The Cleveland Electric Illuminating Company

PERRY OPERATIONS MANUAL

TITLE: PUMP AND VALVE INSERVICE TESTING PROGRAM PLAN

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Pump and Valve Inservice Testing Program Plan

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Submittal History

PY-CEI/NRR-0051L	Revision No. 0	Initial Pump and Valve Inservice Testing Program submitted by Nuclear Energy Services (NES) as Document No. 80A5237 Revision No. 0.
PY-CEI/NRR-0318L	Revision No. 1	Pump and Valve Inservice Testing Program Submitted by CEI as Document No. 80A5237 Revision No. 1. The submittal was a significant upgrade of the program and the Licensing Submittal No. will be substituted as the Site Program Document No.
PY-CEI/NRR-0445L	Revision No. 2	Addenda to the Pump and Valve Inservice Testing Program, Relief Request Submittal by CEI. The relief request submittal included all requests that had been changed, added or deleted.
PY-CEI/NRR-0618L	Revision No. 3	Addenda to the Pump and Valve Inservice Testing Program, Relief Request Submittal by CEI. The relief request submittal included all requests that had been changed or added.
PY-CEI/NRR-0716L	Revision No. 4	Addenda to the Pump and Valve Inservice Testing Program, Relief Request Submittal by CEI. This revision revises VR-29 and VR-51 and submits new relief request Numbers GR-2, VR-53, VR-54, and VR-55.
PNPP Volume OM7E	Revision No. 0	Addenda to the Pump and Valve Inservice Testing Program, Relief Request Submittal by CEI. This revision updates the tables to the latest components being tested and provides the identification of Cold Shutdown Justification vs. Relief Request. The Pump and Valve Inservice Testing Program Plan is maintained as part of the Operations Manual to allow ease of reference and distribution.
PNPP Volume OM7E	Revision No. 1	Minor revisions to reflect plant design changes during RFO#1. Corrected typing errors and added valves: 1E51-F577, 1P45-F656, 1P45-F654A, and 1P54-F654B.

Submittal History (Cont.)

PNPP Volume OM7E PY-CEI/NRR-1063L	Revision No. 2	Minor revisions to correct typos prior to submitting the ISTP Plan to NRR.
PNPP Volume OM7E PY-CEI/NRR-1368L	Revision No. 3, Draft 1	Minor revision incorporating revised relief requests satisfying concerns identified per interim relief of the Inservice Testing Program for Pumps and Valves - Perry Nuclear Power Plant, Unit No. 1 (TAC Nos. 74784 and 75072) and current positions taken by the NRC staff reviewers. Also included are minor typing corrections.
PNPP Volume OM7E PY-CEI/NRR-1739L	Revision No. 3, Draft 2	Revision incorporated some of the concerns and anomalies identified per SE/TER of the Inservice Testing Program (TAC No. M74784) and Response Letter submitted dated Feb. 3, 1994 for VR-26, VR-35, RO-1 and RO-2.
PNPP Volume OM7E PY-CEI/NRR-1765L	Revision No. 3	Revision incorporated the remaining concerns and anomalies identified per SE/TER(s) of the Inservice Testing Program (TAC Nos. 74784, M74784 and 75072) and Response Letter submitted dated Apr. 5, 1994.

SCOPE OF REVISION:

Rev. 3 -

1. Incorporated reference to 10CFR50.55a(f) Inservice Testing Requirements in lieu of 10CFR50.55a(g) Inservice Inspection Requirements due to amendment to 10CFR50.55a Code and Standards effective September 8, 1992.

2. Revised the following relief requests to address concerns from the NRC Safety Evaluation and Interim Relief Letter (TAC No. 75072): PR-2, PR-4, VR-3, VR-11, VR-15. These relief requests were submitted to PORC (No. 90-068) and approved.

3. Revised the following relief requests to address additional concerns from the NRC safety evaluation and interim relief review process: PR-12, VR-26, VR-32, VR-35, VR-36 and VR-39. These relief requests were submitted to PORC (No. 91-014) and approved.

4. Deleted or added relief requests to address NRC Comments/ Concerns identified in meeting summary - Inservice Testing Program and Relief Requests, March 5-7, 1991 as part of the ISTP review process:

   Deleted - PR-7, 8, 10, and 11. Also CS-7, CS-8, CS-12 and CS-17 with VR-12, 16, 21, 22, 25, 28, 29, 31 and 33.
   Added - VR-38, 40, 41, 42 and 43.

5. Changed as follows the relief request and cold shutdown justifications to address concerns from the NRC Safety Evaluation and Interim Relief Letter (TAC No. M74784) while identifying approval document, when applicable:

   Revised - PR-3, 4, 6, and 9. Also CS-10, 22, with VR-5, 9, 11, 14, 15, 17, 18, 19, 20, 23, 26, 27, 30, 34, 35, 37, 40, 41 and 42.
   Deleted - VR-5, VR-7, VR-8, VR-9, VR-15, VR-18, VR-19, VR-23, VR-24, VR-27, VR-37, VR-40 and VR-42.
   Added - OM(6)-1, CS-23, OM(10)-1, OM(10)-2, OM(10)-3, OM(10)-4, RO-1, RO-2, RO-3, RO-4, RO-5, RO-6, RO-7 and RO-8.

6. Created a new valve test "XX", Non-Code testing. These test requests are to satisfy other surveillance requirements than ASME Code, Section XI.

7. Revised numerous Surveillance Instruction Nos. for implementation of test requirements.

8. Changed stroke timing direction for numerous valves.

SCOPE OF REVISION:

Rev. 3 - 9. Revised pump test table and valve test table to agree with current status of pump and valve relief requests.

10. Incorporated implementing document changes:

a. DCP No. 90-0086, changing the primary method of exercising to manual for valves: P42-F260A, P42-F260B, P42-F265A and P42-F265B. Administrative controls have been established making the motors a convenience function only.
b. FCR No. 14487, revised the maximum seat leakage limit for 1E12-F053B.
c. DCP No. 87-0791, changing valve size and remarks section for valves: 1R44-F508A, 1R44-F508B, 1R44-F518A and 1R44-F518B.
d. DCP No. 92-043 and SE No. 92-0097, added valves 1E12-F103A, 1E12-F103B, 1E12-F104A and 1E12-F104B requiring relief VR-44. Also, added 1E12-F102 and 1E51-F078 as LJ tested valves.
e. DCP No. 90-012, Added valves: 1P42-F550 and 1P42-F551.
f. DCP No. 93-075, Added valves: 1B21-R011A-F, 1B21-R011A-G, 1B21-R011B-F, 1B21-R011B-G, 1B21-R011C-F, 1B21-R011C-G, 1B21-R011D-F and 1B21-R011D-G. Also, incorporated CS-23.
g. DCP No. 93-0085, Revised the maximum stroke times for 1E21-F005 and 1E21-F011.
h. DCP No. 93-0083, Revised the maximum stroke time for 1E12-F064A.
i. DCP No. 93-0084, Revised the maximum stroke time for 1E12-F028A.
j. DCP No. 93-0110, Revised the maximum stroke time for 1E12-F042A.

11. Added two new manual valves: G41-F619A and G41-F619B. Also, valves 1E12-F051A, 1E12-F051B, 1E12-F065A and 1E12-F065B were added because of their safety related fail safe function.

12. Changed test requirement from LK to LD for relief valves with seat leakage measured during pressure set testing.

13. Revised the normal position for all M14 valves to normally closed and deleted open stroke time test requirement.

14. Classified normally closed check valves with no open safety function as passive: 1P11-F556B, 1P22-F577, 1P51-F530, 1P57-F555A, 1P57-F555B, 1P57-F556A, 1P57-F556B and 1P86-F528.

15. Incorporated test requests of FE and AP for 1P43-F721.

SCOPE OF REVISION:

Rev. 3 - 16. Deleted performance of AP for: 1R45-F577A, 1R45-F577B, 1R45-F578A, 1R45-F578B, 1R45-F579A and 1R45-F579B.

17. Revised the document listing for those documents used to develop the ISTP Plan.

18. Corrected stroke times of OP42-F150A, F150B, F290, F295A, F295B, F300A, F300B, F320, F325A, F325B, F330A, F330B per response to CR 93-245. New stroke times are 30 sec.

19. Developed a new method for identifying nonconformance to Section XI requirements. These nonconformances shall comply with the Operation and Maintenance Standards Part 6 and Part 10. There is a unique number assigned to each one as either OM(6), OM(10), or RO Justifications.

20. Deleted AP test requirement for 1E51-F047 because of downstream orifice size makes closure verification not necessary.

1.0 INTRODUCTION

1.1 Purpose

The inservice tests identified in this program plan will verify the operational readiness of pumps and valves whose functions are required to mitigate the consequences of an accident or to bring the reactor to a cold shutdown condition or maintain the reactor in a safe shutdown condition.

1.2 Scope

The program plan incorporates the requirements of ASME Boiler and Pressure Vessel Code, Section XI; Subsection IWP, Inservice Testing of Pumps in Nuclear Power Plants and Subsection IWV, Inservice Testing of Valves in Nuclear Power Plants.

The inservice inspection (ISI) boundary classification incorporates the design classification or quality group boundaries shown on the plant piping and instrument diagrams (P&ID's). The inservice testing (IST) program was developed using the ISI safety classification boundaries and the following documents:

Title 10, Code of Federal Regulations, Part 50, Paragraph 50.55a(f) and (g).

NRC Regulatory Guides Division 1.

"NRC Staff Guidance for Preparing Pump and Valve Testing Programs and Associated Relief Request," November, 1981.

Updated Safety Analysis Report, Perry Nuclear Power Plant.

Technical Specifications, Perry Nuclear Power Plant.

Generic Letter 89-04, Guidance on Developing Acceptable Inservice Testing Program.

Minutes of the Public Meeting to Discuss Generic Letter 89-04.

NRR Safety Evaluations and their associated TER.

NUREG-1482 Guidelines For Inservice Testing At Nuclear Power Plants (Draft Report)

The satisfactory testing of individual components (valve/pump) in accordance with the plan shall verify operability of each component's safety functions. A failure to meet the scheduled surveillance frequency or acceptance criteria shall place the component in an inoperable status. Further consideration must be given to verify the system's or the subsystem's status and limiting condition of operation requirements. Components placed in an inoperable status 1) because of exceeding an acceptance criteria must undergo a repair, replacement, evaluation or corrective maintenance and be satisfactorily retested or 2) because of exceeding the scheduled surveillance frequency - must be satisfactorily tested to return the component to an operable status.

1.3 Compliance

The Perry Nuclear Power Plant Inservice Pump and Valve Testing Program Plan will be in effect through the first 120 month inspection interval (18 Nov. 1997) and will be updated in accordance with the requirements of 10CFR50.55a(f) and Technical Specification Surveillance Requirement 4.0.5.

This document outlines the inservice testing program based on the requirements of Section XI of the ASME Boiler & Pressure Vessel Code, 1983 Edition through the Summer 1983 Addenda. All references to IWP or IWV, respectively, of ASME Section XI, reflect the 1983 Edition through the Summer 1983 Addenda, unless otherwise noted.

If this revised Inservice Testing (IST) Program Plan for the site conflicts with site technical specifications a technical specification amendment shall be submitted to conform the technical specification to the revised IST program [10CFR50.55a(f)(5)(ii)]. Until approval of the technical specification amendment the most limiting requirement shall be met.

2.0 INSERVICE TESTING PROGRAM FOR PUMPS

2.1 General Information

2.1.1 Applicable Code

This testing program for ISI Class 1, 2 and 3 pumps meets the requirements of Subsection IWP of Section XI of the ASME Boiler and Pressure Vessel Code. Where these requirements are determined to be impractical, specific requests for relief have been written and included in Section 2.2. Also, nonconformance to Section XI requirements may be identified as OM Justifications if the impractical requirement complies with OM Part 6.

2.1.2 Pump Program Tables

The tables in Section 2.3.3 list all pumps included in the Perry Nuclear Power Plant (PNPP) IST Program. Data contained in these tables identifies those pumps subject to inservice testing, the inservice test quantities to be measured, the inservice testing frequency, and any applicable remarks. The column headings are listed and explained below:

PUMP IDENTIFICATION

1. SYSTEM: The system of which the pump is a component.

2. PUMP NUMBER: The pump Master Parts List (MPL) number.

3. SVI INST. NO.: The Surveillance Instruction number in which the Inservice Pump Test is accomplished.

4. ISI CLASS: The ISI safety classification of the pump.

5. FREQ.: The frequency is the periodicity in which pump test must be accomplished.

6. MEASURED PARAMETERS: The parameters to be measured during the Inservice Pump Test.

IST REQUIREMENTS

PUMP SPEED, INLET (SUCTION) PRESSURE, DIFFERENTIAL PRESSURE FLOW RATE, VIBRATION, BEARING TEMPERATURE AND LUBRICANT LEVEL OR PRESSURE: When the symbol "X" appears in a particular measured parameter column, that quantity will be measured during inservice testing in accordance with Subsection IWP. If a modified test is planned or a test is being waived, a number which refers to a Pump Test Table Note (Section 2.3.3), shall appear in the measured parameter column. Requests for relief are identified with the letter "PR" where OM Justification are identified with OM(6) under the measured column in the test tables. The requests for relief and OM justifications are included in Section 2.2.

2.1.3 Measurement of Test Parameters

SPEED: Per IWP-4400, shaft speed need not be measured for pumps directly coupled to synchronous or induction type motor drivers. For variable speed pumps, the pump speed is set at the reference speed per IWP-3100.

INLET (SUCTION) PRESSURE: For pumps with no installed pressure instrument, suction pressure may be calculated (using appropriate correction factors) from a measured tank or basin level. All other suction pressure measurements will be taken using pressure instruments at or near the pump inlet.

DIFFERENTIAL PRESSURE: Differential pressure will be calculated from suction and discharge pressure measurements or by direct differential pressure measurement.

FLOW RATE: Flow rate will be measured using a flow rate meter installed in or on the hydraulic circuit.

VIBRATION: Pump vibration will be measured as close as possible to the inboard bearing, in a plane approximately perpendicular to rotating shaft, in a horizontal or vertical direction that has the largest deflection for that particular pump. At least one displacement and one velocity measurement will be taken with one of the instruments referenced in IWP-4520. These vibration reference points are permanently marked by "V" or "H" on the appropriate location.

BEARING TEMPERATURE: Pump bearing temperature(s) will not be measured. (Relief Request PR-1).

LUBRICANT LEVEL OR PRESSURE: Pump lubricant level or pressure will be observed during each inservice test, when applicable.

2.1.4 Allowable Ranges of Test Parameters

The allowable ranges specified in Table IWP-3100-2 will be used for differential pressure, flow and vibration measurements. Should a measured test quantity fall outside the allowable range, the possibility of defining an expanded allowable range, in accordance with ASME Code interpretation XI-1-79-19, will be investigated.

2.1.5 Instrument Accuracy

Allowable instrument accuracies are given in Table IWP-4110-1. If the accuracies of the station's instruments are not acceptable, temporary instruments meeting those requirements in Table IWP-4110-1 will be used.

2.1.6 OM(6) Justification

The Operations and Maintenance Part 6 Justification allows the implementation of portions of OM-6 pursuant to 10CFR50.55a(f)(4)(iv) without requesting formal relief. An OM(6) Justification is similar in format and purpose to a cold shutdown justification for IST of valves. This justification provides the mechanism for documenting the bases for performing specific IST pump requirements as well as specifying the alternative requirements in accordance with the OM-6 standard.

2.1.7 Post-Maintenance Testing

During the inservice life of a pump, work may be required to restore or maintain the pump performance to within acceptable ranges. This work can be in the form of: routine servicing, maintenance (preventive/corrective), repair and replacement. The following work scope guidelines, steps to determine retest requirement, and retest flowpath (with examples) should be utilized in determining post-maintenance testing requirements.

WORK SCOPE GUIDELINES

a. Routine Servicing - Performance of planned preventive maintenance which does not require disassembly of the pump or replacement of parts: Changing oil, flushing the cooling system, adjusting packing, adding packing rings or mechanical seal maintenance.

   Exceptions:

   1) When routine servicing is performed on a running pump, verification that no changes in monitored parameters may be substituted in place of the SVI.

   2) When a parameter is verified within the maintenance instruction or prior to operation (i.e., verifying proper oil level) no retest is required.

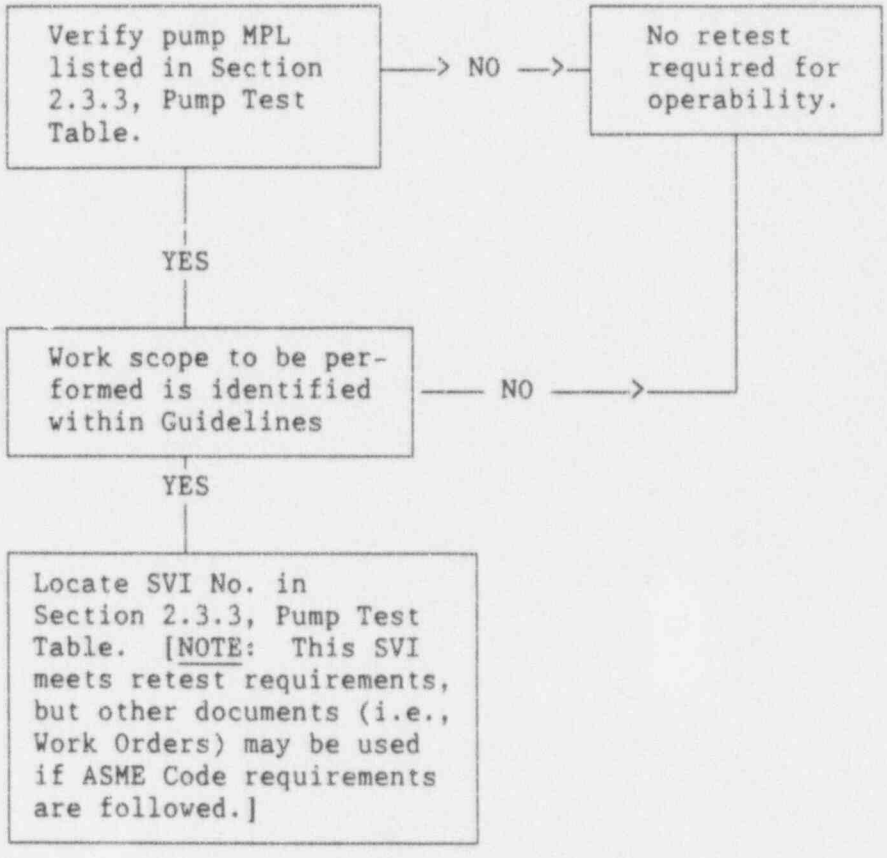
b. Maintenance - Performance of preventive or corrective maintenance which requires disassembly of the pump or replacement of consumable items.
c. Repair - Performance of welding or grinding on a pump to correct a defect.
d. Replacement - Installation of a new pump, pump-part, or a modification to the pump.

STEPS TO DETERMINE RETEST REQUIREMENTS

Step 1: Locate the pump by MPL number in the Pump Test Table (Section 2.3.3).

Step 2: If the work includes any of the work scope guidelines, then the surveillance listed on the pump test table should be performed. However, other documents (i.e., Work Order) may be used if ASME Code requirements are followed.

RETEST FLOWPATH



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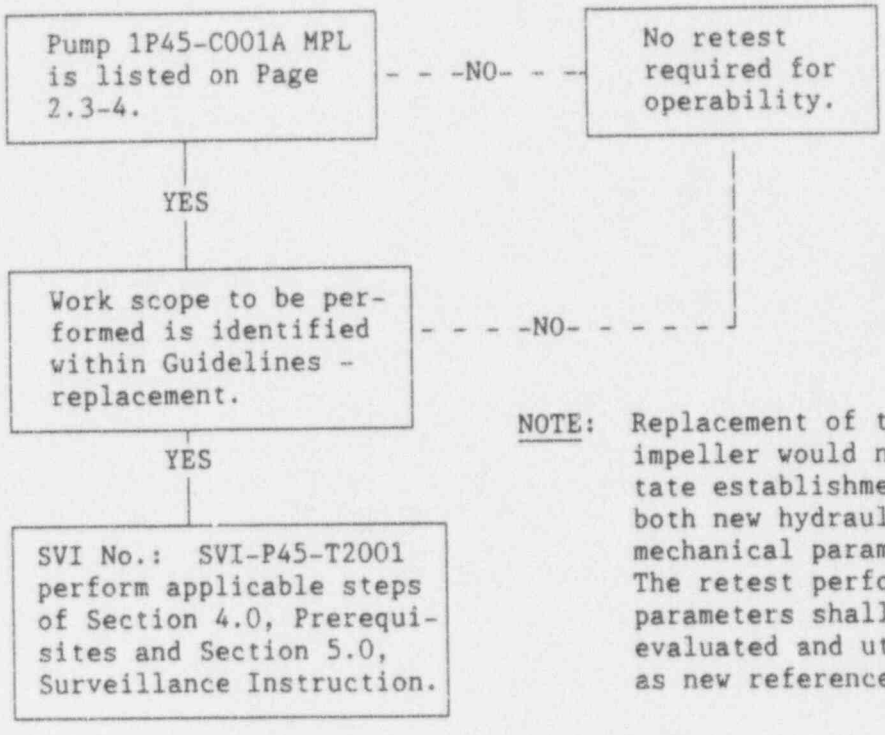
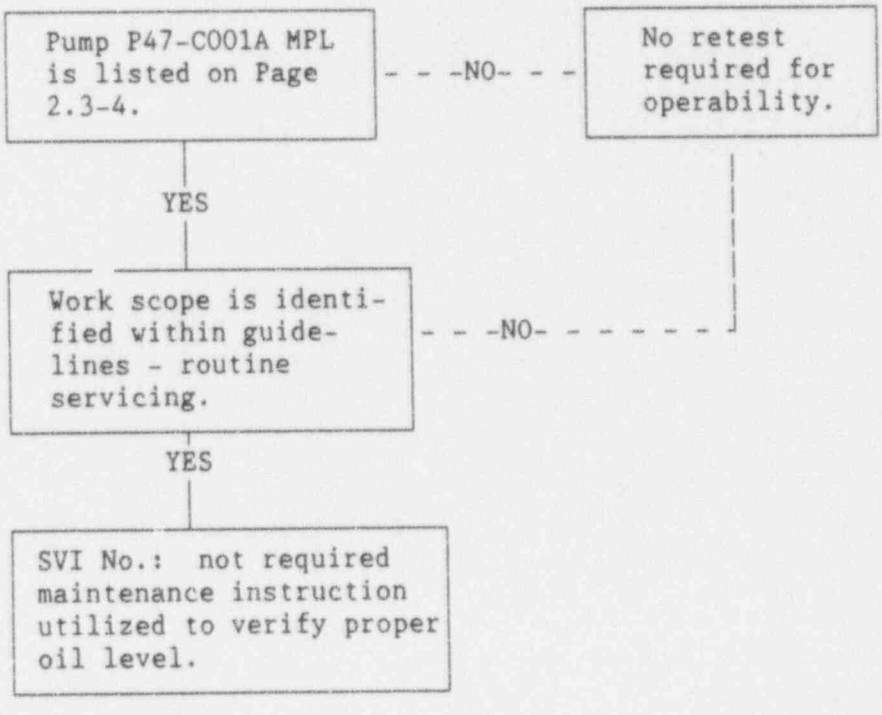
Examples:

1. 1P45-C001A requires the impeller replacement due to excessive wear per work order.

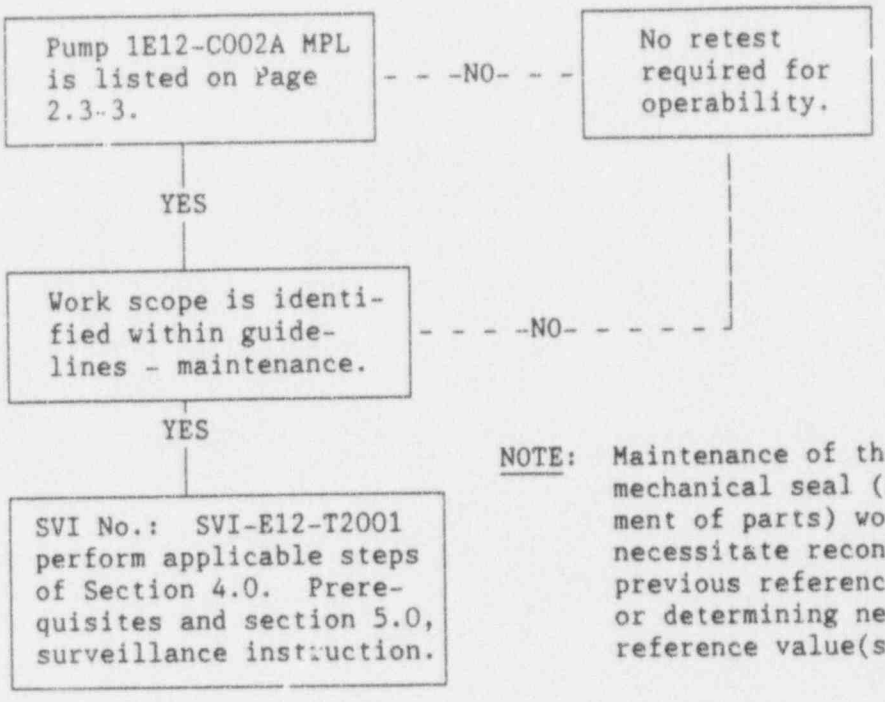


NOTE: Replacement of the pump impeller would necessitate establishment of both new hydraulic and mechanical parameters. The retest performance parameters shall be evaluated and utilized as new reference values.

2. P47-C001A, requires the lubricant reservoir to be filled due to level indication just visible per work order.

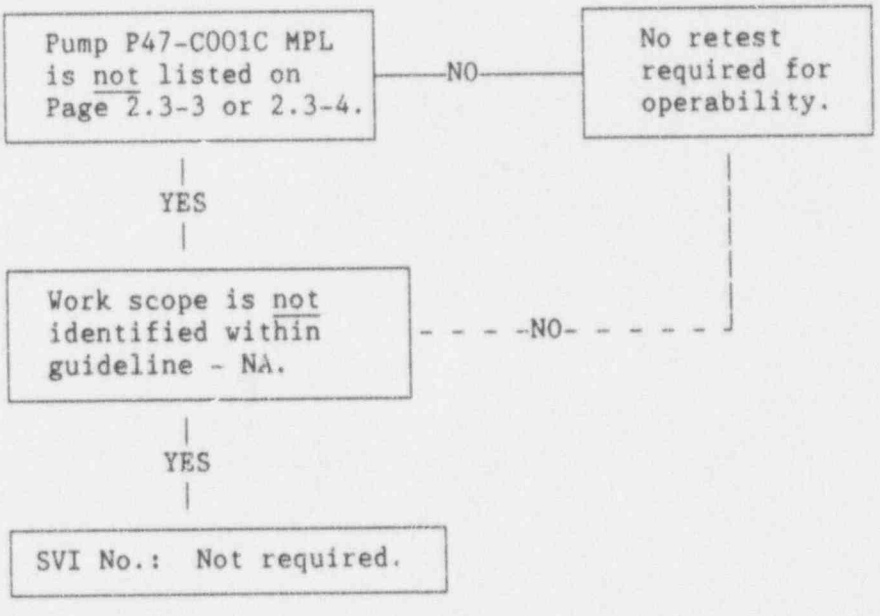


3. 1E12-C002A requires the pump mechanical seals replacement per work order.



NOTE: Maintenance of the pump mechanical seal (replacement of parts) would necessitate reconfirming previous reference values or determining new reference value(s).

4. P47-C001C requires the motor to be replaced per work order.



2.2 Relief Requests for Inservice Pump Testing Program

Operation and Maintenance (Part 6) Justification

OM(6) - 1

(Previously PR-3, Part 1)

System: Standby Liquid Control (SLC) System

Pumps: 1C41-C001A and 1C41-C001B

Class: 2

Function: Provides a method of shutting down the reactor without use of the control rods.

Test Requirements: IWP-3300; Scope of Test - measurement and observation of inlet pressure (Pi) and differential pressure (Pd) across the pumps.

Basis of Justification: The standby liquid control pumps are required to supply the necessary flow rate at a given system pressure. The inlet pressure (no installed test equipment) is equivalent to the static head provided by the test tank. Test tank level is established within the inservice test procedures. Also, the measurement of inlet pressure on a positive displacement pump is not a significant test parameter. The system resistance is varied to establish the measured and observed discharge pressure as the reference value. Flow rate is measured, observed and monitored to verify pump operability and detect degradation. Surveillance test requirements for discharge pressure comply with the ASME Code for pressure instrument accuracy and pressure measurements.

This alternate testing is acceptable for implementation in accordance with OM-6 pursuant to 10CFR50.55a(f)(4)(iv) if all related requirements of OM-6 for monitoring pump discharge pressure are implemented. These related requirements for monitoring discharge pressure are identified as OM-6 Paragraph 4.6.1 General and 4.6.2 Pressure Measurement. Additional clarification is provided in Record No. PY-E-SO-7812, Subject: Pressure Measurement for SLC Pump Operability Testing.

Operation and Maintenance (Part 6) Justification

OM(6) - 1

Alternate Testing: Utilize pump discharge pressure reading in lieu of pump differential pressure reading and verify test tank level to ensure adequate suction pressure.

Applicable related requirements contained in OM-6 Paragraph 4.6 instrumentation shall be met.

Use of OM-6 Alternate Testing Requirement was approved in NRC Safety Evaluation Dated 4/5/93 (Log No. PY-NRR/CEI-0629L)

Pump Relief Request #

PR-1

System: As applicable

Pumps:

1C41-C001A	1E21-C002	1P42-C001A	1R45-C001A
1C41-C001B	1E22-C001	1P42-C001B	1R45-C001B
1E12-C002A	1E22-C003	1P45-C001A	1R45-C001C
1E12-C002B	1E51-C001	1P45-C001B	1R45-C002A
1E12-C002C	1E51-C003	1P45-C002	1R45-C002B
1E12-C003	G41-C003A	P47-C001A	1R45-C002C
1E21-C001	G41-C003B	P47-C001B	

Class: ASME Class 2 and 3

Function: As applicable

Test Requirement: IWP-4310, Bearings - temperature of all centrifugal pump bearings outside the main flow path and of the main shaft bearings of reciprocating pumps shall be measured at points selected to be responsive to changes in the temperature of the bearing. Lubricant temperature, when measured after passing through the bearing, and prior to entering a cooler, shall be considered the bearing temperature.

Basis for Relief:

a) The following pumps addressed in this relief request are cooled by their respective process fluid, "Main Flow Path." Therefore, conformance with taking bearing temperature measurements is impractical for the facility.

1E12-C002A	1E22-C001
1E12-C002B	1P45-C001A
1E12-C002C	1P45-C001B
1E21-C001	1P45-C002

b) Pump bearing temperature is taken at (1) one-year intervals only. Temperature readings do not provide a meaningful trend data towards determining incremental degradation of a bearing.

c) Vibration measurements (displacement and velocity) are significantly more reliable indications of pump bearing degradation than are temperature measurements. Therefore, this alternative provides an equal to or better than acceptable level of quality and safety.

d) All pumps addressed in this relief request will be subject to vibration measurements per sub-article IWP-4500 utilizing displacement and velocity. Except for: the Standby Liquid Control Pumps 1C41-C001A/B which are positive displacement pumps operating at low speeds making velocity reading meaningless. Therefore, compliance with velocity readings would result in unusual difficulty without a compensating increase in the level of quality and safety.

Alternate Testing: Vibration measurements shall be taken on all pumps identified above as required by ASME Section XI Subsection IWP-4500, except as noted in paragraph "d" above. Additionally, vibration measurements using velocity as a measured value shall be taken on each pump in the same locations as the required displacement measured values.

Approved in NRC Safety Evaluation dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Pump Relief Request #

PR-2

System: As Applicable

Pumps:

1C41-C001A	1E21-C002	1P42-C001A	1R45-C001A
1C41-C001B	1E22-C001	1P42-C001B	1R45-C001B
1E12-C002A	1E22-C003	1P45-C001A	1R45-C001C
1E12-C002B	1E51-C001	1P45-C001B	1R45-C002A
1E12-C002C	1E51-C003	1P45-C002	1R45-C002B
1E12-C003	G41-C003A	P47-C001A	1R45-C002C
1E21-C001	G41-C003B	P47-C001B	

Class: ASME Class 2 and 3

Function: As Applicable

Test Requirement: IWP-3220, Time Allowed for Analysis of tests - all test data shall be analyzed within 96 hours after completion of a test.

