	D-25021 Sht. 1B	C-2	6	RL	SAAO	1	B/C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									VRR-01	
					R	2R	19.5			
					ST-O	R	11.1.2		RFJ-02	
1-B21-F013F	D-25021 Sht. 1A	E-3	6	RL	SAAO	1	B/C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									VRR-01	
					R	2R	19.5			
					ST-O	R	11.1.2		RFJ-02	
1-B21-F013G	D-25021 Sht. 1A	E-2	6	RL	SAAO	1	B/C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									VRR-01	
					R	2R	19.5			
					ST-O	R	11.1.2		RFJ-02	

Unit 1 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-B21-F013H	D-25021 Sht. 1A	C-3	6	RL	SAAO	1	B/C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									VRR-01	
					R	2R	19.5			
					ST-O	R	11.1.2		RFJ-02	
1-B21-F013J	D-25021 Sht. 1A	C-2	6	RL	SAAO	1	B/C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									VRR-01	
					R	2R	19.5			
					ST-O	R	11.1.2		RFJ-02	
1-B21-F013K	D-25021 Sht. 1A	E-1	6	RL	SAAO	1	B/C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									VRR-01	
					R	2R	19.5			
					ST-O	R	11.1.2		RFJ-02	
1-B21-F013L	D-25021 Sht. 1B	C-1	6	RL	SAAO	1	B/C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									VRR-01	
					R	2R	19.5			
					ST-O	R	11.1.2		RFJ-02	
1-B21-F014A	D-25021 Sht. 1B	E-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV13R		VRR-4	
					V	5R	0MST-EFCV13R		VRR-4	

Unit 1 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-B21-F014B	D-25021 Sht. 1B	E-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV13R		VRR-4	
					V	5R	0MST-EFCV13R		VRR-4	
1-B21-F014C	D-25021 Sht. 1B	E-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV-16R		VRR-4	
					V	5R	0MST-EFCV-16R		VRR-4	
1-B21-F014D	D-25021 Sht. 1B	D-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV16R		VRR-4	
					V	5R	0MST-EFCV16R		VRR-4	
1-B21-F014E	D-25021 Sht. 1B	B-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV13R		VRR-4	
					V	5R	0MST-EFCV13R		VRR-4	
1-B21-F014F	D-25021 Sht. 1B	B-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV13R		VRR-4	
					V	5R	0MST-EFCV13R		VRR-4	
1-B21-F014G	D-25021 Sht. 1B	B-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV16R		VRR-4	
					V	5R	0MST-EFCV16R		VRR-4	

Unit 1 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-B21-F014H	D-25021 Sht. 1B	A-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV16R		VRR-4	
					V	5R	0MST-EFCV16R		VRR-4	
1-B21-F014J	D-25021 Sht. 1A	D-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV13R		VRR-4	
					V	5R	0MST-EFCV13R		VRR-4	
1-B21-F014K	D-25021 Sht. 1A	D-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV13R		VRR-4	
					V	5R	0MST-EFCV13R		VRR-4	
1-B21-F014L	D-25021 Sht. 1A	D-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV16R		VRR-4	
					V	5R	0MST-EFCV16R		VRR-4	
1-B21-F014M	D-25021 Sht. 1A	D-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV16R		VRR-4	
					V	5R	0MST-EFCV16R		VRR-4	
1-B21-F014N	D-25021 Sht. 1A	B-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV13R		VRR-4	
					V	5R	0MST-EFCV13R		VRR-4	

Unit 1 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-B21-F014P	D-25021 Sht. 1A	B-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV13R		VRR-4	
					V	5R	0MST-EFCV13R		VRR-4	
1-B21-F014R	D-25021 Sht. 1A	B-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV16R		VRR-4	
					V	5R	0MST-EFCV16R		VRR-4	
1-B21-F014S	D-25021 Sht. 1A	B-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV16R		VRR-4	
					V	5R	0MST-EFCV16R		VRR-4	
1-B21-F016	D-25021 Sht. 1B	D-4	3	GA	MO	1	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	R	20.3-B21			
					ST-C	Q	25.4			
					V	R	25.4			
1-B21-F019	D-25021 Sht. 1B	D-5	3	GA	MO	1	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	R	20.3-B21			
					ST-C	Q	25.4			
					V	R	25.4			

Unit 1 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-B21-F022A	D-25021 Sht. 1B	E-4	24	GL	AO	1	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									VRR-3	
					F	C	25.1		CSJ-13	
					LLRT	R	20.3A.5			
					ST-C	C	25.1		CSJ-01	
					ST-P	Q	40.2.8		CSJ-01	
					V	R	25.1			
1-B21-F022B	D-25021 Sht. 1B	B-4	24	GL	AO	1	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									VRR-3	
					F	C	25.1		CSJ-13	
					LLRT	R	20.3A.5			
					ST-C	C	25.1		CSJ-01	
					ST-P	Q	40.2.8		CSJ-01	
					V	R	25.1			
1-B21-F022C	D-25021 Sht. 1A	E-4	24	GL	AO	1	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									VRR-3	
					F	C	25.1		CSJ-13	
					LLRT	R	20.3A.5			
					ST-C	C	25.1		CSJ-01	
					ST-P	Q	40.2.8		CSJ-01	
					V	R	25.1			

Unit 1 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-B21-F022D	D-25021 Sht. 1A	C-4	24	GL	AO	1	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									VRR-3	
					F	C	25.1		CSJ-13	
					LLRT	R	20.3A.5			
					ST-C	C	25.1		CSJ-01	
					ST-P	Q	40.2.8		CSJ-01	
					V	R	25.1			
1-B21-F024A	D-70007	C-4	1	CK	SA	S	C	Yes	--	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	95.0A		RFJ-03	
					CV-O	R	31.1		RFJ-03	
1-B21-F024B	D-70007	C-4	1	CK	SA	S	C	Yes	--	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	95.0A		RFJ-03	
					CV-O	R	31.1		RFJ-03	
1-B21-F024C	D-70007	C-6	1	CK	SA	S	C	Yes	--	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	95.0A		RFJ-03	
					CV-O	R	31.1		RFJ-03	
1-B21-F024D	D-70007	C-5	1	CK	SA	S	C	Yes	--	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	95.0A		RFJ-03	
					CV-O	R	31.1		RFJ-03	

Unit 1 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-B21-F028A	D-25021 Sht. 1B	E-5	24	GL	AO	1	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									VRR-3	
					F	C	25.1		CSJ-13	
					LLRT	R	20.3A.5			
					ST-C	C	25.1		CSJ-01	
					ST-P	Q	40.2.8		CSJ-01	
					V	R	25.1			
1-B21-F028B	D-25021 Sht. 1B	B-5	24	GL	AO	1	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									VRR-3	
					F	C	25.1		CSJ-13	
					LLRT	R	20.3A.5			
					ST-C	C	25.1		CSJ-01	
					ST-P	Q	40.2.8		CSJ-01	
					V	R	25.1			
1-B21-F028C	D-25021 Sht. 1A	E-6	24	GL	AO	1	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									VRR-3	
					F	C	25.1		CSJ-13	
					LLRT	R	20.3A.5			
					ST-C	C	25.1		CSJ-01	
					ST-P	Q	40.2.8		CSJ-01	
					V	R	25.1			

Unit 1 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-B21-F028D	D-25021 Sht. 1A	C-6	24	GL	AO	1	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									VRR-3	
					F	C	25.1		CSJ-13	
					LLRT	R	20.3A.5			
					ST-C	C	25.1		CSJ-01	
					ST-P	Q	40.2.8		CSJ-01	
					V	R	25.1			
1-B21-F029A	D-72006	B-4	1	CK	SA	S	C	Yes	--	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	C	95		CSJ-02	
					CV-O	C	31.9		CSJ-02	
1-B21-F029B	D-72006	B-3	1	CK	SA	S	C	Yes	--	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	C	95		CSJ-02	
					CV-O	C	31.9		CSJ-02	
1-B21-F029C	D-72006	B-6	1	CK	SA	S	C	Yes	--	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	C	95		CSJ-02	
					CV-O	C	31.9		CSJ-02	
1-B21-F029D	D-72006	B-5	1	CK	SA	S	C	Yes	--	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	C	95		CSJ-02	
					CV-O	C	31.9		CSJ-02	

Unit 1 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-B21-F032A	D-25021 Sht. 1C	C-7	18	SC	MOSA	1	A/C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	R	20.3-B21			
					ST-C	C	25.1		CSJ-03	
					V	R	25.1			
1-B21-F032B	D-25021 Sht. 1C	B-7	18	SC	MOSA	1	A/C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	R	20.3-B21			
					ST-C	C	25.1		CSJ-03	
					V	R	25.1			
1-B21-F036A	D-70007 Sht. 1	E-4	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	
1-B21-F036B	D-70007 Sht. 1	E-4	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	
1-B21-F036C	D-70007 Sht. 1	E-3	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	

Unit 1 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-B21-F036D	D-70007 Sht. 1	E-3	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	
1-B21-F036E	D-70007 Sht. 1	E-3	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	
1-B21-F036F	D-70007 Sht. 1	E-6	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	
1-B21-F036G	D-70007 Sht. 1	E-6	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	
1-B21-F036H	D-70007 Sht. 1	E-5	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	
1-B21-F036J	D-70007 Sht. 1	E-5	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	

Unit 1 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-B21-F036K	D-70007 Sht. 1	E-7	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	
1-B21-F036L	D-70007 Sht. 1	E-1	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	
1-B21-F037A	D-25021 Sht. 1A	B-2	10	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	11.1.3		RFJ-05	
					CV-O	R	11.1.3		RFJ-05	
1-B21-F037B	D-25021 Sht. 1A	B-2	10	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	11.1.3		RFJ-05	
					CV-O	R	11.1.3		RFJ-05	
1-B21-F037C	D-25021 Sht. 1A	B-2	10	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	11.1.3		RFJ-05	
					CV-O	R	11.1.3		RFJ-05	
1-B21-F037D	D-25021 Sht. 1A	B-3	10	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	11.1.3		RFJ-05	
					CV-O	R	11.1.3		RFJ-05	

Unit 1 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-B21-F037E	D-25021 Sht. 1A	B-3	10	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	11.1.3		RFJ-05	
					CV-O	R	11.1.3		RFJ-05	
1-B21-F037F	D-25021 Sht. 1A	B-3	10	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	11.1.3		RFJ-05	
					CV-O	R	11.1.3		RFJ-05	
1-B21-F037G	D-25021 Sht. 1A	B-3	10	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	11.1.3		RFJ-05	
					CV-O	R	11.1.3		RFJ-05	
1-B21-F037H	D-25021 Sht. 1A	B-2	10	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	11.1.3		RFJ-05	
					CV-O	R	11.1.3		RFJ-05	
1-B21-F037J	D-25021 Sht. 1A	B-2	10	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	11.1.3		RFJ-05	
					CV-O	R	11.1.3		RFJ-05	
1-B21-F037K	D-25021 Sht. 1A	B-1	10	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	11.1.3		RFJ-05	
					CV-O	R	11.1.3		RFJ-05	

Unit 1 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-B21-F037L	D-25021 Sht. 1A	B-1	10	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	11.1.3		RFJ-05	
					CV-O	R	11.1.3		RFJ-05	
1-B21-F040	D-25022 Sht. 2A	F-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV10R		VRR-4	
					V	5R	0MST-EFCV10R		VRR-4	
1-B21-F042A	D-25022 Sht. 2A	D-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV18R		VRR-4	
					V	5R	0MST-EFCV18R		VRR-4	
1-B21-F042B	D-25020 Sht. 3A	E-6	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV19R		VRR-4	
					V	5R	0MST-EFCV19R		VRR-4	
1-B21-F044A	D-25022 Sht. 2A	D-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV18R		VRR-4	
					V	5R	0MST-EFCV18R		VRR-4	
1-B21-F044B	D-25020 Sht. 3A	E-6	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV19R		VRR-4	
					V	5R	0MST-EFCV19R		VRR-4	

Unit 1 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-B21-F046A	D-25022 Sht. 2A	D-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV18R		VRR-4	
					V	5R	0MST-EFCV18R		VRR-4	
1-B21-F046B	D-25020 Sht. 3A	E-6	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV19R		VRR-4	
					V	5R	0MST-EFCV19R		VRR-4	
1-B21-F047C	D-25022 Sht. 2A	B-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV18R		VRR-4	
					V	5R	0MST-EFCV18R		VRR-4	
1-B21-F047D	D-25020 Sht. 3A	D-6	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV19R		VRR-4	
					V	5R	0MST-EFCV19R		VRR-4	
1-B21-F048A	D-25022 Sht. 2A	C-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV18R		VRR-4	
					V	5R	0MST-EFCV18R		VRR-4	
1-B21-F048B	D-25020 Sht. 3A	E-6	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV19R		VRR-4	
					V	5R	0MST-EFCV19R		VRR-4	

Unit 1 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-B21-F049C	D-25022 Sht. 2A	C-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV18R		VRR-4	
					V	5R	0MST-EFCV18R		VRR-4	
1-B21-F049D	D-25020 Sht. 3A	D-6	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV19R		VRR-4	
					V	5R	0MST-EFCV19R		VRR-4	
1-B21-F050A	D-25022 Sht. 2B	D-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV12R		VRR-4	
					V	5R	0MST-EFCV12R		VRR-4	
1-B21-F050B	D-25020 Sht. 3B	D-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV11R		VRR-4	
					V	5R	0MST-EFCV11R		VRR-4	
1-B21-F050C	D-25022 Sht. 2B	D-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV12R		VRR-4	
					V	5R	0MST-EFCV12R		VRR-4	
1-B21-F050D	D-25020 Sht. 3B	D-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV11R		VRR-4	
					V	5R	0MST-EFCV11R		VRR-4	

Unit 1 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-B21-F052A	D-25022 Sht. 2B	E-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV12R		VRR-4	
					V	5R	0MST-EFCV12R		VRR-4	
1-B21-F052B	D-25020 Sht. 3B	E-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV11R		VRR-4	
					V	5R	0MST-EFCV11R		VRR-4	
1-B21-F052C	D-25022 Sht. 2B	E-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV12R		VRR-4	
					V	5R	0MST-EFCV12R		VRR-4	
1-B21-F052D	D-25020 Sht. 3B	F-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV11R		VRR-4	
					V	5R	0MST-EFCV11R		VRR-4	
1-B21-F054	D-25022 Sht. 2B	C-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV14R		VRR-4	
					V	5R	0MST-EFCV14R		VRR-4	
1-B21-F056	D-25022 Sht. 2B	C-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV12R		VRR-4	
					V	5R	0MST-EFCV12R		VRR-4	

Unit 1 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-B21-F058A	D-25022 Sht. 2B	D-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV12R		VRR-4	
					V	5R	0MST-EFCV12R		VRR-4	
1-B21-F058B	D-25020 Sht. 3B	D-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV11R		VRR-4	
					V	5R	0MST-EFCV11R		VRR-4	
1-B21-F058C	D-25022 Sht. 2B	D-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV11R		VRR-4	
					V	5R	0MST-EFCV11R		VRR-4	
1-B21-F058D	D-25020 Sht. 3B	D-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV11R		VRR-4	
					V	5R	0MST-EFCV11R		VRR-4	
1-B21-F058E	D-25022 Sht. 2B	D-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV12R		VRR-4	
					V	5R	0MST-EFCV12R		VRR-4	
1-B21-F058F	D-25020 Sht. 3B	D-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV11R		VRR-4	
					V	5R	0MST-EFCV11R		VRR-4	

Unit 1 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-B21-F058G	D-25022 Sht. 2B	D-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV12R		VRR-4	
					V	5R	0MST-EFCV12R		VRR-4	
1-B21-F058H	D-25020 Sht. 3B	E-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV11R		VRR-4	
					V	5R	0MST-EFCV11R		VRR-4	
1-B21-F058L	D-25022 Sht. 2B	E-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV12R		VRR-4	
					V	5R	0MST-EFCV12R		VRR-4	
1-B21-F058M	D-25020 Sht. 3B	E-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV11R		VRR-4	
					V	5R	0MST-EFCV11R		VRR-4	
1-B21-F058N	D-25022 Sht. 2B	E-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV12R		VRR-4	
					V	5R	0MST-EFCV12R		VRR-4	
1-B21-F058P	D-25020 Sht. 3B	E-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV11R		VRR-4	
					V	5R	0MST-EFCV11R		VRR-4	

Unit 1 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-B21-F058R	D-25022 Sht. 2B	E-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV12R		VRR-4	
					V	5R	0MST-EFCV12R		VRR-4	
1-B21-F058S	D-25020 Sht. 3B	E-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV11R		VRR-4	
					V	5R	0MST-EFCV11R		VRR-4	
1-B21-F058T	D-25022 Sht. 2B	F-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV12R		VRR-4	
					V	5R	0MST-EFCV12R		VRR-4	
1-B21-F058U	D-25020 Sht. 3B	F-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV11R		VRR-4	
					V	5R	0MST-EFCV11R		VRR-4	
1-B21-F060	D-25020 Sht. 3B	C-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV11R		VRR-4	
					V	5R	0MST-EFCV11R		VRR-4	
1-B21-IV-2149	D-25020 Sht. 3A	D-6	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV10R		VRR-4	
					V	5R	0MST-EFCV10R		VRR-4	

Unit 1 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-B21-IV-2196	D-25022 Sht. 2B	C-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV17R		VRR-4	
					V	5R	0MST-EFCV17R		VRR-4	
1-B21-IV-2455	D-25022 Sht. 2A	D-6	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV18R		VRR-4	
					V	5R	0MST-EFCV18R		VRR-4	
1-B21-IV-2456	D-25020 Sht. 3A	F-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV19R		VRR-4	
					V	5R	0MST-EFCV19R		VRR-4	
1-B21-V27A	D-70007	E-5	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	
1-B21-V27B	D-70007	E-4	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	
1-B21-V27C	D-70007	E-4	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	

Unit 1 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-B21-V27D	D-70007	E-3	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	
1-B21-V27E	D-70007	E-3	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	
1-B21-V27F	D-70007	E-6	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	
1-B21-V27G	D-70007	E-6	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	
1-B21-V27H	D-70007	E-5	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	
1-B21-V27J	D-70007	E-5	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	

Unit 1 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-B21-V27K	D-70007	E-8	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	
1-B21-V27L	D-70007	E-2	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	
1-B21-V28A	D-70007	C-5	1	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	95.0A		RFJ-03	
					CV-O	R	31.1		RFJ-03	
1-B21-V28B	D-70007	C-4	1	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	95.0A		RFJ-03	
					CV-O	R	31.1		RFJ-03	
1-B21-V28C	D-70007	C-6	1	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	95.0A		RFJ-03	
					CV-O	R	31.1		RFJ-03	
1-B21-V28D	D-70007	C-5	1	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	95.0A		RFJ-03	
					CV-O	R	31.1		RFJ-03	

Unit 1 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-B21-V29A	D-72006	B-4	1	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	C	95		CSJ-02	
					CV-O	C	31.9		CSJ-02	
1-B21-V29B	D-72006	B-3	1	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	C	95		CSJ-02	
					CV-O	C	31.9		CSJ-02	
1-B21-V29C	D-72006	B-6	1	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	C	95		CSJ-02	
					CV-O	C	31.9		CSJ-02	
1-B21-V29D	D-72006	B-5	1	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	C	95		CSJ-02	
					CV-O	C	31.9		CSJ-02	

Unit 1 IST Valve Table

System: TIP **System No.** 1050

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-C51-J004A-BAL	F-70081	B-3	.37	BL	SO	2	A	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	1.2.2A			
					LLRT	R	20.3-179			
					ST-C	Q	1.2.2A			
					V	R	20.3-179			
1-C51-J004A-SHE	F-70081	B-3	.37	SH	XP	S	D	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					D	2Y	0-MST-TIP11R			
1-C51-J004B-BAL	F-70081	B-3	.37	BL	SO	2	A	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	1.2.2A			
					LLRT	R	20.3-180			
					ST-C	Q	1.2.2A			
					V	R	20.3-180			
1-C51-J004B-SHE	F-70081	B-3	.37	SH	XP	S	D	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					D	2Y	0-MST-TIP11R			
1-C51-J004C-BAL	F-70081	B-3	.37	BL	SO	2	A	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	1.2.2A			
					LLRT	R	20.3-181			
					ST-C	Q	1.2.2A			
					V	R	20.3-181			

Unit 1 IST Valve Table

System: TIP **System No.** 1050

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-C51-J004C-SHE	F-70081	B-3	.37	SH	XP	S	D	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					D	2Y	0-MST-TIP11R			
1-C51-J004D-BAL	F-70081	B-3	.37	BL	SO	2	A	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	1.2.2A			
					LLRT	R	20.3-182			
					ST-C	Q	1.2.2A			
					V	R	20.3-182			
1-C51-J004D-SHE	F-70081	B-3	.37	SH	XP	S	D	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					D	2Y	0-MST-TIP11R			
1-C51-TIP-CHV	F-70081	C-3	.37	CK	SA	2	A/C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.3-183		RFJ-06	
					CV-O	R	20.3-183		RFJ-06	
					LLRT	R	20.3-183			

Unit 1 IST Valve Table

System: CRD **System No.** 1070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-C11-101	D-25017 Sht. 2B	D-5	1	GA	MA	2	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					N/A					
1-C11-102	D-25017 Sht. 2B	E-5	.75	GA	MA	2	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					N/A					
1-C11-112	D-25017 Sht. 2B	F-2	.75	GA	MA	2	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					N/A					
1-C11-114	D-25017 Sht. 2A	F-4	.75	CK	SA	2	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					SKID				V-01, V-02	
1-C11-115	D-25017 Sht. 2A	D-2	.5	CK	SA	2	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-01	
					CV-C	R	14.1.2a		RFJ-15	
					CV-O	R	14.2.1		RFJ-15	
1-C11-138	D-25017 Sht. 2A	D-5	.5	CK	SA	2	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					SKID				V-01, V-02	
1-C11-CV-126	D-25017 Sht. 2A	D-5	.5	GA	AO	2	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					SKID				V-01, V-02	

Unit 1 IST Valve Table

System: CRD **System No.** 1070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-C11-CV-127	D-25017 Sht. 2A	E-5	.75	GA	AO	2	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					SKID				V-01, V-02	
1-C11-CV-F010	D-25017 Sht. 2B	D-4	1	GA	AO	2	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	14.0			
					ST-C	Q	14.0			
					V	R	14.0			
1-C11-CV-F011	D-25017 Sht. 2B	B-4	2	GA	AO	S	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	14.0			
					ST-C	Q	14.0			
					V	R	14.0			
1-C11-SV-120	D-25017 Sht. 2B	D-3	.5	GA	SO	2	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					NONE					
1-C11-SV-121	D-25017 Sht. 2B	E-3	.5	GA	SO	2	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					NONE					
1-C11-SV-122	D-25017 Sht. 2B	E-4	.5	GA	SO	2	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					NONE					
1-C11-SV-123	D-25017 Sht. 2B	D-4	.5	GA	SO	2	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					NONE					

Unit 1 IST Valve Table

System: CRD **System No.** 1070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-C11-V139	D-25017 Sht. 2B	D-4	1	GA	AO	2	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	14.0			
					ST-C	Q	14.0			
					V	R	14.0			
1-C11-V140	D-25017 Sht. 2B	B-4	2	GA	AO	2	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	14.0			
					ST-C	Q	14.0			
					V	R	14.0			

Unit 1 IST Valve Table

System: RWCU **System No.** 2010

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-G31-F001	D-25027 Sht. 1B	D-7	6	GA	MO	1	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-164A			
					ST-C	C	14.6		CSJ-15	
					V	R	14.6			
1-G31-F004	D-25027 Sht. 1B	D-6	6	GA	MO	1	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-164B			
					ST-C	C	14.6		CSJ-15	
					V	R	14.6			
1-G31-F042	D-25027 Sht. 1B	E-5	4	GL	MO	1	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	R	20.3-165			
					ST-C	C	14.6		CSJ-15	
					V	R	14.6			

Unit 1 IST Valve Table

System: RECIRC **System No.** 2020

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-B32-F005A	D-25018 Sht. 1A	C-2	.75	EF	SA	2	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV15R		VRR-4	
					V	5R	0MST-EFCV15R		VRR-4	
1-B32-F005B	D-25048 Sht. 2B	C-7	.75	EF	SA	2	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV15R		VRR-4	
					V	5R	0MST-EFCV15R		VRR-4	
1-B32-F006A	D-25018 Sht. 1A	C-2	.75	EF	SA	2	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV15R		VRR-4	
					V	5R	0MST-EFCV15R		VRR-4	
1-B32-F006B	D-25048 Sht. 2B	C-7	.75	EF	SA	2	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV15R		VRR-4	
					V	5R	0MST-EFCV15R		VRR-4	
1-B32-F019	D-25018 Sht. 1A	D-7	.75	GL	AO	1	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	3.1.22			
					LLRT	R	20.3-B32			
					ST-C	Q	3.1.22			
					V	R	3.1.22			

Unit 1 IST Valve Table

System: RECIRC **System No.** 2020

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-B32-F020	D-25018 Sht. 1A	D-3	.75	GL	AO	1	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	3.1.22			
					LLRT	R	20.3-B32			
					ST-C	Q	3.1.22			
					V	R	3.1.22			
1-B32-F031A	D-25018 Sht. 1A	B-5	28	GA	MO	1	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	C	3.1.21		CSJ-04	
					V	R	3.1.21			
1-B32-F031B	D-25048 Sht. 2B	B-4	28	GA	MO	1	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	C	3.1.21		CSJ-04	
					V	R	3.1.21			
1-B32-F032A	D-25018 Sht. 1A	B-5	4	GA	MO	1	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	C	3.1.21		CSJ-05	
					V	R	3.1.21			
1-B32-F032B	D-25048 Sht. 2B	B-4	4	GA	MO	1	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	C	3.1.21		CSJ-05	
					V	R	3.1.21			

Unit 1 IST Valve Table

System: RECIRC **System No.** 2020

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-B32-F039A	D-25018 Sht. 1A	B-2	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV15R		VRR-4	
					V	5R	0MST-EFCV15R		VRR-4	
1-B32-F039B	D-25048 Sht. 2B	B-7	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV15R		VRR-4	
					V	5R	0MST-EFCV15R		VRR-4	
1-B32-F039C	D-25018 Sht. 1A	B-2	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV15R		VRR-4	
					V	5R	0MST-EFCV15R		VRR-4	
1-B32-F039D	D-25048 Sht. 2B	C-7	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV15R		VRR-4	
					V	5R	0MST-EFCV15R		VRR-4	
1-B32-F041A	D-25048 Sht. 2B	C-7	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV15R		VRR-4	
					V	5R	0MST-EFCV15R		VRR-4	
1-B32-F041B	D-25048 Sht. 2B	C-8	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV15R		VRR-4	
					V	5R	0MST-EFCV15R		VRR-4	

Unit 1 IST Valve Table

System: RECIRC **System No.** 2020

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-B32-F041C	D-25018 Sht. 1A	C-1	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV15R		VRR-4	
					V	5R	0MST-EFCV15R		VRR-4	
1-B32-F041D	D-25018 Sht. 1A	C-2	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV15R		VRR-4	
					V	5R	0MST-EFCV15R		VRR-4	
1-B32-F042A	D-25048 Sht. 2B	C-7	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV15R		VRR-4	
					V	5R	0MST-EFCV15R		VRR-4	
1-B32-F042B	D-25048 Sht. 2B	C-7	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV15R		VRR-4	
					V	5R	0MST-EFCV15R		VRR-4	
1-B32-F042C	D-25018 Sht. 1A	C-2	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV15R		VRR-4	
					V	5R	0MST-EFCV15R		VRR-4	
1-B32-F042D	D-25018 Sht. 1A	C-2	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV15R		VRR-4	
					V	5R	0MST-EFCV15R		VRR-4	

Unit 1 IST Valve Table

System: RECIRC **System No.** 2020

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-B32-F058A	D-25018 Sht. 1A	B-2	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV15R		VRR-4	
					V	5R	0MST-EFCV15R		VRR-4	
1-B32-F058B	D-25048 Sht. 2B	B-7	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV15R		VRR-4	
					V	5R	0MST-EFCV15R		VRR-4	
1-B32-V22	D-25018 Sht. 1A	E-3	.75	GL	MO	2	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	R	20.3-B32			
					ST-C	C	3.1.21		CSJ-06	
					V	R	3.1.21			
1-B32-V24	D-25018 Sht. 1A	E-3	.75	CK	SA	2	A/C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.3-B32		RFJ-07	
					LLRT	R	20.3-B32			
1-B32-V30	D-25048 Sht. 2B	E-6	.75	GL	MO	2	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	R	20.3-B32			
					ST-C	C	3.1.21		CSJ-06	
					V	R	3.1.21			

Unit 1 IST Valve Table

System: RECIRC **System No.** 2020

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-B32-V32	D-25048 Sht. 2B	E-6	.75	CK	SA	2	A/C	Yes	O	C

Test	Frequency	Procedure	Relief/Justification/Remark
CV-C	R	20.3-B32	RFJ-07
LLRT	R	20.3-B32	

Unit 1 IST Valve Table

System: CS **System No.** 2035

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-E21-F001A	D-25024 Sht. 2	A-7	14	GA	MO	2	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	7.2.4A			
					ST-O	Q	7.2.4A			
					V	R	7.2.4A			
1-E21-F001B	D-25024 Sht. 1	B-8	14	GA	MO	2	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	7.2.4B			
					ST-O	Q	7.2.4B			
					V	R	7.2.4B			
1-E21-F002A	D-25024 Sht. 2	A-4	12	GA	MA	2	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					N/A					
1-E21-F002B	D-25024 Sht. 1	A-4	12	GA	MA	2	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					N/A					
1-E21-F003A	D-25024 Sht. 2	D-1	12	CK	SA	2	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	7.2.4A			
					CV-O	Q	7.2.4A			
1-E21-F003B	D-25024 Sht.1	C-2	12	CK	SA	2	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	7.2.4B			
					CV-O	Q	7.2.4B			

Unit 1 IST Valve Table

System: CS **System No.** 2035

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-E21-F004A	D-25024 Sht. 2	D-6	10	GA	MO	2	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-E21			
					ST-C	Q	7.2.4A			
					ST-O	Q	7.2.4A			
					V	R	7.2.4A			
1-E21-F004B	D-25024 Sht. 1	E-6	10	GA	MO	2	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-E21			
					ST-C	Q	7.2.4B			
					ST-O	Q	7.2.4B			
					V	R	7.2.4B			
1-E21-F005A	D-25024 Sht. 2	D-6	10	GA	MO	1	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-E21			
					PIV	R	20.7B			
					ST-C	Q	7.2.4A			
					ST-O	Q	7.2.4A			
					V	R	7.2.4A			
1-E21-F005B	D-25024 Sht. 1	E-6	10	GA	MO	1	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-E21			
					PIV	R	20.7B			
					ST-C	Q	7.2.4B			
					ST-O	Q	7.2.4B			
					V	R	7.2.4B			

Unit 1 IST Valve Table

System: CS **System No.** 2035

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-E21-F006A	D-25024 Sht. 2	D-7	10	CK	SA	1	A/C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.7B		RFJ-08	
					CV-O	R	7.1.1A		RFJ-08	
					PIV	R	20.7B			
1-E21-F006B	D-25024 Sht. 1	E-7	10	CK	SA	1	A/C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.7B		RFJ-08	
					CV-O	R	7.1.1B		RFJ-08	
					PIV	R	20.7B			
1-E21-F007A	D-25024 Sht. 2	D-7	10	GA	MA	1	B	Yes	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	20.7B			
1-E21-F007B	D-25024 Sht. 1	E-7	10	GA	MA	1	B	Yes	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	20.7B			
1-E21-F008A	D-25024 Sht. 2	A-6	2	GA	MA	2	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					N/A					
1-E21-F008B	D-25024 Sht. 1	A-5	2	GA	MA	2	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					N/A					
1-E21-F012A	D-25024 Sht. 2	E-2	1.5	RL	SA	2	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	10Y	11.0			

Unit 1 IST Valve Table

System: CS **System No.** 2035

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-E21-F012B	D-25024 Sht. 1	E-3	1.5	RL	SA	2	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	10Y	11.0			
1-E21-F015A	D-25024 Sht. 2	E-4	10	GL	MO	2	B	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	R	7.2.4A		RFJ-14	
					V	R	7.2.4A			
1-E21-F015B	D-25024 Sht. 1	D-4	10	GL	MO	2	B	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	R	7.2.4B		RFJ-14	
					V	R	7.2.4B			
1-E21-F017A	D-25024 Sht. 2	E-6	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV18R		VRR-4	
					V	5R	0MST-EFCV18R		VRR-4	
1-E21-F017B	D-25024 Sht. 1	D-6	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV17R		VRR-4	
					V	5R	0MST-EFCV17R		VRR-4	
1-E21-F029A	D-25024 Sht. 2	C-5	2	CK	SA	S	C	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	7.2.4A			
					CV-P	Q	7.2.4A			

Unit 1 IST Valve Table

System: CS **System No.** 2035

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-E21-F029B	D-25024 Sht. 1	E-5	2	CK	SA	S	C	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	7.2.4B			
					CV-P	Q	7.2.4B			
1-E21-F030A	D-25024 Sht. 2	C-5	2	CK	SA	2	C	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	7.2.4A			
					CV-P	Q	7.2.4A			
1-E21-F030B	D-25024 Sht. 1	E-5	2	CK	SA	2	C	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	7.2.4B			
					CV-P	Q	7.2.4B			
1-E21-F031A	D-25024 Sht. 2	C-2	3	GA	MO	2	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	7.2.4A			
					ST-O	Q	7.2.4A			
					V	R	7.2.4A			
1-E21-F031B	D-25024 Sht. 1	C-4	3	GA	MO	2	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	7.2.4B			
					ST-O	Q	7.2.4B			
					V	R	7.2.4B			
1-E21-V1	D-25024 Sht. 2	A-7	.75	GL	MA	2	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					N/A					

Unit 1 IST Valve Table

System: CS **System No.** 2035

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-E21-V9	D-25024 Sht. 1	A-6	.75	GL	MA	2	B	No	C	C

Test	Frequency	Procedure	Relief/Justification/Remark
N/A			

Unit 1 IST Valve Table

System: SLC **System No.** 2040

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-C41-F001	D-25047	E-3	3	GA	MA	2	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					N/A					
1-C41-F003A	D-25047	C-6	1.5	GA	MA	2	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					N/A					
1-C41-F003B	D-25047	B-6	1.5	GA	MA	2	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					N/A					
1-C41-F004A	D-25047	C-7	1.5	SQUIB	XP	2	D	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					D	R	6.2.3			
1-C41-F004B	D-25047	B-7	1.5	SQUIB	XP	2	D	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					D	R	6.2.3			
1-C41-F005	D-25047	B-7	1.5	GA	MA	2	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					N/A					
1-C41-F006	D-25047	C-7	1.5	CK	SA	1	A/C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.14		RFJ-09	
					CV-O	R	20.14		RFJ-09	
					L-XI	R	20.14			

Unit 1 IST Valve Table

System: SLC **System No.** 2040

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-C41-F007	D-25047	B-8	1.5	CK	SA	1	A/C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.14		RFJ-09	
					CV-O	R	20.14		RFJ-09	
					L-XI	R	20.14			
1-C41-F008	D-25047	B-8	1.5	GA	MA	1	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	20.14			
1-C41-F015	D-25047	B-4	1	GA	MA	2	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					N/A					
1-C41-F029A	D-25047	D-5	1.5	RL	SA	2	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	SP	11.0			
1-C41-F029B	D-25047	A-5	1.5	RL	SA	2	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	SP	11.0			
1-C41-F033A	D-25047	C-6	1.5	CK	SA	2	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	6.1			
					CV-O	Q	6.1			
1-C41-F033B	D-25047	B-6	1.5	CK	SA	2	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	6.1			
					CV-O	Q	6.1			

Unit 1 IST Valve Table

System: SLC **System No.** 2040

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-C41-V5003	D-25047	B-7	1.5	GA	MA	1	B	No	O	O

Test	Frequency	Procedure	Relief/Justification/Remark
N/A			

Unit 1 IST Valve Table

System: RHR **System No.** 2045

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-E11-F002A	D-25037 Sht. 1	C-6	16	BF	MO	3	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	8.1.4A			
1-E11-F002B	D-25037 Sht. 2	C-5	16	BF	MO	3	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	8.1.4B			
1-E11-F003A	D-25025 Sht. 1A	E-4	16	GL	MO	2	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	8.2.2C			
1-E11-F003B	D-25026 Sht. 2A	B-8	16	GL	MO	2	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	8.2.2B			
1-E11-F004A	D-25025 Sht. 1B	C-5	20	GA	MO	2	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	8.2.2C			
1-E11-F004B	D-25026 Sht. 2B	B-7	20	GA	MO	2	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	8.2.2B			
1-E11-F004C	D-25025 Sht. 1B	C-5	20	GA	MO	2	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	8.2.2C			
1-E11-F004D	D-25026 Sht. 2B	B-7	20	GA	MO	2	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	8.2.2B			

Unit 1 IST Valve Table

System: RHR **System No.** 2045

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-E11-F005A	D-25037 Sht. 1	E-6	12	CK	SA	3	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	8.1.4A			
					CV-O	Q	8.1.4A			
1-E11-F005B	D-25037 Sht. 2	E-3	12	CK	SA	3	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	8.1.4B			
					CV-O	Q	8.1.4B			
1-E11-F005C	D-25037 Sht. 1	E-8	12	CK	SA	3	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	8.1.4A			
					CV-O	Q	8.1.4A			
1-E11-F005D	D-25037 Sht. 2	E-5	12	CK	SA	3	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	8.1.4B			
					CV-O	Q	8.1.4B			
1-E11-F006A	D-25025 Sht. 1B	C-7	20	GA	MO	2	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	8.2.2C			
1-E11-F006B	D-25026 Sht. 2B	C-5	20	GA	MO	2	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	8.2.2B			
1-E11-F006C	D-25025 Sht. 1B	C-3	20	GA	MO	2	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	8.2.2C			

Unit 1 IST Valve Table

System: RHR **System No.** 2045

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-E11-F006D	D-25026 Sht. 2B	C-8	20	GA	MO	2	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	8.2.2B			
1-E11-F007A	D-25025 Sht. 1B	D-7	4	GA	MO	2	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	8.2.2C			
					ST-O	Q	8.2.2C			
					V	R	8.2.2C			
1-E11-F007B	D-25026 Sht. 2B	B-4	4	GA	MO	2	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	8.2.2B			
					ST-O	Q	8.2.2B			
					V	R	8.2.2B			
1-E11-F008	D-25025 Sht. 1B	D-2	20	GA	MO	1	A	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-E11			
					PIV	R	20.7B			
					ST-C	C	8.0		CSJ-07	
					V	R	8.0			
1-E11-F009	D-25025 Sht. 1B	E-2	20	GA	MO	1	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-E11			
					PIV	R	20.7B			
					ST-C	C	8.0		CSJ-07	
					V	R	8.0			

Unit 1 IST Valve Table

System: RHR **System No.** 2045

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-E11-F011A	D-25025 Sht. 1A	E-5	4	GA	MO	2	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	8.2.2C			
1-E11-F011B	D-25026 Sht. 2A	C-7	4	GA	MO	2	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	8.2.2B			
1-E11-F015A	D-25025 Sht. 1B	E-6	24	GA	MO	1	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-111A			
					PIV	R	20.7B			
					ST-C	Q	8.2.2C			
					ST-O	Q	8.2.2C			
					V	R	8.2.2C			
1-E11-F015B	D-25026 Sht. 2B	D-5	24	GA	MO	1	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-111B			
					PIV	R	20.7B			
					ST-C	Q	8.2.2B			
					ST-O	Q	8.2.2B			
					V	R	8.2.2B			

Unit 1 IST Valve Table

System: RHR **System No.** 2045

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-E11-F016A	D-25025 Sht. 1B	F-6	14	GL	MO	2	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-113A			
					ST-C	Q	8.2.2C			
					ST-O	Q	8.2.2C			
					V	R	8.2.2C			
1-E11-F016B	D-25026 Sht. 2B	E-5	14	GL	MO	2	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-114A			
					ST-C	Q	8.2.2B			
					ST-O	Q	8.2.2B			
					V	R	8.2.2B			
1-E11-F017A	D-25025 Sht. 1B	E-7	24	AN	MO	2	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-112A			
					ST-C	Q	8.2.2C			
					ST-O	Q	8.2.2C			
					V	R	8.2.2C			
1-E11-F017B	D-25026 Sht. 2B	D-4	24	AN	MO	2	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-112B			
					ST-C	Q	8.2.2B			
					ST-O	Q	8.2.2B			
					V	R	8.2.2B			

