

DUKE POWER
A Duke Energy Company

Oconee Nuclear Station

ASME Inservice Testing Program

Revision 26

July 2002

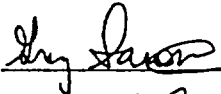

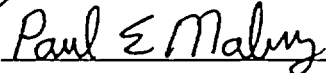
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**Oconee Nuclear Station
Pump and Valve Inservice Testing
Program Document
(IST, Appendix B)**

July 2002

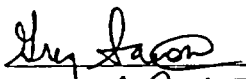

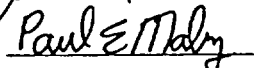
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1. PROFILE

The purpose of the In-Service Testing (IST) program, as related to this document, is to assess the operational readiness of safety related pumps and valves in accordance with NRC and ASME guidelines. This document discusses the intent of the licensee's testing positions and philosophies with regards to ASME Section XI (and OM Code for Nuclear Plant Operations and Maintenance Program where applicable) testing positions and philosophies. It is not the purpose of this document to reiterate the ASME or NRC guidelines in their entirety. Additionally, this document outlines the process for additions, changes, and deletions of pumps and valves from, or to, the IST program.

Technical Specifications require performance testing of pumps and valves in the ASME Section XI IST program. This program document defines how Oconee Nuclear Station (ONS) complies with the ASME Code and Technical Specifications as well as positions on alternative testing techniques and options. Failure to meet the requirements of this program is a violation of Technical Specifications and 10CFR 50.55a.

1.1 Program Period:

Fourth Ten Year Interval; 120 month period beginning July 1, 2002

1.2 Applicable ASME Code(s) and Addenda:

ASME Boiler and Pressure Vessel Code, 1995 edition, 1996 Addenda
ANSI/ASME OM-1995 Standard, OMa-1996 addenda, Subsection ISTB
ANSI/ASME OM-1995 Standard, OMa-1996 addenda, Subsection ISTC
ANSI/ASME OM-1995 Standard, OMa-1996 addenda, Appendix I

1.3 Program Changes:

Section 2.1 of NUREG 1482 states: An IST Program, including implementing procedures, is subject to the requirements of 10 CFR Part 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants." Changes to the scope, test methods, or acceptance criteria are subject to the requirements of Section 50.59, "Changes, Tests, and Experiments."

NRC response to a comment on this section of NUREG-1482 further states: "The IST program consists of various documents, many of which are administrative, that may not be covered by a 10CFR50.59 review process. However, a determination pursuant to 10CFR50.59 may be part of the process if components are deleted from the program, if acceptance criteria are changed, or if a test method is modified."

It is concluded that changes to the IST program scope, test methods, or acceptance criteria are subject to the requirements of Section 50.59 and require evaluation. Editorial changes do not require a 50.59 evaluation. A 50.59 evaluation needs to be part of the change process and applicable to the resulting program change. It will generally be performed in conjunction with the document driving the change. This includes plant modification, Design Basis Document revision, and procedure revision. However, if a program change can not be tied to an existing 50.59 evaluation, one must be prepared.

Resultant changes to reference values due to equipment repair, or replacement, are not considered changes to acceptance criteria requiring a 50.59 evaluation. They are analyzed, evaluated and documented in the record of tests in accordance with Section 3.4 of ISTC.

The NRC shall be notified of IST program changes; however, component additions (or deletions) may be submitted and testing implemented (or deleted) without prior NRC approval. In the instance that a component has been added to the IST program, testing and the appropriate program changes shall take place within 90 days of revising the program source documents unless determined to be impractical. If a

hardship is identified, documentation in the form of a Relief Request or Justification for Deferral will be provided.

Program updates are completed as dictated by additions, deletions, and/or revisions to design basis documents (DBDs) and design calculations. The IST database represents the official IST program and is updated as required. The Pump and Valve Inservice Test Program Manual is to be updated and submitted to the NRC when a sufficient number of changes to the IST database have been made. Every 120 months ONS is mandated to review current testing requirements and upgrade testing to the latest approved version of the ASME Code as specified by 10CFR50.55a, 12 months prior to the anniversary date.

The content of this program document is for non-mandatory compliance to a recommendation stated in NUREG-1482 and is intended for the purpose of maintaining program continuity and documenting additional discussions and positions relative to code interpretations. Therefore, changes to this document are not subject to the requirements of 10CFR50.59 and do not require prior NRC review and/or approval unless so deemed by the licensee.

1.4 Scope:

As required by 10CFR50.55a, pumps and valves that are classified in accordance with NRC Regulatory Guide 1.26 as ISI Class A, B, or C, which corresponds to ASME Class 1, 2, or 3, respectively, are reviewed for inclusion in the ONS IST Program. The scope of the OM Standards and Code has been expanded to include all safety-related pumps and valves. Until the scope of 10CFR50.55a is changed, the scope of the IST program only includes those components within the Code classes.

Oconee is licensed to operate with a "safe" shutdown condition of hot shutdown rather than cold shutdown as documented below (Reference 2.8 - Technical Evaluation Report pg 20):

"Early plants such as Oconee were licensed to operate with a 'safe' shutdown condition of hot standby or hot shutdown, and were not required to achieve cold shutdown following a design basis accident. For such plants, certain components and systems necessary to achieve cold shutdown may not be safety-related and/or subject to quality assurance requirements. These components are not credited to achieve 'safe' shutdown. Subsequently, only components required to bring the unit(s) to this safe shutdown condition are included within the IST program

The licensing basis for Oconee is contained in the Final Safety Analysis Report (FSAR). Chapter 15 of the Oconee FSAR examines the effects and consequences of transients and accidents that constitute the design basis. The ability of the plant to operate within regulatory guidelines without undue risk to public health and safety was evaluated and accepted by the Staff. The fact that the transients and accidents analyzed in the FSAR do not continue beyond the hot shutdown condition indicates that the capability to establish this condition would provide an acceptable level of quality and safety.

The licensee has proposed to exclude from the IST scope those components that are not required to perform a specific function in shutting down the reactor to the safe shutdown condition. The licensee has proposed to 'test these valves in accordance with their 10CFR50 Appendix B program.' 10CFR50, Appendix B addresses quality assurance for safety-related components. These components may not, however, be safety-related, as discussed above. In any case, the licensee has stated in the basis that the component's operability would be assured during normal plant shutdown. Based on the determination that the licensee's proposed alternative would provide an acceptable level of quality and safety, it is recommended that the alternative be authorized in accordance with §50.55a ¶(a)(3)(i)."

Subsequently, only components required to bring the unit(s) to this safe shutdown condition are included within the IST program.

Certain pumps and valves beyond the scope of 10CFR50.55a are active in certain non-Design Basis Events, are cold shutdown equipment not associated with a UFSAR Chapter 15 event, are significant to plant safety, and/or are of economic importance that are beyond the scope of 10CFR50.55a. Such

components are not included in the IST Program. However, "the intent of 10 CFR 50 Appendix A, GDC-1, and Appendix B, Criterion XI, is that all components, such as pumps and valves, necessary for safe operation are to be tested to demonstrate that they will perform satisfactorily in service" (Reference 2.11 - Appendix A). Such pumps and valves are tested in the supplemental, 10CFR50 Appendix B Program. Within the supplemental program, the licensee specifies how the component is tested or if a deviation from the Code guidelines is allowable. No relief requests for components within the scope of the Appendix B supplemental program are submitted. See Appendix A of this document for a discussion of this program.

1.5 Bases:

The design bases for inclusion of pumps and valves within the testing program is provided within the following source documents:

Mechanical System Design Basis Documents (DBD): OSS-0254.00-00-1000 Series
Plant Design Basis Document for Reactor Building Containment Isolation: OSS-0254.00-00-4001
Design Basis Calculations:
OSC-3608; "Active Valves - Steam Drain System"
OSC-3666; "Active Valves - Turbine Oil System"

A comparison of the bases documents and the IST program should be accomplished periodically to ensure completeness and correctness of the IST program.

The Responsible System Engineer shall initiate program changes as changes are made to the respective system DBDs or active/passive valve calculations. When changing the program by revising a DBD, appropriate groups are notified via the modification process. The IST database should be listed as an affected document. When changing the program by revising a calculation (for systems that do not have DBDs), the programmatic method of informing station personnel of changes in the calculation is ensured by completion of the Calculation Impact Assessment (CIA) form. The person who revises the calculation is required to complete the CIA form to evaluate the need for subsequent changes to the test procedures and the program. Enclosures 9.2 and 9.3 are included to assist station personnel in documenting program changes for the IST Coordinator.

To ensure Code compliance for the ONS Pump and Valve Testing Program, the IST Coordinator should be notified of any of the following changes:

- changing the active/passive status of a component
- changing the leakage requirements of the component
- changing the piping classification of the component (Duke Class and ISI Class)
- changes regarding how the component may be tested
- a commitment is made or changed for testing or operation of a component
- taking credit for a new function, flow path, etc.

1.6 History:

The ONS IST program has gone through three major phases from 1976 to 1994.

The initial phase began in April 1976 when the NRC informed ONS that 10CFR50.55(a) had been revised. This revision to the regulations required "testing in accordance with ASME Code Section XI... which may conflict with existing Technical Specifications and advise them where Section XI requirements could not be met". It was recognized that this was a requirement that was not in force at the time of plant design, so the NRC required ONS to meet Section XI to the extent that was consistent with the original design (i.e., ONS was not required to put in instruments to measure certain parameters where instruments did not previously exist).

On October 1, 1976 a response to the above request was submitted to the NRC for Unit 1. This submittal generically defined the IST program scope as, "...Duke Power Class A, B, and C piping and components (corresponding to ASME Code Section 1, 2, and 3, respectively)...except for stated exceptions, primarily based on design limitations".

ONS expanded the IST valve list beyond the defined scope to include containment isolation valves which are Duke Class F. This valve scope was supported by temporary approval of the ONS IST program in March of 1978. In this letter the NRC acknowledged that ONS was expanding the scope of its previous test program, and they agreed that "design limitations" prevented ONS from meeting Section XI in its entirety. In November 1980, ONS received the IST program Safety Evaluation Report for Units 1, 2, and 3.

The second phase of the ONS IST program began in the early 1980s and lasted until 1990. During this time the basic scope of the IST program was unchanged, but additional Duke Class F valves were added to the program due to expanding safety concerns that went beyond design basis accidents described in FSAR Chapter 15. In the second phase, the method of determining whether the IST program was applicable to a structure, system or component did not provide for a clear methodology in determining what additional valves should be added to the IST program.

The third phase of the ONS IST program started in 1990. During the first part of this phase the IST program scope was clearly defined to resolve and clarify the concerns experienced during the 1980s. The scope is now clearly defined for valves and pumps within Sections 4 and 5, respectively. ONS also recognized that the accidents postulated in the late sixties and early seventies for PWRs are considerably different from accidents postulated for newer plants. For this reason, ONS expanded its testing by developing a supplemental program called the "Appendix B Test program". The Appendix B program was created out of a need to proceduralize the testing of additional pumps and valves that are important to safety.

The new IST scope and the Appendix B program were discussed with the NRC at an information meeting on November 14, 1990. In July 1993, ONS received its second 10 year submittal approval. There were no objections to the scope. The NRC granted relief from testing cold shutdown valves as part of the formal IST program. The NRC recognized ONS tested these valves within the Appendix B program, and commented... "The licensee has proposed to test these valves in accordance with their Appendix B program...the licensee has stated in the basis that the component's operability would be assured during normal plant shutdown. Based on the determination that the licensee's proposed alternative would provide an acceptable level of quality and safety, it is recommended that the alternative be authorized in accordance with 50.55a."

Oconee Nuclear Site updated the valve In-Service Testing program to follow the requirements of the ASME/ANSI Operational and Maintenance Code OM-1987 (OMa-1988 Part 10) in the February 1995 response to the November 1994 NRC Safety Evaluation Report.

Prior to 1998, it was the ONS position that constant speed, gear driven motors of MOVs would operate in essentially the same time when stroked in either direction. It was also the ONS position that degradation of a constant speed, gear driven motor would not appear in only one direction. Therefore, ONS took the position that IST MOVs that have a requirement to change position in both directions during an accident would be stroke timed in one direction and simply exercised in the other direction. This position was clearly documented within the IST program document, which was submitted to the NRC with Revision 23 of the IST program. In 1998, NRC auditors inspected the IST program and differed in this interpretation (NRC Inspection Report 98-11). Their interpretation was based on OM-10, which speaks of "limiting value(s)" of stroke times for power operated valves. The NRC stated that the word "value(s)" implied that MOVs that are required to stroke in both positions during an accident should be stroke timed in both directions. Therefore, the ONS position was changed to incorporate stroke timing MOVs in either or both direction(s) which the valve operators are credited during an accident. Reference PIP 98-5894 for the corrective actions in place to revise affected procedures.

2. REFERENCES

- 2.1 Generic Letter 89-04
- 2.2 10CFR 50, Appendix B
- 2.3 10CFR 50.55a
- 2.4 ASME Section XI, IWV (1995) and IWP (1995)
- 2.5 ASME OMa-1996, Subsection ISTA, ISTB, ISTC, Appendix I, and Appendix II
- 2.6 ONS Technical Specifications
- 2.7 Updated Final Safety Analysis Report (UFSAR)
- 2.8 NRC Safety Evaluation of the Inservice Testing Program Relief Requests for Pumps and Valves (7-23-93)
- 2.9 NRC Safety Evaluation of the ONS, Units 1, 2, and 3 Pump and Valve IST Program, Revision 21 (11-23-94)
- 2.10 NUREG/CP-0152, Proceedings of the Sixth NRC/ASME Symposium on Pump and Valve Testing
- 2.11 NUREG-1482, Guidelines for Inservice Testing at Nuclear Power Plants, April 1995
- 2.12 Generic Letter 89-10
- 2.13 Correspondence: M. S. Tuckman to NRC, "Generic Letter 89-04 Response", 11/01/1990

3. DEFINITIONS/TERMS

Generic Letter 89-10 -	the NRC letter providing additional requirements in testing MOVs to design basis conditions.
Generic Letter 89-04 -	the NRC letter providing supplemental guidance on developing and enhancing plant IST programs.
ASME Section XI -	the section of ASME Boiler and Pressure Vessel Code that provides rules for Inservice Inspection and Testing of light water reactor nuclear power plant components.
OM ISTC Codes -	the part of ASME O&M Codes dealing with the Inservice Testing of valves.
OM ISTB Codes -	the part of ASME O&M Codes dealing with the Inservice Testing of pumps.
Frequencies -	the interval of time between in service testing of the components. These intervals are defined as follows: <ul style="list-style-type: none">• Double frequency - 56 days maximum• Quarterly (3 months) - 115 days maximum• Cold Shutdown (CSD) - Unit RCS temperature below 200 °F and reactor subcritical. No testing is required if it has been less than 90 days since the last test was performed.• Refueling (RF) - Unit at CSD for the purpose of replacing or rearranging all or a portion of the fuel assemblies or control rods. Consistent with the guidelines within NUREG-1482 and OM-10, tests required to be performed each refueling are tied to a plant condition rather than a specific time interval.
IST Component -	components (valves and pumps) that are required to be tested per ASME Section XI. Sections 4.1 and 5.1 of this document define the criteria to be included in the IST program.
"Appendix B Component" -	components (valves and pumps) tested under jurisdiction of 10CFR50, Appendix B. They are not required be tested per the Code and no Relief Request or Justification for Deferral is submitted.
"Appendix J Component" -	components leak tested for containment integrity under jurisdiction of 10CFR50, Appendix J.
Active Component -	a component that must perform a mechanical motion during the course of accomplishing a system safety function.
Passive Component -	a component that does not perform a mechanical motion during the course of accomplishing a system safety function.
System Resistance-	the hydraulic resistance to flow in a system
Trending-	a comparison of current data to previous data obtained under similar conditions for the same equipment.
Set Point -	the value for which relief valves are set to relieve its pressure.
Leak Test -	testing of valves to verify seat leakage as limited to a specified maximum.

Stroke Time -	the time interval from valve actuation to the limit switch indication light at the end of the actuating cycle.
Limiting Stroke Time -	the maximum time allowed for an IST required valve to stroke before becoming immediately inoperable.
Relief Request -	A request submitted to the NRC requesting relief from the requirements of the Code for testing a particular component or a generic group of components.
Justification for Deferral -	A documented explanation of why a valve can only be tested at a cold shutdown or refueling outage frequency as opposed to quarterly.
IST Database -	IST program manual. This document is stored on a limited access server in a controlled database.

4. VALVE PROGRAM

4.1 In-Service Testing (IST) Program

As required by 10CFR50.55a, only valves that are classified in accordance with NRC Regulatory Guide 1.26 as ISI Class A, B, or C, which corresponds to ASME Class 1, 2, or 3, respectively, are subject to IST requirements. For clarification of system piping classification correlation refer to Enclosure 9.1.

Refer to Sections 1.4 and 1.5 for further clarification of the scope of the IST program.

4.2 Valve Testing Generic Position Statements

Valves tested under the jurisdiction of this program are tested per code requirements of ISTC at the specified frequencies unless it has been determined to be impractical. This section of the program document provides the site's positions on interpretations, guidance, and other options regarding testing alternatives.

- 4.2.1 ISTC 6.3 (h) requires the signature of the person or persons responsible for conducting and analyzing the test. The dated initials of the person or persons responsible for conducting and analyzing the test may be used in place of a signature in the record of the tests. Initials can be used as signatures to meet the intent of the ISTC as long as somewhere in the test procedure the initials are identified by a full signature or the initials are construed as signatures.
- 4.2.2 It is the licensee's position that valve testing be deferred if the normal code required test frequency or plant conditions would result in increased personnel risk or damage to plant equipment. The practicality of such deferral shall be determined by the licensee and documented in the "Justification for Deferral" section of the IST Program manual. In such cases, the licensee will not perform any type of destructive testing to determine the period of time at which damage to the equipment or risk to personnel would occur. Exercising valves on a cold shutdown or refueling outage frequency is not a deviation from the code (Reference 2.11 - Section 2.4.5).
- 4.2.3 Manual valves that meet the scope requirements of ISTC or are credited in the safety analysis for being repositioned to shut down the plant, to maintain the plant in a safe shutdown condition, or to mitigate the consequences of an accident are included in the IST program. The testing of such valves is established in order to meet the intent of the exercising requirements of ISTC.

4.3 Check Valve Testing

Check valves tested under the jurisdiction of this program shall be tested per ASME O&M Code requirements or alternatives at the specified frequencies unless otherwise specified. As an alternative, Appendix II (Condition Monitoring) may be implemented on certain valves or groups of valves at the discretion of the licensee. This section of the program document provides the ONS positions with regards to interpretations, guidance and other options and testing alternatives for check valves.

- 4.3.1 Check valves shall be exercised per ISTC (OMa-1996), section 4.5 every 3 months, except as provided by ISTC sections 4.5.2, 4.5.3, 4.5.4, 4.5.5 and 4.5.6. Where testing is deferred, it is noted in the Valve Table with a specific Justification for Deferral. If the valve exercising methods specified in ISTC 4.5.4 (a) are impractical for certain check valves, or if sufficient flow cannot be achieved or verified, then a Sample Disassembly examination program shall be used to verify valve obturator movement as described in ISTC 4.5.4 (c).
- 4.3.2 Full stroke testing of check valves does not necessarily constitute the obturator contacting the back-stop. Where possible, sufficient flow shall be passed through the valve to verify design basis accident flow. If full flow is not possible, then the licensee shall perform correlation testing, partial stroking, or other alternatives as provided by ISTC section 4.5.4
- 4.3.3 Reverse flow testing of check valves shall be performed per ASME requirements. Examples of positive means that may be used to verify valve closure are as follows:
- Pump discharge check valves - verified closed by meeting a parallel pump's acceptance criteria while cross-connected.
 - Appendix J testing
 - Measure reverse flow through the valve using an open vent on the backside of the valve or ultrasonic flow measurement techniques.
 - Pressure drop across a pump
 - Observation of external indication on valve stem
 - Pump windmilling
- 4.3.4 Per NUREG-1482 and recommendations stated in ONS SER, the licensee recognizes the NRC's acceptance of nonintrusive techniques (N.I.T.) for testing check valves. The licensee, in fact, has purchased N.I.T. equipment and is investigating incorporation into the testing program. However, this N.I.T. equipment has only recently been introduced to the industry and was not supplied from the vendor under the elements of the Q.A. program as with other equipment utilized for testing safety related components. This presents the burden on the licensee to validate the technology (i.e. software qualifications, calculation validity, engineering correlation, etc.). Therefore, it is the licensee's position that (N.I.T.) is a voluntary option and is evaluated on a specific application basis if full stroke exercising or sample disassembly cannot be performed.

4.4 Relief Valve Testing

Relief valves tested under the jurisdiction of this program shall be tested per code requirements Appendix I as referenced by OMa-1996 ISTC section 4.4. This section of the program document is to provide the site's positions with regards to interpretations, guidance, and testing alternatives for relief valves. Relief valves shall be considered for inclusion in the program if they provide overpressure or thermal relief protection for portions of systems that perform a specific function in shutting down a reactor or in mitigating the consequences of an accident.

Valves that fail to comply with the set pressure acceptance criteria or the owner established acceptance criteria will be evaluated.

Refer also to the ONS Engineering Support Program for Relief Valves.

4.5 Leak Rate Testing

All category A valves shall be tested per ISTC section 4.3. Those valves which function in the course of plant operation in a manner that demonstrates adequate seat leak-tightness need not be additionally leakage tested. In such cases (i.e., Containment Purge Isolation Valves) proper administrative controls are implemented and the valves leak tested during refueling outages.

Per section ISTC 4.3.2, Category A containment isolation valves shall be tested per 10CFR50, Appendix J and shall be included in the IST program (Reference 2.11 - Appendix A). Where a valve is identified as a containment isolation valve in the Technical Specification or SAR and if it is determined to be an "active"

valve with respect to this function, it shall be exercised to the closed position when there is an associated requirement for leak testing.

Within the Low Pressure Injection System (LPI) a passive failure (i.e. pressure boundary failure) is credible within a design basis accident. Passive failures are defined as any failure that is not an active failure. For example, the breach of a fluid pressure boundary or blockage of a process flow path is a passive failure. Pressure boundary failures considered are limited to leakage between flanges, gross valve or pump seal (or packing) leaks, etc., but not pipe breaks or cracks.

Testing of equipment necessary to mitigate the effects of passive failures from the standpoint of maintaining LPI accident mitigation functions such as core cooling and core injection has been included within the scope of the testing program.

Leakage testing of boundary valves that provide isolation outside of the LPI system (leakage testing to the BWST, external leakage check, leakage to the LDST, etc.) without consideration of passive failures is considered within the testing program. Such concerns are discussed within Information Notice 91-56, "Potential Radioactive Leakage to Tank Vented to Atmosphere". Leakage testing of isolation valves at a secondary level such as occurs due to a passive failure is not included within the scope of testing program. If included in the testing program, the number of combinations of potential valves that would have to be leak tested would be significantly large. Although such leakage could contribute to off-site and control room dose, significant leakage is not deemed credible following a passive failure since there would be multiple means (valves in series, stopping LPI pumps, etc.) available to isolate a passive failure causing external leakage from the LPI system. Therefore, based on the low likelihood for external leakage based on multiple means of isolating a passive failure versus the significant number of tests necessary to ensure the isolation of all potential passive failures, the incremental safety benefit for such testing does not appear cost justified. Where leakage past such boundary valves is identified during normal plant operations, actions (work orders, modifications, etc.) will be taken to correct the problems in a timely manner.