Basis for Relief: The inservice personnel are not always readily available for the review effort. Test acceptance criteria is contained within the test procedures, and the initial approval of equipment operability is by on-shift personnel. The On-Shift personnel declare pumps whose measured parameters enter the acceptance criteria required action range inoperable in a timely manner. The analysis of results for degradation requiring increased testing or engineering evaluation will then occur when the Inservice Testing (IST) personnel are available for reviewing the inservice pump test data. Therefore, compliance with the duration required for performance of the analysis would result in a hardship without a compensating increase in the level of quality and safety.

Alternate Testing: Test data shall be reviewed within four (4) work days following the test, excluding weekends (Saturday & Sunday) and Holidays, within the 96 hour time frame.

Approved in NRC Safety Evaluation dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Pump Relief Request #

PR-3

System: Standby Liquid Control (SLC) System

Pumps: 1C41-C001A and 1C41-C001B

Class: 2

Function: Provides a method of shutting down the reactor without use of the control rods.

Test Requirements: IWP 4520(b); Instruments to Measure Amplitude - The frequency response range of the readout system shall be from one-half minimum speed to at least maximum pump shaft rotational speed.

Basis for Relief: The SLC pumps are positive displacement with a shaft rotational speed of 360 revolutions per minute (RPM). The amplitude frequency response range is 180 RPM which corresponds to a frequency of 3 cycles per second (cps). The International Research and Development (IRD) vibration instrument is calibrated to 5 cps even though it measures the entire frequency spectrum. These pumps utilize roller bearings which do not provide any meaningful input at one-half or any fraction of the minimum rotating speed. Therefore, calibration to 5 cps provides an acceptable level of quality and safety.

Alternate Testing: The IRD equipment shall only require calibration to as low as practical (approximately 5 cps).

Approved Part 2 in NRC Safety Evaluation dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Revised Part 1 to OM(6)-1 in accordance with NRC Safety Evaluation Dated April 5, 1993 Resolution (Log No. PY-NRR/CEI-0629L)

Pump Relief Request

PR-4

System: Waterleg Fill Pumps (RHR, LPCS, HPCS, and RCIC)

Pumps: 1E12-C003, 1E21-C002, 1E22-C003, and 1E51-C003

Class: 2

Function: Waterleg pumps maintain the discharge piping of safety-related systems full to expedite flow during initiation, and to minimize the likelihood of system damage due to water hammer.

Test Requirements: IWP-3100; Inservice Test Procedure - measure, record, and compare inlet (suction) pressure Pi.

IWP-3300; Scope of Test - measurement and observation of inlet (suction) pressure Pi stopped.

Basis for Relief: The securing of waterleg pumps (RHR, LPCS, HPCS and RCIC) to measure the suction pressure stopped would serve no useful purpose, since an adequate net positive suction head (NPSH) is verified by proper suppression pool or condensate storage tank level. These levels are maintained per Technical Specification requirements. The instrumentation used to measure suppression pool level and condensate storage tank pressure meet the required ASME Code accuracies. Also, securing these pumps will require filling and venting the safety-related system increasing the duration that the system is in a non-standby readiness mode. When starting a waterleg pump, no deviation in run or stop inlet (suction) pressure for RHR, LPCS and HPCS has been observed. Therefore, compliance with measuring suction pressure would result in unusual difficulty without a compensating increase in the level of quality and safety.

Alternate Testing: The inlet suction pressure shall be measured using suppression pool level (RHR and LPCS) and condensate storage tank pressure or suppression pool level (HPCS). The suction pressure stopped shall not be measured or observed.

Approved in NRC Safety Evaluation dated April 5, 1993 (Log NO. PY-NRR/CEI-0629L)

Pump Relief Request #

PR-5

System: Emergency Core Cooling Systems (E12, E21, E22)
Emergency Service Water System (P45)

Pumps: 1E12-C002A, 1E12-C002B, 1E12-C002C, 1E21-C001, 1E22-C001, 1P45-C001A, 1P45-C001B, 1P45-C002

Class: 2 and 3

Function: The Emergency Service Water Pumps provide the cooling water to support the safety-related shutdown systems.

The Emergency Core Cooling Systems (RHR, LPCS, HPCS) Pumps are used to supply water to the reactor vessel during plant abnormal conditions.

Test Requirement: IWP-4500; Vibration amplitude - location shall generally be on a bearing housing or its structural support, provided it is not separated from the pump by any resilient mounting. On a pump coupled to the driver, the measurement shall be taken on the bearing housing near the coupling; on close-coupled pumps, the measurement point shall be as close as possible to the inboard bearing.

Basis for Relief: The Emergency Service Water Pumps and ECCS Pumps are totally submerged under water making the required vibration testing impractical, however, the motor drivers are shaft connected to the pumps and are accessible.

Alternate Testing: The vibration measurements shall be taken, as scheduled on a quarterly basis, on the lower bearing or its structural support, closest to the pump driver motor stuffing box assembly.

Approved in NRC Safety Evaluation dated April 5, 1993 (Log NO. PY-NRR/CEI-0629L)

Pump Relief Request #

PR-6

System: Emergency Service Water (P45)

Pumps: 1P45-C001A, 1P45-C001B, 1P45-C002

Class: 3

Function: The Emergency Service Water Pumps provide the cooling water to Support the safety-related shutdown systems.

Test Requirements: Measure, record, and compare inlet (suction) pressure Pi Per IWP-3100.

Basis for Relief: An inlet (suction) pressure gauge is not provided for the Emergency Service Water Pumps. The pumps have an inlet pressure dependent upon Lake Erie water level. Calculation of this static head between Lake level and pump inlet shall adequately provide the necessary inlet pressure. The instrumentation used to measure lake level meets the required ASME Code accuracies.

Alternate Testing: Calculate the static head between Lake Erie water level and the pump suction for inlet suction pressure.

Approved in NRC Safety Evaluation dated April 5, 1993 (Log NO. PY-NRR/CEI-0629L)

Pump Relief Request #

PR-7

Relief Request Deleted
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In accordance with NRC
Site Meeting Summary Correspondence
dated May 29, 1991 (Log No. PY-NRR/CEI-0559L)

Pump Relief Request #

PR-8

Relief Request Deleted
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In accordance with NRC
Site Meeting Summary Correspondence
dated May 29, 1991 (Log No. PY-NRR/CEI-0559L)

Pump Relief Request #

PR-9

System: Waterleg Fill Pumps (RHR, LPCS, HPCS, and RCIC)

Pumps: 1E12-C003, 1E21-C002, 1E22-C003, and 1E51-C003

Class: 2

Function: Waterleg pumps maintain the discharge piping of safety-related systems full to expedite flow during initiation, and to minimize the likelihood of system damage due to waterhammer.

Test Requirements: IWP-3400; Test Frequency - Test pumps at least every three months, quarterly.

Basis for Relief: The waterleg pumps were designed to be inservice to maintain functional systems (discharge/suction piping) pressurized. The waterleg pump normal discharge path must be redirected to perform safety-related pump testing. This would require racking out of safety-related pump breakers (RHR, LPCS, and HPCS) or isolating the safety-related pump (RCIC) to prevent system damage due to waterhammer or cavitation upon receipt of an actuation signal. Racking out safety-related pump breakers or isolation of the pump will place the plant in a Limiting Condition of Operation for testing. The intent of ASME Code, Section XI is not to reduce the reliability of safety-related systems. Therefore, testing the listed safety-related waterleg pumps quarterly would result in hardship without a compensating increase in the level of quality or safety.

These pumps shall be monitored on a quarterly basis observing pump discharge pressure and bearing vibration. These parameter will be evaluated to adequately assess the pump's mechanical performance parameters.

Alternate Testing: Test during cold shutdown.

Approved in NRC Safety Evaluation dated April 5, 1993 (Log NO. PY-NRR/CEI-0629L)

Pump Relief Request #

PR-10

Relief Request Deleted
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In accordance with NRC
Site Meeting Summary Correspondence
dated May 29, 1991 (Log No. PY-NRR/CEI-0559L)

Pump Relief Request #

PR-11

Relief Request Deleted
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In accordance with NRC
Site Meeting Summary Correspondence
dated May 29, 1991 (Log No. PY-NRR/CEI-0559L)

Pump Relief Request #

PR-12

System: As Applicable

Pumps:

1C41-C001A	1E21-C002	1P42-C001A	1R45-C001A
1C41-C001B	1E22-C001	1P42-C001B	1R45-C001C
1E12-C002A	1E22-C003	1P45-C001A	1R45-C001C
1E12-C002B	1E51-C001	1P45-C001B	1R45-C002A
1E12-C002C	1E51-C003	1P45-C002	1R45-C002B
1E12-C003	G41-C003A	P47-C001A	1R45-C002C
1E21-C001	G41-C003B	P47-C001B	

Class: ASME Class 2 and 3

Function: As Applicable

Test Requirements: IWP-4120; Range - the full-scale range of each instrument shall be three times the reference values or less.

Basis for Relief: The analog instrumentation (IRD) used to measure vibration amplitude has a range selector with multiples of 3 and 1 (i.e., full scale ranges of .03, .1, .3, 1, 3 and others for full-scale readings). The IWP-4210 range requirements translates into requiring all measurements to be in the upper 66% of the meter scale. When measuring reference values that fall between 0.030 to 0.033, 0.30 to 0.33, and 3.0 to 3.3, this requirement can not be met. For these specific cases, the upper 70% of full scale must be used. The code deviation described above occurs infrequently and is so minute, the effects are insignificant when compared to the many variables encountered during vibration data collection. Measuring reference values using the upper 70% of the meter full scale does not impact vibration measuring consistency for monitoring pump degradation. Therefore, conformance with this code requirement is impractical for the facility and the alternate testing provides an acceptable level of quality and safety.

Alternate Testing: Pump vibration reference values will be measured within the upper 70% of the vibration meter's full scale.

Approved in NRC Safety Evaluation dated April 5, 1993 (Log NO. PY-NRR/CEI-0629L)

2.3 Pump Testing System Index and Test Tables

2.3.1 Pump Testing System Index

System	Dwg. No./Rev.	Pump MPL	Coordinate
Standby Liquid Control (C41)	D-302-691/Rev. P	1C41-C001A	D-8
		1C41-C001B	G-8
Standby Liquid Control Transfer (C41)	D-302-692/Rev. K	C41-C002A	F-7
		C41-C002B	F-9
Residual Heat Removal (E12)	D-302-641/Rev. Z	1E12-C002A	J-4
	D-302-643/Rev. W	1E12-C002B	H-12
		1E12-C002C	G-12
		1E12-C003	F-10
Low Pressure Core Spray (E21)	D-302-705/Rev. P	1E21-C001	G-4
		1E21-C002	F-8
High Pressure Core Spray (E22)	D-302-701/Rev. T	1E22-C001	E-12
		1E22-C003	F-9
Reactor Core Isolation Cooling (E51)	D-302-631/Rev. N	1E51-C001	D-3
		1E51-C003	F-4
Fuel Pool Cooling and Cleanup (G41)	D-302-654/Rev. H	G41-C003A	G-12
		G41-C003B	J-12
Emergency Closed Cooling Water (P42)	D-302-621/Rev. V	1P42-C001A	D-12
		1P42-C001B	G-12
Emergency Service Water (P45)	D-302-791/Rev. U	1P45-C001A	G-14
		1P45-C001B	G-13
		1P45-C002	G-11
Control Complex Chilled Water (P47)	D-913-001/Rev. BB	P47-C001A	B-5
		P47-C001B	H-5
ESW Screen Wash (P49)	D-302-214/Rev. M	P49-C002A	C-12
		P49-C002B	G-12
Standby D.G. Fuel Oil (R45)	D-302-352/Rev. U	1R45-C001A	F-11
		1R45-C001B	F-5
		1R45-C002A	F-9
		1R45-C002B	F-3
HPCS D.G. Fuel Oil (R45)	D-302-356/Rev. J	1R45-C001C	F-5
		1R45-C002C	F-3

2.3.2 Pump Test Table Nomenclature

The following abbreviations have been used in the Pump Test Table.

N = Rotative Speed

Pi = Inlet Pressure (Before and after pump start)

Pd = Differential Pressure Across Pump

Q_f = Flow Rate

V = Vibration Amplitude

T_b = Bearing Temperature

Q = Quarterly

RO = Refueling Outage

X = Measurement/Observation Per IWP

L = Lubricant Level or Pressure

PR = Relief Request

OM = Operations and Maintenance (Part 6) Justification

2.3.3 Pump Test Table

PUMP LISTING					MEASURED PARAMETERS						
SYSTEM	PUMP MPL	SVI. INST. NO.	CLASS	FREQ.	N	Pi	Pd	Qf	V	Tb	L
Standby Liquid Control	1C41-C001A	SVI-C41-T2001A	2	Q	(1)	OM(6)-1	OM(6)-1	X	PR-3,12	PR-1	X
	1C41-C001B	SVI-C41-T2001B	2	Q	(1)	OM(6)-1	OM(6)-1	X	PR-3,12	PR-1	X
Standby Liquid Control Transfer System	C41-C002A	PTI-C41-P0001	3	RO	(2)	(2)	(2)	(2)	(2)	(2)	(2)
	C41-C002B	PTI-C41-P0001	3	RO	(2)	(2)	(2)	(2)	(2)	(2)	(2)
Residual Heat Removal	1E12-C002A	SVI-E12-T2001	2	Q	(1)	X	X	X	PR-5,12	PR-1	X
	1E12-C002B	SVI-E12-T2002	2	Q	(1)	X	X	X	PR-5,12	PR-1	X
	1E12-C002C	SVI-E12-T2003	2	Q	(1)	X	X	X	PR-5,12	PR-1	X
	1E12-C003(3)	SVI-E12-T2023	2	PR-9	(1)	PR-4	X	X	RP-12	PR-1	X
Low Pressure Core Spray	1E21-C001	SVI-E21-T2001	2	Q	(1)	X	X	X	PR-5,12	PR-1	X
	1E21-C002(3)	SVI-E21-T2004	2	PR-9	(1)	PR-4	X	X	PR-12	PR-1	X
High Pressure Core Spray	1E22-C001	SVI-E22-T2001	2	Q	(1)	X	X	X	PR-5,12	PR-1	X
	1E22-C003(3)	SVI-E22-T2002	2	PR-9	(1)	PR-4	X	X	PR-12	PR-1	X
Reactor Core Isolation Cooling	1E51-C001	SVI-E51-T2001	2	Q	X	X	X	X	PR-12	PR-1	X
	1E51-C003(3)	SVI-E51-T2003	2	PR-9	(1)	PR-4	X	X	PR-12	PR-1	X
Fuel Pool Cooling and Cleanup	G41-C003A	SVI-G41-T2001	3	Q	(1)	X	X	X	PR-12	PR-1	X
	G41-C003B	SVI-G41-T2001	3	Q	(1)	X	X	X	PR-12	PR-1	X

NOTE 1: Per IWP-4400, Shaft Speed is not measured for pumps directly coupled to synchronous or induction type motor drivers.

NOTE 2: These pump testing requirements are to satisfy other surveillance requirements than Technical Specification 4.0.5 (ASME Code, Section XI).

NOTE 3: These pumps shall have their discharge pressure and vibration monitored quarterly (SVI-GEN-T2002) to verify mechanical performance parameters.

2.3.3 Pump Test Table

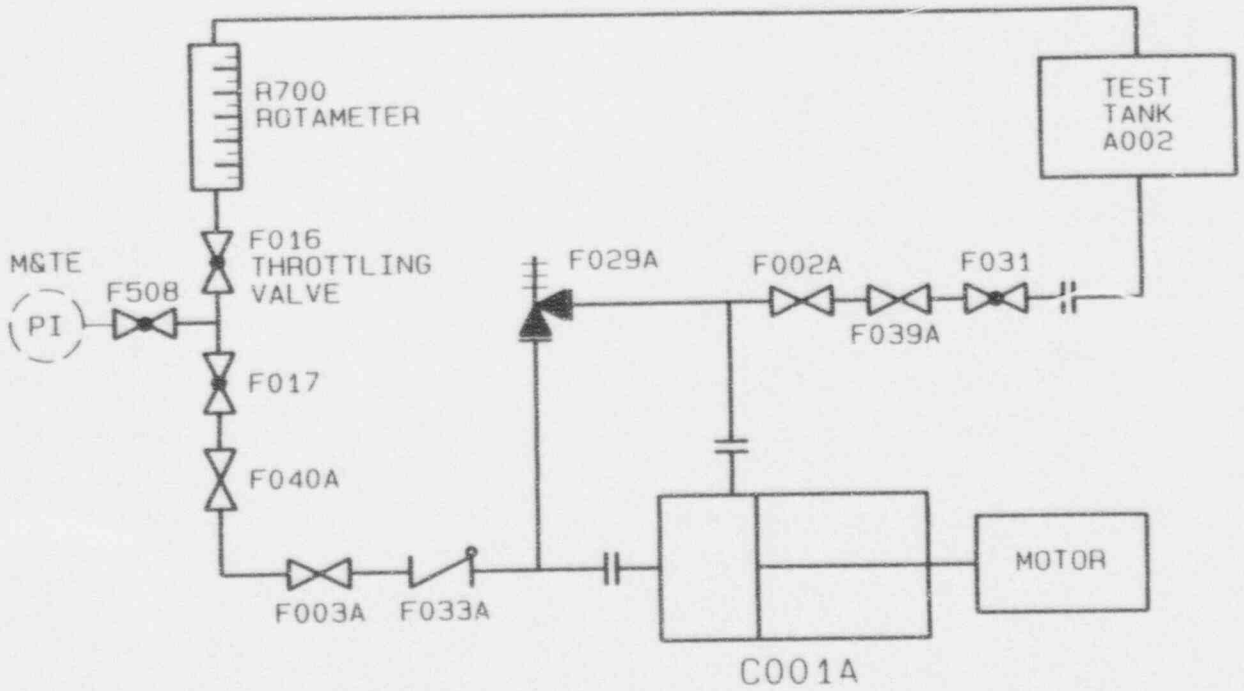
PUMP LISTING					MEASURED PARAMETERS						
SYSTEM	PUMP MPL	SVI. INST. NO.	CLASS	FREQ.	N	Pi	Pd	Qf	V	Tb	L
Emergency Closed Cooling Water	1P42-C001A	SVI-P42-T2001	3	Q	(1)	X	X	X	PR-12	PR-1	X
	1P42-C001B	SVI-P42-T2001	3	Q	(1)	X	X	X	PR-12	PR-1	X
Emergency Service Water	1P45-C001A	SVI-P45-T2001	3	Q	(1)	PR-6	X	X	PR-5,12	PR-1	X
	1P45-C001B	SVI-P45-T2002	3	Q	(1)	PR-6	X	X	PR-5,12	PR-1	X
	1P45-C002	SVI-P45-T2003	3	Q	(1)	PR-6	X	X	PR-5,12	PR-1	X
Control Complex Chilled Water	P47-C001A	SVI-P47-T2001	3	Q	(1)	X	X	X	PR-12	PR-1	X
	P47-C001B	SVI-P47-T2001	3	Q	(1)	X	X	X	PR-12	PR-1	X
Emergency Service Water Screen Wash	P49-C002A	PTI-P49-P0001	3	RO	(2)	(2)	(2)	(2)	(2)	(2)	(2)
	P49-C002B	PTI-P49-P0001	3	RO	(2)	(2)	(2)	(2)	(2)	(2)	(2)
Standby Diesel Generator Fuel Oil	1R45-C001A	SVI-R45-T2001	3	Q	(1)	X	X	X	PR-12	PR-1	X
	1R45-C001B	SVI-R45-T2001	3	Q	(1)	X	X	X	PR-12	PR-1	X
	1R45-C002A	SVI-R45-T2002	3	Q	(1)	X	X	X	PR-12	PR-1	X
	1R45-C002B	SVI-R45-T2002	3	Q	(1)	X	X	X	PR-12	PR-1	X
HPCS Diesel Generator Fuel Oil	1R45-C001C	SVI-R45-T2003	3	Q	(1)	X	X	X	PR-12	PR-1	X
	1R45-C002C	SVI-R45-T2003	3	Q	(1)	X	X	X	PR-12	PR-1	X

NOTE 1: Per IWP-4400, Shaft Speed is not measured for pumps directly coupled to synchronous or induction type motor drivers.

NOTE 2: These pump testing requirements are to satisfy other surveillance requirements than Technical Specification 4.0.5 (ASME Code, Section XI).

2.4 Hydraulic Circuit

'A' Standby Liquid Control Pump (1C41-C001A)

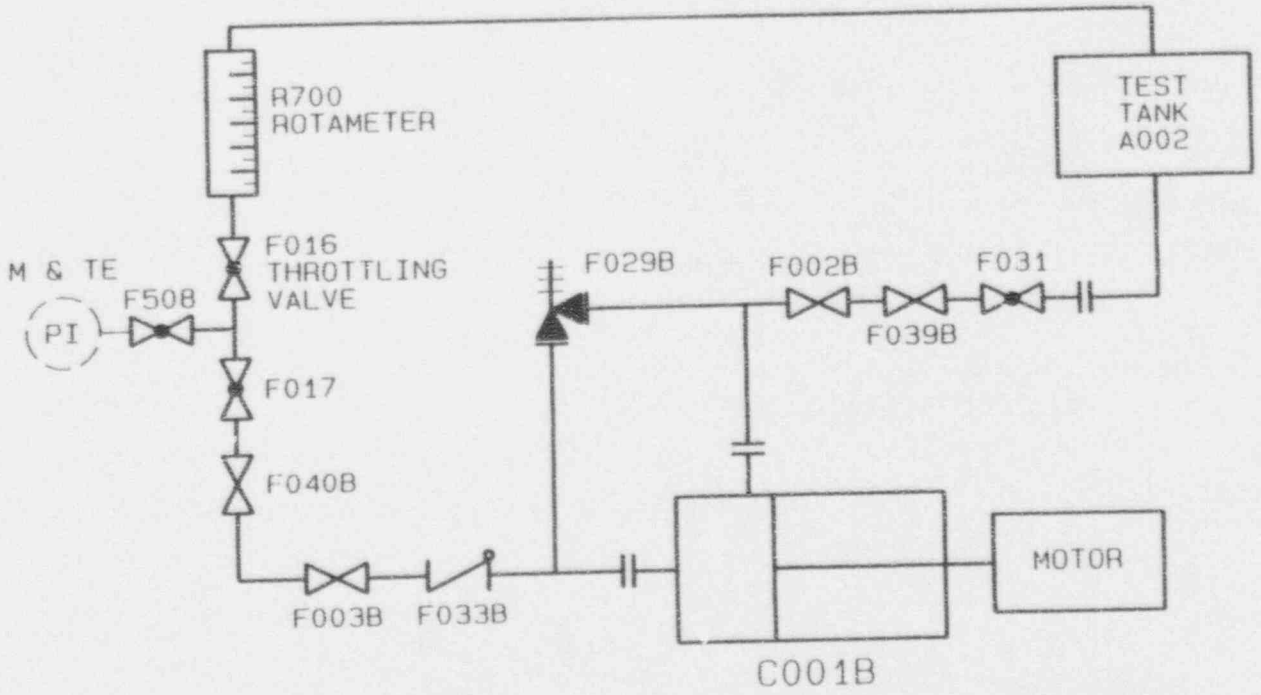


PUMP PARAMETERS			
HYDRAULIC		MECHANICAL	
MONITORED	SET	MONITORED	SET
SPEED	CONSTANT (RPM)	VIBRATION DISPLACEMENT	VARIABLE (MILS)
FLOWRATE	VARIABLE (GPM)	VIBRATION VELOCITY	NA (IN/SEC)
DIFFERENTIAL PRESSURE	1220 (PSID)	LUBRICATION LEVEL	VISIBLE
SUCTION PRESSURE	NA (PSIG)		

INSTRUMENTATION				
PARAMETERS	FLOWRATE	PRESSURE DISCHARGE	PRESSURE SUCTION	SPEED
MPL NO.	1C41-R700	TEMPORARY	NA	NA
RANGE	0 TO 54.8	0 TO 1500	NA	NA
ELEVATION	NA	655	NA	NA
LOCATION	C-654-265	C-654-265	NA	NA
ACCURACY	±2%	±2%	NA	NA

2.4 Hydraulic Circuit

'B' Standby Liquid Control Pump (1C41-C001B)

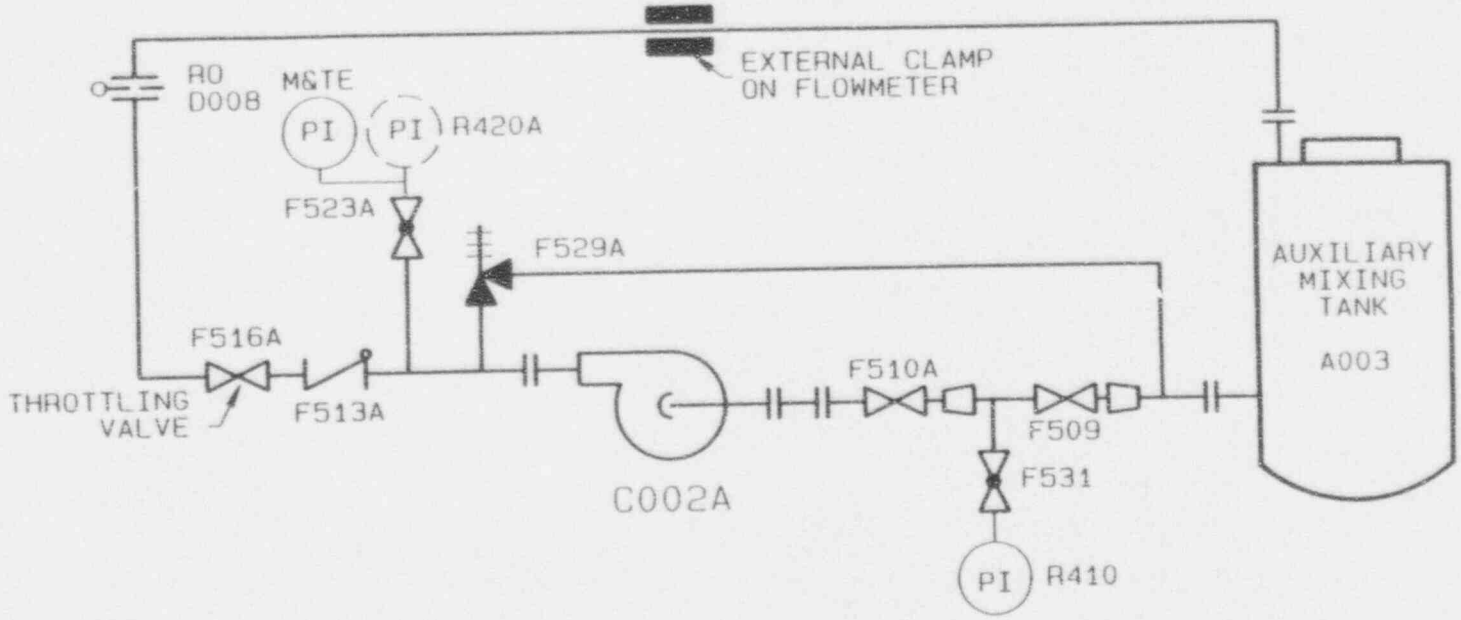


PUMP PARAMETERS			
HYDRAULIC		MECHANICAL	
MONITORED	SET	MONITORED	SET
SPEED	CONSTANT (RPM)	VIBRATION DISPLACEMENT	VARIABLE (MILS)
FLOWRATE	VARIABLE (GPM)	VIBRATION VELOCITY	NA (IN/SEC)
DIFFERENTIAL PRESSURE	1220 (PSID)	LUBRICATION LEVEL	VISIBLE
SUCTION PRESSURE	NA (PSIG)		

INSTRUMENTATION				
PARAMETERS	FLOWRATE	PRESSURE DISCHARGE	PRESSURE SUCTION	SPEED
MPL NO.	1C41-R700	TEMPORARY	NA	NA
RANGE	0 TO 54.8	0 TO 1500	NA	NA
ELEVATION	NA	655	NA	NA
LOCATION	C-654-265	C-654-265	NA	NA
ACCURACY	±2%	±2%	NA	NA

2.4 Hydraulic Circuit

'A' Standby Liquid Control Transfer Pump (C41-C002A)

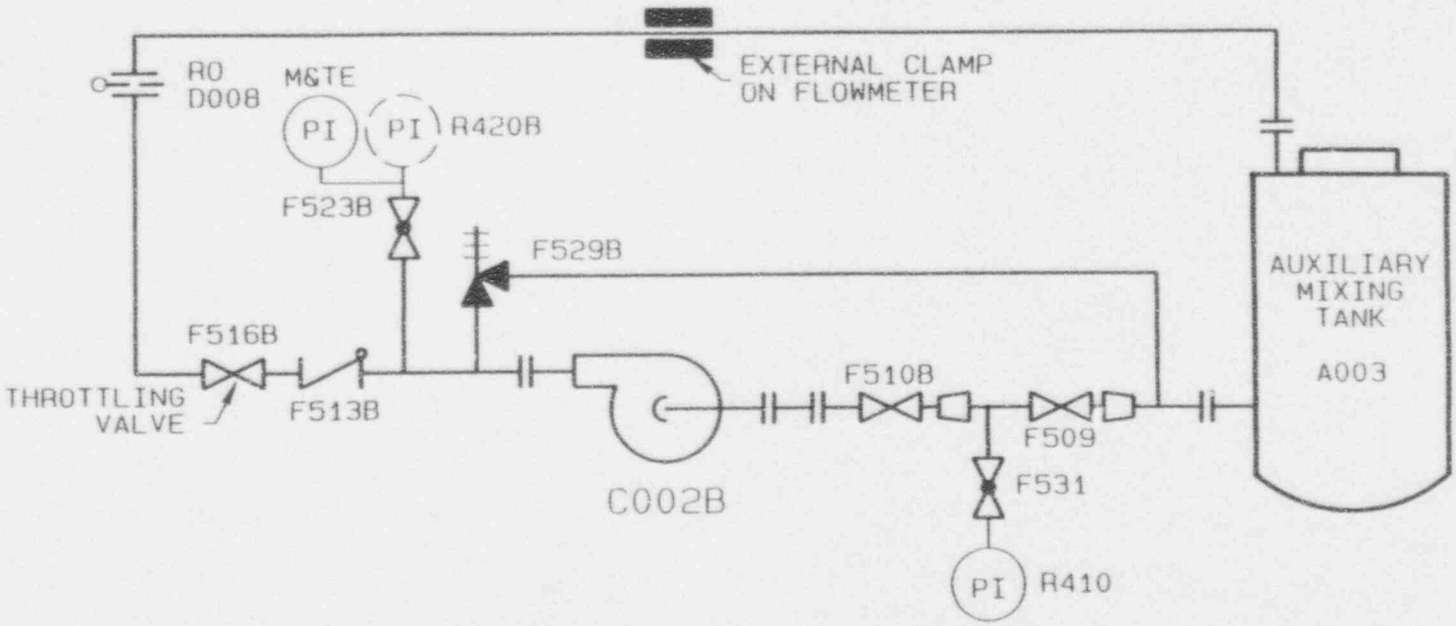


PUMP PARAMETERS			
HYDRAULIC		MECHANICAL	
MONITORED	SET	MONITORED	SET
SPEED	CONSTANT (RPM)	VIBRATION DISPLACEMENT	VARIABLE (MILS)
FLOWRATE	VARIABLE (GPM)	VIBRATION VELOCITY	NA (IN/SEC)
DIFFERENTIAL PRESSURE	33 (PSID)	LUBRICATION LEVEL	VISIBLE
SUCTION PRESSURE	VARIABLE (PSIG)		

INSTRUMENTATION				
PARAMETERS	FLOWRATE	PRESSURE DISCHARGE	PRESSURE SUCTION	SPEED
MPL NO.	TEMPORARY	TEMPORARY	C41-R410	NA
RANGE	VARIABLE	0 TO 60	0 TO 5	NA
ELEVATION	NA	624	624	NA
LOCATION	IBI/05-620	IBI/05-620	IBI/06-620	NA
ACCURACY	±5%	±0.1%	±1%	NA

2.4 Hydraulic Circuit

'B' Standby Liquid Control Transfer Pump (C41-C002B)