Unit 1 IST Valve Table

System: RHR **System No.** 2045

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-E11-F020A	D-25025 Sht. 1B	D-4	24	GA	MO	2	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	8.2.2C			
					ST-O	Q	8.2.2C			
					V	R	8.2.2C			
1-E11-F020B	D-25026 Sht. 2B	C-7	24	GA	MO	2	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	8.2.2B			
					ST-O	Q	8.2.2B			
					V	R	8.2.2B			
1-E11-F021A	D-25025 Sht. 1B	F-3	14	GA	MO	2	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-E11			
					ST-C	Q	8.2.2C			
					ST-O	Q	8.2.2C			
					V	R	8.2.2C			
1-E11-F021B	D-25026 Sht. 2B	E-7	14	GA	MO	2	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-E11			
					ST-C	Q	8.2.2B			
					ST-O	Q	8.2.2B			
					V	R	8.2.2B			

Unit 1 IST Valve Table

System: RHR **System No.** 2045

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-E11-F024A	D-25025 Sht. 1B	E-8	16	GL	MO	2	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	8.2.2C			
					ST-O	Q	8.2.2C			
					V	R	8.2.2C			
1-E11-F024B	D-25026 Sht. 2B	D-3	16	GL	MO	2	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	8.2.2B			
					ST-O	Q	8.2.2B			
					V	R	8.2.2B			
1-E11-F025A	D-25025 Sht. 1A	F-3	1	RL	SA	2	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	SP	11.0			
1-E11-F025B	D-25026 Sht. 2A	E-7	1	RL	SA	2	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	SP	11.0			
1-E11-F027A	D-25025 Sht. 1B	E-7	6	GL	MO	2	A	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-118B			
					V	R	8.2.2C			
1-E11-F027B	D-25026 Sht. 2B	E-4	6	GL	MO	2	A	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-118B			
					V	R	8.2.2B			

Unit 1 IST Valve Table

System: RHR **System No.** 2045

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-E11-F028A	D-25025 Sht. 1B	F-7	16	GA	MO	2	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-118A			
					ST-C	Q	8.2.2C			
					ST-O	Q	8.2.2C			
					V	R	8.2.2C			
1-E11-F028B	D-25026 Sht. 2B	E-4	16	GA	MO	2	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-119A			
					ST-C	Q	8.2.2B			
					ST-O	Q	8.2.2B			
					V	R	8.2.2B			
1-E11-F029	D-25025 Sht. 1B	C-1	1	RL	SA	2	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	SP	11.0			
1-E11-F031A	D-25025 Sht. 1B	B-7	16	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	8.2.2C		V-14	
					CV-O	Q	8.2.2C			
1-E11-F031B	D-25026 Sht. 2B	A-2	16	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	8.2.2B		V-14	
					CV-O	Q	8.2.2B			

Unit 1 IST Valve Table

System: RHR **System No.** 2045

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-E11-F031C	D-25025 Sht. 1B	B-5	16	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	8.2.2C		V-14	
					CV-O	Q	8.2.2C			
1-E11-F031D	D-25026 Sht. 2B	A-6	16	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	8.2.2B		V-14	
					CV-O	Q	8.2.2B			
1-E11-F040	D-25026 Sht. 2B	C-3	4	GA	MO	S	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	8.2.2B			
					V	R	8.2.2B			
1-E11-F046A	D-25025 Sht. 1B	B-6	3	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	8.2.2C		V-14	
					CV-P	Q	8.2.2C			
					DA	SP	11.1.2.3			
1-E11-F046B	D-25026 Sht. 2B	A-4	3	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	8.2.2B		V-14	
					CV-P	Q	8.2.2B			
					DA	SP	11.1.2.3			

Unit 1 IST Valve Table

System: RHR **System No.** 2045

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-E11-F046C	D-25025 Sht. 1B	B-4	3	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	8.2.2C		V-14	
					CV-P	Q	8.2.2C			
					DA	SP	11.1.2.3			
1-E11-F046D	D-25026 Sht. 2B	A-6	3	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	8.2.2B		V-14	
					CV-P	Q	8.2.2B			
					DA	SP	11.1.2.3			
1-E11-F047A	D-25025 Sht. 1A	D-2	16	GA	MO	2	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	8.2.2C			
1-E11-F047B	D-25026 Sht. 2B	B-1	16	GA	MO	2	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	8.2.2B			
1-E11-F048A	D-25025 Sht. 1A	E-2	20	GL	MO	2	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	8.2.2C			
					ST-O	Q	8.2.2C			
					V	R	8.2.2C			

Unit 1 IST Valve Table

System: RHR **System No.** 2045

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-E11-F048B	D-25026 Sht. 2B	B-2	20	GL	MO	2	B	No	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	8.2.2B			
					ST-O	Q	8.2.2B			
					V	R	8.2.2B			
1-E11-F049	D-25026 Sht. 2B	C-4	4	GL	MO	2	B	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	8.2.2B			
					V	R	8.2.2B			
1-E11-F050A	D-25025 Sht. 1B	E-4	24	CK	SA	1	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.7B		RFJ-10	
					CV-O	C	8.0A		CSJ-08	
					PIV	R	20.7B			
1-E11-F050B	D-25026 Sht. 2B	D-7	24	CK	SA	1	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.7B		RFJ-10	
					CV-O	C	8.0B		CSJ-08	
					PIV	R	20.7B			
1-E11-F060A	D-25025 Sht. 1B	E-3	24	GA	MA	1	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	20.7B			
1-E11-F060B	D-25026 Sht. 2B	D-7	24	GA	MA	1	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	20.7B			

Unit 1 IST Valve Table

System: RHR **System No.** 2045

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-E11-F089	D-25026 Sht. 2B	F-3	4	CK	SA	2	C	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	8.2.2B			
					CV-P	Q	8.2.2B			
1-E11-F090	D-25026 Sht. 2B	F-3	4	CK	SA	S	C	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	8.2.2B			
					CV-P	Q	8.2.2B			
1-E11-F103A	D-25025 Sht. 1A	C-2	1	GL	MO	2	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	8.2.2C			
1-E11-F103B	D-25026 Sht. 2A	C-4	1	GL	MO	2	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	8.2.2B			
1-E11-PDV-F068A	D-25037 Sht. 1	D-1	16	AN	MO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-O	Q	8.1.4A			
					V	R	8.1.4A			
1-E11-PDV-F068B	D-25037 Sht. 2	D-8	16	AN	MO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-O	Q	8.1.4B			
					V	R	8.1.4B			

Unit 1 IST Valve Table

System: RHR **System No.** 2045

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-E11-V192	D-25025 Sht. 1B	F-7	4	CK	SA	S	C	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	8.2.2C			
					CV-P	Q	8.2.2C			
1-E11-V193	D-25025 Sht. 1B	F-7	4	CK	SA	2	C	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	8.2.2C			
					CV-P	Q	8.2.2C			
1-E11-V39	D-25049 Sht. 1B	F-5	8	GA	MA	2	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST	R	8.0C			
1-E11-V40	D-25049 Sht. 1B	B-2	8	GA	MA	2	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					NONE					
1-E11-V51	D-25037 Sht.1	C-6	.75	RL	SA	3	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	SP	11.0			
1-E11-V54	D-25037 Sht.2	C-5	.75	RL	SA	3	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	SP	11.0			

Unit 1 IST Valve Table

System: CAC **System No.** 2070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-CAC-SV-1200B	D-720018	D-4	1	GL	SO	2	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-1			
					LLRT	PB	20.3-073			
					ST-C	Q	16.0-1			
					V	R	20.4			
1-CAC-SV-1205E	D-73026 sh. 2	B-3	.75	GL	SO	2	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-1			
					ST-C	Q	16.0-1			
					V	R	20.4			
1-CAC-SV-1209A	D-73026 sh. 2	B-3	1	GL	SO	2	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-1			
					ST-C	Q	16.0-1			
					V	R	20.4			
1-CAC-SV-1209B	D-73026 sh. 2	B-3	1	GL	SO	2	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-1			
					ST-C	Q	16.0-1			
					V	R	20.4			

Unit 1 IST Valve Table

System: CAC **System No.** 2070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-CAC-SV-1211E	D-72018	B-6	1	GL	SO	2	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-1			
					LLRT	PB	20.3-089			
					ST-C	Q	16.0-1			
					V	R	20.4			
1-CAC-SV-1211F	D-72018	C-6	1	GL	SO	2	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-1			
					LLRT	PB	20.3-083			
					ST-C	Q	16.0-1			
					V	R	20.4			
1-CAC-SV-1213A	D-73026 sh. 2	B-3	1	GL	SO	2	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-1			
					ST-C	Q	16.0-1			
					V	R	20.4			
1-CAC-SV-1215E	D-73026 sh. 2	B-4	.75	GL	SO	2	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-1			
					ST-C	Q	16.0-1			
					V	R	20.4			

Unit 1 IST Valve Table

System: CAC **System No.** 2070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-CAC-SV-1218A	D-73026 sh. 1	A-6	1	GL	SO	2	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-1			
					ST-C	Q	16.0-1			
					V	R	20.4			
1-CAC-SV-1225B	D-72018	B-3	1.25	GL	SO	2	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-1			
					LLRT	PB	20.3-082			
					ST-C	Q	16.0-1			
					V	R	20.4			
1-CAC-SV-1227A	D-73026 sh. 1	B-7	.75	GL	SO	2	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-1			
					ST-C	Q	16.0-1			
					V	R	20.4			
1-CAC-SV-1227B	D-73026 sh. 1	B-7	1	GL	SO	2	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-1			
					ST-C	Q	16.0-1			
					V	R	20.4			

Unit 1 IST Valve Table

System: CAC **System No.** 2070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-CAC-SV-1227C	D-72018	C-4	1.25	GL	SO	2	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-1			
					ST-C	Q	16.0-1			
					V	R	20.4			
1-CAC-SV-1227E	D-73026 sh. 1	B-6	1	GL	SO	2	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-1			
					LLRT	PB	20.3-78A			
					ST-C	Q	16.0-1			
					V	R	20.4			
1-CAC-SV-1231B	D-73026 sh. 1	A-6	1	GL	SO	2	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-1			
					ST-C	Q	16.0-1			
					V	R	20.4			
1-CAC-SV-1260	D-72018	C-3	1	GL	SO	2	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-1			
					LLRT	PB	20.3-079			
					ST-C	Q	16.0-1			
					V	R	20.4			

Unit 1 IST Valve Table

System: CAC **System No.** 2070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-CAC-SV-1261	D-72018	D-3	1	GL	SO	2	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-1			
					LLRT	PB	20.3-074			
					ST-C	Q	16.0-1			
					V	R	20.4			
1-CAC-SV-1262	D-72018	C-6	1	GL	SO	2	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-1			
					LLRT	PB	20.3-084			
					ST-C	Q	16.0-1			
					V	R	20.4			
1-CAC-SV-3439	D-72018	B-7	1	GL	SO	2	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-1			
					LLRT	PB	20.3-090			
					ST-C	Q	16.0-1			
					V	R	20.4			
1-CAC-SV-3440	D-72018	B-2	1.25	GL	SO	2	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-1			
					LLRT	PB	20.3-081			
					ST-C	Q	16.0-1			
					V	R	20.4			

Unit 1 IST Valve Table

System: CAC **System No.** 2070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-CAC-SV-4409-1	D-73026 sh. 2	B-4	.5	GL	SO	2	B	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-1			
					ST-C	Q	16.0-1			
					V	R	20.4			
1-CAC-SV-4409-2	D-73026 sh. 2	B-5	.5	GL	SO	2	B	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-1			
					ST-C	Q	16.0-1			
					V	R	20.4			
1-CAC-SV-4409-3	D-73026 sh. 2	B-5	.5	GL	SO	2	B	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-1			
					ST-C	Q	16.0-1			
					V	R	20.4			
1-CAC-SV-4409-4	D-73026 sh. 2	B-5	.5	GL	SO	2	B	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-1			
					ST-C	Q	16.0-1			
					V	R	20.4			
1-CAC-SV-4410-1	D-73026 sh. 1	B-5	.5	GL	SO	2	B	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-1			
					ST-C	Q	16.0-1			
					V	R	20.4			

Unit 1 IST Valve Table

System: CAC **System No.** 2070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-CAC-SV-4410-2	D-73026 sh. 1	B-5	.5	GL	SO	2	B	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-1			
					ST-C	Q	16.0-1			
					V	R	20.4			
1-CAC-SV-4410-3	D-73026 sh. 1	B-5	.5	GL	SO	2	B	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-1			
					ST-C	Q	16.0-1			
					V	R	20.4			
1-CAC-SV-4410-4	D-73026 sh. 1	B-5	.5	GL	SO	2	B	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-1			
					ST-C	Q	16.0-1			
					V	R	20.4			
1-CAC-SV-4540	D-73026 sh. 2	B-4	.5	GL	SO	2	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-1			
					ST-C	Q	16.0-1			
					V	R	20.4			
1-CAC-SV-4541	D-73026 sh. 1	A-6	.5	GL	SO	2	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-1			
					ST-C	Q	16.0-1			
					V	R	20.4			

Unit 1 IST Valve Table

System: CAC **System No.** 2070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-CAC-V10	D-25015 sh. 1A	D-6	18	BF	AO	2	A	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.1.1			
					LLRT	R	20.3-69E			
					ST-C	Q	16.1.1			
					V	R	16.1.1			
1-CAC-V15	D-25015 sh. 1B	D-2	24	BF	AO	2	A	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.1.1			
					LLRT	R	20.3-67C			
					ST-C	Q	16.1.1			
					V	R	16.1.1			
1-CAC-V16	D-25015 sh. 1B	A-2	20	BF	AO	2	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	2.3.2			
					LLRT	R	20.3-67D			
					ST-C	Q	2.3.2			
					ST-O	Q	2.3.2			
					V	R	2.3.2			
1-CAC-V160	D-25015 sh. 1B	C-1	1	GL	SO	2	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.1.1			
					LLRT	R	20.3-67D			
					ST-C	Q	16.1.1			
					ST-O	Q	16.1.1			
					V	R	20.3-67D			

Unit 1 IST Valve Table

System: CAC **System No.** 2070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-CAC-V161	D-25015 sh. 1B	F-2	1	GL	SO	2	A	Yes	C	OC

Test	Frequency	Procedure	Relief/Justification/Remark
F	Q	16.1.1	
LLRT	R	20.3-67E	
ST-C	Q	16.1.1	
ST-O	Q	16.1.1	
V	R	20.3-67E	

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-CAC-V162	D-25015 sh. 1B	C-2	1	GL	SO	2	A	Yes	C	OC

Test	Frequency	Procedure	Relief/Justification/Remark
F	Q	16.1.1	
LLRT	R	20.3-67D	
ST-C	Q	16.1.1	
ST-O	Q	16.1.1	
V	R	20.3-67D	

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-CAC-V163	D-25015 sh. 1B	E-2	1	GL	SO	2	A	Yes	C	OC

Test	Frequency	Procedure	Relief/Justification/Remark
F	Q	16.1.1	
LLRT	R	20.3-67E	
ST-C	Q	16.1.1	
ST-O	Q	16.1.1	
V	R	20.3-67E	

Unit 1 IST Valve Table

System: CAC **System No.** 2070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-CAC-V17	D-25015 sh. 1B	A-2	20	BF	AO	2	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	2.3.2			
					LLRT	R	20.3-67D			
					ST-C	Q	2.3.2			
					ST-O	Q	2.3.2			
					V	R	2.3.2			
1-CAC-V172	D-25015 sh. 1A	C-7	2	GL	SO	2	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.1.1			
					LLRT	R	20.3-68C			
					ST-C	Q	16.1.1			
					ST-O	Q	16.1.1			
					V	R	20.4			
1-CAC-V216	D-25015 sh. 1D	F-2	8	BF	AO	2	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.1.1			
					LLRT	R	20.3-68D			
					ST-C	Q	16.1.1			
					ST-O	Q	16.1.1		INFO ONLY	
					V	R	16.1.1			

Unit 1 IST Valve Table

System: CAC **System No.** 2070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-CAC-V22	D-25015 sh. 1A	C-8	2	GA	MO	2	A	Yes	C	OC

Test	Frequency	Procedure	Relief/Justification/Remark
LLRT	R	20.3-68D	
ST-C	Q	16.1.1	
ST-O	Q	16.1.1	
V	R	16.1.1	

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-CAC-V23	D-25015 sh. 1A	E-6	2	GA	MO	2	A	Yes	C	OC

Test	Frequency	Procedure	Relief/Justification/Remark
LLRT	R	20.3-69E	
ST-C	Q	16.1.1	
ST-O	Q	16.1.1	
V	R	16.1.1	

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-CAC-V4	D-25015 sh. 1B	B-4	8	BF	AO	2	A	Yes	O	C

Test	Frequency	Procedure	Relief/Justification/Remark
F	Q	16.1.1	
LLRT	R	20.3-67C	
ST-C	Q	16.1.1	
V	R	16.1.1	

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-CAC-V49	D-25015 sh. 1A	F-5	3	GL	SO	2	A	Yes	C	OC

Test	Frequency	Procedure	Relief/Justification/Remark
F	Q	16.1.1	
LLRT	R	20.3-72A	
ST-C	Q	16.1.1	
ST-O	Q	16.1.1	
V	R	20.4	

Unit 1 IST Valve Table

System: CAC **System No.** 2070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-CAC-V5	D-25015 sh. 1B	B-3	20	BF	AO	2	A	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.1.1			
					LLRT	R	20.3-67D			
					ST-C	Q	16.1.1			
					V	R	16.1.1			
1-CAC-V50	D-25015 sh. 1A	F-6	3	GL	SO	2	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.1.1			
					LLRT	R	20.3-72B			
					ST-C	Q	16.1.1			
					ST-O	Q	16.1.1			
					V	R	20.4			
1-CAC-V55	D-25015 sh. 1B	D-3	1	GL	SO	2	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.1.1			
					LLRT	PB	20.3-67B1			
					ST-C	Q	16.1.1			
					ST-O	Q	16.1.1			
					V	R	20.4			

Unit 1 IST Valve Table

System: CAC **System No.** 2070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-CAC-V56	D-25015 sh. 1B	C-3	1	GL	SO	2	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.1.1			
					LLRT	PB	20.3-67B2			
					ST-C	Q	16.1.1			
					ST-O	Q	16.1.1			
					V	R	20.4			
1-CAC-V59	D-25015 sh. 1B	D-5	.75	RL	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	SP	11.0			
1-CAC-V6	D-25015 sh. 1A	D-3	18	BF	AO	2	A	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.1.1			
					LLRT	R	20.3-67E			
					ST-C	Q	16.1.1			
					V	R	16.1.1			
1-CAC-V7	D-25015 sh. 1A	B-7	20	BF	AO	2	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.1.1			
					LLRT	R	20.3-68C			
					ST-C	Q	16.1.1			
					ST-O	Q	16.1.1		ONLY INFO	
					V	R	16.1.1			

Unit 1 IST Valve Table

System: CAC **System No.** 2070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-CAC-V8	D-25015 sh. 1A	B-8	20	BF	AO	2	A	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.1.1			
					LLRT	R	20.3-68D			
					ST-C	Q	16.1.1			
					V	R	16.1.1			
1-CAC-V9	D-25015 sh. 1A	D-6	18	BF	AO	2	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.1.1			
					LLRT	R	20.3-69D			
					ST-C	Q	16.1.1			
					ST-O	Q	16.1.1			
					V	R	16.1.1			
1-CAC-X18A	D-25015 sh. 1A	B-6	18	VB	SA	S	A/C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					L-M	R	20.6			
					R	R	0MSTCAC500R			
					ST-P	Q	2.3.1			
					V	R	2.3.1			
1-CAC-X18B	D-25015 sh. 1A	B-6	18	VB	SA	S	A/C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					L-M	R	20.6			
					R	R	0MSTCAC500R			
					ST-P	Q	2.3.1			
					V	R	2.3.1			

Unit 1 IST Valve Table

System: CAC **System No.** 2070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-CAC-X18C	D-25015 sh. 1A	B-6	18	VB	SA	S	A/C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					L-M	R	20.6			
					R	R	0MSTCAC500R			
					ST-P	Q	2.3.1			
					V	R	2.3.1			
1-CAC-X18D	D-25015 sh. 1A	B-6	18	VB	SA	S	A/C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					L-M	R	20.6			
					R	R	0MSTCAC500R			
					ST-P	Q	2.3.1			
					V	R	2.3.1			
1-CAC-X18E	D-25015 sh. 1A	B-6	18	VB	SA	S	A/C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					L-M	R	20.6			
					R	R	0MSTCAC500R			
					ST-P	Q	2.3.1			
					V	R	2.3.1			
1-CAC-X18F	D-25015 sh. 1A	B-6	18	VB	SA	S	A/C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					L-M	R	20.6			
					R	R	0MSTCAC500R			
					ST-P	Q	2.3.1			
					V	R	2.3.1			

Unit 1 IST Valve Table

System: CAC **System No.** 2070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-CAC-X18G	D-25015 sh. 1A	B-6	18	VB	SA	S	A/C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					L-M	R	20.6			
					R	R	0MSTCAC500R			
					ST-P	Q	2.3.1			
					V	R	2.3.1			
1-CAC-X18H	D-25015 sh. 1A	B-6	18	VB	SA	S	A/C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					L-M	R	20.6			
					R	R	0MSTCAC500R			
					ST-P	Q	2.3.1			
					V	R	2.3.1			
1-CAC-X18I	D-25015 sh. 1A	B-6	18	VB	SA	S	A/C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					L-M	R	20.6			
					R	R	0MSTCAC500R			
					ST-P	Q	2.3.1			
					V	R	2.3.1			
1-CAC-X18J	D-25015 sh. 1A	B-6	18	VB	SA	S	A/C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					L-M	R	20.6			
					R	R	0MSTCAC500R			
					ST-P	Q	2.3.1			
					V	R	2.3.1			

Unit 1 IST Valve Table

System: CAC **System No.** 2070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-CAC-X20A	D-25015 sh. 1B	A-6	20	VB	SA	2	A/C	Yes	C	OC

Test	Frequency	Procedure	Relief/Justification/Remark
CV-C	Q	2.3.2	
CV-O	Q	2.3.2	
LLRT	R	20.3-67C	
R	R	0MSTCAC501R	

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-CAC-X20B	D-25015 sh. 1B	A-2	20	VB	SA	2	A/C	Yes	C	OC

Test	Frequency	Procedure	Relief/Justification/Remark
CV-C	Q	2.3.2	
CV-O	Q	2.3.2	
LLRT	R	20.3-67C	
R	R	0MSTCAC501R	

Unit 1 IST Valve Table

System: HPCI **System No.** 2095

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-E41-F001	D-25023 Sht. 2	F-6	10	GA	MO	S	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-O	Q	9.7			
					V	R	9.7			
1-E41-F002	D-25023 Sht. 1	E-2	10	GA	MO	1	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	R	20.3-148A			
					ST-C	Q	9.7			
					ST-O	Q	9.7			
					V	R	9.2.1			
1-E41-F003	D-25023 Sht. 1	E-3	10	GA	MO	1	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	R	20.3-148B			
					ST-C	Q	9.7			
					ST-O	Q	9.7			
					V	R	9.7			
1-E41-F004	D-25023 Sht. 1	E-7	16	GA	MO	S	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	9.7			
					V	R	9.7			
1-E41-F005	D-25023 Sht. 1	B-3	14	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	9.2			
					CV-O	Q	9.2			

Unit 1 IST Valve Table

System: HPCI **System No.** 2095

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-E41-F006	D-25023 Sht. 1	A-2	14	GA	MO	1	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	R	20.3-056			
					ST-C	Q	9.7			
					ST-O	Q	9.7			
					V	R	9.7			
1-E41-F007	D-25023 Sht. 1	B-3	14	GA	MO	S	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	9.7			
1-E41-F008	D-25023 Sht. 1	D-4	10	GL	MO	S	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	9.7			
1-E41-F011	D-25023 Sht. 1	E-5	10	GA	MO	S	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	9.7			
1-E41-F012	D-25023 Sht. 1	A-4	4	GL	MO	2	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	9.7			
					ST-O	Q	9.7			
					V	R	9.7			
1-E41-F019	D-25023 Sht. 1	E-6	16	CK	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	9.2			
					CV-O	Q	9.2			

Unit 1 IST Valve Table

System: HPCI **System No.** 2095

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-E41-F020	D-25023 Sht. 1	D-5	1	RL	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	SP	11.0			
1-E41-F021	D-25023 Sht.2	C-2	20	SC	SA	2	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	Q	9.2			
					DA	R	11.1.2.3			
1-E41-F022	D-25023 Sht. 2	C-3	2	SC	SA	2	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					DA	R	11.1.2.3			
1-E41-F023A	D-25023 Sht. 1	F-2	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV14R		VRR-4	
					V	5R	0MST-EFCV14R		VRR-4	
1-E41-F023B	D-25023 Sht. 1	D-2	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV17R		VRR-4	
					V	5R	0MST-EFCV17R		VRR-4	
1-E41-F023C	D-25023 Sht. 1	F-2	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV14R		VRR-4	
					V	5R	0MST-EFCV14R		VRR-4	

Unit 1 IST Valve Table

System: HPCI **System No.** 2095

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-E41-F023D	D-25023 Sht. 1	D-2	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV17R		VRR-4	
					V	5R	0MST-EFCV17R		VRR-4	
1-E41-F026	D-25023 Sht. 2	A-5	1	GA	AO	S	B	Yes	OC	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	9.7			
					ST-C	Q	9.7			
					V	R	9.7			
1-E41-F040	D-25023 Sht. 2	C-3	2	CK	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.2-151		RFJ-17	
					DA	R	11.1.2.3			
1-E41-F041	D-25023 Sht. 1	E-5	16	GA	MO	S	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	9.7			
					ST-O	Q	9.7			
					V	R	9.7			
1-E41-F042	D-25023 Sht. 2	A-3	16	GA	MO	2	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	9.7			
					ST-O	Q	9.7			
					V	R	9.7			

Unit 1 IST Valve Table

System: HPCI **System No.** 2095

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-E41-F045	D-25023 Sht. 2	A-3	16	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-P	2R	9.2		V-06	
					DA	2R	11.1.2.3			
1-E41-F046	D-25023 Sht. 1	A-4	4	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-P	Q	9.2		V-07	
					DA	2R	11.1.2.3		V-07	
1-E41-F048	D-25023 Sht. 2	B-4	2	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-P	Q	9.2		V-08	
					DA	2R	11.1.2.3		V-08	
1-E41-F049	D-25023 Sht. 2	D-2	20	CK	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.2-152		RFJ-18	
					CV-O	Q	9.2			
1-E41-F050	D-25023 Sht. 2	B-4	1.5	RL	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	SP	11.0			
1-E41-F052	D-25023 Sht. 2	B-6	2	CK	SA	S	C	Yes	OC	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	9.2			
					CV-P	Q	9.2			

Unit 1 IST Valve Table

System: HPCI **System No.** 2095

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-E41-F057	D-25023 Sht. 2	B-6	2	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-P	Q	9.2		V-08	
					DA	2R	11.1.2.3		V-08	
1-E41-F059	D-25023 Sht. 2	C-4	2	GL	MO	S	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-O	Q	9.7			
					V	R	9.7			
1-E41-F075	D-25023 Sht. 2	B-1	2	GL	MO	2	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-153B			
					ST-C	Q	9.7			
					ST-O	Q	9.7			
					V	R	9.7			
1-E41-F076	D-25023 Sht. 2	B-1	2	CK	SA	2	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	C	20.10		CSJ-09	
					CV-O	C	20.10		CSJ-09	
1-E41-F077	D-25023 Sht. 2	B-1	2	CK	SA	2	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	C	20.10		CSJ-09	
					CV-O	C	20.10		CSJ-09	

Unit 1 IST Valve Table

System: HPCI **System No.** 2095

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-E41-F079	D-25023 Sht. 2	B-1	2	GL	MO	2	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-153A			
					ST-C	Q	9.7			
					V	R	9.7			
1-E41-PSE-D003	D-25023 Sht. 2	D-3	16	RD	SA	S	D	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					INSP	5Y	PMID 39412-01		V-15	
1-E41-PSE-D004	D-25023 Sht. 2	E-3	16	RD	SA	S	D	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					INSP	5Y	PMID 39413-01		V-15	
1-E41-V159	D-25023 Sht. 1	A-2	14	CK	SA	1	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.12		RFJ-11	
					CV-O	R	20.12		RFJ-11	
					DA	SP	11.1.2.3		RFJ-11	
1-E41-V8	D-25023 Sht. 2	F-5	10	GA	HO	S	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					SKID	Q	9.2			
1-E41-V9	D-25023 Sht. 2	F-4	10	GA	HO	S	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					SKID	Q	9.2			

Unit 1 IST Valve Table

System: HPCI **System No.** 2095

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-E41-V93	D-25023 Sht. 1	D-3	2	CK	SA	S	C	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	9.2			
					CV-P	Q	9.2			
1-E41-V94	D-25023 Sht. 1	E-3	2	CK	SA	S	C	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	9.2			
					CV-P	Q	9.2			

Unit 1 IST Valve Table

System: RCIC **System No.** 2100

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-E51-F001	D-25029 Sht. 2	B-6	8	SC	SA	2	C	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	Q	10.1.1			
					DA	R	11.1.2.3			
1-E51-F007	D-25029 Sht. 1	E-7	3	GA	MO	1	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	R	20.3-156A			
					ST-C	Q	10.1.8			
					ST-O	Q	10.1.8			
					V	R	10.2.1			
1-E51-F008	D-25029 Sht. 1	E-6	3	GA	MO	1	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	R	20.3-156B			
					ST-C	Q	10.1.8			
					ST-O	Q	10.1.8			
					V	R	10.1.8			
1-E51-F010	D-25029 Sht. 1	E-4	6	GA	MO	S	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	10.1.8			
					ST-O	Q	10.1.8			
					V	R	10.1.8			
1-E51-F011	D-25029 Sht. 1	D-4	6	CK	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	10.1.1			
					CV-O	Q	10.1.1			

Unit 1 IST Valve Table

System: RCIC **System No.** 2100

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-E51-F012	D-25029 Sht. 1	B-6	4	GA	MO	S	B	Yes	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-O	Q	10.1.8			
					V	R	10.1.8			
1-E51-F013	D-25029 Sht. 1	B-6	4	GA	MO	1	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	R	20.3-165			
					ST-C	Q	10.1.8			
					ST-O	Q	10.1.8			
					V	R	10.1.8			
1-E51-F014	D-25029 Sht. 1	B-5	4	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	10.1.1			
					CV-O	Q	10.1.1			
1-E51-F017	D-25029 Sht. 1	D-3	1	RL	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	SP	11.0			
1-E51-F018	D-25029 Sht. 2	E-5	1	RL	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	SP	11.0			
1-E51-F019	D-25029 Sht. 2	C-3	2	GL	MO	2	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	10.1.8			
					ST-O	Q	10.1.8			
					V	R	10.1.8			

Unit 1 IST Valve Table

System: RCIC **System No.** 2100

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-E51-F021	D-25029 Sht. 2	C-2	2	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-P	Q	10.1.1		V-07	
					DA	2R	11.1.2.3		V-07	
1-E51-F022	D-25029 Sht. 1	D-5	4	GL	MO	S	B	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	10.1.8			
					V	R	10.1.8			
1-E51-F029	D-25029 Sht. 1	D-4	6	GA	MO	S	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	10.1.8			
					ST-O	Q	10.1.8			
					V	R	10.1.8			
1-E51-F030	D-25029 Sht. 2	A-5	6	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-P	2R	10.1.1		V-06	
					DA	2R	11.1.2.3			
1-E51-F031	D-25029 Sht. 2	A-6	6	GA	MO	2	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	10.1.8			
					ST-O	Q	10.1.8			
					V	R	10.1.8			

Unit 1 IST Valve Table

System: RCIC **System No.** 2100

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-E51-F040	D-25029 Sht. 2	B-6	8	CK	SA	2	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.2-160		RFJ-18	
					CV-O	Q	10.1.1			
1-E51-F043A	D-25029 Sht. 1	D-7	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV14R		VRR-4	
					V	5R	0MST-EFCV14R		VRR-4	
1-E51-F043B	D-25029 Sht. 1	F-7	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV17R		VRR-4	
					V	5R	0MST-EFCV17R		VRR-4	
1-E51-F043C	D-25029 Sht. 1	D-7	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV14R		VRR-4	
					V	5R	0MST-EFCV14R		VRR-4	
1-E51-F043D	D-25029 Sht. 1	F-7	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV17R		VRR-4	
					V	5R	0MST-EFCV17R		VRR-4	
1-E51-F045	D-25029 Sht. 1	D-2	3	GL	MO	S	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	10.1.8			
					ST-O	Q	10.1.8			
					V	R	10.1.8			

Unit 1 IST Valve Table

System: RCIC **System No.** 2100

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-E51-F046	D-25029 Sht. 1	B-4	2	GL	MO	S	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	10.1.8			
					ST-O	Q	10.1.8			
					V	R	10.1.8			
1-E51-F047	D-25029 Sht. 2	E-6	2	CK	SA	S	C	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	10.1.1			
					CV-P	Q	10.1.1			
1-E51-F062	D-25029 Sht. 2	B-7	2	GL	MO	2	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-161B			
					ST-C	Q	10.1.8			
					ST-O	Q	10.1.8			
					V	R	10.1.8			
1-E51-F063	D-25029 Sht. 2	B-8	2	CK	SA	2	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	C	20.10		CSJ-09	
					CV-O	C	20.10		CSJ-09	
1-E51-F064	D-25029 Sht. 2	B-8	2	CK	SA	2	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	C	20.10		CSJ-09	
					CV-O	C	20.10		CSJ-09	

Unit 1 IST Valve Table

System: RCIC **System No.** 2100

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-E51-F066	D-25029 Sht. 2	B-8	2	GL	MO	2	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-161A			
					ST-C	Q	10.1.8			
					ST-O	Q	10.1.8			
					V	R	10.1.8			
1-E51-PSE-D001	D-25029,SH.2	C-5	8	RD		S	D	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					INSP	5Y	PMID 39414-01		V-15	
1-E51-PSE-D002	D-25029 SH.2	C-5	8	RD		S	D	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					INSP	5Y	PMID 39415-01		V-15	
1-E51-V72	D-25029 Sht. 1	A-5	2	CK	SA	S	C	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	10.1.1			
					CV-P	Q	10.1.1			
1-E51-V73	D-25029 Sht. 1	A-5	2	CK	SA	S	C	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	10.1.1			
					CV-P	Q	10.1.1			
1-E51-V8	D-25029 Sht. 1	C-2	3	GA	MO	S	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					SKID	Q	10.1.1			

Unit 1 IST Valve Table

System: RCIC **System No.** 2100

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-E51-V88	D-25029 Sht. 1	B-7	4	CK	SA	1	B/C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					DA	2R	11.1.2.3			
1-E51-V9	D-25029 Sht. 1	C-3	3	GA	HO	S	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					SKID	Q	10.1.1			

Unit 1 IST Valve Table

System: RXS **System No.** 2117

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-RXS-SV-4186	D-73027 Sht. 1	A-7	.5	GL	SO	2	A	No	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	15.8			
					LLRT	PB	20.3-172			
					ST-C	Q	15.8			
					V	R	20.4			
1-RXS-SV-4187	D-73027 Sht. 1	A-7	.5	GL	SO	2	A	No	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	15.8			
					LLRT	PB	20.3-173			
					ST-C	Q	15.8			
					V	R	20.4			
1-RXS-SV-4188	D-73027 Sht. 1	B-7	.5	GL	SO	2	A	No	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	15.8			
					LLRT	PB	20.3-174			
					ST-C	Q	15.8			
					V	R	20.4			
1-RXS-SV-4189	D-73027 Sht. 1	B-7	.5	GL	SO	2	A	No	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	15.8			
					LLRT	PB	20.3-175			
					ST-C	Q	15.8			
					V	R	20.4			

Unit 1 IST Valve Table

System: RXS **System No.** 2117

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-RXS-SV-4192	D-73027 Sht. 1	F-8	.5	GL	SO	2	B	No	C	OC

Test	Frequency	Procedure	Relief/Justification/Remark
F	Q	15.7	
ST-C	Q	15.7	
V	R	20.4	

Unit 1 IST Valve Table

System: TD **System No.** 2190

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-TD-V2	D-26098	B-7	3	GA	MA	2	B	No	C	C

Test	Frequency	Procedure	Relief/Justification/Remark
N/A			

Unit 1 IST Valve Table

System: Misc V&D **System No.** 3020

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-MS-F038A	D-25021 SHT 1B	C-6	2	GL	MO	S	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	C	25.4		CSJ-14	
					ST-O	C	25.4		CSJ-14	
					V	R	25.4			
1-MS-F038B	D-25021 SHT 1B	C-7	2	GL	MO	S	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	C	25.4		CSJ-14	
					ST-O	C	25.4		CSJ-14	
					V	R	25.4			
1-MS-F038C	D-25021 SHT 1A	E-7	2	GL	MO	S	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	C	25.4		CSJ-14	
					ST-O	C	25.4		CSJ-14	
					V	R	25.4			
1-MS-F038D	D-25021 SHT 1A	C-7	2	GL	MO	S	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	C	25.4		CSJ-14	
					ST-O	C	25.4		CSJ-14	
					V	R	25.4			

Unit 1 IST Valve Table

System: HPDrains **System No.** 3060

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-MVD-F021	D-25021 SHT 1B	D-7	2	GL	MO	S	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	C	25.4		CSJ-14	
					ST-O	C	25.4		CSJ-14	
					V	R	25.4			
1-MVD-V5008	D-20028	D-6	2	CK		S	C	Yes	OC	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					DA	2R	11.1.2.3			
1-MVD-V5009	D-20028	D-6	2	CK		S	C	Yes	OC	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					DA	2R	11.1.2.3			

Unit 1 IST Valve Table

System: SW **System No.** 4060

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-SW-PV-116	D-20041 Sht. 1	C-3	2	BL	AO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	24.1-1			
					ST-O	Q	24.1-1			
1-SW-PV-118	D-20041 Sht. 1	C-5	2	BL	AO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	24.1-1			
					ST-O	Q	24.1-1			
1-SW-PV-120	D-20041 Sht. 1	C-7	2	BL	AO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	24.1-1			
					ST-O	Q	24.1-1			
1-SW-PV-138	D-20041 Sht. 2	C-5	2	BL	AO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	24.1-1			
					ST-O	Q	24.1-1			
1-SW-PV-140	D-20041 Sht. 2	C-7	2	BL	AO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	24.1-1			
					ST-O	Q	24.1-1			
1-SW-V101	D-25037 Sht. 1	D-4	24	BF	MO	3	B	Yes	C	CO
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	8.1.4A			
					ST-O	Q	8.1.4A			
					V	R	8.1.4A			

Unit 1 IST Valve Table

System: SW **System No.** 4060

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-SW-V102	D-25037 Sht. 2	D-1	24	BF	MO	3	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	8.1.4A			
					ST-O	Q	8.1.4A			
					V	R	8.1.4A			
1-SW-V103	D-25037 Sht. 2	E-8	20	BF	MO	3	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	8.1.4A			
					V	R	8.1.4A			
1-SW-V105	D-25037 Sht. 2	E-7	24	BF	MO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-O	Q	8.1.4B			
					V	R	8.1.4B			
1-SW-V106	D-25037 Sht. 1	F-7	20	BF	MO	3	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	8.1.4A			
					V	R	8.1.4A			
1-SW-V111	D-25037 Sht. 1	C-2	6	BF	MO	3	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	24.1.2			
					ST-O	Q	24.1.2			
					V	R	24.1.2			