Other utilities were also contacted to determine the industry position on such testing. It was determined that this issue was not being considered at other sites. The individuals questioned concluded that the stance remain that such testing not be performed since it is a secondary level of testing beyond the current requirements to identify external leakage from the LPI system in its normal state, not considering a passive failure. In addition, there were no identified commitments to perform such testing.

Thus, leakage testing of equipment necessary to isolate consequential external leakage from passive failures is not included within the scope of the testing program.

4.6 Valve Position Verification

From section 4.1 of ISTC, valves with remote position indication shall be tested at least once every 2 years to verify that the valve operation is accurately indicated. Valves that have remote operating switches and/or power supplies (e.g. SSF valves) should also be tested and verified for proper indication from the remote location. Other valve operating parameters, such as timing are not performed from the remote location during this testing.

The remote position indication is verified for passive valves as well (reference 2.11 - Section 4.2.6). This is further captured in PIP 98-3826.

Many valves such as sealed solenoid valves and valves with enclosed stems have no provision for verifying the position by direct observation. Other methods, such as nonintrusive techniques, causing the flow to begin or cease, leak testing, and pressure testing can yield a positive indication of obturator position (reference 2.11 - Section 4.2.5). This is further captured in PIP 98-3858.

4.7 Post Maintenance/Modification Testing (Retest)

See NSD-408, "Testing".

4.8 Fail-Safe Testing of Valves

All Fail-Safe valves shall be tested in accordance with ISTC, section 4.2.6. Valves used only for system control are typically excluded from testing in the IST program. However, if a system control valve must change position to support a safety-related function and it has a fail-safe position, then it must be included within the program and tested to verify the ability to perform that function with power removed (or simulated power removal).

4.9 Skid-Mounted Valves

Skid mounted valves and component subassemblies are excluded from ISTC provided they are tested as part of the major component and are determined by the Owner to be adequately tested (ISTC 1.2). The licensee, however, may opt to include certain components contained on these skids in the IST program for testing purposes. Skid mounted components that are adequately tested as part of the major component will be included in the Supplemental Testing program. In such cases, the licensee is neither obligated to submit relief request on testing alternatives nor is it obligated to trend the performance of such components as required with components which meet the scope of ISTC (Reference 2.11 - Section 3.4).

4.10 Valve Test Acceptance Criteria

All valve test acceptance criteria (IST-TAC) shall be developed in accordance with the provisions specified in ISTC. The applicable acceptance criteria is developed when the valve is known to be performing in a satisfactory manner. Where IST-TAC other than that required by code is established for a given valve (i.e. additional N.I.T diagnostics), the documentation of that criteria is at the discretion of the licensee and not required to be part of the test record. Trending of valve test data is performed by the licensee on a periodic basis. Leakage criteria for valves, other than those tested in accordance to 10CFR50, Appendix J, is determined based on leakage rates specified by the licensee or using the guidance specified in ISTC 4.3.3. Relief valve IST-TAC shall be established per OMa-1996, ISTC 4.4, Appendix I.

Such 'IST-TAC' should not be confused with the acceptance criteria specified in DBDs, DBD associated TAC Sheets, Technical Specifications, or any SAR. Such acceptance criteria are the most limiting values and can not be exceeded. IST-TAC are set to verify operational readiness of the valves and to identify valve degradation before the 'most limiting' acceptance criteria are exceeded. IST-TAC are based upon stroke times measured when the valve is known to be in good working order and are controlled within the test procedures. Alternatively, DBD-TAC are specific criteria associated with a valve's design basis.

4.10.1 Reference Values

Reference values shall only be established when the valve is known to be operating acceptably. After valve maintenance or replacement, baseline stroke times shall be reset or the previous value reconfirmed per ISTC section 3.4.

4.10.2 Valve Stroke-Time Acceptance Criteria:

The following cases present the options available for determining valve operability based on stroke time:

CASE 1: The valve strokes within its acceptable stroke time. The valve is considered operable.

CASE 2: The valve doesn't move at all on the first try or exceeds its LIMITING VALUE. ISTC immediately refers to this valve as being inoperable. An engineering evaluation needs to be done to determine the cause of the valve failure and system operability.

CASE 3: The valve fails to meet the acceptance stroke time, but strokes in less than the LIMITING VALUE. Per ISTC, the valve shall immediately be restroked to achieve an acceptable stroke time. Per the Oconee valve testing program:

- a. If the valve successfully strokes on the restroke, the valve is considered operable. The cause of the initial deviation shall be analyzed and the results documented in the test procedure. A third valve stroke may be performed to demonstrate consistent valve operation.
- b. If the valve does not fall within the acceptable range on the restroke, then the valve is declared inoperable. An evaluation must be performed to determine the root cause of the failed test. The evaluation may determine that either corrective maintenance must be performed on the valve or the new stroke data is acceptable and new baselines must be established. Such results must be documented in the test procedure.
- c. In the event the initial stroke and the retest results are inconsistent, but the engineering evaluation shows the new stroke time is acceptable, a third test may be performed to verify consistent behavior. Documentation of the third test is optional if it shows no deviation from the "restroke".

4.10.3 *Valve Stroke-Time Measurements and Methods:*

Power operated valves, which are active and therefore must change position in order to perform a safety function, shall be stroked timed to that position. Power operated valves which are active in both the open and closed directions shall be stroke timed in both directions. These valves may have a different reference value in each direction.

In most instances, valve stroke times are measured with a stopwatch. The stopwatch is started when the valve is actuated and it is stopped when an indication light is received indicating that the valve has completed its full stroke. Stopwatches used to measure stroke times are calibrated annually. Valve stroke times are recorded to the precision of the timing device to prevent any rounding errors in the field.

4.10.4 *Limiting Value Stroke-Time Acceptance Criteria:*

Limiting Values for stroke-times are established in accordance with the guidance given in NUREG-1482 (Reference 2.11 - Appendix A). It is the position of the licensee that these values be determined as follows (with the limitations of Tech. Specs. and Safety Analysis being the most limiting):

<u>Valve Type</u>	<u>Limiting Value Calculation</u>
EMO (> 10secs.)	1.3R (to the nearest second or 5 sec.)
EMO (≤ 10secs.)	1.5R (to the nearest second or 5 sec.)
POV (> 10secs.)	2.0R (to the nearest second or 5 sec.)
POV (≤ 10secs.)	2.25R (to the nearest second or 5 sec.)

Note: Where 'R' represents the valve reference value at acceptable operation.

Valves that stroke in less than 2 seconds may be exempted from reference ranges and the maximum limiting stroke time shall be 2 seconds as specified by ISTC section 4.2.8 (e).

4.10.5 *Engineering Evaluations:*

Section 4.2.9 of ISTC allows the use of analysis for declaring a valve operable, after testing indicates the stroke time is above the limiting value. This approach may be used to the extent that it applies. In cases where a valve stroke time exceeds the limits of the safety analysis, it could not be declared operable until a reanalysis indicates the new (increased) stroke time is acceptable. A relief request would not be necessary to perform the analysis (or reanalysis). The analysis shall be documented or referenced within the record of test.

5. PUMP PROGRAM

5.1 In-Service Testing (IST) Program

As required by 10CFR50.55a, only pumps that are classified in accordance of NRC Regulatory Guide 1.26 as ISI Class A, B, or C, which corresponds to ASME Class 1, 2, or 3, respectively, are subject to IST requirements. For clarification of system piping classification correlation refer to Enclosure 9.1. The following defines the criteria for inclusion of equipment in the IST Program:

- A. All pumps which fall within the Duke ISI Class A, B, or C boundaries that are provided with an emergency power source and are also active in mitigating the consequences of the Design Basis Accidents (Design Basis Accident is defined as those described in UFSAR Chapter 15).
- B. Pumps in systems specifically required by Technical Specifications to be tested per ASME Section XI.

Refer to Sections 1.4 and 1.5 for further clarification of the scope of the IST program.

5.2 Pump Testing Program Exemptions and Position Statements

Pumps tested under the jurisdiction of this program shall be tested per code requirements of OMa-1996 Subsection ISTB at the specified frequencies unless it has been determined to be impractical. The purpose of this section of the program document is to provide the site's positions on interpretations, guidance, and other options regarding testing alternatives.

- 5.2.1 ISTB 7.3 (i) requires the signature of the person or persons responsible for conducting and analyzing the test. The dated initials of the person or persons responsible for conducting and analyzing the test may be used in place of a signature in the record of the tests. Initials shall be used as signatures to meet the intent of the IWP as long as somewhere in the test procedure a full signature identifies the initials.
- 5.2.2 Developed head acceptance should be rounded up for conservatism in calculations to the nearest 0.5 psi, if possible. In most cases, the suction gauges used allow this type of accuracy.
- 5.2.3 Vibration acceptance should be truncated to 2 decimal places for operability determinations. The full four digit display number should still be recorded.
- 5.2.4 Pumps whose only safety function is predicated on plant shutdown and recovery from a fire per commitments made as a result of 10CFR50, Appendix R are not included in the IST Program. The licensee tests these in accordance with Appendix R requirements.
- 5.2.5 Pumps that are not provided with an emergency source of power are not required to meet IST requirements. The licensee, however, may elect to include these pumps in the IST program for testing purpose only.
- 5.2.6 Pumps that can only be tested during plant operation shall be tested within 1 week following plant startup. To comply with GL 87-09 guidance, if the testing schedule is not maintained during plant shutdowns, the affected pump(s) must be tested before entering an operational mode which requires the pump(s) to be operable. The licensee, however, may elect to delay repairs and/or retest of pumps not required to be operable for plant startup or other operational modes.
- 5.2.7 After pump maintenance, pump performance parameters shall be reset or reverified ISTB 4.4.

5.3 Mini-flow/Recirculation Flow Pump Testing

Reference OMa-1996 Subsection ISTB 3.2 Bypass Loops.

5.4 Testing Required from Remote Locations:

Pumps with remote indications shall be observed at least once every 2 years to verify that pump operation is accurately indicated. Pumps that have remote operating switches and/or power supplies should be remotely tested (i.e. HPI pumps). They should be tested and verified for proper pump operation and

indication from the remote location as a good engineering practice. Other pump operation parameters, such as vibration, bearing temperatures, pressure and flow do not have to be performed from the remote location during testing.

5.5 Post Maintenance/Modification Testing (Retest)

See NSD-408, "Testing".

5.6 Skid-Mounted Pumps

Skid mounted valves and component subassemblies are excluded from ISTB provided they are tested as part of the major component and are determined by the Owner to be adequately tested (ISTB 1.2). The licensee, however, may opt to include certain components contained on these skids in the IST program for testing purposes. Skid mounted components that are adequately tested as part of the major component will be included in the Supplemental Testing program. In such cases, the licensee is not obligated to submit relief request on testing alternatives nor is it obligated to trend the performance of such components as is required for components which meet the scope of ISTB.

5.7 Pump Performance Testing

All pump reference values shall be developed in accordance with the provisions specified in ISTB. The reference values shall be developed when the pump is known to be performing in a satisfactory manner. Additionally, the reference values shall be established at points of operation readily duplicated during subsequent inservice testing. Where test acceptance criteria (IST-TAC) other than that required by code is established for a given pump (i.e., pump curves), the documentation of that criteria is at the discretion of the licensee and is not required to be part of the test record. Trending of pump test data is performed by the licensee on a periodic basis.

Such 'IST-TAC' should not be confused with the acceptance criteria specified in DBDs, DBD associated TAC Sheets, Technical Specifications, or any SAR. Such acceptance criteria are the most limiting values and can not be exceeded. IST-TAC are set to verify operational readiness of the pumps and to identify pump degradation before the 'most limiting' acceptance criteria are exceeded. IST-TAC are based upon performance data measured when the pump is known to be in good working order and are controlled within the test procedures. Alternatively, DBD-TAC are specific criteria associated with a pump's design basis.

5.7.1 Establishment of Initial Conditions

The pump performance testing shall be completed as follows:

Pump Speed

The pump shall be operated at the nominal motor nameplate speed for constant speed drives, and at a speed adjusted to the reference speed for variable speed drives.

System Resistance

The resistance of the system shall be varied until the flow rate equals the reference value. The pressure shall then be determined and compared to its reference value. Alternatively, the flow rate can be varied until the pressure equals the reference value and the flow rate shall be determined and compared to the reference flow rate value. The initial establishment of the flow rate or pressure is performed in order to create equivalent system resistance during each performance test. Section XI does not address the possibility that the initial establishment of flow rate or differential pressure may not be controllable to an exact value. When the Code specifies that the system resistance be varied until either the flow or differential pressure equals the corresponding reference value, it does not intend that the "set value" have an acceptable range as stated in Table ISTB 5.2.1-2, ISTB 5.2.2-1, ISTB 5.2.3-1. The acceptance criteria are only applied to the parameter being determined after the resistance is varied. From NUREG 1482, however, the allowed tolerance for setting the fixed parameter may be established for each case individually including the accuracy of the instrument and the precision of its display. A total tolerance of ± 2 percent of the reference value is allowed without approval from the NRC.

For conservatism, the tolerance of the fixed parameter should be set from the reference value to +2 percent of the reference value. The responsible system engineer should document deviation from this practice as guidance for the procedure writers. For a tolerance greater than ± 2 percent 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. In using this guidance, the variance must be documented in the IST program documents or implementing procedures (Reference 2.11 Section 5.3).

5.7.2 *Pump Hydraulic Parameters Acceptance Criteria:*

The ONS IST Program applies the acceptance criteria established for Comprehensive Tests (as in Table ISTB 5.2.3-1) for the quarterly Group A tests and Group B tests as well. This approach is taken in a effort to simplify the test procedures and enable the same acceptance criteria values to be used for the quarterly tests (Group A and B) as well as the Comprehensive tests. This method is deemed acceptable due to more conservative acceptance criteria being applied to the Group A and B tests.

5.7.3 *Vibration Monitoring*

Pumps tested under the jurisdiction of this program shall be tested per code requirements at the specified frequencies unless it has been determined to be impractical.

6. RELIEF REQUESTS

The purpose of a Relief Request is to exclude components in the IST program from testing requirements of the ASME Code which have been determined to be impractical due to plant configuration, plant safety, equipment limitations, type, or hazards to personnel. Submitted relief requests address if: (1) the proposed alternative gives an acceptable level of quality and safety, (2) compliance would result in a hardship without a compensating increase in safety, or (3) complying with code requirements is impractical. Relief Request for components that are in the ASME IST Program shall be sent to the NRC for approval. Each Ten Year Interval, when the site testing program is being upgraded to the new testing requirements, all relief requests shall be reviewed to ensure that their reasons for issuance are still valid.

6.1 Implementing Relief Requests:

When a relief request is submitted for those requirements which have been determined to be clearly impractical, the licensee reserves the right to implement the proposed alternative testing while the NRC is reviewing the relief request (Reference 2.11 - Section 2.5) if the proposed alternative gives an acceptable level of quality and safety.

6.2 Interim Relief Requests:

When a relief request is required on an interim basis, the licensee shall submit the relief for review, but may implement the relief while the NRC is reviewing the request (see Section 6.1). Updates to schedules or impacts to design/modification implementation of the component with interim relief shall be communicated to the NRC as the program is updated. Interim reliefs shall be withdrawn as soon as the licensee no longer requires them.

7. JUSTIFICATIONS FOR DEFERRAL:

Justification for deferral (JFD) is written when a valve can not be tested at a quarterly frequency. This could be due to an impracticality of testing the component at power or due to plant safety concerns introduced by the testing configuration. The basis for determining the impracticality of testing at power and expanding the valve's testing frequency to a Cold Shutdown or Refueling Outage frequency is documented for the IST Program in a Justification for Deferral.

In-Service Testing to be performed at Cold Shutdown shall:

- a) be performed during each cold shutdown when the planned length is of sufficient duration to establish the necessary test conditions and to perform the test,
- b) be performed as to not impact the timely completion of the shutdown related activities and subsequent return to operation. For outages when the planned length is not of sufficient duration to complete all tests, testing shall start within 48 hours of reaching cold shutdown conditions. If all tests are not completed, those tests will be scheduled to be performed at the next available cold shutdown consistent with the above criteria. Completion of the IST is not a prerequisite to return to operation. This is supported by the position stated in ISTC 4.2.2.

All testing required to be performed during a refueling outage shall be completed prior to plant operation. Components tested during start-up shall not delay start-up if the site Technical Specifications allow start-up with the component out of service or inoperable. Retest and corrective actions shall be performed at the first available opportunity.

7.1 Testing Deferral Justifications:

The purpose of the testing Justification for Deferral form is to document the reason that a pump or valve can only be tested during cold shutdown or a refueling outage. The Justification for Deferral Form is found within Enclosure 9.4.

Valid reasons could be plant configuration for testing which would jeopardize the safety of plant operation, access to the component which would be against ALARA, access to the component due to the environmental conditions endangering personnel safety, or that plant configuration for testing would require the plant to be in a mode not suitable for power production. Removing one train for testing or entering a limiting condition of operation is not sufficient basis for not performing the required tests, unless the testing renders systems inoperable for extended periods of time. It is not the intent of IST to cause unwarranted plant shutdowns or to unnecessarily challenge other safety systems. Other factors such as the effect on plant safety and the difficulty of the test should be considered. As stated earlier, testing should not interfere with power production.

8. PROCESS FOR PROGRAM CHANGES:

The IST and Appendix B Test Programs are based on design basis documents (DBDs) and calculations. When changing the program by revising a design basis document, the IST Program is listed as an affected document. The normal modification process of reconciling affected documents ensures that the IST Program Administrator is notified of a required change. The system engineer reviews all modification packages and is responsible for identifying changes to an IST component, insuring that the IST Data Base is listed as an affected document and providing updated information to the IST Administrator. When changing the program by revising a calculation, there is no programmatic method of informing station personnel of changes to the calculation, as is the case for changes to a design basis document. The person who revises the calculation is responsible for informing the appropriate station and engineering personnel of changes to the calculation and the need for subsequent changes to test procedures and changes to the test programs. Enclosures 9.2 and 9.3 are to be completed and submitted by the system engineer responsible for the affected component(s). The following represents the method for performing changes to the IST or Appendix B program:

PROGRAM DELETION

- Step 1: Determine a need to DELETE from the IST Program (System Engineering)
- Step 2: Revise DBD or Calculation (System Engineering)
- Step 3: Complete and Submit Enclosures 9.2 and 9.3 as required (System Engineering)
- Step 4: 50.59 prepared or included with package and deemed applicable.
- Step 5: Delete from Program (IST Administrator)
- Step 6: Perform Necessary Procedure Changes (System Engineering & Procedure Owner)
- Step 7: Perform Necessary WMS Changes (System Engineering or Procedure Owner submit PM Action Form to WC) **

PROGRAM ADDITION OR REVISION

Step 1: Determine a need to CHANGE or ADD to the IST Program (System Engineering)

Step 2: Revise DBD or Calculation (System Engineering)

Step 3: Perform Necessary Procedure Changes (System Engineering & Procedure Owner)

Step 4: Generate R005 Work Request to perform an initial baseline stroke time test as required (IST Engineer)

Step 5: Perform Necessary WMS Changes (System Engineering or Procedure Owner submit PM Action Form to WC) **

Step 6: Complete and Submit Enclosures 9.2 and 9.3 as required (System Engineering)

Step 7: 50.59 prepared or included with package and deemed applicable.

Step 8: Complete Necessary Program Changes (IST Administrator)

**PM Action Form and instructions for changing surveillances are found in Site Directive 4.1.1. Note the requirement to update the Work Management System (WMS) to ensure that all IST and Appendix B Surveillances are scheduled was committed within PIP's 98-0276 and 98-0233.

Appendix A

10CFR50, Appendix B Program (Supplemental Testing Program)

The scope of the Oconee pump and valve testing program includes all components which are active in mitigating the consequences of Design and non-Design Basis Events, are required for cold shutdown, provide a containment isolation function, or are designated by station Technical Specifications to be included in testing programs. This scope is further divided into IST testing and Appendix B testing (Reference 2.17). The scope of the IST program is discussed in detail in Sections 4.1 and 5.1 of this document.

The selected components tested under the jurisdiction of the Appendix B portion of the Oconee Pump and Valve Testing Program provide a function of safety to the operation of the plant, but do not fall explicitly under the jurisdiction of the ASME Code. Specifically, the Appendix B program encompasses pumps and valves not included in the ASME program which are active in certain non-Design Basis Events, are cold shutdown valves not associated with a FSAR Chapter 15 event, are significant to plant safety, or are of economic importance and that are considered beyond the scope of 10CFR50.55a. Pumps and valves used in the mitigation of a tornado, station blackout, fire, flood, sabotage, or loss of the Keowee Dam are included within this scope (Reference 2.17).

As a result of PIP 01-0762, valves contained in the Time Critical Operator Action list should receive a supplemental test consisting of a timed manual stroke. It should be noted that the timed manual stroke is a supplemental test and NOT required by IST. Furthermore, the IST program does not require testing of instrument, vent and drain valves; likewise, valves of this type will be exempt from testing as part of the Supplemental Program although possibly identified as a time critical component. PT/0/A/0120/033 (Time Critical Action Verification) identifies which operator actions are time critical and require timing every 2 years. Some actions identified within PT/0/A/0120/033 are exempt from timing; consequently, the population of valves associated with these actions will be manually stroked without being timed. The Design Basis Specification for Design Basis Events (OSS-0254.00-00-4005) includes the components required to be operated to perform time critical tasks. In addition, the DBD for each system with Time Critical Components identified has been revised to include a generic statement directing the reader to reference the Design Basis Events DBD for a listing of specific Time Critical Components.

Per letter dated August 28, 1997 from Duke Power to the NRC regarding a proposed revision to Technical Specifications for the upgraded ECCW system (Tech Spec Change #96-09), the ESV pumps were committed to be tested per the manufacturer's test methods coupled with guidance from OM-6 requirements for quarterly pump testing. Testing of the ESV pumps as such will continue within the ONS Supplemental testing program with guidance from ASME OM Code subsection ISTB (latest approved version).

The Appendix B components are tested in accordance with internal Duke Power procedures and requirements (per 10 CFR 50, Appendix B). The methods and acceptance criteria used to adequately test the components should use the criteria as specified by the IST program administrator. Relief Requests do not have to be generated for valves in the Appendix B Testing Program (Reference 2.13).

Unless appropriately documented, the ONS Appendix B Program is administered identically to the IST Program. Where possible, Appendix B components are tested per the requirements of the IST Program using safety related procedures. If the requirements of the IST Program (ISTB or ISTC) cannot be followed, relief requests need not be submitted to the NRC. Such deviations from Code 'recommendations' are documented below:

Supplemental Program Test Method Deviations:

- M-01 Appendix B manual valves are only stroked each refueling outage (Reference 2.17) or during plant operation at a frequency not to exceed 2 years.
- M-02 The Hydrogen Analyzer Sample Select Valves (1,2,3PR-71, 72, 73, 74, 75, 76, 77, 78, 79, 80) are stroked quarterly to assure functionality, but the valves are not timed. These solenoid valves do

not have an external indicator which signals a change of disk position. An air pressure change is used to verify a change of disk position.