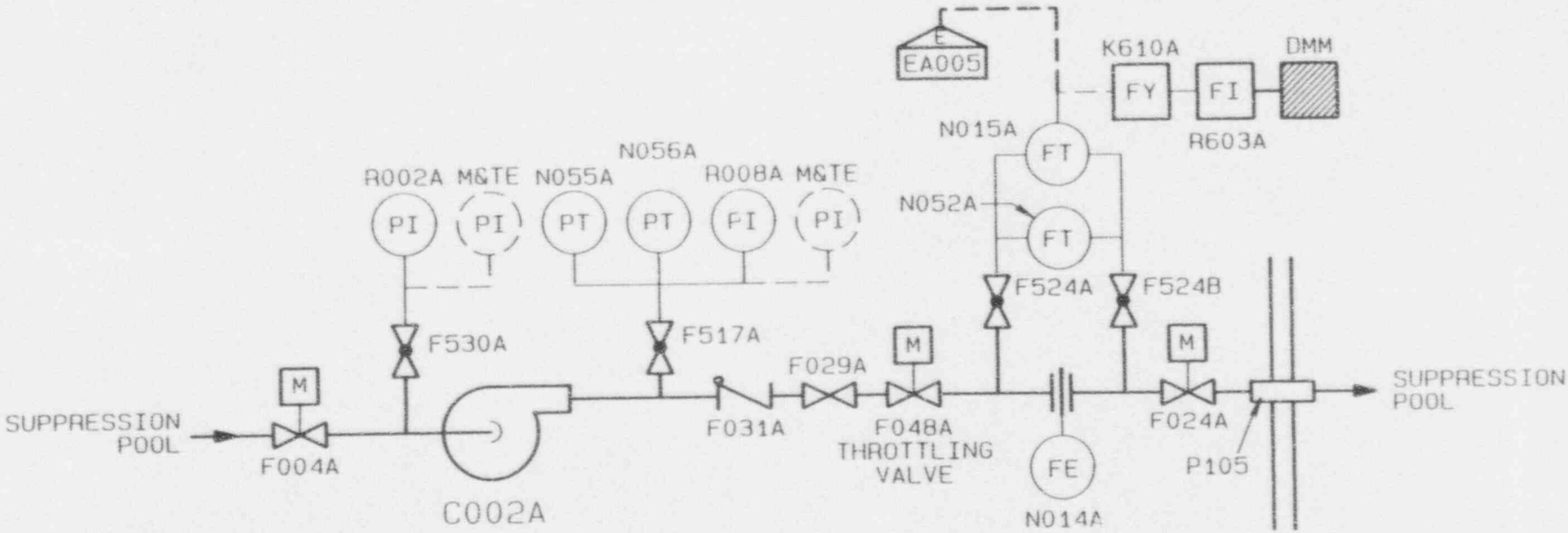


F`IMP PARAMETERS			
HYDRAULIC		MECHANICAL	
MONITORED	SET	MONITORED	SET
SPEED	CONSTANT (RPM)	VIBRATION DISPLACEMENT	VARIABLE (MILS)
FLOWRATE	VARIABLE (GPM)	VIBRATION VELOCITY	NA (IN/SEC)
DIFFERENTIAL PRESSURE	33 (PSID)	LUBRICATION LEVEL	VISIBLE
SUCTION PRESSURE	VARIABLE (PSIG)		

INSTRUMENTATION				
PARAMETERS	FLOWRATE	PRESSURE DISCHARGE	PRESSURE SUCTION	SPEED
MPL NO.	TEMPORARY	TEMPORARY	C41-R410	NA
RANGE	VARIABLE	0 TO 60	0 TO 5	NA
ELEVATION	NA	624	624	NA
LOCATION	IBI/05-620	IBI/05-620	IBI/06-620	NA
ACCURACY	±5%	±0.1%	±1%	NA

2.4 Hydraulic Circuit

'A' Residual Heat Removal Pump (1E12-C002A)

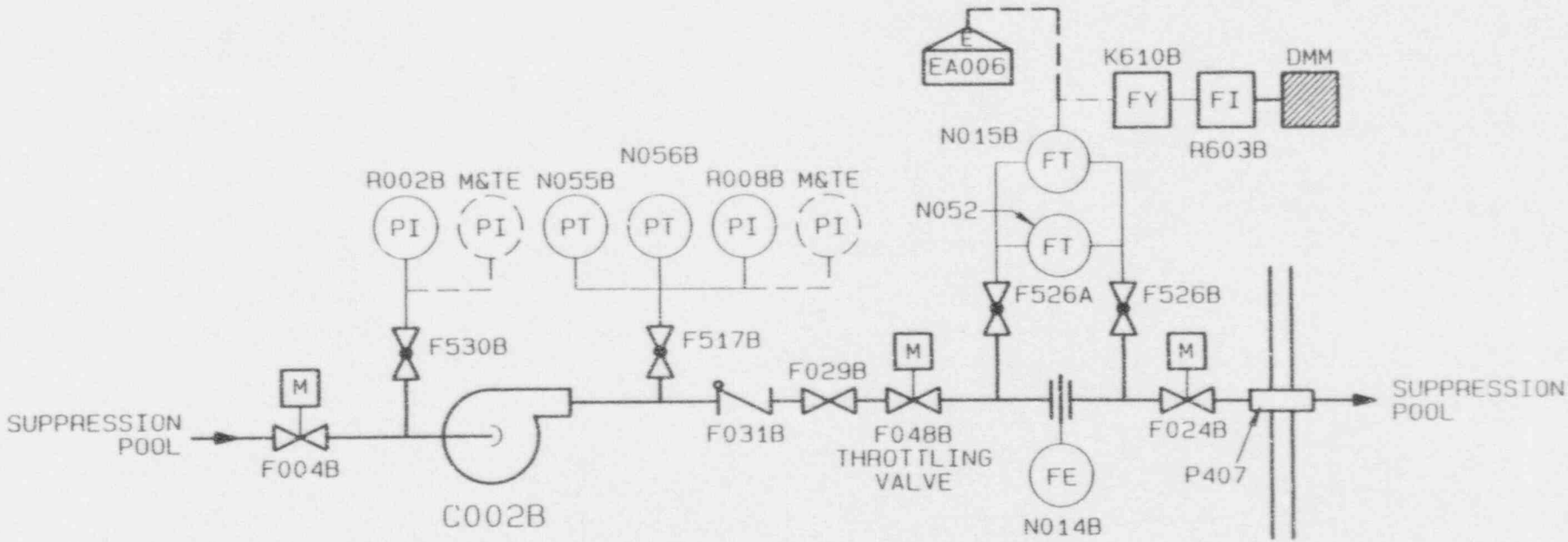


PUMP PARAMETERS			
HYDRAULIC		MECHANICAL	
MONITORED	SET	MONITORED	SET
SPEED	CONSTANT (RPM)	VIBRATION DISPLACEMENT	VARIABLE (MILS)
FLOWRATE	7100 (GPM)	VIBRATION VELOCITY	VARIABLE (IN/SEC)
DIFFERENTIAL PRESSURE	VARIABLE (PSID)	LUBRICATION LEVEL	VISIBLE
SUCTION PRESSURE	VARIABLE (PSIG)		

INSTRUMENTATION				
PARAMETERS	FLOWRATE	PRESSURE DISCHARGE	PRESSURE SUCTION	SPEED
MPL NO.	E12EA005	TEMPORARY	TEMPORARY	NA
RANGE	500 TO 10,000	0 TO 200	0 TO 15	NA
ELEVATION	NA	571	571	NA
LOCATION	ERIS COMP.	AXC/07-574	AXC/07-574	NA
ACCURACY	±1.47%	±2%	±2%	NA

2.4 Hydraulic Circuit

'B' Residual Heat Removal Pump (1E12-C002B)

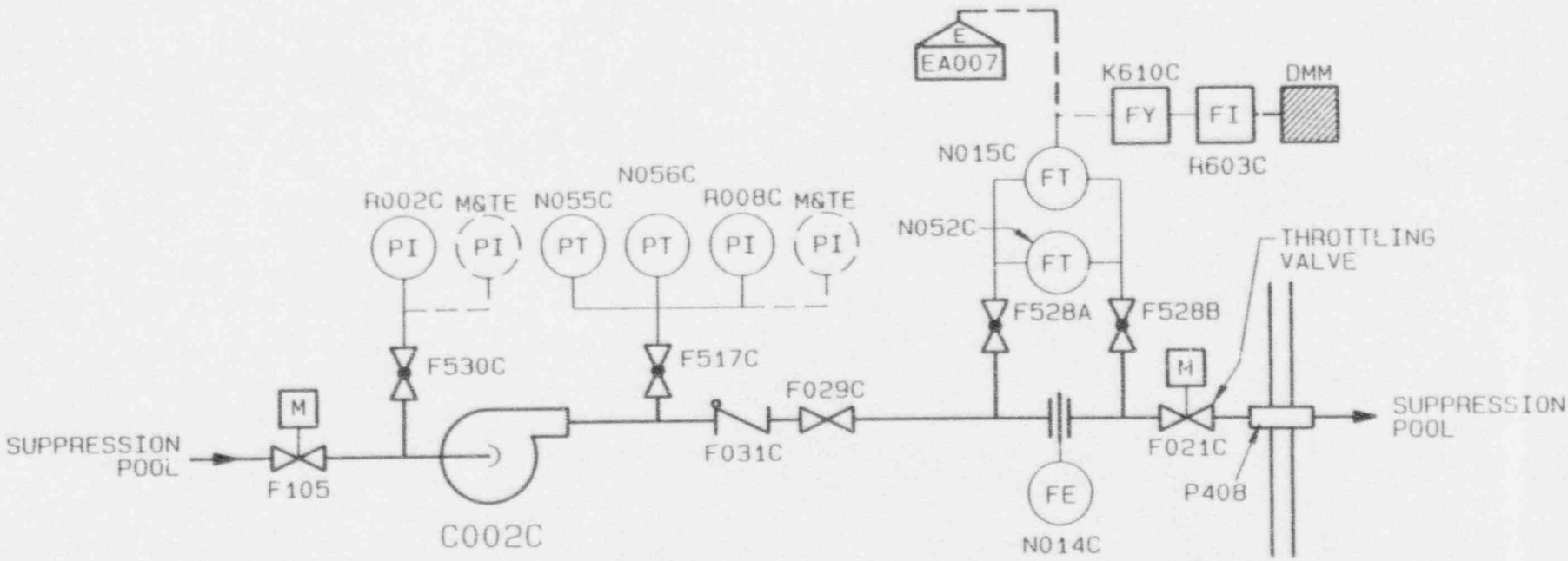


PUMP PARAMETERS			
HYDRAULIC		MECHANICAL	
MONITORED	SET	MONITORED	SET
SPEED	CONSTANT (RPM)	VIBRATION DISPLACEMENT	VARIABLE (MILS)
FLOWRATE	7100 (GPM)	VIBRATION VELOCITY	VARIABLE (IN/SEC)
DIFFERENTIAL PRESSURE	VARIABLE (PSID)	LUBRICATION LEVEL	VISIBLE
SUCTION PRESSURE	VARIABLE (PSIG)		

INSTRUMENTATION				
PARAMETERS	FLOWRATE	PRESSURE DISCHARGE	PRESSURE SUCTION	SPEED
MPL NO.	E12EA006	TEMPORARY	TEMPORARY	NA
RANGE	500 TO 10,000	0 TO 200	0 TO 15	NA
ELEVATION	NA	571	571	NA
LOCATION	ERIS COMP.	AXC/03-574	AXC/03-574	NA
ACCURACY	±1.79%	±2%	±2%	NA

2.4 Hydraulic Circuit

'C' Residual Heat Removal Pump (1E12-C002C)

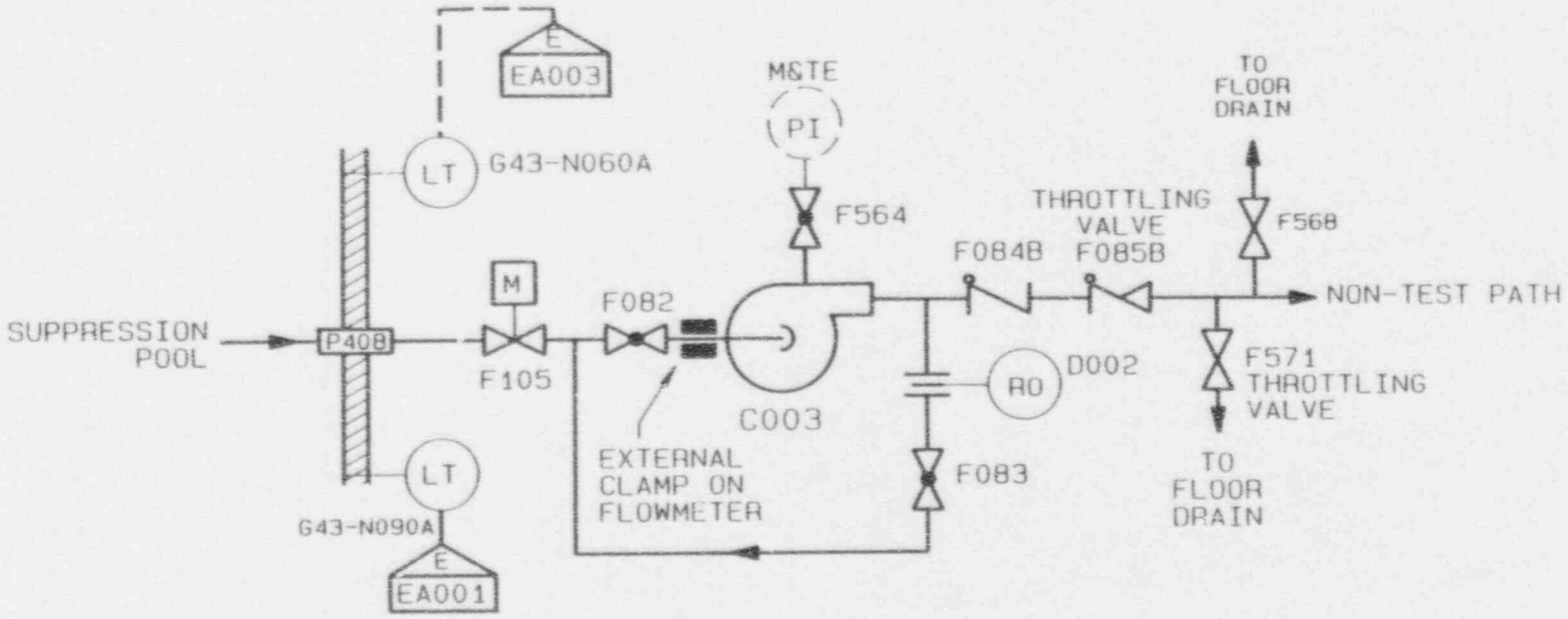


PUMP PARAMETERS			
HYDRAULIC		MECHANICAL	
MONITORED	SET	MONITORED	SET
SPEED	CONSTANT (RPM)	VIBRATION DISPLACEMENT	VARIABLE (MILS)
FLOWRATE	7100 (GPM)	VIBRATION VELOCITY	VARIABLE (IN/SEC)
DIFFERENTIAL PRESSURE	VARIABLE (PSID)	LUBRICATION LEVEL	VISIBLE
SUCTION PRESSURE	VARIABLE (PSIG)		

INSTRUMENTATION				
PARAMETERS	FLOWRATE	PRESSURE DISCHARGE	PRESSURE SUCTION	SPEED
MPL NO.	E12EA007	TEMPORARY	TEMPORARY	NA
RANGE	500 TO 10,000	0 TO 200	0 TO 15	NA
ELEVATION	NA	571	571	NA
LOCATION	ERIS COMP.	AXC/05-574	AXC/05-574	NA
ACCURACY	±1.47%	±2%	±2%	NA

2.4 Hydraulic Circuit

Residual Heat Removal Waterleg Pump (1E12-C003)



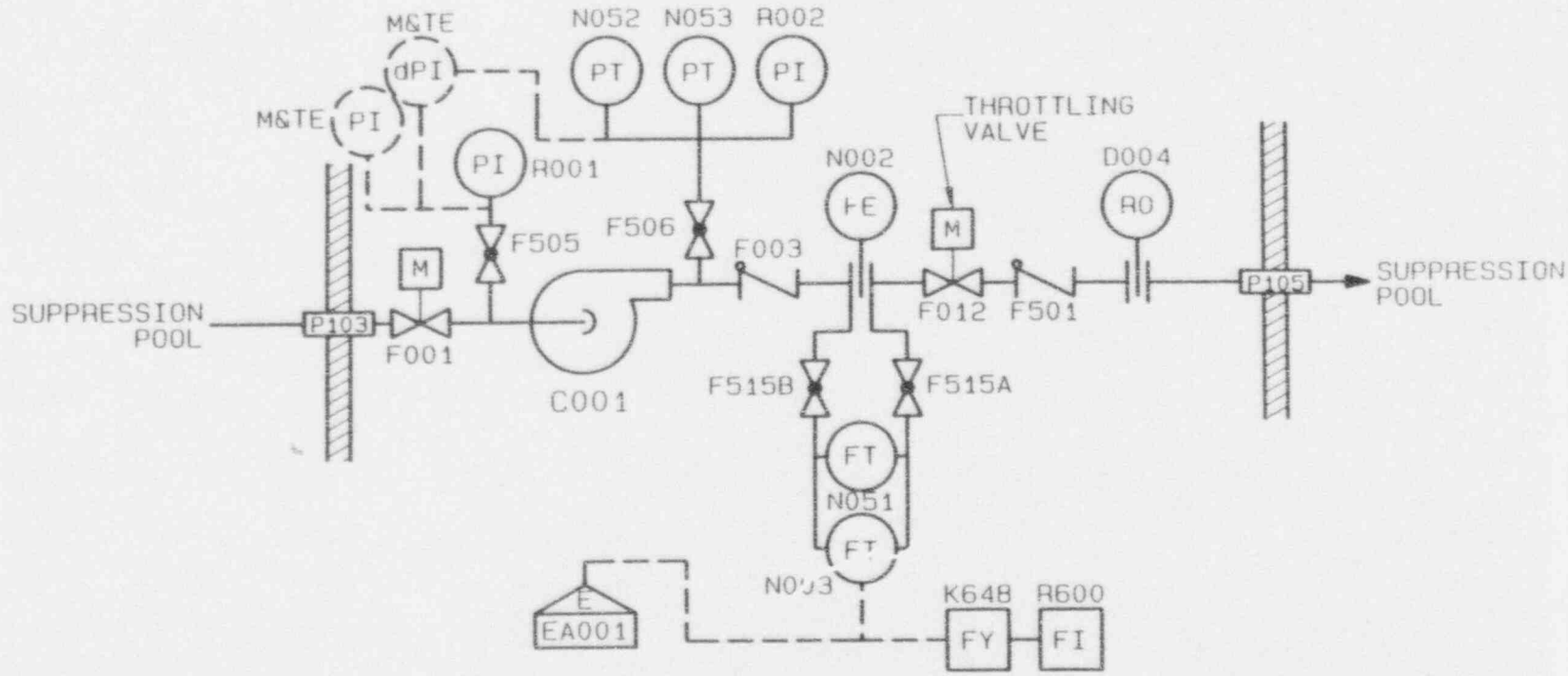
NOTE: G43EA001 (2 TO 24 FT., ± 0.89%) MAY BE USED IN LIEU OF G43EA003 IF 1G43-R062A INDICATES OFF SCALE HIGH.

PUMP PARAMETERS			
HYDRAULIC		MECHANICAL	
MONITORED	SET	MONITORED	SET
SPEED	CONSTANT (RPM)	VIBRATION DISPLACEMENT	VARIABLE (MILS)
FLOWRATE	VARIABLE (GPM)	VIBRATION VELOCITY	VARIABLE (IN/SEC)
DIFFERENTIAL PRESSURE	33 (PSID)	LUBRICATION LEVEL	VISIBLE
SUCTION PRESSURE	VARIABLE (FT)		

INSTRUMENTATION				
PARAMETERS	FLOWRATE	PRESSURE DISCHARGE	PRESSURE SUCTION	SPEED
MPL NO.	TEMPORARY	TEMPORARY	G43EA003	NA
RANGE	VARIABLE	0 TO 60	16 TO 19	NA
ELEVATION	NA	579	NA	NA
LOCATION	AXB/02-574	AXB/04-574	ERIS COMP.	NA
ACCURACY	± 1%	±2%	±0.92%	NA

2.4 Hydraulic Circuit

Low Pressure Core Spray Pump (1E21-C001)

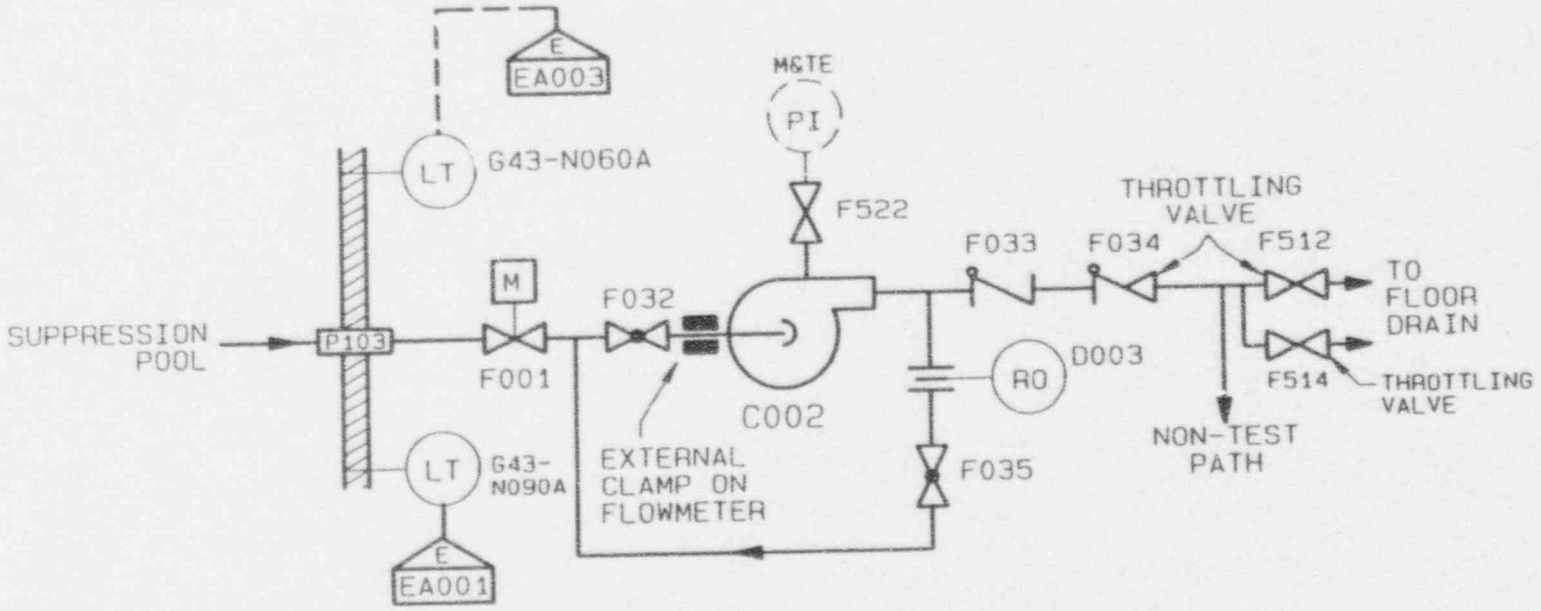


PUMP PARAMETERS			
HYDRAULIC		MECHANICAL	
MONITORED	SET	MONITORED	SET
SPEED	CONSTANT (RPM)	VIBRATION DISPLACEMENT	VARIABLE (MILS)
FLOWRATE	VARIABLE (GPM)	VIBRATION VELOCITY	VARIABLE (IN/SEC)
DIFFERENTIAL PRESSURE	284 (PSID)	LUBRICATION LEVEL	VISIBLE

INSTRUMENTATION				
PARAMETERS	FLOWRATE	DIFFERENTIAL PRESSURE	PRESSURE SUCTION	SPEED
MPL NO.	E21EA001	TEMPORARY	NA	NA
RANGE	1,000 TO 10,000	0 TO 600	NA	NA
ELEVATION	NA	572	NA	NA
LOCATION	ERIS COMP.	AXC/08-568	NA	NA
ACCURACY	± 1.47%	±1%	NA	NA

2.4 Hydraulic Circuit

Low Pressure Core Spray Waterleg Pump (1E21-C002)



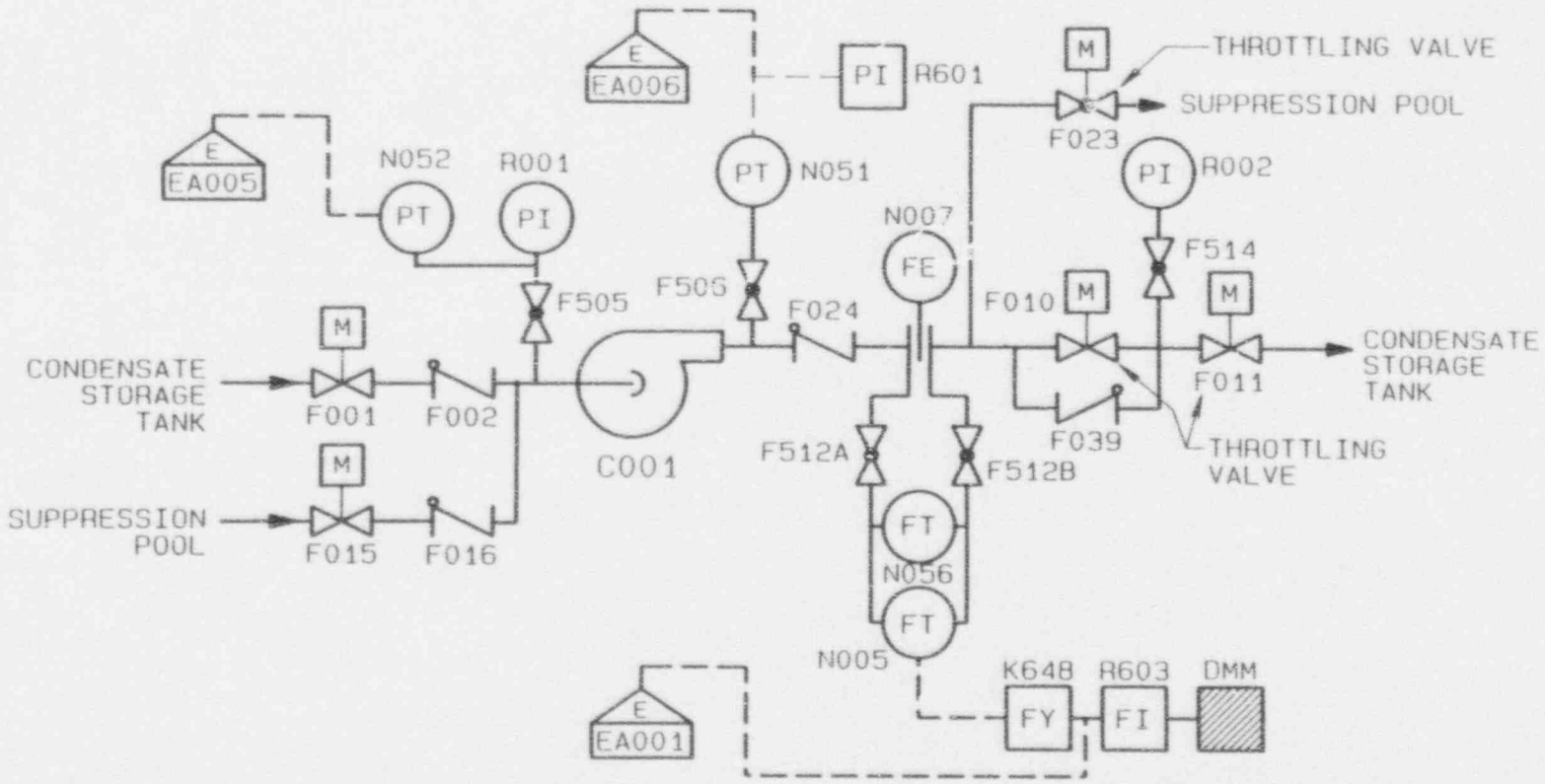
NOTE: G43EA001 (2 TO 24 FT., ± 0.89%) MAY BE USED IN LIEU OF G43EA003 IF 1G43-R062A INDICATES OFF SCALE HIGH.

PUMP PARAMETERS			
HYDRAULIC		MECHANICAL	
MONITORED	SET	MONITORED	SET
SPEED	CONSTANT (RPM)	VIBRATION DISPLACEMENT	VARIABLE (MILS)
FLOWRATE	VARIABLE (GPM)	VIBRATION VELOCITY	VARIABLE (IN/SEC)
DIFFERENTIAL PRESSURE	33 (PSID)	LUBRICATION LEVEL	VISIBLE
SUCTION PRESSURE	VARIABLE (FT)		

INSTRUMENTATION				
PARAMETERS	FLOWRATE	PRESSURE DISCHARGE	PRESSURE SUCTION	SPEED
MPL NO.	TEMPORARY	TEMPORARY	G43EA003	NA
RANGE	VARIABLE	0 TO 60	16 TO 19	NA
ELEVATION	NA	579	NA	NA
LOCATION	AXC'07-574	AXC/07-574	ERIS COMP.	NA
ACCURACY	± 1%	±2%	±0.92%	NA

2.4 Hydraulic Circuit

High Pressure Core Spray Pump (1E22-C001)

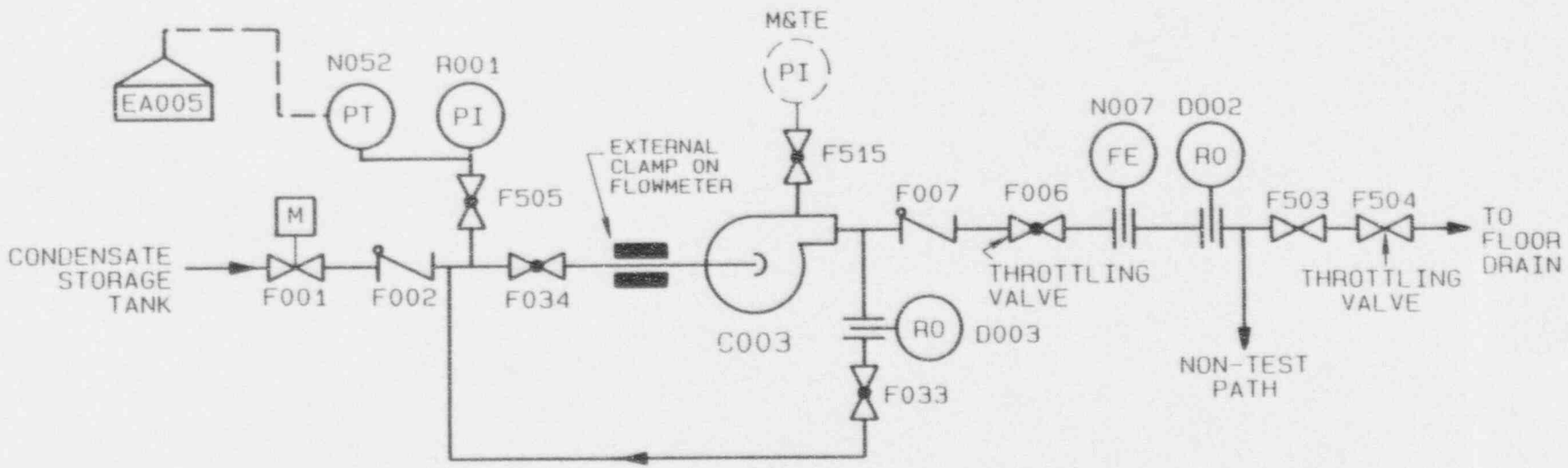


PUMP PARAMETERS			
HYDRAULIC		MECHANICAL	
MONITORED	SET	MONITORED	SET
SPEED	CONSTANT (RPM)	VIBRATION DISPLACEMENT	VARIABLE (MILS)
FLOWRATE	6150 (GPM)	VIBRATION VELOCITY	VARIABLE (IN/SEC)
DIFFERENTIAL PRESSURE	VARIABLE (PSID)	LUBRICATION LEVEL	VISIBLE
SUCTION PRESSURE	VARIABLE (PSIG)		

INSTRUMENTATION				
PARAMETERS	FLOWRATE	PRESSURE DISCHARGE	PRESSURE SUCTION	SPEED
MPL NO.	E22EA001	E22EA006	E22EA005	NA
RANGE	200 TO 9,999	30 TO 1500	2 TO 100	NA
ELEVATION	NA	577	577	NA
LOCATION	ERIS COMP.	ERIS COMP.	ERIS COMP.	NA
ACCURACY	±1.19%	± 0.69%	± 0.89%	NA

2.4 Hydraulic Circuit

High Pressure Core Spray Waterleg Pump (1E22-C003)