Unit 1 IST Valve Table

System: SW **System No.** 4060

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-SW-V117	D-25037 Sht. 2	C-7	6	BF	MO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-O	Q	24.1.2			
					V	R	24.1.2			
1-SW-V118	D-25037 Sht. 1	B-6	6	BF	MO	3	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	24.1.2			
					ST-O	Q	24.1.2			
					V	R	24.1.2			
1-SW-V123	D-25037 Sht. 2	D-7	2	PG	AO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	24.1.2			
					ST-O	Q	24.1.2			
1-SW-V124	D-25037 Sht. 2	B-6	6	BF	AO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	24.1.2			
					ST-O	Q	24.1.2			
1-SW-V125	D-25037 Sht. 2	A-4	1	PG	AO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	24.1.2			
					ST-O	Q	24.1.2			
1-SW-V126	D-25037 Sht. 2	A-5	1	PG	AO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	24.1.2			
					ST-O	Q	24.1.2			

Unit 1 IST Valve Table

System: SW **System No.** 4060

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-SW-V128	D-25037 Sht. 1	C-2	2	PG	AO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	24.1.2			
					ST-O	Q	24.1.2			
1-SW-V129	D-25037 Sht. 1	B-3	6	BF	AO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	24.1.2			
					ST-O	Q	24.1.2			
1-SW-V13	D-20041 Sht. 1	E-2	20	BF	MO	3	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	24.1-1			
					ST-O	Q	24.1-1			
					V	R	24.1-1			
1-SW-V130	D-25037 Sht. 1	A-5	1	PG	AO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	24.1.2			
					ST-O	Q	24.1.2			
1-SW-V131	D-25037 Sht. 1	A-4	1	PG	AO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	24.1.2			
					ST-O	Q	24.1.2			

Unit 1 IST Valve Table

System: SW **System No.** 4060

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-SW-V136	D-25037 Sht. 1	E-5	1.5	PG	AO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	8.1.4A			
					ST-O	Q	8.1.4A			
					V	R	8.1.4A			
1-SW-V137	D-25037 Sht. 1	E-7	1.5	PG	AO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	8.1.4A			
					ST-O	Q	8.1.4A			
					V	R	8.1.4A			
1-SW-V138	D-25037 Sht. 2	E-2	1.5	PG	AO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	8.1.4B			
					ST-O	Q	8.1.4B			
					V	R	8.1.4B			
1-SW-V139	D-25037 Sht. 2	E-4	1.5	PG	AO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	8.1.4B			
					ST-O	Q	8.1.4B			
					V	R	8.1.4B			
1-SW-V14	D-20041 Sht. 1	E-3	20	BF	MO	3	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	24.1-1			
					ST-O	Q	24.1-1			
					V	R	24.1-1			

Unit 1 IST Valve Table

System: SW **System No.** 4060

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-SW-V144	D-25037 Sht. 2	D-1	1.5	CK	SA	3	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					DA	2R	11.1.2.3		V-09	
1-SW-V148	D-25037 Sht. 2	D-2	1.5	CK	SA	3	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					DA	2R	11.1.2.3		V-09	
1-SW-V15	D-20041 Sht. 1	E-4	20	BF	MO	3	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	24.1-1			
					ST-O	Q	24.1-1			
					V	R	24.1-1			
1-SW-V16	D-20041 Sht. 1	E-5	20	BF	MO	3	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	24.1-1			
					ST-O	Q	24.1-1			
					V	R	24.1-1			
1-SW-V17	D-20041 Sht. 1	E-6	20	BF	MO	3	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	24.1-1			
					ST-O	Q	24.1-1			
					V	R	24.1-1			

Unit 1 IST Valve Table

System: SW **System No.** 4060

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-SW-V18	D-20041 Sht. 1	E-7	20	BF	MO	3	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	24.1-1			
					ST-O	Q	24.1-1			
					V	R	24.1-1			
1-SW-V19	D-20041 Sht. 2	E-5	20	BF	MO	3	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	24.1-1			
					ST-O	Q	24.1-1			
					V	R	24.1-1			
1-SW-V192	D-25037 sh. 1	B-7	1.5	CK	SA	3	C	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					DA	2R	11.1.2.3		V-09	
1-SW-V20	D-20041 Sht. 2	E-8	20	BF	MO	3	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	24.1-1			
					ST-O	Q	24.1-1			
					V	R	24.1-1			
1-SW-V21	D-20041 Sht. 1	D-3	20	CK	SA	3	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	24.1-1			
					CV-O	Q	24.1-1			

Unit 1 IST Valve Table

System: SW **System No.** 4060

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-SW-V22	D-20041 Sht. 1	D-5	20	CK	SA	3	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	24.1-1			
					CV-O	Q	24.1-1			
1-SW-V23	D-20041 Sht. 1	D-8	20	CK	SA	3	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	24.1-1			
					CV-O	Q	24.1-1			
1-SW-V24	D-20041 Sht. 2	D-5	20	CK	SA	3	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	24.1-1			
					CV-O	Q	24.1-1			
1-SW-V25	D-20041 Sht. 2	D-8	20	CK	SA	3	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	24.1-1			
					CV-O	Q	24.1-1			
1-SW-V294	D-20041 Sht. 1	F-2	10	BF	MO	3	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	24.1.2			
					V	R	24.1.2			
1-SW-V295	D-20041 Sht. 1	F-2	10	BF	MO	S	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	24.1.2			
					V	R	24.1.2			

Unit 1 IST Valve Table

System: SW **System No.** 4060

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-SW-V3	D-20041 Sht. 2	F-2	30	BF	MO	S	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	C	24.4		CSJ-10	
					V	R	24.4			
1-SW-V36	D-20041 Sht. 2	F-7	4	BF	MO	3	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	R	24.4		RFJ-16	
					V	R	24.4			
1-SW-V37	D-20041 Sht. 2	E-7	4	BF	MO	S	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	R	24.4		RFJ-16	
					V	R	24.4			
1-SW-V4	D-20041 Sht. 2	F-4	30	BF	MO	3	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	C	24.4		CSJ-10	
					V	R	24.4			
1-SW-V679	D-2274 Sht. 1	C-3	6	BF	MO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-O	Q	1-MST-SW12Q			
1-SW-V680	D-2274 Sht. 1	C-7	6	BF	MO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-O	Q	1-MST-SW12Q			
1-SW-V681	D-2274 Sht. 2	C-3	6	BF	MO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-O	Q	2-MST-SW12Q			

Unit 1 IST Valve Table

System: SW **System No.** 4060

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-SW-V682	D-2274 Sht. 2	C-7	6	BF	MO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-O	Q	2-MST-SW12Q			
1-SW-V683	D-2274 Sht. 1	C-3	6	CK	SA	3	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-P	Q	1-MST-SW12Q			
					DA	R	11.1.2.3		VRR-05	
1-SW-V684	D-2274 Sht. 1	C-7	6	CK	SA	3	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-P	Q	1-MST-SW12Q			
					DA	R	11.1.2.3		VRR-05	
1-SW-V685	D-2274 Sht. 2	C-3	6	CK	SA	3	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-P	Q	2-MST-SW12Q			
					DA	R	11.1.2.3		VRR-05	
1-SW-V686	D-2274 Sht. 2	C-6	6	CK	SA	3	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-P	Q	2-MST-SW12Q			
					DA	R	11.1.2.3		VRR-05	

Unit 1 IST Valve Table

System: RCC **System No.** 4070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-RCC-SV-1222B	D-25038 Sht. 1	F-2	.75	GL	SO	2	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	2.2.1A			
					LLRT	PB	20.3-167			
					ST-C	Q	2.2.1A			
					V	R	20.4			
1-RCC-SV-1222C	D-25038 Sht. 1	E-2	.75	GL	SO	2	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	2.2.1A			
					LLRT	PB	20.3-167			
					ST-C	Q	2.2.1A			
					V	R	20.4			
1-RCC-V28	D-25038 Sht. 1	D-8	8	GA	MO	2	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-166			
					ST-C	C	22.2		CSJ-11	
					V	R	22.2			
1-RCC-V52	D-25038 Sht. 1	E-7	8	GA	MO	2	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-166			
					ST-C	C	22.2		CSJ-11	
					V	R	22.2			

Unit 1 IST Valve Table

System: RNA **System No.** 6135

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-RNA-IV-2307	D-70029 Sht. 2A	D-6	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	C	20.9			
					CV-O	Q	16.1.1			
1-RNA-IV-2311	D-70029 Sht. 2A	F-2	.75	CK	SA	S	C	Yes	OC	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	C	20.9			
					CV-O	Q	16.1.1			
1-RNA-IV-2315	D-70029 Sht. 2B	B-6	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	C	20.9			
					CV-O	Q	20.9			
1-RNA-IV-2319	D-70029 Sht. 2B	B-6	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	C	20.9			
					CV-O	Q	16.1.1			
1-RNA-IV-2323	D-72006	F-6	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	C	20.9			
					CV-O	Q	16.1.1			
1-RNA-IV-2327	D-72006	F-6	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	C	20.9			
					CV-O	Q	16.1.1			

Unit 1 IST Valve Table

System: RNA **System No.** 6135

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-RNA-IV-2331	D-70029 Sht. 2A	F-1	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	C	20.9			
					CV-O	Q	16.1.1			
1-RNA-IV-2620	D-70029 Sht. 2B	B-5	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	20.9			
					CV-O	C	20.9			
1-RNA-IV-2621	D-70029 Sht. 2B	B-5	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	C	20.9			
					CV-O	Q	20.9			
1-RNA-IV-2622	D-70029 Sht. 2B	B-5	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	20.9			
					CV-O	C	20.9			
1-RNA-PRV-5256	D-73068	E-3	.75	RL	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	SP	11.0			
1-RNA-PRV-5258	D-73068	C-3	.75	RL	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	SP	11.0			
1-RNA-PRV-5259	D-73068	E-7	.75	RL	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	SP	11.0			

Unit 1 IST Valve Table

System: RNA **System No.** 6135

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-RNA-PRV-5260	D-73068	B-7	.75	RL	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	SP	11.0			
1-RNA-PSE-101	D-73068	E-8	.75	RD	SA	S	D	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					REPL	5Y	PMID 39410-01			
1-RNA-PSE-102	D-73068	C-7	.75	RD	SA	S	D	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					REPL	5Y	PMID 39411-01			
1-RNA-SV-5251	D-73068	E-2	.75	GL	SO	2	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	31.6			
					LLRT	PB	20.3-170			
					ST-C	Q	31.6			
					ST-O	Q	31.6			
					V	R	20.4			
1-RNA-SV-5253	D-73068	C-2	.75	GL	SO	2	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	31.6			
					LLRT	PB	20.3-171			
					ST-C	Q	31.6			
					ST-O	Q	31.6			
					V	R	20.4			

Unit 1 IST Valve Table

System: RNA **System No.** 6135

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-RNA-SV-5261	D-70077 Sht. 3B	D-1	2	GL	SO	2	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	C	31.11		CSJ-12	
					LLRT	PB	20.3-169			
					ST-C	C	31.11		CSJ-12	
					V	R	20.4			
1-RNA-SV-5262	D-70077 Sht. 3A	D-8	2	GL	SO	2	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	C	31.11		CSJ-12	
					LLRT	PB	20.3-168			
					ST-C	C	31.11		CSJ-12	
					V	R	20.4			
1-RNA-SV-5481	D-73068	E-5	.75	GL	SO	S	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	31.6			
					ST-C	Q	31.6			
					ST-O	Q	31.6			
					V	R	20.4			
1-RNA-SV-5482	D-73068	C-5	.75	GL	SO	S	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	31.6			
					ST-C	Q	31.6			
					ST-O	Q	31.6			
					V	R	20.4			

Unit 1 IST Valve Table

System: RNA **System No.** 6135

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-RNA-V305	D-73068	E-3	.75	CK	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	20.9			
					CV-O	Q	2.3.2			
1-RNA-V306	D-70029 Sht. 2B	D-5	.75	CK	SA	S	C	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	2.3.2			
					CV-O	Q	2.3.2			
1-RNA-V307	D-73068 Sht. 1	C-3	.75	CK	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	20.9			
					CV-O	Q	2.3.2			
1-RNA-V308	D-70029 Sht. 2A	C-3	.75	CK	SA	S	C	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	2.3.2			
					CV-O	Q	2.3.2			
1-RNA-V313	D-70007	E-3	.75	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	20.9			
					CV-O	R	31.1		RFJ-12	
1-RNA-V314	D-70007	F-6	.75	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	20.9			
					CV-O	R	31.1		RFJ-12	

Unit 1 IST Valve Table

System: RNA **System No.** 6135

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-RNA-V315	D-70007	E-2	2	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-12	
					CV-O	R	31.1		RFJ-12	
1-RNA-V316	D-70007	E-7	2	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-12	
					CV-O	R	31.1		RFJ-12	
1-RNA-V317	D-73068	E-7	.25	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	R	31.8		V-03	
1-RNA-V318	D-73068	E-7	.25	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	R	31.8		V-03	
1-RNA-V319	D-73068	E-7	.25	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	R	31.8		V-03	
1-RNA-V320	D-73068	E-7	.25	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	R	31.8		V-03	
1-RNA-V321	D-73068	E-8	.25	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	R	31.8		V-03	

Unit 1 IST Valve Table

System: RNA **System No.** 6135

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-RNA-V322	D-73068	E-7	.25	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	R	31.8		V-03	
1-RNA-V323	D-73068	E-7	.25	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	R	31.8		V-03	
1-RNA-V324	D-73068	E-6	.25	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	R	31.8		V-03	
1-RNA-V325	D-73068	E-6	.25	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	R	31.8		V-03	
1-RNA-V326	D-73068	E-6	.25	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	R	31.8		V-03	
1-RNA-V327	D-73068	C-6	.25	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	R	31.8		V-03	
1-RNA-V328	D-73068	C-6	.25	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	R	31.8		V-03	
1-RNA-V329	D-73068	C-7	.25	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	R	31.8		V-03	

Unit 1 IST Valve Table

System: RNA **System No.** 6135

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-RNA-V330	D-73068	C-7	.25	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	R	31.8		V-03	
1-RNA-V331	D-73068	C-7	.25	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	R	31.8		V-03	
1-RNA-V332	D-73068	C-7	.25	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	R	31.8		V-03	
1-RNA-V333	D-73068	C-7	.25	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	R	31.8		V-03	
1-RNA-V334	D-73068	C-7	.25	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	R	31.8		V-03	
1-RNA-V335	D-73068	C-8	.25	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	R	31.8		V-03	
1-RNA-V336	D-73068	C-8	.25	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	R	31.8		V-03	

Unit 1 IST Valve Table

System: RNA **System No.** 6135

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-RNA-V350	D-70007 Sht. 1	D-7	.75	CK	SA	2	A/C	Yes	OC	OC

Test	Frequency	Procedure	Relief/Justification/Remark
CV-C	R	20.3-169A	RFJ-13
CV-O	R	31.1	RFJ-13
LLRT	R	20.3-169A	

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-RNA-V351	D-70007 Sht. 1	D-2	.75	CK	SA	2	A/C	Yes	OC	OC

Test	Frequency	Procedure	Relief/Justification/Remark
CV-C	R	20.3-168A	RFJ-13
CV-O	R	31.1	RFJ-13
LLRT	R	20.3-168A	

Unit 1 IST Valve Table

System: FLR DRN **System No.** 6235

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-G16-F003	D-25045 Sht. 3B	C-3	3	GA	AO	2	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	11.3			
					LLRT	PB	20.3-162A			
					ST-C	Q	11.3			
					V	R	11.3			
1-G16-F004	D-25045 Sht. 3B	C-3	3	GA	AO	2	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	11.3			
					LLRT	PB	20.3-162B			
					ST-C	Q	11.3			
					V	R	11.3			

Unit 1 IST Valve Table

System: EQUIP DR **System No.** 6240

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-G16-F019	D-25045 Sht. 3A	B-3	3	GA	AO	2	A	Yes	O	C

Test	Frequency	Procedure	Relief/Justification/Remark
F	Q	11.3	
LLRT	PB	20.3-163A	
ST-C	Q	11.3	
V	R	11.3	

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-G16-F020	D-25045 Sht. 3A	B-2	3	GA	AO	2	A	Yes	O	C

Test	Frequency	Procedure	Relief/Justification/Remark
F	Q	11.3	
LLRT	PB	20.3-163B	
ST-C	Q	11.3	
V	R	11.3	

Unit 1 IST Valve Table

System: SGT **System No.** 7071

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-SGT-V8	F-40073 Sht. 3	E-7	.5	AN	MO	2	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	15.7			
1-SGT-V9	F-40073 Sht. 3	E-7	.5	AN	MO	2	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	15.7			
1-VA-1A-BFCV-RB	F-40073 Sht. 3	D-1	18	BC	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	15.7			
					CV-O	Q	15.7			
1-VA-1A-BFV-RB	F-40073 Sht. 3	F-2	24	BF	MO	2	B	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	15.7			
					V	R	15.7			
1-VA-1B-BFCV-RB	F-40073 Sht. 3	D-5	18	BC	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	15.7			
					CV-O	Q	15.7			
1-VA-1B-BFV-RB	F-40073 Sht. 3	D-1	18	BF	MO	2	B	Yes	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-O	Q	15.7			
					V	R	15.7			

Unit 1 IST Valve Table

System: SGT **System No.** 7071

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-VA-1C-BFV-RB	F-40073 Sht. 3	D-4	18	BF	MO	2	B	Yes	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-O	Q	15.7			
					V	R	15.7			
1-VA-1D-BFV-RB	F-40073 Sht. 3	E-4	18	BF	MO	2	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	15.7			
					ST-O	Q	15.7			
					V	R	15.7			
1-VA-1E-BFV-RB	F-40073 Sht. 3	D-5	18	BF	MO	2	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-O	Q	15.7			
					V	R	15.7			
1-VA-1F-BFV-RB	F-40073 Sht. 3	E-6	18	BF	MO	2	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	15.7			
					ST-O	Q	15.7			
					V	R	15.7			
1-VA-1G-BFV-RB	F-40073 Sht. 3	D-8	18	BF	MO	2	B	Yes	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-O	Q	15.7			
					V	R	15.7			

Unit 1 IST Valve Table

System: SGT **System No.** 7071

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-VA-1H-BFV-RB	F-40073 Sht. 3	E-8	18	BF	MO	2	B	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	15.7			
					ST-O	Q	15.7			
					V	R	15.7			
1-VA-1I-BFV-RB	F-40073 Sht. 3	F-6	30	BF	MO	2	B	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	15.7			
					V	R	15.7			

Unit 1 IST Valve Table

System: FPC **System No.** 7110

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-G41-F011	D-25049 Sht. 1B	F-3	8	GA	MA	S	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST	R	8.0C			
1-G41-F036	D-25049 Sht. 1B	F-4	8	GL	MA	S	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST	R	8.0C			
1-G41-V24	D-25049 Sht. 1B	E-4	6	CK	SA	2	C	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	24.6.2			
					CV-O	Q	24.6.2			
1-G41-V8	D-25049 Sht. 1B	E-4	6	CK	SA	2	C	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	24.6.2			
					CV-O	Q	24.6.2			

Unit 1 IST Valve Table

System: CB VA **System No.** 8220

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-VA-1A-CV-CB	F-4080, Sht. 1	C-3	54	N/A	SA	S	C	Yes	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	6M	23.1.2			
					CV-O	6M	23.1.2			
1-VA-1B-CV-CB	F-4080, Sht. 1	C-1	54	N/A	SA	S	C	Yes	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	6M	23.1.2			
					CV-O	6M	23.1.2			

Unit 1 IST Valve Table

System: SECONDARY **System No.** 8240

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
1-VA-1A-BFIV-RB	F-40073 Sht. 2	F-7	54	BF/	AO	S	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST	Q	04.1.1		V-04	
					ST-C	R	15.4A		V-04	
1-VA-1B-BFIV-RB	F-40073 Sht. 2	F-7	54	BF	AO	S	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST	Q	04.1.1		V-04	
					ST-C	R	15.4A		V-04	
1-VA-1C-BFIV-RB	F-40073 Sht. 2	E-2	54	BF	AO	S	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST	Q	04.1.1		V-04	
					ST-C	R	15.4A		V-04	
1-VA-1D-BFIV-RB	F-40073 Sht. 2	E-2	54	BF	AO	S	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST	Q	04.1.1		V-04	
					ST-C	R	15.4A		V-04	

Unit 2 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-B21-F008	D-2521 sh. 1C	E-6	.75	EF	SA	2	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV18R		VRR-4	
					V	5R	0MST-EFCV18R		VRR-4	
2-B21-F010A	D-2521 sh. 1C	C-5	18	CK	SA	1	A/C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.3-B21		RFJ-01	
					CV-O	SP	N/A		VRR-2	
					LLRT	R	20.3-B21			
2-B21-F010B	D-2521 sh. 1C	B-5	18	CK	SA	1	A/C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.3-B21		RFJ-01	
					CV-O	SP	N/A		VRR-2	
					LLRT	R	20.3-B21			
2-B21-F013A	D-2521 sh. 1B	E-3	6	RL	SAAO	1	B/C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									VRR-01	
					R	2R	19.5			
					ST-O	R	11.1.2		RFJ-02	
2-B21-F013B	D-2521 sh. 1B	E-2	6	RL	SAAO	1	B/C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									VRR-01	
					R	2R	19.5			
					ST-O	R	11.1.2		RFJ-02	

Unit 2 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-B21-F013C	D-2521 sh. 1B	C-3	6	RL	SAAO	1	B/C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									VRR-01	
					R	2R	19.5			
					ST-O	R	11.1.2		RFJ-02	
2-B21-F013D	D-2521 sh. 1B	C-2	6	RL	SAAO	1	B/C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									VRR-01	
					R	2R	19.5			
					ST-O	R	11.1.2		RFJ-02	
2-B21-F013E	D-2521 sh. 1B	C-2	6	RL	SAAO	1	B/C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									VRR-01	
					R	2R	19.5			
					ST-O	R	11.1.2		RFJ-02	
2-B21-F013F	D-2521 sh. 1A	E-6	6	RL	SAAO	1	B/C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									VRR-01	
					R	2R	19.5			
					ST-O	R	11.1.2		RFJ-02	
2-B21-F013G	D-2521 sh. 1A	E-7	6	RL	SAAO	1	B/C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									VRR-01	
					R	2R	19.5			
					ST-O	R	11.1.2		RFJ-02	

Unit 2 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-B21-F013H	D-2521 sh. 1A	C-6	6	RL	SAAO	1	B/C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									VRR-01	
					R	2R	19.5			
					ST-O	R	11.1.2		RFJ-02	
2-B21-F013J	D-2521 sh. 1A	C-7	6	RL	SAAO	1	B/C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									VRR-01	
					R	2R	19.5			
					ST-O	R	11.1.2		RFJ-02	
2-B21-F013K	D-2521 sh. 1A	E-8	6	RL	SAAO	1	B/C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									VRR-01	
					R	2R	19.5			
					ST-O	R	11.1.2		RFJ-02	
2-B21-F013L	D-2521 sh. 1B	C-1	6	RL	SAAO	1	B/C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									VRR-01	
					R	2R	19.5			
					ST-O	R	11.1.2		RFJ-02	
2-B21-F014A	D-2521 sh. 1B	E-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV13R		VRR-4	
					V	5R	0MST-EFCV13R		VRR-4	

Unit 2 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-B21-F014B	D-2521 sh. 1B	E-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV13R		VRR-4	
					V	5R	0MST-EFCV13R		VRR-4	
2-B21-F014C	D-2521 sh. 1B	E-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV16R		VRR-4	
					V	5R	0MST-EFCV16R		VRR-4	
2-B21-F014D	D-2521 sh. 1B	D-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV16R		VRR-4	
					V	5R	0MST-EFCV16R		VRR-4	
2-B21-F014E	D-2521 sh. 1B	B-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV13R		VRR-4	
					V	5R	0MST-EFCV13R		VRR-4	
2-B21-F014F	D-2521 sh. 1B	B-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV13R		VRR-4	
					V	5R	0MST-EFCV13R		VRR-4	
2-B21-F014G	D-2521 sh. 1B	B-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV16R		VRR-4	
					V	5R	0MST-EFCV16R		VRR-4	

Unit 2 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-B21-F014H	D-2521 sh. 1B	A-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV16R		VRR-4	
					V	5R	0MST-EFCV16R		VRR-4	
2-B21-F014J	D-2521 sh. 1A	D-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV13R		VRR-4	
					V	5R	0MST-EFCV13R		VRR-4	
2-B21-F014K	D-2521 sh. 1A	D-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV13R		VRR-4	
					V	5R	0MST-EFCV13R		VRR-4	
2-B21-F014L	D-2521 sh. 1A	D-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV16R		VRR-4	
					V	5R	0MST-EFCV16R		VRR-4	
2-B21-F014M	D-2521 sh. 1A	D-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV16R		VRR-4	
					V	5R	0MST-EFCV16R		VRR-4	
2-B21-F014N	D-2521 sh. 1A	B-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV13R		VRR-4	
					V	5R	0MST-EFCV13R		VRR-4	

Unit 2 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-B21-F014P	D-2521 sh. 1A	B-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV13R		VRR-4	
					V	5R	0MST-EFCV13R		VRR-4	
2-B21-F014R	D-2521 sh. 1A	B-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV16R		VRR-4	
					V	5R	0MST-EFCV16R		VRR-4	
2-B21-F014S	D-2521 sh. 1A	B-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV16R		VRR-4	
					V	5R	0MST-EFCV16R		VRR-4	
2-B21-F016	D-2521 sh. 1B	D-5	3	GA	MO	1	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	R	20.3-B21			
					ST-C	Q	25.4			
					V	R	25.4			
2-B21-F019	D-2521 sh. 1B	D-6	3	GA	MO	1	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	R	20.3-B21			
					ST-C	Q	25.4			
					V	R	25.4			

Unit 2 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-B21-F022A	D-2521 sh. 1B	E-5	24	GL	AO	1	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									VRR-3	
					F	C	25.1		CSJ-13	
					LLRT	R	20.3A.5			
					ST-C	C	25.1		CSJ-01	
					ST-P	Q	40.2.8		CSJ-01	
					V	R	25.1			
2-B21-F022B	D-2521 sh. 1B	B-5	24	GL	AO	1	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									VRR-3	
					F	C	25.1		CSJ-13	
					LLRT	R	20.3A.5			
					ST-C	C	25.1		CSJ-01	
					ST-P	Q	40.2.8		CSJ-01	
					V	R	25.1			
2-B21-F022C	D-2521 sh. 1A	E-5	24	GL	AO	1	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									VRR-3	
					F	C	25.1		CSJ-13	
					LLRT	R	20.3A.5			
					ST-C	C	25.1		CSJ-01	
					ST-P	Q	40.2.8		CSJ-01	
					V	R	25.1			

Unit 2 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-B21-F022D	D-2521 sh. 1A	C-5	24	GL	AO	1	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									VRR-3	
					F	C	25.1		CSJ-13	
					LLRT	R	20.3A.5			
					ST-C	C	25.1		CSJ-01	
					ST-P	Q	40.2.8		CSJ-01	
					V	R	25.1			
2-B21-F024A	D-7007	C-4	1	CK	SA	S	C	Yes	--	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	95.0A		RFJ-03	
					CV-O	R	31.1		RFJ-03	
2-B21-F024B	D-7007	C-4	1	CK	SA	S	C	Yes	--	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	95.0A		RFJ-03	
					CV-O	R	31.1		RFJ-03	
2-B21-F024C	D-7007	C-6	1	CK	SA	S	C	Yes	--	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	95.0A		RFJ-03	
					CV-O	R	31.1		RFJ-03	
2-B21-F024D	D-7007	C-5	1	CK	SA	S	C	Yes	--	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	95.0A		RFJ-03	
					CV-O	R	31.1		RFJ-03	

Unit 2 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-B21-F028A	D-2521 sh. 1B	E-6	24	GL	AO	1	A	Yes	O	C

Test	Frequency	Procedure	Relief/Justification/Remark
			VRR-3
F	C	25.1	CSJ-13
LLRT	R	20.3A.5	
ST-C	C	25.1	CSJ-01
ST-P	Q	40.2.8	CSJ-01
V	R	25.1	

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-B21-F028B	D-2521 sh. 1B	B-6	24	GL	AO	1	A	Yes	O	C

Test	Frequency	Procedure	Relief/Justification/Remark
			VRR-3
F	C	25.1	CSJ-13
LLRT	R	20.3A.5	
ST-C	C	25.1	CSJ-01
ST-P	Q	40.2.8	CSJ-01
V	R	25.1	

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-B21-F028C	D-2521 sh. 1A	E-3	24	GL	AO	1	A	Yes	O	C

Test	Frequency	Procedure	Relief/Justification/Remark
			VRR-3
F	C	25.1	CSJ-13
LLRT	R	20.3A.5	
ST-C	C	25.1	CSJ-01
ST-P	Q	40.2.8	CSJ-01
V	R	25.1	

Unit 2 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-B21-F028D	D-2521 sh. 1A	C-3	24	GL	AO	1	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									VRR-3	
					F	C	25.1		CSJ-13	
					LLRT	R	20.3A.5			
					ST-C	C	25.1		CSJ-01	
					ST-P	Q	40.2.8		CSJ-01	
					V	R	25.1			
2-B21-F029A	D-7206	B-4	1	CK	SA	S	C	Yes	--	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	C	95		CSJ-02	
					CV-O	C	31.9		CSJ-02	
2-B21-F029B	D-7206	B-3	1	CK	SA	S	C	Yes	--	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	C	95		CSJ-02	
					CV-O	C	31.9		CSJ-02	
2-B21-F029C	D-7206	B-7	1	CK	SA	S	C	Yes	--	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	C	95		CSJ-02	
					CV-O	C	31.9		CSJ-02	
2-B21-F029D	D-7206	B-6	1	CK	SA	S	C	Yes	--	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	C	95		CSJ-02	
					CV-O	C	31.9		CSJ-02	

Unit 2 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-B21-F032A	D-2521 sh. 1C	D-7	18	SC	MOSA	1	A/C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	R	20.3-B21			
					ST-C	C	25.1		CSJ-03	
					V	R	25.1			
2-B21-F032B	D-2521 sh. 1C	B-7	18	SC	MOSA	1	A/C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	R	20.3-B21			
					ST-C	C	25.1		CSJ-03	
					V	R	25.1			
2-B21-F036A	D-7007	E-4	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	
2-B21-F036B	D-7007	E-2	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	
2-B21-F036C	D-7007	E-3	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	

Unit 2 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-B21-F036D	D-7007	E-3	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	
2-B21-F036E	D-7007	E-2	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	
2-B21-F036F	D-7007	E-6	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	
2-B21-F036G	D-7007	E-6	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	
2-B21-F036H	D-7007	E-5	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	
2-B21-F036J	D-7007	E-5	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	

Unit 2 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-B21-F036K	D-7007	E-6	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	
2-B21-F036L	D-7007	E-4	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	
2-B21-F037A	D-2521 sh. 1A	B-6	10	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	11.1.3		RFJ-05	
					CV-O	R	11.1.3		RFJ-05	
2-B21-F037B	D-2521 sh. 1A	B-6	10	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	11.1.3		RFJ-05	
					CV-O	R	11.1.3		RFJ-05	
2-B21-F037C	D-2521 sh. 1A	B-6	10	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	11.1.3		RFJ-05	
					CV-O	R	11.1.3		RFJ-05	
2-B21-F037D	D-2521 sh. 1A	B-7	10	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	11.1.3		RFJ-05	
					CV-O	R	11.1.3		RFJ-05	

Unit 2 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-B21-F037E	D-2521 sh. 1A	B-7	10	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	11.1.3		RFJ-05	
					CV-O	R	11.1.3		RFJ-05	
2-B21-F037F	D-2521 sh. 1A	B-7	10	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	11.1.3		RFJ-05	
					CV-O	R	11.1.3		RFJ-05	
2-B21-F037G	D-2521 sh. 1A	B-7	10	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	11.1.3		RFJ-05	
					CV-O	R	11.1.3		RFJ-05	
2-B21-F037H	D-2521 sh. 1A	B-7	10	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	11.1.3		RFJ-05	
					CV-O	R	11.1.3		RFJ-05	
2-B21-F037J	D-2521 sh. 1A	B-8	10	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	11.1.3		RFJ-05	
					CV-O	R	11.1.3		RFJ-05	
2-B21-F037K	D-2521 sh. 1A	B-8	10	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	11.1.3		RFJ-05	
					CV-O	R	11.1.3		RFJ-05	

Unit 2 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-B21-F037L	D-2521 sh. 1A	B-8	10	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	11.1.3		RFJ-05	
					CV-O	R	11.1.3		RFJ-05	
2-B21-F040	D-2522 sh. 2A	F-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV10R		VRR-4	
					V	5R	0MST-EFCV10R		VRR-4	
2-B21-F042A	D-2522 sh. 2A	D-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV18R		VRR-4	
					V	5R	0MST-EFCV18R		VRR-4	
2-B21-F042B	D-2520 sh. 3A	E-6	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV19R		VRR-4	
					V	5R	0MST-EFCV19R		VRR-4	
2-B21-F044A	D-2522 sh. 2A	D-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV18R		VRR-4	
					V	5R	0MST-EFCV18R		VRR-4	
2-B21-F044B	D-2520 sh. 3A	E-6	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV19R		VRR-4	
					V	5R	0MST-EFCV19R		VRR-4	

Unit 2 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-B21-F046A	D-2522 sh. 2A	D-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV18R		VRR-4	
					V	5R	0MST-EFCV18R		VRR-4	
2-B21-F046B	D-2520 sh. 3A	E-6	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV19R		VRR-4	
					V	5R	0MST-EFCV19R		VRR-4	
2-B21-F047C	D-2522 sh. 2A	B-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV18R		VRR-4	
					V	5R	0MST-EFCV18R		VRR-4	
2-B21-F047D	D-2520 sh. 3A	D-6	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV19R		VRR-4	
					V	5R	0MST-EFCV19R		VRR-4	
2-B21-F048A	D-2522 sh. 2A	C-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV18R		VRR-4	
					V	5R	0MST-EFCV18R		VRR-4	
2-B21-F048B	D-2520 sh. 3A	E-6	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV19R		VRR-4	
					V	5R	0MST-EFCV19R		VRR-4	

Unit 2 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-B21-F049C	D-2522 sh. 2A	C-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV18R		VRR-4	
					V	5R	0MST-EFCV18R		VRR-4	
2-B21-F049D	D-2520 sh. 3A	D-6	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV19R		VRR-4	
					V	5R	0MST-EFCV19R		VRR-4	
2-B21-F050A	D-2522 sh. 2B	D-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV12R		VRR-4	
					V	5R	0MST-EFCV12R		VRR-4	
2-B21-F050B	D-2520 sh. 3B	D-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV11R		VRR-4	
					V	5R	0MST-EFCV11R		VRR-4	
2-B21-F050C	D-2522 sh. 2B	D-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV12R		VRR-4	
					V	5R	0MST-EFCV12R		VRR-4	
2-B21-F050D	D-2520 sh. 3B	D-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV11R		VRR-4	
					V	5R	0MST-EFCV11R		VRR-4	

Unit 2 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-B21-F052A	D-2522 sh. 2B	E-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV12R		VRR-4	
					V	5R	0MST-EFCV12R		VRR-4	
2-B21-F052B	D-2520 sh. 3B	E-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV11R		VRR-4	
					V	5R	0MST-EFCV11R		VRR-4	
2-B21-F052C	D-2522 sh. 2B	E-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV12R		VRR-4	
					V	5R	0MST-EFCV12R		VRR-4	
2-B21-F052D	D-2520 sh. 3B	F-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV11R		VRR-4	
					V	5R	0MST-EFCV11R		VRR-4	
2-B21-F054	D-2522 sh. 2B	C-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV14R		VRR-4	
					V	5R	0MST-EFCV14R		VRR-4	
2-B21-F056	D-2522 sh. 2B	C-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV12R		VRR-4	
					V	5R	0MST-EFCV12R		VRR-4	

Unit 2 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-B21-F058A	D-2522 sh. 2B	E-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV12R		VRR-4	
					V	5R	0MST-EFCV12R		VRR-4	
2-B21-F058B	D-2520 sh. 3B	D-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV11R		VRR-4	
					V	5R	0MST-EFCV11R		VRR-4	
2-B21-F058C	D-2522 sh. 2B	D-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV12R		VRR-4	
					V	5R	0MST-EFCV12R		VRR-4	
2-B21-F058D	D-2520 sh. 3B	D-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV11R		VRR-4	
					V	5R	0MST-EFCV11R		VRR-4	
2-B21-F058E	D-2522 sh. 2B	D-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV12R		VRR-4	
					V	5R	0MST-EFCV12R		VRR-4	
2-B21-F058F	D-2520 sh. 3B	D-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV11R		VRR-4	
					V	5R	0MST-EFCV11R		VRR-4	

Unit 2 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-B21-F058G	D-2522 sh. 2B	D-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV12R		VRR-4	
					V	5R	0MST-EFCV12R		VRR-4	
2-B21-F058H	D-2520 sh. 3B	E-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV11R		VRR-4	
					V	5R	0MST-EFCV11R		VRR-4	
2-B21-F058L	D-2522 sh. 2B	D-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV12R		VRR-4	
					V	5R	0MST-EFCV12R		VRR-4	
2-B21-F058M	D-2520 sh. 3B	E-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV11R		VRR-4	
					V	5R	0MST-EFCV11R		VRR-4	
2-B21-F058N	D-2522 sh. 2B	E-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV12R		VRR-4	
					V	5R	0MST-EFCV12R		VRR-4	
2-B21-F058P	D-2520 sh. 3B	E-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV11R		VRR-4	
					V	5R	0MST-EFCV11R		VRR-4	

Unit 2 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-B21-F058R	D-2522 sh. 2B	E-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV12R		VRR-4	
					V	5R	0MST-EFCV12R		VRR-4	
2-B21-F058S	D-2520 sh. 3B	E-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV11R		VRR-4	
					V	5R	0MST-EFCV11R		VRR-4	
2-B21-F058T	D-2522 sh. 2B	E-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV12R		VRR-4	
					V	5R	0MST-EFCV12R		VRR-4	
2-B21-F058U	D-2520 sh. 3B	E-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV11R		VRR-4	
					V	5R	0MST-EFCV11R		VRR-4	
2-B21-F060	D-2520 sh. 3B	C-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV11R		VRR-4	
					V	5R	0MST-EFCV11R		VRR-4	
2-B21-IV-2149	D-2520 sh. 3A	D-6	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV10R		VRR-4	
					V	5R	0MST-EFCV10R		VRR-4	

Unit 2 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-B21-IV-2196	D-2522 sh. 2B	C-4	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV17R		VRR-4	
					V	5R	0MST-EFCV17R		VRR-4	
2-B21-IV-2455	D-2522 sh. 2A	F-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV18R		VRR-4	
					V	5R	0MST-EFCV18R		VRR-4	
2-B21-IV-2456	D-2520 sh. 3A	F-5	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV19R		VRR-4	
					V	5R	0MST-EFCV19R		VRR-4	
2-B21-V27A	D-7007	E-5	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	
2-B21-V27B	D-7007	E-2	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	
2-B21-V27C	D-7007	E-4	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	

Unit 2 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-B21-V27D	D-7007	E-3	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	
2-B21-V27E	D-7007	E-3	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	
2-B21-V27F	D-7007	E-6	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	
2-B21-V27G	D-7007	E-6	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	
2-B21-V27H	D-7007	E-5	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	
2-B21-V27J	D-7007	E-5	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	

Unit 2 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-B21-V27K	D-7007	E-8	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	
2-B21-V27L	D-7007	E-2	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-04	
					CV-O	R	31.1		RFJ-04	
2-B21-V28A	D-7007	C-5	1	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	95.0A		RFJ-03	
					CV-O	R	31.1		RFJ-03	
2-B21-V28B	D-7007	C-4	1	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	95.0A		RFJ-03	
					CV-O	R	31.1		RFJ-03	
2-B21-V28C	D-7007	C-6	1	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	95.0A		RFJ-03	
					CV-O	R	31.1		RFJ-03	
2-B21-V28D	D-7007	C-5	1	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	95.0A		RFJ-03	
					CV-O	R	31.1		RFJ-03	

Unit 2 IST Valve Table

System: NSSS **System No.** 1005

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-B21-V29A	D-7206	B-4	1	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	C	95		CSJ-02	
					CV-O	C	31.9		CSJ-02	
2-B21-V29B	D-7206	B-3	1	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	C	95		CSJ-02	
					CV-O	C	31.9		CSJ-02	
2-B21-V29C	D-7206	B-6	1	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	C	95		CSJ-02	
					CV-O	C	31.9		CSJ-02	
2-B21-V29D	D-7206	B-5	1	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	C	95		CSJ-02	
					CV-O	C	31.9		CSJ-02	