- M-03 The Auxiliary Steam Pressure Control Valves (1,2,3MS-126, and 1,2,3MS-129) and Main Steam to Auxiliary Steam Header Check Valves (1,2,3AS-001) are tested during normal operation by verifying their ability to supply and control steam to the auxiliary steam header.
- M-04 Pressure regulating valves 0CCW-277 and 0CCW-280 function to support the SSF HVAC. The valves are tested on an annual frequency, which is consistent with the testing of the SSF HVAC system.
- M-05 PRVS Fans Suction Tie (1,2,3PR-20) is no longer required for system operability. It is stated in the PRVS DBD that failure of this valve will not affect PRVS operability. It is therefore not required to be in the IST Program. The only requirement to test this valve is Improved Technical Specification Surveillance Requirement stating that the "valve can be opened" on an 18 month frequency. It is in the Appendix B Program for tracking purposes only. Since this valve is not required for operability and is only in the Appendix B Program for tracking purposes, it is not stroked timed.
- M-06 The Reactor Building Purge Containment Isolation Valves (1,2,3PR-1, 1,2,3PR-2, 1,2,3PR-5, and 1,2,3PR-6) are passive in the closed direction as they are never opened during power operation. They are classified as IST Program valves due to their function as containment isolation valves and receive a Type C leak rate test. These valves are exercised closed during cold shutdown as they are required to close on high radiation signal during fuel movement. This is deemed an Appendix B function.
- M-07 Check valves in the Appendix B program are tested only in the direction required to perform their intended safety function. OMa-1996 ISTC requires check valves to be stroked in both directions independent of their safety function.

Supplemental Program Test Deferrals:

- D-01 The Core Flood Tank A and B Discharge Isolation Valves (1,2,3CF-1, and 1,2,3CF-2) are exercised at cold shutdown. Per ONS Technical Specifications, the electrical breakers for these valves are tagged open when the RCS pressure is above 800 psig.
- D-02 The Condenser Discharge Valves (1,2,3CCW-20, 21, 22, 23, 24, and 25) are exercised at cold shutdown. These valves cannot be stroked at power. Stroking these valves at power would place undue stress on the condenser expansion joints and necessitate a decrease in power output of the unit affected.
- D-03 The steam generator supply check valves associated with the Auxiliary Service Water Pump cannot be tested to the open position without injecting raw lake water into the steam generators. Therefore, the following valves are disassembled per the guidelines of NUREG-1482 to ensure their functional capability: 1CCW-105, 2CCW-113, 3CCW-121, 2CCW-152, 3CCW-254, and 1CCW-321.
- D-04 The Auxiliary Service Water Pump discharge check valve (0CCW-100) cannot be full stroked to the open position without injecting raw lake water into the steam generators. Therefore, the valve is disassembled per the guidelines of NUREG-1482 to ensure its functional capability.
- D-05 Deleted
- D-06 The following feedwater valves function to establish an alternate feedwater supply path: 1,2,3FDW-31, 36, 38, 40, 45, and 47. The exercising of the valves at power would affect the main feedwater supply to the steam generators. Therefore, the valves are exercised during cold shutdown to prevent causing a feedwater transient during power operation.
- D-07 The following feedwater check valves function to establish an alternate feedwater supply path from the emergency feedwater system to the main feedwater header: 1,2,3FDW-48, 93, 95, 99, 101, 375, and 385. The valves cannot be exercised at power without causing a feedwater transient. The valves are not exercised at cold shutdown in order to prevent unnecessary critical path time. Therefore, the valves are exercised each refueling outage.
- D-08 The following reactor coolant system vent valves function to provide a vent path to exhaust non-condensable gases and/or steam from the RCS that could inhibit natural circulation core cooling: 1,2,3RC-155, 156, 157, 158, 159, and 160. The valves cannot be exercised at power without potentially breaching the RCS pressure boundary. Therefore, the valves are exercised during cold shutdown.
- D-09 The following vacuum system valves function to break condenser vacuum when the Motor Driven Emergency Feedwater Pumps or Turbine-Driven Emergency Feedwater Pumps are required to take suction from the condenser: 1,2,3V-186. The valves cannot be exercised at power without

- causing the unit to trip due to the loss of condenser vacuum. Therefore, the valves are exercised during cold shutdown if condenser vacuum is not being maintained.
- D-10 The following high pressure injection valve functions to control flow to the auxiliary pressurizer spray: 1,2,3HP-355. The valves are not exercised at power to prevent any inadvertent actuation of auxiliary pressurizer spray. Therefore, the valves are exercised during cold shutdown.
 - D-11 The high pressure service water jockey pump maintains level within the elevated storage water tank during normal operation. The high pressure service water jockey pump discharge check valve (0HPSW-8) cannot be full stroke exercised due to a lack of flow indication. Therefore, the valve is disassembled per the guidelines of NUREG-1482 to ensure its functional capability.
 - D-12 The main steam bypass valves (1,2,3MS-19, 22, 28, and 31) function to control cool down following an ATWS event. The valves are not exercised at power operation to preclude any adverse affects on secondary plant operation. The valves are exercised during cold shutdown.
 - D-13 The following valves open to allow main steam from the auxiliary steam header: 1,2,3MS-25, and 1,2,3MS-34. Due to system constraints, there is no means to pass accident flow rates in order to verify open full stroke. Therefore, the valves are disassembled per the guidelines of NUREG-1482 to ensure their functional capability.
 - D-14 Deleted
 - D-15 The following High Pressure Service Water (HPSW) valves function to regulate pressure from the HPSW system to the High Pressure Injection pump motor coolers: 1,2,3HPSW-556. The valves can only be tested during cold shutdown since the QA source of cooling water to the pump motor coolers cannot be isolated at power conditions due to Technical Specification requirements.
 - D-16 Valves 1,2,3LPSW-502 function during a tornado event to allow the ASW system to supply the HPI pump motor cooler jackets. Due to system constraints, there is no means available to full stroke exercise the valves. Therefore, the valves are disassembled per the guidelines of NUREG-1482 to ensure their functional capability.
 - D-17 Due to past water hammer events (PIPs 97-0254, 98-3702) it has been determined that valves 1,2,3C-156 need to have stroke time testing deferred from quarterly to cold shutdown with no vacuum due to the fact that the valves have been contributors to past water hammer events and should not be stroked when the condenser is under vacuum in order to avoid the potential for water hammer induced equipment damage.
 - D-18 The SSF Submersible Pumps (0CCWPU0010 and 0CCWPU0011) are tested at a two year frequency. The test parameters monitored are developed head and flow rate. This meets the requirements of Technical Specifications. This is not a deviation from Code as these portable pumps are non-Code Class, non-safety grade components.
 - D-19 Deleted
 - D-20 FDW-33 and FDW-42 close to provide feedwater isolation after a Main Steam Line Break in which overcooling is a concern. These valves are normally open to allow feedwater flow to continue through the startup line. Exercising these valves would result in a feedwater transient, which could cause a reactor trip. Therefore, the valves are stroked during cold shutdown.
 - D-21 Deleted
 - D-22 Deleted
 - D-23 1/2/3CC-7 and 1/2/3CC-8 are classified as IST valves and shall close to provide containment isolation. CC is a support system to the Reactor Coolant Pump seals. These valves should be capable of opening after an ES signal as desired during an event (i.e., RCP restart). Exercising these valves during power operation would remove cooling water to the control rod drive mechanism and to the reactor coolant pumps, resulting in damage to the thermal barriers and pump seal failure. Therefore, these valves are stroked from closed to open during cold shutdown.
 - D-24 1/2/3MS-83 and 1/2/3MS-85 open to allow steam flow to the EFW Pump Turbine for mitigation of an ATWS event or a Tornado event. Although not required, the valves may be closed to isolate an affected steam generator from an unaffected steam generator in the event of a MSLB. Due to system constraints, there is no means to verify these valves close upon cessation or reversal of flow. Thus, the valves are sampled disassembled during each refueling outage based on the guidelines within NUREG-1482 to assure their closure function.
 - D-25 1/2/3AS-39 are designed to open to supply steam to the EFWPT during a tornado or ATWS event any time Main Steam is unavailable. During normal operation the valves are closed and shall remain closed to prevent diversion of main steam during EFWPT operation. Thus, the valves are sampled disassembled during each refueling outage based on the guidelines within NUREG-1482 to assure their closure function.

- D-26 0HPSW-408, 409, 902, 903 should open to allow cooler water flow to its associated HPSW pump motor cooler. The valves should close to isolate flow to its associated HPSW pump motor cooler and to maintain pressure boundary integrity in the LPSW system. Due to lake temperature requirements for testing, these valves will be tested on an annual frequency during the summer months.
- D-27 0LPSW-175, 182, 189, 3LPSW-196, 203 regulate LPSW pump packing seal water flow. LPSW pump packing seal water is required to keep packing cool and seal around the pump shaft when operating near or below atmospheric suction pressure. Pressure regulating valves are exempt from the scope of IST. Therefore, these valves are tested within the Supplemental Program on an 18 month frequency.
- D-28 1/2/3LP-28 The valve shall be capable of being manually closed to prevent reverse flow from the containment sump to the BWST after a postulated accident in order to provide a boundary in addition to the BWST Supply Check Valves (i.e. LP-29 and LP-30) if either valve LP-21 or LP-22 fails to close. Closing these valves during normal operation results in making all trains of ECCS inoperable. The valve will be tested during cold shutdown.

Appendix B

Responsibilities

1.0 *IST Coordinator:*

The IST Coordinator position shall be filled by a qualified individual knowledgeable of plant system operation. He/she ensures the site is in compliance by its performance testing and trending methods. The IST Coordinator accomplishes this by maintaining consistency among the System Engineers and overall program management. The IST Coordinator should publish an overall summary (in the form of an annual summary) on the current status of the site performance monitoring of the valves and pumps tested under the requirements of the IST or Appendix B program.

The IST Coordinator is responsible for notifying Regulatory Compliance of any changes to the Valve and Pump Testing Program described in this directive, including changes to the data sheet information. The IST Coordinator is responsible for updating and maintaining the IST database. The IST Coordinator is responsible for coordinating and implementing the program update and renewal per 10CFR50 every 10 years.

2.0 *Mechanical and Civil Engineering:*

MCE is responsible for the following:

- ensuring the accuracy of IST data set information
- notifying IST coordinator of changes in calculations
- defining test acceptance criteria (TAC)
- ensuring Code testing requirements are met
- documenting reasons for scope or Code deviation
- providing technical assistance for writing and reviewing test procedures
- trending data
- complete valve and pump data sheets for program revisions.
- notifying the IST Coordinator of maintenance that could affect the baseline data for any IST component
- overall administration of the relief valve testing program (OMa-1996, Appendix I)
- administrating the check valve sample disassembly program
- evaluating specific component problems/failures (why test failed, baseline changed, etc.).

MCE is responsible for the components within their systems, which are in the program. If the status of a component changes via the modification process, MCE is responsible for referencing the IST database as an affected document which assures the IST program is properly revised. If the status of a component changes via the calculation or licensing (T.S. or UFSAR) process, MCE is responsible for notifying the IST Coordinator to assure the IST database is properly revised.

3.0 *Operations Test Group:*

OTG is responsible for the following:

- performing tests
- accurately recording test results in procedure and database
- notifying MCE of any testing problems
- initiating a PIP when a test has failed or a problem is encountered
- documenting test discrepancies on the procedure.

4.0 *Operations Procedure Group:*

This group is responsible for the following:

- updating and maintaining all IST procedures
- verifying all technical changes with the IST Coordinator and respective MCE.

Enclosure 9.1
System Piping Classification Correlation for ONS:

Duke System Piping Classification	Safety ¹ Related	NRC Quality Group	Duke QA Cond.	ANS ⁹ Safety Class	Code ⁶ Design Criteria	Seismic Pressure Boundary Integrity	Seismic Category	Normally Contains Radioactive Material
A	YES	A ²	1	1 ²	Class 1 ANSI B31.7	YES	SC-I	YES
B	YES	B ²	1	2 ²	Class 2 ANSI B31.7	YES	SC-I	YES
C	YES	C ²	1	3 ²	Class 3 ANSI B31.7	YES	SC-I	YES
D	NO	-	4	NNS ³	ANSI B31.1	YES	SC-II ⁸	NO
E	NO	D ⁴	2 ⁵	NNS ³	ANSI B31.1	NO	-	YES
F	YES	B,C	1	2,3	ANSI B31.1	YES	SC-I	NO
G	NO	-	5	-	ANSI B31.1	NO	-	NO
H	NO	-	5	-	DPCo Specification	NO	-	NO
H (Duke HVAC Duct Classification)	YES	-	7	-	DPCo Specification	YES	SC-I	NO

NOTES:

- (1) Safety Related as used herein is in accordance with 10CFR50 Appendix A General Design Criteria for Nuclear Power Plants and is applicable to function only; i.e., structures, systems, and components required to function such that the facility can be operated without undue risk to the health and safety of the public are safety related.
- (2) Due to the evolution of requirements, Duke Classes A, B, and C for Oconee are similar but not exact to NRC Quality Group and ANS Safety Class definitions used for McGuire and Catawba, refer to Oconee FSAR for specifics.
- (3) NNS = Non-Nuclear Safety
- (4) Class E piping is equivalent to NRC Quality Group D, i.e., the system is designed to normally carry a radioactive fluid, however, is considered NNS as a component failure would not result in a calculated potential exposure in excess of the limits established by 10 CFR20
- (5) Class E, G, and H piping systems may also be assigned QA Condition 3 and/or 4 to denote additional requirements for fire protection of safety related components and/or seismic structural integrity (except pressure boundary) to preclude adverse interactions with safety related structures, systems and components, respectively; refer to Duke Nuclear Guide 1.29
- (6) Code and Standards Applicability. Duke Power Company establishes an "effective code date" in accordance with 10CFR50, par. 50.55a for Oconee Nuclear Site. Due to the numerous code and standards references applicable to each station, no attempt is made to specifically identify these references as they are amended, superseded, or substituted. Duke reviews and complies with all or portions of the latest versions of the above Codes and Standards unless materials and/or design commitments have progressed to a stage that it is not practical to make a change. When only portions of addenda to Codes and Standards are utilized, the appropriate engineering review of the entire agenda assures that the overall intent of the Code Standard is still maintained. These codes and standards are identified in the Oconee Piping Installation Specification OS-243.00-00-00-0001.
- (7) HVAC Duct Systems may be constructed of either sheet metal or piping materials depending upon the design function and requirements. Non-Safety Related HVAC may be assigned QA Condition 4, SC-II Support Restraints to preclude adverse interactions with safety related structures, systems, and components. Refer to Duke Nuclear Guide 1.29.
- (8) Class D for piping systems is used when pressure boundary protection is required. Seismic Category II hangers may be use on Class E, G, or H piping systems when pressure boundary integrity is not required. See Duke Guide 1.29.
- (9) ANSI N18.2, 1973 with 1975 addenda

Enclosure 9.2

Valve Data Sheet

Change Type: **Revision** **Addition** **Deletion** **Prepared By**_____

Valve Number	Description
1	1.000000
2	2.000000
3	3.000000
4	4.000000
5	5.000000
6	6.000000
7	7.000000
8	8.000000
9	9.000000
10	10.000000
11	11.000000
12	12.000000
13	13.000000
14	14.000000
15	15.000000
16	16.000000
17	17.000000
18	18.000000
19	19.000000
20	20.000000
21	21.000000
22	22.000000
23	23.000000
24	24.000000
25	25.000000
26	26.000000
27	27.000000
28	28.000000
29	29.000000
30	30.000000
31	31.000000
32	32.000000
33	33.000000
34	34.000000
35	35.000000
36	36.000000
37	37.000000
38	38.000000
39	39.000000
40	40.000000
41	41.000000
42	42.000000
43	43.000000
44	44.000000
45	45.000000
46	46.000000
47	47.000000
48	48.000000
49	49.000000
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86	86.000000
87	87.000000
88	88.000000
89	89.000000
90	90.000000
91	91.000000
92	92.000000
93	93.000000
94	94.000000
95	95.000000
96	96.000000
97	97.000000
98	98.000000
99	99.000000
100	100.000000

NSM No. / Description _____

Flow Diagram _____ **Coordinate** _____

Valve Type:	BA	BF	CK	DI	EX	GB	GT	FL	-
	PG	PR	RV	SC	ST	SV	VB		

Valve Size _____ **Actuator Type:** AO HO MA ML MO MR PA SA SO

Active Valve	Yes	No	Fails to Safe	Yes	No	NA
--------------	-----	----	---------------	-----	----	----

Appendix J	Yes	No	Alternate Feedwater Path	Yes	No
------------	-----	----	--------------------------	-----	----

Auxiliary Safe Guard Valve		Remote Position Indication	
Yes	No	Yes	No

ESF Valve	Yes	No	Skid Mounted Valve	Yes	No
-----------	-----	----	--------------------	-----	----

Program	IST	Appx. B	Vent/Drain	Yes	No
---------	-----	---------	------------	-----	----

ASME/ISI Class	A	B	C	N (non code class)
----------------	---	---	---	--------------------

Valve Category	A	B	C	D	(See ISTC section 1.4)
----------------	---	---	---	---	------------------------

Required Accident Position	O	C	TR
----------------------------	---	---	----

Cold Shutdown Position	O	C	TR	NA
------------------------	---	---	----	----

Air Failure Position	O	C	AI	TR	NA
----------------------	---	---	----	----	----

Electric Failure Position	O	C	AI	TR	NA
---------------------------	---	---	----	----	----

*DBD Time OPEN _____

*DBD Time CLOSED _____

*TS Time OPEN _____

*TS Time CLOSED _____

*FSAR Time OPEN _____

***FSAR Time CLOSED** _____

**Minimum accident analysis performance must be reflected in acceptance criteria if more conservative than IST Requirements.*

[illegible]

* PM Action Form must be submitted in accordance with Site Directive 4.1.1 to make scheduling changes to the Work Management System (WMS). These include changes to test frequency and/or affected procedure number.

Enclosure 9.3
Pump Data Sheet

Change Type: **Revision** **Addition** **Deletion** **Prepared By** _____

Pump Number _____ **Description** _____

NSM No. / Description _____

Pump Information:

Train		A	B	C	D	
ISI Class		A	B	C	N (non code class)	
Duke Class		A	B	C	D	F G
Program		IST		Appx. B		
ES Actuation		Yes	No			
ASG		Yes	No			
OFD	-	_____				
Pump Type	-	Centrifugal _____ P D _____ Other _____				
Pump BEP (Design Pt.)	-	_____ gpm _____ psig				
Driver RPM	-	_____ rpm				
Accident Pump Flow	-	*Minimum _____ gpm				
Accident Pump Flow	-	Nominal _____ gpm				
Delta P Required	-	_____ psid				
Minimum Flow Req.	-	_____ gpm				
TAC Sheets	-	_____				

**Minimum accident analysis performance must be reflected in acceptance criteria if more conservative than IST Requirements*

Test Type	Test Frequency			Test Procedure	PM Action Form ⁹	
Min-Flow	Q	CSD	RF		yes	no
Full-Flow	Q	CSD	RF		yes	no
VIB	Q	CSD	RF		yes	no
					yes	no

⁹ PM Action Form must be submitted in accordance with Site Directive 4.1.1 to make scheduling changes to the Work Management System (WMS). These include changes to test frequency and/or affected procedure number.

Justification for Deferral

Item Number:

Valve:

Flow Diagram:

Code Category:

ISI Class / Duke Class:

Function:

Test Requirement:

Basis for Deferral:

Test Alternative & Frequency:

Specific Relief Request

Item Number:

Valve(s):

Flow Diagram:

ISI Class / Duke Class:

Function:

Test Requirement:

Basis for Relief:

Test Alternative:

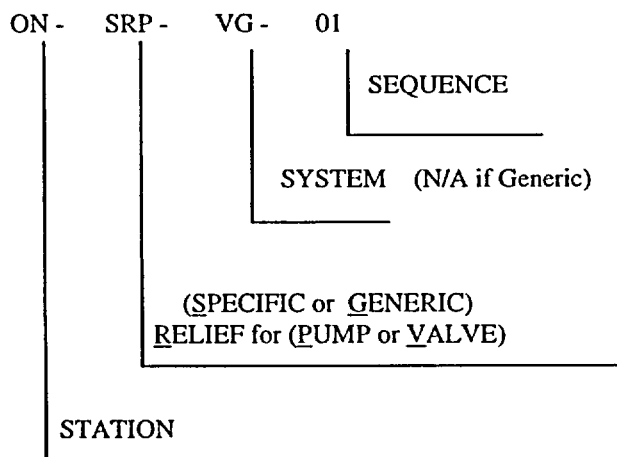
TABLE OF ABBREVIATIONS

ISI Class	Code Design Criteria	ASME XI Classification
A	ANSI B31.7, Class 1	1
B	ANSI B31.7, Class 2	2
C	ANSI B31.7, Class 3	3

Numbering Sequence for Relief Request and Justification For Deferral

Examples:

RELIEF REQUEST



JUSTIFICATION FOR DEFERRAL

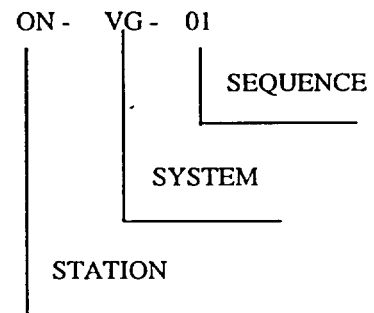


TABLE OF ABBREVIATIONS

TEST TYPE	Description
BT	New Baseline Test
CSE	Contact System Engineering
CVE	Contact Valve Engineering
CVED	Contact Valve Engineering for DP Test Requirements
EX	Explosive Valve Test
FS	Full Stroke Exercise
FT	Failed To Safe Position
IS	Instrumented Electrical Stroke
LJ	Leak Rate Test Valve To App J Requirements(s)
LT	Leak Rate Test Valve To Section XI Requirements(s)
LTTS	Leak Test Per Tech Spec Requirements
MS	Manual Stroke of Power Operated Valve
NT	No Test Required
PI	Verify The Valve Remote Position Indication
PIS	Pre And Post Maintenance Instrumented Electrical Stroke
PS	Partial Stroke Exercise Valve
RV	Safety And Relief Valve Test
SD	Sample Disassembly
SFB	System Flow Balance
SP	Special Test For Particular Component Or Situation
ST	Measure Full Stroke Time Of Valve
TTB	Torque Test Bench
US	Functional (Uninstrumented) Stroke Only

FREQUENCY	Description
2RF	Every Other Refueling Outage
2Y	Testing Once Every Two Years
6M	Tested Every 6 Months
CS	Tested At Cold Shutdown
CSDRF	Tested Each Cold S/D And Each RFO
ILRT	Tested Every ILRT Outage
M	Tested Once Monthly
NA	No Specified Test Frequency
Note1	See Technical Specification
Note2	6 Month, See Technical Specification
Note3	CSD, Hot Tested Prior To LTOP
NPT	No Periodic Test Required
Q	Tested Once Quarterly
QCS	Tested Quarterly And Each Cold Shut Down
QRF	Tested Quarterly And Each Refueling Outage
RF	Tested Every Refueling Outage
RR	Per Relief Request
RV	Test Relief Valve Per Om-1 Schedule
SD	Disassemble One Valve Per Group Each Refueling Outage
VV	Visual Verification Frequency
W	Tested Once Weekly
Y	Tested Once Yearly