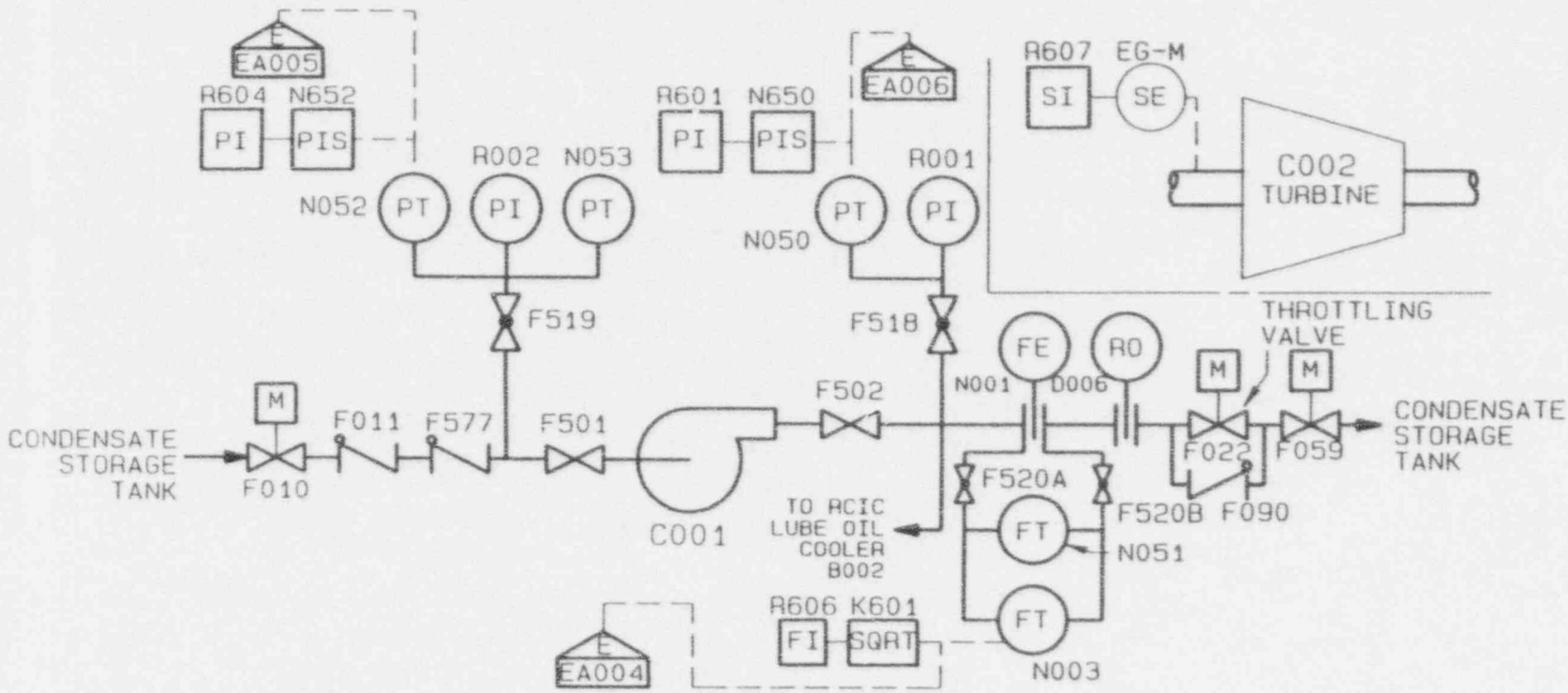


PUMP PARAMETERS			
HYDRAULIC		MECHANICAL	
MONITORED	SET	MONITORED	SET
SPEED	CONSTANT (RPM)	VIBRATION DISPLACEMENT	VARIABLE (MILS)
FLOWRATE	VARIABLE (GPM)	VIBRATION VELOCITY	VARIABLE (IN/SEC)
DIFFERENTIAL PRESSURE	33 (PSID)	LUBRICATION LEVEL	VISIBLE
SUCTION PRESSURE	VARIABLE (PSIG)		

INSTRUMENTATION				
PARAMETERS	FLOWRATE	PRESSURE DISCHARGE	PRESSURE SUCTION	SPEED
MPL NO.	TEMPORARY	TEMPORARY	E22EA005	NA
RANGE	VARIABLE	0 TO 100	2 TO 100	NA
ELEVATION	NA	579	577	NA
LOCATION	AXC/02-574	AXC/02-574	ERIS COMP.	NA
ACCURACY	± 1%	± 2%	± 0.89%	NA

2.4 Hydraulic Circuit

Reactor Core Isolation Cooling Pump (1E51-C001)



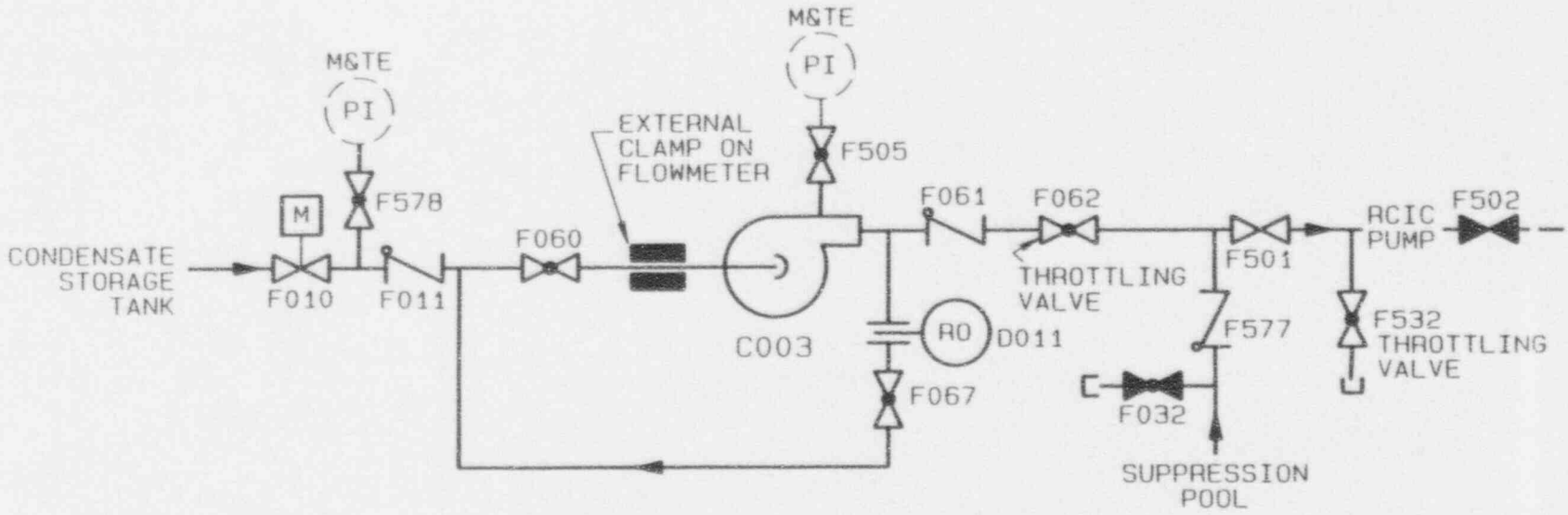
NOTE: APPROXIAMATELY 25 GPM IS CONTINUOUSLY SUPPLIED TO THE LUBE OIL COOLER BYPASSING TO THE TEST LOOP.

PUMP PARAMETERS			
HYDRAULIC		MECHANICAL	
MONITORED	SET	MONITORED	SET
SPEED	4400 (RPM)	VIBRATION DISPLACEMENT	VARIABLE (MILS)
FLOWRATE	700 (GPM)	VIBRATION VELOCITY	VARIABLE (IN/SEC)
DIFFERENTIAL PRESSURE	VARIABLE (PSID)	LUBRICATION LEVEL	VISIBLE
SUCTION PRESSURE	VARIABLE (PSIG)		

INSTRUMENTATION				
PARAMETERS	FLOWRATE	PRESSURE DISCHARGE	PRESSURE SUCTION	SPEED
MPL NO.	E51EA004	E51EA006	E51EA005	1E51-R607
RANGE	8 TO 800	30 TO 1500	0 TO 99.7	0 TO 6000
ELEVATION	NA	571	571	NA
LOCATION	ERIS COMP.	ERIS COMP.	ERIS COMP.	1H13-P601
ACCURACY	±1.01%	±0.69%	±0.89%	±1.5%

2.4 Hydraulic Circuit

Reactor Core Isolation Cooling Waterleg Pump (1E51-C003)

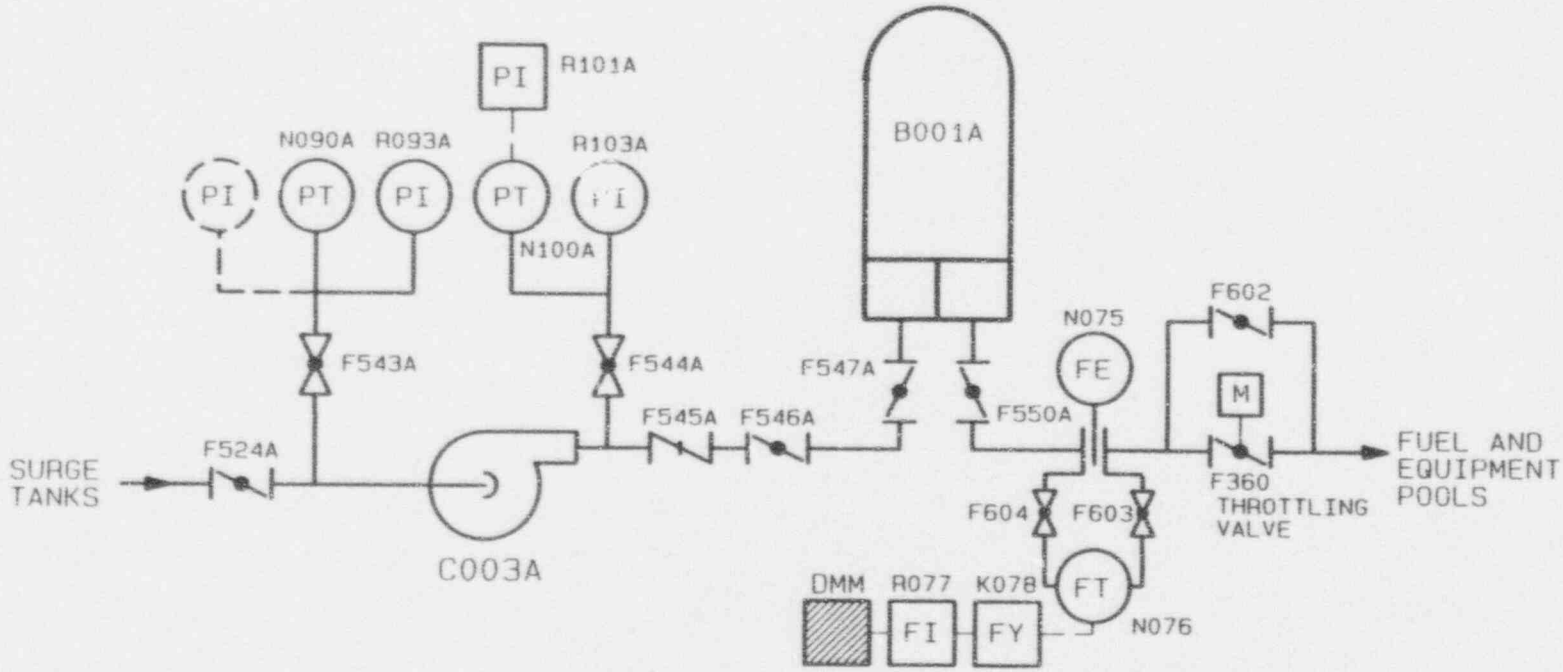


PUMP PARAMETERS			
HYDRAULIC		MECHANICAL	
MONITORED	SET	MONITORED	SET
SPEED	CONSTANT (RPM)	VIBRATION DISPLACEMENT	VARIABLE (MILS)
FLOWRATE	VARIABLE (GPM)	VIBRATION VELOCITY	VARIABLE (IN/SEC)
DIFFERENTIAL PRESSURE	33 (PSID)	LUBRICATION LEVEL	VISIBLE
SUCTION PRESSURE	VARIABLE (PSIG)		

INSTRUMENTATION				
PARAMETERS	FLOWRATE	PRESSURE DISCHARGE	PRESSURE SUCTION	SPEED
MPL NO.	TEMPORARY	TEMPORARY	TEMPORARY	NA
RANGE	VARIABLE	0 TO 100	0 TO 60	NA
ELEVATION	NA	579	579	NA
LOCATION	AXB/06-574	AXB/06-574	AXB/06-574	NA
ACCURACY	± 1%	± 2%	± 2%	NA

2.4 Hydraulic Circuit

'A' Fuel Pool Cooling and Cleanup Pump (G41-C003A)

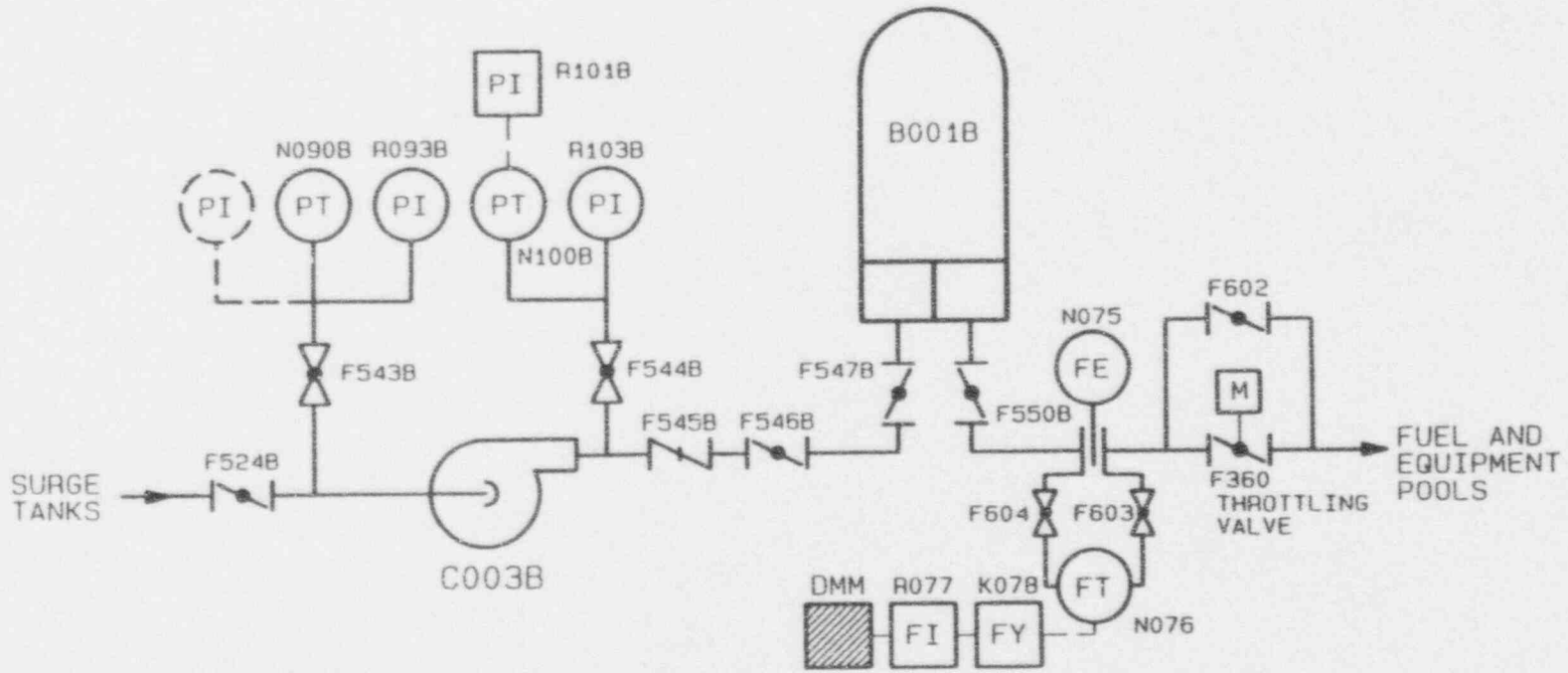


PUMP PARAMETERS			
HYDRAULIC		MECHANICAL	
MONITORED	SET	MONITORED	SET
SPEED	CONSTANT (RPM)	VIBRATION DISPLACEMENT	VARIABLE (MILS)
FLOWRATE	1400 (GPM)	VIBRATION VELOCITY	VARIABLE (IN/SEC)
DIFFERENTIAL PRESSURE	VARIABLE (PSID)	LUBRICATION LEVEL	VISIBLE
SUCTION PRESSURE	VARIABLE (PSIG)		

INSTRUMENTATION				
PARAMETERS	FLOWRATE	PRESSURE DISCHARGE	PRESSURE SUCTION	SPEED
MPL NO.	TEMPORARY	G41-R103A	TEMPORARY	NA
RANGE	4 TO 6 VDC	0 TO 160	0 TO 30	NA
ELEVATION	NA	577	577	NA
LOCATION	1H13-P970	IBH/07-574	IBH/07-574	NA
ACCURACY	±4 mv	± 1%	± 2%	NA

2.4 Hydraulic Circuit

'B' Fuel Pool Cooling and Cleanup Pump (G41-C003B)

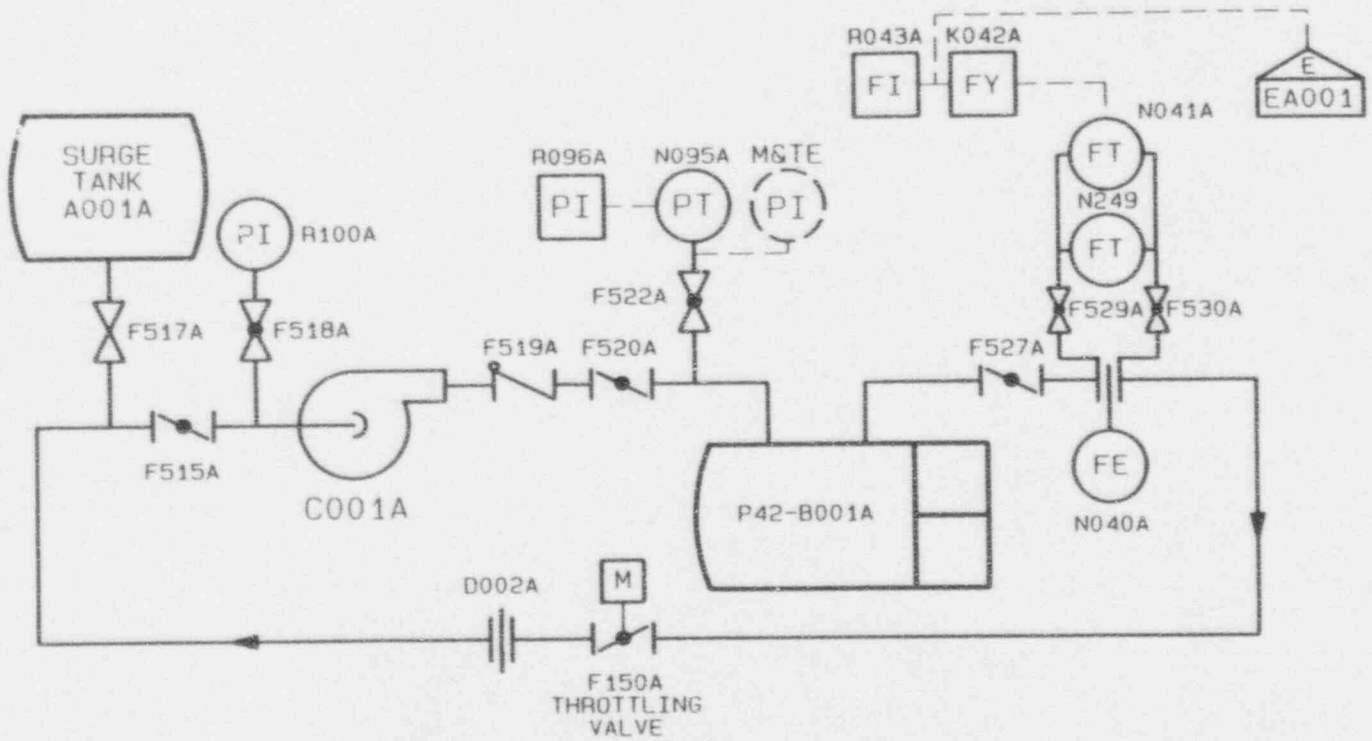


PUMP PARAMETERS			
HYDRAULIC		MECHANICAL	
MONITORED	SET	MONITORED	SET
SPEED	CONSTANT (RPM)	VIBRATION DISPLACEMENT	VARIABLE (MILS)
FLOWRATE	1400 (GPM)	VIBRATION VELOCITY	VARIABLE (IN/SEC)
DIFFERENTIAL PRESSURE	VARIABLE (PSID)	LUBRICATION LEVEL	VISIBLE
SUCTION PRESSURE	VARIABLE (PSIG)		

INSTRUMENTATION				
PARAMETERS	FLOWRATE	PRESSURE DISCHARGE	PRESSURE SUCTION	SPEED
MPL NO.	TEMPORARY	G41-R103B	TEMPORARY	NA
RANGE	4 TO 6 VDC	0 TO 160	0 TO 30	NA
ELEVATION	NA	577	577	NA
LOCATION	1H13-P970	1H13-P970	IBH/07-574	NA
ACCURACY	±4 mv	±0.5%	± 2%	NA

2.4 Hydraulic Circuit

'A' Emergency Closed Cooling Water Pump (1P42-C001A)

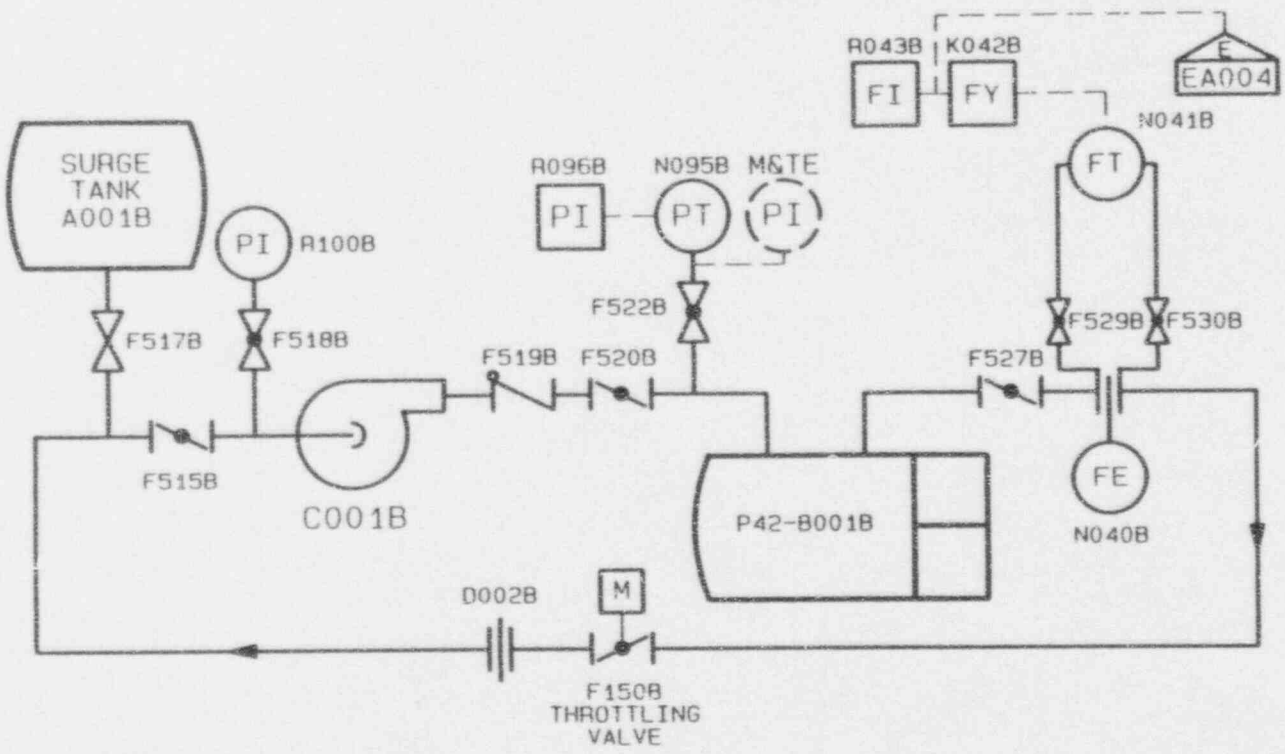


PUMP PARAMETERS			
HYDRAULIC		MECHANICAL	
MONITORED	SET	MONITORED	SET
SPEED	CONSTANT (RPM)	VIBRATION DISPLACEMENT	VARIABLE (MILS)
FLOWRATE	2000 (GPM)	VIBRATION VELOCITY	VARIABLE (IN/SEC)
DIFFERENTIAL PRESSURE	VARIABLE (PSID)	LUBRICATION LEVEL	VISIBLE
SUCTION PRESSURE	VARIABLE (PSIG)		

INSTRUMENTATION				
PARAMETERS	FLOWRATE	PRESSURE DISCHARGE	PRESSURE SUCTION	SPEED
MPL NO.	P42EA001	TEMPORARY	1P42-R100A	NA
RANGE	50 TO 2500	0 TO 200	0 TO 100	NA
ELEVATION	NA	577	576	NA
LOCATION	ERIS COMP.	CC D/03-574	CCB/03-574	NA
ACCURACY	±1.19%	±1%	±0.5%	NA

2.4 Hydraulic Circuit

'B' Emergency Closed Cooling Water Pump (1P42-C001B)

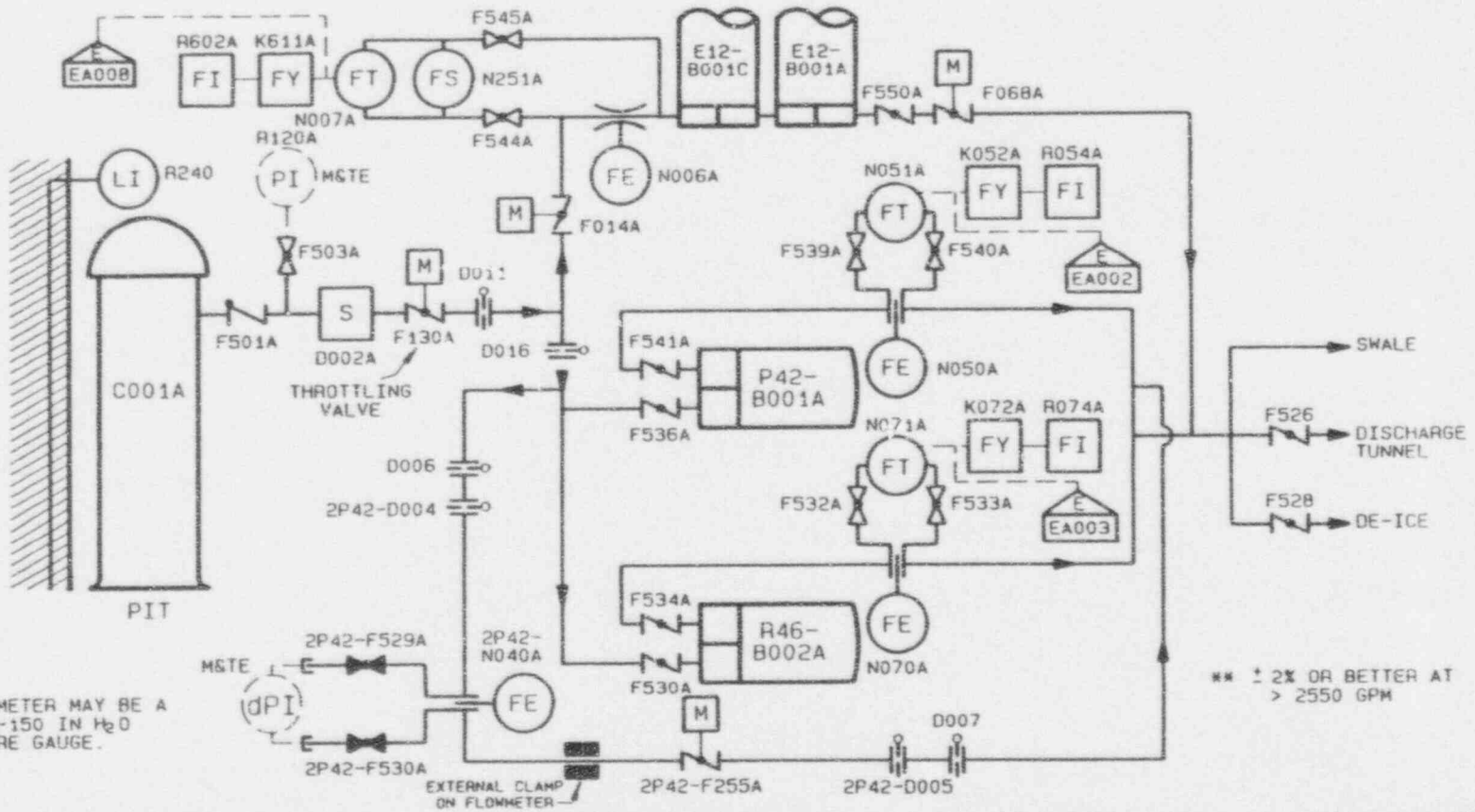


PUMP PARAMETERS			
HYDRAULIC		MECHANICAL	
MONITORED	SET	MONITORED	SET
SPEED	CONSTANT (RPM)	VIBRATION DISPLACEMENT	VARIABLE (MILS)
FLOWRATE	2000 (GPM)	VIBRATION VELOCITY	VARIABLE (IN/SEC)
DIFFERENTIAL PRESSURE	VARIABLE (PSID)	LUBRICATION LEVEL	VISIBLE
SUCTION PRESSURE	VARIABLE (PSIG)		

INSTRUMENTATION				
PARAMETERS	FLOWRATE	PRESSURE DISCHARGE	PRESSURE SUCTION	SPEED
MPL NO.	P42EA004	TEMPORARY	1P42-R100B	NA
RANGE	50 TO 2500	0 TO 200	0 TO 100	NA
ELEVATION	NA	577	576	NA
LOCATION	ERIS COMP.	CC D/04-574	CCE/03-574	NA
ACCURACY	±1.19%	±1%	±0.5%	NA

2.4 Hydraulic Circuit

'A' Emergency Service Water Pump (1P45-C001A)



* THIS TEMPORARY FLOWMETER MAY BE A CONTROLOTRON OR A 0-150 IN H_2O DIFFERENTIAL PRESSURE GAUGE.

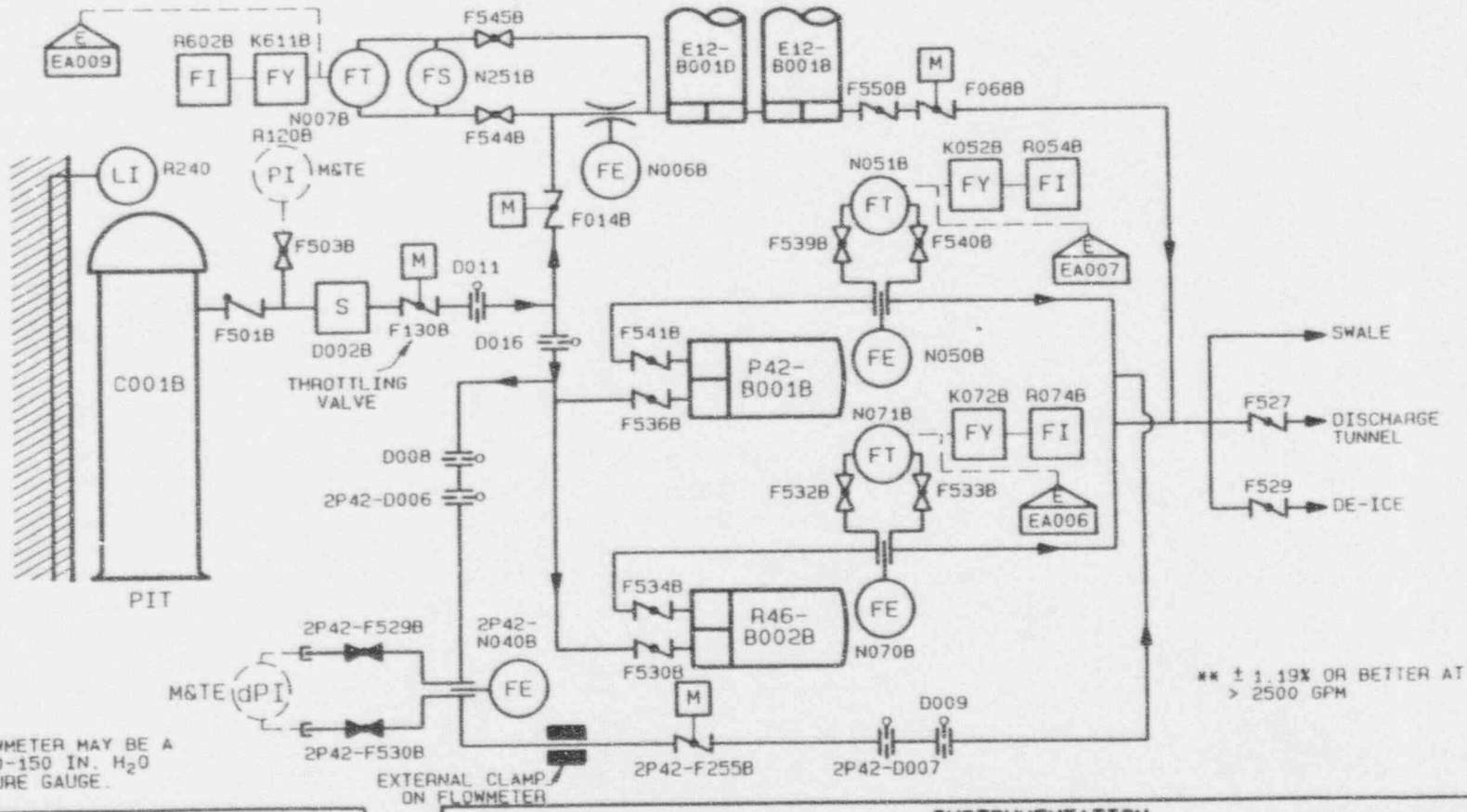
** ± 2% OR BETTER AT > 2550 GPM

PUMP PARAMETERS			
HYDRAULIC		MECHANICAL	
MONITORED	SET	MONITORED	SET
SPEED	CONSTANT (RPM)	VIBRATION DISPLACEMENT	VARIABLE (MILS)
FLOWRATE	VARIABLE (GPM)	VIBRATION VELOCITY	VARIABLE (IN/SEC)
DIFFERENTIAL PRESSURE	96 (PSID)	LUBRICATION LEVEL	VISIBLE
SUCTION PRESSURE	VARIABLE (FT)		

INSTRUMENTATION							
PARAMETERS	FLOWRATE	FLOWRATE	FLOWRATE	FLOWRATE	PRESSURE DISCHARGE	PRESSURE SUCTION	SPEED
MPL NO.	TEMPORARY*	P45EA003	P45EA002	E12EA008	TEMPORARY	PHYSICAL MEASUREMENT	NA
RANGE	VARIABLE	24 TO 1200	60 TO 3000	500 TO 10,000	0 TO 200	NA	NA
ELEVATION	NA	NA	NA	NA	590	NA	NA
LOCATION	CC8/06-574	ERIS COMP.	ERIS COMP.	ERIS COMP.	EWC/05-586	EWC/01-586	NA
ACCURACY	2%	±1.2%	± 1.58%	± 2%**	± 0.25%	NA	NA

2.4 Hydraulic Circuit

'B' Emergency Service Water Pump (1P45-C001B)



* THIS TEMPORARY FLOWMETER MAY BE A CONTROLOTRON OR A 0-150 IN. H_2O DIFFERENTIAL PRESSURE GAUGE.