Unit 2 IST Valve Table

System: TIP **System No.** 1050

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-C51-J004A-BAL	F-7081	B-3	.37	BL	SO	2	A	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	1.2.2A			
					LLRT	R	20.3-179			
					ST-C	Q	1.2.2A			
					V	R	20.3-179			
2-C51-J004A-SHE	F-7081	B-3	.37	SH	XP	S	D	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					D	2Y	0-MST-TIP11R			
2-C51-J004B-BAL	F-7081	B-3	.37	BL	SO	2	A	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	1.2.2A			
					LLRT	R	20.3-180			
					ST-C	Q	1.2.2A			
					V	R	20.3-180			
2-C51-J004B-SHE	F-7081	B-3	.37	SH	XP	S	D	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					D	2Y	0-MST-TIP11R			
2-C51-J004C-BAL	F-7081	B-3	.37	BL	SO	2	A	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	1.2.2A			
					LLRT	R	20.3-181			
					ST-C	Q	1.2.2A			
					V	R	20.3-181			

Unit 2 IST Valve Table

System: TIP **System No.** 1050

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-C51-J004C-SHE	F-7081	B-3	.37	SH	XP	S	D	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					D	2Y	0-MST-TIP11R			
2-C51-J004D-BAL	F-7081	B-3	.37	BL	SO	2	A	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	1.2.2A			
					LLRT	R	20.3-182			
					ST-C	Q	1.2.2A			
					V	R	20.3-182			
2-C51-J004D-SHE	F-7081	B-3	.37	SH	XP	S	D	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					D	2Y	0-MST-TIP11R			
2-C51-TIP-CHV	F-7081	C-3	.37	CK	SA	2	A/C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.3-183		RFJ-06	
					CV-O	R	20.3-183		RFJ-06	
					LLRT	R	20.3-183			

Unit 2 IST Valve Table

System: CRD **System No.** 1070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-C12-101	D-2517 Sht. 2A	D-5	1	GA	MA	2	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					N/A					
2-C12-102	D-2517 Sht. 2A	E-5	.75	GA	MA	2	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					N/A					
2-C12-112	D-2517 Sht. 2A	F-2	.75	GA	MA	2	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					N/A					
2-C12-114	D-2517 sh. 2A	F-4	.75	CK	SA	2	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					SKID				V-01, V-02	
2-C12-115	D-2517 sh. 2A	D-2	.5	CK	SA	2	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-01	
					CV-C	R	14.1.2a		RFJ-15	
					CV-O	R	14.2.1		RFJ-15	
2-C12-138	D-2517 sh. 2A	D-5	.5	CK	SA	2	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					SKID	SP			V-01, V-02	
2-C12-CV-126	D-2517 sh. 2A	D-5	.5	GA	AO	2	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					SKID	SP			V-01, V-02	

Unit 2 IST Valve Table

System: CRD **System No.** 1070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-C12-CV-127	D-2517 sh. 2A	E-5	.75	GA	AO	2	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					SKID	SP			V-01, V-02	
2-C12-CV-F010	D-2517 sh. 2B	D-4	1	GA	AO	S	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	14.0			
					ST-C	Q	14.0			
					V	R	14.0			
2-C12-CV-F011	D-2517 sh. 2B	B-4	2	GA	AO	S	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	14.0			
					ST-C	Q	14.0			
					V	R	14.0			
2-C12-SV-120	D-2517 Sht. 2A	D-3	.5	GA	SO	2	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					NONE					
2-C12-SV-121	D-2517 Sht. 2A	E-3	.5	GA	SO	2	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					NONE					
2-C12-SV-122	D-2517 Sht. 2A	E-4	.5	GA	SO	2	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					NONE					
2-C12-SV-123	D-2517 Sht. 2A	D-4	.5	GA	SO	2	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					NONE					

Unit 2 IST Valve Table

System: CRD **System No.** 1070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-C12-V139	D-2517 sh. 2B	D-4	1	GA	AO	2	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	14.0			
					ST-C	Q	14.0			
					V	R	14.0			
2-C12-V140	D-2517 sh. 2B	B-4	2	GA	AO	2	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	14.0			
					ST-C	Q	14.0			
					V	R	14.0			

Unit 2 IST Valve Table

System: RWCU **System No.** 2010

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-G31-F001	D-2527 sh. 1B	D-7	6	GA	MO	1	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-164A			
					ST-C	C	14.6		CSJ-15	
					V	R	14.6			
2-G31-F004	D-2527 sh. 1B	D-6	6	GA	MO	1	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-164B			
					ST-C	C	14.6		CSJ-15	
					V	R	14.6			
2-G31-F042	D-2527 sh. 1B	E-5	4	GL	MO	1	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	R	20.3-165			
					ST-C	C	14.6		CSJ-15	
					V	R	14.6			

Unit 2 IST Valve Table

System: RECIRC **System No.** 2020

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-B32-F005A	D-2518 sh. 1A	C-2	.75	EF	SA	2	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV15R		VRR-4	
					V	5R	0MST-EFCV15R		VRR-4	
2-B32-F005B	D-2548 sh. 2B	C-7	.75	EF	SA	2	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV15R		VRR-4	
					V	5R	0MST-EFCV15R		VRR-4	
2-B32-F006A	D-2518 sh. 1A	C-2	.75	EF	SA	2	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV15R		VRR-4	
					V	5R	0MST-EFCV15R		VRR-4	
2-B32-F006B	D-2548 sh. 2B	C-7	.75	EF	SA	2	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV15R		VRR-4	
					V	5R	0MST-EFCV15R		VRR-4	
2-B32-F019	D-2518 sh. 1A	D-7	.75	GL	AO	1	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	3.1.22			
					LLRT	R	20.3-B32			
					ST-C	Q	3.1.22			
					V	R	3.1.22			

Unit 2 IST Valve Table

System: RECIRC **System No.** 2020

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-B32-F020	D-2518 sh. 1A	D-3	.75	GL	AO	1	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	3.1.22			
					LLRT	R	20.3-B32			
					ST-C	Q	3.1.22			
					V	R	3.1.22			
2-B32-F031A	D-2518 sh. 1A	B-5	28	GA	MO	1	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	C	3.1.21		CSJ-04	
					V	R	3.1.21			
2-B32-F031B	D-2548 sh. 2B	B-4	28	GA	MO	1	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	C	3.1.21		CSJ-04	
					V	R	3.1.21			
2-B32-F032A	D-2518 sh. 1A	B-5	4	GA	MO	1	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	C	3.1.21		CSJ-05	
					V	R	3.1.21			
2-B32-F032B	D-2548 sh. 2B	B-4	4	GA	MO	1	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	C	3.1.21		CSJ-05	
					V	R	3.1.21			

Unit 2 IST Valve Table

System: RECIRC **System No.** 2020

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-B32-F039A	D-2518 sh. 1A	B-2	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV15R		VRR-4	
					V	5R	0MST-EFCV15R		VRR-4	
2-B32-F039B	D-2548 sh. 2B	B-7	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV15R		VRR-4	
					V	5R	0MST-EFCV15R		VRR-4	
2-B32-F039C	D-2518 sh. 1A	B-2	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV15R		VRR-4	
					V	5R	0MST-EFCV15R		VRR-4	
2-B32-F039D	D-2548 sh. 2B	C-7	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV15R		VRR-4	
					V	5R	0MST-EFCV15R		VRR-4	
2-B32-F041A	D-2548 sh. 2B	C-7	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV15R		VRR-4	
					V	5R	0MST-EFCV15R		VRR-4	
2-B32-F041B	D-2548 sh. 2B	C-8	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV15R		VRR-4	
					V	5R	0MST-EFCV15R		VRR-4	

Unit 2 IST Valve Table

System: RECIRC **System No.** 2020

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-B32-F041C	D-2518 sh. 1A	C-2	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV15R		VRR-4	
					V	5R	0MST-EFCV15R		VRR-4	
2-B32-F041D	D-2518 sh. 1A	C-2	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV15R		VRR-4	
					V	5R	0MST-EFCV15R		VRR-4	
2-B32-F042A	D-2548 sh. 2B	C-7	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV15R		VRR-4	
					V	5R	0MST-EFCV15R		VRR-4	
2-B32-F042B	D-2548 sh. 2B	C-7	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV15R		VRR-4	
					V	5R	0MST-EFCV15R		VRR-4	
2-B32-F042C	D-2518 sh. 1A	C-2	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV15R		VRR-4	
					V	5R	0MST-EFCV15R		VRR-4	
2-B32-F042D	D-2518 sh. 1A	C-2	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV15R		VRR-4	
					V	5R	0MST-EFCV15R		VRR-4	

Unit 2 IST Valve Table

System: RECIRC **System No.** 2020

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-B32-F058A	D-2518 sh. 1A	B-2	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV15R		VRR-4	
					V	5R	0MST-EFCV15R		VRR-4	
2-B32-F058B	D-2548 sh. 2B	B-7	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV15R		VRR-4	
					V	5R	0MST-EFCV15R		VRR-4	
2-B32-V22	D-2518 sh. 1A	E-3	.75	GL	MO	2	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	R	20.3-B32			
					ST-C	C	3.1.21		CSJ-06	
					V	R	3.1.21			
2-B32-V24	D-2518 sh. 1A	E-3	.75	CK	SA	2	A/C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.3-B32		RFJ-07	
					LLRT	R	20.3-B32			
2-B32-V30	D-2548 sh. 2B	E-6	.75	GL	MO	2	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	R	20.3-B32			
					ST-C	C	3.1.21		CSJ-06	
					V	R	3.1.21			

Unit 2 IST Valve Table

System: RECIRC **System No.** 2020

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-B32-V32	D-2548 sh. 2B	E-6	.75	CK	SA	2	A/C	Yes	O	C

Test	Frequency	Procedure	Relief/Justification/Remark
CV-C	R	20.3-B32	RFJ-07
LLRT	R	20.3-B32	

Unit 2 IST Valve Table

System: CS **System No.** 2035

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-E21-F001A	D-2524 Sht. 2	A-7	14	GA	MO	2	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	7.2.4A			
					ST-O	Q	7.2.4A			
					V	R	7.2.4A			
2-E21-F001B	D-2524 Sht. 1	B-8	14	GA	MO	2	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	7.2.4B			
					ST-O	Q	7.2.4B			
					V	R	7.2.4B			
2-E21-F002A	D-2524 Sht. 2	A-4	12	GA	MA	2	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					N/A					
2-E21-F002B	D-2524 Sht. 1	A-4	12	GA	MA	2	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					N/A					
2-E21-F003A	D-2524 Sht. 2	D-1	12	CK	SA	2	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	7.2.4A			
					CV-O	Q	7.2.4A			
2-E21-F003B	D-2524 Sht.1	C-2	12	CK	SA	2	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	7.2.4B			
					CV-O	Q	7.2.4B			

Unit 2 IST Valve Table

System: CS **System No.** 2035

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-E21-F004A	D-2524 Sht. 2	D-6	10	GA	MO	2	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-E21			
					ST-C	Q	7.2.4A			
					ST-O	Q	7.2.4A			
					V	R	7.2.4A			
2-E21-F004B	D-2524 Sht. 1	E-6	10	GA	MO	2	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-E21			
					ST-C	Q	7.2.4B			
					ST-O	Q	7.2.4B			
					V	R	7.2.4B			
2-E21-F005A	D-2524 Sht. 2	D-6	10	GA	MO	1	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-E21			
					PIV	R	20.7B			
					ST-C	Q	7.2.4A			
					ST-O	Q	7.2.4A			
					V	R	7.2.4A			
2-E21-F005B	D-2524 Sht. 1	E-6	10	GA	MO	1	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-E21			
					PIV	R	20.7B			
					ST-C	Q	7.2.4B			
					ST-O	Q	7.2.4B			
					V	R	7.2.4B			

Unit 2 IST Valve Table

System: CS **System No.** 2035

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-E21-F006A	D-2524 Sht. 2	D-7	10	CK	SA	1	A/C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.7B		RFJ-08	
					CV-O	R	7.1.1A		RFJ-08	
					PIV	R	20.7B			
2-E21-F006B	D-2524 Sht. 1	E-7	10	CK	SA	1	A/C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.7B		RFJ-08	
					CV-O	R	7.1.1B		RFJ-08	
					PIV	R	20.7B			
2-E21-F007A	D-2524 Sht. 2	D-7	10	GA	MA	1	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	20.7B			
2-E21-F007B	D-2524 Sht. 1	E-7	10	GA	MA	1	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	20.7B			
2-E21-F008A	D-2524 Sht. 2	A-6	2	GA	MA	2	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					N/A					
2-E21-F008B	D-2524 Sht. 1	A-5	2	GA	MA	2	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					N/A					
2-E21-F012A	D-2524 Sht. 2	E-2	1.5	RL	SA	2	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	10Y	11.0			

Unit 2 IST Valve Table

System: CS **System No.** 2035

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-E21-F012B	D-2524 Sht. 1	E-3	1.5	RL	SA	2	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	10Y	11.0			
2-E21-F015A	D-2524 Sht. 2	E-4	10	GL	MO	2	B	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	R	7.2.4A		RFJ-14	
					V	R	7.2.4A			
2-E21-F015B	D-2524 Sht. 1	D-4	10	GL	MO	2	B	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	R	7.2.4B		RFJ-14	
					V	R	7.2.4B			
2-E21-F017A	D-2524 Sht. 2	E-6	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV18R		VRR-4	
					V	5R	0MST-EFCV18R		VRR-4	
2-E21-F017B	D-2524 Sht. 1	D-6	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV17R		VRR-4	
					V	5R	0MST-EFCV17R		VRR-4	
2-E21-F029A	D-2524 Sht. 2	C-5	2	CK	SA	S	C	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	7.2.4A			
					CV-P	Q	7.2.4A			

Unit 2 IST Valve Table

System: CS **System No.** 2035

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-E21-F029B	D-2524 Sht. 1	E-5	2	CK	SA	S	C	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	7.2.4B			
					CV-P	Q	7.2.4B			
2-E21-F030A	D-2524 Sht. 2	C-5	2	CK	SA	2	C	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	7.2:4A			
					CV-P	Q	7.2.4A			
2-E21-F030B	D-2524 Sht. 1	E-5	2	CK	SA	2	C	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	7.2.4B			
					CV-P	Q	7.2.4B			
2-E21-F031A	D-2524 Sht. 2	C-2	3	GA	MO	2	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	7.2.4A			
					ST-O	Q	7.2.4A			
					V	R	7.2.4A			
2-E21-F031B	D-2524 Sht. 1	C-4	3	GA	MO	2	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	7.2.4B			
					ST-O	Q	7.2.4B			
					V	R	7.2.4B			
2-E21-V1	D-2524 Sht. 2	A-7	.75	GL	MA	2	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					N/A					

Unit 2 IST Valve Table

System: CS **System No.** 2035

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-E21-V9	D-2524 Sht. 1	A-6	.75	GL	MA	2	B	No	C	C

Test	Frequency	Procedure	Relief/Justification/Remark
N/A			

Unit 2 IST Valve Table

System: SLC **System No.** 2040

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-C41-F001	D-2547	E-3	3	GA	MA	2	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					N/A					
2-C41-F003A	D-2547	C-6	1.5	GA	MA	2	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					N/A					
2-C41-F003B	D-2547	B-6	1.5	GA	MA	2	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					N/A					
2-C41-F004A	D-2547	C-7	1.5	SQUIB	XP	2	D	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					D	R	6.2.3			
2-C41-F004B	D-2547	B-7	1.5	SQUIB	XP	2	D	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					D	R	6.2.3			
2-C41-F005	D-2547	B-7	1.5	GA	MA	2	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					N/A					
2-C41-F006	D-2547	C-7	1.5	CK	SA	1	A/C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.14		RFJ-09	
					CV-O	R	20.14		RFJ-09	
					L-XI	R	20.14			

Unit 2 IST Valve Table

System: SLC **System No.** 2040

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-C41-F007	D-2547	B-8	1.5	CK	SA	1	A/C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.14		RFJ-09	
					CV-O	R	20.14		RFJ-09	
					L-XI	R	20.14			
2-C41-F008	D-2547	B-8	1.5	GA	MA	1	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	20.14			
2-C41-F015	D-2547	B-4	1	GA	MA	2	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					N/A					
2-C41-F024	D-2547	B-4	1	GA	MA	2	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					N/A					
2-C41-F029A	D-2547	D-5	1.5	RL	SA	2	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	SP	11.0			
2-C41-F029B	D-2547	A-5	1.5	RL	SA	2	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	SP	11.0			
2-C41-F033A	D-2547	C-6	1.5	CK	SA	2	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	6.1			
					CV-O	Q	6.1			

Unit 2 IST Valve Table

System: SLC **System No.** 2040

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-C41-F033B	D-2547	B-6	1.5	CK	SA	2	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	6.1			
					CV-O	Q	6.1			
2-C41-V5003	D-2547	B-7	1.5	GA	MA	1	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					N/A					

Unit 2 IST Valve Table

System: RHR **System No.** 2045

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-E11-F002A	D-2537 sh. 1	C-6	16	BF	MO	3	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	8.1.4A			
2-E11-F002B	D-2537 sh. 2	C-5	16	BF	MO	3	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	8.1.4B			
2-E11-F003A	D-2525 sh. 1A	E-4	16	GL	MO	2	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	8.2.2C			
2-E11-F003B	D-2526 sh. 2A	B-8	16	GL	MO	2	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	8.2.2B			
2-E11-F004A	D-2525 sh. 1B	C-5	20	GA	MO	2	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	8.2.2C			
2-E11-F004B	D-2526 sh. 2B	B-7	20	GA	MO	2	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	8.2.2B			
2-E11-F004C	D-2525 sh. 1B	C-5	20	GA	MO	2	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	8.2.2C			
2-E11-F004D	D-2526 sh. 2B	B-7	20	GA	MO	2	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	8.2.2B			

Unit 2 IST Valve Table

System: RHR **System No.** 2045

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-E11-F005A	D-2537 sh. 1	E-6	12	CK	SA	3	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	8.1.4A			
					CV-O	Q	8.1.4A			
2-E11-F005B	D-2537 sh. 2	E-3	12	CK	SA	3	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	8.1.4B			
					CV-O	Q	8.1.4B			
2-E11-F005C	D-2537 sh. 1	E-8	12	CK	SA	3	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	8.1.4A			
					CV-O	Q	8.1.4A			
2-E11-F005D	D-2537 sh. 2	E-5	12	CK	SA	3	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	8.1.4B			
					CV-O	Q	8.1.4B			
2-E11-F006A	D-2525 sh. 1B	C-7	20	GA	MO	2	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	8.2.2C			
2-E11-F006B	D-2526 sh. 2B	C-5	20	GA	MO	2	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	8.2.2B			
2-E11-F006C	D-2525 sh. 1B	C-3	20	GA	MO	2	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	8.2.2C			

Unit 2 IST Valve Table

System: RHR **System No.** 2045

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-E11-F006D	D-2526 sh. 2B	C-8	20	GA	MO	2	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	8.2.2B			
2-E11-F007A	D-2525 SH. 1B	D-7	4	GA	MO	2	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	8.2.2C			
					ST-O	Q	8.2.2C			
					V	R	8.2.2C			
2-E11-F007B	D-2526 sh. 2B	B-4	4	GA	MO	2	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	8.2.2B			
					ST-O	Q	8.2.2B			
					V	R	8.2.2B			
2-E11-F008	D-2525 sh. 1B	D-2	20	GA	MO	1	A	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-E11			
					PIV	R	20.7B			
					ST-C	C	8.0		CSJ-07	
					V	R	8.0			

Unit 2 IST Valve Table

System: RHR **System No.** 2045

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-E11-F009	D-2525 sh. 1B	E-2	20	GA	MO	1	A	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-E11			
					PIV	R	20.7B			
					ST-C	C	8.0		CSJ-07	
					V	R	8.0			
2-E11-F011A	D-2525 sh. 1A	E-5	4	GA	MO	2	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	8.2.2C			
2-E11-F011B	D-2526 sh. 2A	C-7	4	GA	MO	2	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	8.2.2B			
2-E11-F015A	D-2525 sh. 1B	E-6	24	GA	MO	1	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-111A			
					PIV	R	20.7B			
					ST-C	Q	8.2.2C			
					ST-O	Q	8.2.2C			
					V	R	8.2.2C			

Unit 2 IST Valve Table

System: RHR **System No.** 2045

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-E11-F015B	D-2526 sh. 2B	D-5	24	GA	MO	1	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-111B			
					PIV	R	20.7B			
					ST-C	Q	8.2.2B			
					ST-O	Q	8.2.2B			
					V	R	8.2.2B			
2-E11-F016A	D-2525 sh. 1B	F-6	14	GL	MO	2	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-113A			
					ST-C	Q	8.2.2C			
					ST-O	Q	8.2.2C			
					V	R	8.2.2C			
2-E11-F016B	D-2526 sh. 2B	E-5	14	GL	MO	2	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-114A			
					ST-C	Q	8.2.2B			
					ST-O	Q	8.2.2B			
					V	R	8.2.2B			
2-E11-F017A	D-2525 sh. 1B	E-7	24	AN	MO	2	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-112A			
					ST-C	Q	8.2.2C			
					ST-O	Q	8.2.2C			
					V	R	8.2.2C			

Unit 2 IST Valve Table

System: RHR **System No.** 2045

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-E11-F017B	D-2526 sh. 2B	D-4	24	AN	MO	2	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-112B			
					ST-C	Q	8.2.2B			
					ST-O	Q	8.2.2B			
					V	R	8.2.2B			
2-E11-F020A	D-2525 sh. 1B	D-4	24	GA	MO	2	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	8.2.2C			
					ST-O	Q	8.2.2C			
					V	R	8.2.2C			
2-E11-F020B	D-2526 sh. 2B	C-7	24	GA	MO	2	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	8.2.2B			
					ST-O	Q	8.2.2B			
					V	R	8.2.2B			
2-E11-F021A	D-2525 sh. 1B	F-3	14	GA	MO	2	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-E11			
					ST-C	Q	8.2.2C			
					ST-O	Q	8.2.2C			
					V	R	8.2.2C			

Unit 2 IST Valve Table

System: RHR **System No.** 2045

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-E11-F021B	D-2526 sh. 2B	E-7	14	GA	MO	2	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-E11			
					ST-C	Q	8.2.2B			
					ST-O	Q	8.2.2B			
					V	R	8.2.2B			
2-E11-F024A	D-2525 sh. 1B	E-8	16	GL	MO	2	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	8.2.2C			
					ST-O	Q	8.2.2C			
					V	R	8.2.2C			
2-E11-F024B	D-2526 sh. 2B	D-3	16	GL	MO	2	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	8.2.2B			
					ST-O	Q	8.2.2B			
					V	R	8.2.2B			
2-E11-F025A	D-2525 sh. 1A	F-3	1	RL	SA	2	RL	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	SP	11.0			
2-E11-F025B	D-2526 sh. 2A	E-7	1	RL	SA	2	RL	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	SP	11.0			

Unit 2 IST Valve Table

System: RHR **System No.** 2045

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-E11-F027A	D-2525 sh. 1B	E-7	6	GL	MO	2	A	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-118B			
					V	R	8.2.2C			
2-E11-F027B	D-2526 sh. 2B	E-4	6	GL	MO	2	A	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-118B			
					V	R	8.2.2B			
2-E11-F028A	D-2525 sh. 1B	F-7	16	GA	MO	2	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-118A			
					ST-C	Q	8.2.2C			
					ST-O	Q	8.2.2C			
					V	R	8.2.2C			
2-E11-F028B	D-2526 sh. 2B	E-4	16	GA	MO	2	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-119A			
					ST-C	Q	8.2.2B			
					ST-O	Q	8.2.2B			
					V	R	8.2.2B			
2-E11-F029	D-2525 sh. 1B	C-1	1	RL	SA	2	RL	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	SP	11.0			

Unit 2 IST Valve Table

System: RHR **System No.** 2045

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-E11-F031A	D-2525 sh. 1B	B-7	16	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	8.2.2C		V-14	
					CV-O	Q	8.2.2C			
2-E11-F031B	D-2526 sh. 2B	A-2	16	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	8.2.2B		V-14	
					CV-O	Q	8.2.2B			
2-E11-F031C	D-2525 sh. 1B	B-5	16	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	8.2.2C		V-14	
					CV-O	Q	8.2.2C			
2-E11-F031D	D-2526 sh. 2B	A-6	16	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	8.2.2B		V-14	
					CV-O	Q	8.2.2B			
2-E11-F040	D-2526 sh. 2B	C-3	4	GA	MO	S	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	8.2.2B			
					V	R	8.2.2B			
2-E11-F046A	D-2525 sh. 1B	B-6	3	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	8.2.2C		V-14	
					CV-P	Q	8.2.2C			
					DA	SP	11.1.2.3			

Unit 2 IST Valve Table

System: RHR **System No.** 2045

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-E11-F046B	D-2526 sh. 2B	A-4	3	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	8.2.2B		V-14	
					CV-P	Q	8.2.2B			
					DA	SP	11.1.2.3			
2-E11-F046C	D-2525 sh. 1B	B-4	3	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	8.2.2C		V-14	
					CV-P	Q	8.2.2C			
					DA	SP	11.1.2.3			
2-E11-F046D	D-2526 sh. 2B	A-6	3	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	8.2.2B		V-14	
					CV-P	Q	8.2.2B			
					DA	SP	11.1.2.3			
2-E11-F047A	D-2525 sh. 1A	D-2	16	GA	MO	2	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	8.2.2C			
2-E11-F047B	D-2526 sh. 2B	A-1	16	GA	MO	2	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	8.2.2B			

Unit 2 IST Valve Table

System: RHR **System No.** 2045

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-E11-F048A	D-2525 sh. 1A	E-2	20	GL	MO	2	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	8.2.2C			
					ST-O	Q	8.2.2C			
					V	R	8.2.2C			
2-E11-F048B	D-2526 sh. 2B	B-2	20	GL	MO	2	B	No	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	8.2.2B			
					ST-O	Q	8.2.2B			
					V	R	8.2.2B			
2-E11-F049	D-2526 sh. 2B	C-4	4	GL	MO	2	B	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	8.2.2B			
					V	R	8.2.2B			
2-E11-F050A	D-2525 sh. 1B	E-4	24	CK	SA	1	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.7B		RJF-10	
					CV-O	C	8.0A		CSJ-08	
					PIV	R	20.7B			
2-E11-F050B	D-2526 sh. 2B	D-7	24	CK	SA	1	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.7B		RJF-10	
					CV-O	C	8.0B		CSJ-08	
					PIV	R	20.7B			

Unit 2 IST Valve Table

System: RHR **System No.** 2045

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-E11-F060A	D-2526 SH. 2B	D-7	24	GA	MA	1	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	20.7B			
2-E11-F060B	D-2526 sh. 2B	D-7	24	GA	MA	1	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	20.7B			
2-E11-F089	D-2526 SH 2B	F-3	4	CK	SA	S	C	Yes	OC	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	8.2.2B			
					CV-P	Q	8.2.2B			
2-E11-F090	D-2526 sh. 2B	F-3	4	CK	SA	2	C	Yes	OC	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	8.2.2B			
					CV-P	Q	8.2.2B			
2-E11-F103A	D-2525 sh. 1A	C-2	1	GL	MO	2	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	8.2.2C			
2-E11-F103B	D-2526 sh. 2A	C-4	1	GL	MO	2	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	8.2.2B			
2-E11-PDV-F068A	D-2537 sh. 1	D-1	16	AN	MO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-O	Q	8.1.4A			
					V	R	8.1.4A			

Unit 2 IST Valve Table

System: RHR **System No.** 2045

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-E11-PDV-F068B	D-2537 sh. 2	D-8	16	AN	MO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-O	Q	8.1.4B			
					V	R	8.1.4B			
2-E11-V192	D-2525 sh. 1B	F-7	4	CK	SA	S	C	Yes	OC	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	8.2.2C			
					CV-P	Q	8.2.2C			
2-E11-V193	D-2525 sh. 1B	F-7	4	CK	SA	2	C	Yes	OC	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	8.2.2C			
					CV-P	Q	8.2.2C			
2-E11-V39	D-2549 sh. 1B	F-5	8	GA	MA	2	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST	R	8.0C			
2-E11-V40	D-2549 sh. 1B	B-2	8	GA	MA	2	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					NONE					
2-E11-V51	D-02537	C-6	.75	RL	SA	3	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	SP	11.0			
2-E11-V54	D-02537	C-5	.75	RL	SA	3	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	SP	11.0			

Unit 2 IST Valve Table

System: CAC **System No.** 2070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-CAC-CV-2713	D-2560 sh. 2A	D-6	.75	DA	AO	S	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.3			
					ST-C	Q	16.3			
					ST-O	Q	16.3			
					V	R	16.3			
2-CAC-CV-2714	D-2560 sh. 2A	D-5	.75	DA	AO	S	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.3			
					ST-C	Q	16.3			
					ST-O	Q	16.3			
					V	R	16.3			
2-CAC-CV-2715	D-2560 sh. 2A	B-5	.75	DA	AO	S	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.3			
					ST-C	Q	16.3			
					ST-O	Q	16.3			
					V	R	16.3			
2-CAC-CV-2716	D-2560 sh. 2A	B-5	.75	DA	AO	S	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.3			
					ST-C	Q	16.3			
					ST-O	Q	16.3			
					V	R	16.3			

Unit 2 IST Valve Table

System: CAC **System No.** 2070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-CAC-CV-2889	D-2560 sh. 2A	E-3	1	DA	AO	S	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.3			
					ST-C	Q	16.3		V-05	
					ST-O	Q	16.3		V-05	
					V	R	16.3			
2-CAC-CV-2890	D-2560 sh. 2A	E-3	1	DA	AO	S	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.3			
					ST-C	Q	16.3		V-05	
					ST-O	Q	16.3		V-05	
					V	R	16.3			
2-CAC-PSV1	D-2560 sh. 2A	D-5	.5	RL	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	SP	11.0			
2-CAC-PSV2	D-2560 sh. 2A	D-6	.5	RL	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	SP	11.0			
2-CAC-PSV3	D-2560 sh. 2A	F-5	1.5	RL	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	SP	11.0			
2-CAC-PSV4	D-2560 sh. 2A	C-6	.5	RL	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	SP	11.0			

Unit 2 IST Valve Table

System: CAC **System No.** 2070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-CAC-PSV5	D-2560 sh. 2A	C-5	.5	RL	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	SP	11.0			
2-CAC-SV-1200B	D-7218	D-4	1	GL	SO	2	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-2			
					LLRT	PB	20.3-073			
					ST-C	Q	16.0-2			
					V	R	20.4			
2-CAC-SV-1205E	D-7326 sh. 2	B-3	.75	GL	SO	2	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-2			
					ST-C	Q	16.0-2			
					V	R	20.4			
2-CAC-SV-1209A	D-7326 sh. 2	B-3	1	GL	SO	2	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-2			
					ST-C	Q	16.0-2			
					V	R	20.4			
2-CAC-SV-1209B	D-7326 sh. 2	B-3	1	GL	SO	2	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-2			
					ST-C	Q	16.0-2			
					V	R	20.4			

Unit 2 IST Valve Table

System: CAC **System No.** 2070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-CAC-SV-1211E	D-7218	B-6	1	GL	SO	2	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-2			
					LLRT	PB	20.3-089			
					ST-C	Q	16.0-2			
					V	R	20.4			
2-CAC-SV-1211F	D-7218	C-6	1	GL	SO	2	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-2			
					LLRT	PB	20.3-083			
					ST-C	Q	16.0-2			
					V	R	20.4			
2-CAC-SV-1213A	D-7326 sh. 2	B-3	1	GL	SO	2	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-2			
					ST-C	Q	16.0-2			
					V	R	20.4			
2-CAC-SV-1215E	D-7326 sh. 2	B-4	.75	GL	SO	2	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-2			
					ST-C	Q	16.0-2			
					V	R	20.4			

Unit 2 IST Valve Table

System: CAC **System No.** 2070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-CAC-SV-1218A	D-7326 sh. 1	A-6	1	GL	SO	2	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-2			
					ST-C	Q	16.0-2			
					V	R	20.4			
2-CAC-SV-1225B	D-7218	B-3	1.25	GL	SO	2	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-2			
					LLRT	PB	20.3-082			
					ST-C	Q	16.0-2			
					V	R	20.4			
2-CAC-SV-1227A	D-7326 sh. 1	B-7	.75	GL	SO	2	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-2			
					ST-C	Q	16.0-2			
					V	R	20.4			
2-CAC-SV-1227B	D-7326 sh. 1	B-7	1	GL	SO	2	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-2			
					ST-C	Q	16.0-2			
					V	R	20.4			

Unit 2 IST Valve Table

System: CAC **System No.** 2070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-CAC-SV-1227C	D-7218	C-4	1.25	GL	SO	2	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-2			
					LLRT	PB	20.3-77B			
					ST-C	Q	16.0-2			
					V	R	20.4			
2-CAC-SV-1227E	D-7326 sh. 1	B-6	1	GL	SO	2	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-2			
					ST-C	Q	16.0-2			
					V	R	20.4			
2-CAC-SV-1231B	D-7326 sh. 1	A-6	1	GL	SO	2	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-2			
					ST-C	Q	16.0-2			
					V	R	20.4			
2-CAC-SV-1260	D-7218	C-3	1	GL	SO	2	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-2			
					LLRT	PB	20.3-079			
					ST-C	Q	16.0-2			
					V	R	20.4			

Unit 2 IST Valve Table

System: CAC **System No.** 2070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-CAC-SV-1261	D-7218	D-3	1	GL	SO	2	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-2			
					LLRT	PB	20.3-074			
					ST-C	Q	16.0-2			
					V	R	20.4			
2-CAC-SV-1262	D-7218	C-6	1	GL	SO	2	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-2			
					LLRT	PB	20.3-084			
					ST-C	Q	16.0-2			
					V	R	20.4			
2-CAC-SV-3439	D-7218	B-7	1	GL	SO	2	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-2			
					LLRT	PB	20.3-090			
					ST-C	Q	16.0-2			
					V	R	20.4			
2-CAC-SV-3440	D-7218	B-2	1.25	GL	SO	2	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-2			
					LLRT	PB	20.3-081			
					ST-C	Q	16.0-2			
					V	R	20.4			

Unit 2 IST Valve Table

System: CAC **System No.** 2070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-CAC-SV-4409-1	D-7326 sh. 2	B-4	.5	GL	SO	2	B	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-2			
					ST-C	Q	16.0-2			
					V	R	20.4			
2-CAC-SV-4409-2	D-7326 sh. 2	B-5	.5	GL	SO	2	B	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-2			
					ST-C	Q	16.0-2			
					V	R	20.4			
2-CAC-SV-4409-3	D-7326 sh. 2	B-5	.5	GL	SO	2	B	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-2			
					ST-C	Q	16.0-2			
					V	R	20.4			
2-CAC-SV-4409-4	D-7326 sh. 2	B-5	.5	GL	SO	2	B	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-2			
					ST-C	Q	16.0-2			
					V	R	20.4			
2-CAC-SV-4410-1	D-7326 sh. 1	B-5	.5	GL	SO	2	B	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-2			
					ST-C	Q	16.0-2			
					V	R	20.4			

Unit 2 IST Valve Table

System: CAC **System No.** 2070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-CAC-SV-4410-2	D-7326 sh. 1	B-5	.5	GL	SO	2	B	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-2			
					ST-C	Q	16.0-2			
					V	R	20.4			
2-CAC-SV-4410-3	D-7326 sh. 1	B-5	.5	GL	SO	2	B	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-2			
					ST-C	Q	16.0-2			
					V	R	20.4			
2-CAC-SV-4410-4	D-7326 sh. 1	B-5	.5	GL	SO	2	B	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-2			
					ST-C	Q	16.0-2			
					V	R	20.4			
2-CAC-SV-4540	D-7326 sh. 2	B-4	.5	GL	SO	2	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-2			
					ST-C	Q	16.0-2			
					V	R	20.4			
2-CAC-SV-4541	D-7326 sh. 1	A-6	.5	GL	SO	2	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.0-2			
					ST-C	Q	16.0-2			
					V	R	20.4			

Unit 2 IST Valve Table

System: CAC **System No.** 2070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-CAC-V10	D-2515 sh. 1A	D-6	18	BF	AO	2	A	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.1.1			
					LLRT	R	20.3-69E			
					ST-C	Q	16.1.1			
					V	R	16.1.1			
2-CAC-V15	D-2515 sh. 1B	D-2	24	BF	AO	2	A	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.1.1			
					LLRT	R	20.3-67C			
					ST-C	Q	16.1.1			
					V	R	16.1.1			
2-CAC-V16	D-2515 sh. 1B	A-2	20	BF	AO	2	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	2.3.2			
					LLRT	R	20.3-67D			
					ST-C	Q	2.3.2			
					ST-O	Q	2.3.2			
					V	R	2.3.2			
2-CAC-V160	D-2515 sh. 1B	C-1	1	GL	SO	2	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.1.1			
					LLRT	R	20.3-67D			
					ST-C	Q	16.1.1			
					ST-O	Q	16.1.1			
					V	R	20.3-67D			

Unit 2 IST Valve Table

System: CAC **System No.** 2070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-CAC-V161	D-2515 sh. 1B	F-2	1	GL	SO	2	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.1.1			
					LLRT	R	20.3-67E			
					ST-C	Q	16.1.1			
					ST-O	Q	16.1.1			
					V	R	20.3-67E			
2-CAC-V162	D-2515 sh. 1B	C-2	1	GL	SO	2	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.1.1			
					LLRT	R	20.3-67D			
					ST-C	Q	16.1.1			
					ST-O	Q	16.1.1			
					V	R	20.3-67D			
2-CAC-V163	D-2515 sh. 1B	E-2	1	GL	SO	2	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.1.1			
					LLRT	R	20.3-67E			
					ST-C	Q	16.1.1			
					ST-O	Q	16.1.1			
					V	R	20.3-67E			

Unit 2 IST Valve Table

System: CAC **System No.** 2070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-CAC-V17	D-2515 sh. 1B	A-2	20	BF	AO	2	A	Yes	C	OC

Test	Frequency	Procedure	Relief/Justification/Remark
F	Q	2.3.2	
LLRT	R	20.3-67D	
ST-C	Q	2.3.2	
ST-O	Q	2.3.2	
V	R	2.3.2	

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-CAC-V172	D-2515 sh. 1A	C-7	2	GL	SO	2	A	Yes	C	OC

Test	Frequency	Procedure	Relief/Justification/Remark
F	Q	16.1.1	
LLRT	R	20.3-68C	
ST-C	Q	16.1.1	
ST-O	Q	16.1.1	
V	R	20.4	

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-CAC-V216	D-2515 sh. 1D	F-2	8	BF	AO	2	A	Yes	C	OC

Test	Frequency	Procedure	Relief/Justification/Remark
F	Q	16.1.1	
LLRT	R	20.3-68D	
ST-C	Q	16.1.1	
ST-O	Q	16.1.1	INFO ONLY
V	R	16.1.1	

Unit 2 IST Valve Table

System: CAC **System No.** 2070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-CAC-V22	D-2515 sh. 1A	C-8	2	GA	MO	2	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	R	20.3-68D			
					ST-C	Q	16.1.1			
					ST-O	Q	16.1.1			
					V	R	16.1.1			
2-CAC-V23	D-2515 sh. 1A	E-6	2	GA	MO	2	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	R	20.3-69E			
					ST-C	Q	16.1.1			
					ST-O	Q	16.1.1			
					V	R	16.1.1			
2-CAC-V4	D-2515 sh. 1B	B-4	8	BF	AO	2	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.1.1			
					LLRT	R	20.3-67C			
					ST-C	Q	16.1.1			
					V	R	16.1.1			
2-CAC-V49	D-2515 sh. 1A	F-5	3	GL	SO	2	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.1.1			
					LLRT	R	20.3-72A			
					ST-C	Q	16.1.1			
					ST-O	Q	16.1.1			
					V	R	20.4			