ISTC VALVE CATEGORIES

Category A Leakage is Critical

Category B Leakage is NOT Critical

Category C Self Actuating (Checks, Reliefs, Etc.,)

DUKE POWER
OCONEE NUCLEAR STATION

Pump Inservice Testing Program

Section 3.0

Revision 26
7/01/02

Equipment ID	Description	Flow Diagram	Pump Group	Pump Type	ASME Class	Test Type	Freq	Relief Request
BS - Building Spray								
ON1BSPU0001	Reactor Building Spray Pump	OFD-103A-1.1	B	CP	B	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
ON2BSPU0001	Reactor Building Spray Pump	OFD-103A-2.1	B	CP	B	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
ON3BSPU0001	Reactor Building Spray Pump	OFD-103A-3.1	B	CP	B	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
ON1BSPU0002	Reactor Building Spray Pump	OFD-103A-1.1	B	CP	B	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
ON2BSPU0002	Reactor Building Spray Pump	OFD-103A-2.1	B	CP	B	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
ON3BSPU0002	Reactor Building Spray Pump	OFD-103A-3.1	B	CP	B	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None

Equipment ID	Description	Flow Diagram	Pump Group	Pump Type	ASME Class	Test Type	Freq	Relief Request
CCW - Condenser Cooling Water								
ON0CCWPU0002	SSF Auxiliary Service Water Pump	OFD-133A-2.5	B	CP	C	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
ON0CCWPU0003	SSF HVAC Service Water Pump	OFD-133A-2.5	A	CP	C	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
ON0CCWPU0004	SSF HVAC Service Water Pump	OFD-133A-2.5	A	CP	C	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
ON0CCWPU0005	SSF Diesel Engine Service Water Pump	OFD-133A-2.5	B	CP	C	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None

Equipment ID	Description	Flow Diagram	Pump Group	Pump Type	ASME Class	Test Type	Freq	Relief Request
FDW - Feedwater								
ON1FDWPU0003	Turbine Driven EFDW Pump	OFD-121D-1.1	B	CP	C	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
ON2FDWPU0003	Turbine Driven EFDW Pump	OFD-121D-2.1	B	CP	C	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
ON3FDWPU0003	Turbine Driven EFDW Pump	OFD-121D-3.1	B	CP	C	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
ON1FDWPU0004	Motor Driven EFDW Pump	OFD-121D-1.1	B	CP	C	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
ON2FDWPU0004	Motor Driven EFDW Pump	OFD-121D-2.1	B	CP	C	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
ON3FDWPU0004	Motor Driven EFDW Pump	OFD-121D-3.1	B	CP	C	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
ON1FDWPU0005	Motor Driven EFDW Pump	OFD-121D-1.1	B	CP	C	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
ON2FDWPU0005	Motor Driven EFDW Pump	OFD-121D-2.1	B	CP	C	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
ON3FDWPU0005	Motor Driven EFDW Pump	OFD-121D-3.1	B	CP	C	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None

Equipment ID	Description	Flow Diagram	Pump Group	Pump Type	ASME Class	Test Type	Freq	Relief Request
FO - Fuel Oil								
ON0FOPU0005	SSF D/E Fuel Oil Transfer Pump	OFD-135A-1.2	A	PDP	C	Flow	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None

Equipment ID	Description	Flow Diagram	Pump Group	Pump Type	ASME Class	Test Type	Freq	Relief Request
GBO - Keowee Turbine Guide Bearing Oil								
K1GBOPU088A	Turbine Guide Bearing Oil Pumps (AC)	KFD-101A-1.1	A	VLS	C	Vibration	Q	None
						Flow	Q	None
						Comprehensive	2Y	None
K2GBOPU088A	Turbine Guide Bearing Oil Pumps (AC)	KFD-101A-2.1	A	VLS	C	Vibration	Q	None
						Flow	Q	None
						Comprehensive	2Y	None
K1GBOPU088D	Turbine Guide Bearing Oil Pumps (DC)	KFD-101A-1.1	A	VLS	C	Vibration	Q	None
						Flow	Q	None
						Comprehensive	2Y	None
K2GBOPU088D	Turbine Guide Bearing Oil Pumps (DC)	KFD-101A-2.1	A	VLS	C	Vibration	Q	None
						Flow	Q	None
						Comprehensive	2Y	None

Equipment ID	Description	Flow Diagram	Pump Group	Pump Type	ASME Class	Test Type	Freq	Relief Request
HPI - High Pressure Injection								
ON1HPIPU0001	High Pressure Injection Pump	OFD-101A-1.3	A	VLS	B	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
ON2HPIPU0001	High Pressure Injection Pump	OFD-101A-2.3	A	VLS	B	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
ON3HPIPU0001	High Pressure Injection Pump	OFD-101A-3.3	A	VLS	B	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
ON1HPIPU0002	High Pressure Injection Pump	OFD-101A-1.3	A	VLS	B	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
ON2HPIPU0002	High Pressure Injection Pump	OFD-101A-2.3	A	VLS	B	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
ON3HPIPU0002	High Pressure Injection Pump	OFD-101A-3.3	A	VLS	B	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
ON1HPIPU0003	High Pressure Injection Pump	OFD-101A-1.3	A	VLS	B	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
ON2HPIPU0003	High Pressure Injection Pump	OFD-101A-2.3	A	VLS	B	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
ON3HPIPU0003	High Pressure Injection Pump	OFD-101A-3.3	A	VLS	B	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None

Equipment ID	Description	Flow Diagram	Pump Group	Pump Type	ASME Class	Test Type	Freq	Relief Request
HPI - High Pressure Injection								
ON1HPIPU0005	SSF RC Makeup Pump	OFD-101A-1.5	B	PDP	B	Flow	Q	ON-SRP-HPI-01, 02
						Vibration	Q	ON-SRP-HPI-01, 02
						Comprehensive	2Y	ON-SRP-HPI-01, 02
ON2HPIPU0005	SSF RC Makeup Pump	OFD-101A-2.5	B	PDP	B	Flow	Q	ON-SRP-HPI-01, 02
						Vibration	Q	ON-SRP-HPI-01, 02
						Comprehensive	2Y	ON-SRP-HPI-01, 02
ON3HPIPU0005	SSF RC Makeup Pump	OFD-101A-3.5	B	PDP	B	Flow	Q	ON-SRP-HPI-01, 02
						Vibration	Q	ON-SRP-HPI-01, 02
						Comprehensive	2Y	ON-SRP-HPI-01, 02

Equipment ID	Description	Flow Diagram	Pump Group	Pump Type	ASME Class	Test Type	Freq	Relief Request
LPI - Low Pressure Injection								
ON1LPIPU0001	Low Pressure Injection Pump	OFD-102A-1.2	A	CP	B	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
ON2LPIPU0001	Low Pressure Injection Pump	OFD-102A-2.2	A	CP	B	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
ON3LPIPU0001	Low Pressure Injection Pump	OFD-102A-3.2	A	CP	B	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
ON1LPIPU0002	Low Pressure Injection Pump	OFD-102A-1.2	A	CP	B	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
ON2LPIPU0002	Low Pressure Injection Pump	OFD-102A-2.2	A	CP	B	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
ON3LPIPU0002	Low Pressure Injection Pump	OFD-102A-3.2	A	CP	B	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
ON1LPIPU0003	Low Pressure Injection Pump	OFD-102A-1.2	A	CP	B	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
ON2LPIPU0003	Low Pressure Injection Pump	OFD-102A-2.2	A	CP	B	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
ON3LPIPU0003	Low Pressure Injection Pump	OFD-102A-3.2	A	CP	B	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None

Equipment ID	Description	Flow Diagram	Pump Group	Pump Type	ASME Class	Test Type	Freq	Relief Request
LPSW - Low Pressure Service Water								
ON1LPSPU0001	Low Pressure Service Water Pump	OFD-124A-1.1	A	CP	C	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
ON3LPSPU0001	Low Pressure Service Water Pump	OFD-124A-3.1	A	CP	C	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
ON1LPSPU0002	Low Pressure Service Water Pump	OFD-124A-1.1	A	CP	C	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
ON3LPSPU0002	Low Pressure Service Water Pump	OFD-124A-3.1	A	CP	C	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
ON1LPSPU0003	Low Pressure Service Water Pump	OFD-124A-1.1	A	CP	C	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None

Equipment ID	Description	Flow Diagram	Pump Group	Pump Type	ASME Class	Test Type	Freq	Relief Request
OG - Keowee Governor Oil								
K1OGPU0001A	Governor Oil Pump	KFD-105A-1.1	A	PDP	C	Flow	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
K2OGPU0001A	Governor Oil Pump	KFD-105A-2.1	A	PDP	C	Flow	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
K1OGPU0002B	Governor Oil Pump	KFD-105A-1.1	A	PDP	C	Flow	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
K2OGPU0002B	Governor Oil Pump	KFD-105A-2.1	A	PDP	C	Flow	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
K1OGPU0003C	Governor Oil Pump	KFD-105A-1.1	A	PDP	C	Flow	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
K2OGPU0003C	Governor Oil Pump	KFD-105A-2.1	A	PDP	C	Flow	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None

Equipment ID	Description	Flow Diagram	Pump Group	Pump Type	ASME Class	Test Type	Freq	Relief Request
TS - Keowee Turbine Sump								
K1TSPU088SA	AC Turbine Sump Pump	KFD-102A-1.1	A	VLS	C	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
K2TSPU088SA	AC Turbine Sump Pump	KFD-102A-2.1	A	VLS	C	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
K1TSPU088SD	DC Turbine Sump Pump	KFD-102A-1.1	A	VLS	C	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None
K2TSPU088SD	DC Turbine Sump Pump	KFD-102A-2.1	A	VLS	C	Differential Pressure	Q	None
						Vibration	Q	None
						Comprehensive	2Y	None

DUKE POWER
OCONEE NUCLEAR STATION

Valve Inservice Testing Program

Section 4.0

Revision 26
7/01/02

Valve	Flow Diagram	ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
AB - Air Circuit Breaker														
1AB0013	KFD-107A-1 1	J2	C	A/C	Yes	Check	Self Actuated	None	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	Q	Tested once quarterly	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None
1AB0014	KFD-107A-1 1	J3	C	A	Yes	Solenoid	Solenoid	None	ST	Measure Full-Stroke Time of Valve	Closed to Open	Q	Tested once quarterly	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None
1AB0015	KFD-107A-1 1	K3	C	A	Yes	Solenoid	Solenoid	None	ST	Measure Full-Stroke Time of Valve	Closed to Open	Q	Tested once quarterly	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None
1AB0017	KFD-107A-1 1	K2	C	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
2AB0023	KFD-107A-1 1	J12	C	A/C	Yes	Check	Self Actuated	None	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	Q	Tested once quarterly	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None

Valve	Flow Diagram		ASME Class	Valve Cutg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
2AB0024	KFD-107A-111	J13	C	A	Yes	Solenoid	Solenoid	None	ST	Measure Full-Stroke Time of Valve	Closed to Open	Q	Tested once quarterly	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y		None every two years
2AB0025	KFD-107A-111	K13	C	A	Yes	Solenoid	Solenoid	None	ST	Measure Full-Stroke Time of Valve	Closed to Open	Q	Tested once quarterly	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y		None every two years
2AB0027	KFD-107A-111	K11	C	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
1AB0033	KFD-107A-111	J5	C	A/C	Yes	Check	Self Actuated	None	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	Q	Tested once quarterly	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None
1AB0034	KFD-107A-111	J6	C	A	Yes	Solenoid	Solenoid	None	ST	Measure Full-Stroke Time of Valve	Closed to Open	Q	Tested once quarterly	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None
1AB0035	KFD-107A-111	K6	C	A	Yes	Solenoid	Solenoid	None	ST	Measure Full-Stroke Time of Valve	Closed to Open	Q	Tested once quarterly	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None

Valve	Flow Diagram	ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
1AB0037	KFD-107A-1.1	K5	C	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
2AB0043	KFD-107A-1.1	J9	C	A/C	Yes	Check	Self Actuated	None	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	Q	Tested once quarterly	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None
2AB0044	KFD-107A-1.1	J9	C	A	Yes	Solenoid	Solenoid	None	ST	Measure Full-Stroke Time of Valve	Closed to Open	Q	Tested once quarterly	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None
2AB0045	KFD-107A-1.1	K9	C	A	Yes	Solenoid	Solenoid	None	ST	Measure Full-Stroke Time of Valve	Closed to Open	Q	Tested once quarterly	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None
2AB0047	KFD-107A-1.1	K8	C	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
<div>AG - Keowee Governor Air</div>														
1AG0003	KFD-104A-1 1	G7	C	B	Yes	Globe	Manual	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None
2AG0003	KFD-104A-2 1	G7	C	B	Yes	Globe	Manual	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None
1AG0006	KFD-104A-1 1	G8	C	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
2AG0006	KFD-104A-2 1	G8	C	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
1AG0007	KFD-104A-1 1	G8	C	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
2AG0007	KFD-104A-2 1	G8	C	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12

Valve	Flow Diagram	ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
BA - Breathing Air													
1BA0171	OFD-137A-1 3	G2	B	A	No	Ball	Manual	None	LJ Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
2BA0171	OFD-137A-2 3	K2	B	A	No	Ball	Manual	None	LJ Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
3BA0171	OFD-137A-3 3	F2	B	A	No	Ball	Manual	None	LJ Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
1BA0172	OFD-137A-1 3	G2	B	A	No	Ball	Manual	None	LJ Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
2BA0172	OFD-137A-2.3	K3	B	A	No	Ball	Manual	None	LJ Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
3BA0172	OFD-137A-3 3	F2	B	A	No	Ball	Manual	None	LJ Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None

Valve	Flow Diagram	ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
BS - Building Spray														
BS0001	OFD-103A-1 1	J8	B	B	Yes	Globe	Limitorque	None	MS	Manual Stroke of Power Operated Valve	Closed to Open	Q	Tested once quarterly	None
									ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
BS0001	OFD-103A-2 1	J8	B	B	Yes	Globe	Limitorque	None	MS	Manual Stroke of Power Operated Valve	Closed to Open	Q	Tested once quarterly	None
									ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
BS0001	OFD-103A-3 1	J8	B	B	Yes	Globe	Limitorque	None	MS	Manual Stroke of Power Operated Valve	Closed to Open	Q	Tested once quarterly	None
									ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1BS0002	OFD-103A-1 1	E8	B	B	Yes	Globe	Limitorque	None	MS	Manual Stroke of Power Operated Valve	Closed to Open	Q	Tested once quarterly	None
									ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2BS0002	OFD-103A-2 1	E8	B	B	Yes	Globe	Limitorque	None	MS	Manual Stroke of Power Operated Valve	Closed to Open	Q	Tested once quarterly	None
									ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3BS0002	OFD-103A-3 1	E8	B	B	Yes	Globe	Limitorque	None	MS	Manual Stroke of Power Operated Valve	Closed to Open	Q	Tested once quarterly	None
									ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
1BS0003	OFD-102A-01-01 E13		B	B	No	Gate	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2BS0003	OFD-102A-02-01 E13		B	B	No	Gate	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3BS0003	OFD-102A-03-01 E13		B	B	No	Gate	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None

Valve	Flow Diagram	ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1BS0004	OFD-102A-01-01 B12	B	B	No	Gate	Limited torque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2BS0004	OFD-102A-02-01 B12	B	B	No	Gate	Limited torque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3BS0004	OFD-102A-03-01 B12	B	B	No	Gate	Limited torque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
1BS0011	OFD-103A-1 1 J6	B	C	Yes	Check	Self Actuated	ON-BS-01	FS	Full-Stroke Exercise	Open to Closed	Q	Tested once quarterly	None
								PS	Partial-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
								SD	Sample Disassembly	Both (Stroke Test)	SD	Disassembly one vlv per grp ea RFO	None
2BS0011	OFD-103A-2 1 J6	B	C	Yes	Check	Self Actuated	ON-BS-01	FS	Full-Stroke Exercise	Open to Closed	Q	Tested once quarterly	None
								PS	Partial-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
								SD	Sample Disassembly	Both (Stroke Test)	SD	Disassembly one vlv per grp ea RFO	None
3BS0011	OFD-103A-3 1 J6	B	C	Yes	Check	Self Actuated	ON-BS-01	FS	Full-Stroke Exercise	Open to Closed	Q	Tested once quarterly	None
								PS	Partial-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
								SD	Sample Disassembly	Both (Stroke Test)	SD	Disassembly one vlv per grp ea RFO	None

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1BS0014	OFD-103A-1.1	J10	B	C	Yes	Check	Self Actuated	ON-BS-02	PS	Partial-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									SD	Sample Disassembly	Both (Stroke Test)	SD	Disassem one vlv per grp ea RFO	None
2BS0014	OFD-103A-2.1	J10	B	C	Yes	Check	Self Actuated	ON-BS-02	PS	Partial-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									SD	Sample Disassembly	Both (Stroke Test)	SD	Disassem one vlv per grp ea RFO	None
3BS0014	OFD-103A-3.1	J10	B	C	Yes	Check	Self Actuated	ON-BS-02	PS	Partial-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									SD	Sample Disassembly	Both (Stroke Test)	SD	Disassem one vlv per grp ea RFO	None

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1BS0016	OFD-103A-1 1	E6	B	C	Yes	Check	Self Actuated	ON-BS-01	FS	Full-Stroke Exercise	Open to Closed	Q	Tested once quarterly	None
									PS	Partial-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									SD	Sample Disassembly	Both (Stroke Test)	SD	Disassem one vlv per grp ea. RFO	None
2BS0016	OFD-103A-2 1	E6	B	C	Yes	Check	Self Actuated	ON-BS-01	FS	Full-Stroke Exercise	Open to Closed	Q	Tested once quarterly	None
									PS	Partial-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									SD	Sample Disassembly	Both (Stroke Test)	SD	Disassem one vlv per grp ea. RFO	None
3BS0016	OFD-103A-3 1	E6	B	C	Yes	Check	Self Actuated	ON-BS-01	FS	Full-Stroke Exercise	Open to Closed	Q	Tested once quarterly	None
									PS	Partial-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									SD	Sample Disassembly	Both (Stroke Test)	SD	Disassem one vlv per grp ea. RFO	None

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1BS0019	OFD-103A-1 I	E10	B	C	Yes	Check	Self Actuated	ON-BS-02	PS	Partial-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									SD	Sample Disassembly	Both (Stroke Test)	SD	Disassem one vlv per grp ea RFO	None
2BS0019	OFD-103A-2 I	E10	B	C	Yes	Check	Self Actuated	ON-BS-02	PS	Partial-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									SD	Sample Disassembly	Both (Stroke Test)	SD	Disassem one vlv per grp ea RFO	None
3BS0019	OFD-103A-3 I	E10	B	C	Yes	Check	Self Actuated	ON-BS-02	PS	Partial-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									SD	Sample Disassembly	Both (Stroke Test)	SD	Disassem one vlv per grp ea RFO	None

Valve	Flow Diagram	ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
<div>C - Condensate</div>													
1C0152	OFD-121A-01-07 17	C	B	No	Butterfly	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2C0152	OFD-121A-02-07 16	C	B	No	Butterfly	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3C0152	OFD-121A-03-07 15	C	B	No	Butterfly	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
1C0153	OFD-121A-01-07 16	C	B	No	Butterfly	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2C0153	OFD-121A-02-07 17	C	B	No	Butterfly	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3C0153	OFD-121A-03-07 17	C	B	No	Butterfly	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None

Valve	Flow Diagram	ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1C0156	OFD-121A-1 7 17	C	B	No	Gate	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2C0156	OFD-121A-2 7 H7	B	B	No	Gate	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3C0156	OFD-121A-3 7 17	B	B	No	Gate	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
1C0158	OFD-121A-01-07 H6	C	B	No	Gate	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2C0158	OFD-121A-02-07 H5	C	B	No	Gate	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3C0158	OFD-121A-03-07 H5	C	B	No	Gate	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None

Valve	Flow Diagram	ASME Class	Valve Cutg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1C0160	OFD-121A-01-08 F9	C	B	No	Gate	Limiterorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2C0160	OFD-121A-02-08 E8	C	B	No	Gate	Limiterorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3C0160	OFD-121A-03-08 E8	C	B	No	Gate	Limiterorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
1C0176	OFD-121A-1.8 17	C	B	Yes	Butterfly	Air	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly	None
								PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2C0176	OFD-121A-2.8 17	C	B	Yes	Butterfly	Air	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly	None
								PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3C0176	OFD-121A-3.8 17	C	B	Yes	Ball	Air	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly	None
								PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1C0187	OFD-121A-1.8	G7	C	B	Yes	Butterfly	Air	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2C0187	OFD-121A-2.8	G7	C	B	Yes	Butterfly	Air	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3C0187	OFD-121A-3.8	G7	C	B	Yes	Ball	Air	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
1C0192	OFD-121A-1.8	J7	C	B	Yes	Globe	Air	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2C0192	OFD-121A-2.8	J7	C	B	Yes	Globe	Air	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3C0192	OFD-121A-3.8	J7	C	B	Yes	Globe	Air	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1C0391	OFD-121A-1	8 J11	C	B	Yes	Gate	Limiter torque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2C0391	OFD-121A-2	8 J11	C	B	Yes	Gate	Limiter torque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3C0391	OFD-121A-3	8 J11	C	B	Yes	Gate	Limiter torque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
1C0572	OFD-121A-1.8	E7	C	C	Yes	Check	Self Actuated	ON-C-02	PS	Partial-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
									SD	Sample Disassembly	Both (Stroke Test)	SD	Disassem one vlv per grp ea RFO	None
2C0572	OFD-121A-2	8 E6	C	C	Yes	Check	Self Actuated	ON-C-02	PS	Partial-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
									SD	Sample Disassembly	Both (Stroke Test)	SD	Disassem one vlv per grp ea RFO	None
3C0572	OFD-121A-3	8 E7	C	C	Yes	Check	Self Actuated	ON-C-02	PS	Partial-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
									SD	Sample Disassembly	Both (Stroke Test)	SD	Disassem one vlv per grp ea. RFO	None

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1C0573	OFD-121A-1.8	E7	C	B	Yes	Gate	Manual	ON-C-01	FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
2C0573	OFD-121A-2.8	D6	C	B	Yes	Gate	Manual	ON-C-01	FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
3C0573	OFD-121A-3.8	D7	C	B	Yes	Gate	Manual	ON-C-01	FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
1C0850	OFD-121A-1.8	D4	C	C	Yes	Check	Self Actuated	ON-C-03	FS	Full-Stroke Exercise	Both (Stroke Test)	CS	Tested every cold shutdown	None
2C0850	OFD-121A-2.8	D4	C	C	Yes	Check	Self Actuated	ON-C-03	FS	Full-Stroke Exercise	Both (Stroke Test)	CS	Tested every cold shutdown	None
3C0850	OFD-121A-3.8	D4	C	C	Yes	Check	Self Actuated	ON-C-03	FS	Full-Stroke Exercise	Both (Stroke Test)	CS	Tested every cold shutdown	None
1C0852	OFD-121A-1.8	C4	C	C	Yes	Check	Self Actuated	ON-C-03	FS	Full-Stroke Exercise	Both (Stroke Test)	CS	Tested every cold shutdown	None
2C0852	OFD-121A-2.8	C4	C	C	Yes	Check	Self Actuated	ON-C-03	FS	Full-Stroke Exercise	Both (Stroke Test)	CS	Tested every cold shutdown	None
3C0852	OFD-121A-3.8	C4	C	C	Yes	Check	Self Actuated	ON-C-03	FS	Full-Stroke Exercise	Both (Stroke Test)	CS	Tested every cold shutdown	None