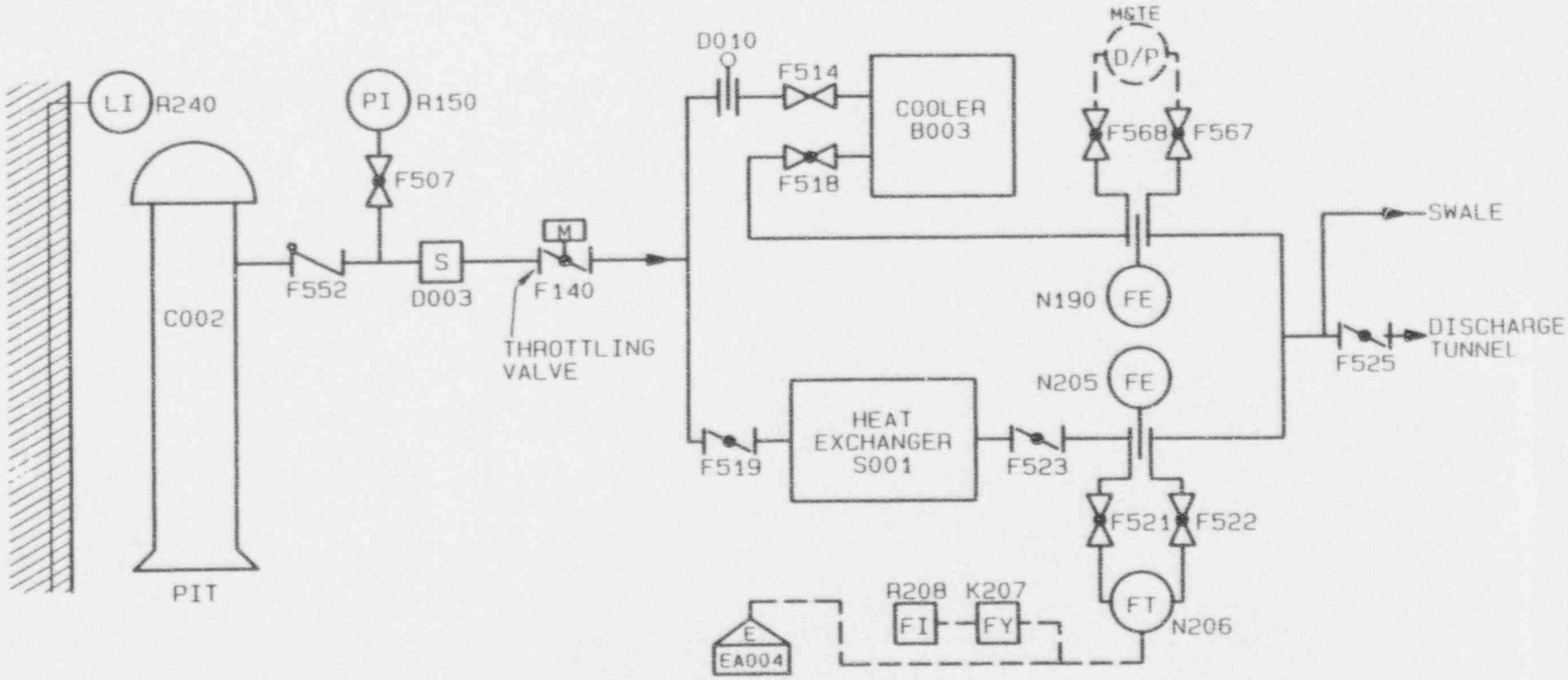
** ± 1.19% OR BETTER AT > 2500 GPM

PUMP PARAMETERS			
HYDRAULIC		MECHANICAL	
MONITORED	SET	MONITORED	SET
SPEED	CONSTANT (RPM)	VIBRATION DISPLACEMENT	VARIABLE (MILS)
FLOWRATE	VARIABLE (GPM)	VIBRATION VELOCITY	VARIABLE (IN/SEC)
DIFFERENTIAL PRESSURE	96 (PSID)	LUBRICATION LEVEL	VISIBLE
SUCTION PRESSURE	VARIABLE (FT)		

INSTRUMENTATION							
PARAMETERS	FLOWRATE	FLOWRATE	FLOWRATE	FLOWRATE	PRESSURE DISCHARGE	PRESSURE SUCTION	SPEED
MPL NO.	TEMPORARY*	P45EA006	P45EA007	E12EA009	TEMPORARY	PHYSICAL MEASUREMENT	NA
RANGE	VARIABLE	24 TO 1200	60 TO 3000	500 TO 10,000	0 TO 200	NA	NA
ELEVATION	NA	NA	NA	NA	590	NA	NA
LOCATION	CCD/06-574	ERIS COMP.	ERIS COMP.	ERIS COMP.	EWC/05-586	EWC/01-586	NA
ACCURACY	2%	±1.2%	±1.58%	± 1.19%**	± 0.25%	NA	NA

2.4 Hydraulic Circuit

HPCS Emergency Service Water Pump (1P45-C002)

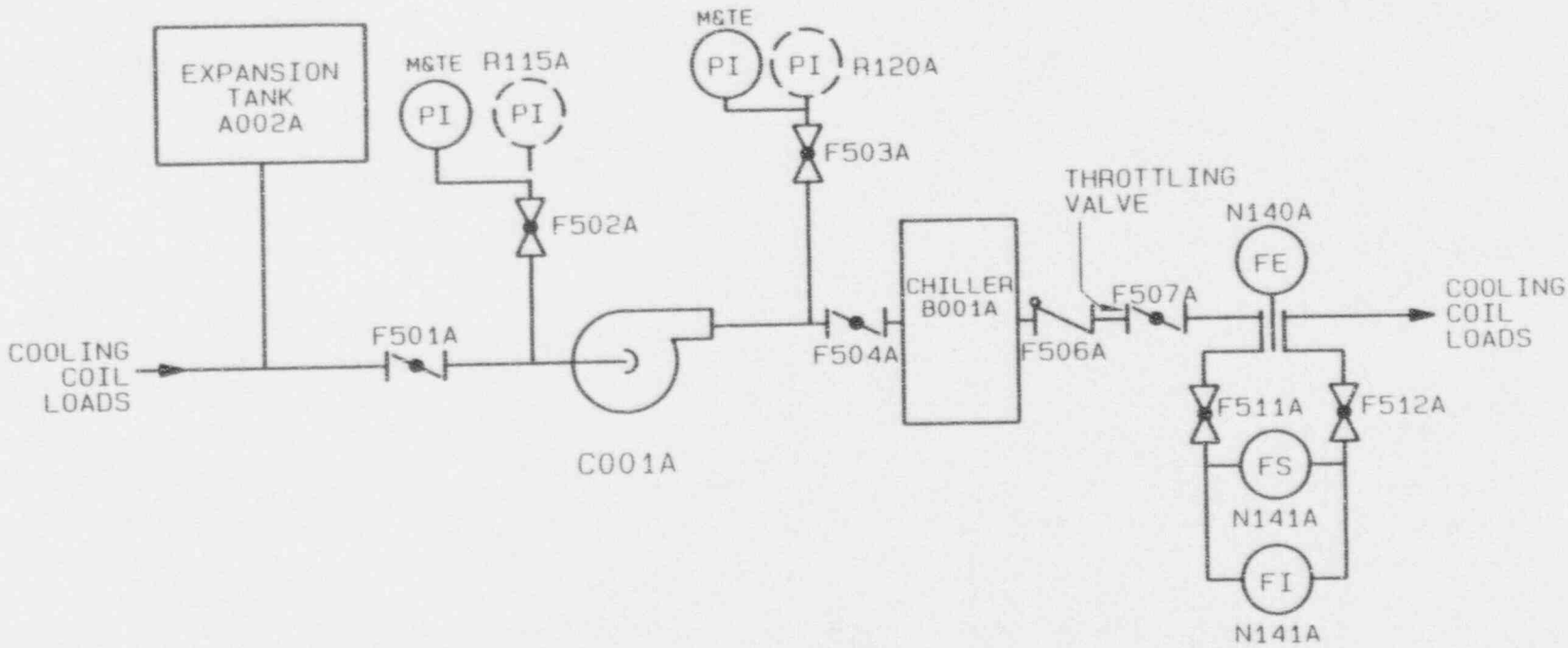


PUMP PARAMETERS			
HYDRAULIC		MECHANICAL	
MONITORED	SET	MONITORED	SET
SPEED	CONSTANT (RPM)	VIBRATION DISPLACEMENT	VARIABLE (MILS)
FLOWRATE	VARIABLE (GPM)	VIBRATION VELOCITY	VARIABLE (IN/SEC)
DIFFERENTIAL PRESSURE	90 (PSID)	LUBRICATION LEVEL	VISIBLE
SUCTION PRESSURE	VARIABLE (FT)		

INSTRUMENTATION					
PARAMETERS	FLOWRATE	FLOWRATE	PRESSURE DISCHARGE	PRESSURE SUCTION	SPEED
MPL NO.	P45EA004	TEMPORARY	1P45-R150	PHYSICAL MEASUREMENT	NA
RANGE	20 TO 1,000	0 TO 150 INCHES	0 TO 200	NA	NA
ELEVATION	NA	NA	588	NA	NA
LOCATION	ERIS COMP.	EWC/03-568	EWC/01-586	EWC/01-586	NA
ACCURACY	±1.56%	±2%	±0.5%	NA	NA

2.4 Hydraulic Circuit

'A' Control Complex Chilled Water Pump (P47-C001A)

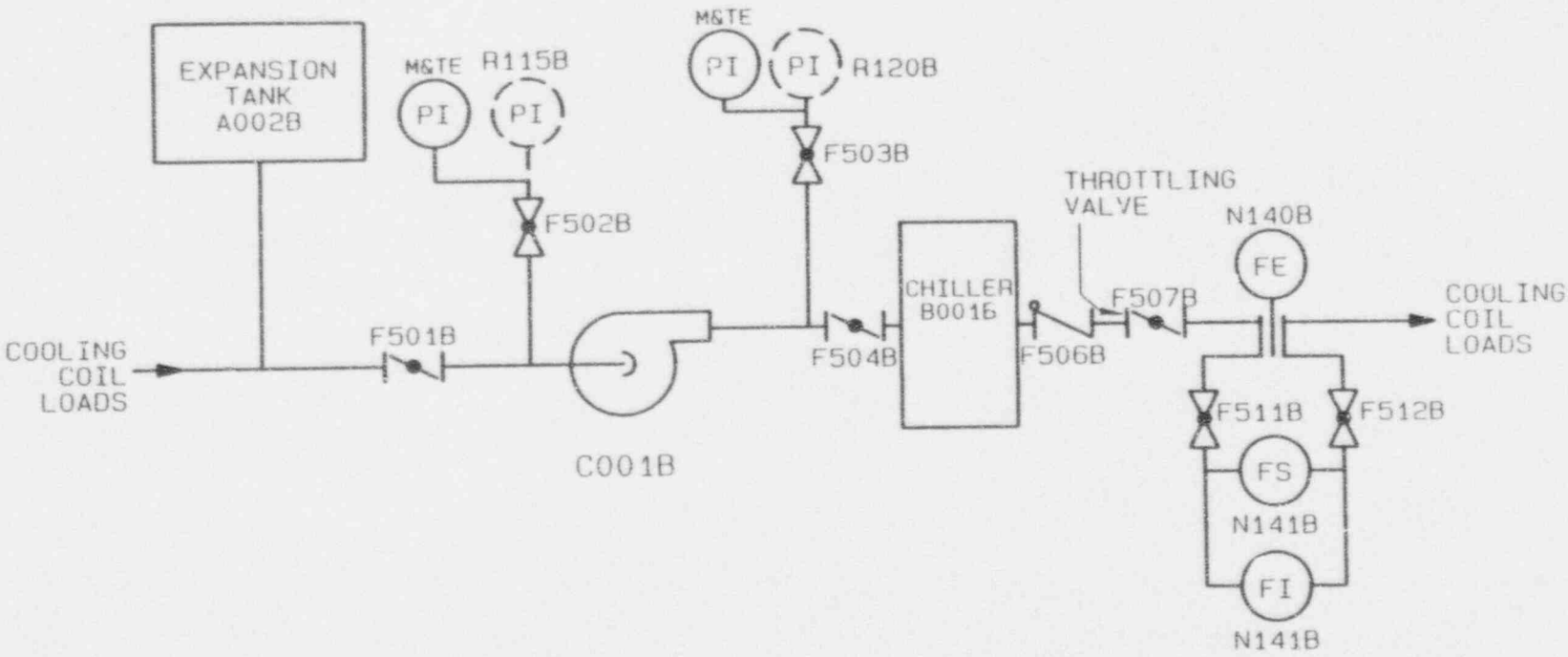


PUMP PARAMETERS			
HYDRAULIC		MECHANICAL	
MONITORED	SET	MONITORED	SET
SPEED	CONSTANT (RPM)	VIBRATION DISPLACEMENT	VARIABLE (MILS)
FLOWRATE	1400 (GPM)	VIBRATION VELOCITY	VARIABLE (IN/SEC)
DIFFERENTIAL PRESSURE	VARIABLE (PSID)	LUBRICATION LEVEL	VISIBLE
SUCTION PRESSURE	VARIABLE (PSIG)		

INSTRUMENTATION				
PARAMETERS	FLOWRATE	PRESSURE DISCHARGE	PRESSURE SUCTION	SPEED
MPL NO.	P47-N141A	TEMPORARY	TEMPORARY	NA
RANGE	0 TO 1600	0 TO 200	0 TO 100	NA
ELEVATION	NA	578	576	NA
LOCATION	CCD/02-574	CCD/02-574	CCD/02-574	NA
ACCURACY	±2%	± 2%	±2%	NA

2.4 Hydraulic Circuit

'B' Control Complex Chilled Water Pump (P47-C001B)

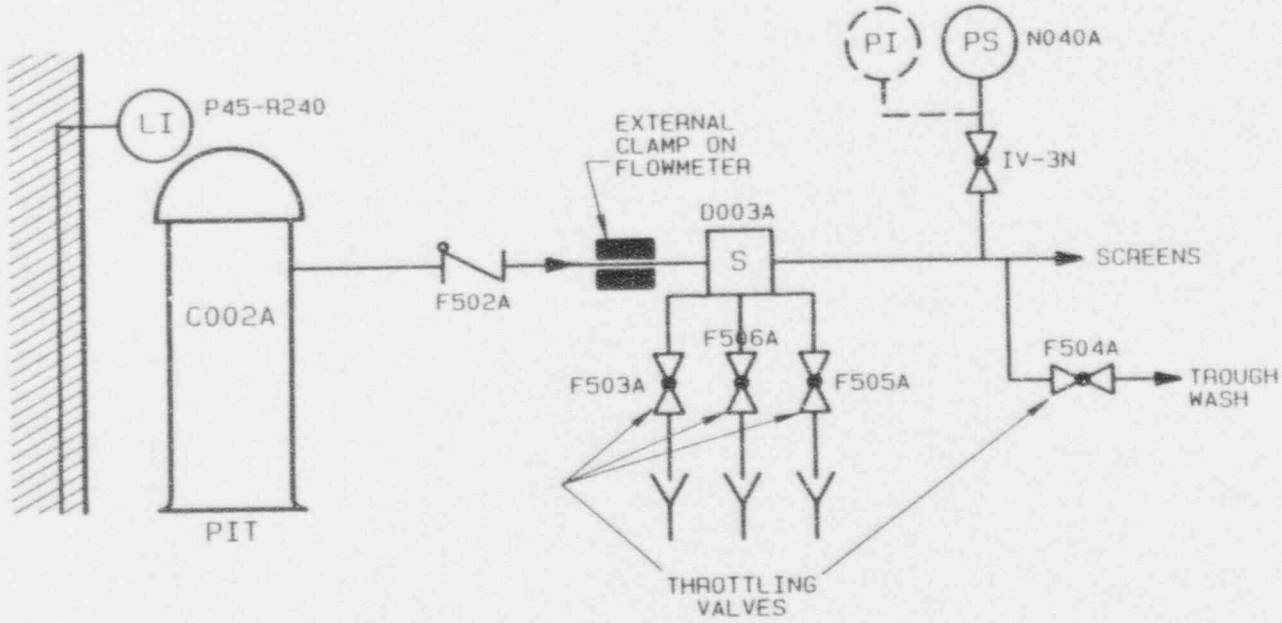


PUMP PARAMETERS			
HYDRAULIC		MECHANICAL	
MONITORED	SET	MONITORED	SET
SPEED	CONSTANT (RPM)	VIBRATION DISPLACEMENT	VARIABLE (MILS)
FLOWRATE	1400 (GPM)	VIBRATION VELOCITY	VARIABLE (IN/SEC)
DIFFERENTIAL PRESSURE	VARIABLE (PSID)	LUBRICATION LEVEL	VISIBLE
SUCTION PRESSURE	VARIABLE (PSIG)		

INSTRUMENTATION				
PARAMETERS	FLOWRATE	PRESSURE DISCHARGE	PRESSURE SUCTION	SPEED
MPL NO.	P47-N141B	TEMPORARY	TEMPORARY	NA
RANGE	0 TO 1600	0 TO 200	0 TO 100	NA
ELEVATION	NA	578	576	NA
LOCATION	CCB/02-574	CCB/02-574	CCB/02-574	NA
ACCURACY	±2%	±2%	±2%	NA

2.4 Hydraulic Circuit

'A' Emergency Service Water Screen Wash Pump (P49-C002A)

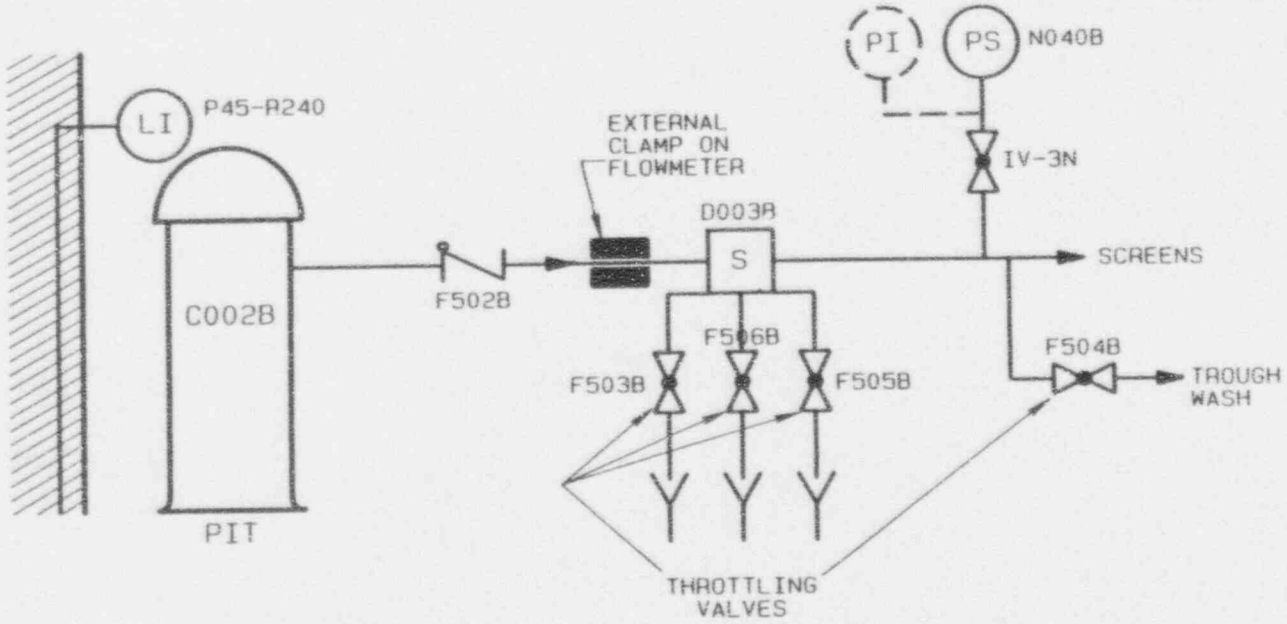


PUMP PARAMETERS			
HYDRAULIC		MECHANICAL	
MONITORED	SET	MONITORED	SET
SPEED	CONSTANT (RPM)	VIBRATION DISPLACEMENT	VARIABLE (MILS)
FLOWRATE	VARIABLE (GPM)	VIBRATION VELOCITY	VARIABLE (IN/SEC)
DIFFERENTIAL PRESSURE	120 (PSID)	LUBRICAT ↓ LEVEL	VISIBLE
SUCTION PRESSURE	VARIABLE (FT)		

INSTRUMENTATION				
PARAMETERS	FLOWRATE	PRESSURE DISCHARGE	PRESSURE SUCTION	SPEED
MPL NO.	TEMPORARY	TEMPORARY	PHYSICAL MEASUREMENT	NA
RANGE	VARIABLE	0 TO 160	NA	NA
ELEVATION	NA	593	NA	NA
LOCATION	EWA/04-586	EWB/04-586	EWC/01-586	NA
ACCURACY	±1%	±2%	NA	NA

2.4 Hydraulic Circuit

'B' Emergency Service Water Screen Wash Pump (P49-C002B)

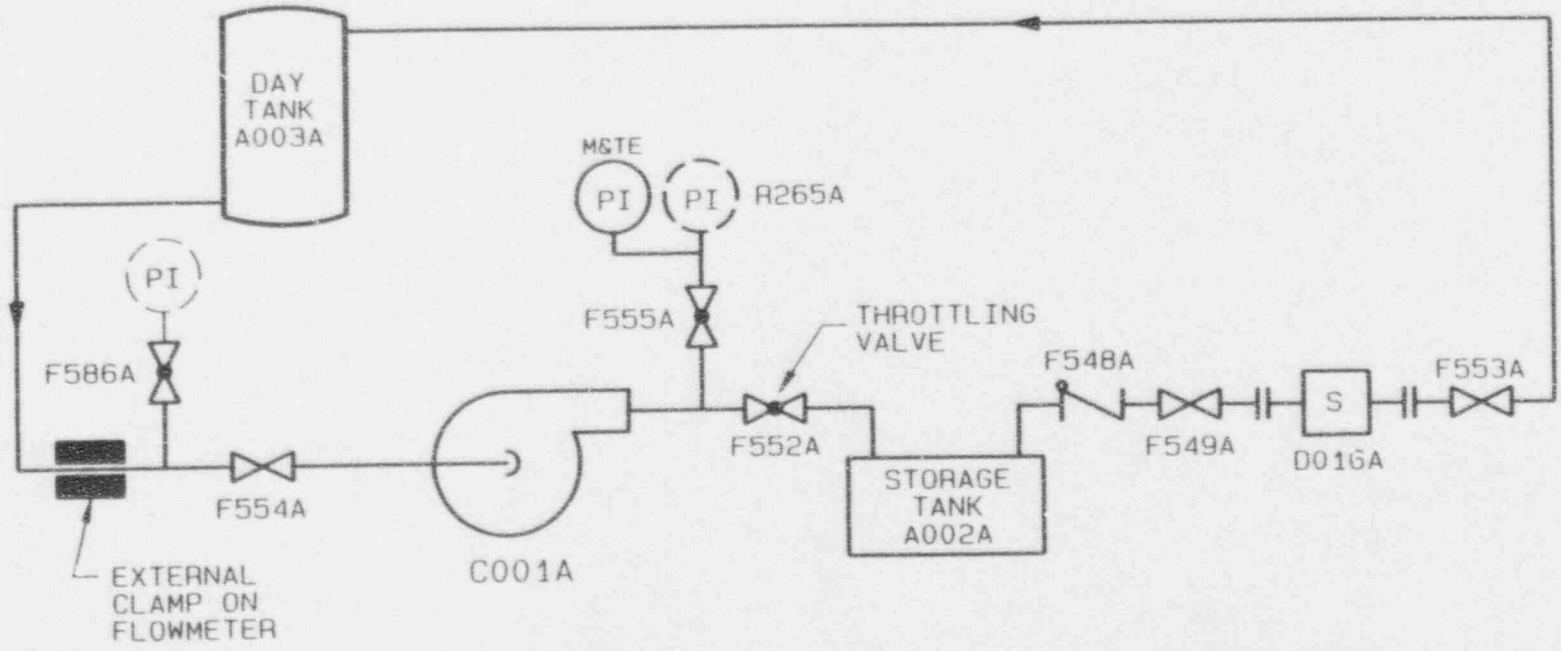


PUMP PARAMETERS			
HYDRAULIC		MECHANICAL	
MONITORED	SET	MONITORED	SET
SPEED	CONSTANT (RPM)	VIBRATION DISPLACEMENT	VARIABLE (MILS)
FLOWRATE	VARIABLE (GPM)	VIBRATION VELOCITY	VARIABLE (IN/SEC)
DIFFERENTIAL PRESSURE	119 (PSID)	LUBRICATION LEVEL	VISIBLE
SUCTION PRESSURE	VARIABLE (PSIG)		

INSTRUMENTATION				
PARAMETERS	FLOWRATE	PRESSURE DISCHARGE	PRESSURE SUCTION	SPEED
MPL NO.	TEMPORARY	TEMPORARY	PHYSICAL MEASUREMENT	NA
RANGE	VARIABLE	0 TO 160	NA	NA
ELEVATION	NA	593	NA	NA
LOCATION	EWA/03-586	EWB/03-586	EWC/01-586	NA
ACCURACY	±1%	±2%	± NA	NA

2.4 Hydraulic Circuit

'1A' Standby Diesel Generator Fuel Oil Pump (1R45-C001A)

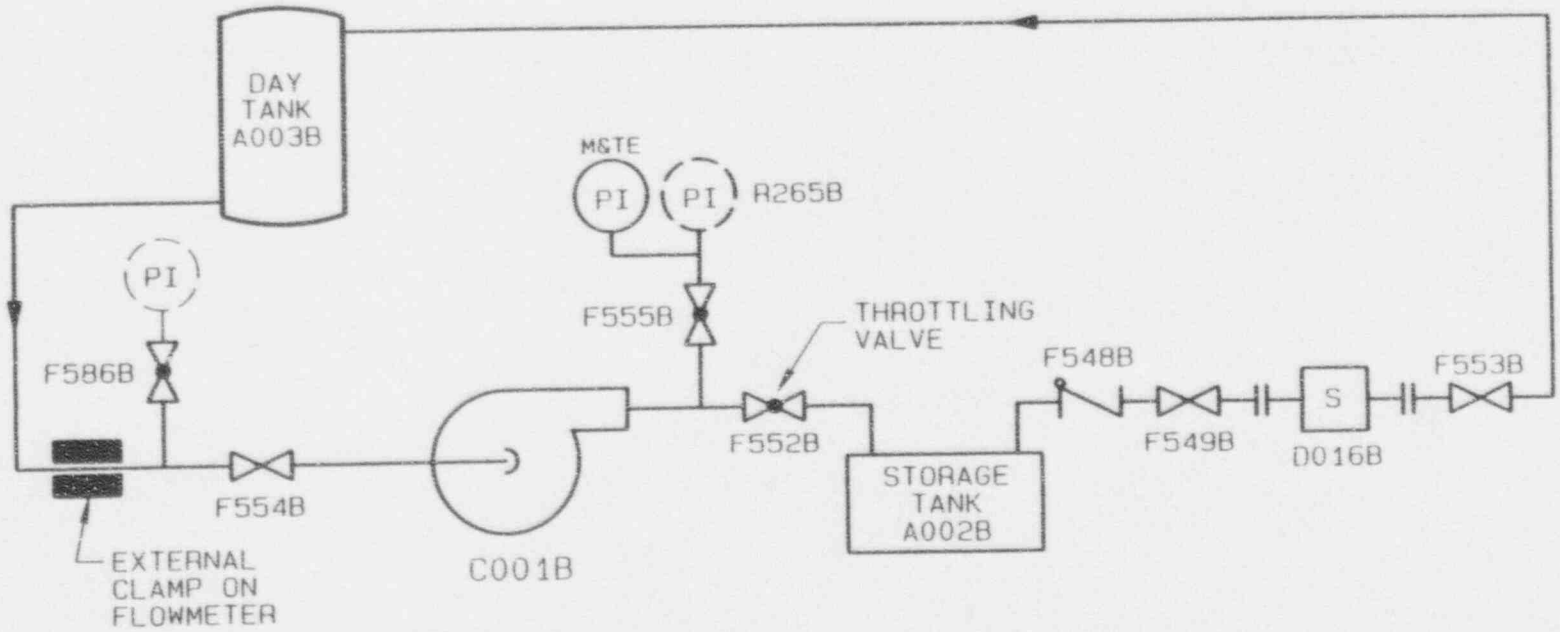


PUMP PARAMETERS			
HYDRAULIC		MECHANICAL	
MONITORED	SET	MONITORED	SET
SPEED	CONSTANT (RPM)	VIBRATION DISPLACEMENT	VARIABLE (MILS)
FLOWRATE	VARIABLE (GPM)	VIBRATION VELOCITY	VARIABLE (IN/SEC)
DIFFERENTIAL PRESSURE	70 (PSID)	LUBRICATION LEVEL	VISIBLE
SUCTION PRESSURE	VARIABLE (PSIG)		

INSTRUMENTATION				
PARAMETERS	FLOWRATE	PRESSURE DISCHARGE	PRESSURE SUCTION	SPEED
MPL NO.	TEMPORARY	TEMPORARY	TEMPORARY	NA
RANGE	VARIABLE	0 TO 100	30" Hg TO 15	NA
ELEVATION	NA	623	621	NA
LOCATION	DGD/01-620	DGD/01-620	DGD/01-620	NA
ACCURACY	±1%	±0.5%	±2%	NA

2.4 Hydraulic Circuit

'1B' Standby Diesel Generator Fuel Oil Pump (1R45-C001B)