Unit 2 IST Valve Table

System: CAC **System No.** 2070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-CAC-V5	D-2515 sh. 1B	B-3	20	BF	AO	2	A	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.1.1			
					LLRT	R	20.3-67D			
					ST-C	Q	16.1.1			
					V	R	16.1.1			
2-CAC-V50	D-2515 sh. 1A	F-6	3	GL	SO	2	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.1.1			
					LLRT	R	20.3-72B			
					ST-C	Q	16.1.1			
					ST-O	Q	16.1.1			
					V	R	20.4			
2-CAC-V55	D-2515 sh. 1B	D-3	1	GL	SO	2	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.1.1			
					LLRT	PB	20.3-67C			
					ST-C	Q	16.1.1			
					ST-O	Q	16.1.1			
					V	R	20.4			

Unit 2 IST Valve Table

System: CAC **System No.** 2070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-CAC-V56	D-2515 sh. 1B	C-3	1	GL	SO	2	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.1.1			
					LLRT	PB	20.3-67C			
					ST-C	Q	16.1.1			
					ST-O	Q	16.1.1			
					V	R	20.4			
2-CAC-V59	D-2515 sh. 1B	D-5	.75	RL	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	SP	11.0			
2-CAC-V6	D-2515 sh. 1A	D-3	18	BF	AO	2	A	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.1.1			
					LLRT	R	20.3-67E			
					ST-C	Q	16.1.1			
					V	R	16.1.1			
2-CAC-V7	D-2515 sh. 1A	B-7	20	BF	AO	2	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.1.1			
					LLRT	R	20.3-68C			
					ST-C	Q	16.1.1			
					ST-O	Q	16.1.1		INFO ONLY	
					V	R	16.1.1			

Unit 2 IST Valve Table

System: CAC **System No.** 2070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-CAC-V8	D-2515 sh. 1A	B-8	20	BF	AO	2	A	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.1.1			
					LLRT	R	20.3-68D			
					ST-C	Q	16.1.1			
					V	R	16.1.1			
2-CAC-V9	D-2515 sh. 1A	D-6	18	BF	AO	2	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	16.1.1			
					LLRT	R	20.3-69D			
					ST-C	Q	16.1.1			
					ST-O	Q	16.1.1			
					V	R	16.1.1			
2-CAC-X18A	D-2515 sh. 1A	B-6	18	VB	SA	S	A/C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					L-M	R	20.6			
					R	R	0MSTCAC500R			
					ST-P	Q	2.3.1			
					V	R	2.3.1			
2-CAC-X18B	D-2515 sh. 1A	B-6	18	VB	SA	S	A/C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					L-M	R	20.6			
					R	R	0MSTCAC500R			
					ST-P	Q	2.3.1			
					V	R	2.3.1			

Unit 2 IST Valve Table

System: CAC **System No.** 2070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-CAC-X18C	D-2515 sh. 1A	B-6	18	VB	SA	S	A/C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					L-M	R	20.6			
					R	R	0MSTCAC500R			
					ST-P	Q	2.3.1			
					V	R	2.3.1			
2-CAC-X18D	D-2515 sh. 1A	B-6	18	VB	SA	S	A/C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					L-M	R	20.6			
					R	R	0MSTCAC500R			
					ST-P	Q	2.3.1			
					V	R	2.3.1			
2-CAC-X18E	D-2515 sh. 1A	B-6	18	VB	SA	S	A/C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					L-M	R	20.6			
					R	R	0MSTCAC500R			
					ST-P	Q	2.3.1			
					V	R	2.3.1			
2-CAC-X18F	D-2515 sh. 1A	B-6	18	VB	SA	S	A/C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					L-M	R	20.6			
					R	R	0MSTCAC500R			
					ST-P	Q	2.3.1			
					V	R	2.3.1			

Unit 2 IST Valve Table

System: CAC **System No.** 2070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-CAC-X18G	D-2515 sh. 1A	B-6	18	VB	SA	S	A/C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					L-M	R	20.6			
					R	R	0MSTCAC500R			
					ST-P	Q	2.3.1			
					V	R	2.3.1			
2-CAC-X18H	D-2515 sh. 1A	B-6	18	VB	SA	S	A/C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					L-M	R	20.6			
					R	R	0MSTCAC500R			
					ST-P	Q	2.3.1			
					V	R	2.3.1			
2-CAC-X18I	D-2515 sh. 1A	B-6	18	VB	SA	S	A/C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					L-M	R	20.6			
					R	R	0MSTCAC500R			
					ST-P	Q	2.3.1			
					V	R	2.3.1			
2-CAC-X18J	D-2515 sh. 1A	B-6	18	VB	SA	S	A/C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					L-M	R	20.6			
					R	R	0MSTCAC500R			
					ST-P	Q	2.3.1			
					V	R	2.3.1			

Unit 2 IST Valve Table

System: CAC **System No.** 2070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-CAC-X20A	D-2515 sh. 1B	A-6	20	VB	SA	2	A/C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	2.3.2			
					CV-O	Q	2.3.2			
					LLRT	R	20.3-67C			
					R	R	0MSTCAC501R			
2-CAC-X20B	D-2515 sh. 1B	A-2	20	VB	SA	2	A/C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	2.3.2			
					CV-O	Q	2.3.2			
					LLRT	R	20.3-67C			
					R	R	0MSTCAC501R			

Unit 2 IST Valve Table

System: HPCI **System No.** 2095

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-E41-F001	D-2523 sh. 2	F-2	10	GA	MO	S	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-O	Q	9.7			
					V	R	9.7			
2-E41-F002	D-2523 sh. 1	E-7	10	GA	MO	1	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	R	20.3-148A			
					ST-C	Q	9.7			
					ST-O	Q	9.7			
					V	R	9.2.1			
2-E41-F003	D-2523 sh. 1	E-6	10	GA	MO	1	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	R	20.3-148B			
					ST-C	Q	9.7			
					ST-O	Q	9.7			
					V	R	9.7			
2-E41-F004	D-2523 sh. 1	E-2	16	GA	MO	S	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	9.7			
					V	R	9.7			
2-E41-F005	D-2523 sh. 1	B-6	14	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	9.2			
					CV-O	Q	9.2			

Unit 2 IST Valve Table

System: HPCI **System No.** 2095

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-E41-F006	D-2523 sh. 1	A-7	14	GA	MO	1	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	R	20.3-56			
					ST-C	Q	9.7			
					ST-O	Q	9.7			
					V	R	9.7			
2-E41-F007	D-2523 sh. 1	B-6	14	GA	MO	S	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	9.7			
2-E41-F008	D-2523 sh. 1	D-5	10	GL	MO	S	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	9.7			
2-E41-F011	D-2523 sh. 1	F-3	10	GA	MO	S	B	No	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	9.7			
2-E41-F012	D-2523 sh. 1	A-5	4	GL	MO	2	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	9.7			
					ST-O	Q	9.7			
					V	R	9.7			
2-E41-F019	D-2523 sh. 1	E-2	16	CK	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	9.2			
					CV-O	Q	9.2			

Unit 2 IST Valve Table

System: HPCI **System No.** 2095

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-E41-F020	D-2523 sh. 1	D-4	1	RL	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	SP	11.0			
2-E41-F021	D-2523 sh. 2	C-7	20	SC	SA	2	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	Q	9.2			
					DA	R	11.1.2.3			
2-E41-F022	D-2523 sh. 2	C-6	2	SC	SA	2	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					DA	R	11.1.2.3			
2-E41-F023A	D-2523 sh. 1	F-7	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV14R		VRR-4	
					V	5R	0MST-EFCV14R		VRR-4	
2-E41-F023B	D-2523 sh. 1	D-7	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV17R		VRR-4	
					V	5R	0MST-EFCV17R		VRR-4	
2-E41-F023C	D-2523 sh. 1	F-7	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV14R		VRR-4	
					V	5R	0MST-EFCV14R		VRR-4	

Unit 2 IST Valve Table

System: HPCI **System No.** 2095

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-E41-F023D	D-2523 sh. 1	E-7	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV17R		VRR-4	
					V	5R	0MST-EFCV17R		VRR-4	
2-E41-F026	D-2523 sh. 2	A-4	1	GA	AO	S	B	Yes	OC	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	9.7			
					ST-C	Q	9.7			
					V	R	9.7			
2-E41-F040	D-2523 sh. 2	C-6	2	CK	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.2-151		RFJ-17	
					DA	R	11.1.2.3			
2-E41-F041	D-2523 sh. 1	E-4	16	GA	MO	S	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	9.7			
					ST-O	Q	9.7			
					V	R	9.7			
2-E41-F042	D-2523 sh. 2	A-6	16	GA	MO	2	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	9.7			
					ST-O	Q	9.7			
					V	R	9.7			

Unit 2 IST Valve Table

System: HPCI **System No.** 2095

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-E41-F045	D-2523 sh. 2	A-5	16	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-P	2R	9.2		V-06	
					DA	2R	11.1.2.3			
2-E41-F046	D-2523 sh. 1	A-5	4	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-P	Q	9.2		V-07	
					DA	2R	11.1.2.3		V-07	
2-E41-F048	D-2523 sh. 2	B-4	2	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-P	Q	9.2		V-08	
					DA	R	11.1.2.3		V-08	
2-E41-F049	D-2523 sh. 2	D-6	20	CK	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.2-152		RFJ-18	
					CV-O	Q	9.2			
2-E41-F050	D-2523 sh. 2	B-5	1.5	RL	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	SP	11.0			
2-E41-F052	D-2523 sh. 2	A-2	2	CK	SA	S	C	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	9.2			
					CV-P	Q	9.2			

Unit 2 IST Valve Table

System: HPCI **System No.** 2095

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-E41-F057	D-2523 sh. 2	B-3	2	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-P	Q	9.2		V-08	
					DA	R	11.1.2.3		V-08	
2-E41-F059	D-2523 sh. 2	C-5	2	GL	MO	S	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-O	Q	9.7			
					V	R	9.7			
2-E41-F075	D-2523 sh. 2	B-8	2	GA	MO	2	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-153B			
					ST-C	Q	9.7			
					ST-O	Q	9.7			
					V	R	9.7			
2-E41-F076	D-2523 sh. 2	B-8	2	CK	SA	2	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	C	20.10		CSJ-09	
					CV-O	C	20.10		CSJ-09	
2-E41-F077	D-2523 sh. 2	B-8	2	CK	SA	2	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	C	20.10		CSJ-09	
					CV-O	C	20.10		CSJ-09	

Unit 2 IST Valve Table

System: HPCI **System No.** 2095

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-E41-F079	D-2523 sh. 2	B-8	2	GA	MO	2	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-153A			
					ST-C	Q	9.7			
					V	R	9.7			
2-E41-PSE-D003	D-2523, SH.2	D-6	16	RD	SA	S	D	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					INSP	5Y	PMID 39406-01		V-15	
2-E41-PSE-D004	D-2523, SH.2	E-6	16	RD	SA	S	D	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					INSP	5Y	PMID 39407-01		V-15	
2-E41-V159	D-2523 sh. 1	A-7	14	CK	SA	1	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.12		RFJ-11	
					CV-O	R	20.12		RFJ-11	
					DA	SP	11.1.2.3		RFJ-11	
2-E41-V8	D-2523 sh. 2	F-3	10	GA	HO	S	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					SKID	Q	9.2			
2-E41-V9	D-2523 sh. 2	F-4	10	GA	HO	S	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					SKID	Q	9.2			

Unit 2 IST Valve Table

System: HPCI **System No.** 2095

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-E41-V93	D-2523 sh. 1	E-6	2	CK	SA	S	C	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	9.2			
					CV-P	Q	9.2			
2-E41-V94	D-2523 sh. 1	E-6	2	CK	SA	S	C	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	9.2			
					CV-P	Q	9.2			

Unit 2 IST Valve Table

System: RCIC **System No.** 2100

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-E51-F001	D-2529 sh. 2	B-6	8	SC	SA	2	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	Q	10.1.1			
					DA	R	11.1.2.3			
2-E51-F007	D-2529 sh. 1	E-7	3	GA	MO	1	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	R	20.3-156A			
					ST-C	Q	10.1.8			
					ST-O	Q	10.1.8			
					V	R	10.2.1			
2-E51-F008	D-2529 sh. 1	E-6	3	GA	MO	1	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	R	20.3-156B			
					ST-C	Q	10.1.8			
					ST-O	Q	10.1.8			
					V	R	10.1.8			
2-E51-F010	D-2529 sh. 1	E-4	6	GA	MO	S	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	10.1.8			
					ST-O	Q	10.1.8			
					V	R	10.1.8			
2-E51-F011	D-2529 sh. 1	D-4	6	CK	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	10.1.1			
					CV-O	Q	10.1.1			

Unit 2 IST Valve Table

System: RCIC **System No.** 2100

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-E51-F012	D-2529 sh. 1	B-6	4	GA	MO	S	B	Yes	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-O	Q	10.1.8			
					V	R	10.1.8			
2-E51-F013	D-2529 sh. 1	B-6	4	GA	MO	1	A	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	R	20.3-165			
					ST-C	Q	10.1.8			
					ST-O	Q	10.1.8			
					V	R	10.1.8			
2-E51-F014	D-2529 sh. 1	B-6	4	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	10.1.1			
					CV-O	Q	10.1.1			
2-E51-F017	D-2529 sh. 1	D-4	1	RL	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	SP	11.0			
2-E51-F018	D-2529 SHT 2	E-5	1	RL		S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	SP	11.0			
2-E51-F019	D-2529 sh. 2	C-3	2	GL	MO	2	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	10.1.8			
					ST-O	Q	10.1.8			
					V	R	10.1.8			

Unit 2 IST Valve Table

System: RCIC **System No.** 2100

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-E51-F021	D-2529 sh. 2	C-2	2	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-P	Q	10.1.1		V-07	
					DA	2R	11.1.2.3		V-07	
2-E51-F022	D-2529 sh. 1	D-5	4	GL	MO	S	B	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	10.1.8			
					V	R	10.1.8			
2-E51-F029	D-2529 sh. 1	D-4	6	GA	MO	S	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	10.1.8			
					ST-O	Q	10.1.8			
					V	R	10.1.8			
2-E51-F030	D-2529 sh. 2	A-5	6	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-P	2R	10.1.1		V-06	
					DA	2R	11.1.2.3			
2-E51-F031	D-2529 sh. 2	A-6	6	GA	MO	2	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	10.1.8			
					ST-O	Q	10.1.8			
					V	R	10.1.8			

Unit 2 IST Valve Table

System: RCIC **System No.** 2100

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-E51-F040	D-2529 sh. 2	B-6	8	CK	SA	2	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.2-160		RFJ-18	
					CV-O	Q	10.1.1			
2-E51-F043A	D-2529 sh. 1	D-7	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV14R		VRR-4	
					V	5R	0MST-EFCV14R		VRR-4	
2-E51-F043B	D-2529 sh. 1	F-7	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV17R		VRR-4	
					V	5R	0MST-EFCV17R		VRR-4	
2-E51-F043C	D-2529 sh. 1	D-7	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV14R		VRR-4	
					V	5R	0MST-EFCV14R		VRR-4	
2-E51-F043D	D-2529 sh. 1	F-7	.75	EF	SA	1	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-F	5R	0MST-EFCV17R		VRR-4	
					V	5R	0MST-EFCV17R		VRR-4	
2-E51-F045	D-2529 sh. 1	D-2	3	GL	MO	S	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	10.1.8			
					ST-O	Q	10.1.8			
					V	R	10.1.8			

Unit 2 IST Valve Table

System: RCIC **System No.** 2100

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-E51-F046	D-2529 sh. 1	B-4	2	GL	MO	S	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	10.1.8			
					ST-O	Q	10.1.8			
					V	R	10.1.8			
2-E51-F047	D-2529 sh. 2	E-6	2	CK	SA	S	C	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	10.1.1			
					CV-P	Q	10.1.1			
2-E51-F062	D-2529 sh. 2	B-7	2	GA	MO	2	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-161B			
					ST-C	Q	10.1.8			
					ST-O	Q	10.1.8			
					V	R	10.1.8			
2-E51-F063	D-2529 sh. 2	B-8	2	CK	SA	2	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	C	20.10		CSJ-09	
					CV-O	C	20.10		CSJ-09	
2-E51-F064	D-2529 sh. 2	B-8	2	CK	SA	2	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	C	20.10		CSJ-09	
					CV-O	C	20.10		CSJ-09	

Unit 2 IST Valve Table

System: RCIC **System No.** 2100

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-E51-F066	D-2529 sh. 2	B-8	2	GL	MO	2	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-161A			
					ST-C	Q	10.1.8			
					ST-O	Q	10.1.8			
					V	R	10.1.8			
2-E51-PSE-D001	D-2529,SH.2	C-5	8	RD		S	D	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					INSP	5Y	PMID 39408-01		V-15	
2-E51-PSE-D002	D-2529,SH.2	C-5	8	RD		S	D	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					INSP	5Y	PMID 39409-01		V-15	
2-E51-V72	D-2529 sh. 1	A-5	2	CK	SA	S	C	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	10.1.1			
					CV-P	Q	10.1.1			
2-E51-V73	D-2529 sh. 1	A-5	2	CK	SA	S	C	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	10.1.1			
					CV-P	Q	10.1.1			
2-E51-V8	D-2529 sh. 1	C-2	3	GA	MO	S	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					SKID	Q				

Unit 2 IST Valve Table

System: RCIC **System No.** 2100

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-E51-V88	D-2529 sh. 1	B-7	4	CK	SA	1	B/C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					DA	2R	11.1.2.3			
2-E51-V9	D-2529 sh. 1	C-3	3	GA	HO	S	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					SKID	Q	10.1.1			

Unit 2 IST Valve Table

System: RXS **System No.** 2117

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-RXS-SV-4186	D-7327 sh. 1	A-7	.5	GL	SO	2	A	No	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	15.8			
					LLRT	PB	20.3-172			
					ST-C	Q	15.8			
					V	R	20.4			
2-RXS-SV-4187	D-7327 sh. 1	A-7	.5	GL	SO	2	A	No	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	15.8			
					LLRT	PB	20.3-173			
					ST-C	Q	15.8			
					V	R	20.4			
2-RXS-SV-4188	D-7327 sh. 1	B-7	.5	GL	SO	2	A	No	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	15.8			
					LLRT	PB	20.3-174			
					ST-C	Q	15.8			
					V	R	20.4			
2-RXS-SV-4189	D-7327 sh. 1	B-7	.5	GL	SO	2	A	No	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	15.8			
					LLRT	PB	20.3-175			
					ST-C	Q	15.8			
					V	R	20.4			

Unit 2 IST Valve Table

System: RXS **System No.** 2117

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-RXS-SV-4192	D-7327 sh. 1	B-1	.5	GL	SO	2	B	No	C	OC

Test	Frequency	Procedure	Relief/Justification/Remark
F	Q	15.7	
ST-C	Q	15.7	
V	R	20.4	

Unit 2 IST Valve Table

System: TD **System No.** 2190

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-TD-V2	D-2698	B-2	3	GA	MA	2	B	No	C	C

Test	Frequency	Procedure	Relief/Justification/Remark
N/A			

Unit 2 IST Valve Table

System: Misc V&D **System No.** 3020

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-MS-F038A	D-02521 sht 1B	D-7	2	GL	MO	S	B	Yes	CO	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	C	25.4		CSJ-14	
					ST-O	C	25.4		CSJ-14	
					V	R	25.4			
2-MS-F038B	D-02521 sht 1B	C-8	2	GL	MO	S	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	C	25.4		CSJ-14	
					ST-O	C	25.4		CSJ-14	
					V	R	25.4			
2-MS-F038C	D-02521 sht 1A	E-2	2	GL	MO	S	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	C	25.4		CSJ-14	
					ST-O	C	25.4		CSJ-14	
					V	R	25.4			
2-MS-F038D	D-02521 sht 1A	C-2	2	GL	MO	S	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	C	25.4		CSJ-14	
					ST-O	C	25.4		CSJ-14	
					V	R	25.4			

Unit 2 IST Valve Table

System: HPDrains **System No.** 3060

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-MVD-F021	D-02521 sht 1B	D-8	2	GL	MO	S	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	C	25.4		CSJ-14	
					ST-O	C	25.4		CSJ-14	
					V	R	25.4			
2-MVD-V5009	D-02028	E-2	2	CK		S	C	Yes	OC	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					DA	2R	11.1.2.3			

Unit 2 IST Valve Table

System: SW **System No.** 4060

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-SW-PV-116	D-2041 sh. 1	C-1	2	BL	AO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	24.1-2			
					ST-O	Q	24.1-2			
2-SW-PV-118	D-2041 sh. 1	C-4	2	BL	AO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	24.1-2			
					ST-O	Q	24.1-2			
2-SW-PV-120	D-2041 sh. 1	C-6	2	BL	AO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	24.1-2			
					ST-O	Q	24.1-2			
2-SW-PV-138	D-2041 SH. 2	C-1	2	BL	AO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	24.1-2			
					ST-O	Q	24.1-2			
2-SW-PV-140	D-2041 SH. 2	C-4	2	BL	AO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	24.1-2			
					ST-O	Q	24.1-2			
2-SW-V101	D-2537 sh. 1	D-4	24	BF	MO	3	B	Yes	C	CO
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	8.1.4A			
					ST-O	Q	8.1.4A			
					V	R	8.1.4A			

Unit 2 IST Valve Table

System: SW **System No.** 4060

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-SW-V102	D-2537 sh. 2	D-1	24	BF	MO	3	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	8.1.4A			
					ST-O	Q	8.1.4A			
					V	R	8.1.4A			
2-SW-V103	D-2537 sh. 2	E-8	20	BF	MO	3	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	8.1.4A			
					V	R	8.1.4A			
2-SW-V105	D-2537 sh. 2	E-7	24	BF	MO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-O	Q	8.1.4B			
					V	R	8.1.4B			
2-SW-V106	D-2537 sh. 1	F-7	20	BF	MO	3	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	8.1.4A			
					V	R	8.1.4A			
2-SW-V111	D-2537 sh. 1	C-2	6	BF	MO	3	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	24.1.2			
					ST-O	Q	24.1.2			
					V	R	24.1.2			

Unit 2 IST Valve Table

System: SW **System No.** 4060

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-SW-V117	D-2537 sh. 2	C-7	6	BF	MO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-O	Q	24.1.2			
					V	R	24.1.2			
2-SW-V118	D-2537 sh. 1	B-6	6	BF	MO	3	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	24.1.2			
					ST-O	Q	24.1.2			
					V	R	24.1.2			
2-SW-V123	D-2537 sh. 2	D-7	2	PG	AO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	24.1.2			
					ST-O	Q	24.1.2			
2-SW-V124	D-2537 sh. 2	B-6	6	BF	AO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	24.1.2			
					ST-O	Q	24.1.2			
2-SW-V125	D-2537 sh. 2	A-4	1	PG	AO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	24.1.2			
					ST-O	Q	24.1.2			
2-SW-V126	D-2537 sh. 2	A-5	1	PG	AO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	24.1.2			
					ST-O	Q	24.1.2			

Unit 2 IST Valve Table

System: SW **System No.** 4060

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-SW-V128	D-2537 sh. 1	C-2	2	PG	AO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	24.1.2			
					ST-O	Q	24.1.2			
2-SW-V129	D-2537 sh. 1	B-3	6	BF	AO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	24.1.2			
					ST-O	Q	24.1.2			
2-SW-V13	D-2041 sh. 1	E-3	20	BF	MO	3	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	24.1-2			
					ST-O	Q	24.1-2			
					V	R	24.1-2			
2-SW-V130	D-2537 sh. 1	A-5	1	PG	AO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	24.1.2			
					ST-O	Q	24.1.2			
2-SW-V131	D-2537 sh. 1	A-4	1	PG	AO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	24.1.2			
					ST-O	Q	24.1.2			

Unit 2 IST Valve Table

System: SW **System No.** 4060

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-SW-V136	D-2537 sh. 1	E-5	1.5	PG	AO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	8.1.4A			
					ST-O	Q	8.1.4A			
					V	R	8.1.4A			
2-SW-V137	D-2537 sh. 1	E-7	1.5	PG	AO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	8.1.4A			
					ST-O	Q	8.1.4A			
					V	R	8.1.4A			
2-SW-V138	D-2537 sh. 2	E-2	1.5	PG	AO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	8.1.4B			
					ST-O	Q	8.1.4B			
					V	R	8.1.4B			
2-SW-V139	D-2537 sh. 2	E-4	1.5	PG	AO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	8.1.4B			
					ST-O	Q	8.1.4B			
					V	R	8.1.4B			
2-SW-V14	D-2041 sh. 1	E-1	20	BF	MO	3	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	24.1-2			
					ST-O	Q	24.1-2			
					V	R	24.1-2			

Unit 2 IST Valve Table

System: SW **System No.** 4060

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-SW-V144	D-2537 sh. 2	D-1	1.5	CK	SA	3	C	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					DA	2R	11.1.2.3		V-09	
2-SW-V148	D-2537 sh. 2	D-2	1.5	CK	SA	3	C	Yes	--	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					DA	2R	11.1.2.3		V-09	
2-SW-V15	D-2041 sh. 1	E-5	20	BF	MO	3	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	24.1-2			
					ST-O	Q	24.1-2			
					V	R	24.1-2			
2-SW-V16	D-2041 sh. 1	E-4	20	BF	MO	3	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	24.1-2			
					ST-O	Q	24.1-2			
					V	R	24.1-2			
2-SW-V17	D-2041 sh. 1	E-7	20	BF	MO	3	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	24.1-2			
					ST-O	Q	24.1-2			
					V	R	24.1-2			

Unit 2 IST Valve Table

System: SW **System No.** 4060

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-SW-V18	D-2041 sh. 1	E-6	20	BF	MO	3	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	24.1-2			
					ST-O	Q	24.1-2			
					V	R	24.1-2			
2-SW-V19	D-2041 sh. 2	E-1	20	BF	MO	3	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	24.1-2			
					ST-O	Q	24.1-2			
					V	R	24.1-2			
2-SW-V192	D-2537 sh. 1	B-7	1.5	CK	SA	3	C	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					DA	2R	11.1.2.3		V-09	
2-SW-V20	D-2041 sh. 2	E-4	20	BF	MO	3	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	24.1-2			
					ST-O	Q	24.1-2			
					V	R	24.1-2			
2-SW-V21	D-2041 sh. 1	D-1	20	CK	SA	3	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	24.1-2			
					CV-O	Q	24.1-2			

Unit 2 IST Valve Table

System: SW **System No.** 4060

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-SW-V22	D-2041 sh. 1	D-4	20	CK	SA	3	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	24.1-2			
					CV-O	Q	24.1-2			
2-SW-V23	D-2041 sh. 1	D-6	20	CK	SA	3	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	24.1-2			
					CV-O	Q	24.1-2			
2-SW-V24	D-2041 sh. 2	D-1	20	CK	SA	3	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	24.1-2			
					CV-O	Q	24.1-2			
2-SW-V25	D-2041 sh. 2	D-4	20	CK	SA	3	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	24.1-2			
					CV-O	Q	24.1-2			
2-SW-V294	D-2041 sh. 1	F-7	10	BF	MO	3	B	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	24.1.2			
					V	R	24.1.2			
2-SW-V295	D-2041 sh. 1	F-7	10	BF	MO	S	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	24.1.2			
					V	R	24.1.2			

Unit 2 IST Valve Table

System: SW **System No.** 4060

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-SW-V3	D-2041 sh. 2	F-7	30	BF	MO	S	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	C	24.4		CSJ-10	
					V	R	24.4			
2-SW-V36	D-2041 sh. 1	F-3	4	BF	MO	3	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	R	24.4		RFJ-16	
					V	R	24.4			
2-SW-V37	D-2041 sh. 1	F-3	4	BF	MO	3	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	R	24.4		RFJ-16	
					V	R	24.4			
2-SW-V4	D-2041 sh. 2	F-7	30	BF	MO	3	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	C	24.4		CSJ-10	
					V	R	24.4			
2-SW-V679	D-2274 SH. 1	C-3	6	BF	MO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-O	Q	1-MST-SW12Q			
2-SW-V680	D-2274 SH. 1	C-7	6	BF	MO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-O	Q	1-MST-SW12Q			
2-SW-V681	D-2274 sh. 2	C-3	6	BF	MO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-O	Q	2-MST-SW12Q			

Unit 2 IST Valve Table

System: SW **System No.** 4060

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-SW-V682	D-2274 sh. 2	C-7	6	BF	MO	3	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-O	Q	2-MST-SW12Q			
2-SW-V683	D-2274 SH. 1	C-3	6	CK	SA	3	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-P	Q	1-MST-SW12Q			
					DA	R	11.1.2.3		VRR-05	
2-SW-V684	D-2274 SH. 1	C-7	6	CK	SA	3	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-P	Q	1-MST-SW12Q			
					DA	R	11.1.2.3		VRR-05	
2-SW-V685	D-2274 sh. 2	C-3	6	CK	SA	3	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-P	Q	2-MST-SW12Q			
					DA	R	11.1.2.3		VRR-05	
2-SW-V686	D-2274 sh. 2	C-6	6	CK	SA	3	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-P	Q	2-MST-SW12Q			
					DA	R	11.1.2.3		VRR-05	

Unit 2 IST Valve Table

System: RCC **System No.** 4070

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-RCC-SV-1222B	D-2538 sh. 1	F-2	.75	GL	SO	2	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	2.2.1A			
					LLRT	PB	20.3-166			
					ST-C	Q	2.2.1A			
					V	R	20.4			
2-RCC-SV-1222C	D-2538 sh. 1	E-2	.75	GL	SO	2	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	2.2.1A			
					LLRT	PB	20.3-166			
					ST-C	Q	2.2.1A			
					V	R	20.4			
2-RCC-V28	D-2538 sh. 1	D-8	8	GA	MO	2	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-166			
					ST-C	C	22.2		CSJ-11	
					V	R	22.2			
2-RCC-V52	D-2538 sh. 1	E-7	8	GA	MO	2	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					LLRT	PB	20.3-166			
					ST-C	C	22.2		CSJ-11	
					V	R	22.2			

Unit 2 IST Valve Table

System: FOD **System No.** 5100

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-FOD-RV-1A	D-2268 sh. 1A	B-3	1	RL	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	R	0MST-DG500R		V-10	
2-FOD-RV-1B	D-2268 sh. 1A	B-2	1	RL	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	R	0MST-DG500R		V-10	
2-FOD-RV-2A	D-2268 sh. 1B	B-3	1	RL	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	R	0MST-DG500R		V-10	
2-FOD-RV-2B	D-2268 sh. 1B	B-2	1	RL	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	R	0MST-DG500R		V-10	
2-FOD-RV-3A	D-2269 sh. 2A	B-3	1	RL	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	R	0MST-DG500R		V-10	
2-FOD-RV-3B	D-2269 sh. 2A	B-2	1	RL	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	R	0MST-DG500R		V-10	
2-FOD-RV-4A	D-2269 sh. 2B	B-3	1	RL	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	R	0MST-DG500R		V-10	
2-FOD-RV-4B	D-2269 sh. 2B	B-2	1	RL	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	R	0MST-DG500R		V-10	

Unit 2 IST Valve Table

System: FOD **System No.** 5100

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-FOD-V33	D-2268 sh. 1A	C-2	1	GA	MA	S	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					NONE				V-10	
2-FOD-V34	D-2268 sh. 1A	C-3	1	GA	MA	S	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					NONE				V-10	
2-FOD-V35	D-2268 sh. 1B	C-2	1	GA	MA	S	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					NONE				V-10	
2-FOD-V36	D-2268 sh. 1B	C-3	1	GA	MA	S	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					NONE				V-10	
2-FOD-V37	D-2269 sh. 2A	C-2	1	GA	MA	S	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					NONE				V-10	
2-FOD-V38	D-2269 sh. 2A	C-3	1	GA	MA	S	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					NONE				V-10	
2-FOD-V39	D-2269 sh. 2B	C-2	1	GA	MA	S	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					NONE				V-10	
2-FOD-V40	D-2269 sh. 2B	C-3	1	GA	MA	S	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					NONE				V-10	

Unit 2 IST Valve Table

System: FOD **System No.** 5100

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-FOD-V41	D-2268 sh. 1A	B-3	1	GA	MA	S	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					NONE				V-10	
2-FOD-V42	D-2268 sh. 1A	B-4	1	GA	MA	S	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					NONE				V-10	
2-FOD-V43	D-2268 sh. 1B	B-3	1	GA	MA	S	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					NONE				V-10	
2-FOD-V44	D-2268 sh. 1B	B-4	1	GA	MA	S	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					NONE				V-10	
2-FOD-V45	D-2269 sh. 2A	B-3	1	GA	MA	S	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					NONE				V-10	
2-FOD-V46	D-2269 sh. 2A	B-4	1	GA	MA	S	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					NONE				V-10	
2-FOD-V47	D-2269 sh. 2B	B-3	1	GA	MA	S	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					NONE				V-10	
2-FOD-V48	D-2269 sh. 2B	B-4	1	GA	MA	S	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					NONE				V-10	

Unit 2 IST Valve Table

System: FOD **System No.** 5100

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-FOD-V49	D-2268 sh. 1A	C-2	1	CK	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	12.4A		V-10	
					CV-O	Q	12.4A		V-10	
2-FOD-V50	D-2268 sh. 1A	C-3	1	CK	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	12.4A		V-10	
					CV-O	Q	12.4A		V-10	
2-FOD-V51	D-2268 sh. 1B	C-2	1	CK	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	12.4B		V-10	
					CV-O	Q	12.4B		V-10	
2-FOD-V52	D-2268 sh. 1B	C-3	1	CK	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	12.4B		V-10	
					CV-O	Q	12.4B		V-10	
2-FOD-V53	D-2269 sh. 2A	C-2	1	CK	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	12.4C		V-10	
					CV-O	Q	12.4C		V-10	
2-FOD-V54	D-2269 sh. 2A	C-3	1	CK	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	12.4C		V-10	
					CV-O	Q	12.4C		V-10	

Unit 2 IST Valve Table

System: FOD **System No.** 5100

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-FOD-V55	D-2269 sh. 2B	C-2	1	CK	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	12.4D		V-10	
					CV-O	Q	12.4D		V-10	
2-FOD-V56	D-2269 sh. 2B	C-3	1	CK	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	12.4D		V-10	
					CV-O	Q	12.4D		V-10	
2-FOD-V57	D-2268 sh. 1A	B-5	1	GA	MA	S	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					NONE				V-10	
2-FOD-V58	D-2268 sh. 1A	B-5	1	GA	MA	S	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					NONE				V-10	
2-FOD-V59	D-2268 sh. 1B	B-5	1	GA	MA	S	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					NONE				V-10	
2-FOD-V60	D-2268 sh. 1B	B-4	1	GA	MA	S	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					NONE				V-10	
2-FOD-V61	D-2269 sh. 2A	B-4	1	GA	MA	S	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					NONE				V-10	

Unit 2 IST Valve Table

System: FOD **System No.** 5100

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-FOD-V62	D-2269 sh. 2A	B-5	1	GA	MA	S	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					NONE				V-10	
2-FOD-V63	D-2269 sh. 2B	B-5	1	GA	MA	S	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					NONE				V-10	
2-FOD-V64	D-2269 sh. 2B	B-4	1	GA	MA	S	B	No	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					NONE				V-10	

Unit 2 IST Valve Table

System: DSA **System No.** 5112

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-DG1-SV-6552-1	D-2265 SH. 1A	B-2	2	GA	SO	S	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					F	Q	12.3.2A			
					ST	Q	12.3.2A		V-11	
2-DG1-SV-6553-1	D-2265 sh. 1A	B-2	2	GA	SO	S	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					F	Q	12.2A			
					ST	Q	12.2A		V-12	
2-DG1-SV-6554-1	D-2265 sh. 1A	B-3	2	GA	SO	S	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					F	Q	12.2A			
					ST	Q	12.2A		V-12	
2-DG1-SV-6576-1	D-2265 sh. 1A	B-3	2	GA	SO	S	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					F	Q	12.3.2A			
					ST	Q	12.3.2A		V-11	
2-DG2-SV-6552-2	D-2265 SH. 1B	B-2	2	GA	SO	S	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					F	Q	12.3.2B			
					ST	Q	12.3.2B		V-11	

Unit 2 IST Valve Table

System: DSA **System No.** 5112

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-DG2-SV-6553-2	D-2265 sh. 1B	B-2	2	GA	SO	S	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					F	Q	12.2B			
					ST	Q	12.2B		V-12	
2-DG2-SV-6554-2	D-2265 sh. 1B	B-3	2	GA	SO	S	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					F	Q	12.2B			
					ST	Q	12.2B		V-12	
2-DG2-SV-6576-2	D-2265 sh. 1B	B-3	2	GA	SO	S	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					F	Q	12.3.2B			
					ST	Q	12.3.2B		V-11	
2-DG3-SV-6552-3	D-2266 sh. 2A	B-2	2	GA	SO	S	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					F	Q	12.3.2C			
					ST	Q	12.3.2C		V-11	
2-DG3-SV-6553-3	D-2266 sh. 2A	B-2	2	GA	SO	S	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					F	Q	12.2C			
					ST	Q	12.2C		V-12	

Unit 2 IST Valve Table

System: DSA **System No.** 5112

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-DG3-SV-6554-3	D-2266 sh. 2A	B-3	2	GA	SO	S	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					F	Q	12.2C			
					ST	Q	12.2C		V-12	
2-DG3-SV-6576-3	D-2266 sh. 2A	B-3	2	GA	SO	S	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					F	Q	12.3.2C			
					ST	Q	12.3.2C		V-11	
2-DG4-SV-6552-4	D-2266 sh. 2B	B-2	2	GA	SO	S	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					F	Q	12.3.2D			
					ST	Q	12.3.2D		V-11	
2-DG4-SV-6553-4	D-2266 sh. 2B	B-2	2	GA	SO	S	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					F	Q	12.2D			
					ST	Q	12.2D		V-12	
2-DG4-SV-6554-4	D-2266 sh. 2B	B-3	2	GA	SO	S	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					F	Q	12.2D			
					ST	Q	12.2D		V-12	

Unit 2 IST Valve Table

System: DSA **System No.** 5112

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-DG4-SV-6576-4	D-2266 sh. 2B	B-3	2	GA	SO	S	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					F	Q	12.3.2D			
					ST	Q	12.3.2D		V-11	
2-DSA-RV10	D-2265 sh. 1B	F-2	.5	RL	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	2Y	11.0		V-10	
2-DSA-RV12	D-2266 sh. 2A	F-4	.75	RL	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	2Y	11.0		V-10	
2-DSA-RV14	D-2266 sh. 2A	F-6	.75	RL	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	2Y	11.0		V-10	
2-DSA-RV15	D-2266 sh. 2A	F-2	.5	RL	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	2Y	11.0		V-10	
2-DSA-RV17	D-2266 sh. 2B	F-4	.75	RL	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	2Y	11.0		V-10	
2-DSA-RV19	D-2266 sh. 2B	F-6	.75	RL	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	2Y	11.0		V-10	

Unit 2 IST Valve Table

System: DSA **System No.** 5112

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-DSA-RV2	D-2265 sh. 1A	F-4	.75	RL	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	2Y	11.0		V-10	
2-DSA-RV20	D-2266 sh. 2B	F-2	.5	RL	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	2Y	11.0		V-10	
2-DSA-RV4	D-2265 sh. 1A	F-6	.75	RL	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	2Y	11.0		V-10	
2-DSA-RV5	D-2265 sh. 1A	F-2	.5	RL	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	2Y	11.0		V-10	
2-DSA-RV7	D-2265 sh. 1B	F-4	.75	RL	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	2Y	11.0		V-10	
2-DSA-RV9	D-2265 sh. 1B	F-6	.75	RL	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	2Y	11.0		V-10	
2-DSA-V100	D-2266 sh. 2A	E-5	.5	CK	SA	S	C	Yes	OC	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					CV-C	Q	12.3.2C			
					CV-O	Q	12.3.2C			

Unit 2 IST Valve Table

System: DSA **System No.** 5112

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-DSA-V106	D-2266 sh. 2A	F-1	.5	CK	SA	S	C	Yes	OC	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					CV-O	Q	12.2C			
					DA	2Y	0MST-DG500R		V-13	
2-DSA-V111	D-2266 sh. 2B	E-3	.75	CK	SA	S	C	Yes	OC	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					DA	2Y	0MST-DG500R		V-13	
2-DSA-V118	D-2266 sh. 2B	E-5	.5	CK	SA	S	C	Yes	OC	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					CV-C	Q	12.3.2D			
					CV-O	Q	12.3.2D			
2-DSA-V123	D-2266 sh. 2B	E-7	.75	CK	SA	S	C	Yes	OC	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					DA	2Y	0MST-DG500R		V-13	
2-DSA-V130	D-2266 sh. 2B	E-5	.5	CK	SA	S	C	Yes	OC	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					CV-C	Q	12.3.2D			
					CV-O	Q	12.3.2D			