Valve	Flow Diagram	ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
CA - Chemical Addition														
1CA0027	OFD-127B-1 2	G7	B	A	Yes	Globe	Manual	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
2CA0027	OFD-127B-2 2	G7	B	A	Yes	Gate	Manual	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
3CA0027	OFD-127B-3 2	G7	B	A	Yes	Globe	Manual	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1CA0029	OFD-127B-1	2 J7	B	A	Yes	Globe	Manual	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
2CA0029	OFD-127B-2	2 J7	B	A	Yes	Gate	Manual	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
3CA0029	OFD-127B-3	2 J7	B	A	Yes	Globe	Manual	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None

Valve	Flow Diagram	ASME Class	Valve Cutg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
<hr/> CC - Component Cooling <hr/>														
1CC0007	OFD-144A-1 2	D13	B	A	Yes	Butterfly	Limitorque	ON-CC-01	ST	Measure Full-Stroke Time of Valve	Open to Closed	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Reverse Direction	RF	Tested every refueling outage	None
2CC0007	OFD-144A-2 2	D11	B	A	Yes	Butterfly	Limitorque	ON-CC-01	ST	Measure Full-Stroke Time of Valve	Open to Closed	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Reverse Direction	RF	Tested every refueling outage	None
3CC0007	OFD-144A-3 2	D11	B	A	Yes	Butterfly	Limitorque	ON-CC-01	ST	Measure Full-Stroke Time of Valve	Open to Closed	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Reverse Direction	RF	Tested every refueling outage	None

Valve	Flow Diagram		ASME Class	Valve Cutg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
1CC0008	OFD-144A-1	2	D13	B	A	Yes	Butterfly	Air	ON-CC-01	ST	Measure Full-Stroke Time of Valve	Open to Closed	CS	Tested every cold shutdown	None
										PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
										LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
2CC0008	OFD-144A-2	2	D13	B	A	Yes	Butterfly	Air	ON-CC-01	ST	Measure Full-Stroke Time of Valve	Open to Closed	CS	Tested every cold shutdown	None
										PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
										LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
3CC0008	OFD-144A-3	2	D13	B	A	Yes	Butterfly	Air	ON-CC-01	ST	Measure Full-Stroke Time of Valve	Open to Closed	CS	Tested every cold shutdown	None
										PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
										LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1CC0020	OFD-1444-1.2	D4	B	A/C	Yes	Check	Self Actuated	ON-CC-02	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
2CC0020	OFD-144A-2.2	D3	B	A/C	Yes	Check	Self Actuated	ON-CC-02	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
3CC0020	OFD-144A-3.2	D3	B	A/C	Yes	Check	Self Actuated	ON-CC-02	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1CC0024	OFD-144A-1.2	D2	B	A/C	Yes	Check	Self Actuated	ON-CC-02	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
2CC0024	OFD-144A-2.2	D1	B	A/C	Yes	Check	Self Actuated	ON-CC-02	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
3CC0024	OFD-144A-3.2	D1	B	A/C	Yes	Check	Self Actuated	ON-CC-02	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
2CC0028	OFD-144A-2.2	L7	C	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
3CC0028	OFD-144A-3.2	L7	C	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
2CC0032	OFD-144A-2.2	K7	C	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
3CC0032	OFD-144A-3.2	K7	C	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
2CC0036	OFD-144A-2.2	J7	C	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
3CC0036	OFD-144A-3.2	J7	C	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
2CC0040	OFD-144A-2.2	H7	C	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
3CC0040	OFD-144A-3.2	H7	C	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1CC0076	OFD-144A-1 3	H6	B	A/C	Yes	Check	Self Actuated	ON-CC-02	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
2CC0076	OFD-144A-2 3	H6	B	A/C	Yes	Check	Self Actuated	ON-CC-02	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
3CC0076	OFD-144A-3 3	H6	B	A/C	Yes	Check	Self Actuated	ON-CC-02	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1CC0077	OFD-144A-1.3	H7	B	A/C	Yes	Check	Self Actuated	ON-CC-02	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
2CC0077	OFD-144A-2.3	H7	B	A/C	Yes	Check	Self Actuated	ON-CC-02	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
3CC0077	OFD-144A-3.3	H7	B	A/C	Yes	Check	Self Actuated	ON-CC-02	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1CC0168	OFD-144A-1.2	D12	B	A/C	Yes	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule Tested every refueling outage	ON-GRV-12
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Reverse Direction	RF		None
2CC0168	OFD-144A-2.2	E12	B	A/C	Yes	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule Tested every refueling outage	ON-GRV-12
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Reverse Direction	RF		None
3CC0168	OFD-144A-3.2	E12	B	A/C	Yes	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule Tested every refueling outage	ON-GRV-12
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Reverse Direction	RF		None

Valve	Flow Diagram	ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
CCW- Condenser Cooling Water														
0CCW0008	OFD-133A-3.2	B1	C	B	Yes	Butterfly	Motor - Other	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
1CCW0010	OFD-133A-1 1	J2	C	B	Yes	Butterfly	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2CCW0010	OFD-133A-2 1	J2	C	B	Yes	Butterfly	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3CCW0010	OFD-133A-3 1	J2	C	B	Yes	Butterfly	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None

Valve	Flow Diagram	ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1CCW0011	OFD-133A-1.1	J5	C	B	Yes	Butterfly	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years
2CCW0011	OFD-133A-2.1	J5	C	B	Yes	Butterfly	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years
3CCW0011	OFD-133A-3.1	J5	C	B	Yes	Butterfly	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years
1CCW0012	OFD-133A-1.1	J7	C	B	Yes	Butterfly	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years
2CCW0012	OFD-133A-2.1	J7	C	B	Yes	Butterfly	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years
3CCW0012	OFD-133A-3.1	J7	C	B	Yes	Butterfly	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1CCW0013	OFD-133A-1.1	J10	C	B	Yes	Butterfly	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2CCW0013	OFD-133A-2.1	J10	C	B	Yes	Butterfly	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3CCW0013	OFD-133A-3.1	J10	C	B	Yes	Butterfly	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
0CCW0267	OFD-133A-2.5	J11	C	B	Yes	Globe	Manual	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1CCW0268SSF	OFD-133A-2.5	H14	C	B	Yes	Globe	Rotork	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		Tested once every two years
2CCW0268SSF	OFD-133A-2.5	H13	C	B	Yes	Globe	Rotork	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		Tested once every two years
3CCW0268SSF	OFD-133A-2.5	H12	C	B	Yes	Globe	Rotork	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		Tested once every two years
1CCW0269SSF	OFD-121D-1.1	G13	C	B	Yes	Gate	Rotork	ON-SSF-01	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		Tested once every two years
2CCW0269SSF	OFD-121D-2.1	G13	C	B	Yes	Gate	Rotork	ON-SSF-01	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		Tested once every two years
3CCW0269SSF	OFD-121D-3.1	G13	C	B	Yes	Globe	Rotork	ON-SSF-01	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		Tested once every two years

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
0CCW0271SSF	OFD-133A-2.5	H5	C	C	Yes	Check	Self Actuated	None	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	Q	Tested once quarterly	None
0CCW0274SSF	OFD-133A-2.5	J6	C	C	Yes	Check	Self Actuated	None	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	Q	Tested once quarterly	None
0CCW0284SSF	OFD-133A-2.5	G6	C	C	Yes	Check	Self Actuated	None	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	Q	Tested once quarterly	None
0CCW0286SSF	OFD-133A-2.5	G10	C	B	Yes	Gate	Manual	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None

Valve	Flow Diagram	ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
1CCW0287SSF	OFD-133A-2.5	G14	C	B	Yes	Gate	Rotork	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2CCW0287SSF	OFD-133A-2.5	G13	C	B	Yes	Gate	Rotork	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3CCW0287SSF	OFD-133A-2.5	G12	C	B	Yes	Gate	Rotork	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
0CCW0289SSF	OFD-133A-2.5	J9	C	C	Yes	Check	Self Actuated	None	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	Q	Tested once quarterly	None
0CCW0384	OFD-133A-2.5	F10	C	B	Yes	Gate	Manual	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None

Valve	Flow Diagram	ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
CF - Core Flood													
1CF0001	OFD-102A-1 3	F10	B	B	No	Gate	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years
2CF0001	OFD-102A-2 3	E10	B	B	No	Gate	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years
3CF0001	OFD-102A-3 3	F10	B	B	No	Gate	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years
1CF0002	OFD-102A-1 3	F6	B	B	No	Gate	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years
2CF0002	OFD-102A-2 3	E6	B	B	No	Gate	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years
3CF0002	OFD-102A-3 3	F6	B	B	No	Gate	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1CF0003	OFD-102A-1.3	G9	B	B	Yes	Globe	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2CF0003	OFD-102A-2.3	G10	B	B	Yes	Globe	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3CF0003	OFD-102A-3.3	G9	B	B	Yes	Globe	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
1CF0004	OFD-102A-1.3	G5	B	B	Yes	Globe	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2CF0004	OFD-102A-2.3	G4	B	B	Yes	Globe	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3CF0004	OFD-102A-3.3	G5	B	B	Yes	Globe	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None

Valve	Flow Diagram	ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1CF0005	OFD-102A-01-03 110	B	B	No	Globe	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2CF0005	OFD-102A-02-03 119	B	B	No	Globe	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3CF0005	OFD-102A-03-03 110	B	B	No	Globe	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
1CF0006	OFD-102A-01-03 16	B	B	No	Globe	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2CF0006	OFD-102A-02-03 H7	B	B	No	Globe	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3CF0006	OFD-102A-03-03 16	B	B	No	Globe	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1CF0011	OFD-102A-1.3	E10	A	C	Yes	Check	Self Actuated	ON-CF-01	FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown Tested every cold shutdown Tested every refueling outage	None
									PS	Partial-Stroke Exercise	Closed to Open	CS		None
									FS	Full-Stroke Exercise	Closed to Open	RF		ON-SRV-CF-01
2CF0011	OFD-102A-2.3	D10	A	C	Yes	Check	Self Actuated	ON-CF-01	FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown Tested every cold shutdown Tested every refueling outage	None
									PS	Partial-Stroke Exercise	Closed to Open	CS		None
									FS	Full-Stroke Exercise	Closed to Open	RF		ON-SRV-CF-01
3CF0011	OFD-102A-3.3	E10	A	C	Yes	Check	Self Actuated	ON-CF-01	FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown Tested every cold shutdown Tested every refueling outage	None
									PS	Partial-Stroke Exercise	Closed to Open	CS		None
									FS	Full-Stroke Exercise	Closed to Open	RF		ON-SRV-CF-01

Valve	Flow Diagram	ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
1CF0012	OFD-102A-1 3	D9	A	A/C	Yes	Check	Self Actuated	ON-CF-02	FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
									FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									PS	Partial-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	CS	Tested every cold shutdown	ON-SRV-CF-02
2CF0012	OFD-102A-2 3	D10	A	A/C	Yes	Check	Self Actuated	ON-CF-02	FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
									FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									PS	Partial-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	CS	Tested every cold shutdown	ON-SRV-CF-02
3CF0012	OFD-102A-3 3	D9	A	A/C	Yes	Check	Self Actuated	ON-CF-02	FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
									FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									PS	Partial-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	CS	Tested every cold shutdown	ON-SRV-CF-02

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1CF0013	OFD-102A-1.3	E6	A	C	Yes	Check	Self Actuated	ON-CF-01	FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
									PS	Partial-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
									FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	ON-SRV-CF-01
2CF0013	OFD-102A-2.3	D6	A	C	Yes	Check	Self Actuated	ON-CF-01	FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
									PS	Partial-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
									FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	ON-SRV-CF-01
3CF0013	OFD-102A-3.3	E6	A	C	Yes	Check	Self Actuated	ON-CF-01	FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
									PS	Partial-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
									FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	ON-SRV-CF-01

Valve	Flow Diagram		ASME Class	Valve Cutg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1CF0014	OFD-102A-1 3	D7	A	A/C	Yes	Check	Self Actuated	ON-CF-02	FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown Tested every refueling outage Tested every cold shutdown Tested every cold shutdown	None
									FS	Full-Stroke Exercise	Closed to Open	RF		None
									PS	Partial-Stroke Exercise	Closed to Open	CS		None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	CS		ON-SRV-CF-02
2CF0014	OFD-102A-2 3	D6	A	A/C	Yes	Check	Self Actuated	ON-CF-02	FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown Tested every refueling outage Tested every cold shutdown Tested every cold shutdown	None
									FS	Full-Stroke Exercise	Closed to Open	RF		None
									PS	Partial-Stroke Exercise	Closed to Open	CS		None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	CS		ON-SRV-CF-02
3CF0014	OFD-102A-3 3	D7	A	A/C	Yes	Check	Self Actuated	ON-CF-02	FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown Tested every refueling outage Tested every cold shutdown Tested every cold shutdown	None
									FS	Full-Stroke Exercise	Closed to Open	RF		None
									PS	Partial-Stroke Exercise	Closed to Open	CS		None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	CS		ON-SRV-CF-02

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1CF0015	OFD-102A-1	3 J10	B	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
2CF0015	OFD-102A-2	3 H19	B	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
3CF0015	OFD-102A-3	3 I10	B	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
1CF0017	OFD-102A-1	3 I6	B	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
2CF0017	OFD-102A-2	3 H6	B	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
3CF0017	OFD-102A-3	3 I6	B	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1CF0019	OFD-102A-1.3	G4	B	B	Yes	Globe	Manual	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None
2CF0019	OFD-102A-2.3	G3	B	B	Yes	Globe	Manual	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None
3CF0019	OFD-102A-3.3	G4	B	B	Yes	Globe	Manual	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None
2CF0034	OFD-102A-2.3	J7	B	A	No	Globe	Manual	None	LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
3CF0034	OFD-102A-3.3	J7	B	A	No	Globe	Manual	None	LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
2CF0035	OFD-102A-2.3	I4	B	A	No	Globe	Manual	None	LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
3CF0035	OFD-102A-3.3	I4	B	A	No	Globe	Manual	None	LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
2CF0036	OFD-102A-2.3	I4	B	A	No	Globe	Manual	None	LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
3CF0036	OFD-102A-3.3	I4	B	A	No	Globe	Manual	None	LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
2CF0037	OFD-102A-2.3	J4	B	A	No	Globe	Manual	None	LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
3CF0037	OFD-102A-3.3	J4	B	A	No	Globe	Manual	None	LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None

Valve	Flow Diagram	ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
1CF0042	OFD-127B-1 2	G11	B	A/C	Yes	Check	Self Actuated	ON-CF-03	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
2CF0042	OFD-127B-2.2	G11	B	A/C	Yes	Check	Self Actuated	ON-CF-03	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
3CF0042	OFD-127B-3 2	G11	B	A/C	Yes	Check	Self Actuated	ON-CF-03	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None

Valve	Flow Diagram	ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
1CF0044	OFD-127B-1.2	J11	B	A/C	Yes	Check	Self Actuated	ON-CF-03	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
2CF0044	OFD-127B-2.2	J11	B	A/C	Yes	Check	Self Actuated	ON-CF-03	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
3CF0044	OFD-127B-3.2	J11	B	A/C	Yes	Check	Self Actuated	ON-CF-03	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1CF0061	OFD-102A-1.3	G5	B	C	Yes	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
2CF0061	OFD-102A-02-03	G4	B	C	Yes	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
3CF0061	OFD-102A-03-03	G4	B	C	Yes	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12

Valve	Flow Diagram	ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
CS - Coolant Storage														
1CS0005	OFD-107A-1.2	D5	B	A	Yes	Diaphragm	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
2CS0005	OFD-107A-2.2	D5	B	A	Yes	Diaphragm	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Reverse Direction	RF	Tested every refueling outage	None
3CS0005	OFD-107A-3.2	D5	B	A	Yes	Diaphragm	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1CS0006	OFD-107A-1.2	D8	B	A	Yes	Diaphragm	Air	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
2CS0006	OFD-107A-2.2	D8	B	A	Yes	Diaphragm	Air	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
3CS0006	OFD-107A-3.2	D8	B	A	Yes	Diaphragm	Air	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None

Valve	Flow Diagram	ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
1CS0011	OFD-107A-1.1	J2	B	A/C	Yes	Check	Self Actuated	ON-CS-01	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
2CS0011	OFD-107A-2.1	J2	B	A/C	Yes	Check	Self Actuated	ON-CS-01	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
3CS0011	OFD-107A-3.1	J3	B	A/C	Yes	Check	Self Actuated	ON-CS-01	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None

Valve	Flow Diagram	ASME Class	Valve Cntg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
1CS0012	OFD-107A-1.1	J5	B	A/C	Yes	Check	Self Actuated	ON-CS-01	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
2CS0012	OFD-107A-2.1	J5	B	A/C	Yes	Check	Self Actuated	ON-CS-01	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
3CS0012	OFD-107A-3.1	J5	B	A/C	Yes	Check	Self Actuated	ON-CS-01	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1CS0197	OFD-107A-1.2	D5	B	A/C	Yes	Check	Self Actuated	ON-CS-02	FS	Full-Stroke Exercise	Both (Stroke Test)	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
2CS0197	OFD-107A-02-02 E5		B	A/C	Yes	Check	Self Actuated	ON-CS-02	FS	Full-Stroke Exercise	Both (Stroke Test)	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
3CS0197	OFD-107A-03-02 E5		B	A/C	Yes	Check	Self Actuated	ON-CS-02	FS	Full-Stroke Exercise	Both (Stroke Test)	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None

Valve	Flow Diagram	ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
DA - Diesel Air														
0DA0006	OFD-137D-1 1	F4	C	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
0DA0011	OFD-137D-1 1	F7	C	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
0DA0016	OFD-137D-1 2	F4	C	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
0DA0021	OFD-137D-1 2	F7	C	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12

Valve	Flow Diagram	ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
<div>DW - Demineralized Water</div>													
1DW0059	OFD-106E-1 1	H2	B	A	No	Diaphragm	Manual	None	LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage
2DW0059	OFD-106E-2 1	H3	B	A	No	Diaphragm	Manual	None	LJ	Leak-Rate Test Valve to App J Requirement(s)	Reverse Direction	RF	Tested every refueling outage
3DW0059	OFD-106E-3 1	H2	B	A	No	Diaphragm	Manual	None	LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage
1DW0060	OFD-106E-1 1	H3	B	A	No	Diaphragm	Manual	None	LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage
2DW0060	OFD-106E-2 1	H4	B	A	No	Diaphragm	Manual	None	LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage
3DW0060	OFD-106E-3 1	H4	B	A	No	Diaphragm	Manual	None	LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1DW0539	OFD-106E-1 1	H4	B	A/C	Yes	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule Tested every refueling outage	ON-GRV-12
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Reverse Direction	RF		None
2DW0539	OFD-106E-2 1	H3	B	A/C	Yes	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule Tested every refueling outage	ON-GRV-12
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Reverse Direction	RF		None
3DW0539	OFD-106E-3 1	H3	B	A/C	Yes	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule Tested every refueling outage	ON-GRV-12
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Reverse Direction	RF		None

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
<div>ESV - Essential Siphon Vacuum</div>														
1ESV0001	OFD-130A-1 1	I2	C	C	Yes	Float	Self Actuated	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None
2ESV0001	OFD-130A-2 1	I2	C	C	Yes	Float	Self Actuated	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None
3ESV0001	OFD-130A-3 1	I2	C	C	Yes	Float	Self Actuated	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None
1ESV0002	OFD-130A-1 1	E2	C	C	Yes	Float	Self Actuated	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None
2ESV0002	OFD-130A-2 1	E2	C	C	Yes	Float	Self Actuated	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None
3ESV0002	OFD-130A-3 1	E2	C	C	Yes	Float	Self Actuated	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1ESV0018	OFD-1304-1.1	F8	C	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	NA or Fail Safe Pos	RV	Test relief valve per OM-1 schedule	ON-GRV-12
2ESV0018	OFD-1304-2.1	F8	C	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	NA or Fail Safe Pos	RV	Test relief valve per OM-1 schedule	ON-GRV-12
3ESV0018	OFD-1304-3.1	F8	C	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
1ESV0019	OFD-1304-1.1	J8	C	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	NA or Fail Safe Pos	RV	Test relief valve per OM-1 schedule	ON-GRV-12
2ESV0019	OFD-1304-2.1	J8	C	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	NA or Fail Safe Pos	RV	Test relief valve per OM-1 schedule	ON-GRV-12
3ESV0019	OFD-1304-3.1	K8	C	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1ESV0026	OFD-130A-1	1 19	C	C	Yes	Check	Self Actuated	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None
2ESV0026	OFD-130A-2	1 19	C	C	Yes	Check	Self Actuated	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None
3ESV0026	OFD-130A-3	1 19	C	C	Yes	Check	Self Actuated	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None
1ESV0027	OFD-130A-1	1 19	C	C	Yes	Check	Self Actuated	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None
2ESV0027	OFD-130A-2	1 19	C	C	Yes	Check	Self Actuated	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None
3ESV0027	OFD-130A-3	1 19	C	C	Yes	Check	Self Actuated	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1ESV0028	OFD-130A-1-1	E6	C	B	Yes	Solenoid	Solenoid	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Open to Closed	2Y	Tested once every two years	None
2ESV0028	OFD-130A-2-1	E6	C	B	Yes	Solenoid	Solenoid	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Open to Closed	2Y	Tested once every two years	None
3ESV0028	OFD-130A-3-1	E6	C	B	Yes	Solenoid	Solenoid	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Open to Closed	2Y	Tested once every two years	None
1ESV0029	OFD-130A-1-1	J6	C	B	Yes	Solenoid	Solenoid	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Open to Closed	2Y	Tested once every two years	None
2ESV0029	OFD-130A-2-1	J6	C	B	Yes	Solenoid	Solenoid	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Open to Closed	2Y	Tested once every two years	None
3ESV0029	OFD-130A-3-1	J6	C	B	Yes	Solenoid	Solenoid	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Open to Closed	2Y	Tested once every two years	None

Valve	Flow Diagram	ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
<i>FDW- Feedwater</i>														
1FDW0032	OFD-121B-1 3	J7	C	B	Yes	Globe	Air	ON-FDW-03	ST	Measure Full-Stroke Time of Valve	Open to Closed	CS	Tested every cold shutdown Tested once every two years	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		None
2FDW0032	OFD-121B-2 3	J6	C	B	Yes	Globe	Air	ON-FDW-03	ST	Measure Full-Stroke Time of Valve	Open to Closed	CS	Tested every cold shutdown Tested once every two years	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		None
3FDW0032	OFD-121B-3 3	J7	C	B	Yes	Globe	Air	ON-FDW-03	ST	Measure Full-Stroke Time of Valve	Open to Closed	CS	Tested every cold shutdown Tested once every two years	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		None