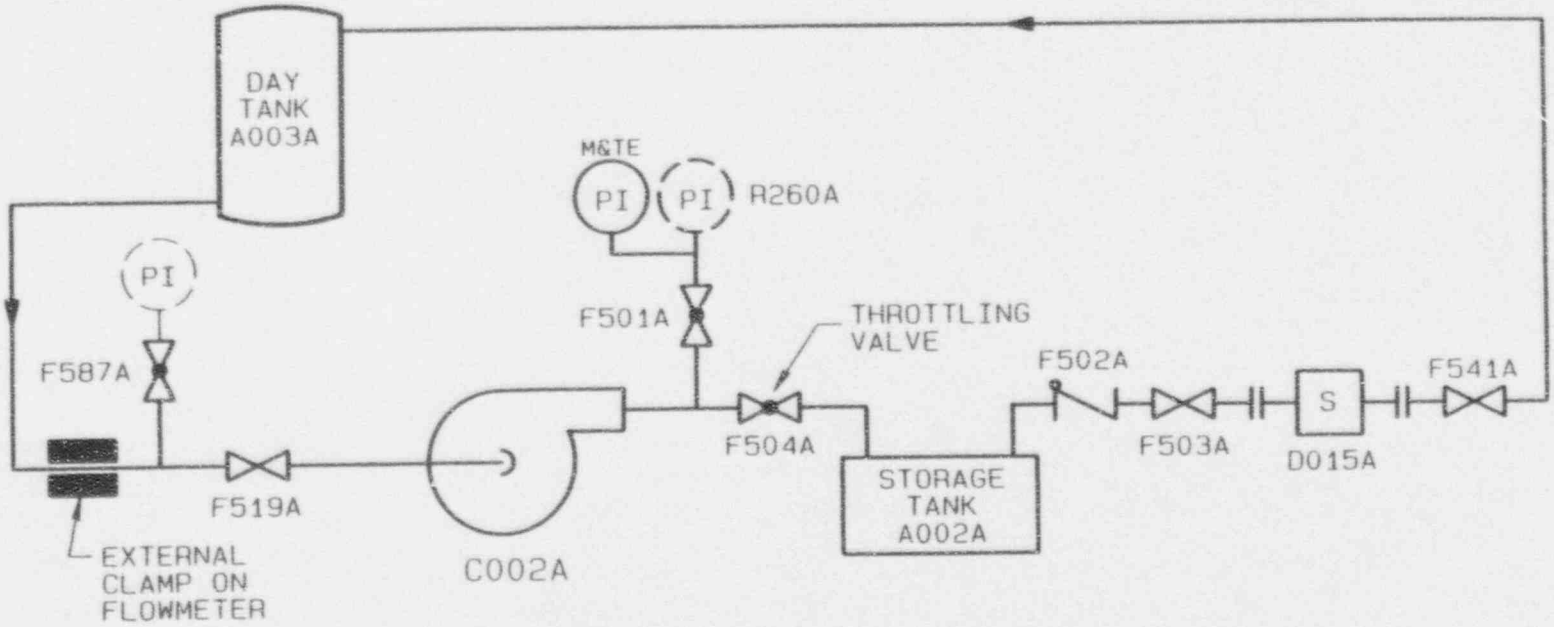


PUMP PARAMETERS			
HYDRAULIC		MECHANICAL	
MONITORED	SET	MONITORED	SET
SPEED	CONSTANT (RPM)	VIBRATION DISPLACEMENT	VARIABLE (MILS)
FLOWRATE	VARIABLE (GPM)	VIBRATION VELOCITY	VARIABLE (IN/SEC)
DIFFERENTIAL PRESSURE	70 (PSID)	LUBRICATION LEVEL	VISIBLE
SUCTION PRESSURE	VARIABLE (PSIG)		

INSTRUMENTATION				
PARAMETERS	FLOWRATE	PRESSURE DISCHARGE	PRESSURE SUCTION	SPEED
MPL NO.	TEMPORARY	TEMPORARY	TEMPORARY	NA
RANGE	VARIABLE	0 TO 100	30" Hg TO 15	NA
ELEVATION	NA	623	C21	NA
LOCATION	DGB/01-620	DGB/01-620	DGB/01-620	NA
ACCURACY	±1%	±0.5%	±2%	NA

2.4 Hydraulic Circuit

'2A' Standby Diesel Generator Fuel Oil Pump (1R45-C002A)

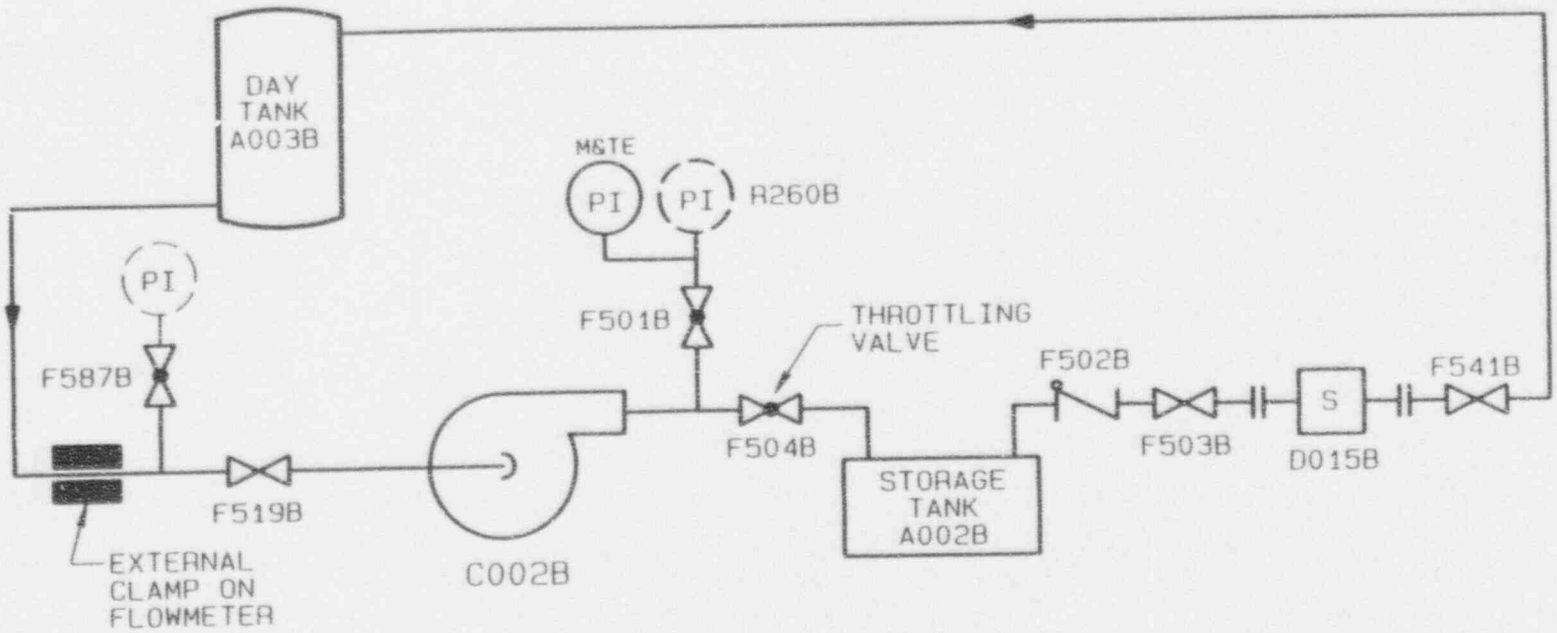


PUMP PARAMETERS			
HYDRAULIC		MECHANICAL	
MONITORED	SET	MONITORED	SET
SPEED	CONSTANT (RPM)	VIBRATION DISPLACEMENT	VARIABLE (MILS)
FLOWRATE	VARIABLE (GPM)	VIBRATION VELOCITY	VARIABLE (IN/SEC)
DIFFERENTIAL PRESSURE	70 (PSID)	LUBRICATION LEVEL	VISIBLE
SUCTION PRESSURE	VARIABLE (PSIG)		

INSTRUMENTATION				
PARAMETERS	FLOWRATE	PRESSURE DISCHARGE	PRESSURE SUCTION	SPEED
MPL NO.	TEMPORARY	TEMPORARY	TEMPORARY	NA
RANGE	VARIABLE	0 TO 100	30" Hg TO 15	NA
ELEVATION	NA	623	621	NA
LOCATION	DGD/01-620	DGD/01-620	DGD/01-620	NA
ACCURACY	±1%	±0.5%	±2%	NA

2.4 Hydraulic Circuit

'2B' Standby Diesel Generator Fuel Oil Pump (1R45-C002B)

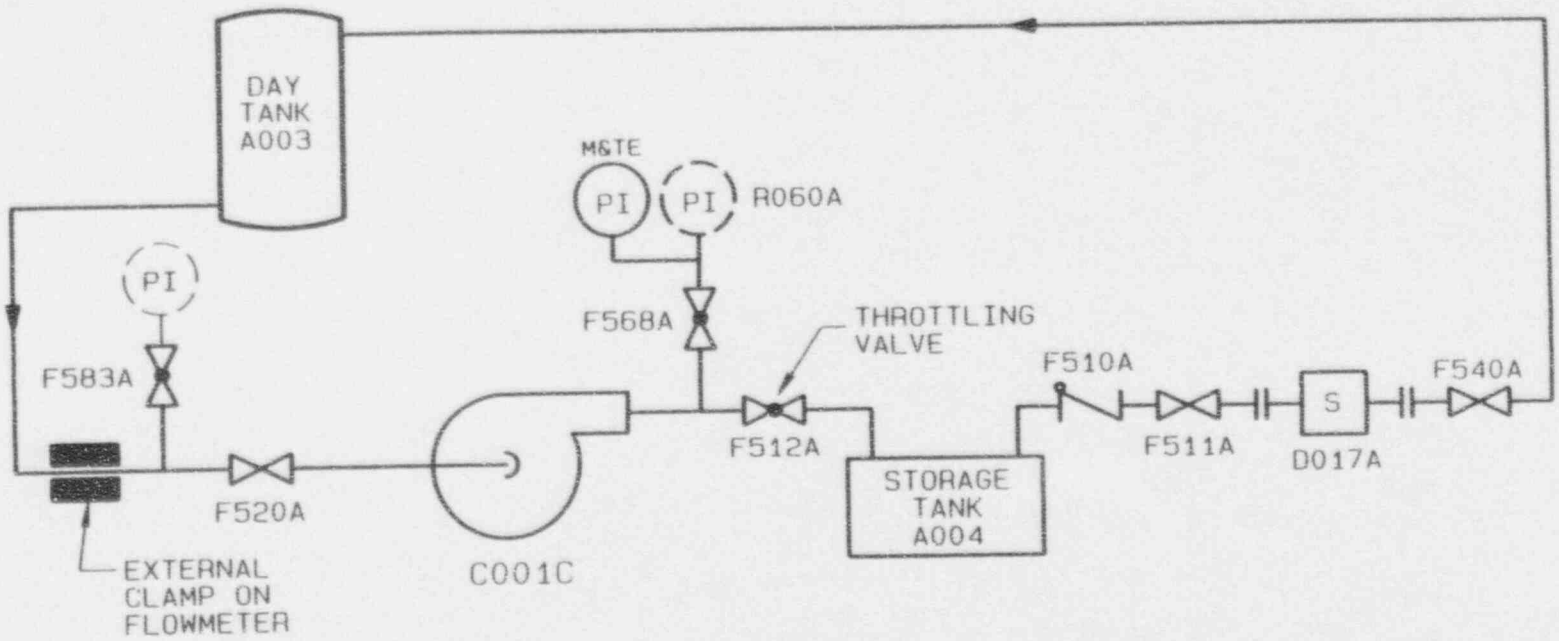


PUMP PARAMETERS			
HYDRAULIC		MECHANICAL	
MONITORED	SET	MONITORED	SET
SPEED	CONSTANT (RPM)	VIBRATION DISPLACEMENT	VARIABLE (MILS)
FLOWRATE	VARIABLE (GPM)	VIBRATION VELOCITY	VARIABLE (IN/SEC)
DIFFERENTIAL PRESSURE	70 (PSID)	LUBRICATION LEVEL	VISIBLE
SUCTION PRESSURE	VARIABLE (PSIG)		

INSTRUMENTATION				
PARAMETERS	FLOWRATE	PRESSURE DISCHARGE	PRESSURE SUCTION	SPEED
MPL NO.	TEMPORARY	TEMPORARY	TEMPORARY	NA
RANGE	VARIABLE	0 TO 100	30" Hg TO 15	NA
ELEVATION	NA	623	621	NA
LOCATION	DGB/01-620	DGB/01-620	DGB/01-620	NA
ACCURACY	±1%	±0.5%	±2%	NA

2.4 Hydraulic Circuit

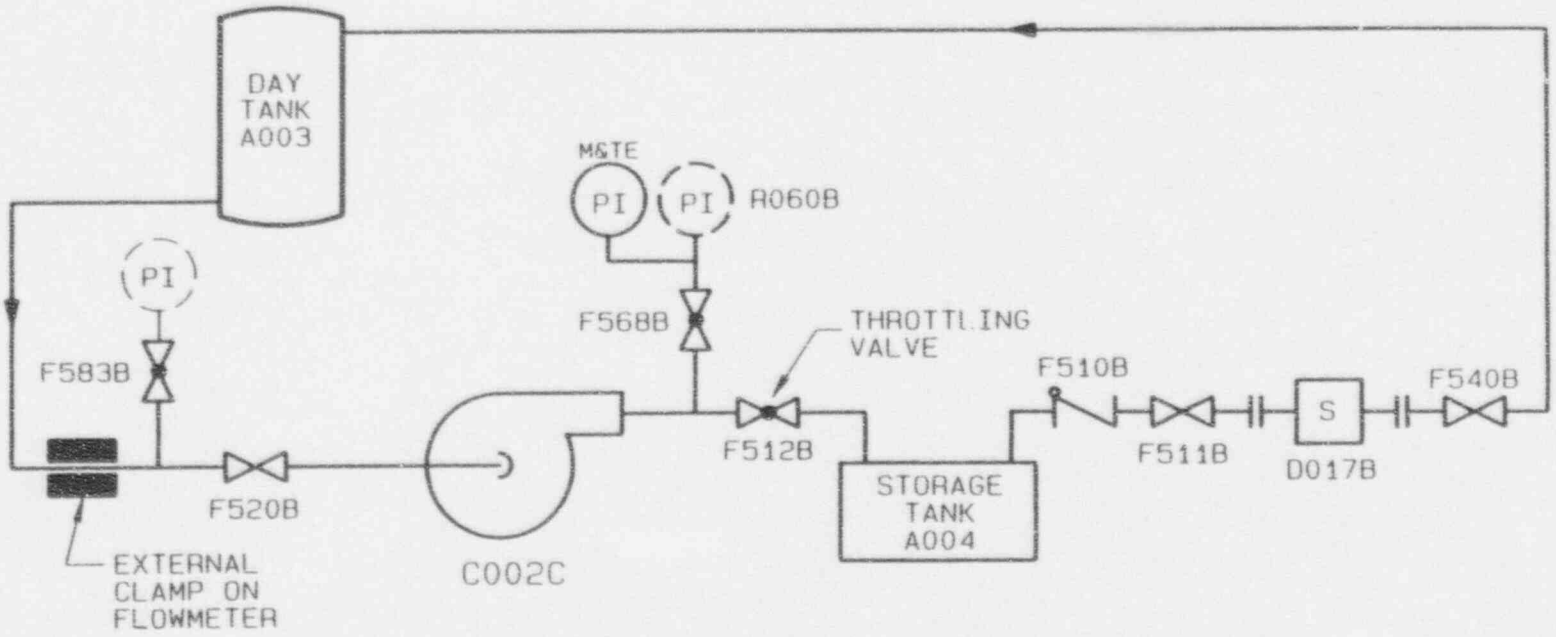
'1C' HPCS Diesel Genertor Fuel Oil Pumps (1R45-C001C)



PUMP PARAMETERS			
HYDRAULIC		MECHANICAL	
MONITORED	SET	MONITORED	SET
SPEED	CONSTANT (RPM)	VIBRATION DISPLACEMENT	VARIABLE (MILS)
FLOWRATE	VARIABLE (GPM)	VIBRATION VELOCITY	VARIABLE (IN/SEC)
DIFFERENTIAL PRESSURE	70 (PSID)	LUBRICATION LEVEL	VISIBLE
SUCTION PRESSURE	VARIABLE (PSIG)		

INSTRUMENTATION				
PARAMETERS	FLOWRATE	PRESSURE DISCHARGE	PRESSURE SUCTION	SPEED
MPL NO.	TEMPORARY	TEMPORARY	TEMPORARY	NA
RANGE	VARIABLE	0 TO 100	30" Hg TO 15	NA
ELEVATION	NA	623	621	NA
LOCATION	DGB/01-620	DGB/01-620	DGB/01-620	NA
ACCURACY	±1%	±0.5%	±2%	NA

'2C' HPCS Diesel Generator Fuel Oil Pumps (1R45-C002C)



PUMP PARAMETERS			
HYDRAULIC		MECHANICAL	
MONITORED	SET	MONITORED	SET
SPEED	CONSTANT (RPM)	VIBRATION DISPLACEMENT	VARIABLE (MILS)
FLOWRATE	VARIABLE (GPM)	VIBRATION VELOCITY	VARIABLE (IN/SEC)
DIFFERENTIAL PRESSURE	70 (PSID)	LUBRICATION LEVEL	VISIBLE
SUCTION PRESSURE	VARIABLE (PSIG)		

INSTRUMENTATION				
PARAMETERS	FLOWRATE	PRESSURE DISCHARGE	PRESSURE SUCTION	SPEED
MPL NO.	TEMPORARY	TEMPORARY	TEMPORARY	NA
RANGE	VARIABLE	0 TO 100	30" Hg TO 15	NA
ELEVATION	NA	623	621	NA
LOCATION	DGB/01-620	DGB/01-620	DGB/01-620	NA
ACCURACY	±1%	±0.5%	±2%	NA

3.0 INSERVICE TESTING PROGRAM FOR VALVES

3.1 General Information

3.1.1 Applicable Code

This testing program for ISI Class 1, 2, 3 Valves and Valve Actuators meets the requirements of Subsection IWV of Section XI of the ASME Boiler and Pressure Vessel Code, 1983 Edition through the Summer 1983 Addenda. Where these requirements are determined to be impractical, specific requests for relief have been written and included in Section 3.2. Also, nonconformance to Section XI requirements may be identified as OM or RO Justifications if the impractical requirement complies with OM Part 10.

3.1.2 Valve Program Tables

The tables in Section 3.4 list ISI Class 1, 2, 3 and Nonclass valves that have been assigned valve categories. Valves exempt per IWV-1200 are not listed. The following information is included for each valve:

VALVE IDENTIFICATION AND IST REQUIREMENTS

SYSTEM P&ID: The system and MPL are located in the top left hand corner of the program table and in the top right hand corner is the drawing number (DWG. NO.). This identifies the valves associated system and P&ID.

VALVE NO.: The valve Master Parts List (MPL) number.

ISI CLASS: The ISI safety classification of the valve.

P&ID COOR.: The coordinates on P&ID at which the valve is located.

ACTIVE: - Valves which are required to change position to accomplish a specific function.

PASSIVE: - Valves which are not required to change position to accomplish a specific function.

ISI CAT.: The category assigned to the valve based on the definitions per IWV-2200. Four (4) separate categories are defined in the Code and combination of these categories may exist.

CATEGORY A - Valves for which seat leakage is limited to a specific maximum amount in the closed position for fulfillment of their function.

CATEGORY B - Valves for which seat leakage in the closed position is inconsequential for fulfillment of their function.

CATEGORY C - Valves which are self-actuating in response to some system characteristic, such as pressure (relief valves) or flow direction (check valves).

CATEGORY D - Valves which are actuated by an energy source capable of only one operation, such as rupture disks or explosive-actuated valves.

VALVE SIZE: The nominal pipe size of the valve in inches.

VALVE TYPE: The type of valve is indicated by the following abbreviations:

BALL	BA
BUTTERFLY	BF
CHECK	CH
DIAPHRAGM	DI
GATE	GT
GLOBE	GL
RELIEF	RE
RUPTURE DIAPHRAGM	RU
STOP CHECK	SC
THREE WAY	TW

ACT. TYPE: The type of valve actuator is indicated by the following abbreviations:

MOTOR OPERATOR	MO
AIR OPERATOR	AO
SOLENOID OPERATOR	SO
HYDRAULIC OPERATOR	HO
MANUAL	MA
SELF-ACTUATED	SE

NORM. POS: The position of the valve during normal plant operation, specified as follows:

Normally Open	O
Normally Closed	C
Locked Open	LO
Locked Closed	LC

TEST RQMT. & FREQ.: The test(s) that will be performed to fulfill the requirements of Subsection IWV. The test descriptions and abbreviations used are identified in Table 3.1-1.

The frequency at which the above mentioned tests will be performed to fulfill the requirements of Subsection IWV and augmented requirements are defined in Table 3.1-2.

SURV. INST. NO.: The surveillance instruction in which the valve is tested.

STROKE DIRECTION & TIME: The stroke direction and the limiting maximum value of full stroke time, in seconds, for power operated valves in Category A or B.

MAX. SEAT LEAKAGE: The limiting maximum value of seat leakage, in gpm or sccm, for Category A and AC valves.

CK VLV DIRECT/RELIEF SET (PSIG): The direction in which flow or force will be applied to check valves during test(s) will be as follows:

F Forward (allows flow through valve)
R Reverse (resists flow through valve)

The relief set (PSIG) pressure is provided for safety, relief and safety relief with deviations noted in the Remarks Section.

RELIEF REQUEST: The reference to a relief request in Section 3.2 for valve testing. Requests for relief are identified as VR-XX.

COLD SHUTDOWN JUSTIFICATION: The reference to a cold shutdown justification in Section 3.2 for valve testing. Cold Shutdown Justifications are identified as CS-XX and comply with the rules of Subsection IWV.

OPERATIONS AND MAINTENANCE (PART 10) JUSTIFICATION: The Operations and Maintenance Part 10 Justification allows the implementation of portions of OM-10 pursuant to 10CFR50.55a(f)(4)(iv) without requesting formal relief. An OM(10) Justification is similar in format and purpose to a cold shutdown justification. This justification provides the mechanism for documenting the bases for performing specific IST valve requirements as well as specifying the alternative requirements in accordance with the OM-10 standard.

REFUELING OUTAGE JUSTIFICATION: The Refueling Outage Justification allows implementation of portions of OM-10 as it pertains to refueling outage frequency testing pursuant to 10CFR50.55a(f)(4)(iv) without requesting formal relief. An RO Justification is similar in format and purpose to a cold shutdown justification. This justification provides the mechanism for documenting the bases for performing a specific test during a refueling outage as well as specifying the alternative requirements in accordance with the OM-10 standard.

REMARKS: Remarks in the valve test table are to clarify any special requirement due to design or identify other documents affecting testing requirements.

3.1.3 Measurement of Test Quantities

STROKE TIME: Stroke time is that time interval from initiation of the actuating signal to the end of the actuating cycle. Stroke time values for each power operated valve is specified in the valve test table. Stroke time is measured to the nearest second, for times 10 SEC. or less or 10% of the specified limiting stroke time for times greater than 10 sec.

POSITION INDICATION: Valve disk movement is determined by exercising the valve while observing an appropriate indicator which signals the required change of disk position. Actual valve movement or observing indirect evidence, such as changes in system pressure, flow rate, level or temperature, which reflect stem or disk position will be used to verify that remote valve position indicators agree with valve travel direction.

SEAT LEAKAGE: Seat leakage is measured by one of the following methods:

a) closing the valve, draining the line, bringing one side to test pressure, and measuring leakage through a downstream telltale connection, or

b) by measuring the feed rate required to maintain pressure between two valves or between two seats of a gate valve, provided the total apparent leak rate is charged to the valve or gate valve set being tested, and that the conditions required by IWV-3423 are satisfied.

CHECK VALVE FULL STROKE EXERCISE:

Confirmation that the disk moves away from the seat shall be by visual observation, by electrical signal initiated by a position indicating device, by observation of substantially free flow through the valve as indicated by appropriate pressure indications in the system, or by other positive means.

a) Mechanical Exerciser - the force or torque delivered to the disk by the exerciser must be limited to less than 10% of the equivalent force or torque represented by the minimum emergency condition pressure differential active on the disk, or to 200% of the actual observed force or torque required to perform the exercise on the valve when the valve is new and in good operating condition, whichever is less.

b) Vacuum Breaker - the exerciser force or torque delivered to the disk may be equivalent to the desired functional pressure differential force. If no functional pressure differential force is identified, then verification of the disk movement shall be sufficient to prove that the disk moves freely off the seat.

c) Swing or Tilting Disk - when tested by fluid flow, the pressure differential for equivalent flow shall be equal to or greater than that observed during the preoperational testing.

d) Other Types - when tested, disk movement is sufficient to provide a flow area at least 50% of the area of the seat port, or to permit flow adequate for the function of the valve.

3.1.4 Allowable Ranges of Test Quantities

STROKE TIME:

a) If, for power operated valves, an increase in stroke time of 125% or more from the previous test for valves with stroke times greater than 10 sec. or 150% or more for valves with stroke times less than or equal to 10 sec. is observed, increased testing will be required until corrective action is taken. For valves with stroke times less than or equal to two seconds see Relief Request VR-2.

b) Valve stroke time shall not exceed either the values used to satisfy PNPP Technical Specifications or the owner's (CEI) established stroke times.

c) The Recommended Practice to establish realistic Acceptance Criteria is: 1) for valves with stroke times greater than 10 seconds an action limit of 150%; 2) for valves with stroke times less than or equal to 10 seconds an action limit of 200%, and 3) for fast acting valves an action limit of 2 seconds.

NOTE: The most limiting action limit shall be used from Technical Specifications, USAR or Recommended Practice (if applicable).

POSITION INDICATION: The valve travel direction (open/closed) will agree with remote position indicators.

SEAT LEAKAGE:

a) Valve leakage rates shall not exceed either the values specified by Perry Nuclear Power Plant Technical Specifications or the Owner's (CEI) established leakage rates.

b) For all containment isolation valves 6 in. nominal pipe size and larger the leakage rate shall not exceed the Technical Specification limit.

c) For the pressure isolation valves if a leakage rate exceeds the rate determined by the previous test by an amount that reduces the margin between measured leakage rate and the maximum permissible rate by 50% or greater, the test frequency shall be double. Also, if tests show a leakage rate increasing with time, and a projection based on three or more tests indicates that the leakage rate of the next scheduled test will exceed the maximum permissible leakage rate by greater than 10%, corrective action will be taken.

3.1.5 Instrument Accuracy

Instruments used to measure stroke times shall be capable of measurement to the nearest tenth of a second.

3.1.6 Post-Maintenance Testing

During the inservice life of a valve, work may be required to restore the valve performance to within acceptable ranges. This work can be in the form of: routine servicing, maintenance (preventive/corrective), repair, and replacement. The following work scope guidelines, test types to work scope required, steps to determine retest requirements, and retest flowpath (with examples) should be utilized in determining post-maintenance test requirements.

WORK SCOPE GUIDELINES

a. Routine Servicing - Performance of planned, preventive maintenance which does not require disassembly of the valve or replacement of parts such as greasing a bearing, stem lubrication, adjustment of stem packing and etc.
b. Maintenance - Performance of preventive or corrective maintenance which does require disassembly of the valve or replacement of consumable items to correct or prevent an abnormal or unsatisfactory condition. Examples: removal of bonnet, stem assembly or actuator, and disconnection of hydraulic or electrical lines.
c. Repair - Performance of welding or grinding on a valve to correct a defect.
d. Replacement - Installation of a new valve, valve part, or a modification to the valve.

TEST TYPES TO WORK SCOPE REQUIRED

Test Types	Work Scope
FE, ST, FS	Routine servicing, maintenance, repair or replacement.
LJ	Specified maintenance, repair or replacement. Specified maintenance: repacking, lowering of motor-operated valve closing torque switch setting, replacement of motor-operated valve torque switch mechanism, adjustment of motor-operated valves that close on limit switch, disassembly of valve internals, removal of the valve actuator or alteration to seating surface. MOVATS Data may be used as an alternative test to verify existing conditions have not degraded.
LW	Specified maintenance, repair or replacement. Specified maintenance: alteration to seating surface, lowering of motor-operated valve closing torque switch setting, replacement of motor-operated valve torque switch mechanism, adjustment of motor-operated valve closing unit switch for motor-operated valves that close on limit switch. MOVATS Data may be used as an alternative test to verify existing conditions have not degraded.
LK	Same as LW.
LD	Same as LW.
PI	Specified maintenance, repair or replacement. Specified maintenance: reconnection of the valve actuator, adjustment or disassembly of limit switch mechanism for remote position indicator, or terminating/reterminating wiring for the remote indicator circuitry. Exception: No retest for replacement of fuses or light bulbs. Lifting and landing a single lead requires no retest.
RT	Specified maintenance, repair or replacement. Specified maintenance: adjustment of setting, disassembly, internal gagging, remachining or cleaning of any critical part, lapping of seat and disc or any other operation which may affect the flow passage, capacity, function or pressure retaining integrity.

NOTE: Changing the blowdown setting and/or the nameplate set pressure for safety and safety relief valves requires testing by other than the bench test method.

RD Maintenance, repair or replacement.

EX None (Manufacturer's Data acceptable).

STEPS TO DETERMINE RETEST REQUIREMENTS

Step 1: Locate the valve by MPL number in the Valve Test Table (Section 3.4).

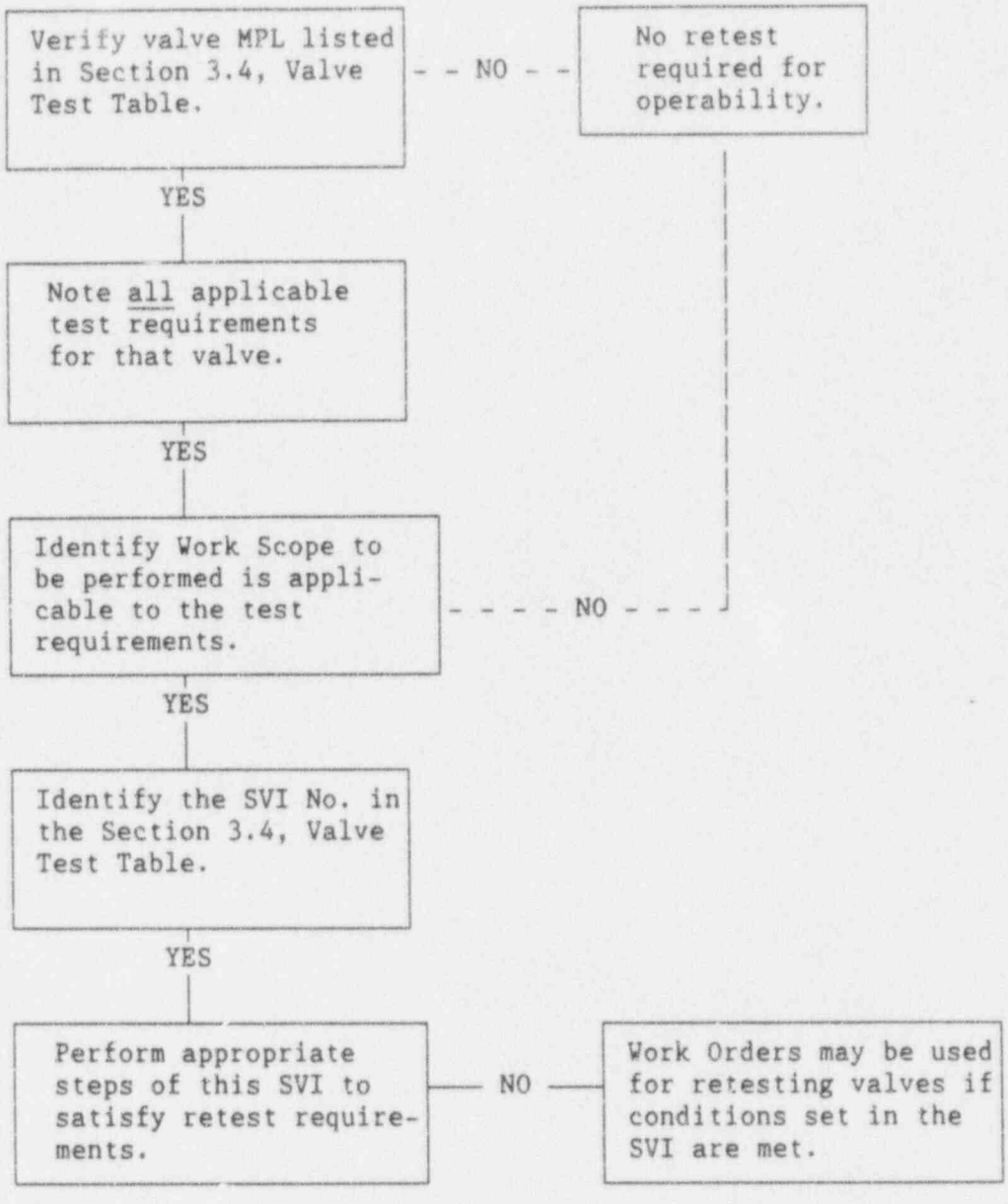
Step 2: If the work scope is applicable to the test requirement then the surveillance located on the valve test table should be performed, however other documents may be used if ASME Code requirements are followed.