Unit 2 IST Valve Table

System: DSA **System No.** 5112

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-DSA-V136	D-2266 sh. 2B	F-1	.5	CK	SA	S	C	Yes	OC	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					CV-O	Q	12.2D			
					DA	2Y	0MST-DG500R		V-13	
2-DSA-V141	D-2265 sh. 1A	B-2	2	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					CV-O	Q	12.3.2A		V-11	
					DA	2Y	0MST-DG500R		V-13	
2-DSA-V142	D-2265 sh. 1A	B-3	2	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					CV-O	Q	12.3.2A		V-11	
					DA	2Y	0MST-DG500R		V-13	
2-DSA-V145	D-2265 sh. 1B	C-2	2	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					CV-O	Q	12.3.2B		V-11	
					DA	2Y	0MST-DG500R		V-13	
2-DSA-V146	D-2265 sh. 1B	C-3	2	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					CV-O	Q	12.3.2B		V-11	
					DA	2Y	0MST-DG500R		V-13	

Unit 2 IST Valve Table

System: DSA **System No.** 5112

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-DSA-V149	D-2266 sh. 2A	B-2	2	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					CV-O	Q	12.3.2C		V-11	
					DA	2Y	0MST-DG500R		V-13	
2-DSA-V150	D-2266 sh. 2A	B-3	2	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					CV-O	Q	12.3.2C		V-11	
					DA	2Y	0MST-DG500R		V-13	
2-DSA-V153	D-2266 sh. 2B	B-3	2	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					CV-O	Q	12.3.2D		V-11	
					DA	2Y	0MST-DG500R		V-13	
2-DSA-V154	D-2266 sh. 2B	B-3	2	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					CV-O	Q	12.3.2D		V-11	
					DA	2Y	0MST-DG500R		V-13	
2-DSA-V21	D-2265 sh. 1A	E-3	.75	CK	SA	S	C	Yes	OC	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					DA	2Y	0MST-DG500R		V-13	

Unit 2 IST Valve Table

System: DSA **System No.** 5112

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-DSA-V28	D-2265 sh. 1A	E-5	.5	CK	SA	S	C	Yes	OC	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					CV-C	Q	12.3.2A			
					CV-O	Q	12.3.2A			
2-DSA-V33	D-2265 sh. 1A	E-7	.75	CK	SA	S	C	Yes	OC	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					DA	2Y	0MST-DG500R		V-13	
2-DSA-V40	D-2265 sh. 1A	E-5	.5	CK	SA	S	C	Yes	OC	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					CV-C	Q	12.3.2A			
					CV-O	Q	12.3.2A			
2-DSA-V46	D-2265 sh. 1A	F-1	.5	CK	SA	S	C	Yes	OC	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					CV-O	Q	12.2A			
					DA	2Y	0MST-DG500R		V-13	
2-DSA-V51	D-2265 sh. 1B	E-3	.75	CK	SA	S	C	Yes	OC	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					DA	2Y	0MST-DG500R		V-13	

Unit 2 IST Valve Table

System: DSA **System No.** 5112

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-DSA-V58	D-2265 sh. 1B	E-5	.5	CK	SA	S	C	Yes	OC	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					CV-C	Q	12.3.2B			
					CV-O	Q	12.3.2B			
2-DSA-V63	D-2265 sh. 1B	E-7	.75	CK	SA	S	C	Yes	OC	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					DA	2Y	0MST-DG500R		V-13	
2-DSA-V70	D-2265 sh. 1B	E-5	.5	CK	SA	S	C	Yes	OC	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					CV-C	Q	12.3.2B			
					CV-O	Q	12.3.2B			
2-DSA-V76	D-2265 sh. 1B	F-1	.5	CK	SA	S	C	Yes	OC	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					CV-O	Q	12.2B			
					DA	2Y	0MST-DG500R		V-13	
2-DSA-V81	D-2266 sh. 2A	E-3	.75	CK	SA	S	C	Yes	OC	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					DA	2Y	0MST-DG500R		V-13	

Unit 2 IST Valve Table

System: DSA **System No.** 5112

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-DSA-V88	D-2266 sh. 2A	E-5	.5	CK	SA	S	C	Yes	OC	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					CV-C	Q	12.3.2C			
					CV-O	Q	12.3.2C			
2-DSA-V93	D-2266 sh. 2A	E-7	.75	CK	SA	S	C	Yes	OC	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
									V-10	
					DA	2Y	0MST-DG500R		V-13	

Unit 2 IST Valve Table

System: RNA **System No.** 6135

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-RNA-IV-2307	D-7029 sh. 2A	D-6	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	C	20.9			
					CV-O	Q	16.1.1			
2-RNA-IV-2311	D-7029 sh. 2A	F-2	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	C	20.9			
					CV-O	Q	16.1.1			
2-RNA-IV-2315	D-7029 sh. 2B	B-6	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	C	20.9			
					CV-O	Q	20.9			
2-RNA-IV-2319	D-7029 sh. 2B	B-6	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	C	20.9			
					CV-O	Q	16.1.1			
2-RNA-IV-2323	D-7206 sh. 4	F-6	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	C	20.9			
					CV-O	Q	16.1.1			
2-RNA-IV-2327	D-7206 sh. 4	F-6	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	C	20.9			
					CV-O	Q	16.1.1			

Unit 2 IST Valve Table

System: RNA **System No.** 6135

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-RNA-IV-2331	D-7029 sh. 2A	F-1	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	C	20.9			
					CV-O	Q	16.1.1			
2-RNA-IV-2641	D-7029 sh. 2B	C-4	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	20.9			
					CV-O	C	20.9			
2-RNA-IV-2643	D-7029 sh. 2B	B-4	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	20.9			
					CV-O	C	20.9			
2-RNA-IV-2647	D-7029 sh. 2B	C-4	.75	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	C	20.9			
					CV-O	Q	20.9			
2-RNA-PRV-5256	D-7368 sh. 1	E-3	.75	RL	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	SP	11.0			
2-RNA-PRV-5258	D-7368 sh. 1	C-3	.75	RL	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	SP	11.0			
2-RNA-PRV-5259	D-7368 sh. 1	E-7	.75	RL	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	SP	11.0			

Unit 2 IST Valve Table

System: RNA **System No.** 6135

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-RNA-PRV-5260	D-7368 sh. 1	B-7	.75	RL	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					R	SP	11.0			
2-RNA-PSE-101	D-7368		.75	RD	SA	S	D	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					REPL	5Y	PMID 39404-01			
2-RNA-PSE-102	D-7368		.75	RD	SA	S	D	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					REPL	5Y	PMID 39405-01			
2-RNA-SV-5251	D-7368 sh. 1	G-2	.75	GL	SO	2	B	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	31.6			
					LLRT	PB	20.3-170			
					ST-C	Q	31.6			
					ST-O	Q	31.6			
					V	R	20.4			
2-RNA-SV-5253	D-7368 sh. 1	D-2	.75	GL	SO	2	A	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	31.6			
					LLRT	PB	20.3-171			
					ST-C	Q	31.6			
					ST-O	Q	31.6			
					V	R	20.4			

Unit 2 IST Valve Table

System: RNA **System No.** 6135

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-RNA-SV-5261	D-7077 sh. 3B	D-1	2	GL	SO	2	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	C	31.11		CSJ-12	
					LLRT	PB	20.3-169			
					ST-C	C	31.11		CSJ-12	
					V	R	20.4			
2-RNA-SV-5262	D-7077 sh. 3A	D-8	2	GL	SO	2	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	C	31.11		CSJ-12	
					LLRT	PB	20.3-168			
					ST-C	C	31.11		CSJ-12	
					V	R	20.4			
2-RNA-SV-5481	D-7368 sh. 1	G-5	.75	GL	SO	S	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	31.6			
					ST-C	Q	31.6			
					ST-O	Q	31.6			
					V	R	20.4			
2-RNA-SV-5482	D-7368 sh. 1	D-5	.75	GL	SO	S	B	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	31.6			
					ST-C	Q	31.6			
					ST-O	Q	31.6			
					V	R	20.4			

Unit 2 IST Valve Table

System: RNA **System No.** 6135

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-RNA-V305	D-7368 sh. 1	F-3	.75	CK	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	20.9			
					CV-O	Q	2.3.2			
2-RNA-V306	D-7368 sh. 1	D-3	.75	CK	SA	S	C	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	2.3.2			
					CV-O	Q	2.3.2			
2-RNA-V307	D-7368 sh. 1	C-3	.75	CK	SA	S	C	Yes	C	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	20.9			
					CV-O	Q	2.3.2			
2-RNA-V308	D-7029 sh. 2A	B-3	.75	CK	SA	S	C	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	2.3.2			
					CV-O	Q	2.3.2			
2-RNA-V313	D-7007 sh. 1	E-3	.75	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	20.9			
					CV-O	R	31.1		RFJ-12	
2-RNA-V314	D-7007 sh. 1	F-6	.75	CK	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	20.9			
					CV-O	R	31.1		RFJ-12	

Unit 2 IST Valve Table

System: RNA **System No.** 6135

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-RNA-V315	D-7007 sh. 1	E-2	2	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-12	
					CV-O	R	31.1		RFJ-12	
2-RNA-V316	D-7007 sh. 1	E-7	2	CK	SA	S	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.8		RFJ-12	
					CV-O	R	31.1		RFJ-12	
2-RNA-V317	D-7368	E-7	.25	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	R	31.8		V-03	
2-RNA-V318	D-7368	E-7	.25	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	R	31.8		V-03	
2-RNA-V319	D-7368	E-7	.25	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	R	31.8		V-03	
2-RNA-V320	D-7368	E-7	.25	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	R	31.8		V-03	
2-RNA-V321	D-7368	E-8	.25	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	R	31.8		V-03	

Unit 2 IST Valve Table

System: RNA **System No.** 6135

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-RNA-V322	D-7368	E-7	.25	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	R	31.8		V-03	
2-RNA-V323	D-7368	E-8	.25	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	R	31.8		V-03	
2-RNA-V324	D-7368	E-6	.25	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	R	31.8		V-03	
2-RNA-V325	D-7368	E-6	.25	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	R	31.8		V-03	
2-RNA-V326	D-7368	E-6	.25	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	R	31.8		V-03	
2-RNA-V327	D-7368	E-6	.25	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	R	31.8		V-03	
2-RNA-V328	D-7368	C-6	.25	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	R	31.8		V-03	
2-RNA-V329	D-7368	C-7	.25	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	R	31.8		V-03	

Unit 2 IST Valve Table

System: RNA **System No.** 6135

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-RNA-V330	D-7368	C-7	.25	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	R	31.8		V-03	
2-RNA-V331	D-7368	C-7	.25	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	R	31.8		V-03	
2-RNA-V332	D-7368	C-7	.25	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	R	31.8		V-03	
2-RNA-V333	D-7368	C-7	.25	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	R	31.8		V-03	
2-RNA-V334	D-7368	C-7	.25	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	R	31.8		V-03	
2-RNA-V335	D-7368	C-8	.25	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	R	31.8		V-03	
2-RNA-V336	D-7368	C-8	.25	CK	SA	S	C	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-O	R	31.8		V-03	

Unit 2 IST Valve Table

System: RNA **System No.** 6135

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-RNA-V350	D-7007 sh. 1	D-7	.75	CK	SA	2	A/C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.3-169A		RFJ-13	
					CV-O	R	31.1		RFJ-13	
					LLRT	R	20.3-169A			
2-RNA-V351	D-7007 sh. 1	D-2	.75	CK	SA	2	A/C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	R	20.3-168A		RFJ-13	
					CV-O	C	31.1		RFJ-13	
					LLRT	R	20.3-168A			

Unit 2 IST Valve Table

System: FLR DRN **System No.** 6235

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-G16-F003	D-2545 sh. 3B	C-3	3	GA	AO	2	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	11.3			
					LLRT	PB	20.3-162A			
					ST-C	Q	11.3			
					V	R	11.3			
2-G16-F004	D-2545 sh. 3B	C-3	3	GA	AO	2	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	11.3			
					LLRT	PB	20.3-162B			
					ST-C	Q	11.3			
					V	R	11.3			

Unit 2 IST Valve Table

System: EQUIP DR **System No.** 6240

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-G16-F019	D-2545 sh. 3A	B-3	3	GA	AO	2	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	11.3			
					LLRT	PB	20.3-163A			
					ST-C	Q	11.3			
					V	R	11.3			
2-G16-F020	D-2545 sh. 3A	B-2	3	GA	AO	2	A	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					F	Q	11.3			
					LLRT	PB	20.3-163B			
					ST-C	Q	11.3			
					V	R	11.3			

Unit 2 IST Valve Table

System: SGT **System No.** 7071

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-SGT-V8	F-4073 sh. 3	E-7	.5	AN	MO	2	B	Yes	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	15.7			
2-SGT-V9	F-4073 sh. 3	E-7	.5	AN	MO	2	B	Yes	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					V	R	15.7			
2-VA-2A-BFCV-RB	F-4073 sh. 3	D-1	18	BC	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	15.7			
					CV-O	Q	15.7			
2-VA-2A-BFV-RB	F-4073 sh. 3	F-2	24	BF	MO	2	B	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	15.7			
					V	R	15.7			
2-VA-2B-BFCV-RB	F-4073 sh. 3	D-5	18	BC	SA	2	C	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	15.7			
					CV-O	Q	15.7			
2-VA-2B-BFV-RB	F-4073 sh. 3	D-1	18	BF	MO	2	B	Yes	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-O	Q	15.7			
					V	R	15.7			

Unit 2 IST Valve Table

System: SGT **System No.** 7071

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-VA-2C-BFV-RB	F-4073 sh. 3	D-4	18	BF	MO	2	B	Yes	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-O	Q	15.7			
					V	R	15.7			
2-VA-2D-BFV-RB	F-4073 sh. 3	E-4	18	BF	MO	2	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	15.7			
					ST-O	Q	15.7			
					V	R	15.7			
2-VA-2E-BFV-RB	F-4073 sh. 3	D-5	18	BF	MO	2	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-O	Q	15.7			
					V	R	15.7			
2-VA-2F-BFV-RB	F-4073 sh. 3	E-6	18	BF	MO	2	B	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	15.7			
					ST-O	Q	15.7			
					V	R	15.7			
2-VA-2G-BFV-RB	F-4073 sh. 3	D-8	18	BF	MO	2	B	Yes	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-O	Q	15.7			
					V	R	15.7			

Unit 2 IST Valve Table

System: SGT **System No.** 7071

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-VA-2H-BFV-RB	F-4073 sh. 3	E-8	18	BF	MO	2	B	Yes	OC	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	15.7			
					ST-O	Q	15.7			
					V	R	15.7			
2-VA-2I-BFV-RB	F-4073 sh. 3	F-6	30	BF	MO	2	B	Yes	C	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST-C	Q	15.7			
					V	R	15.7			

Unit 2 IST Valve Table

System: FPC **System No.** 7110

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-G41-F011	D-2549 Sht. 1B	F-3	8	GA	MA	S	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST	R	8.0C			
2-G41-F036	D-2549 sh. 1B	F-4	8	GL	MA	S	B	Yes	C	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST	R	8.0C			
2-G41-V24	D-2549 sh. 1B	E-4	6	CK	SA	2	C	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	24.6.2			
					CV-O	Q	24.6.2			
2-G41-V8	D-2549 sh. 1B	E-4	6	CK	SA	2	C	Yes	O	OC
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	Q	24.6.2			
					CV-O	Q	24.6.2			

Unit 2 IST Valve Table

System: CB VA **System No.** 8220

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-VA-2A-CV-CB	F-4080, Sht. 1	C-3	54	N/A	SA	S	C	Yes	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	6M	23.1.2			
					CV-O	6M	23.1.2			
2-VA-2B-CV-CB	F-4080, Sht. 1	C-5	48	N/A	SA	S	C	Yes	O	O
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					CV-C	6M	23.1.2			
					CV-O	6M	23.1.2			

Unit 2 IST Valve Table

System: SECONDARY **System No.** 8240

Valve ID	Drawing Number	Coordinate	Size	Type	Actuator	Class	Category	Active?	Normal Position	Safety Position
2-VA-2A-BFIV-RB	F-4073 sh. 2	F-7	54	BF	AO	S	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST	Q	04.1.1		V-04	
					ST-C	R	15.4A		V-04	
2-VA-2B-BFIV-RB	F-4073 sh. 2	F-7	54	BF	AO	S	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST	Q	04.1.1		V-04	
					ST-C	R	15.4A		V-04	
2-VA-2C-BFIV-RB	F-4073 sh. 2	E-2	54	BF	AO	S	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST	Q	04.1.1		V-04	
					ST-C	R	15.4A		V-04	
2-VA-2D-BFIV-RB	F-4073 sh. 2	E-2	54	BF	AO	S	B	Yes	O	C
					Test	**Frequency**	**Procedure**		**Relief/Justification/Remark**	
					ST	Q	04.1.1		V-04	
					ST-C	R	15.4A		V-04	

6.0 PROGRAM REMARKS

The following generic program remarks provide specific detail to better explain and justify the basis for IST program positions taken. Program Remarks are uniquely numbered and components within the IST program affected by specific Program Remarks reference the unique number within pump and valve tables.

PROGRAM REMARK INDEX

P-01 Code Case OMN-6

P-02 HPCI Pump Testing

P-03 CS and RHR Pump Vibration Testing

V-01 CRD Valve Identification

V-02 CRD Skid Mounted Valves

V-03 Nitrogen Backup Check Valve Testing

V-04 Reactor Building Ventilation Valve Testing

V-05 Containment Atmosphere Control Common Valve Testing

V-06 HPCI and RCIC Suction Check Valve Partial Flow Test Frequency

V-07 HPCI and RCIC Minimum Flow Check Valve Disassembly Interval

V-08 HPCI Auxiliary Check Valve Disassembly Interval

V-09 Service Water Boundary Check Valve Disassembly

V-10 EDG Fuel Oil, Cooling Water, and Starting Air Valve Unit Designation

V-11 EDG Solenoid Valve Testing

V-12 EDG Solenoid Valve Testing

V-13 On-Line Check Valve Disassembly

V-14 RHR Discharge Check Valve Testing

V-15 HPCI and RCIC Rupture Disc Testing

Program Remark P-01

SYSTEM:

Standby Liquid Control (2040)

COMPONENTS:

1-C41-C001A&B
2-C41-C001A&B

PUMP GROUP:

B

CLASS:

2

DISCUSSION:

ISTB-3510(b)(2) requires that digital instruments be selected such that the reference value does not exceed 70% of the calibrated range of the instrument. The digital flow indicator for the SLC pumps (1(2)-C41-FI-5512) has a calibrated range of 0 to 60 gpm. The reference value for the SLC pumps is approximately 43 gpm which is 72% of the calibrated range of the digital instrument.

Code Case OMN-6, Alternate Rules for Digital Instruments, allows digital instruments to be selected such that the reference value does not exceed 90% of the calibrated range of the instrument. Code Case OMN-6 has been unconditionally accepted by the NRC in Reg Guide 1.192; therefore, relief is not required to use this Code Case.

Code Case OMN-6 will be implemented for the Comprehensive pump test for these pumps.

Program Remark P-02

SYSTEM:

High Pressure Coolant Injection (2095)

COMPONENTS:

1-E41-C001
2-E41-C001

PUMP GROUP:

B

CLASS:

2

DISCUSSION:

ISTB requires inservice testing of each pump. There are no suitable provisions for measuring the pressure in the cross-over piping between the HPCI booster and main pumps. Since these pumps are driven by a common driver and are connected in tandem, they are necessarily tested together, simultaneously, under the same operating conditions (flow rate and speed). Therefore, measuring the inlet pressure of the booster pump and calculating the differential pressure of the pump combination will effectively verify operability and serve to monitor the performance of the pair.

During inservice testing of these pumps, the differential pressure of the pump combination will be determined from measurements of the suction and discharge pressures of the booster and main pumps, respectively. This data will be used to evaluate the performance of the pump combination in a manner such that the combination will be treated as a single multi-stage pump.

These pumps are included in the IST Program in an augmented basis; therefore, no relief request is necessary.

Program Remark P-03

SYSTEMS:

Core Spray (2035)
RHR (2045)

PUMP GROUP:

CS – B, RHR – A

CLASS:

2

DISCUSSION:

This program remark establishes a technical position on the testing of the Core Spray and RHR pumps. These pumps are vertically mounted, centrifugal pumps. For the purposes of vibration testing, these pumps will be treated as vertical line shaft pumps. The bearings on the pumps themselves are hydrostatic bearings which would tend to dampen any vibration and do not provide a viable point of data for assessing the operational readiness of the pumps. These pumps will have vibration measurements taken at the top of the motor, where the bearing arrangement is of a conventional type of bearing that will provide the best transmission of vibration to measurement devices. For flow parameters, the RHR and Core Spray pumps will be treated as centrifugal pumps. This is the practice that has been used at BSEP Units 1 & 2 for the third 10-year interval but is not discussed in any program documents. This position was discussed in a telephone conversation with Mr. Robert Binz who serves on the OM Code committee for ISTB. He stated that this is the typical treatment for these types of pumps throughout the industry. He also stated that this has been discussed by the committee but not formally documented in a code interpretation.

Program Remark V-01

SYSTEM:

Control Rod Drive (1070)

COMPONENTS:

1-C11-114, 1-C11-115, 1-C11-138, 1-C11-CV-126, 1-C11-CV-127
2-C12-114, 2-C12-115, 2-C12-138, 2-C12-CV-126, 2-C12-CV-127

CATEGORY:

B and C

CLASS:

2

DISCUSSION:

For convenience, the respective valve listing only identifies one of each type and application of valves. This should be considered to be typical of each of the 137 hydraulic control units - each one associated with these typical valves.

Program Remark V-02

SYSTEM:

Control Rod Drive (1070)

COMPONENTS:

1-C11-114, 138, CV-126, and CV-127
2-C12-114, 138, CV-126, and CV-127

CATEGORY:

C

CLASS:

2

DISCUSSION:

These valves are considered skid mounted and a subassembly of the CRD hydraulic control unit. The valves are adequately tested by verifying the safety related closed functionality during Control Rod Scram Timing in accordance with Technical Specification 3.1.4.

Program Remark V-03

SYSTEM:

Instrument Air Supply/Nitrogen Backup (6135)

COMPONENTS:

1-RNA-V317 thru 1-RNA-V336
2-RNA-V317 thru 2-RNA-V336

CATEGORY:

C

CLASS:

S

TEST REQUIREMENT:

ISTC-3510 Exercising Test Frequency. Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3560, ISTC-5221, and ISTC-5222.

Each check valve exercise test shall include open and close tests. (ISTC-3522(a))

DISCUSSION:

These are simple check valves that open to provide flow paths from the backup nitrogen storage bottles to the backup nitrogen headers. They have no external means of exercising or determining valve disc position.

The only practical method of testing to the open position is to isolate all of the bottles in the train, reduce downstream header pressure, and sequentially open and close each bottle isolation valve to verify flow. While the bottles are isolated, this source of nitrogen is unavailable in the event of a failure of the associated uninterruptable air supply header.

The only practical method of testing to the close position is to remove each bottle and verify no leakage.

These are small (i.e, 1/4-inch) stainless steel valves installed in a clean and dry system. In the past, there were no instances where these valves failed to open or close. In particular, even if they were in a degraded condition, with the potentially large

Program Remark V-03

differential pressure across each valve (i.e. greater than 750 psid), failure to open is extremely unlikely. Similarly, failure to close would only be significant when changing bottles if the isolation valve were not closed.

Reliability of the nitrogen source is increased by the inherent redundancy of 10 nitrogen bottles and 10 associated check valves. Given the redundancy and reliability of the nitrogen supply provided by the system design, the individual reliability of the valves, the relatively low probability of significant failure, and the effect of frequently imposing system downtime, the burden on the plant staff of performing these tests is not commensurate with the potential small gain in plant safety afforded by quarterly testing. Exercising these valves on a 2-year schedule will adequately ensure continued system availability.

These check valves are not within the ASME Code Class boundaries and have been placed in the Inservice Testing Program in an Augmented Basis; therefore, code relief is not required.

ALTERNATE TESTING:

Each of these valves will be exercised open at least once every two years.

Program Remark V-04

SYSTEM:

Reactor Building Ventilation (8185)

COMPONENTS:

1-VA-1A-BFIV-RB, 1-VA-1B-BFIV-RB, 1-VA-1C-BFIV-RB, and 1-VA-1D-BFIV-RB
2-VA-2A-BFIV-RB, 2-VA-2B-BFIV-RB, 2-VA-2C-BFIV-RB, and 2-VA-2D-BFIV-RB

CATEGORY:

B

CLASS:

S

TEST REQUIREMENT:

ISTC-3521 Category A and Category B Valves. Category A and Category B valves shall be tested as follows:
(a) full-stroke exercising of Category A and Category B valves during operation at power to the position(s) required to fulfill its function(s), and exercising or examining check valves during plant operation in a manner that verifies obturator travel to the closed, full-open, or partially open position required to fulfill its function(s).

BASIS FOR RELIEF:

Testing to determine the operability of the secondary containment isolation dampers is performed per the requirements of Technical Specification Surveillance Requirement 3.6.4.2.1. The Technical Specification requires that these valves be exercised quarterly and requires exercise and stroke time tests to be performed at least once every 24 months. These valves are not within the ASME Code Class boundaries and have been placed in the Inservice Testing (IST) Program in an augmented basis; therefore, relief from Code testing requirements has not been pursued. Per Generic Letter 89-04, documentation is required in the IST Program that testing of non-Code class safety-related components provides assurance of continued operability if Code provisions are not met. The plant's position is that Technical Specification required testing is sufficient to ensure that the valves perform their safety function.

ALTERNATE TESTING:

Test valves in accordance with Technical Specifications.

Program Remark V-05

SYSTEM:

Containment Atmosphere Control (2070)

COMPONENTS:

2-CAC-CV-2889 and 2-CAC-CV-2890

CATEGORY:

B

CLASS:

S

DISCUSSION:

These are rapid-acting valves installed in a parallel arrangement in the AOG supply line to both units. The valves' control system is such that they share common control switch and indicating lights. The light indication indicates when either valve is in the open/closed position (e.g., if one valve is open and the other closed, the indication would show intermediate with both the open and closed lights illuminated).

These valves are common (i.e. shared) to both units.

ALTERNATE TESTING:

The stroke time for the pair will be measured and recorded as the stroke time for each valve. This time will be that of the slowest valve.

Program Remark V-06

SYSTEM:

High Pressure Coolant Injection (2095)
Reactor Core Isolation Cooling (2100)

COMPONENTS:

1-E41-F045 and 1-E51-F030
2-E41-F045 and 2-E51-F030

CATEGORY:

C

CLASS:

S

TEST REQUIREMENT:

ISTC-3510 Exercising Test Frequency. Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3560, ISTC-5221, and ISTC-5222.

DISCUSSION:

The E41-F045 and E51-F030 valves open to provide flow paths from the suppression pool to the suctions of the HPCI and RCIC pumps, respectively. They are simple check valves, with no external means of exercising or verifying obturator position; thus, the only method of determining valve operability is by observation of system parameters. During quarterly pump testing, the pumps normally take suction from the condensate storage tank, recirculating water back to the condensate storage tank via the only available discharge flow path for the pumps since injection into the reactor vessel is impractical. If suction were to be switched to the suppression pool, pool water would be transferred to the condensate storage tanks. This would result in contaminating the contents of the condensate storage tanks both with radioactive contaminants as well as possible chemical impurities. Each of these valves has been inspected on a regular basis since 1989. In these cases, the valves were found to be free of any indications of wear or corrosion that challenged the valves' capability of performing their functions. These valves experience no flow except during test periods; thus, service-related degradation is not expected.

Program Remark V-06 Page 2 of 2

ALTERNATIVE TESTING:

Each of these valves will be partial flow exercised every 24 months and subjected to periodic disassembly and internal inspection consistent with their observed condition. Following re-assembly, each valve that was disassembled will be partial-flow exercised.

For grouping characteristics/groupings, refer to Engineering Procedure 0ENP-16.7, Administrative Control of the Check Valve Disassembly Program.

Program Remark V-07

SYSTEM:

High Pressure Coolant Injection (2095)
Reactor Core Isolation Cooling (2100)

COMPONENTS:

1-E41-F046 and 1-E51-F021
2-E41-F046 and 2-E51-F021

CATEGORY:

C

CLASS:

2

TEST REQUIREMENT:

ISTC-3510 Exercising Test Frequency. Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3560, ISTC-5221, and ISTC-5222.

If the test methods in ISTC-5221(a) and ISTC-5221(b) are impractical for certain check valves, or if sufficient flow cannot be achieved or verified, a sample disassembly examination program shall be used to verify valve obturator movement. (ISTB-5221(c)).

DISCUSSION:

These valves open to provide flow paths for minimum flow from the associated pump to prevent over-heating and damage under low-flow conditions. During normal quarterly pump testing, each valve is subjected to full-flow conditions; however, there is no installed instrumentation in the line that can verify, quantitatively, that full accident flow is present as specified by Generic Letter 89-04, Position 1. Thus, this quarterly testing is considered to be partial-stroke exercising.

Each of these valves has been inspected at least twice in the last seven years. In these cases, the valves were found to be free of any indications of wear or corrosion that challenged the valves' capability of performing their safety functions. These valves experience no flow or transients except for periodic testing; thus, service-related degradation is not expected.

Program Remark V-07

ALTERNATIVE TESTING:

Each of these valves will be partial flow exercised quarterly and subjected to disassembly and internal inspection during refueling outages. Individual valves will be disassembled on a 2R frequency. ESR 94-00706 performed the justification to extend the disassembly per Generic Letter 89-04. Following re-assembly, each valve that was disassembled will be partial-flow exercised.

For grouping characteristics/groupings, refer to Engineering Procedure 0ENP-16.7, Administrative Control of the Check Valve Disassembly Program.

Program Remark V-08

SYSTEM:

High Pressure Coolant Injection (2095)

COMPONENTS:

1-E41-F048 and 1-E41-F057
2-E41-F048 and 2-E41-F057

CATEGORY:

C

CLASS:

S

TEST REQUIREMENT:

ISTC-3510 Exercising Test Frequency. Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3560, ISTC-5221, and ISTC-5222.

DISCUSSION:

These valves open to provide flow paths from the HPCI barometric condenser condensate pump and lube oil cooler to the suction of the HPCI pump. During routine testing of the HPCI pumps, these valves see accident flow; however, there is no instrumentation in the associated lines that can be used to verify flow. Opening without flow verification is considered to be a partial-stroke exercise test. Each of these valves has been inspected on a regular basis since 1996. In these cases, the valves were found to be free of any indications of wear or corrosion that challenged the valves' capability of performing their safety functions.

ALTERNATIVE TESTING:

Each of these valves will be partial-stroke exercised every 24 months and disassembled and inspected on a periodic basis consistent with their observed condition. Following disassembly, the subject valve will be partial-flow exercised.

For grouping characteristics/groupings, refer to Engineering Procedure 0ENP-16.7, Administrative Control of the Check Valve Disassembly Program.

Program Remark V-09

SYSTEM:

Service Water (4060)

COMPONENTS:

1-SW-V144 and 1-SW-V148 and 1-SW-V192
2-SW-V144 and 2-SW-V148 and 2-SW-V192

CATEGORY:

C

CLASS:

3

TEST REQUIREMENT:

ISTC-3510 Exercising Test Frequency. Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3560, ISTC-5221, and ISTC-5222.

DISCUSSION:

These normally-closed check valves provide the class boundary between the Service Water, RHR service water, and well water systems. They are simple check valves, with no external means of exercising or for determining obturator position. Due to the absence of isolation valves and vent/drain connections, there is no practical way these valves can be back flow (i.e. closure) tested during any plant mode of operation. These limitations apply to partial stroke exercising as well.

ALTERNATE TESTING:

These valves will be disassembled and inspected on a sampling basis per the requirements and guidance provided in NRC Generic Letter 89-04, Position 2.

For grouping characteristics/groupings, refer to Engineering Procedure 0ENP-16.7, Administrative Control of the Check Valve Disassembly Program.

Program Remark V-10

SYSTEM:

Emergency Diesel Generator Fuel Oil Trans. (5100)
Emergency Diesel Starting Air (5112)

COMPONENTS:

Various

CATEGORY:

B/C

CLASS:

S

DISCUSSION:

The components of the subject systems are considered to be common to both units, with the individual components listed under the Unit 2 testing program.

Program Remark V-11

SYSTEM:

Emergency Diesel Generator Starting Air (5112)

COMPONENTS:

2-DG1-SV-6552-1	2-DG2-SV-6552-2
2-DG3-SV-6552-3	2-DG4-SV-6552-4
2-DG1-SV-6576-1	2-DG2-SV-6576-2
2-DG3-SV-6576-3	2-DG4-SV-6576-4
2-DSA-V141	2-DSA-V142
2-DSA-V145	2-DSA-V146
2-DSA-V149	2-DSA-V150
2-DSA-V153	2-DSA-V154

CATEGORIES:

B & C

CLASS:

S

TEST REQUIREMENT:

The stroke time of all valves shall be measured to at least the nearest second (ISTC-5113(c)).

During operation at power, each check valve shall be exercised or examined in a manner that verifies obturator travel by using the methods in ISTC-5221. Each check valve exercise test shall include open and close tests. (ISTC-3522(a)). Generic Letter 89-04 allows attainment of full accident flow, as confirmed in an appropriate manner, as satisfactory evidence of full-open stroking.

DISCUSSION:

These valves open and close to direct and secure starting air to the emergency diesel generators jet assist headers. Proper operation of the diesel engine does not provide assurance that these valves operate properly; thus, simple observing the operation of the engine is not a definitive method of determining proper valve operation. They have no position indication, nor can shaft position be observed during valve operation; thus, stroke timing or direct observation is not possible.

Program Remark V-11

DISCUSSION (cont.):

Note that these valves are not classified as Class 1, 2, or 3; thus, testing is considered to be augmented and, per the guidance contained in NUREG-1482, Revision 1, code relief is not necessary.

ALTERNATE TESTING:

Each of these solenoid valves will be exercised open and closed in conjunction with periodic emergency diesel generator testing, and each check valve will be confirmed to open. During these tests, satisfactory valve operation will be ascertained by observing changes in jet assist supply air pressures when these valves are cycled. No stroke times or flow rates will be measured.

Program Remark V-12

SYSTEM:

Emergency Diesel Generator Starting Air (5112)

COMPONENTS:

2-DG1-SV-6553-1	2-DG2-SV-6553-2
2-DG3-SV-6553-3	2-DG4-SV-6553-4
2-DG1-SV-6554-1	2-DG2-SV-6554-2
2-DG3-SV-6554-3	2-DG4-SV-6554-4

CATEGORY:

B

CLASS:

S

TEST REQUIREMENT:

The stroke time of all valves shall be measured to at least the nearest second (ISTC-5113(c)).

DISCUSSION:

These solenoid valves open and close to direct and secure starting air to the emergency diesel generators starting air headers. They have no position indication, nor can shaft position be observed during valve operation; thus, stroke timing is not possible. These valves are not classified as Class 1, 2, or 3; thus, testing is considered to be augmented and, per the guidance contained in NUREG-1482, Revision 1, request for relief is not necessary.

ALTERNATE TESTING:

Each of these valves will be exercised open and closed in conjunction with periodic emergency diesel generator testing. During these tests, satisfactory valve operation will be ascertained by the satisfactory starting and operation of the diesel generators. Stroke times will not be measured.

Program Remark V-13

SYSTEM:

Emergency Diesel Starting Air (5112)

COMPONENTS:

2-DSA-V21	2-DSA-V93	2-DSA-V145
2-DSA-V33	2-DSA-V106	2-DSA-V146
2-DSA-V46	2-DSA-V111	2-DSA-V149
2-DSA-V51	2-DSA-V123	2-DSA-V150
2-DSA-V63	2-DSA-V136	2-DSA-V153
2-DSA-V76	2-DSA-V141	2-DSA-V154
2-DSA-V81	2-DSA-V142	

CATEGORY:

C

CLASS:

S

DISCUSSION:

This program remark addresses testing for the emergency diesel generator starting air compressor discharge, jet assist supply, and control air check valves. The emergency diesel generator starting air compressor discharge valves open to charge the starting air tanks and close to prevent back leakage and venting of a tank through the associated compressor when the compressor is not in operation. The emergency diesel generator starting air jet assist supply check valves open to provide a flow path from the air receiver to the jet assist intake of the diesel engine and close to prevent backflow from the jet assist to the air receiver. The emergency diesel generator starting air control air check valves open to provide a flow path from the air volume tank to the control air system for the diesel engine and close to provide pressure boundary integrity to the control air system. These valves are simple check valves, with no external means of exercising the valve disk or for determining disk position. There is also no convenient method of determining disk position via a back leakage test.

Therefore, these valves are disassembled every 24 months. Note that this is in compliance with ISTC-5221(c).

Program Remark V-14

SYSTEM: RHR (2045)

COMPONENTS: 1-E11-F031A thru D 1-E11-F046A thru D
2-E11-F031A thru D 2-E11-F046A thru D

CATEGORY: C

CLASS: 2

DISCUSSION:

The testing methodology for the RHR Pump Discharge Check Valves (E11-F031A through D) and the RHR Minimum Flow Check Valves (E11-F046A through D) in the closed position was demonstrated per performance of 0PT-08.2.2b and 0PT-08.2.2c. These are Category C valves with a safety function in the open and closed position. The methodology of verifying the closure capability of these check valves was demonstration of the ability to establish a differential pressure of greater than or equal to 50 psid across the valves. This differential pressure was determined by the difference in indication between the Pump Discharge Pressure Indicators (e.g. E11-PI-R003B and E11-PI-R003D).

The methodology used in 0PT-08.2.2b and 0PT-08.2.2c for testing the subject check valves (i.e. closed position only) will be changed to comply with Generic Letter 89-04 Staff Position 3, "Back Flow Testing of Check Valves." Per Plant Design Basis Document 17 the subject check valves have a safety function in the closed position to prevent diversion of loop flow in the event that the opposite loop RHR pump is in operation.

NRC Staff Position 3:

Section XI requires that Category C check valves (i.e. valves that are self actuated in response to a system characteristic) performing a safety function in the closed position to prevent reversed flow be tested in a manner that proves that the disk travels to the seat promptly on cessation or reversal of flow. In addition, for Category A/C check valves (i.e. valves that have a specified leak rate limit and are self actuated in response to a system characteristic), seat leakage must be limited to a specific maximum amount in the closed position for fulfillment of their function. Verification that a Category C valve is in the closed position can be done by visual observation, by an electrical signal initiated by a position-indicating device, by observation of appropriate pressure indication in the system, by leak testing, or by other positive means.

Program Remark V-14

Questions and Answers for Position 3 - Question Group 21

Question

With reference to Generic Letter item 3, if a leak test is performed to verify Category C check valve seat position, would any leak rate be acceptable so long as the system meets its minimum requirements to perform its safety function?

Response

When performing a test to verify closure capability of a check valve that does not have a defined seat leakage limit, the achievement of the necessary system flow rate through the intended flow path might be an adequate demonstration of the closure capability of a check valve. For example, when verifying the closure capability of the check valves on the discharge of parallel pumps, achievement of the required safety flow rate from one running pump with the idle pump's discharge check valve providing the barrier for recirculation flow would be considered an acceptable test configuration. In addition, the licensee should evaluate the consequences of the back flow through the check valve. This evaluation should consider the loss of water from that system and connecting systems, the effect that the leakage might have on components and piping downstream of the valve, and any increase in radiological exposure resulting from leakage.

Current Considerations

A plant's safety analysis may include a leakage limit for a particular valve, or only require that the valve closes to inhibit gross leakage. When a valve has a safety-related function to close to prevent diversion of flow between trains of a system, there may be a leakage limit based on the total system requirements. The Code does not specifically require that these valves be Category A. The basis for assigning valves to categories should be available for inspection.