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1FDW0035	OFD-121B-1 3	L7	C	B	Yes	Globe	Air	ON-FDW-01	ST	Measure Full-Stroke Time of Valve	Open to Closed	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2FDW0035	OFD-121B-2 3	K6	C	B	Yes	Globe	Air	ON-FDW-01	ST	Measure Full-Stroke Time of Valve	Open to Closed	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3FDW0035	OFD-121B-3 3	K7	C	B	Yes	Globe	Air	ON-FDW-01	ST	Measure Full-Stroke Time of Valve	Open to Closed	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1FDW0039	OFD-121D-1 1	J10	B	C	Yes	Check	Self Actuated	ON-FDW-04	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage Disassem one vlv per grp ea RFO	None
									SD	Sample Disassembly	Open to Closed	SD		None
2FDW0039	OFD-121D-2 1	J10	B	C	Yes	Check	Self Actuated	ON-FDW-04	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage Disassem one vlv per grp ea RFO	None
									SD	Sample Disassembly	Open to Closed	SD		None
3FDW0039	OFD-121D-3 1	J10	B	C	Yes	Check	Self Actuated	ON-FDW-04	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage Disassem one vlv per grp ea. RFO	None
									SD	Sample Disassembly	Open to Closed	SD		None

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1FDW0041	OFD-121B-1 3	D7	C	B	Yes	Globe	Air	ON-FDW-03	ST	Measure Full-Stroke Time of Valve	Open to Closed	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		None
2FDW0041	OFD-121B-2 3	D5	C	B	Yes	Globe	Air	ON-FDW-03	ST	Measure Full-Stroke Time of Valve	Open to Closed	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		None
3FDW0041	OFD-121B-3 3	D7	C	B	Yes	Globe	Air	ON-FDW-03	ST	Measure Full-Stroke Time of Valve	Open to Closed	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		None
1FDW0044	OFD-121B-1 3	F7	C	B	Yes	Globe	Air	ON-FDW-01	ST	Measure Full-Stroke Time of Valve	Open to Closed	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		None
2FDW0044	OFD-121B-2 3	F7	C	B	Yes	Globe	Air	ON-FDW-01	ST	Measure Full-Stroke Time of Valve	Open to Closed	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		None
3FDW0044	OFD-121B-3 3	F7	C	B	Yes	Globe	Air	ON-FDW-01	ST	Measure Full-Stroke Time of Valve	Open to Closed	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		None

Valve	Flow Diagram	ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1FDW0103	OFD-121B-1 5	K8	B	B	Yes	Gate	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years
2FDW0103	OFD-121B-2 5	J9	B	B	Yes	Gate	Rotork	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years
3FDW0103	OFD-121B-3 5	J9	B	B	Yes	Gate	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years
1FDW0104	OFD-121B-1 5	C8	B	B	Yes	Gate	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years
2FDW0104	OFD-121B-2 5	C9	B	B	Yes	Gate	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years
3FDW0104	OFD-121B-3 5	D9	B	B	Yes	Gate	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1FDW0106	OFD-1104-1 1	D6	B	B	Yes	Globe	Air	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		Tested once every two years
2FDW0106	OFD-1104-2 1	F6	B	B	Yes	Globe	Air	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		Tested once every two years
3FDW0106	OFD-1104-3 1	D6	B	B	Yes	Globe	Air	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		Tested once every two years
1FDW0108	OFD-110A-1 1	F6	B	B	Yes	Globe	Air	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		Tested once every two years
2FDW0108	OFD-110A-2 1	D6	B	B	Yes	Globe	Air	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		Tested once every two years
3FDW0108	OFD-110A-3 1	F6	B	B	Yes	Globe	Air	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		Tested once every two years

Valve	Flow Diagram		ASME Class	Valve Cutg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1FDW0232	OFD-121D-1 1	K13	B	C	Yes	Check	Self Actuated	ON-FDW-06	FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown Disassem one vlv per grp ea RFO	None
									SD	Sample Disassembly	Both (Stroke Test)	SD		None
2FDW0232	OFD-121D-2 1	K13	B	C	Yes	Check	Self Actuated	ON-FDW-06	FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown Disassem one vlv per grp ea RFO	None
									SD	Sample Disassembly	Both (Stroke Test)	SD		None
3FDW0232	OFD-121D-3 1	K13	B	C	Yes	Check	Self Actuated	ON-FDW-06	FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown Disassem one vlv per grp ea RFO	None
									SD	Sample Disassembly	Both (Stroke Test)	SD		None
1FDW0233	OFD-121D-1 1	D13	B	C	Yes	Check	Self Actuated	ON-FDW-06	FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown Disassem one vlv per grp ea RFO	None
									SD	Sample Disassembly	Both (Stroke Test)	SD		None
2FDW0233	OFD-121D-2 1	D13	B	C	Yes	Check	Self Actuated	ON-FDW-06	FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown Disassem one vlv per grp ea RFO	None
									SD	Sample Disassembly	Both (Stroke Test)	SD		None
3FDW0233	OFD-121D-3 1	D13	B	C	Yes	Check	Self Actuated	ON-FDW-06	FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown Disassem one vlv per grp ea RFO	None
									SD	Sample Disassembly	Both (Stroke Test)	SD		None

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1FDW0311	OFD-121D-1 1	J6	C	C	Yes	Check	Self Actuated	ON-FDW-02	FS	Full-Stroke Exercise	Both (Stroke Test)	CS	Tested every cold shutdown	None
2FDW0311	OFD-121D-2 1	J6	C	C	Yes	Check	Self Actuated	ON-FDW-02	FS	Full-Stroke Exercise	Both (Stroke Test)	CS	Tested every cold shutdown	None
3FDW0311	OFD-121D-3 1	I6	C	C	Yes	Check	Self Actuated	ON-FDW-02	FS	Full-Stroke Exercise	Both (Stroke Test)	CS	Tested every cold shutdown	None
1FDW0312	OFD-121D-1 1	E6	C	C	Yes	Check	Self Actuated	ON-FDW-02	FS	Full-Stroke Exercise	Both (Stroke Test)	CS	Tested every cold shutdown	None
2FDW0312	OFD-121D-2 1	E7	C	C	Yes	Check	Self Actuated	ON-FDW-02	FS	Full-Stroke Exercise	Both (Stroke Test)	CS	Tested every cold shutdown	None
3FDW0312	OFD-121D-3 1	L6	C	C	Yes	Check	Self Actuated	ON-FDW-02	FS	Full-Stroke Exercise	Both (Stroke Test)	CS	Tested every cold shutdown	None
1FDW0313	OFD-121D-1 1	H10	C	B	Yes	Gate	Manual	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None
2FDW0313	OFD-121D-2 1	H10	C	B	Yes	Gate	Manual	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None
3FDW0313	OFD-121D-3 1	H10	C	B	Yes	Gate	Manual	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1FDW0314	OFD-121D-1 1	F10	C	B	Yes	Gate	Manual	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None
2FDW0314	OFD-121D-2 1	F10	C	B	Yes	Gate	Manual	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None
3FDW0314	OFD-121D-3 1	F10	C	B	Yes	Gate	Manual	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None
1FDW0315	OFD-121D-1 1	K10	C	B	Yes	Globe	Air	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2FDW0315	OFD-121D-2 1	K10	C	B	Yes	Globe	Air	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3FDW0315	OFD-121D-3 1	K10	C	B	Yes	Globe	Air	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1FDW0316	OFD-121D-1 1	D10	C	B	Yes	Globe	Air	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2FDW0316	OFD-121D-2 1	D10	C	B	Yes	Globe	Air	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3FDW0316	OFD-121D-3 1	D10	C	B	Yes	Globe	Air	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
1FDW0317	OFD-121D-1 1	K10	B	C	Yes	Check	Self Actuated	ON-FDW-07	FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown Disassem one vlv per grp ea RFO	None
									SD	Sample Disassembly	Both (Stroke Test)	SD		None
2FDW0317	OFD-121D-2 1	K10	B	C	Yes	Check	Self Actuated	ON-FDW-07	FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown Disassem one vlv per grp ea RFO	None
									SD	Sample Disassembly	Both (Stroke Test)	SD		None
3FDW0317	OFD-121D-3 1	K10	B	C	Yes	Check	Self Actuated	ON-FDW-07	FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown Disassem one vlv per grp ea RFO	None
									SD	Sample Disassembly	Both (Stroke Test)	SD		None

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1FDW0318	OFD-121D-1 1	D10	C	C	Yes	Check	Self Actuated	ON-FDW-07	FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown Disassem one vlv per grp ea RFO	None
									SD	Sample Disassembly	Both (Stroke Test)	SD		None
2FDW0318	OFD-121D-2 1	D10	C	C	Yes	Check	Self Actuated	ON-FDW-07	FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown Disassem one vlv per grp ea RFO	None
									SD	Sample Disassembly	Both (Stroke Test)	SD		None
3FDW0318	OFD-121D-3 1	D10	C	C	Yes	Check	Self Actuated	ON-FDW-07	FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown Disassem one vlv per grp ea RFO	None
									SD	Sample Disassembly	Both (Stroke Test)	SD		None
1FDW0345	OFD-121D-1 1	K12	B	C	Yes	Check	Self Actuated	ON-FDW-08	FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown Disassem one vlv per grp ea RFO	None
									SD	Sample Disassembly	Both (Stroke Test)	SD		None
2FDW0345	OFD-121D-2 1	K12	B	C	Yes	Check	Self Actuated	ON-FDW-08	FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown Disassem one vlv per grp ea RFO	None
									SD	Sample Disassembly	Both (Stroke Test)	SD		None
3FDW0345	OFD-121D-3 1	K13	B	C	Yes	Check	Self Actuated	ON-FDW-08	FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown Disassem one vlv per grp ea RFO	None
									SD	Sample Disassembly	Both (Stroke Test)	SD		None

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1FDW0346	OFD-121D-1.1	D12	B	C	Yes	Check	Self Actuated	ON-FDW-08	FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown Disassem one vlv per grp ea RFO	None
									SD	Sample Disassembly	Both (Stroke Test)	SD		None
2FDW0346	OFD-121D-2.1	D12	B	C	Yes	Check	Self Actuated	ON-FDW-08	FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown Disassem one vlv per grp ea RFO	None
									SD	Sample Disassembly	Both (Stroke Test)	SD		None
3FDW0346	OFD-121D-3.1	D12	B	C	Yes	Check	Self Actuated	ON-FDW-08	FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown Disassem one vlv per grp ea RFO	None
									SD	Sample Disassembly	Both (Stroke Test)	SD		None
1FDW0347SSF	OFD-121D-1.1	D13	C	B	Yes	Gate	Rotork	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly every two years	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		None
2FDW0347SSF	OFD-121D-2.1	D13	C	B	Yes	Gate	Rotork	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly every two years	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		None
3FDW0347SSF	OFD-121D-3.1	D13	C	B	Yes	Globe	Rotork	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly every two years	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		None

Valve	Flow Diagram	ASMF Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1FDW0368	OFD-121D-01-01 J5	C	B	No	Gate	Rotork	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2FDW0368	OFD-121D-21 J7	C	B	No	Gate	Rotork	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3FDW0368	OFD 121D-03-01 I7	C	B	No	Gate	Rotork	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
1FDW0369	OFD-121D-11 E6	C	B	No	Gate	Rotork	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2FDW0369	OFD-121D-21 E6	C	B	No	Gate	Rotork	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3FDW0369	OFD 121D-03-01 D7	C	B	No	Gate	Rotork	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1FDW0370	OFD-121D-1.1	K3	C	C	Yes	Check	Self Actuated	None	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
2FDW0370	OFD-121D-2.1	K3	C	C	Yes	Check	Self Actuated	None	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
3FDW0370	OFD-121D-3.1	K4	C	C	Yes	Check	Self Actuated	None	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
1FDW0372	OFD-121D-1.1	K7	C	B	No	Gate	Rotork	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2FDW0372	OFD-121D-2.1	K7	C	B	No	Gate	Rotork	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3FDW0372	OFD-121D-3.1	K7	C	B	No	Gate	Rotork	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
1FDW0373	OFD-121D-1.1	K7	C	C	Yes	Check	Self Actuated	ON-FDW-09	FS	Full-Stroke Exercise	Both (Stroke Test)	CS	Tested every cold shutdown	None
2FDW0373	OFD-121D-2.1	K7	C	C	Yes	Check	Self Actuated	ON-FDW-09	FS	Full-Stroke Exercise	Both (Stroke Test)	CS	Tested every cold shutdown	None
3FDW0373	OFD-121D-3.1	K7	C	C	Yes	Check	Self Actuated	ON-FDW-09	FS	Full-Stroke Exercise	Both (Stroke Test)	CS	Tested every cold shutdown	None

Valve	Flow Diagram	ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
1FDW0378	OFD-121D-1.1	K3	C	C	Yes	Check	Self Actuated	ON-FDW-10	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly Disassem one vlv per grp ea RFO	None
									SD	Sample Disassembly	Both (Stroke Test)	SD		None
2FDW0378	OFD-121D-2.1	K3	C	C	Yes	Check	Self Actuated	ON-FDW-10	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly Disassem one vlv per grp ea RFO	None
									SD	Sample Disassembly	Both (Stroke Test)	SD		None
3FDW0378	OFD-121D-3.1	J4	C	C	Yes	Check	Self Actuated	ON-FDW-10	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly Disassem one vlv per grp ea. RFO	None
									SD	Sample Disassembly	Both (Stroke Test)	SD		None
1FDW0380	OFD-121D-1.1	D3	C	C	Yes	Check	Self Actuated	None	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
2FDW0380	OFD-121D-2.1	D3	C	C	Yes	Check	Self Actuated	None	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
3FDW0380	OFD-121D-3.1	D4	C	C	Yes	Check	Self Actuated	None	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1FDW0382	OFD-121D-1 1	D7	C	B	No	Gate	Rotork	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2FDW0382	OFD-121D-2 1	D7	C	B	No	Gate	Rotork	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3FDW0382	OFD-121D-3 1	D7	C	B	No	Gate	Rotork	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
1FDW0383	OFD-121D-1 1	D7	C	C	Yes	Check	Self Actuated	ON-FDW-09	FS	Full-Stroke Exercise	Both (Stroke Test)	CS	Tested every cold shutdown	None
2FDW0383	OFD-121D-2 1	D6	C	C	Yes	Check	Self Actuated	ON-FDW-09	FS	Full-Stroke Exercise	Both (Stroke Test)	CS	Tested every cold shutdown	None
3FDW0383	OFD-121D-3 1	D7	C	C	Yes	Check	Self Actuated	ON-FDW-09	FS	Full-Stroke Exercise	Both (Stroke Test)	CS	Tested every cold shutdown	None

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1FDW0388	OFD-121D-1.1	D3	C	C	Yes	Check	Self Actuated	ON-FDW-10	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly Disassem one vlv per grp ea RFO	None
									SD	Sample Disassembly	Both (Stroke Test)	SD		None
2FDW0388	OFD-121D-2.1	D3	C	C	Yes	Check	Self Actuated	ON-FDW-10	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly Disassem one vlv per grp ea RFO	None
									SD	Sample Disassembly	Both (Stroke Test)	SD		None
3FDW0388	OFD-121D-3.1	D4	C	C	Yes	Check	Self Actuated	ON-FDW-10	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly Disassem one vlv per grp ea. RFO	None
									SD	Sample Disassembly	Both (Stroke Test)	SD		None

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1FDW0432	OFD-121D-11	F10	C	C	Yes	Check	Self Actuated	ON-FDW-04	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									SD	Sample Disassembly	Open to Closed	SD	Disassem one vlv per grp ea RFO	None
2FDW0432	OFD-121D-21	E10	C	C	Yes	Check	Self Actuated	ON-FDW-04	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									SD	Sample Disassembly	Open to Closed	SD	Disassem one vlv per grp ea RFO	None
3FDW0432	OFD-121D-31	E10	B	C	Yes	Check	Self Actuated	ON-FDW-04	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									SD	Sample Disassembly	Open to Closed	SD	Disassem one vlv per grp ea RFO	None

Valve	Flow Diagram		ASME Class	Valve Cutg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1FDW0442	OFD-121D-1 1	D11	B	C	Yes	Check	Self Actuated	ON-FDW-11	FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown Disassem one vlv per grp ea. RFO	None
									SD	Sample Disassembly	Both (Stroke Test)	SD		None
2FDW0442	OFD-121D-2.1	D11	B	C	Yes	Check	Self Actuated	ON-FDW-11	FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown Disassem one vlv per grp ea. RFO	None
									SD	Sample Disassembly	Both (Stroke Test)	SD		None
3FDW0442	OFD-121D-3 1	D11	B	C	Yes	Check	Self Actuated	ON-FDW-11	FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown Disassem one vlv per grp ea. RFO	None
									SD	Sample Disassembly	Both (Stroke Test)	SD		None
1FDW0582	OFD-121B-1 5	L8	B	C	Yes	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
2FDW0582	OFD-121B-02-05	L8	B	C	Yes	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
3FDW0582	OFD-121B-03-05	L8	B	C	Yes	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1FDW0583	OFD-121B-1.5	C8	B	C	Yes	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
2FDW0583	OFD-121B-02-05	C8	B	C	Yes	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
3FDW0583	OFD-121B-03-05	C8	B	C	Yes	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
1FDW0584	OFD-110A-1.1	D3	B	C	Yes	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
2FDW0584	OFD-110A-2 1	D4	B	C	Yes	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
3FDW0584	OFD-110A-3 1	D4	B	C	Yes	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	$\frac{1}{2}$, Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1FDW0585	OFD-110A-1.1	F4	B	C	Yes	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
2FDW0585	OFD-110A-2.1	D4	B	C	Yes	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
3FDW0585	OFD-110A-3.1	D4	B	C	Yes	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12

Valve	Flow Diagram	ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
<hr/> <i>FO - Fuel Oil</i> <hr/>														
0FO0050	OFD-135A-1.2	D7	C	C	Yes	Check	Self Actuated	ON-FO-01	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly Disassem one vlv per grp ea RFO	None
									SD	Sample Disassembly	Open to Closed	SD		None
0FO0052	OFD-135A-1.2	E5	C	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
<i>GBO - Keowee Turb. Guide Bearing Oil</i>														
1GBO0001	KFD-101A-1 1	E5	C	C	Yes	Check	Self Actuated	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None
2GBO0001	KFD-101A-2 1	E5	C	C	Yes	Check	Self Actuated	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None
1GBO0003	KFD-101A-1 1	E5	C	C	Yes	Check	Self Actuated	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None
2GBO0003	KFD-101A-2 1	E5	C	C	Yes	Check	Self Actuated	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None

Valve	Flow Diagram	ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
<hr/> <i>GWD- Gaseous Waste Disposal</i> <hr/>														
1GWD0012	OFD-107A-1 1	J11	B	A	Yes	Diaphragm	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Reverse Direction	RF	Tested every refueling outage	None
2GWD0012	OFD-107A-2 1	J11	B	A	Yes	Diaphragm	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Reverse Direction	RF	Tested every refueling outage	None
3GWD0012	OFD-107A-3 1	J11	B	A	Yes	Diaphragm	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Reverse Direction	RF	Tested every refueling outage	None

Valve	Flow Diagram	ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
1GWD0013	OFD-107A-1 1	K13	B	A	Yes	Diaphragm	Air	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
2GWD0013	OFD-107A-2 1	K13	B	A	Yes	Diaphragm	Air	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
3GWD0013	OFD-107A-3 1	K13	B	A	Yes	Diaphragm	Air	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None

Valve	Flow Diagram	ASME Class	Valve Cutg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
HP - High Pressure Injection													
1HP0003	OFD-101A-11	L5	A	A	Yes	Globe	Limitorque	ON-HP-07	ST	Measure Full-Stroke Time of Valve	Open to Closed	CS	Tested every cold shutdown
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage
2HP0003	OFD-101A-21	L5	A	A	Yes	Globe	Limitorque	ON-HP-07	ST	Measure Full-Stroke Time of Valve	Open to Closed	CS	Tested every cold shutdown
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage
3HP0003	OFD-101A-31	K5	A	A	Yes	Globe	Limitorque	ON-HP-07	ST	Measure Full-Stroke Time of Valve	Open to Closed	CS	Tested every cold shutdown
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage

Valve	Flow Diagram	ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
1HP0004	OFD-101A-1.1	J5	A	A	Yes	Globe	Limitorque	ON-HP-07	ST	Measure Full-Stroke Time of Valve	Open to Closed	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
2HP0004	OFD-101A-2.1	J5	A	A	Yes	Globe	Limitorque	ON-HP-07	ST	Measure Full-Stroke Time of Valve	Open to Closed	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
3HP0004	OFD-101A-3.1	J5	A	A	Yes	Globe	Limitorque	ON-HP-07	ST	Measure Full-Stroke Time of Valve	Open to Closed	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None

Valve	Flow Diagram	ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
1HP0005	OFD-101A-1 1	K8	B	A	Yes	Globe	Air	ON-HP-01	ST	Measure Full-Stroke Time of Valve	Open to Closed	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
2HP0005	OFD-101A-2 1	K8	B	A	Yes	Globe	Air	ON-HP-01	ST	Measure Full-Stroke Time of Valve	Open to Closed	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
3HP0005	OFD-101A-3 1	K8	B	A	Yes	Globe	Air	ON-HP-01	ST	Measure Full-Stroke Time of Valve	Open to Closed	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None

Valve	Flow Diagram	ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
1HP0020	OFD-101A-1.1	F5	B	A	Yes	Globe	Limiter torque	ON-HP-02	ST	Measure Full-Stroke Time of Valve	Open to Closed	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Reverse Direction	RF	Tested every refueling outage	None
2HP0020	OFD-101A-2.1	E6	B	A	Yes	Globe	Limiter torque	ON-HP-02	ST	Measure Full-Stroke Time of Valve	Open to Closed	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
3HP0020	OFD-101A-3.1	E6	B	A	Yes	Globe	Limiter torque	ON-HP-02	ST	Measure Full-Stroke Time of Valve	Open to Closed	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1HP0021	OFD-101A-1 1	E7	B	A	Yes	Globe	Air	ON-HP-02	ST	Measure Full-Stroke Time of Valve	Open to Closed	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
2HP0021	OFD-101A-2 1	E8	B	A	Yes	Globe	Air	ON-HP-02	ST	Measure Full-Stroke Time of Valve	Open to Closed	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
3HP0021	OFD-101A-3 1	E7	B	A	Yes	Globe	Air	ON-HP-02	ST	Measure Full-Stroke Time of Valve	Open to Closed	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None

Valve	Flow Diagram	ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1HP0023	OFD-101A-01-02 D13	B	B	No	Gate	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2HP0023	OFD-101A-02-02 D13	B	B	No	Gate	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3HP0023	OFD-101A-03-02 D13	B	B	No	Gate	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
1HP0024	OFD-101A-1.3 13	B	B	Yes	Gate	Limitorque	None	ST PI	Measure Full-Stroke Time of Valve Verify the Valve Remote Position Indication	Closed to Open Both (Stroke Test)	Q 2Y	Tested once quarterly Tested once every two years	None None
2HP0024	OFD-101A-2.3 13	B	B	Yes	Gate	Limitorque	None	ST PI	Measure Full-Stroke Time of Valve Verify the Valve Remote Position Indication	Closed to Open Both (Stroke Test)	Q 2Y	Tested once quarterly Tested once every two years	None None
3HP0024	OFD-101A-3.3 12	B	B	Yes	Gate	Limitorque	None	ST PI	Measure Full-Stroke Time of Valve Verify the Valve Remote Position Indication	Closed to Open Both (Stroke Test)	Q 2Y	Tested once quarterly Tested once every two years	None None