Step 3: When the work scope is applicable to the test requirement, other means for documenting retests may be used (i.e., Work Orders). When using other means for documenting retests, ensure all ASME Code, Section XI requirements are being followed (i.e., all appropriate retests FE, ST, PI etc. are being performed). Also any test conditions established within the applicable surveillance must be met (i.e., flowrate of 7100 GPM for stroke timing of valve). To establish surveillance test conditions within the RETEST document (Work Order) any approved PNPP instruction may be used (e.g., SVI, SOI, IOI, etc.).

This is accomplished by extracting the steps from the appropriate instruction (SVI, SOI, IOI, etc.) and inserting them into the retesting document (Work Order).

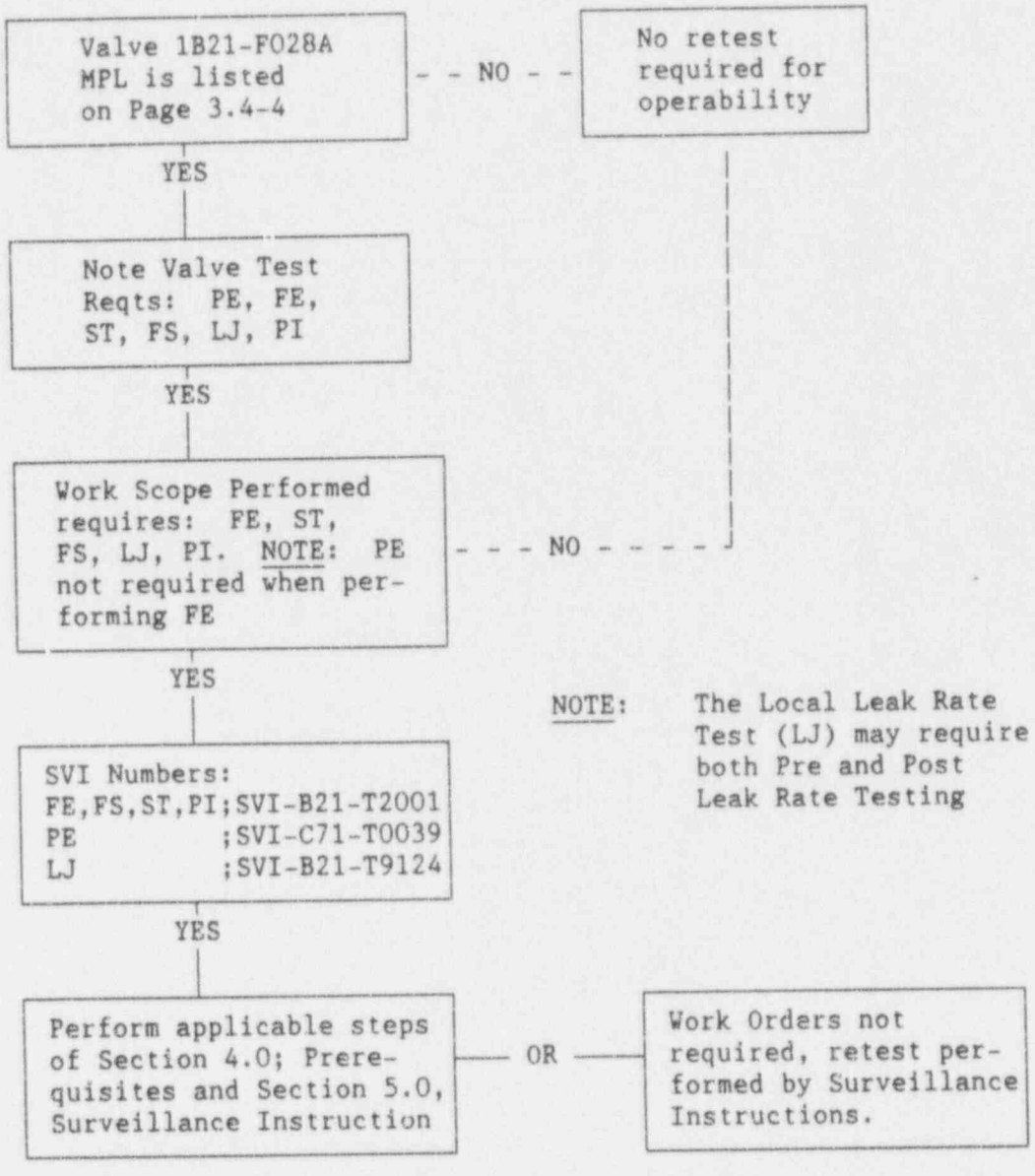
Step 4: If a valve test exists within the pump operability portior of a surveillance instruction, and the pump must be started to test this valve, only the set reference value for the pump need be established. It is not required to perform entire pump data collection (e.g., if flow is set to 7100 GPM to establish conditions for pump data collection, then set flow to 7100 GPM and N/A all other data entries on pump data sheet).

Retest Flowpath



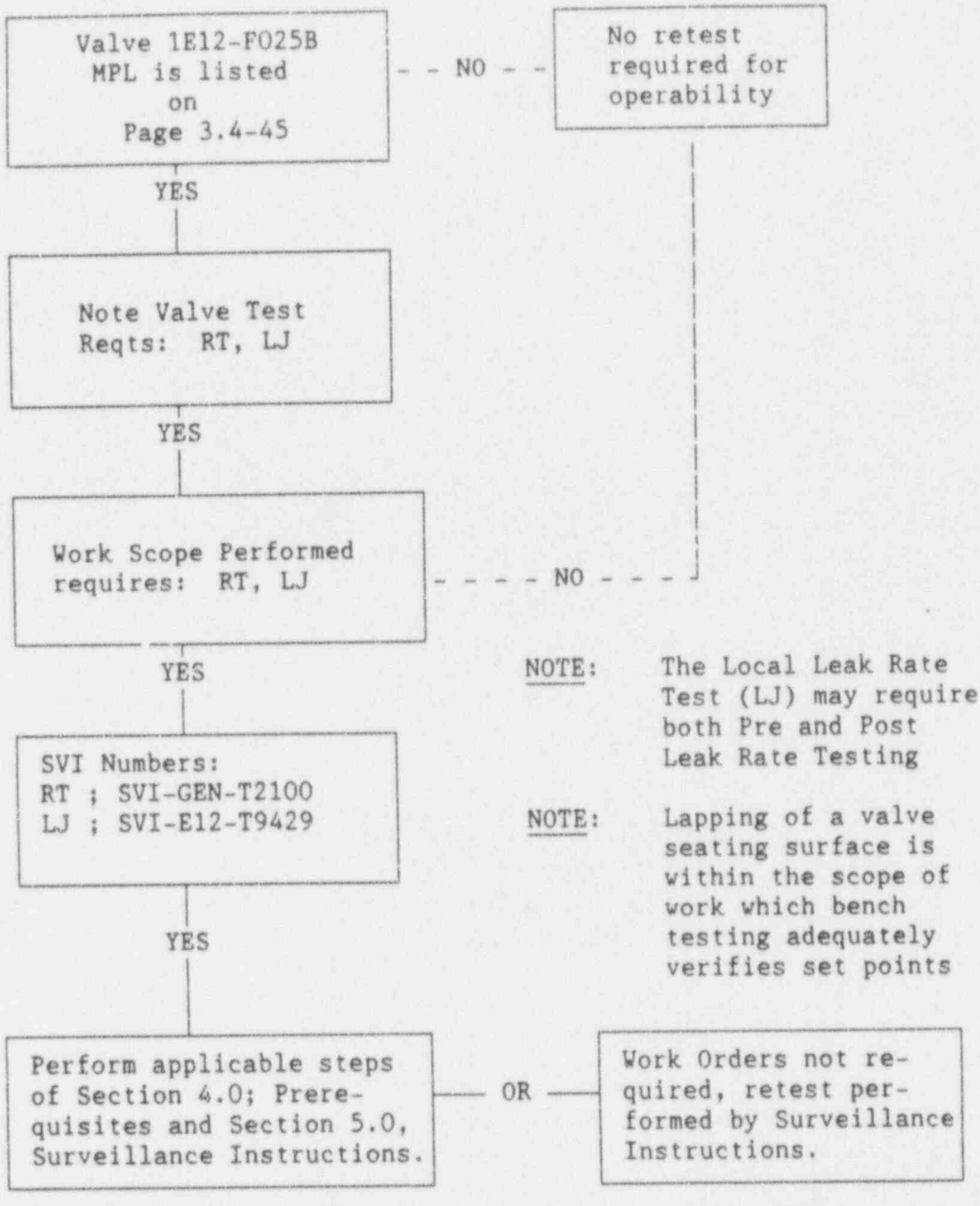
Examples:

1. 1B21-F028A requires the valve seating surface to be lapped per Work Order and the appropriate Surveillance Instructions are used for retests.

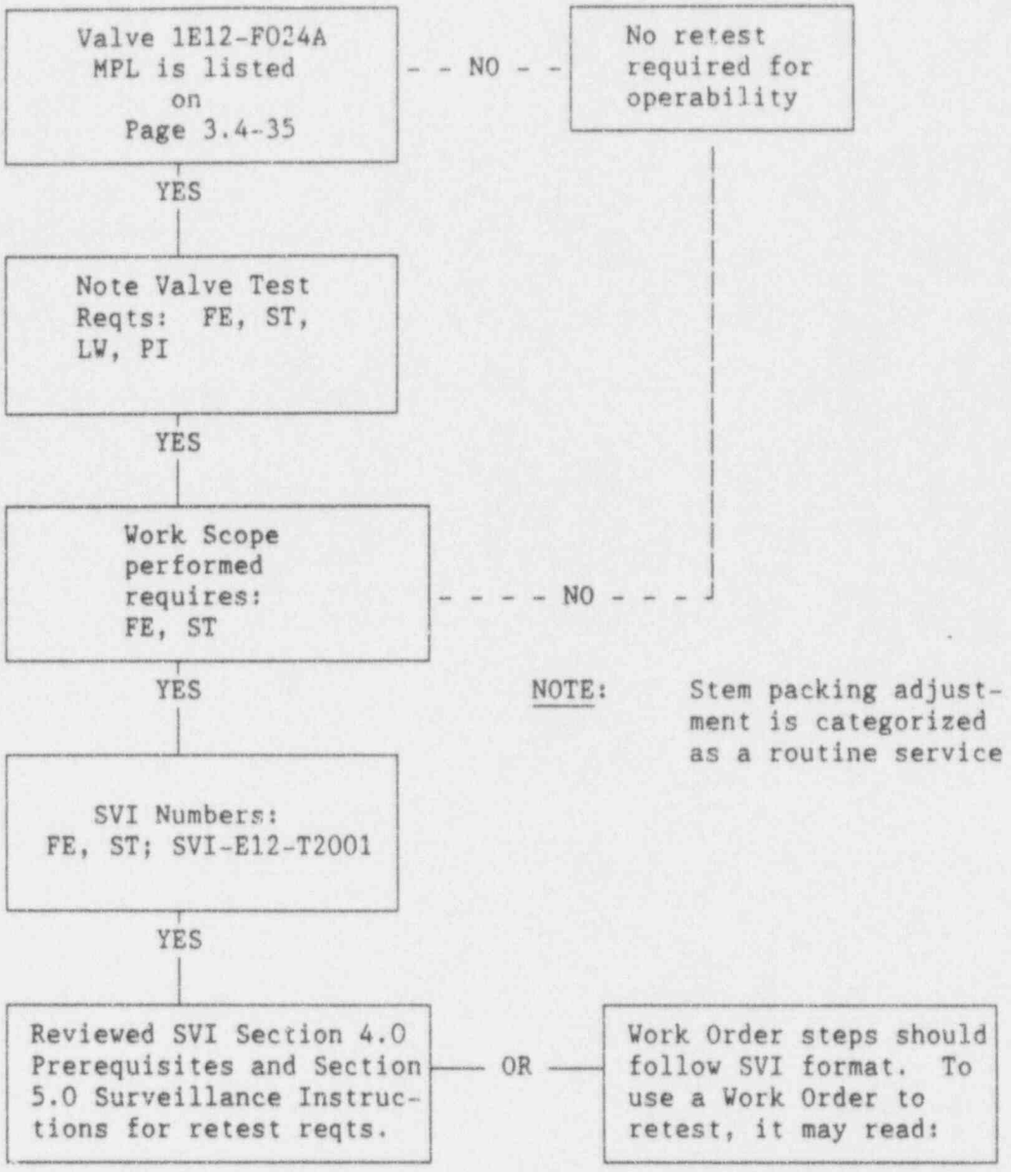


NOTE: The Local Leak Rate Test (LJ) may require both Pre and Post Leak Rate Testing

2. 1E12-F025B requires the valve seating surface to be lapped per Work Order and the appropriate Surveillance Instructions are used for retests.



3. 1E12-F024A requires the stem packing to be adjusted to minimize leaking and the retest is to be performed within the Work Order Package.



NOTE: Stem packing adjustment is categorized as a routine service

TABLE 3.1-1

INSERVICE VALVE TESTS

TEST	TEST NAME	TEST DESCRIPTION
LJ	Containment Isolation Valve	Containment isolation valves will be seat leak tested in accordance with 10CFR50, Appendix J, Type C Leak test and PNPP Technical Specification requirements.
LW	Seal System Containment Isolation Valve	Seal System - Containment isolation valves will be seat leak tested in accordance with 10CFR50, Appendix J, Type C Leak Test and PNPP Technical Specification requirements.
LK	Pressure Isolation Valve	Pressure isolation valves will be seat leak tested in accordance with ASME Boiler and Pressure Vessel Code, Section XI, IWV-3420; Valve Leak Rate Test.
LD	Other Isolation Valves	Other isolation valves using a pressure drop test or ASME Code, leak rate tests to determine valve seat leakage.
FE	Full-Stroke Exercise	Exercise testing of Category A or B valves through one complete cycle of operation. 1) Normally open: Full Stroke exercise the valve closed then return to open position. 2) Normally closed: Full Stroke exercise the valve open then return to closed position.
ST	Stroke Time	Stroke time is the measurement of the time required to exercise test a power operated Category A or B valve through an operation. Valve timing shall be to the alternate position to comply with ASME Boiler and Pressure Vessel Code, Section XI. 1) Stroke Direction (C) - Normally open: Full Stroke time close. 2) Stroke Direction (O) - Normally closed: Full Stroke time open. Motor operated valves shall be stroke timed in only one direction since no deviation should occur.

TABLE 3.1-1 (Cont.)

INSERVICE VALVE TESTS

TEST	TEST NAME	TEST DESCRIPTION
		Additional stroke timing may be required by other documents (i.e., PNPP Technical Specifications and PNPP Updated Safety Analysis Report) for Category A or B. * Bypass Time - The time interval between closed light indication until the end of the actuating cycle. The bypass time applies to containment isolation valves both automatic and manual listed in the Plant Data Book (PDB) G0001 that are stroke timed. These valves require the time interval to be added to the indicator time for comparison against the maximum stroke time, if the MOVATS obtained time is 0.5 seconds or greater.
PE	Partial Stroke Exercise	Partial stroke exercise testing will be performed to confirm partial stroke capability when full stroke exercise is impractical.
FE	Full-Stroke Exercise (Check Valve)	Exercise testing of Category C (e.g., check valves) valves through a complete cycle of operation by system flow or other positive exercise method. Exercising will verify the check valve is not sticking or binding. 1) Forward Flow Direction (F) - Normally closed: Flow Stroke open 2) Reverse Flow Direction (R) - Normally open: Flow Stroke close.
PC	Partial Check Exercise	Partial check valve exercise is when the valve can only be partially exercised open by flow or the opening is not in accordance with the methods per IWV-3522(b), to verify the check valve is not binding.
AP	Check Alternate (Safety) Position Verification	A requirement which shall verify the check valve has returned to the normal operational position. Check valves should position themselves following each exercise. This position may be verified by normal operating parameters or special testing not to exceed a refueling outage.

TABLE 3.1-1 (Cont.)

INSERVICE VALVE TESTS

TEST	TEST NAME	TEST DESCRIPTION
RD	Rupture Disk Test	Rupture Test of all Category "D": Non-Testable Rupture Disk Tests were performed by the manufacturer or the start-up testing program and no additional testing shall be required; Testable valves were performed by the start-up testing program and shall be routinely scheduled by CEI.
EX	Explosive Test	Testing of explosive charges by firing per ASME Section XI shall be with at least 20% of the charges in a batch fired every 2 years with no charge testing exceeding 10 years.
RT	Relief Set Point	Relief and safety valve set point will be verified in accordance with ASME Boiler and Pressure Vessel Code, Section XI, ANSI/ASME PTC 25.3-1976 (in accordance with Section 4.0.9, Valve Operational-Readiness Test) including addenda, or OM-1-1981 (or latest revision) and PNPP Technical Specifications.
FS	Fail Safe Test	Valve with fail safe actuators (e.g., air operated, spring loaded, solenoid operated, and hydraulic operated) will be tested to verify proper safety-related fail safe operation upon loss of actuator power.
PI	Position Indicator Verification	Valves with remote position indicators will be checked to verify that remote valve position indicators accurately reflect valve travel direction.
XX	Non-Code Testing	These test requirements are to satisfy other surveillance requirements than Technical Specification 4.0.5 (ASME Code, Section XI).

TABLE 3.1-2

INSERVICE VALVE TESTS

TEST FREQUENCY	OPERATIONAL (1) CONDITION	FREQUENCY OF TESTING
Q	Any Operational Condition	At least once per 92 days
CS	Cold Shutdown	See (2) below
RO	Refueling Outage	Plant outage with the head removed with the intent to replace fuel (maximum 2 years plus 6 months).
2Y	Any Operational Condition	Every two years (see Article IWV-3300). Applies to position indication tests and seat leakage tests.
5Y	Any Operational Condition	Every five years (see Articles IWV-3511). Applies to RT test.

(1) Operational conditions are defined in PNPP Technical Specifications.

(2) Valve testing shall be during each shutdown except that testing shall commence within 48 hours of achieving cold shutdown, and continue until all testing is complete or the plant is ready to return to power. For extended outages, testing need not be commenced in 48 hours provided all valves required to be tested during cold shutdown will be tested prior to plant startup. However, it is not the intent of the Code to keep the plant in cold shutdown in order to complete cold shutdown testing. Also, testing is not required if the time period since the previous test is less than 3 months.

NOTE: Completion of all valve testing during cold shutdowns is not required if plant operating conditions do not permit testing of specific valves.

TABLE 3.1-2 (Cont.)

TEST FREQUENCY (3)

(3) Provisions for ASME Code test frequency are applicable to the following required frequencies for performing inservice testing activities.

ASME BOILER AND PRESSURE VESSEL CODE AND APPLICABLE ADDENDA TERMINOLOGY FOR INSERVICE TESTING ACTIVITIES	REQUIRED FREQUENCIES FOR PERFORMING INSERVICE TEST ACTIVITIES
WEEKLY	AT LEAST ONCE PER 7 DAYS
MONTHLY	AT LEAST ONCE PER 31 DAYS
QUARTERLY OR EVERY 3 MONTHS	AT LEAST ONCE PER 92 DAYS
SEMIANNUALLY OR EVERY 6 MONTHS	AT LEAST ONCE PER 184 DAYS
EVERY 9 MONTHS	AT LEAST ONCE PER 276 DAYS
YEARLY OR ANNUALLY	AT LEAST ONCE PER 366 DAYS
BIENNIALLY OR EVERY 2 YEARS	AT LEAST ONCE FER 731 DAYS

NOTE: Each Surveillance Requirement shall be performed within the specified surveillance interval with a maximum allowable extension not to exceed 25 percent of the specified surveillance interval.

3.2 Cold Shutdown Justifications and Relief Requests for Inservice Valve Testing Program

Cold Shutdown Justification

CS-1

System: Feedwater (N27)

Valves: 1B21-F065A, 1B21-F065B

Category: A

Class: 2

Test Requirements: IWV-3411; Test Frequency - Exercise at least once every three months.

IWV-3413; Power operated valves - full stroke time

Basis for Justification: Exercising these valves during normal operation would require a significant reduction in power and stopping one line of feedwater flow. Isolation of one line of feedwater flow during normal operation introduces undesirable operational transients and could result in a reactor trip. Partial stroke testing cannot be performed since valves stroke fully on initiation and conformance with the quarterly requirements is impractical for the facility.

Alternate Testing: Exercise valves during cold shutdown.

Acceptable in NRC Safety Evaluation
Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Cold Shutdown Justification

CS-2

System: Main Steam System (N11)

Valves: 1N11-F020A, 1N11-F020B, 1N11-F020C, 1N11-F020D

Category: B

Class: 2

Function: Main Steam Shutoff Valve

Test Requirements: IWV-3411; Test Frequency - Exercise at least once every three months.

IWV-3413; Power operated valves - full stroke time

Basis for Justification: Valves fully stroke on initiation of close signal making partial valve stroke impractical. Full stroke exercising results in loss of steam flow from one main steam line to the turbine creating adverse transients and potential of valve damage from steam erosion of valve seat. Also, the design of these 28 inch gate valves does not allow exercising against the magnitude of differential pressure encountered without valve damage. Therefore, conformance to the quarterly requirements is impractical for the facility.

Alternate Testing: Exercise valves during cold shutdown.

Acceptable in NRC Safety Evaluation
Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Cold Shutdown Justification

CS-3

System: Reactor Coolant Pressure Isolation Valves - Motor operated (e.g.; RHR, LPCS, HPCS, and Feedwater Leakage Control).

Valves: 1E12-F008, 1E12-F009, 1E12-F023, 1E12-F042A, 1E12-F042B, 1E12-F042C, 1E12-F053A, 1E12-F053B, 1E21-F005, 1E22-F004, 1N27-F737, 1N27-F740

Category: A

Class: 1, 2

Function: Provide pressure isolation from high pressure coolant systems (e.g.; Rx. Coolant, Feedwater and other safety-related systems containing low pressure designed components.

Test Requirements: IWV-3411; Test Frequency - Exercise at least once every three months and

IWV-3413; Power operated valves - full stroke time

Basis for Justification: These pressure isolation motor operated valves maintain one of the two high to low pressure barriers during plant operation. Exercising these valves during plant operation would involve a loss of one isolation barrier. The probability of causing an internal loss of coolant accident is significantly increased by exercising these motor operated valves quarterly. Therefore, conformance to the quarterly requirements is impractical for the facility.

Alternate Testing: Exercise valves during cold shutdown.

Acceptable in NRC Safety Evaluation
Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Cold Shutdown Justification

CS-4

System: Reactor Core Isolation Cooling (E51)

Valves: 1E51-F013

Category: A

Class: 1

Function: Provide primary containment isolation and isolation of the RCIC injection to reactor coolant system.

Test Requirements: IWV-3411; Test Frequency - Exercise at least once every three months and

IWV-3413; Power operated valves - full stroke time

Basis for Justification: The RCIC motor operated injection isolation valve is normally closed and interlocked with the turbine steam supply valve to prevent inadvertent opening if the RCIC system is not in operation. System design precluded the installation of a RCIC pump discharge check valve, thus the motor operated injection isolation valve provides a second isolation between high pressure and low pressure RCIC components. Testing of the RCIC injection isolation valve during plant operation would require either defeating the safety interlock, increasing the likelihood of an internal loss of coolant accident, or using the RCIC system to inject into the reactor vessel, which would cause the undesirable effects of nozzle thermal stress cycling and moisture carry-over. Therefore, conformance to the quarterly requirements is impractical for the facility.

Alternate Testing: Exercise valve during cold shutdown.

Acceptable in NRC Safety Evaluation
Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Cold Shutdown Justification

CS-5

System: Nuclear Boiler (B21)

Valves: 1B21-F022A, 1B21-F022B, 1B21-F022C, 1B21-F022D,
1B21-F028A, 1B21-F028B, 1B21-F028C, 1B21-F028D

Category: A

Class: 1

Function: Main Steam Isolation Valves

Test Requirements: IWV-3411; Test Frequency - Exercise at least once every three months and

IWV-3413; Power operated valves - full stroke time

IWV-3415; Fail Safe - at least once every three months

Basis for Justification: Full stroke exercising requires a reduction in power to approximately 80% due to the loss of steam flow from one main steam line to the turbine. Recent industry information indicates that closing these valves with high steam flow in the line may be a large contributing factor in observed seat degradation. The valves are designed for and receive a partial stroke exercise quarterly to verify proper position indication, limit switch actuation and partial fail safe with full steam flow during plant operation. Partial stroke exercising is accomplished by bleeding down the accumulator air supply to the operator. Therefore, conformance to the quarterly requirements is impractical for the facility.

Alternate Testing: Exercise and fail safe test valves during cold shutdown.

Acceptable in NRC Safety Evaluation
Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Cold Shutdown Justification

CS-6

System: Control Rod Drive Hydraulic (C11)

Valves: 1C11-F083

Category: A

Class: 2

Function: Condensate Water to Control Rod Drive Outboard Containment Isolation Valve.

Test Requirements: IWV-3411; Test Frequency - Exercise at least once every three months and

IWV-3413; Power operated valves - Full stroke time

Basis for Justification: Closing of this valve during plant operation would result in a loss of drive and cooling water to the control rods. This would inhibit normal operation of the control rods possibly resulting in a reactor shutdown and/or overheating of the control rods causing equipment damage. This valve fully strokes upon initiation and cannot be partial stroke tested. Therefore, conformance to the quarterly requirements is impractical for the facility.

Alternate Testing: Exercise valve during cold shutdown.

Acceptable in NRC Safety Evaluation Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

CS-7

Cold Shutdown Justification Deleted
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In accordance with NRC
Site Meeting Summary Correspondence
dated May 29, 1991 (Log No. PY-NRR/CEI-0559L)

Cold Shutdown Justification Deleted
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In accordance with NRC
Site Meeting Summary Correspondence
Dated May 29, 1991 (Log No. PY-NRR/CEI-0559L)

Cold Shutdown Justification

CS-9

System: Feedwater Leakage Control (N27)

Valves: 1N27-F739A, 1N27-F739B, 1N27-F742A, 1N27-F742B

Category: C

Class: 2

Function: These valves allow a flowpath to the feed system during feedwater leakage control operations and provide a pressure isolation from the feed system during normal power operations.

Test Requirements: IWV-3521; Test Frequency - Exercise at least once every three months, quarterly.

Basis for Justification: To demonstrate forward flow operability would require opening upstream valves 1N27-F737 and 1N27-F740. These valves are interlocked (feed header pressure must be <35 psig) to prevent either full or partial stroke exercising during normal operation. Therefore, conformance to the quarterly exercise requirement is impractical for the facility.

Alternate Testing: Exercise valves during cold shutdown.

Acceptable in NRC Safety Evaluation Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Cold Shutdown Justification

CS-10

System: Reactor Coolant Pressure Isolation Check Valves (RHR, LPCS, HPCS, and RCIC) of a testable nature.

Valves: 1E12-F041A, 1E12-F041B, 1E12-F041C, 1E21-F006, 1E22-F005, 1E51-F065, 1E51-F066

Category: AC

Class: 1

Function: Provide pressure isolation of the reactor coolant pressure boundary between the high pressure reactor coolant system and other safety-related systems containing low pressure designed components.

Test Requirement: IWV-3521; Test Frequency - Exercise at least once every three months, quarterly.

Basis for Justification: These pressure isolation valves maintain one of the two high to low pressure barriers during plant operation. To exercise these valves during plant operation would involve a loss of one isolation barrier. The possibility of an internal loss of coolant accident is significantly increased by exercising these valves quarterly. Therefore, conformance to the quarterly exercise requirement is impractical for the facility.

The normal closed position verification will be satisfied by obtaining the closed position indicating signal following the open exercise during cold shutdown.

Alternate Testing: Perform valve exercise and normal closed position verification of the valves during cold shutdown.

Acceptable in NRC Safety Evaluation Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Cold Shutdown Justification

CS-11

System: Safety Relief Valve (SRV) Reactor Head Vent and RHR Relief Line to Suppression Pool Discharge Lines

Valves: 1B21-F037A, B, C, D, E, F, G, H, J, K, L, M, N, P, R, S, T, U, V
1B21-F078A, B, C, D, E, F, G, H, J, K, L, M, N, P, R, S, T, U, V
1B21-F040
1E12-F605A and F605B

Category: C

Class: 2, 3

Function: Vacuum breakers ensure that the steam exhausted into the discharge lines equalizes to the environment's pressure.

Test Requirement: IWV-3521; Test Frequency - Exercise at least once every three months, quarterly.

Basis for Justification: The SRV, reactor head vent, and RHR relief line to suppression pool discharge vacuum breakers provide a means for releasing a vacuum developed in the discharge line from condensing steam. The vacuum breakers are normally closed during plant operation. The forward flow exercising of these valves can be verified manually. Exercising these valves during operation would require entry into the drywell and containment. Also, there is no method to prevent actuation or steam seat leakage into the discharge lines placing personnel at risk if exercising was performed. Therefore, conformance to the quarterly exercise requirement during operation would result in a hardship and unusual difficulty without any compensating increase in the level of quality or safety.

Normal closed position verification of these valves will be performed during the manual exercise by witnessing the valves return to the closed position during the cold shutdown exercise.

Alternate Testing: Exercise and perform normal position verification for valves during cold shutdown.

Acceptable in NRC Safety Evaluation
Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Cold Shutdown Justification Deleted
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In accordance with NRC
Site Meeting Summary Correspondence
Dated May 29, 1991 (Log No. PY-NRR/CEI-0559L)

Cold Shutdown Justification

CS-13

System: Nuclear Boiler Head Vent Lines

Valves: 1B21-F001, 1B21-F002

Category: B

Class: 1

Function: Provide a path for venting non-condensible gases from the reactor head region.

Test Requirements: IWV-3411; Test Frequency - Exercise at least once every three months and

IWV-3413; Power Operated Valve - Full stroke time

Basis for Justification: Opening of the 1B21-F001 and 1B21-F002 during operation will allow steam to be released into the drywell equipment drain sump causing a temperature rise, possible damage to the sump level instrumentation and release of radioactive non-condensible gas into the drywell. These valves are passive during operation serving no safety function. They are used during a plant shutdown when the normal reactor vessel vent paths (i.e., main steam lines) are isolated. Therefore, conformance to the quarterly requirements during operation would result in a hardship without any compensating increase in the level of quality and safety.

Alternate Testing: Exercise valves during cold shutdown.

Acceptable in NRC Safety Evaluation
Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Cold Shutdown Justification

CS-14

System: Reactor Water Cleanup System (G33)

Valves: 1G33-F001, 1G33-F004, 1G33-F039, 1G33-F040, 1G33-F053, 1G33-F054

Category: A

Class: 1

Function: To provide containment isolation of the Reactor Water Cleanup System.

Test Requirements: IWV-3411; Test Frequency - Exercise at least once every three months and

IWV-3413; Power Operated Valve - Full stroke time

Basis for Justification: The Reactor Water Cleanup System is inservice during normal plant operation and provides a backup function in post accident cleanup. This system ensures that reactor coolant pH, chlorides, conductivity, and activity are maintained within specified limits. These limits are to prevent the likelihood of exceeding 10CFR100 guidelines or allowing stress corrosion cracking of the stainless steel systems which is important since the facility is currently monitoring indicated feedwater nozzle cracks for size propagation. A closure of any valve during surveillance testing would require the removal of the system from service causing a prolonged system inoperability. Therefore, conformance to the quarterly requirements during operation would result in hardship and unusual difficulty without a compensating increase in the level of quality and safety due to the prolonged loss of operability and a likelihood of causing a Licensee Event Report.

Alternate Testing: Exercise valves during cold shutdown.

Acceptable in NRC Safety Evaluation Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Cold Shutdown Justification

CS-15

System: Main Steam Isolation Valve Leakage Control (E32)

Valves: 1E32-F001A, 1E32-F001E, 1E32-F001J, 1E32-F001N,
1E32-F002A, 1E32-F002E, 1E32-F002J, 1E32-F002N,
1E32-F003A, 1E32-F003E, 1E32-F003J, 1E32-F003N,
1E32-F006, 1E32-F007, 1E32-F008, 1E32-F009

Category: A (1E32-F001A, -F001E, -F001J, -F001N)
B (1E32-F002A, -F002E, -F002J, -F002N), (1E32-F003A, -F003E, -F003J, -F003N) 1E32-F006, 1E32-F007, 1E32-F008, 1E32-F009

Class: 1, 2

Function: MSIV Leakage Control System valves are designed to direct any fission product leakage past the MSIV's to a filtration system after a LOCA. During normal operation these valves provide a boundary between the Main Steam System and the downstream Leakage Control System/Annulus.