Disposition:

The subject check valves are installed on the discharge of the respective pump (i.e. E11-F046A and E11-F031A are on the discharge of the "A" RHR Pump). These valves provide a barrier for recirculation flow as described in the Generic Letter example above. There is not a specified leakage limit for the subject check valves in the closed direction (i.e. they are classified as ASME Category C only and not A/C). The check valve leakage will remain in the pressure boundary of the RHR system and causes no adverse effects to the immediate area. Achievement of a single pump providing the required safety flow rate of 9000 gpm is considered an acceptable alternative in lieu of measuring the differential pressure. Any back flow through the check valves will simply recirculate back into the RHR system discharge of the opposite non running pump. The RHR pump discharge piping is Class 300 and leakage will result in the piping being pressurized to higher than designed. The differential pressure will continue to be

Program Remark V-14

monitored; however, it will not be used as a bases for check valve closure acceptance criteria. Monitoring of the differential pressure will allow for planned maintenance of the subject check valves. There are no increases in radiological exposure resulting from the leakage past the check valves since the piping remains full of process water. No leakage to the environment results from these check valves leaking past their seats since the water is contained in the RHR system.

Program Remark V-15

SYSTEM:

High Pressure Coolant Injection (HPCI) (D-02523 Sh 2, D-25023, Sh 2)
Reactor Core Isolation Cooling (RCIC) (D-02529 Sh 2, D-25029, Sh 2)

CLASS:

S

COMPONENTS:

1-E41-PSE-D003 and 1-E41-PSE-D004
1-E51-PSE-D001 and 1-E51-PSE-D002
2-E41-PSE-D003 and 2-E41-PSE-D004
2-E51-PSE-D001 and 2-E51-PSE-D002

CATEGORY:

D

DISCUSSION:

These rupture disks retain the integrity of the HPCI and RCIC steam exhaust piping during system operation, and open (destructively) to prevent damage to the steam discharge piping and turbines in the event that the exhaust piping pressure becomes excessive. In each case, there are two disks in series with a vent between, to prevent steam exhaust into the reactor building in the event of pre-mature opening (failure) or leaking of the respective inboard disk. The cavities between the disks are also provided with pressure sensing devices that will automatically shutdown the system in the event of an opening of the inboard rupture disks.

These disks are of the "reverse buckling style" (MFG. Black, Sivalls, and Bryson), where the disk material is concave into the pressure side of the assembly, and an over-pressure condition deflects the "membrane" outward onto a cutter edge that breaks the material causing rapid opening. This design is somewhat unique in that the disk membrane is not scored or materially weakened, as others are, and the concave form eliminates fatigue failure as a realistic failure mode.

The disk membranes are made of corrosion resistant Inconel 600 material. The service of these lines is low pressure clean steam (typically less than 25 psig), and each of the systems runs for an average of approximately 20 hours per year. Considering these mild service conditions, and that the disk membranes are made of corrosion resistant Inconel 600 material, there is a low probability of service-related failure. Based on the design and construction of these units and the minimal service conditions under which they operate, significant degradation is unlikely. It is expected that the most likely result of aging of these units is a reduction of the deflection pressure with an associated reduction in the burst pressure. This is conservative with respect the safety requirement associated with over-pressure protection. In addition, since the outboard disk sees essentially no pressure, service failure of the inboard disk due to aging is not significant with respect to system integrity and personnel safety.

Industry event databases were reviewed to determine failure causes for this type of application. Rupture discs have actuated due to actual over pressure conditions associated with water hammers. These events are not actual disc failures. Also these discs can be exposed to vacuum conditions. When the standard blow out type disc is exposed to a vacuum buckling can lead to failure. The reverse buckling disc is not subject to this failure mode. Rupture discs have also failed after significant service where operating pressures where greater than 70% of the rupture pressure. With the low operating pressures, this failure mode is not applicable to BNP. Failures have been attributed to improper maintenance during periodic replacements. This will not be applicable to BNP unless we are required to implement a periodic replacement program. Cases were also identified where pinhole leaks were identified. This is the only failure mechanism that was found to be applicable to BNP. The BNP configuration allows this failure mechanism to be detected with simple inspections during the routine quarterly surveillance testing. The design would allow water to be detected coming from the orifice between the discs long before gross failure would be expected. Regular inspections will allow BNP to replace a leaking inboard disc on an as needed basis in a planned fashion with no risk to personnel or nuclear safety.

Given the low failure rate and intrinsic reliability of these rupture disks, along with the redundancy (i..e. two disks in series) that provides high reliable system integrity, the effort and cost associated with replacements is not commensurate with any associated improvement in plant safety that may be achieved due to replacement of these rupture disks on a periodic basis.

ALTERNATE TESTING:

Each of these rupture disk assemblies will be subjected to a visual inspection at least once every five (5) years.

7.0 RELIEF REQUESTS

RELIEF REQUEST INDEX

PRR-01	Core Spray and Residual Heat Removal Pump Flow Rate Accuracy
PRR-02	Residual Heat Removal Service Water Pump Flow Rate Accuracy
PRR-03	Core Spray Pump Instrumentation
VRR-01	SRV Stroke Time Measurement
VRR-02	Feedwater Injection Check Valves
VRR-03	Main Steam Isolation Valves
VRR-04	Relaxed Surveillance Frequency for Excess Flow Check Valves
VRR-05	On-Line Disassembly of Service Water Check Valves

10 CFR 50.55a Relief Request Number PRR-01

Proposed Alternative In Accordance with 10 CFR 50.55a(a)(3)(i)

- Alternative Provides Acceptable Level of Quality and Safety -

1. ASME Components Affected

CS: 1-E21-C001A&B and 2-E21-C001A&B

RHR: 1-E11-C002A/B/C/D and 2-E11-C002A/B/C/D

2. Applicable Code Edition and Addenda

ASME OM Code, 2001 Edition through ASME OMb 2003 Addenda.

3. Applicable Code Requirement

Table ISTB-3500-1 requires a total instrument loop accuracy for flow indicators of ± 2% of full scale for IST pump testing.

4. Reason for Request

In accordance with 10 CFR 50.55a(a)(3)(i), Carolina Power & Light Company (CP&L), now doing business as Progress Energy Carolinas, Inc., is requesting a proposed alternative to the Code requirements provided above. The proposed alternative provides an acceptable level of quality and safety.

The CS pump flow indicators do not meet this requirement for the Preservice and Comprehensive pump tests. The RHR pump flow indicators do not meet this requirement for the Preservice, Group A and Comprehensive pump tests.

The CS and RHR pump flow indicators exceed the maximum code allowed loop accuracy. The required accuracy of 2%, as required by Table ISTB-3500-1, is exceeded by the installed flow instrument loop accuracy of 2.016%, as calculated per ISTA-2000. The flow indicators have full scale ranges less than that allowed by the Code. The table below demonstrates that the actual flow measurement accuracy of the instrument loops is better than that allowed by the Code.

System	Reference Value	Code Allowable Range	2% Allowable Accuracy	Actual Instrument Range	2.016% Actual Accuracy
CS	4700 gpm	14,100 gpm	282 gpm	7000 gpm	141.1 gpm
RHR	8000 gpm	24,000 gpm	480 gpm	20,000 gpm	403.2 gpm

Compliance with the Code requirement would require a plant modification while the existing instrument loops provide more accurate flow measurement than required by the Code. The existing instrument loops provide an acceptable level of quality and safety.

5. Proposed Alternative and Basis for Use

CS pump flow measurement for the Preservice and Comprehensive pump tests will be made with the existing instrumentation with an overall loop accuracy of 2.016%. RHR pump flow measurement for the Preservice, Group A, and Comprehensive pump tests will be made with the existing instrumentation with an overall loop accuracy of 2.016%.

The proposed alternative provides an acceptable level of quality and safety since the variance in the actual test results is less than the maximum variance allowed by the Code. Based on the determination that the use of installed instrumentation provides an acceptable level of quality and safety, the proposed alternative should be granted pursuant to 10 CFR 50.55a(a)(3)(i).

6. Duration of the Proposed Alternative

The proposed alternative will be used for the entire fourth 10-year interval for both BSEP units.

7. Precedents

No similar relief requests have been approved for BSEP.

8. References

UFSAR 6.3.2.2.3

UFSAR Table 6-14

DBD-17

10 CFR 50.55a Relief Request Number PRR-02

- Hardship or Unusual Difficulty
Without Compensating Increase in Level of Quality or Safety -

1. ASME Components Affected

1-E11-C001A/B/C/D and 2-E11-C001A/B/C/D

2. Applicable Code Edition and Addenda

ASME OM Code, 2001 Edition through ASME OMb 2003 Addenda.

3. Applicable Code Requirement

Table ISTB-3500-1 requires a total instrument loop accuracy for flow indicators of ± 2% of full scale for IST pump testing.

4. Reason for Request

In accordance with 10 CFR 50.55a(a)(3)(ii), Carolina Power & Light Company (CP&L), now doing business as Progress Energy Carolinas, Inc., is requesting a proposed alternative to the Code requirements provided above. The proposed alternative provides an acceptable level of quality and safety.

The RHRSW pump flow indicators do not meet this requirement for the Preservice, Group A and Comprehensive pump tests. The RHRSW pump flow indicators exceed the maximum Code allowed loop accuracy. The required accuracy of 2%, as required by Table ISTB-3500-1, is exceeded by the installed flow instrument loop accuracy of 2.016%, as calculated per ISTA-2000. The table below shows the actual flow measurement accuracy of the instrument loops relative to that allowed by the Code.

System	Reference Value	Code Allowable Range	2% Allowable Accuracy	Actual Instrument Range	2.016% Actual Accuracy
RHRSW	4000 gpm	12,000 gpm	240 gpm	12,000 gpm	241.9 gpm

Compliance with the Code requirement would require a plant modification while the existing instrument loops provide more accurate flow measurement than required by the Code. The existing instrument loops provide an acceptable level of quality and safety.

5. Proposed Alternative and Basis for Use

CS pump flow measurement for the Preservice and Comprehensive pump tests will be made with the existing instrumentation with an overall loop accuracy of 2.016%. RHR pump flow measurement for the Preservice, Group A, and Comprehensive pump tests will be made with the existing instrumentation with an overall loop accuracy of 2.016%.

The proposed alternative provides an acceptable level of quality and safety since the variance in the actual test results is less than the maximum variance allowed by the Code. Based on the determination that the use of installed instrumentation provides an acceptable level of quality and safety, the proposed alternative should be granted pursuant to 10 CFR 50.55a(a)(3)(ii).

6. Duration of the Proposed Alternative

The proposed alternative will be used for the entire fourth 10-year interval for both BSEP units.

7. Precedents

No similar relief requests have been approved for BSEP.

10 CFR 50.55a Relief Request Number PRR-03

Proposed Alternative In Accordance with 10 CFR 50.55a(a)(3)(i)

- Alternative Provides Acceptable Level of Quality and Safety -

1. ASME Components Affected

1-E21-C001A&B and 2-E21-C001A&B

2. Applicable Code Edition and Addenda

ASME OM Code, 2001 Edition through ASME OMb 2003 Addenda.

3. Applicable Code Requirement

ISTB-3510(b)(1) requires that the full-scale range of each analog instrument shall be not greater than three times the reference value.

4. Reason for Request

In accordance with 10 CFR 50.55a(a)(3)(i), Carolina Power & Light Company (CP&L), now doing business as Progress Energy Carolinas, Inc., is requesting a proposed alternative to the Code requirements provided above. The proposed alternative provides an acceptable level of quality and safety.

ISTB-3510(b)(1) requires that the full-scale range of each analog instrument shall be not greater than three times the reference value. The permanently installed plant instrumentation does not meet the requirements of ISTB-3510(b)(1).

The use of permanently installed plant instruments provides an acceptable level of quality and safety for the following reasons:

1. NUREG-1482, Revision 1 provides guidelines for development and implementation of programs for in-service testing of pumps and valves at nuclear power plants. Section 5.5.1, "Range and Accuracy of Analog Instruments" discusses situations where the range of permanently installed instrumentation is greater than three times the reference value but the accuracy of instrument is more conservative than the OM Code. Under such circumstances, the NUREG indicates the NRC will grant relief when the combination of range and accuracy yields a reading at least equivalent to the reading achieved from the instruments that meet the Code requirements.

2. CS pump differential pressure measurements are determined by subtracting a suction pressure from a discharge pressure obtained at locally installed pressure gauges. The range of the plant installed analog instrumentation is greater than three times the reference values, but the accuracy of the instrumentation is $\pm 1/2$ percent of full scale, which is more conservative than Table ISTB-3500-1. Since the differential pressure is the value of concern, the overall accuracy of the installed test equipment was compared to the requirement for a differential pressure gauge for each case.

   The comparison found that with the higher accuracy requirements, the total possible error from plant installed equipment was significantly less than a comparable code allowable pressure differential pressure gauge. Readability concerns associated with the higher range gauges were also evaluated for impact on overall test results. The evaluation performed concluded that the combination of range and accuracy of the permanently installed plant instrumentation yields readings which are at least equivalent to the readings achieved from instrumentation that meet the Code requirements.

3. The installation and removal of temporary test gauges creates a hardship with respect to site personnel radiation exposure. In addition, the use of temporary test gauges is undesirable due to the inherent risks associated with the breaking and re-assembly of mechanical connections, the additional calibration requirements associated with temporary instrumentation, and the additional man-hours required to install and remove the temporary instrumentation.

5. Proposed Alternative and Basis for Use

Use permanently installed plant instrumentation to perform in-service testing that will yield readings (i.e. combination of the range and accuracy) which are at least equivalent to the readings achieved from instrumentation that meet the OM Code requirements.

6. Duration of the Proposed Alternative

The proposed alternative will be used for the entire fourth 10-year interval for both BSEP units.

7. Precedents

This relief request was previously submitted as Relief Request PRR-04 for the third 10-year IST interval and was approved by NRC letter dated February 9, 1999.

8. References

1. Engineering Evaluation Report 94-0243, "IST Gauge Accuracy Requirements Evaluation."

2. Letter from the NRC to CP&L dated May 16, 1996, "Relief from American Society of Mechanical Engineers Code Requirement for the Inservice Inspection Program Pump Differential Pressure Instrument Range for the Brunswick Steam Electric Plant, Units 1 and 2 (TAC Nos. M93256 and M93257)."

10 CFR 50.55a Relief Request Number VRR-01

Proposed Alternative In Accordance with 10 CFR 50.55a(f)(5)(iii)

- Inservice Testing Impracticality -

1. ASME Components Affected

1-B21-F013A thru 1-B21-F013L

2-B21-F013A thru 2-B21-F013L

2. Applicable Code Edition and Addenda

ASME OM Code, 2001 Edition through ASME OMb 2003 Addenda.

3. Applicable Code Requirement

The stroke time of all valves shall be measured to at least the nearest second (ISTC-5113(c)).

4. Impracticality of Compliance

The functions of these valves are to: (1) open upon receipt of an ADS signal to blow down the reactor vessel (i.e. for the ADS valves only), (2) act as primary system safety valves actuating on high system pressure or by manual actuation from the Control Room, and (3) to close to maintain the primary system pressure boundary and prevent uncontrolled de-pressurization of the reactor (i.e. stuck open relief valve). The function of the solenoid valves is to energize upon receipt of a manual or ADS actuation signal and, in so doing, vent the associated poppet valve assembly causing the associated main valve to open.

There are no remote position indicators related to the position of these valves that signal full-open positioning of the valves. The only positive means of providing valve position indication is by temperature sensors and acoustic monitors downstream of the valves' discharge nozzles, each of which is not sensitive to the extent of opening of the valves. For this reason, measuring the stroke time of these valves has no significance other than the fact that they actuated.

The proposed alternate testing, together with the extensive preventative maintenance requirements for these valves, gives adequate assurance that these valves will perform satisfactorily and reliably. This position and alternate testing conforms with the recommendations presented in NUREG-1482, Revision 1, Paragraph 4.3.4.

5. Burden Caused by Compliance

Compliance with the Code requirement would require a plant modification without a compensating increase in the level of quality or safety

6. Proposed Alternative and Basis for Use

Each of these valves will be exercised open and closed, and proper operation will be ascertained, by observing the response and changes in main steam parameters within a specified time period and observation of the outputs of the downstream temperature and acoustic sensors. Specific stroke times will not be measured, and observations and incidental measurements will not be subjected to evaluation, per ISTC-5114.

7. Duration of the Proposed Alternative

The proposed alternative will be used for the entire fourth 10-year interval for both BSEP units.

8. Precedents

This relief request was previously submitted as Relief Request VRR-02 for the third 10-year IST interval and was approved by NRC letter dated February 9, 1999.

10 CFR 50.55a Relief Request Number VRR-02

Proposed Alternative In Accordance with 10 CFR 50.55a(f)(5)(iii)

- Inservice Testing Impracticality -

1. ASME Components Affected

1-B21-F010A and 1-B21-F010B

2-B21-F010A and 2-B21-F010B

2. Applicable Code Edition and Addenda

ASME OM Code, 2001 Edition through ASME OMb 2003 Addenda.

3. Applicable Code Requirement

ISTC-3510 Exercising Test Frequency. Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3560, ISTC-5221, and ISTC-5222.

ISTC-5224 Corrective Action. If a check valve fails to exhibit the required change of obturator position, it shall be declared inoperable. A retest showing acceptable performance shall be run following any required corrective action before the valve is returned to service.

4. Impracticality of Compliance

These valves open to provide flowpaths for normal feedwater flow as well as HPCI and RCIC flow into the reactor vessel. These are simple check valves, with no external means of exercising nor for determining disk position; thus, the only practical method of exercising these valves to their open position and confirming full open operation per the guidance of NRC Generic Letter 89-04 and NUREG-1482, Revision 1 is with flow from the reactor feedwater system, or from the HPCI or RCIC systems themselves. The HPCI accident flow requirement is 4250 gpm, and RCIC accident flow requirement is 400 gpm. Injecting water directly from either the HPCI or RCIC systems to the reactor is impractical during plant operation due to the possibility of creating an unacceptable reactor vessel water level transient, thermal shock to reactor vessel nozzles, a reactivity excursion, or upsetting reactor water chemistry. Under normal shutdown conditions, steam is unavailable to operate the HPCI and RCIC turbines and there is a potential for over-pressurizing the reactor vessel. Thus, the only practical way of exercising these valves is with reactor feedwater flow during power (i.e. steaming) operation.

During normal plant operation, the feedwater flow is approximately 12,500 gpm per loop. Normal plant operation exceeds 12,500 gpm, which is greater than the maximum accident flow of either HPCI or RCIC through these check valves. The reactor feedwater system arrangement is such that flow indication can be obtained for each of the individual feedwater loops. Thus, flow measurement through each check valve can be made to verify proper opening of the subject check valve.

5. Burden Caused by Compliance

Injecting water directly from either the HPCI or RCIC systems to the reactor is impractical during plant operation due to the possibility of creating an unacceptable reactor vessel water level transient, thermal shock to reactor vessel nozzles, a reactivity excursion, or upsetting reactor water chemistry.

6. Proposed Alternative and Basis for Use

Exercising of these valves open will only be performed to the extent that adequate reactor feedwater flow is available. Full accident flow through each feedwater injection leg will be confirmed by monitoring A-loop and B-loop flow through feedwater flow venturis 1/2-C32-FE-N001A/B during power operation. Feedwater flow is a critical input to the reactor heat balance and is monitored by Operations continuously via the plant process computer. Where maintenance or corrective action has been performed on a valve during a shutdown period, the subject valve will not be flow tested (i.e. opened) prior to being placed in service.

7. Duration of the Proposed Alternative

The proposed alternative will be used for the entire fourth 10-year interval for both BSEP units.

8. Precedents

This relief request was previously submitted as Relief Request VRR-12 for the third 10-year IST interval and was approved by NRC letter dated February 9, 1999.

10 CFR 50.55a Relief Request Number VRR-03

Proposed Alternative In Accordance with 10 CFR 50.55a(a)(3)(i)

- Alternative Provides Acceptable Level of Quality and Safety -

1. ASME Components Affected

1-B21-F022A thru 1-B21-F022D 1-B21-F028A thru 1-B21-F028D

2-B21-F022A thru 2-B21-F022D 2-B21-F028A thru 2-B21-F028D

2. Applicable Code Edition and Addenda

ASME OM Code, 2001 Edition through ASME OMb 2003 Addenda.

3. Applicable Code Requirement

Valves with reference stroke times less than or equal to 10 seconds shall exhibit no more than $\pm$50 percent change in stroke time when compared to the reference value (ISTC-5114(b)).

4. Reason for Request

In accordance with 10 CFR 50.55a(a)(3)(i), Carolina Power & Light Company (CP&L), now doing business as Progress Energy Carolinas, Inc., is requesting a proposed alternative to the Code requirements provided above. The proposed alternative provides an acceptable level of quality and safety.

The stroke times of these valves are adjusted within an acceptable band of 3 to 5 seconds by adjusting orifices associated with hydraulic dashpots attached to each operator. Thus, the stroke time performance of each valve operator is more a function of the dashpot setting than the material condition of the valve.

The acceptable band of +1 second is restrictive enough to ensure that each of the valves remains operable within the established limits of the plant safety analyses.

Elimination of the 50 percent limit on deviation will have no significant impact on the reliability of these valves nor on the health and safety of the public.

5. Proposed Alternative and Basis for Use

The acceptance criteria for closure stroke time for these valves will be 3 to 5 seconds, as established by the Brunswick Steam Electric Plant Technical Specification Surveillance Requirement 3.6.1.3.5. An arbitrary reference value will be established at four seconds, and the acceptance values will be set at three and five seconds. These values are more conservative than the values established per the acceptance criteria of ISTC-5114(b).

6. Duration of the Proposed Alternative

The proposed alternative will be used for the entire fourth 10-year interval for both BSEP units.

7. Precedents

This relief request was previously submitted as Relief Request VRR-13 for the third 10-year IST interval and was approved by NRC letter dated February 9, 1999.

10 CFR 50.55a Relief Request Number VRR-04

Proposed Alternative In Accordance with 10 CFR 50.55a(a)(3)(i)

- Alternative Provides Acceptable Level of Quality and Safety -

1. ASME Components Affected

1/2-B21-F008	1/2-B21-F046A	1/2-B21-F058F	1/2-B32-F041A
1/2-B21-F014A	1/2-B21-F046B	1/2-B21-F058G	1/2-B32-F041B
1/2-B21-F014B	1/2-B21-F047C	1/2-B21-F058H	1/2-B32-F041C
1/2-B21-F014C	1/2-B21-F047D	1/2-B21-F058L	1/2-B32-F041D
1/2-B21-F014D	1/2-B21-F048A	1/2-B21-F058M	1/2-B32-F042A
1/2-B21-F014E	1/2-B21-F048B	1/2-B21-F058N	1/2-B32-F042B
1/2-B21-F014F	1/2-B21-F049C	1/2-B21-F058P	1/2-B32-F042C
1/2-B21-F014G	1/2-B21-F049D	1/2-B21-F058R	1/2-B32-F042D
1/2-B21-F014H	1/2-B21-F050A	1/2-B21-F058S	1/2-B32-F058A
1/2-B21-F014J	1/2-B21-F050B	1/2-B21-F058T	1/2-B32-F058B
1/2-B21-F014K	1/2-B21-F050C	1/2-B21-F058U	1/2-E21-F017A
1/2-B21-F014L	1/2-B21-F050D	1/2-B21-F060	1/2-E21-F017B
1/2-B21-F014M	1/2-B21-F052A	1/2-B21-IV-2149	1/2-E41-F023A
1/2-B21-F014N	1/2-B21-F052B	1/2-B21-IV-2196	1/2-E41-F023B
1/2-B21-F014P	1/2-B21-F052C	1/2-B21-IV-2455	1/2-E41-F023C
1/2-B21-F014R	1/2-B21-F052D	1/2-B21-IV-2456	1/2-E41-F023D
1/2-B21-F014S	1/2-B21-F054	1/2-B32-F005A	1/2-E51-F043A
1/2-B21-F040	1/2-B21-F056	1/2-B32-F005B	1/2-E51-F043B
1/2-B21-F042A	1/2-B21-F058A	1/2-B32-F006A	1/2-E51-F043C
1/2-B21-F042B	1/2-B21-F058B	1/2-B32-F006B	1/2-E51-F043D
1/2-B21-F044A	1/2-B21-F058C	1/2-B32-F039A	
1/2-B21-F044B	1/2-B21-F058D	1/2-B32-F039B	
	1/2-B21-F058E	1/2-B32-F039C	
		1/2-B32-F039D	

2. Applicable Code Edition and Addenda

ASME OM Code, 2001 Edition through ASME OMb 2003 Addenda.

3. Applicable Code Requirement

ISTC-3510 Exercising Test Frequency. Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months …

ISTC-3700 Position Verification Testing

Valves with remote position indicators shall be observed locally at least once every 2 years to verify that valve operation is accurately indicated …

4. Reason for Request

In accordance with 10 CFR 50.55a(a)(3)(i), Carolina Power & Light Company (CP&L), now doing business as Progress Energy Carolinas, Inc., is requesting a proposed alternative to the Code requirements provided above. The proposed alternative provides an acceptable level of quality and safety.

Because of the design of excess flow check valves, verifying their closure indication requires a simulated instrument line break. Based on the burden and costs associated with testing these excess flow check valves, CP&L is proposing to perform the exercise tests and valve position verification tests on a sampling basis (i.e. approximately an equal number of excess flow check valves every 24 months such that each excess flow check valve is tested at least once every 10 years).

CP&L has determined that alternative excess flow check valve testing will provide an acceptable level of quality and safety for the following reasons:

1. Excess flow check valves are a simple and reliable device. The major components are a poppet and spring. The spring holds the poppet open only under static conditions, such that the valve will close upon sufficient differential pressure across the poppet. Functional testing of the valve is accomplished by venting the instrument side of the tube. The resultant increase in flow imposes a differential pressure across the poppet, which compresses the spring and decreases flow through the valve.

2. The Boiling Water Reactor Owners' Group (BWROG) has developed a basis, documented in Topical Report B21-00658-01, "Excess Flow Check Valve Testing Frequency Relaxation," dated November 1988, for reducing the EFCV testing frequency. This report was initially submitted to the NRC as part of a Duane Arnold Energy Center proposed license amendment on April 12, 1999. The BWROG report was supplemented by BWROG letter dated January 6, 2000, "Generic Response to NRC Request For Additional information on Lead Plant Technical Specification Change Request Regarding Excess Flow Check Valve Surveillance Requirements." The report was approved for use by an NRC Safety Evaluation dated March 14, 2000. Additionally, issues raised by the NRC in the March 14, 2000, Safety Evaluation were addressed in the issuance of General Electric Topical Report NEDO-32977-A (i.e. BWROG Topical Report B21-00658-01), "Excess Flow Check Valve Testing Relaxation," dated June 2000.

Technical Specification Task Force (TSTF) Item Number 334 (i.e. TSTF-334) was previously submitted to the NRC and was approved on September 18, 2000.

The BWROG topical report concluded that the change in excess flow check valve test frequency has an insignificant impact on excess flow check valve reliability. The topical report evaluated the reliability of excess flow check valves at various boiling water reactor plants, including BSEP, based on information covering a 10-year period. Industry experience with excess flow check valves indicate that they have very low failure rates. A large portion of the reported test failures at other plants was related to test methodologies and not actual valve failures.

On October 4, 2001, the NRC issued License Amendments 215 and 242 for BSEP Units 1 and 2, respectively, revising the BSEP Technical Specifications to incorporate excess flow check valve testing requirements consistent with TSTF-334.

Excess flow check valves have been extremely reliable throughout the industry. At BSEP, since 1995, no excess flow check valves have failed to close due to actual valve failure.

An orifice is installed on each of the affected instrument lines. The orifice limits leakage to a quantity where the integrity and functional performance of secondary containment and the associated safety systems are maintained. The process fluid loss for a postulated rupture of an instrument line is within the capability of the reactor coolant makeup systems.

The reduced testing associated with the alternative will result in an increase in the availability of the associated instrumentation during plant refueling outages. The reduced testing associated with the alternative will also reduce occupational radiological exposure.

5. Proposed Alternative and Basis for Use

CP&L proposes to test a representative sample of excess flow check valves consisting of an approximately equal number of excess flow check valves every 24 months, such that each excess flow check valve will be tested at least once every 10 years. In addition, CP&L proposes to verify the open position indication at a frequency more often than what the ASME Code requires, but verify the close position indication in conjunction with excess flow check valve exercise tests.

6. Duration of the Proposed Alternative

The proposed alternative will be used for the entire fourth 10-year interval for both BSEP units.

7. Precedents

This relief request was previously submitted as Relief Request VRR-14 for the third 10-year IST interval and was approved by NRC letter dated October 4, 2001.

VRR-04 Relaxed Surveillance Frequency for Excess Flow Check Valves Page 4 of 4

8. References

1. ASME OMb Code-2003 Addenda to ASME OM Code-2001 Code for Operation and Maintenance of Nuclear Power Plants.

2. Updated Final Safety Analysis Report, Section 6.2.4.2.

3. NRC Safety Guide 11 (Regulatory Guide 1.11), Instrument Lines Penetrating Primary Reactor Containment

10 CFR 50.55a Relief Request Number VRR-05

Proposed Alternative In Accordance with 10 CFR 50.55a(a)(3)(i)

- Alternative Provides Acceptable Level of Quality and Safety -

1. ASME Components Affected

1-SW-V683, 1-SW-V684, 1-SW-V685, and 1-SW-V686.

2-SW-V683, 2-SW-V684, 2-SW-V685, and 2)-SW-V686.

2. Applicable Code Edition and Addenda

ASME OM Code, 2001 Edition through ASME OMb 2003 Addenda.

3. Applicable Code Requirement

ISTC-3510 Exercising Test Frequency. Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3560, ISTC-5221, and ISTC-5222.

ISTC-3522 Category C Check Valves. (c) If exercising is not practicable during operation at power and cold shutdowns, it shall be performed during refueling outages.

ISTC-5221 Valve Obturator Movement (c)(3) At least one valve from each group shall be disassembled and examined at each refueling outage; all valves in each group shall be disassembled

4. Reason for Request

In accordance with 10 CFR 50.55a(a)(3)(i), Carolina Power & Light Company (CP&L), now doing business as Progress Energy Carolinas, Inc., is requesting a proposed alternative to the Code requirements provided above. The proposed alternative provides an acceptable level of quality and safety.

These service water check valves open to provide flow paths for cooling water to the emergency diesel generators, and close to ensure service water system train isolation. These are simple check valves, with no external means of exercising the valves or determining obturator position. Due to the absence of isolation valves and vent and drain connections, there is no practical way these check valves can be back-flow (ie, closure) tested. Therefore, the only means of determining valve operability is to observe system parameters. Since there are no position indicating devices on these check valves and no flow instrumentation installed on the emergency diesel generator service water supply headers, verification of full flow through these check valves is not possible.

These valves are located in the diesel generator building adjacent to the machinery to which they supply cooling water. Each valve is oriented horizontally. The valves operate in a saltwater environment and are only operated during the monthly diesel generator testing, quarterly partial stroke testing, and during a system hydraulic test that is performed once every other refueling outage (ie., approximately every 4 years). The design of these check valves is very robust, and the valves are limited operation; therefore, the potential for wear is minimum. Being nozzle check valves, the piston does not oscillate during diesel generator operation, which eliminates the primary contributor to wear in check valves.

ISTC-5221(c) specifies requirements for a sample disassembly and inspection program where the owner determines that it is impractical to otherwise test the check valves. The program involves grouping similar valves, and examining at least one valve in each group during each refueling outage. A different valve of each group is required to be disassembled, inspected, and manually full-stroke exercised at each successive refueling outage, until the entire group has been tested. The identified check valves will be assigned to eight valve groups, each group consisting of a single check valve.

The valves will be disassembled and inspected on a nominal 24-month frequency. This valve grouping and inspection frequency is acceptable, as described in GL 89-04, Position 2, as well as in accordance with the ASME OM Code. Following check valve disassembly and inspection, the check valve will be partial-stroke tested.

The valves have been routinely disassembled and inspected during normal at-power operation as part of the 24-month emergency diesel generator inspection. The time allotted for the diesel generator inspection is approximately 72 hours. The Technical Specification Limiting Condition for Operation (LCO) allows the emergency diesel generator to be out of service for 7 days. The 24-month diesel generator inspection consists of inspections and maintenance of diesel engine, generator, and supporting systems such as lubrication oil, fuel oil, starting air, and cooling water. The approximate time period for the work associated with the check valve inspection is 4 to 5 hours and is usually performed in the first 24 hours of the diesel generator inspection work. Due to the physical arrangement of the valves, both check valves on a diesel generator are inspected at the same time.

Since their installation in 1994/1995, these valves have not exhibited any signs of wear or degradation. However, early signs of degradation would likely not have an impact on valve operability. This would allow ample time to obtain additional replacement parts, if needed. The BSEP maintains one new replacement check valve in stock. In the event that a deficiency was found that warranted inspections of the other check valve groups, the additional inspections would be planned and carried out within the framework of the 12-week rolling schedule used at the BSEP.

Isolation of the affected check valves is accomplished by closing two upstream motor operated butterfly valves (ie,, one valve on each unit's service water supply line to the diesel) and manually closing a single butterfly valve on the common discharge line. The butterfly valves used to isolate the affected check valves are not leak tested, as they are Category B valves and there are no taps available to perform leak testing. Historically, the isolation valves have performed well, with only one instance of one of the isolation valves leaking to a point that inhibited inspecting the check valves. In the event that one of the isolation valves should lose isolation capability during the inspection, it would cause a reduction in service water header pressure on the affected unit. This results in an alarm in the control room and entry into plant procedure OAOP-18, "Nuclear Service Water System Failure." Plant procedure OAOP-18 directs closure of manual upstream isolation valves, isolating one unit's service water header into the diesel generator building. Service water to the remaining three emergency diesel generators is provided from the other unit's nuclear service water header. A flooding event in the out-of-service diesel generator cell will not impact the three remaining diesel generators in the adjoining cells. Level switches in the room sumps would alert the control room of a flooding condition.

The check valve disassembly and inspection does not add time to emergency diesel generator out-of-service time and can be completed well within the allowed Technical Specification LCO time of 7 days. There is no net adverse impact associated with performing the on-line IST of these check valves since the work is performed when the diesel generator is already unavailable (i.e. during on-line diesel generator maintenance and surveillance activities). Overall diesel generator maintenance activities are performed within the restrictions of the Technical Specification LCO, and the risk is managed in accordance with 10 CFR 50.65 requirements. As such, there is no increase in plant risk associated with the check valve disassembly and inspection activity during plant operation versus during refueling. Performing this task during refueling outages will add tasks to the refueling outage and potentially extend the refueling work window.

Based on the above, the proposed alternative to verify the full-stroke capability of the identified check valves on a nominal 24-month frequency, and not during refueling outages, by valve disassembly and inspection, will provide an acceptable level of quality and safety.

5. Proposed Alternative and Basis for Use

The check valves will be full-stroke exercised every 24 months instead of every refueling outage as required by ISTC-5221(c)(3). Also the check valve IST will be performed by valve disassembly and inspection in accordance with the guidelines provided in Position 2 of NRC GL 89-04, "Guidance on Developing Acceptable Inservice Testing Programs." This check valve testing will be performed at a frequency of at least once per operating cycle (i.e. 24 months) in lieu of during each refueling outage.

6. Duration of the Proposed Alternative

The proposed alternative will be used for the entire fourth 10-year interval for both BSEP units.

7. Precedents

This relief request was previously submitted as Relief Request VRR-15 for the third 10-year IST interval and was approved by NRC letter dated April 27, 2005.

8.0 COLD SHUTDOWN JUSTIFICATIONS

Cold Shutdown Justification CSJ-01

SYSTEM:

Nuclear Steam Supply (D-02521, Sh. 1A&B & D-25021, Sh. 1A&B)

COMPONENTS:

1-B21-F022A, 1-B21-F022B, 1-B21-F022C, and 1-B21-F022D
1-B21-F028A, 1-B21-F028B, 1-B21-F028C, and 1-B21-F028D
2-B21-F022A, 2-B21-F022B, 2-B21-F022C, and 2-B21-F022D
2-B21-F028A, 2-B21-F028B, 2-B21-F028C, and 2-B21-F028D

CATEGORY:

A

CLASS:

1

TEST REQUIREMENT:

ISTC-3510 Exercising Test Frequency. Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3560, ISTC-5221, and ISTC-5222.

BASIS:

During normal plant steaming operation, these valves remain open to provide flow paths for steam from the reactor vessel to the main turbine generator. Full closure of one of these valves during steaming operations would result in transients in reactor power, reactor vessel level, and reactor pressure with the potential of creating an unstable condition ultimately resulting in a reactor shutdown or trip. In addition, per NUREG-0626, system transients resulting from full-stroke testing of main steam isolation valves can increase the chances of actuating primary system safety/relief valves.

ALTERNATE TESTING:

Each of these valves will be partial-stroke exercised quarterly and full-stroke exercised during cold shutdowns in accordance with ISTC-3521 (b), subject to the provisions of ISTC-3521(f) and ISTC-3521(g).

Cold Shutdown Justification CSJ-02

SYSTEM:

Instrument Air Supply (D-70006 Sh. 4, D-7006 Sh 4)

COMPONENTS:

1-B21-F029A thru 1-B21-F029D	1-B21-V29A thru 1-B21-V29D
2-B21-F029A thru 2-B21-F029D	2-B21-V29A thru 2-B21-V29D

CATEGORY:

C

CLASS:

S

TEST REQUIREMENT:

ISTC-3510 Exercising Test Frequency. Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3560, ISTC-5221, and ISTC-5222.

BASIS:

These valves open to provide flow paths for supplying instrument air to the outboard main steam isolation valve (MSIV) operating system. They close to isolate the respective air accumulator to ensure an adequate supply of air to maintain the MSIV open, and provide closure air in the event of the loss of air pressure in the common supply headers.

These are simple check valves with no external means of exercising or determining obturator position. Testing these valves in the open and closed directions requires isolation of the uninterruptable instrument air system, removal of the MSIV vault shield plug, and entry into the MSIV vault for valve manipulation and pressure monitoring - impractical during steaming operations due to environmental conditions and disruption of the main steam line radiation monitors. Partial-stroke exercising of these valves has the same impact and potential problems as does full closure, thus it is also not practical during steaming operations.

ALTERNATE TESTING:

Each of these valves will be exercised open and closed during cold shutdown periods in accordance with ISTC-3522(b), subject to the provision of ISTC-3522(f) and ISTC-3522(g).

Cold Shutdown Justification CSJ-03

SYSTEM:

Nuclear Steam Supply (NSSS) (D-02521 Sh 1C, D-25021 Sh 1C)

COMPONENTS:

1-B21-F032A and 1-B21-F032B
2-B21-F032A and 2-B21-F032B

CATEGORY:

A/C

CLASS:

1

TEST REQUIREMENT:

ISTC-3510 Exercising Test Frequency. Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3560, ISTC-5221, and ISTC-5222.

BASIS:

During plant steaming operations, closure of either of these valves would severely disrupt feedwater makeup to the reactor vessel, resulting in reactor water level transients and the potential for a plant shutdown. The effect of partial stroking these valves is essentially the same as full stroking, thus it also is impractical.

ALTERNATE TESTING:

Each of these valves will be exercised closed during cold shutdown periods in accordance with ISTC-3521(c) subject to the provision of ISTC-3521(f) and ISTC-3521(g) and ISTC-3522(b), subject to the provisions of ISTC-3522(d) and ISTC-3522(e).

Cold Shutdown Justification CSJ-04

SYSTEM:

Reactor Recirculation (D-02518, Sh. 1A, D-02548, Sh. 2B, D-25018 Sh. 1A & D-25048, Sh. 2B)

COMPONENTS:

1-B32-F031A and 1-B32-F031B
2-B32-F031A and 2-B32-F031B

CATEGORY:

B

CLASS:

1

TEST REQUIREMENT:

ISTC-3510 Exercising Test Frequency. Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3560, ISTC-5221, and ISTC-5222.

BASIS:

These normally-open motor-operated valves provide recirculation flow paths from the recirculation pumps through the reactor core. Closing either of these valves during plant operation places the recirculation system in a "single loop" configuration. Although single-loop operation is possible, routinely entering into this configuration is undesirable, contrary to the prudent operation of the reactor plant, and is restricted by BSEP Technical Specifications. In addition, operation in a single loop configuration requires a significant power reduction. Partial closure of these valves has the same impacts as does full closure, thus it is also not practical during steaming operations.