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1HP0025	OFD-101A-1 3	F3	B	B	Yes	Gate	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Closed to Open	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2HP0025	OFD-101A-2 3	F3	B	B	Yes	Gate	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Closed to Open	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3HP0025	OFD-101A-3 3	F3	B	B	Yes	Gate	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Closed to Open	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
1HP0026	OFD-101A-1 4	J7	B	B	Yes	Globe	Limitorque	ON-HP-03	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2HP0026	OFD-101A-2 4	J7	B	B	Yes	Globe	Limitorque	ON-HP-03	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3HP0026	OFD-101A-3 4	J6	B	B	Yes	Globe	Limitorque	ON-HP-03	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1HP0027	OFD-101A-1 4	D7	B	B	Yes	Globe	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2HP0027	OFD-101A-2 4	D7	B	B	Yes	Globe	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3HP0027	OFD-101A-3 4	D7	B	B	Yes	Globe	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None

Valve	Flow Diagram		ASME Class	Valve Cntg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1HP0078	OFD-101A-1 2	F6	B	C	Yes	Stop Check	Self Actuated	ON-HP-21	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
2HP0078	OFD-101A-2 2	F6	B	C	Yes	Stop Check	Self Actuated	ON-HP-21	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
3HP0078	OFD-101A-3 2	F6	B	C	Yes	Stop Check	Self Actuated	ON-HP-21	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
1HP0079	OFD-101A-1 2	C10	B	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
2HP0079	OFD-101A-2 2	C8	B	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
3HP0079	OFD-101A-3 2	C11	B	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12

Valve	Flow Diagram	ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
1HP0097	OFD-101A-1 2	D12	B	A/C	Yes	Check	Self Actuated	ON-HP-05	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None
2HP0097	OFD-101A-2 2	D12	B	A/C	Yes	Check	Self Actuated	ON-HP-05	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None
3HP0097	OFD-101A-3 2	D12	B	A/C	Yes	Check	Self Actuated	ON-HP-05	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None

Valve	Flow Diagram	ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	TestDirection	Test Frequency	Frequency Description	Relief Request
1HP0098	OFD-101A-01-03 I3	B	B	No	Gate	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2HP0098	OFD-101A-02-03 I3	B	B	No	Gate	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3HP0098	OFD-101A-03-03 I3	B	B	No	Gate	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1HP0101	OFD-101A-1.3	J3	B	A/C	Yes	Check	Self Actuated	ON-HP-10	FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
									PS	Partial-Stroke Exercise	Closed to Open	CS		None
									FS	Full-Stroke Exercise	Both (Stroke Test)	RF	Tested every refueling outage	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None
2HP0101	OFD-101A-2.3	J3	B	A/C	Yes	Check	Self Actuated	ON-HP-10	FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
									PS	Partial-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
									FS	Full-Stroke Exercise	Both (Stroke Test)	RF	Tested every refueling outage	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None
3HP0101	OFD-101A-3.3	J2	B	A/C	Yes	Check	Self Actuated	ON-HP-10	FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
									PS	Partial-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
									FS	Full-Stroke Exercise	Both (Stroke Test)	RF	Tested every refueling outage	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None

Valve	Flow Diagram	ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
1HP0102	OFD-101A-1 3	E3	B	A/C	Yes	Check	Self Actuated	ON-HP-10	FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
									PS	Partial-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
									FS	Full-Stroke Exercise	Both (Stroke Test)	RF	Tested every refueling outage	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None
2HP0102	OFD-101A-2 3	E3	B	A/C	Yes	Check	Self Actuated	ON-HP-10	FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
									PS	Partial-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
									FS	Full-Stroke Exercise	Both (Stroke Test)	RF	Tested every refueling outage	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None
3HP0102	OFD-101A-3 3	E2	B	A/C	Yes	Check	Self Actuated	ON-HP-10	FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
									PS	Partial-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
									FS	Full-Stroke Exercise	Both (Stroke Test)	RF	Tested every refueling outage	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1HP0104	OFD-101A-1	3 K6	B	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
2HP0104	OFD-101A-2	3 K6	B	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
3HP0104	OFD-101A-3	3 J5	B	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
1HP0105	OFD-101A-1	3 J10	B	C	Yes	Check	Self Actuated	ON-HP-11	FS	Full-Stroke Exercise	Open to Closed	Q	Tested once quarterly	None
									PS	Partial-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
2HP0105	OFD-101A-2	3 J10	B	C	Yes	Check	Self Actuated	ON-HP-11	FS	Full-Stroke Exercise	Open to Closed	Q	Tested once quarterly	None
									PS	Partial-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
3HP0105	OFD-101A-3	3 J10	B	C	Yes	Check	Self Actuated	ON-HP-11	FS	Full-Stroke Exercise	Open to Closed	Q	Tested once quarterly	None
									PS	Partial-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
1HP0108	OFD-101A-1	3	H6	B	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
2HP0108	OFD-101A-2	3	H6	B	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
3HP0108	OFD-101A-3	3	H5	B	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
1HP0109	OFD-101A-1	3	G10	B	C	Yes	Check	Self Actuated	ON-HP-11	FS	Full-Stroke Exercise	Open to Closed	Q	Tested once quarterly	None
										PS	Partial-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
										FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
2HP0109	OFD-101A-2	3	G10	B	C	Yes	Check	Self Actuated	ON-HP-11	FS	Full-Stroke Exercise	Open to Closed	Q	Tested once quarterly	None
										PS	Partial-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
										FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
3HP0109	OFD-101A-3	3	G10	B	C	Yes	Check	Self Actuated	ON-HP-11	FS	Full-Stroke Exercise	Open to Closed	Q	Tested once quarterly	None
										PS	Partial-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
										FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1HP0112	OFD-101A-1.3	E6	B	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
2HP0112	OFD-101A-2.3	D6	B	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
3HP0112	OFD-101A-3.3	C5	B	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
1HP0113	OFD-101A-1.3	D10	B	C	Yes	Check	Self Actuated	ON-HP-11	FS	Full-Stroke Exercise	Open to Closed	Q	Tested once quarterly	None
									PS	Partial-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
2HP0113	OFD-101A-2.3	D10	B	C	Yes	Check	Self Actuated	ON-HP-11	FS	Full-Stroke Exercise	Open to Closed	Q	Tested once quarterly	None
									PS	Partial-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
3HP0113	OFD-101A-3.3	D10	B	C	Yes	Check	Self Actuated	ON-HP-11	FS	Full-Stroke Exercise	Open to Closed	Q	Tested once quarterly	None
									PS	Partial-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None

Valve	Flow Diagram	ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1HP0115	OFD-101A-01-03 H11	B	B	No	Gate	Rotork	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2HP0115	OFD-101A-02-03 H11	B	B	No	Gate	Rotork	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3HP0115	OFD-101A-03-03 H11	B	B	No	Gate	Rotork	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None

Valve	Flow Diagram	ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
1HP0144	OFD-101A-1 4	G13	B	A/C	Yes	Check	Self Actuated	ON-HP-17	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
2HP0144	OFD-101A-2 4	F12	B	A/C	Yes	Stop Check	Self Actuated	ON-HP-17	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
3HP0144	OFD-101A-3 4	H13	B	A/C	Yes	Check	Self Actuated	ON-HP-17	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None

Valve	Flow Diagram	ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
1HP0145	OFD-101A-1.4	F13	B	A/C	Yes	Check	Self Actuated	ON-HP-17	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
2HP0145	OFD-101A-2.4	G12	B	A/C	Yes	Check	Self Actuated	ON-HP-17	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
3HP0145	OFD-101A-3.4	I13	B	A/C	Yes	Check	Self Actuated	ON-HP-17	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None

Valve	Flow Diagram	ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
1HP0146	OFD-101A-1.4	H13	B	A/C	Yes	Check	Self Actuated	ON-HP-17	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
2HP0146	OFD-101A-2.4	H12	B	A/C	Yes	Check	Self Actuated	ON-HP-17	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
3HP0146	OFD-101A-3.4	G13	B	A/C	Yes	Check	Self Actuated	ON-HP-17	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1HP0147	OFD-101A-1.4	112	B	A/C	Yes	Check	Self Actuated	ON-HP-17	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
2HP0147	OFD-101A-2.4	112	B	A/C	Yes	Check	Self Actuated	ON-HP-17	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
3HP0147	OFD-101A-3.4	F13	B	A/C	Yes	Check	Self Actuated	ON-HP-17	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1HP0155	OFD-127B-1.2	H7	B	A	No	Globe	Manual	None	LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
2HP0155	OFD-127B-2.2	H7	B	A	No	Globe	Manual	None	LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
3HP0155	OFD-127B-3.2	H7	B	A	No	Globe	Manual	None	LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
1HP0156	OFD-127B-1.2	I7	B	A	No	Globe	Manual	None	LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
2HP0156	OFD-127B-2.2	I7	B	A	No	Globe	Manual	None	LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
3HP0156	OFD-127B-3.2	I7	B	A	No	Globe	Manual	None	LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1HP0188	OFD-101A-1.4	D11	A	C	Yes	Check	Self Actuated	ON-HP-14	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									PS	Partial-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
									SD	Sample Disassembly	Open to Closed	SD	Disassem one vlv per grp ea RFO	None
2HP0188	OFD-101A-2.4	D11	A	C	Yes	Check	Self Actuated	ON-HP-14	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									PS	Partial-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
									SD	Sample Disassembly	Open to Closed	SD	Disassem one vlv per grp ea RFO	None
3HP0188	OFD-101A-3.4	D10	A	C	Yes	Check	Self Actuated	ON-HP-14	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									PS	Partial-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
									SD	Sample Disassembly	Open to Closed	SD	Disassem one vlv per grp ea. RFO	None

Valve	Flow Diagram	ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
1HP0189	OFD-101A-1.2	F6	B	C	Yes	Check	Self Actuated	ON-HP-08	PS	Partial-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									SD	Sample Disassembly	Both (Stroke Test)	SD	Disassem one vlv per grp ea. RFO	None
2HP0189	OFD-101A-2.2	F5	B	C	Yes	Check	Self Actuated	ON-HP-08	PS	Partial-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									SD	Sample Disassembly	Both (Stroke Test)	SD	Disassem one vlv per grp ea. RFO	None
3HP0189	OFD-101A-3.2	F5	B	C	Yes	Check	Self Actuated	ON-HP-08	PS	Partial-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									SD	Sample Disassembly	Both (Stroke Test)	SD	Disassem one vlv per grp ea. RFO	None

Valve	Flow Diagram	ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
1HP0194	OFD-101A-1.4	J10	A	C	Yes	Check	Self Actuated	ON-HP-15	PS	Partial-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									SD	Sample Disassembly	Open to Closed	SD	Disassem one vlv per grp ea RFO	None
2HP0194	OFD-101A-2.4	J10	A	C	Yes	Check	Self Actuated	ON-HP-15	PS	Partial-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									SD	Sample Disassembly	Open to Closed	SD	Disassem one vlv per grp ea RFO	None
3HP0194	OFD-101A-3.4	J8	A	C	Yes	Check	Self Actuated	ON-HP-15	PS	Partial-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									SD	Sample Disassembly	Open to Closed	SD	Disassem one vlv per grp ea RFO	None

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1HP0247	OFD-101A-1.3	K10	B	A	Yes	Globe	Manual	ON-HP-06	FS	Full-Stroke Exercise	Both (Stroke Test)	CS	Tested every cold shutdown	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None
2HP0247	OFD-101A-2.3	K10	B	A	Yes	Globe	Manual	ON-HP-06	FS	Full-Stroke Exercise	Both (Stroke Test)	CS	Tested every cold shutdown	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None
3HP0247	OFD-101A-3.3	K9	B	A	Yes	Globe	Manual	ON-HP-06	FS	Full-Stroke Exercise	Both (Stroke Test)	CS	Tested every cold shutdown	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1HP0248	OFD-101A-1.3	L10	B	A/C	Yes	Stop Check	Self Actuated	ON-HP-16	FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
									FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									PS	Partial-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None
2HP0248	OFD-101A-2.3	L10	B	A/C	Yes	Stop Check	Self Actuated	ON-HP-16	FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
									FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									PS	Partial-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None
3HP0248	OFD-101A-3.3	H9	B	A/C	Yes	Stop Check	Self Actuated	ON-HP-16	FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
									FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									PS	Partial-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1HP0249	OFD-101A-1.3	H9	B	A	Yes	Globe	Manual	ON-HP-06	FS	Full-Stroke Exercise	Both (Stroke Test)	CS	Tested every cold shutdown	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None
2HP0249	OFD-101A-2.3	H9	B	A	Yes	Globe	Manual	ON-HP-06	FS	Full-Stroke Exercise	Both (Stroke Test)	CS	Tested every cold shutdown	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None
3HP0249	OFD-101A-3.3	H9	B	A	Yes	Globe	Manual	ON-HP-06	FS	Full-Stroke Exercise	Both (Stroke Test)	CS	Tested every cold shutdown	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None

Valve	Flow Diagram	ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
1HP0250	OFD-101A-1.3	19	B	A/C	Yes	Stop Check	Self Actuated	ON-HP-16	FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
									FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									PS	Partial-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None
2HP0250	OFD-101A-2.3	19	B	A/C	Yes	Stop Check	Self Actuated	ON-HP-16	FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
									FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									PS	Partial-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None
3HP0250	OFD-101A-3.3	19	B	A/C	Yes	Stop Check	Self Actuated	ON-HP-16	FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
									FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									PS	Partial-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1HP0251	OFD-101A-1.3	D9	B	A	Yes	Globe	Manual	ON-HP-06	FS	Full-Stroke Exercise	Both (Stroke Test)	CS	Tested every cold shutdown Tested once every two years	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y		None
2HP0251	OFD-101A-2.3	D9	B	A	Yes	Globe	Manual	ON-HP-06	FS	Full-Stroke Exercise	Both (Stroke Test)	CS	Tested every cold shutdown Tested once every two years	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y		None
3HP0251	OFD-101A-3.3	D8	B	A	Yes	Globe	Manual	ON-HP-06	FS	Full-Stroke Exercise	Both (Stroke Test)	CS	Tested every cold shutdown Tested once every two years	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y		None

Valve	Flow Diagram		ASME Class	Valve Cntg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1HP0252	OFD-101A-1 3	E9	B	A/C	Yes	Stop Check	Self Actuated	ON-HP-22	FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
									FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None
2HP0252	OFD-101A-2 3	E9	B	A/C	Yes	Stop Check	Self Actuated	ON-HP-22	FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
									FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None
3HP0252	OFD-101A-3 3	F8	B	A/C	Yes	Stop Check	Self Actuated	ON-HP-22	FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
									FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None
1HP0254	OFD-101A-1 4	K11	A	C	Yes	Stop Check	Self Actuated	ON-HP-19	SD	Sample Disassembly	Both (Stroke Test)	SD	Disassem one vlv per grp ea RFO	None
3HP0254	OFD-101A-3 4	K9	A	C	Yes	Stop Check	Self Actuated	ON-HP-19	SD	Sample Disassembly	Both (Stroke Test)	SD	Disassem one vlv per grp ea RFO	None

Valve	Flow Diagram	ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
2HP0389	OFD-101A-2.4	110	B	A/C	Yes	Check	Self Actuated	ON-HP-17	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
1HP0390	OFD-101A-1.4	F10	B	A/C	Yes	Check	Self Actuated	ON-HP-17	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
2HP0390	OFD-101A-2.4	G10	B	A/C	Yes	Check	Self Actuated	ON-HP-17	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
3HP0390	OFD-101A-3.4	111	B	A/C	Yes	Check	Self Actuated	ON-HP-17	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None

Valve	Flow Diagram	ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
1HP0393	OFD-101A-1.4	I10	B	A/C	Yes	Check	Self Actuated	ON-HP-17	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
3HP0393	OFD-101A-3.4	F11	B	A/C	Yes	Check	Self Actuated	ON-HP-17	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
1HP0398SSF	OFD-101A-1.5	F11	B	B	Yes	Gate	Rotork	ON-SSF-03	ST	Measure Full-Stroke Time of Valve	Closed to Open	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2HP0398SSF	OFD-101A-2.5	F11	B	B	Yes	Gate	Rotork	ON-SSF-03	ST	Measure Full-Stroke Time of Valve	Closed to Open	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3HP0398SSF	OFD-101A-3.5	F11	B	B	Yes	Gate	Rotork	ON-SSF-03	ST	Measure Full-Stroke Time of Valve	Closed to Open	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1HP0399SSF	OFD-101A-1.5	G13	B	C	Yes	Check	Self Actuated	ON-SSF-02	FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown Tested every refueling outage	None
									FS	Full-Stroke Exercise	Open to Closed	RF		None
2HP0399SSF	OFD-101A-2.5	H13	B	C	Yes	Check	Self Actuated	ON-SSF-02	FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown Tested every refueling outage	None
									FS	Full-Stroke Exercise	Open to Closed	RF		None
3HP0399SSF	OFD-101A-3.5	H13	B	C	Yes	Check	Self Actuated	ON-SSF-02	FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown Tested every refueling outage	None
									FS	Full-Stroke Exercise	Open to Closed	RF		None
1HP0400SSF	OFD-101A-1.5	H13	B	C	Yes	Check	Self Actuated	ON-SSF-02	FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown Tested every refueling outage	None
									FS	Full-Stroke Exercise	Open to Closed	RF		None
2HP0400SSF	OFD-101A-2.5	G13	B	C	Yes	Check	Self Actuated	ON-SSF-02	FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown Tested every refueling outage	None
									FS	Full-Stroke Exercise	Open to Closed	RF		None
3HP0400SSF	OFD-101A-3.5	G13	B	C	Yes	Check	Self Actuated	ON-SSF-02	FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown Tested every refueling outage	None
									FS	Full-Stroke Exercise	Open to Closed	RF		None

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1HP0401SSF	OFD-101A-1.5	F13	B	C	Yes	Check	Self Actuated	ON-SSF-02	FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
2HP0401SSF	OFD-101A-2.5	F13	B	C	Yes	Check	Self Actuated	ON-SSF-02	FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
3HP0401SSF	OFD-101A-3.5	F13	B	C	Yes	Check	Self Actuated	ON-SSF-02	FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
1HP0402SSF	OFD-101A-1.5	F13	B	C	Yes	Check	Self Actuated	ON-SSF-02	FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
2HP0402SSF	OFD-101A-2.5	F13	B	C	Yes	Check	Self Actuated	ON-SSF-02	FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
3HP0402SSF	OFD-101A-3.5	F13	B	C	Yes	Check	Self Actuated	ON-SSF-02	FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1HP0404	OFD-101A-1.5	G9	B	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
2HP0404	OFD-101A-2.5	G9	B	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
3HP0404	OFD-101A-3.5	G9	B	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
1HP0405SSF	OFD-101A-1.5	H10	B	A	No	Gate	Rotork	None	PI	Verify the Valve Remote Position Indication	Open to Closed	2Y	Tested once every two years	ON-GRV-15
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
2HP0405SSF	OFD-101A-2.5	H10	B	A	No	Gate	Rotork	None	PI	Verify the Valve Remote Position Indication	Open to Closed	2Y	Tested once every two years	ON-GRV-15
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
3HP0405SSF	OFD-101A-3.5	H10	B	A	No	Gate	Rotork	None	PI	Verify the Valve Remote Position Indication	Open to Closed	2Y	Tested once every two years	ON-GRV-15
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1HP0409	OFD-101A-1.4	D7	B	B	Yes	Globe	Limitorque	ON-HP-04	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		None
2HP0409	OFD-101A-2.4	E8	B	B	Yes	Gate	Limitorque	ON-HP-04	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		None
3HP0409	OFD-101A-3.4	E8	B	B	Yes	Globe	Limitorque	ON-HP-04	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		None
1HP0410	OFD-101A-1.4	H7	B	B	Yes	Globe	Limitorque	ON-HP-04	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		None
2HP0410	OFD-101A-2.4	F7	B	B	Yes	Gate	Limitorque	ON-HP-04	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		None
3HP0410	OFD-101A-3.4	I7	B	B	Yes	Globe	Limitorque	ON-HP-04	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		None

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1HP0417SSF	OFD-101A-1.5	H9	B	A	No	Globe	Limitorque	None	PI	Verify the Valve Remote Position Indication	Open to Closed	2Y	Tested once every two years	ON-GRV-15
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
2HP0417SSF	OFD-101A-2.5	I9	B	A	No	Globe	Limitorque	None	PI	Verify the Valve Remote Position Indication	Open to Closed	2Y	Tested once every two years	ON-GRV-15
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
3HP0417SSF	OFD-101A-3.5	I9	B	A	No	Globe	Limitorque	None	PI	Verify the Valve Remote Position Indication	Open to Closed	2Y	Tested once every two years	ON-GRV-15
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1HP0426SSF	OFD-101A-1.5	J9	B	A	Yes	Globe	Limitorque	ON-SSF-04	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
2HP0426SSF	OFD-101A-2.5	J9	B	A	Yes	Globe	Limitorque	ON-SSF-04	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
3HP0426SSF	OFD-101A-3.5	K9	B	A	Yes	Globe	Limitorque	ON-SSF-04	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None

Valve	Flow Diagram	ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
1HP0428SSF	OFD-101A-1.5	J13	B	A	Yes	Globe	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	RF	Tested every refueling outage	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
2HP0428SSF	OFD-101A-2.5	J13	B	A	Yes	Globe	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	RF	Tested every refueling outage	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
3HP0428SSF	OFD-101A-3.5	J13	B	A	Yes	Globe	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	RF	Tested every refueling outage	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1HP0451	OFD-101A-1.4	K13	A	C	Yes	Check	Self Actuated	ON-HP-20	SD	Sample Disassembly	Both (Stroke Test)	SD	Disassem one vlv per grp ea. RFO	None
2HP0451	OFD-101A-2.4	K13	A	C	Yes	Check	Self Actuated	ON-HP-20	SD	Sample Disassembly	Both (Stroke Test)	SD	Disassem one vlv per grp ea. RFO	None
3HP0451	OFD-101A-3.4	K11	A	C	Yes	Check	Self Actuated	ON-HP-20	SD	Sample Disassembly	Both (Stroke Test)	SD	Disassem one vlv per grp ea. RFO	None
1HP0453	OFD-101A-1.4	K13	A	C	Yes	Check	Self Actuated	ON-HP-20	SD	Sample Disassembly	Both (Stroke Test)	SD	Disassem one vlv per grp ea. RFO	None
2HP0453	OFD-101A-2.4	K13	A	C	Yes	Check	Self Actuated	ON-HP-20	SD	Sample Disassembly	Both (Stroke Test)	SD	Disassem one vlv per grp ea. RFO	None
3HP0453	OFD-101A-3.4	K12	A	C	Yes	Check	Self Actuated	ON-HP-20	SD	Sample Disassembly	Both (Stroke Test)	SD	Disassem one vlv per grp ea. RFO	None

Valve	Flow Diagram	ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
1HP0454	OFD-101A-1.4	G10	B	A/C	Yes	Check	Self Actuated	ON-HP-17	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
2HP0454	OFD-101A-2.4	G10	B	A/C	Yes	Check	Self Actuated	ON-HP-17	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
3HP0454	OFD-101A-3.4	H11	B	A/C	Yes	Check	Self Actuated	ON-HP-17	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1HP0457	OFD-101A-1.4	H10	B	A/C	Yes	Check	Self Actuated	ON-HP-17	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
2HP0457	OFD-101A-2.4	H10	B	A/C	Yes	Check	Self Actuated	ON-HP-17	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
3HP0457	OFD-101A-3.4	G11	B	A/C	Yes	Check	Self Actuated	ON-HP-17	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None

Valve	Flow Diagram	ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
1HP0486	OFD-101A-1.4	J12	A	C	Yes	Check	Self Actuated	ON-HP-12	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									PS	Partial-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
									SD	Sample Disassembly	Open to Closed	SD	Disassem one vlv per grp ea. RFO	None
2HP0486	OFD-101A-2.4	J13	A	C	Yes	Check	Self Actuated	ON-HP-12	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									PS	Partial-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
									SD	Sample Disassembly	Open to Closed	SD	Disassem one vlv per grp ea. RFO	None
3HP0486	OFD-101A-3.4	J12	A	C	Yes	Check	Self Actuated	ON-HP-12	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									PS	Partial-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
									SD	Sample Disassembly	Open to Closed	SD	Disassem one vlv per grp ea. RFO	None

Valve	Flow Diagram	ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
1HP0487	OFD-101A-1 4	J13	A	C	Yes	Check	Self Actuated	ON-HP-12	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									PS	Partial-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
									SD	Sample Disassembly	Open to Closed	SD	Disassem one vlv per grp ea RFO	None
2HP0487	OFD-101A-2 4	J13	A	C	Yes	Check	Self Actuated	ON-HP-12	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									PS	Partial-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
									SD	Sample Disassembly	Open to Closed	SD	Disassem one vlv per grp ea RFO	None
3HP0487	OFD-101A-3 4	J12	A	C	Yes	Check	Self Actuated	ON-HP-12	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									PS	Partial-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
									SD	Sample Disassembly	Open to Closed	SD	Disassem one vlv per grp ea RFO	None

Valve	Flow Diagram	ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
1HP0488	OFD-101A-1.4	E13	A	C	Yes	Check	Self Actuated	ON-HP-13	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									PS	Partial-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
									SD	Sample Disassembly	Open to Closed	SD	Disassem one vlv per grp ea. RFO	None
2HP0488	OFD-101A-2.4	E13	A	C	Yes	Check	Self Actuated	ON-HP-13	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									PS	Partial-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
									SD	Sample Disassembly	Open to Closed	SD	Disassem one vlv per grp ea. RFO	None
3HP0488	OFD-101A-3.4	E13	A	C	Yes	Check	Self Actuated	ON-HP-13	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									PS	Partial-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
									SD	Sample Disassembly	Open to Closed	SD	Disassem one vlv per grp ea. RFO	None

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1HP0489	OFD-101A-1.4	D13	A	C	Yes	Check	Self Actuated	ON-HP-13	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage Tested every cold shutdown Disassem one vlv per grp ea. RFO	None
									PS	Partial-Stroke Exercise	Closed to Open	CS		
									SD	Sample Disassembly	Open to Closed	SD		
2HP0489	OFD-101A-2.4	D13	A	C	Yes	Check	Self Actuated	ON-HP-13	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage Tested every cold shutdown Disassem one vlv per grp ea. RFO	None
									PS	Partial-Stroke Exercise	Closed to Open	CS		
									SD	Sample Disassembly	Open to Closed	SD		
3HP0489	OFD-101A-3.4	D13	A	C	Yes	Check	Self Actuated	ON-HP-13	FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage Tested every cold shutdown Disassem one vlv per grp ea. RFO	None
									PS	Partial-Stroke Exercise	Closed to Open	CS		
									SD	Sample Disassembly	Open to Closed	SD		
2HP0494	OFD-101A-2.4	K11	A	C	Yes	Check	Self Actuated	ON-HP-19	SD	Sample Disassembly	Both (Stroke Test)	SD	Disassem one vlv per grp ea. RFO	None

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1HP0934	OFD-101A-1 1	K6	B	A/C	Yes	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule Tested every refueling outage	ON-GRV-12
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Reverse Direction	RF		None
2HP0934	OFD-101A-02-01 K6		B	A/C	Yes	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule Tested every refueling outage	ON-GRV-12
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Reverse Direction	RF		None
3HP0934	OFD-101A-03-01 K6		B	A/C	Yes	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule Tested every refueling outage	ON-GRV-12
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Reverse Direction	RF		None

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1HP0935	OFD-101A-1.1	E6	B	A/C	Yes	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule Tested every refueling outage	ON-GRV-12
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Reverse Direction	RF		None
2HP0935	OFD-101A-02-01	E7	B	A/C	Yes	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule Tested every refueling outage	ON-GRV-12
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Reverse Direction	RF		None
3HP0935	OFD-101A-03-01	E7	B	A/C	Yes	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule Tested every refueling outage	ON-GRV-12
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Reverse Direction	RF		None

Valve	Flow Diagram	ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
1HP0936	OFD-101A-1.5	J11	B	A/C	Yes	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule Tested every refueling outage	ON-GRV-12
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Reverse Direction	RF		None
2HP0936	OFD-101A-02-05	J12	B	A/C	Yes	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule Tested every refueling outage	ON-GRV-12
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Reverse Direction	RF		None
3HP0936	OFD-101A-03-05	J12	B	A/C	Yes	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule Tested every refueling outage	ON-GRV-12
									LJ	Leak-Rate Test Valve to App J Requirement(s)	Reverse Direction	RF		None

Valve	Flow Diagram	ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
IA - Instrument Air													
11A0090	OFD-137B-1 2	D4	B	A	No	Ball	Manual	None	LJ Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
21A0090	OFD-137B-1 2	D7	B	A	No	Ball	Manual	None	LJ Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
31A0090	OFD-137B-1 2	D11	B	A	No	Ball	Manual	None	LJ Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
11A0091	OFD-137B-1.2	C4	B	A	No	Ball	Manual	None	LJ Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
21A0091	OFD-137B-1.2	C7	B	A	No	Ball	Manual	None	LJ Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None
31A0091	OFD-137B-1 2	C11	B	A	No	Ball	Manual	None	LJ Leak-Rate Test Valve to App J Requirement(s)	Accident Direction	RF	Tested every refueling outage	None

Valve	Flow Diagram	ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
LP - Low Pressure Injection														
1LP0001	OFD-102A-1.1	H2	A	B	Yes	Gate	Limitorque	ON-LP-01	ST	Measure Full-Stroke Time of Valve	Closed to Open	CS	Tested every cold shutdown Tested once every two years	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		None
2LP0001	OFD-102A-2.1	H2	A	B	Yes	Gate	Limitorque	ON-LP-01	ST	Measure Full-Stroke Time of Valve	Closed to Open	CS	Tested every cold shutdown Tested once every two years	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		None
3LP0001	OFD-102A-3.1	H2	A	B	Yes	Gate	Rotork	ON-LP-01	ST	Measure Full-Stroke Time of Valve	Closed to Open	CS	Tested every cold shutdown Tested once every two years	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		None

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1LP0002	OFD-102A-1.1	H2	A	B	Yes	Gate	Limitorque	ON-LP-01	ST	Measure Full-Stroke Time of Valve	Closed to Open	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		
2LP0002	OFD-102A-2.1	H2	A	B	Yes	Gate	Limitorque	ON-LP-01	ST	Measure Full-Stroke Time of Valve	Closed to Open	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		
3LP0002	OFD-102A-3.1	H2	A	B	Yes	Gate	Rotork	ON-LP-01	ST	Measure Full-Stroke Time of Valve	Closed to Open	CS	Tested every cold shutdown	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		
1LP0003	OFD-102A-1.1	H5	B	B	No	Gate	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2LP0003	OFD-102A-2.1	H6	B	B	Yes	Gate	Rotork	None	ST	Measure Full-Stroke Time of Valve	Closed to Open	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		
3LP0003	OFD-102A-3.1	H6	B	B	Yes	Gate	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Closed to Open	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1LP0005	OFD-102A-1.1	F10	B	B	No	Gate	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2LP0005	OFD-102A-2.1	F10	B	B	No	Gate	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3LP0005	OFD-102A-3.1	F9	B	B	No	Gate	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
1LP0006	OFD-102A-01-01	E8	B	B	No	Gate	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2LP0006	OFD-102A-02-01	E8	B	B	No	Gate	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3LP0006	OFD-102A-03-01	E8	B	B	No	Gate	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None

Valve	Flow Diagram	ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1LP0007	OFD-102A-01-01 D8	B	B	No	Gate	Limiterorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2LP0007	OFD-102A-02-01 D8	B	B	No	Gate	Limiterorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3LP0007	OFD-102A-03-01 D8	B	B	No	Gate	Limiterorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
1LP0008	OFD-102A-01-01 D8	B	B	No	Gate	Limiterorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2LP0008	OFD-102A-02-01 D8	B	B	No	Gate	Limiterorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3LP0008	OFD-102A-03-01 D8	B	B	No	Gate	Limiterorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1LP0009	OFD-102A-1.2	17	B	B	Yes	Gate	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Closed to Open	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2LP0009	OFD-102A-2.2	18	B	B	Yes	Gate	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Closed to Open	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3LP0009	OFD-102A-3.2	17	B	B	Yes	Gate	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Closed to Open	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
1LP0010	OFD-102A-1.2	G7	B	B	Yes	Gate	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Closed to Open	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2LP0010	OFD-102A-2.2	H8	B	B	Yes	Gate	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Closed to Open	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3LP0010	OFD-102A-3.2	G7	B	B	Yes	Gate	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Closed to Open	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None

Valve	Flow Diagram	ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1LP0011	OFD-102A-01-02 K8	B	B	No	Gate	Rotork	None	PI	Verify the Valve Remote Position Indication	Closed to Open	2Y	Tested once every two years	ON-GRV-15
2LP0011	OFD-102A-02-02 K8	B	B	No	Gate	Rotork	None	PI	Verify the Valve Remote Position Indication	Closed to Open	2Y	Tested once every two years	ON-GRV-15
1LP0012	OFD-102A-1.2 K11	B	B	Yes	Globe	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
								PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2LP0012	OFD-102A-2.2 K11	B	B	Yes	Globe	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
								PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3LP0012	OFD-102A-3.2 K11	B	B	Yes	Globe	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
								PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
1LP0013	OFD-102A-01-02 E8	B	B	No	Gate	Rotork	None	PI	Verify the Valve Remote Position Indication	Closed to Open	2Y	Tested once every two years	ON-GRV-15
2LP0013	OFD-102A-02-02 E8	B	B	No	Gate	Rotork	None	PI	Verify the Valve Remote Position Indication	Closed to Open	2Y	Tested once every two years	ON-GRV-15

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1LP0014	OFD-102A-1.2	E11	B	B	Yes	Globe	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2LP0014	OFD-102A-2.2	E11	B	B	Yes	Globe	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3LP0014	OFD-102A-3.2	E11	B	B	Yes	Globe	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1LP0015	OFD-102A-1.2	L11	B	A	Yes	Gate	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None
2LP0015	OFD-102A-2.2	L11	B	A	Yes	Gate	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None
3LP0015	OFD-102A-3.2	K12	B	A	Yes	Gate	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1LP0016	OFD-102A-1.2	D11	B	A	Yes	Gate	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None
2LP0016	OFD-102A-2.2	D11	B	A	Yes	Gate	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None
3LP0016	OFD-102A-3.2	E12	B	A	Yes	Ball	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None

Valve	Flow Diagram	ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
1LP0017	OFD-102A-1.2	K13	B	B	Yes	Globe	Rotork	ON-LP-07	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	CS	Tested every cold shutdown Tested once every two years	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		None
2LP0017	OFD-102A-2.2	K12	B	B	Yes	Globe	Rotork	ON-LP-07	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	CS	Tested every cold shutdown Tested once every two years	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		None
3LP0017	OFD-102A-3.2	K13	B	B	Yes	Globe	Rotork	ON-LP-07	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	CS	Tested every cold shutdown Tested once every two years	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		None
1LP0018	OFD-102A-1.2	E13	B	B	Yes	Globe	Rotork	ON-LP-07	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	CS	Tested every cold shutdown Tested once every two years	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		None
2LP0018	OFD-102A-2.2	E13	B	B	Yes	Globe	Rotork	ON-LP-07	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	CS	Tested every cold shutdown Tested once every two years	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		None
3LP0018	OFD-102A-3.2	E13	B	B	Yes	Globe	Rotork	ON-LP-07	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	CS	Tested every cold shutdown Tested once every two years	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		None

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1LP0019	OFD-102A-1.1	D5	B	B	Yes	Gate	Limitorque	ON-LP-10	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	RF	Tested every refueling outage	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		
2LP0019	OFD-102A-2.1	D5	B	B	Yes	Gate	Limitorque	ON-LP-10	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	RF	Tested every refueling outage	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		
3LP0019	OFD-102A-3.1	D5	B	B	Yes	Gate	Limitorque	ON-LP-10	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	RF	Tested every refueling outage	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1LP0020	OFD-102A-1.1	D5	B	B	Yes	Gate	Limitorque	ON-LP-10	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	RF	Tested every refueling outage	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2LP0020	OFD-102A-2.1	D5	B	B	Yes	Gate	Limitorque	ON-LP-10	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	RF	Tested every refueling outage	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3LP0020	OFD-102A-3.1	D5	B	B	Yes	Gate	Limitorque	ON-LP-10	ST	Measure Full-Stroke Time of Valve	Both (Stroke Test)	RF	Tested every refueling outage	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None

Valve	Flow Diagram	ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1LP0021	OFD-102A-1.1	F7	B	B	Yes	Gate	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years
2LP0021	OFD-102A-2.1	E7	B	B	Yes	Gate	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years
3LP0021	OFD-102A-3.1	E7	B	B	Yes	Gate	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years
1LP0022	OFD-102A-1.1	D7	B	B	Yes	Gate	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years
2LP0022	OFD-102A-2.1	D7	B	B	Yes	Gate	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years
3LP0022	OFD-102A-3.1	D7	B	B	Yes	Gate	Limitorque	None	ST	Measure Full-Stroke Time of Valve	Open to Closed	Q	Tested once quarterly
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1LP0025	OFD-102A-1	J2	B	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
2LP0025	OFD-102A-2	J2	B	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
3LP0025	OFD-102A-3	J3	B	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
1LP0026	OFD-102A-1	G7	B	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
2LP0026	OFD-102A-2	G7	B	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
3LP0026	OFD-102A-3	F8	B	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1LP0027	OFD-102A-1 1	D8	B	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
2LP0027	OFD-102A-2 1	D8	B	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
3LP0027	OFD-102A-3 1	D8	B	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12

Valve	Flow Diagram	ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
1LP0029	OFD-102A-1.1	F6	B	A/C	Yes	Check	Self Actuated	ON-LP-09	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None
2LP0029	OFD-102A-2.1	F6	B	A/C	Yes	Check	Self Actuated	ON-LP-09	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None
3LP0029	OFD-102A-3.1	E7	B	A/C	Yes	Check	Self Actuated	ON-LP-09	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1LP0030	OFD-102A-1 1	D6	B	A/C	Yes	Check	Self Actuated	ON-LP-09	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None
2LP0030	OFD-102A-2 1	D6	B	A/C	Yes	Check	Self Actuated	ON-LP-09	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None
3LP0030	OFD-102A-3 1	C6	B	A/C	Yes	Check	Self Actuated	ON-LP-09	FS	Full-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Open to Closed	RF	Tested every refueling outage	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1LP0031	OFD-102A-1.2	K5	B	C	Yes	Check	Self Actuated	ON-LP-04	FS	Full-Stroke Exercise	Open to Closed	Q	Tested once quarterly	None
									PS	Partial-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Both (Stroke Test)	CS	Tested every cold shutdown	None
2LP0031	OFD-102A-2.2	K5	B	C	Yes	Check	Self Actuated	ON-LP-04	FS	Full-Stroke Exercise	Open to Closed	Q	Tested once quarterly	None
									PS	Partial-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Both (Stroke Test)	CS	Tested every cold shutdown	None
3LP0031	OFD-102A-3.2	K5	B	C	Yes	Check	Self Actuated	ON-LP-04	FS	Full-Stroke Exercise	Open to Closed	Q	Tested once quarterly	None
									PS	Partial-Stroke Exercise	Closed to Open	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Both (Stroke Test)	CS	Tested every cold shutdown	None
1LP0033	OFD-102A-1.2	E6	B	C	Yes	Check	Self Actuated	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Both (Stroke Test)	CS	Tested every cold shutdown	None
2LP0033	OFD-102A-2.2	E5	B	C	Yes	Check	Self Actuated	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Both (Stroke Test)	CS	Tested every cold shutdown	None
3LP0033	OFD-102A-3.2	E5	B	C	Yes	Check	Self Actuated	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None
									FS	Full-Stroke Exercise	Both (Stroke Test)	CS	Tested every cold shutdown	None

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1LP0036	OFD-102A-1.2	K8	C	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
2LP0036	OFD-102A-2.2	K8	C	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
3LP0036	OFD-102A-3.2	K8	C	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
1LP0037	OFD-102A-1.2	D8	B	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
2LP0037	OFD-102A-2.2	D8	B	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
3LP0037	OFD-102A-3.2	D8	B	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12

Valve	Flow Diagram	ASME Class	Valve Cutg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
1LP0042	OFD-102A-1 2	G13	B	A	No	Ball	Manual	None	LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None
2LP0042	OFD-102A-2 2	G13	B	A	No	Ball	Manual	None	LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None
3LP0042	OFD-102A-3.2	H13	B	A	No	Ball	Manual	None	LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	2Y	Tested once every two years	None
1LP0047	OFD-102A-1 2	E14	A	A/C	Yes	Check	Self Actuated	ON-LP-02	FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
									FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	CS	Tested every cold shutdown	None
2LP0047	OFD-102A-2 2	E14	A	A/C	Yes	Check	Self Actuated	ON-LP-02	FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
									FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	CS	Tested every cold shutdown	None
3LP0047	OFD-102A-3 2	E14	A	A/C	Yes	Check	Self Actuated	ON-LP-02	FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
									FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
									LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	CS	Tested every cold shutdown	None

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
1LP0048	OFD-102A-1	2	K14	A	A/C	Yes	Check	Self Actuated	ON-LP-02	FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
										FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
										LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	CS	Tested every cold shutdown	None
2LP0048	OFD-102A-2	2	K14	A	A/C	Yes	Check	Self Actuated	ON-LP-02	FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
										FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
										LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	CS	Tested every cold shutdown	None
3LP0048	OFD-102A-3	2	K14	A	A/C	Yes	Check	Self Actuated	ON-LP-02	FS	Full-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
										FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
										LT	Leak-Rate Test Valve to Section XI Requirement(s)	Accident Direction	CS	Tested every cold shutdown	None

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1LP0051	OFD-102A-1 1	I7	B	B	Yes	Globe	Manual	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		None
2LP0051	OFD-102A-2 1	H7	B	B	Yes	Globe	Manual	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		None
3LP0051	OFD-102A-3 1	I7	B	B	Yes	Globe	Manual	None	FS	Full-Stroke Exercise	Both (Stroke Test)	Q	Tested once quarterly	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		None

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1LP0055	OFD-101A-1.3	K3	B	C	Yes	Check	Self Actuated	ON-LP-06	FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
									FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									PS	Partial-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
2LP0055	OFD-101A-2.3	K3	B	C	Yes	Check	Self Actuated	ON-LP-06	FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
									FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									PS	Partial-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
3LP0055	OFD-101A-3.3	K3	B	C	Yes	Check	Self Actuated	ON-LP-06	FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
									FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									PS	Partial-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None

Valve	Flow Diagram	ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request	
1LP0057	OFD-101A-1 3	C3	B	C	Yes	Check	Self Actuated	ON-LP-06	FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
									FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									PS	Partial-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
2LP0057	OFD-101A-2 3	C3	B	C	Yes	Check	Self Actuated	ON-LP-06	FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
									FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									PS	Partial-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
3LP0057	OFD-101A-3 3	D2	B	C	Yes	Check	Self Actuated	ON-LP-06	FS	Full-Stroke Exercise	Open to Closed	CS	Tested every cold shutdown	None
									FS	Full-Stroke Exercise	Closed to Open	RF	Tested every refueling outage	None
									PS	Partial-Stroke Exercise	Closed to Open	CS	Tested every cold shutdown	None
1LP0060	OFD-102A-1.1	J9	C	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
2LP0060	OFD-102A-2 1	J9	C	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
3LP0060	OFD-102A-3.1	J9	C	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12

Valve	Flow Diagram		ASME Class	Valve Catg	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1LP0061	OFD-102A-1 1	J10	C	C	Yes	Vacuum Breaker	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	None
2LP0061	OFD-102A-2 1	J10	C	C	Yes	Vacuum Breaker	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	None
3LP0061	OFD-102A-3 1	J10	C	C	Yes	Vacuum Breaker	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	None
1LP0069	OFD-102A-01-02 118		B	B	No	Globe	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
2LP0069	OFD-102A-02-02 18		B	B	No	Globe	Limitorque	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3LP0092	OFD-102A-03-02 L10		B	B	No	Control	Air	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3LP0093	OFD-102A-03-02 F10		B	B	No	Control	Air	None	PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y	Tested once every two years	None
3LP0100	OFD-102A-3 1	D7	B	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
3LP0101	OFD-102A-3.1	F7	B	C	No	Relief	Self Actuated	None	RV	Safety and Relief Valve Test	Closed to Open	RV	Test relief valve per OM-1 schedule	ON-GRV-12
1LP0103	OFD-102A-1.1	H2	A	B	Yes	Gate	Rotork	ON-LP-03	ST PI	Measure Full-Stroke Time of Valve Verify the Valve Remote Position Indication	Closed to Open Both (Stroke Test)	CS 2Y	Tested every cold shutdown Tested once every two years	None None
2LP0103	OFD-102A-2.1	H2	A	B	Yes	Gate	Rotork	ON-LP-03	ST PI	Measure Full-Stroke Time of Valve Verify the Valve Remote Position Indication	Closed to Open Both (Stroke Test)	CS 2Y	Tested every cold shutdown Tested once every two years	None None
3LP0103	OFD-102A-3.1	G2	A	B	Yes	Gate	Rotork	ON-LP-03	ST PI	Measure Full-Stroke Time of Valve Verify the Valve Remote Position Indication	Closed to Open Both (Stroke Test)	CS 2Y	Tested every cold shutdown Tested once every two years	None None

Valve	Flow Diagram		ASME Class	Valve Catg.	Active	Valve Type	Actuator Type	JFD	Test Type	Test Type Description	Test Direction	Test Frequency	Frequency Description	Relief Request
1LP0104	OFD-102A-1.1	F2	A	B	Yes	Gate	Rotork	ON-LP-03	ST	Measure Full-Stroke Time of Valve	Closed to Open	CS	Tested every cold shutdown Tested once every two years	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		None
2LP0104	OFD-102A-2.1	F2	A	B	Yes	Gate	Rotork	ON-LP-03	ST	Measure Full-Stroke Time of Valve	Closed to Open	CS	Tested every cold shutdown Tested once every two years	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		None
3LP0104	OFD-102A-3.1	G2	A	B	Yes	Gate	Limitorque	ON-LP-03	ST	Measure Full-Stroke Time of Valve	Closed to Open	CS	Tested every cold shutdown Tested once every two years	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		None
1LP0105	OFD-102A-1.1	H2	B	B	Yes	Gate	Rotork	ON-LP-08	ST	Measure Full-Stroke Time of Valve	Closed to Open	CS	Tested every cold shutdown Tested once every two years	None
									PI	Verify the Valve Remote Position Indication	Both (Stroke Test)	2Y		None