ALTERNATE TESTING:

Each of these valves will be full-stroke exercised during cold shutdowns in accordance with ISTC-3521(c), subject to the provisions of ISTC-3521(f) and ISTC-3521(g).

Cold Shutdown Justification CSJ-05 Page 1 of 1

SYSTEM:

Reactor Recirculation (D-02518, Sh. 1A, D-02548, Sh. 2B, D-25018 Sh. 1A & D-25048, Sh. 2B)

COMPONENTS:

1-B32-F032A and 1-B32-F032B
2-B32-F032A and 2-B32-F032B

CATEGORY:

B

CLASS:

1

TEST REQUIREMENT:

ISTC-3510 Exercising Test Frequency. Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3560, ISTC-5221, and ISTC-5222.

BASIS:

During normal plant steaming operations, these valves remain open to eliminate undesirable thermal stresses across the valves. (Reference General Electric SIL No. 104). If during testing, either of these valves were to fail in the closed position, a plant shutdown would be required to correct the problem and reopen the valve(s). Partial closure of these valves has the same impact and potential problems as does full closure; thus, it is also not practical during steaming operations.

ALTERNATE TESTING:

Each of these valves will be full-stroke exercised during cold shutdowns in accordance with ISTC-3521 (c), subject to the provisions ISTC-3521 (f) and ISTC-3521 (g).

Cold Shutdown Justification CSJ-06

SYSTEM:

Reactor Recirculation (D-02518, Sh. 1A, D-02548, Sh. 2B, D-25018 Sh. 1A & D-25048, Sh. 2B)

COMPONENTS:

1-B32-V22 and 1-B32-V30
2-B32-V22 and 2-B32-V30

CATEGORY:

A

CLASS:

2

TEST REQUIREMENT:

ISTC-3510 Exercising Test Frequency. Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3560, ISTC-5221, and ISTC-5222.

BASIS:

During normal plant steaming operations, these valves remain open to provide seal water injection to the recirculation pump seals. If during testing, either of these valves were to fail in the closed position, the associated pump seal could suffer damage leading to premature seal failure and a potential plant shutdown. Partial closure of these valves has the same impact and potential problems as does full closure; thus, it is also not practical during steaming operations.

ALTERNATE TESTING:

Each of these valves will be full-stroke exercised during cold shutdowns in accordance with ISTC-3521(c), subject to the provisions of ISTC-3521(f) and ISTC-3521(g).

Cold Shutdown Justification CSJ-07

SYSTEM:

Residual Heat Removal (D-02525, Sh. 1B & D-25025, Sh. 1B)

COMPONENTS:

1-E11-F008 and 1-E11-F009
2-E11-F008 and 2-E11-F009

CATEGORY:

A

CLASS:

1

TEST REQUIREMENT:

ISTC-3510 Exercising Test Frequency. Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3560, ISTC-5221, and ISTC-5222.

BASIS:

During power operations, these normally-closed valves protect the low pressure rated RHR system piping from the high pressure of the reactor recirculation system. Under normal conditions, these valves could experience a differential pressure in excess of 900 psid. Opening these valves under these conditions could result in valve or actuator damage. In addition, with one of these valves in the open position, pressure isolation protection for the RHR system is limited to a single valve. These valves are electrically interlocked to prevent opening with reactor pressure greater than 137 psig. Partial closure of these valves has the same impact and potential problems as does full closure; thus, it is also not practical during steaming operations.

ALTERNATE TESTING:

Each of these valves will be full-stroke exercised during cold shutdowns in accordance with ISTC-3521(c), subject to the provisions of ISTC-3521(f) and ISTC-3521(g).

Cold Shutdown Justification CSJ-08

SYSTEM:

Residual Heat Removal (D-02525 Sh 1B, D-02526 Sh 2B, D-25025 Sh 1B, D-25026 Sh 2B)

COMPONENTS:

1-E11-F050A and 1-E11-F050B
2-E11-F050A and 2-E11-F050B

CATEGORY:

A/C

CLASS:

1

TEST REQUIREMENT:

ISTC-3510 Exercising Test Frequency. Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3560, ISTC-5221, and ISTC-5222.

BASIS:

During power operations, these normally-closed valves isolate the RHR system piping from the high pressure reactor recirculation system. These are simple check valves with no external means of operation or position indication; thus, the only method of exercising them is to observe system parameters during system operation where flow is directed and measured through each valve. With the reactor plant at normal steaming pressure, the RHR pumps cannot develop sufficient discharge pressure to fully or partial stroke open these valves.

ALTERNATE TESTING:

Each of these valves will be exercised open during cold shutdown periods in accordance with ISTC-3522(c), subject to the provision of ISTC-3522(d) and ISTC-3522(e).

Cold Shutdown Justification CSJ-09

SYSTEM:

High Pressure Coolant Injection (D-02523 Sh 2, D25023, Sh 2
Reactor Core Isolation Cooling (D-02529 Sh 2, D25029, Sh 2

COMPONENTS:

1-E41-F076, 1-E41-F077, 1-E51-F063, and 1-E51-F064
2-E41-F076, 2-E41-F077, 2-E51-F063, and 2-E51-F064

CATEGORY:

C

CLASS:

2

TEST REQUIREMENT:

ISTC-3510 Exercising Test Frequency. Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3560, ISTC-5221, and ISTC-5222.

BASIS:

These simple check valves have no external means of exercising or for determining disc position; thus, the only practical method of exercising is to perform forward and backflow tests using compressed air. During performance of this test, the upstream and downstream motor-operated valves (MOVs) are closed and the associated test/vent connection valves are opened. In this configuration, in the event HPCI or RCIC operation is required, both MOVs must open to ensure system operation. If one of the two valves failed to open, system availability would be questionable. Furthermore, if they did open and the associated system did initiate operation, operator response would be required to isolate the test/vent connections to prevent the release of radioactive steam into the reactor building and ensure containment isolation. Based on the foregoing discussion, testing of these valves satisfies the criteria of NUREG-1482, Revision 1, Paragraph 3.1.1 for test deferral.

Cold Shutdown Justification CSJ-09

ALTERNATE TESTING:

Each of these valves will be exercised open and closed during cold shutdown periods in accordance with ISTC-3522(b), subject to the provision of ISTC-3522(d) and ISTC-3522(e).

Cold Shutdown Justification CSJ-10

SYSTEM:

Service Water (D-02041 Sh. 2, D-20041 Sh. 2)

COMPONENTS:

1-SW-V3 and 1-SW-V4
2-SW-V3 and 2-SW-V4

CATEGORY:

B

CLASS:

S and 3

TEST REQUIREMENT:

ISTC-3510 Exercising Test Frequency. Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3560, ISTC-5221, and ISTC-5222.

BASIS:

These normally-open motor-operated valves provide flow paths for cooling water from the service water system to the main turbine generator auxiliaries. They close in the event of an accident to direct full service water flow to critical safety equipment. Closure of these valves during plant steaming operations secures cooling water to the turbine generator support equipment and will result in over-heating and damage to associated plant equipment.

ALTERNATE TESTING:

Each of these valves will be exercised closed during cold shutdown periods in accordance with ISTC-3521(c), subject to the provision of ISTC-3521(f) and ISTC-3521(g).

Cold Shutdown Justification CSJ-11

SYSTEM:

Reactor Building Closed Cooling Water (D-02538 Sh 1, D-25028 Sh 1)

COMPONENTS:

1-RCC-V28 and 1-RCC-V52
2-RCC-V28 and 2-RCC-V52

CATEGORY:

A

CLASS:

2

TEST REQUIREMENT:

ISTC-3510 Exercising Test Frequency. Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3560, ISTC-5221, and ISTC-5222.

BASIS:

During plant operation, these valves are open to provide flowpaths for supply and return of cooling water to and from reactor recirculation pump components and drywell coolers. Closing either of these valves interrupts cooling water flow and could result in damage to recirculation pump and motor components. If a valve were to fail to re-open, elevated temperatures in the drywell and of recirculation pump components would require an expedited plant shutdown and cooldown to preclude equipment damage.

ALTERNATE TESTING:

Each of these valves will be full-stroke exercised during cold shutdowns in accordance with ISTC-3521(c) subject to the provisions of ISTC-3521(f) and ISTC-3521(g).

Cold Shutdown Justification CSJ-12

SYSTEM:

Noninterruptible Air (D-70077 Sh 3A, D-7077 Sh 3A)

COMPONENTS:

1(2)-RNA-SV-5262
1(2)-RNA-SV-5261

CATEGORY:

A

CLASS:

2

TEST REQUIREMENT:

ISTC-3510 Exercising Test Frequency. Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3560, ISTC-5221, and ISTC-5222.

BASIS:

Instrument air supplies various components in the primary containment which are essential for normal operation. Loss of instrument air during normal operation could result in a reactor scram. Valve design precludes partial stroke exercising.

ALTERNATE TESTING:

Each of these valves will be full-stroke exercised during cold shutdowns in accordance with ISTC-3521(c) subject to the provisions of ISTC-3521(f) and ISTC-3521(g).

Cold Shutdown Justification CSJ-13

SYSTEM:

Nuclear Steam Supply (D-02521, Sh. 1A&B, D-25021, Sh. 1A&B)

COMPONENTS:

1-B21-F022A thru 1-B21-F022D and 1-B21-F028A thru 1-B21-F028D
2-B21-F022A thru 2-B21-F022D and 2-B21-F028A thru 2-B21-F028D

CATEGORY:

A

CLASS:

1

TEST REQUIREMENT:

ISTC-3560 Fail-Safe Valves. Valves with fail-safe actuators shall be tested by observing the operation of the actuator upon loss of actuating power in accordance with the frequency of ISTC-3510 (nominally every 3 months)

BASIS:

As described in Cold Shutdown Justification CSJ-01, these valves can only be exercised (i.e. full-stroke) during cold shutdown periods. During normal valve stroking, the fail-safe feature related to loss of electric power is verified; however, the fail-safe performance of the valves on loss of operating air pressure is not typically tested. To do so requires realignment of the Main Steam Isolation Valve operating air supply system and, in the case of the B21-F022 valves, access to the drywell. The extent of the effort needed to perform this testing is beyond the normal scope of activities performed during short outages and would consume plant resources needed elsewhere for higher priority activities.

ALTERNATE TESTING:

During cold shutdown periods, the electrical fail-safe feature of these valves will be observed in conjunction with testing performed per CSJ-01, and at each refuel outage each valve will be observed to operate properly in the fail-safe mode upon loss of the operating air supply pressure.

Cold Shutdown Justification CSJ-14

SYSTEM:

Nuclear Steam Supply (D-02521, Sh. 1B & D-25021, Sh. 1B)

COMPONENTS:

1-MS-F038A/B/C/D, 1-MVD-F021
2-MS-F038A/B/C/D, 2-MVD-F021

CATEGORY:

A

CLASS:

2

TEST REQUIREMENT:

ISTC-3510 Exercising Test Frequency. Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3560, ISTC-5221, and ISTC-5222.

BASIS:

During normal plant steaming operation, these valves are closed. There is no additional isolation valve to limit flow through the valve during the stroke time. Stroking of these valves during steaming operations can result in damage to the seating surfaces as a result of the differential pressure across the valves at normal operating pressure (i.e. main steam line pressure to condenser). These valves are only to be used following an accident with the Main Steam Isolation Valves closed and with very little differential pressure across them. These valves are considered augmented and are not subject to OM Code requirements. Commitments made to the NRC as part of the Alternate Source Term project was testing of these valves on a refueling frequency.

ALTERNATE TESTING:

Each of these valves will be full-stroke exercised during cold shutdowns in accordance with ISTC-3521(c), subject to the provisions of ISTC-3521(f) and ISTC-3521(g).

Cold Shutdown Justification CSJ-15

<u>SYSTEM:</u>

Reactor Water Cleanup (D-25027 Sh. 1B and D-2527 Sh. 1B)

<u>COMPONENTS</u>:

1(2)-G31-F001
1(2)-G31-F004
1(2)-G31-F042

<u>CATEGORY</u>:

A

<u>CLASS</u>:

1

<u>TEST REQUIREMENT:</u>

ISTC-3510 Exercising Test Frequency. Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3560, ISTC-5221, and ISTC-5222.

<u>BASIS</u>:

These valves are primary containment isolation valves and cannot be closed during plant operation without removing the Reactor Water Cleanup (RWCU) system from service.

The RWCU system is in service during normal plant operations to maintain high reactor water purity by the removal of solid and dissolved impurities and corrosion products from reactor coolant. This system ensures that reactor coolant PH, chlorides, conductivity, sulfates, and activity are maintained within specified limits. These limits are established to prevent the likelihood of exceeding 10 CFR 50.67 release limits, and also to maintain compliance with the guidelines established by the BWR Owners Group and GE and AREVA Fuel Warranties. Additionally, water purity is maintained to minimize the occurrence of stress corrosion cracking of the reactor vessel and associated stainless steel piping systems.

Removing the RWCU system from service contributes to accelerated degradation of RWCU circulating pump seals due to stopping and starting the pumps under reactor pressure. This has contributed to an increased frequency of RWCU pump seal failures. Replacing pump seals results in Brunswick personnel exposure ranging from 0.5 to 1.2 REM per occurrence.

Quarterly testing requirements for these valves contribute to accelerated equipment failure and increased personnel radiation exposure without a commensurate increase in reactor water quality or plant safety.

ALTERNATE TESTING:

Each of these valves will be full-stroke exercised during cold shutdowns in accordance with ISTC-3521(c), subject to the provisions of ISTC-3521(f) and ISTC-3521(g).

9.0 REFUELING OUTAGE JUSTIFICATIONS

Refueling Outage Justification RFJ-01

SYSTEM:

Nuclear Steam Supply (D-02521 Sh. 1C, D-25021Sh. 1C)

COMPONENTS:

1-B21-F010A and 1-B21-F010B
2-B21-F010A and 2-B21-F010B

CATEGORY:

AC

CLASS:

1

TEST REQUIREMENT:

ISTC-3510 Exercising Test Frequency. Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3560, ISTC-5221, and ISTC-5222.

BASIS:

These valves open to provide flow paths for HPCI and RCIC flow into the reactor vessel as well as normal reactor feedwater makeup. They close for reactor vessel and containment isolation. These are simple check valves, with no positive indication of disk position; thus, the only means of determining closure of these valves is by performing a back flow or leak test. Such a test requires drywell and steam tunnel entry plus extensive preparations of the feedwater system including draining approximately 2000 gallons of water. Furthermore, testing of 1/2-B21-F010B requires shutdown of the reactor water cleanup system, which is undesirable during operations or cold shutdown. Performance of these closure tests is impossible during plant operation, as it would require securing one-half of the feedwater makeup flow to the reactor vessel, and is impractical at cold shutdown due to the unreasonable burden it would place on the plant staff.

ALTERNATE TESTING:

Each of these valves will be closure verified during refueling outages in accordance with ISTC-3522(c), subject to the provision of ISTC-3522(f). This is consistent with the NRC position stated in NUREG-1482, Revision 1, Section 3.1.1.3.

Refueling Outage Justification RFJ-02

<u>SYSTEM</u>:

Nuclear Steam Supply (D-02521 Sh. 1A&B, D-25021 Sh. 1A&B)

<u>COMPONENTS</u>:

1-B21-F013A thru 1-B21-F013L
2-B21-F013A thru 2-B21-F013L

<u>CATEGORY:</u>

BC

<u>CLASS:</u>

1

<u>TEST REQUIREMENT</u>:

ISTC-3510 Exercising Test Frequency. Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3560, ISTC-5221, and ISTC-5222.

<u>BASIS:</u>

The functions of these valves are to: (1) open upon receipt of an ADS signal to blow down the reactor vessel (for the ADS valves only), (2) act as primary system safety valves actuating on high system pressure or by manual actuation from the Control Room, and (3) to close to maintain the primary system pressure boundary and prevent uncontrolled de-pressurization of the reactor (i.e. stuck open relief valve). The function of the associated solenoid valves is to energize upon receipt of a manual or ADS actuation signal and, in so doing, vent the associated poppet valve assembly causing the main valve to open.

Testing of SRVs is performed to satisfy Technical Specifications Surveillance Requirements (SRs) and the ASME OM Code-2001, "Code for Operation and Maintenance of Nuclear Power Plants." Certain tests are performed with the SRVs installed (in situ), while others are performed as "bench tests" after the valve is removed and transported to a maintenance and testing facility.

BASIS (cont):

Exercising the main disk of the SRV after reinstallation can only be performed during reactor startup with primary system pressure greater than 175 psig. Although this plant evolution at low reactor power level provides sufficient steam pressure to actuate the main disk, it is also being conducted at a time of elevated potential for plant transients to occur. Each relief valve actuation transmits hydrodynamic loading to the torus, and quarterly testing of each of these valves could result in exceeding the torus design basis. Also, failure of any relief valve to close would cause an uncontrolled rapid de-pressurization of the primary system and plant shutdown.

Several aspects of SRV design and operation can contribute to valve leakage. These include test pressure, pilot valve disc and rod configuration, and system and valve cleanliness. Actuation of the SRVs after laboratory testing by any means allows these contributors to impact the ability of the valve to re-close completely. Reduction of in situ valve testing that disturbs the pilot disc/seat interface is expected to have a positive impact in reducing SRV leakage and subsequent plant challenges.

Additionally, challenges to components and operation are presented by leaking SRVs as follows:
1. Leakage during operation may cause the valve to inadvertently actuate, possibly resulting in an unplanned plant shutdown, with its attendant challenges to plant safety systems and components.
2. Leaking SRVs create operational problems associated with the suppression pool. SRV leakage increases both pool temperature and level, requiring more frequent use of the suppression pool cooling mode of the Residual Heat Removal (RHR) system.
3. Plant efficiency is impacted because the transfer of heat to the suppression pool is a source of thermal heat loss from the power generation steam cycle, thereby reducing electrical generating capacity.
4. SRV leakage results in radiological challenges since radioactive nuclides contained in the steam can become a potential source for personnel contamination.

Reducing challenges to the SRVs is a recommendation of NUREG-0737, "TMI Action Plan Requirements" item II.K.3 (16), "Reduction of Challenges and Failures of Relief Valves". This recommendation is based on a stuck open SRV being a possible cause of a Loss of Coolant Accident and recommends reducing the number of challenges to safety/relief valves. Testing during cold shutdown contradicts the recommendation.

ALTERNATE TESTING:

Each of these valves will be exercised open and verified to close following refueling outages in accordance with ISTC-3521(e), subject to the provision of ISTC-3521(h).

Refueling Outage Justification RFJ-03

SYSTEM:

Instrument Air Supply (D-70007 Sh. 1, D-070007 Sh 1)

COMPONENTS:

1-B21-F024A thru 1-B21-F024D 1-B21-V28A thru 1-B21-V28D
2-B21-F024A thru 2-B21-F024D 2-B21-V28A thru 2-B21-V28D

CATEGORY:

C

CLASS:

S

TEST REQUIREMENT:

ISTC-3510 Exercising Test Frequency. Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3560, ISTC-5221, and ISTC-5222.

BASIS:

These valves open to provide flow paths for supplying instrument air to the inboard main steam isolation valve (MSIV) operating system. They close to isolate the respective air accumulator to ensure an adequate supply of air to maintain the MSIV open, and provide closure air in the event of the loss of air pressure in the common supply headers.

These are simple check valves, with no external means of exercising or determining obturator position. Testing these valves in the open and closed directions requires isolation of the uninterruptable instrument air system and entry into the drywell for valve manipulation and pressure monitoring. During cold shutdown periods, entry into the drywell would require de-inerting the drywell. Partial-stroke exercising of these valves has the same impact and potential problems as does full closure; thus, it is also not practical during steaming operations.

ALTERNATE TESTING:

Each of these valves will be closure verified during refueling outages in accordance with ISTC-3522(c), subject to the provision of ISTC-3522(f). This is consistent with the NRC position stated in NUREG-1482, Revision 1, Section 3.1.1.3.

Refueling Outage Justification RFJ-04

SYSTEM:

Instrument Air Supply (D-70007 Sh. 1, D-07007 Sh 1)

COMPONENTS:

1-B21-F036A thru 1-B21-F036L   1-B21-V27A thru 1-B21-V27L
2-B21-F036A thru 2-B21-F036L   2-B21-V27A thru 2-B21-V27L

CATEGORY:

C

CLASS:

S

TEST REQUIREMENT:

ISTC-3510 Exercising Test Frequency. Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3560, ISTC-5221, and ISTC-5222.

BASIS:

These valves open to provide flowpaths for supplying instrument air to the automatic de-pressurization system (ADS) valves operating system. They close to isolate the respective air accumulator to ensure an adequate supply of air to provide closure air in the event of the loss of air pressure in the common supply headers.

These are simple check valves, with no external means of exercising or determining obturator position. Testing these valves in the open and closed directions requires isolation of the uninterruptable instrument air system and entry into the drywell for valve manipulation and pressure monitoring. During cold shutdown periods entry into the drywell would require de-inerting the drywell. Partial-stroke exercising of these valves has the same impact and potential problems as does full closure; thus, it is also not practical during steaming operations.

ALTERNATE TESTING:

Each of these valves will be exercised and verified to open and close during refueling outages in accordance with ISTC-3522(c), subject to the provision of ISTC-3522(f). This is consistent with the NRC position stated in NUREG-1482, Revision 1, Section 3.1.1.3.

Refueling Outage Justification RFJ-05

SYSTEM:

Nuclear Steam Supply System (D-02521 Sh. 1A, D-25021 Sh. 1A)

COMPONENTS:

1-B21-F037A thru 1-B21-F037L
2-B21-F037A thru 2-B21-F037L

CATEGORY:

C

CLASS:

2

TEST REQUIREMENT:

ISTC-3510 Exercising Test Frequency. Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3560, ISTC-5221, and ISTC-5222.

BASIS:

These valves close to prevent venting steam into the drywell (i.e. bypassing the torus) in the event that the associated ADS valve opens. They open to prevent drawing a vacuum in the ADS tailpipes that could result in partial filling of the tailpipe with water from the torus. Excess quantities of water in a tailpipe could result in unacceptable forces generated on the piping and torus during blowdown.

These are exposed, spring-loaded check valves located in the drywell. These valves are typically exercised manually. Testing these valves requires plant shutdown and entry into the drywell. During cold shutdown periods, entry into the drywell would require de-inerting the drywell. Partial-stroke exercising of these valves has the same impact and potential problems as does full closure; thus, it is also not practical during steaming or cold shutdown conditions.

ALTERNATE TESTING:

Each of these valves will be exercised open and closed during refueling outages in accordance with ISTC-3522(c), subject to the provision of ISTC-3522(f). This is consistent with the NRC position stated in NUREG-1482, Revision 1, Section 3.1.1.3.

Refueling Outage Justification RFJ-06

SYSTEM:

Traversing Incore Probe (TIP) (F-70081)

COMPONENTS:

1-C51-TIP-CHV
2-C51-TIP-CHV

CATEGORY:

AC

CLASS:

2

TEST REQUIREMENT:

ISTC-3510 Exercising Test Frequency. Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3560, ISTC-5221, and ISTC-5222.

BASIS:

These are simple check valves with no external means of exercising, nor for determining disk position; thus, the only practical method of verifying closure is by performing a leak test. The method of leak testing this valve requires separation of the nitrogen supply tubing inside containment and, thus, is not practical during plant operation.

During cold shutdown periods, entry into the drywell would require de-inerting the drywell. Partial-stroke exercising of these valves has the same impact and potential problems as does full closure; thus, it is also not practical during steaming operations.

ALTERNATE TESTING:

Each of these valves will be exercised open and closed during refueling outages in accordance with ISTC-3522(c), subject to the provision of ISTC-3522(f). This is consistent with the NRC position stated in NUREG-1482, Revision 1, Section 3.1.1.3.

Refueling Outage Justification RFJ-07

SYSTEM:

Reactor Coolant Recirculation (D-02518 Sh. 1A, D-2548 sh. 2B, D-25018 Sh. 1A, D-25048 Sht. 2B)

COMPONENTS:

1-B32-V24 and 1-B32-V32
2-B32-V24 and 2-B32-V32

CATEGORY:

AC

CLASS:

2

TEST REQUIREMENT:

ISTC-3510 Exercising Test Frequency. Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3560, ISTC-5221, and ISTC-5222.

BASIS:

These check valves open to provide flow paths for seal water flow to the recirculation pumps and close for containment isolation. They are simple check valves, with no positive indication of disk position; thus, the only means of determining closure of these valves is by performing a back flow or leak test. Such a test requires drywell entry plus extensive system re-alignment. Furthermore, testing requires shutdown of the respective recirculation pump, which is impossible during operations and undesirable during cold shutdown periods.

ALTERNATE TESTING:

Each of these valves will be closure verified during refueling outages in accordance with ISTC-3522(c), subject to the provision of ISTC-3522(f). This is consistent with the NRC position stated in NUREG-1482, Revision 1, Section 3.1.1.3.

Refueling Outage Justification RFJ-08

SYSTEM:

Core Spray (D-02524 Sh. 1&2, D-25024 Sh. 1&2)

COMPONENTS:

1-E21-F006A and 1-E21-F006B 2-E21-F006A and 2-E21-F006B

CATEGORY:

AC

CLASS:

1

TEST REQUIREMENT:

ISTC-3510 Exercising Test Frequency. Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3560, ISTC-5221, and ISTC-5222.

BASIS:

These check valves open to provide flow paths for core spray to the reactor vessel. They close to isolate the low pressure-rated core spray system components from the reactor vessel. These are simple check valves, with no external means of exercising nor for determining disk position; thus, the only means of determining closure of these valves is by performing a back flow or leak test. Such a test requires drywell entry plus extensive valve lineup alterations.

In order to full-stroke open these valves, the core spray pumps must be operated at rated flow discharging directly into the reactor vessel. This cannot be done during normal operation because the core spray pumps are not capable of overcoming reactor pressure. Core spray injection during cold shutdown with the reactor head in place is impractical due to the difficulty of controlling reactor vessel water level. Core spray injection at rated flow would result in a vessel level increase of approximately 30 inches per minute. With injection going into the vessel shroud region, the high rate of change in water level, and a possible difference in level between the shroud region and the main vessel, it would be possible to inadvertently flood the main steam lines or over-pressurize the reactor vessel if this test were performed at cold shutdown with the head in place. In addition, the extensive scope of preparations required to inject water via the core spray pumps would result in a significant burden on the plant operating staff.

Refueling Outage Justification RFJ-08 Page 2 of 2

ALTERNATE TESTING:

Each of these valves will be exercised open and closed during refueling outages in accordance with ISTC-3522(c), subject to the provision of ISTC-3522(f). This is consistent with the NRC position stated in NUREG-1482, Revision 1, Section 3.1.1.3.

Refueling Outage Justification RFJ-09

SYSTEM:

Standby Liquid Control (D-02547, D-25047)

COMPONENTS:

1-C41-F006 and 1- C41-F007
2-C41-F006 and 2- C41-F007

CATEGORY:

AC

CLASS:

1

TEST REQUIREMENT:

ISTC-3510 Exercising Test Frequency. Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3560, ISTC-5221, and ISTC-5222.

BASIS:

These check valves provide flow paths for borated water from the standby liquid control injection (SLC) header to the reactor vessel, and close for containment isolation. These are simple check valves, with no positive external means of determining disk position; thus, the only means of verifying closure of these valves is by performing a leak test. Such a test requires extensive preparations, and is impractical during plant operations or at cold shutdown due to the required plant conditions. Exercising these valves to the closed position requires the reactor vessel to be flooded for refueling and connection of hoses from the demineralized water system.

The only practical means of exercising these valves to the open position requires connection of a hose and flow meter from the demineralized water system and injecting into the vessel. This cannot be done during normal operation or cold shutdown since the SLC system must be flushed to prevent contamination of the reactor coolant with sodium pentaborate.

ALTERNATE TESTING:

Each of these valves will be full-stroke exercised to the open and close positions during every refueling outage using 0PT-20.14, in accordance with ISTC-3522(c), subject to the provision of ISTC-3522(f). This is consistent with the NRC position as set forth in NUREG-1482, Revision 1, Paragraph 4.1.6.

Refueling Outage Justification RFJ-10

SYSTEM:

Residual Heat Removal (D-02525, Sh. 1B, D-02526, Sh. 2B & D-25025, Sh. 1B, D-25026, Sh. 2B)

COMPONENTS:

1-E11-F050A and 1-E11-F050B
2-E11-F050A and 2-E11-F050B

CATEGORY:

A/C

CLASS:

1

TEST REQUIREMENT:

ISTC-3510 Exercising Test Frequency. Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3560, ISTC-5221, and ISTC-5222.

BASIS:

During power operation, these normally-closed valves isolate the RHR system piping from the high pressure reactor recirculation system. These are simple check valves, with no external means of operation or position indication; thus, the only method of exercising them is to observe system parameters during system operation.

The normal means of verifying closure of these valves requires entry into the drywell. Such an entry is not practical during plant operation or under inerted containment conditions due to personnel safety concerns. Verification of closure by back leakage methods at operating pressure would expose test personnel to a possible release of high pressure radioactive steam.

ALTERNATE TESTING:

Each of these valves will be verified closed during refueling outages in accordance with ISTC-3522(c), subject to the provisions of ISTC-3522(f). This is with the NRC position provided in NUREG-1482, Revision 1, Paragraph 3.1.1.3.

Refueling Outage Justification RFJ-11

SYSTEM:

High Pressure Coolant Injection (HPCI) (D-02523, Sh. 1, D-25023, Sh. 1)

COMPONENTS:

1-E41-V159
2-E41-V159

CATEGORY:

C

CLASS:

1

TEST REQUIREMENT:

ISTC-3510 Exercising Test Frequency. Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3560, ISTC-5221, and ISTC-5222.

BASIS:

These valves open for HPCI System injection into the main feedwater headers. There are two possible methods of exercising these valves. The HPCI pump can be aligned to pump full accident flow directly into the reactor coolant system. Under steaming conditions at power, this would result in severe thermal stresses on the reactor vessel feedwater nozzles and possibly unacceptable transients in reactor vessel water level. During cold shutdown periods, there is insufficient steam pressure for pump operation. An alternate means of exercising utilizes the manual lever arm installed on each valve. Manual exercising requires access to the MSIV pit. During power operation, radiation levels prohibit access to the MSIV pit; during cold shutdown periods, the level of effort and resources required to remove the pit shield plug to provide access are prohibitive.

ALTERNATE TESTING:

Each of these valves will be exercised manually during each refueling outage or disassembled as permitted per ISTC-3522(c), subject to the provision of ISTC-3522(f).

Refueling Outage Justification RFJ-12

SYSTEM:

Instrument Air Supply (D-70007 Sh. 1, D-07007)

COMPONENTS:

1-RNA-V313, 1-RNA-V314, 1-RNA-V315, 1-RNA-V316
2-RNA-V313, 2-RNA-V314, 2-RNA-V315, 2-RNA-V316

CATEGORY:

C

CLASS:

2/N

TEST REQUIREMENT:

ISTC-3510 Exercising Test Frequency. Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3560, ISTC-5221, and ISTC-5222.

BASIS:

These valves open to provide flow paths for supplying instrument air and backup nitrogen to the automatic de-pressurization system (ADS) valves operating system. The RNA-V315 and RNA-V316 close to isolate the respective supply headers, and provide independent supply paths.

These are simple check valves, with no external means of exercising or determining obturator position. Testing these valves in the open direction requires isolation of the individual headers and entry into the drywell for valve manipulation and pressure monitoring. Furthermore, testing valves RNA-V315 and RNA-V316 to the closed position also requires entry into the drywell for valve manipulation and pressure monitoring. During cold shutdown periods, entry into the drywell would require de-inerting. Partial-stroke exercising of these valves requires the same plant conditions and access requirements as does full stroke exercising; thus, partial stroke exercising is also not practical during steaming operations or cold shutdown periods.

Refueling Outage Justification RFJ-12

ALTERNATE TESTING:

RNA-V315 and RNA-V316 will be exercised and verified to open and close, and RNA-V313 and RNA-V314 will be exercised and verified to open, during refueling outages in accordance with ISTC-3522(c), subject to the provision of ISTC-3522(f). This is consistent with the NRC position stated in NUREG-1482, Revision 1, Paragraph 3.1.1.3.

Refueling Outage Justification RFJ-13

SYSTEM:

Instrument Air Supply (D-07007, D-70007)

COMPONENTS:

1-RNA-V350 and 1-RNA-V351
2-RNA-V350 and 2-RNA-V351

CATEGORY:

AC

CLASS:

2

TEST REQUIREMENT:

ISTC-3510 Exercising Test Frequency. Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3560, ISTC-5221, and ISTC-5222.

BASIS:

These valves open to provide flow paths for supplying instrument air to various components inside the drywell and close for containment isolation.

These are simple check valves with no external means of exercising or determining obturator position. Testing these valves in the open direction requires entry into the drywell for valve manipulation and pressure monitoring. Testing in the closed direction also requires entry into the drywell and performance of a leak rate test. Partial-stroke exercising of these valves requires the same plant conditions and access requirements as does full stroke exercising; thus, partial stroke exercising is also not practical during steaming operations or cold shutdown periods.

ALTERNATE TESTING:

Each of these valves will be exercised, and verified to open and close, during refueling outages in accordance with ISTC-3522(c), subject to the provision of ISTC-3522(f). This is consistent with the NRC position stated in NUREG-1482, Revision 1, Paragraph 3.1.1.3.

Refueling Outage Justification RFJ-14

SYSTEM:

Core Spray (D-25024 Sht. 2, D-2524 Sht. 2)

COMPONENTS:

1-E21-F015A and 1- E21-F015B
2-E21-F015A and 2- E21-F015B

CATEGORY:

B

CLASS:

2

TEST REQUIREMENT:

ISTC-3510 Exercising Test Frequency. Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3560, ISTC-5221, and ISTC-5222.

BASIS:

During PT-07.2.4a(b), Core Spray System Operability Test, , the E21-F015 Full Flow Test Bypass Valve is stroked and the low pressure alarm has been observed. Review of computer data during testing indicates that the pressure drops low enough to allow voiding in the upper elevations of Core Spray injection piping. This could cause significant water hammer if the pumps were started prior to refilling. Review of computer data for torus water level during the test, indicates that the torus water level increases during the time frame the F015 valve is stroked. This further validates that water is draining from the line and voiding is occurring in the upper elevation Core Spray piping.

PT-07.2.4a(b) is performed quarterly. The F015 valve is the last isolation valve prior to the Core Spray test return line entering the Torus and terminating under the water level. This valve is listed in TRM Appendix D, Table 3.6.1.3-2, Power Operated and Automatic PCIVs. SR 3.6.1.3.4 is specified. Per the TRM and SR 3.6.1.3.4, the allowable isolation time and test frequency is specified in accordance with the IST Program.

BASIS (cont):

The F015 full flow test bypass valve is only opened during PT-07.2.4a(b) for stroke testing (close) and for pump operability testing. The closing stroke time test is performed under static conditions. For pump operability testing the F015 is throttled open to achieve 4700 gpm. It is never fully opened during pump operation. Since this line does not have flow limiting orifices, opening the F015 full open could cause pump cavitation. The F015 is closed against full flow of 4700 gpm during the operability test which conservatively demonstrates that it can close as required to perform its PCIV function.

Partial voiding of Core Spray piping on a quarterly basis to perform stroke time testing of the F015 introduces the possibility of water hammer damage if a spurious or inadvertent Core Spray pump start were to occur. Requiring that the Core Spray pump motor be racked out during this portion of the procedure would be time consuming, reduces system availability, introduces additional steps and possibility of human error. Since closing the F015 valve against 4700 gpm flow adequately demonstrates the closing capability of the valve on a quarterly basis, stroke timing of this valve should be revised to be required only during refueling outages.

ALTERNATE TESTING:

Each of these valves will be stroked during refueling outages when the system is removed from normal service and the likelihood of an inadvertent pump start is minimized. This meets the criteria for refueling frequency in ISTC-3521(e).

Refueling Outage Justification RFJ-15

SYSTEM:

Control Rod Drive (D-02517 Sh 2A, D-25017 Sh 2A)

COMPONENTS:

1-C11-115 (137 Valves)
2-C12-115 (137 Valves)

CATEGORY:

C

CLASS:

2

TEST REQUIREMENT:

ISTC-3510 Exercising Test Frequency. Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3560, ISTC-5221, and ISTC-5222.

BASIS:

These valves open to provide flow paths from the Control Rod Drive (CRD) pumps to the accumulators and drive water headers. They close to retain accumulator pressure in the event that the CRD pumps are shut down. They are simple check valves, with no external means of exercising or verifying obturator position, and can only be tested by de-pressurizing the charging water headers and performing a pressure decay test of the accumulators. During power operation, securing CRD flow will result in loss of control rod drive cooling water and probable seal damage. Additionally, this test should not be performed during cold shutdown periods with the recirculation pumps operating. The CRD pumps supply seal water to the recirculation pumps and securing seal water will require securing recirculation pumps. In addition, it is desirable to maintain CRD flow during cold shutdown periods to ensure flushing of the CRDs and prevent the accumulation of deposits of foreign matter in the drive mechanisms.

ALTERNATE TESTING:

Each of these valves will be exercised open and closed during refueling outages in accordance with ISTC-3522(c), subject to the provision of ISTC-3522(f). This is consistent with the NRC position stated in Generic Letter 89-04, Position 7.

Refueling Outage Justification RFJ-16

SYSTEM:

Service Water (D-02041 Sh. 2, D-20041 Sh. 2)

COMPONENTS:

1-SW-V36 and 1-SW-V37
2-SW-V36 and 2-SW-V37

CATEGORY:

B

CLASS:

3 and S

TEST REQUIREMENT:

ISTC-3510 Exercising Test Frequency. Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3560, ISTC-5221, and ISTC-5222.

BASIS:

These normally-open motor-operated valves provide flow paths for lubricating water from the service water system to the main circulating water pump seals. They close in the event of an accident to direct full service water flow to critical safety equipment. Closure of these valves during plant operation and cold shutdown secures seal water to the main circulating water pumps. This will automatically trip the circulating pumps which would, in turn, result in a plant trip on high condenser pressure and loss of primary heat sink.

ALTERNATE TESTING:

Each of these valves will be full-stroke exercised closed during refueling outage periods in accordance with ISTC-3521(e) subject to the provision of ISTC-3521(h).

Refueling Outage Justification RFJ-17

SYSTEM:

High Pressure Coolant Injection (D-02523 Sh. 2 and D-25023 Sh. 2)

COMPONENTS:

1-E41-F040
2-E41-F040

CATEGORY:

C

CLASS:

2

TEST REQUIREMENT:

ISTC-3510 Exercising Test Frequency. Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3560, ISTC-5221, and ISTC-5222.

BASIS:

These valves close for containment isolation and open to provide a flow path for draining the HPCI steam exhaust drain pot to the torus. Testing these valves to the closed position requires system realignment and set up of leak testing or similar equipment. To perform this testing quarterly or during cold shutdown outages would constitute a significant burden on staff resources with no commensurate benefit in plant safety.

ALTERNATE TESTING:

Each of these valves will be verified closed during refueling outages in accordance with ISTC-3522(c), subject to the provisions of ISTC-3522(f). This is with the NRC position provided in NUREG-1482, Revision 1, Paragraph 3.1.1.3.

Refueling Outage Justification RFJ-18

SYSTEM:

High Pressure Coolant Injection (HPCI) (D-02523 Sh. 2 and D-25023 Sh. 2)
Reactor Core Isolation Cooling (RCIC) (D-02529 Sh. 2 and D-25029 Sh. 2)

COMPONENTS:

1-E41-F049 and 1-E51-F040
2-E41-F049 and 2-E51-F040

CATEGORY:

C

CLASS:

2

TEST REQUIREMENT:

ISTC-3510 Exercising Test Frequency. Active Category A, Category B, and Category C check valves shall be exercised nominally every 3 months, except as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3560, ISTC-5221, and ISTC-5222.

BASIS:

These valves close for containment isolation. They open to provide a flow path of HPCI and RCIC turbine steam exhaust to the torus. Testing these valves to the closed position requires system realignment and set up of leak testing or similar equipment. To perform this testing quarterly or during cold shutdown outages would constitute a significant burden on staff resources with no commensurate benefit in plant safety.

ALTERNATE TESTING:

Each of these valves will be verified closed during refueling outages in accordance with ISTC-3522(c), subject to the provisions of ISTC-3522(f). This is with the NRC position provided in NUREG-1482, Revision 1, Paragraph 3.1.1.3.