Test Requirements: IWV-3411; Test Frequency - Exercise at least once every three months and

IWV-3413; Power Operated Valves - Full Stroke Time

Basis for Justification: These isolation valves receive an isolation signal when steam line pressure exceeds 20 psig. To exercise these valves during plant operation would involve bypassing (defeating) the safety interlock, and could cause possible overpressurization of the MSIV Leakage Control System components, contamination of the annulus (secondary containment) and unnecessarily challenge the AEGTS (an ESF filtration system). Therefore, conformance to the quarterly requirements is impractical for the facility. Exercising of these valves will be performed during cold shutdown, to avoid the undesirable results of testing during power operation with full steam flow and pressure in the Main Steam Lines.

Alternate Testing: Exercise valves during cold shutdown.

Acceptable in NRC Safety Evaluation
Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Cold Shutdown Justification

CS-16

System: Residual Heat Removal System (1E12)

Valves: 1E12-F051A, 1E12-F051B, 1E12-F052A, 1E12-F052B, 1E12-F065A, 1E12-F065B, 1E12-F087A, 1E12-F087B

Category: B

Class: 2

Function: Residual Heat Removal Valves used during steam condensing mode of operation. With the RHR system in standby readiness these valves are normally closed providing a boundary between the RHR and Main Steam systems.

Test Requirements: IWV-3411; Test Frequency - Exercise at least once every three months and

IWV-3413; Power Operated Valves - Full stroke time

IWV-3415; Fail Safe - at least once every three months

Basis for Justification: These valves are closed for all modes of system operation except steam condensing mode. The Residual Heat Removal System, Steam Condensing Mode, is designed as a low pressure operating mode to provide an alternative means of reactor vessel heat removal if the condenser was not available. Attempting to test these valves during normal operation would place a serious transient on the component by exposing the cooler low pressure fluid to the high pressure and temperature reactor steam. These lines are temperature monitored currently to detect system leakage which has been used successfully in the past. Therefore, conformance to the quarterly requirements is impractical for the facility.

Alternate Testing: Exercise valves during cold shutdown.

Acceptable in NRC Safety Evaluation
Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Cold Shutdown Justification Deleted
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In accordance with NRC
Site Meeting Summary Correspondence
Dated May 29, 1991 (Log No. PY-NRR/CEI-0559L)

Cold Shutdown Justification

CS-18

System: Containment Atmosphere Monitoring System

Valves: 1D23-F010A, 1D23-F010B, 1D23-F020A, 1D23-F020B, 1D23-F030A, 1D23-F030B, 1D23-F040A, 1D23-F040B, 1D23-F050

Category: A

Class: 2

Function: Provide instrumentation isolation in case of an instrument line failure to maintain containment integrity.

Test Requirements: IWV-3411; Test Frequency - Exercise at least once every three months and

IWV-3413; Power Operated Valves - Full stroke time

IWV-3415; Fail Safe - At least once every three months

Basis for Justification: The Containment Atmosphere Monitoring System provides highly reliable instrumentation for detecting abnormal conditions in the containment, drywell and the suppression pool, and for monitoring of these areas after postulated accidents. These valves have a normal and accident position as open. Opening and closing of these valves will cause unanalyzed perturbations which may initiate the trip logic associated with the instrumentation being isolated, which could cause a plant shutdown to occur. These valves affect instrumentation for five (5) Emergency Safety Feature Systems and more than ten (10) Limiting Condition of Operation Technical Specifications. Therefore, compliance with the quarterly requirements would result in unusual difficulty without a compensating increase in the level of quality and safety due to risks involved in testing.

Alternate Testing: Exercise valves during cold shutdown.

Acceptable in NRC Safety Evaluation
Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Cold Shutdown Justification

CS-19

Systems: Residual Heat Removal (RHR)

Valves: 1E12-F037A, 1E12-F037B

Category: A

Class: 2

Function: These valves are used during refueling activities to provide an alternate mode of reactor vessel shutdown cooling when reduced turbulence and improved water clarity is necessary.

Test Requirements: IWV-3411; Test Frequency - Exercise at least once every three months and

IWV-3413; Power Operated Valves - Full stroke time

Basis for Justification: These valves (1E12-F037A and 1E12-F037B) provide isolation between the RHR System and the Upper Containment Pool (UCP). A reactor pressure interlock is provided to prevent inadvertent valve opening above 135 psig. Overriding this interlock to test these valves will provide an alternate flow path that would divert flow from the reactor vessel if a LPCI initiation were to occur. Therefore, conformance to the quarterly requirements is impractical for the facility, and would not provide a compensating increase in the level of quality and safety to the plant.

Alternate Testing: Exercise valves during cold shutdown.

Acceptable in NRC Safety Evaluation
Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Cold Shutdown Justification

CS-20

Systems: Nuclear Boiler (B21)

Valves: 1B21-F024A, B, C, D
1B21-F029A, B, C, D
1B21-F036C, D, G, H, J, K, M, N, R, S, U
1B21-F039A, B, E, F, L, P, T, V
1P52-F550
1P57-F524A, B

Category: C and AC

Class: 3

Function: Prevent depressurization of air accumulators on a Loss of Instrument Air and Supply Air for the exercising of the Safety Relief Valves (SRV) and Main Steam Isolation Valves (MSIV). Instrument Air Supply check valve provides a flow of makeup air from instrument air to Non-ADS SRV's and MSIV's Accumulators. Safety-Related Air Supply Check Valve provides a flow of makeup air from the safety-related air receiver tanks to the ADS accumulators.

Test Requirements: IWV-3521; Test Frequency - Exercise at least once every three months, quarterly

Basis for Justification: To adequately exercise the check valves leading to the ADS and non-ADS, SRV's, and the MSIV accumulator check valves would require valve manipulation making the associated SRV and MSIV valves inoperative. Performance of this test requires a drywell entry and would expose personnel to the drywell high neutron flux and a hazardous environment during power operations. Exercise testing of the safety-related air supply and instrument air supply check valves could potentially cause loss of ADS or Non-ADS SRV'S and MSIV accumulator air supply. Therefore, compliance with the exercise requirements would result in unusual difficulty without a compensating increase in the level of quality and safety due to the increased radiation exposure and safety concerns created.

Alternate Testing: Exercise valves during cold shutdown.

Acceptable in NRC Safety Evaluation
Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Cold Shutdown Justification

CS-21

Systems: ECCS Waterleg Pump Check Valves (RHR, LPCS, HPCS, AND RCIC)

Valves: 1E12-F084A, 1E12-F084B, 1E12-F084C, 1E12-F085A, 1E12-F085B, 1E12-F085C, 1E21-F033, 1E21-F034, 1E22-F006, 1E22-F007, 1E51-F061, 1E51-F062

Category: C

Class: 2

Function: To provide keep fill water for Emergency Core Cooling System discharge piping preventing possible water hammer.

Test Requirements: IWV-3521; Test Frequency - Exercise at least once every three months, quarterly

Basis for Justification: Forward flow exercising of these check valves would require system alignment for a flow path and measurement of an established flow rate. Waterleg pump testing accomplishes both items, therefore the pump cold shutdown justification is applicable to these valves. The waterleg pumps were designed to be inservice to maintain functional systems (discharge/suction piping) pressurized. The waterleg pump normal discharge path must be redirected to perform safety-related pump testing. This would require racking out of the ECCS main pump breakers (RHR, LPCS, and HPCS) or isolation of the pump (RCIC) to prevent system damage due to waterhammer or cavitation upon receipt of an actuation signal. Also, a fill and vent of each ECCS System would be required after testing, prolonging the time these systems are in a non-standby readiness mode. Therefore, conformance with the exercise requirements is impractical for the facility.

Alternate Testing: Exercise valves during cold shutdown, in conjunction with the waterleg keepfill pump operability test.

Acceptable in NRC Safety Evaluation Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Cold Shutdown Justification

CS-22

Systems: Reactor Core Isolation Cooling System (RCIC)

Valves: 1E51-F079, 1E51-F081

Category: C

Class: 2

Function: These RCIC check valves serve various functions to allow for proper operation of the RCIC system turbine. Each valve's function will be described briefly in the Basis for Justification.

Test Requirements: IWV-3521; Test Frequency - Exercise at least once every three months, quarterly

Basis for Justification: The exercise and normal (closed) position verification of 1E51-F079 and 1E51-F081 will be performed during cold shutdown due to restrictions on system operability and radiation levels. The RCIC Vacuum Breaker Check Valves act as an integral unit (i.e., series pair) thus ensuring; the turbine exhaust steam line pressure remains equalized and isolation of the containment atmosphere from the turbine's exhaust steam. Both the exercise and closed position verification require significant test durations for equipment; installation, testing and removal. Additionally, these check valves meet the NRC staff's position for series pair. Valve redundancy is provided due to the harsh/volatile operating environment and closure of only one valve assures satisfactory performance of their intended safety function. These valves are category "C" (no seat leakage test) because the unwanted steam seat leakage is directed into the controlled containment environment. Finally, the failure of both valves to pass the closure verification would require both valves to be repaired or replaced, as necessary.

CS-22 (Continued)

Each test method requires personnel to be located in high radiation fields for prolonged periods while the plant is operating at power and requires the RCIC system to be removed from service for the duration of the test. Therefore, compliance with the quarterly exercise requirement would result in unusual difficulty and hardship without a compensating increase in the level of quality and safety due to the increased exposure of personnel to radiation and the prolonged period of inoperability of a system required for safe shutdown.

Alternate Testing: Perform valve normal position verification and the exercise of 1E51-F079/F081 during cold shutdown.

Acceptable in NRC Safety Evaluation Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Cold Shutdown Justification

CS-23

System: Nuclear Boiler (B21)

Valves: 1B21-R011A-F, 1B21-F011A-G, 1B21-R011B-F, 1B21-R011B-G, 1B21-R011C-F, 1B21-R011C-G, 1B21-R011D-F, 1B21-R011D-G

Category: AC

Class: 2

Function: These check valves provide the flowpath for CRD water to the RPV level sensing line reference leg preventing the buildup of non-condensible gases.

Test Requirement: IWV-3521; Test Frequency - Exercise at least once every three months, quarterly

Basis for Justification: These valves are the safety interface between the RPV level reference leg and the non-safety portion of the CRD system. The instrument reference leg purge system provides a continuous water flow of approximately 0.002 gpm up to 0.020 gpm to prevent creation of a non-conservative instrument error. The instrument error is attributed to gases coming out of solution during a rapid depressurization event. The check valve will have the obturator movement demonstrated by exercising the valve and observing that the obturator travels to the seat on reversal of flow and opens to the position required to fulfill its function. The safety significance of this system precludes the justification for testing during normal plant operation. Therefore conformance with the exercise requirements during normal operation is impractical for the facility.

Alternate Testing: Exercise valves during cold shutdown.

Operation and Maintenance (Part 10) Justification #

OM(10)-1

(Previously VR-15)

System: Penetration Pressurization (P53)

Valves: 1P53-F601A, 1P53-F601B, 1P53-F602A, 1P53-F602B, 1P53-F633A, 1P53-F633B

Category: A, AC

Class: 2

Function: These valves serve as the air accumulator supply check valves for the drywell air lock door seals. The drywell air lock door equalizing ball valves allow for air lock pressure equalization during operation.

Test Requirement: IWV-3411; Test Frequency - Exercise at least once every three months, quarterly.

IWV-3521; Test Frequency - Exercise at least once every three months, quarterly.

Basis for Relief: These valves open to charge the seal accumulators following seal pressurization. The valves shall be exercised during the opening and closing of the air lock doors during cold shutdown per Technical Specifications for the drywell airlock if not performed within the previous 6 months during verifications that only one door of the drywell airlock can be opened at a time. Failure of the check valve to open after using the airlock door would be identified by a limit switch indication that one or both doors are open (i.e., the unsafe condition) and ball valve failure would be detected by the inability to equalize pressure across the airlock door during cycling. Since entrance into the drywell is not necessary or desirable during each cold shutdown satisfying the 6 months frequency versus quarterly is appropriate.

This alternate testing is acceptable for implementation in accordance with OM-10 pursuant to 10CFR50.55a(f)(4)(iv) if the related requirements of OM-10 are implemented. The related requirements for exercising during refueling outage paragraphs 4.2.1.2(e) & (h) and 4.3.2.2(e) & (h) would satisfy this exercise duration even though technical specification of 6 months is more restrictive.

Operation and Maintenance (Part 10) Justification #

OM(10)-1 (Continued)

(Previously VR-15)

Alternate Testing: Exercise valves by seal pressurization and equalizing pressure across both drywell airlock door during normal door cycling during cold shutdown if not performed within the previous 6 months.

Applicable related requirements contained in OM-10 paragraphs 4.2.1.2(e) & (h) and 4.3.2.2(e) & (h) shall as a minimum be met.

Use of OM-10 Alternate Testing Requirement Was Approved in NRC Safety Evaluation Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Operation and Maintenance (Part 10) Justification #

OM(10)-2

(Previously Approved as VR-19)

System: As Applicable

Valves: Containment Isolation Valves

Category: A and AC

Class: 1 and 2

Function: These valves provide the primary containment barrier during an accident to minimize the consequences of the accident.

Test Requirement: IWV-3426; Analysis of Leakage Rates

Leakage rate measurements shall be compared with previous measurements and with the permissible leakage rates specified by the plant owner for a specific valve.

IWV-3427(a) Corrective Action

(a) Valves with leakage rates exceeding either the values specified by the owner or those rates given in IWV-3426 shall be replaced or repaired.

Basis for Relief: Appendix J, Type C, Local Leak Rate Testing is interested in verifying the inner and outer containment barrier will function properly during an accident. When designing these barriers the testing considerations were to verify leak tightness of the barrier (not a single valve) which may consist of numerous valves. Penetration barrier testing verifies seat leakage, as the design allows, of a valve or numerous valves. The leakage rate for barriers with more than one valve being tested shall be assigned by the penetration barrier size or a realistic limit for the smallest valve undergoing testing. Failure to meet the Acceptance Criteria shall require compliance with IWV-3427(a) for the penetration barrier and identification of the leakage pathway.

The testing of these valves will comply with 10CFR50, Appendix J requirement of performing the test by local pressurization. The pressure shall be applied in the same direction as that when the valve would be required to perform its safety function, unless it can be determined that the results from the tests for a pressure applied in a different direction will provide equivalent or more conservative results.

Valve seat leakage shall be determined by measuring the feed rate required to maintain test pressure in the test volume, provided the total apparent leakage rate is charged to the valve combination being tested. The leakage test is to be performed with the pressure differential in the same direction as when the valves are performing their safety function with the exceptions allowed within Section XI, Appendix J, or USAR. The leakage rate measurement shall be compared to the permissible leakage rates specified by PNPP for the valve combination. Finally, when the valve combination leakage exceeds the permissible leakage rate the combination shall be declared inoperable and either repaired or replaced with a retest demonstrating acceptable operation and leakage.

Penetration barriers tested are tabulated into two distinct groups. Table 1 is titled Barrier Leakage Limited To The Smallest Valve Size and Table 2 is titled Barrier Leakage Limited To The Penetration Size. Table 2 penetration barriers must be tested as a group due to 10CFR50, Appendix J required test pressure differential being applied in the same direction as the accident pressure differential. Also, a justification is provided in Table 2 for why the assigned leakage provides an acceptable level of safety.

This alternate testing is acceptable for implementation in accordance with OM-10 pursuant to 10CFR50.55a(f)(4)(iv) if the related requirements of OM-10 are implemented. The related requirement for group leakage testing is paragraph 4.2.2.3.

Alternate Testing: The leakage rate shall be assigned to the tested penetration barrier vs. a specific valve. Valves affected by this request are:

Applicable related requirement contained in OM-10 paragraph 4.2.2.3 shall be met.

Use of OM-10 Alternative Testing Requirement Was Identified in NRC Safety Evaluation Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L) with this OM being approved as a relief request in the same NRC Safety Evaluation.

Table 1 - Barrier Leakage Limited to the Smallest Valve Size

Penet.	Barrier Valves Tested
P115	1E12-F102, 1E51-F077
P123	1E12-F023, 1E51-F013
P305	1P53-F010, 1P53-F030
P305	1P53-F015, 1P53-F035
P305	1P53-F035, 1P53-F070
P305	1P53-F536, 1P53-F570
P312	1P53-F020, 1P53-F040
P312	1P53-F025, 1P53-F045
P312	1P53-F045, 1P53-F075
P312	1P53-F541, 1P53-F571
*P313	1M14-F040, 1M14-F045, 1M14-F190
*P313	1M14-F040, 1M14-F045, 1M14-F195
*P314	1M14-F085, 1M14-F090, 1M14-F200
*P314	1M14-F085, 1M14-F090, 1M14-F205

* Due to the system piping/valve configuration, penetration P313 and P314 are tested with 3 barrier valves in the test boundary rather than 2. However, the allowable leakage of the smallest valve will still be assigned to the penetration.

Table 1 - Barrier Leakage Limited to the Smallest Valve Size (Cont.)

Penet.	Barrier Valves Tested
P318	1M51-F210B, 1P87-F074
P318	1M51-F230B, 1P87-F077
P318	1M51-F240B, 1P87-F071
P318	1M51-F250B, 1P87-F065
P423	1B21-F016, 1B21-F019
P429	1P87-F083, 1P87-F264

Table 2 - Barrier Leakage Limited to the Penetration Size

Penet.	Penet. Barrier Valves Tested	Acceptable Leakage Limit Justification
P105	1E12-F011A, 1E12-F024A,	The smallest valves limit would be less than a third the current penetration limit.
	1E12-F609, 1E21-F011, 1E21-F012	This water tested penetration is an augmented 10CFR50 Appendix J program to identify gross water loss from the 30 day water supply. The penetration limit is less than a fourth of the allowable to assure the facility operates within the safety limits, thus providing an acceptable level of safety.

Penet.	Penet. Barrier Valves Tested	Acceptable Leakage Limit Justification
P106	1E51-F068, 1E51-F077	The smallest valves limit would be approximately a third the current penetration limit and any leakage from this valve is into a closed system whose integrity is verified during periodic Type "A" tests and during system leak tests. The penetration limit is less than a nineteenth the overall containment Type "C" limit and approximately half the secondary containment bypass leakage limit, thus providing an acceptable level of safety.
P107	1E12-F025A, 1E12-F055A, 1E21-F018	The smallest valves limit would be less than half the current penetration limit. These valves are relief valves receiving a reverse seat leakage test. Each valve is relief tested in accordance with the ASME Code, Section XI. The discharge of each relief is into a closed system whose integrity is maintained and verified during periodic Type "A" tests and during system leak tests. The penetration limit is less than one thirty-sixth the overall containment Type "C" limit and approximately half the secondary containment bypass leakage limit, thus providing an acceptable level of safety.
P122	1B21-F022C, 1B21-F028C, 1B21-F067C, 1E21-F001J	This containment penetration barrier limit is established per technical specifications and assures the necessary integrity of the system and components is maintained, that facility operation will be within safety limits and the Limiting Condition of Operation will be met. The penetration is pressurized between the inner and outer barrier with the smaller valves leakage being directed into the secondary containment (annulus) or into the main condenser (preventing direct leakage to the atmosphere). Thus, this leakage limit provides an acceptable level of quality and safety.
P124	1B21-F022A, 1B21-F028A, 1B21-F067A, 1E32-F001A	Same As P122.

Penet.	Penet. Barrier Valves Tested	Acceptable Leakage Limit Justification
P407	1E12-F011B, 1E12-F024B	Same as P105.
P409	1E22-F012, 1E22-F023, 1E22-F035	The smallest valves limit would be approximately a third the current penetration limit. Leakage from any valve is into a safety-related system which receives periodic system leak test and has a safety-related keep fill system maintaining system pressure at approximately four times the test pressure. The penetration limit is less than a nineteenth the overall containment Type "C" limit and approximately half the secondary containment bypass leakage limit, thus providing an acceptable level of safety.
P415	1B21-F022D, 1B21-F028D, 1B21-F067D, 1E32-F001N	Same as P122.
P416	1B21-F022B, 1B21-F028B, 1B21-F067B, 1E32-F001E	Same as P122.
P421	1E12-F009, 1E12-F550	These valves are parallel to the test pressure differential with the smallest valve being a simple check valve servicing a thermal relief design function. This barrier is tested with both air and water with the check valves sizing for other than minimizing seat leakage. They provide the inner pressure barriers for the penetration with its limit being derived from technical specifications. These limits assure the necessary quality of the system and component is maintained, that facility operation will be within the safety limits and Limiting Condition of Operation will be met, providing an acceptable level of safety.

Penet.	Penet. Barrier Valves Tested	Acceptable Leakage Limit Justification
P422	1E51-F063, 1E51-F064, 1E51-F076	Testing of this penetration is by pressurizing between both the inner and outer barriers. The smallest valves limit would be less than a third the current penetration limit and this valve services the design function of a normally open steam drain bypass and warm-up line. The penetration limit is less than a twentieth the overall containment Type "C" limit. The assigning the penetration limit when testing between the inner and outer barrier provides conservatism allowing the proposed alternative to provide an acceptable level of quality and safety.
P429	1E12-F005, 1E12-F025B, 1E12-F025C, 1E12-F055B	Same as P107.

Operation and Maintenance (Part 10) Justification #

OM(10)-3

(Previously VR-27)

System: Penetration Pressurization (P53)

Valves: 1P53-F572A, 1P53-F572B, 1P53-F573A, 1P53-F573B, 1P53-F587A, 1P53-F587B, 1P53-F588A, 1P53-F588B, 1P53-F601A, 1P53-F601B, 1P53-F602A, 1P53-F602B

Category: AC

Class: 2

Function: The valves serve as the air accumulator supply check valves for the air lock door seals. They prevent excessive leakage upon loss of supply air.

Test Requirements: IWV-3424; Seat Leakage Measurement
Valve seat leakage may be determined by one of the following:

a) measuring leakage through a downstream telltale connection or

b) by measuring the feed rate required to maintain pressure.

IWV-3426; Analysis of Leakage Rates
Leakage rate measurements shall be compared with previous measurements and with the permissible leakage rates specified by the Owner for a specific valve.

IWV-3427(a); Corrective Action

a) Valves with leakage rates exceeding either the values specified by the Owner or those rates given in IWV-3426 shall be replaced or repaired.

Basis for Justification: These valves serve as the pressure boundary to ensure adequate seal pressure is maintained upon loss of the Instrument Air (P52) supply. The inflatable seal system pressure boundary is verified operable by conducting a Seal Pneumatic System Leak Test and verifying that system pressure does not decay more than 1.5 psig from 90 psig within 24 hours. Satisfactory completion of the decay pressure test verifies the valve leak rate test requirements. The

valve seat leakage shall be determined by measuring pressure decay in the test volume with the apparent leakage rate being charged to the valve combination being tested.

The normal closed position verification will be satisfied by obtaining a satisfactory pressure decay test. The check valves will have the obturator movement demonstrated by exercising the valve and observing that the obturator travels to the seat on reversal of flow. Verifying the normal position by other means than a pressure decay test is not practical. This test makes the airlocks inoperable for an extended period of time, thus restricting access to the containment. Therefore, performance of the normal position verification on other than the technical specification frequency would result in a hardship without a compensating increase in the level of safety due to a prolonged restriction of access, causing a possible safety concern and unnecessary wear of sealing parts.

This alternate testing is acceptable for implementation in accordance with OM-10 pursuant to 10CFR50.55a(f)(4)(iv) if the related requirements of OM-10 are implemented. The related requirements include group leakage testing paragraph 4.2.2.3 and exercise duration paragraphs 4.3.2.2(e) & (h).

Alternate Testing: Seat leakage testing of valves will be by conducting a seal pneumatic system leak test per technical specifications which also will perform the normal closed position verification.

Applicable related requirements contained in OM-10 paragraphs 4.2.2.3 and 4.3.2.2(e) & (h) shall as a minimum be met.

Use of OM-10 Alternative Testing Requirements Was Approved in NRC Safety Evaluation Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Operation and Maintenance (Part 10) Justification #

OM(10)-4

(Previously VR-37)

System: Drywell (M16) and Containment Vacuum Relief (M17) Systems

Valves: 1M16-F020A, 1M16-F020B, 1M17-F010, 1M17-F020, 1M17-F030, 1M17-F040

Category: AC

Class: 2

Function: These primary containment vacuum relief valves are designed to protect a vessel (drywell/containment) from adverse conditions. The valves will maintain their associated vessel's contained pressure approximately equal to or greater than its surrounding environment's pressure.

Test Requirement: IWV-3522(b); Normally Closed Valves - for vacuum breaker valves the exerciser force or torque delivered to the disk may be equivalent to the desired functional pressure differential force.

Basis for Justification: These vacuum breakers have a unique design which allows remote exercising using a testable pneumatic actuator. Their design includes a position indicator and annunciator circuitry to remotely verify that the disk moves freely off the seat, thus minimizing the need for personnel access to the containment reducing that amount of radiation exposure (ALARA). Exercising by use of the testable (pneumatic) mechanism shall comply with IWV-3521 test frequency requirements. The measurement of actual force to verify that the torque or force for opening is equivalent to the desired functional pressure differential force shall be performed as set pressure verification for vacuum relief valves.

The Operation and Maintenance (1987) Part 1 - Requirements of Inservice Performance Testing of Nuclear Power Plant Pressure Relief Devices puts forth specific requirements for Primary Containment Vacuum Relief Valves paragraph 1.3.4.3 and Periodic Testing Vacuum Relief Valves paragraph 3.3.2.3. OM Part 10 paragraph 4.3.1 Safety Valve and Relief Valve Test states that safety and relief valves shall meet the inservice test requirements of Part 1.

Operation and Maintenance (Part 10) Justification #

OM(10)-4

This alternate testing is acceptable for implementation in accordance with OM-10 pursuant to 10CFR50.55a(f)(4)(iv) if the related requirements of OM-10 are implemented. The related requirement for testing is paragraph 4.3.1. This paragraph invokes the testing requirements of paragraphs 1.3.4.3 and 3.3.2.3 per OM Part 1.

Alternate Testing: Exercise these valves once every 6 months verifying open and close capability, set pressure, and performance of position sensing accessories.

Applicable related requirement contained in OM-10 paragraph 4.3.1 and OM-1 paragraphs 1.3.4.3 and 3.3.2.3 shall be met.

Use of OM-10 Alternative Testing Frequency Was Approved in NRC Safety Evaluation Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Refueling Outage Justification #

RO-1

System: Residual Heat Removal System

Valves: 1E12-F103A, 1E12-F103B, 1E12-F104A, 1E12-F104B

Category: C

Class: 2

Function: These simple check valves are in the vent leak off line for the RHR heat exchanger relief valves and relief valve discharge header isolation crosstie.

Test Requirement: IWV-3521; Test Frequency - exercise at least once every three months, quarterly.

Basis for Justification: These check valves are an integral part of the ECCS Relief Valve Discharge Header. Exercise testing and normal closed position verification for these valves involves the potential for pressurizing the ECCS Relief Valve Discharge Header. This would result in increasing back pressure to the relief valves vented to this common header. Thus this test cannot be performed at a quarterly frequency during operation or during cold shutdown without adversely affecting the operability of all three LPCI subsystems, the low pressure core spray system, as well as the RHR shutdown cooling mode of operation. The PNPP Technical Specifications do not permit this condition unless the plant is in OPERATIONAL CONDITION 5 with the reactor vessel head removed, the cavity flooded, the steam dryer storage/reactor well gate removed and water level in the upper containment pools within required limits.

(Reference piping configuration attached)

The NRC staff has previously approved similar surveillance interval extensions based on ASME Operations and Maintenance Standard Part 10 (OM-10), Inservice Testing of Valves In Light-Water Reactor Power Plants.

Refueling Outage Justification #

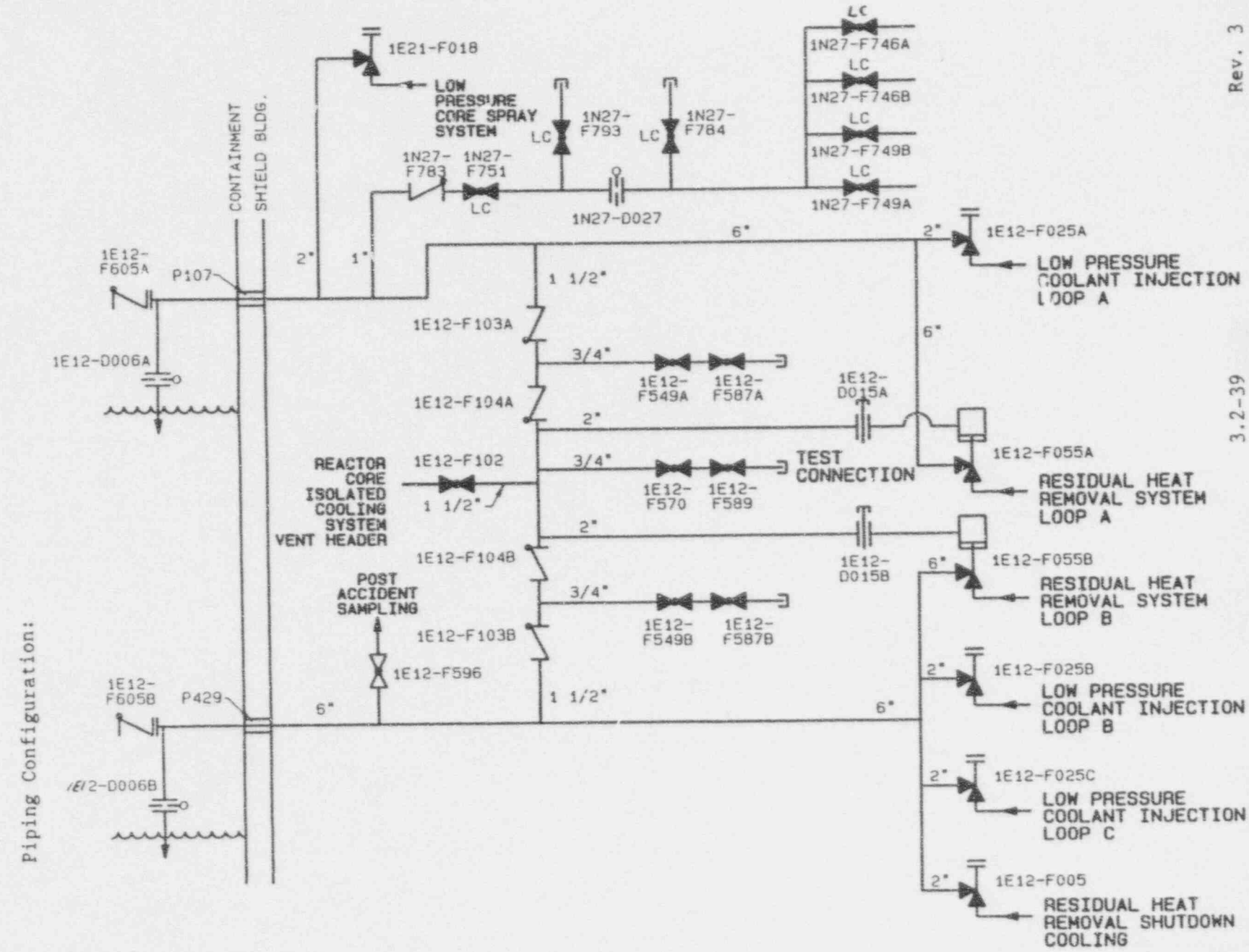
RO-1 (Continued)

Alternate Testing: Exercise open and perform normal position verification for these valves during refueling outages. Obturator movement in the open direction is observed by a direct indication such as test medium flow, and in the closed direction by seat leakage measurement or other positive means.

Applicable requirements contained in OM-10 Paragraph 4.3.2 shall be met.

Use of OM-10 Alternative Testing Frequency Is An Approved Alternative. This Justification Being Submitted to NRC (Log No. PY-CEI/NRR-1739L)

Piping Configuration:



Refueling Outage Justification #

RO-2

System: As applicable

Valves: 1E51-F030, 1P45-F575, 1E21-F501

Category: C

Class: 2, 3

Function: These complex check valves perform different system functions which are described within the Basis for Justification.

Test Requirement: IWV-3521, Test Frequency - exercise at least once every three months, quarterly.
IWV-3522, Exercise Procedure

Basis for Justification: These valves are of a unique design called Duo-Check. The Duo-Check design is constructed as an integral unit permitting removal and installation in the same manner as an ordinary pipe orifice. The valve's removal for inspection and exercising is accomplished without any disassembly of the obturator or its actuating components. The exercise of a Duo-Check valve is similar to other check valves such as vacuum breakers whose obturator is exposed to permit direct observation.

1E51-F030
1E51-F030 is a check valve located in the supply line from the suppression pool (backup source) for the RCIC system. The preferred source of water for the RCIC system is the condensate storage tank (CST). PNPP maintains the RCIC system as a "clean" system with minimal internal contamination by preferentially using the CST as the water supply during normal RCIC system operation including testing. Minimizing RCIC system contamination supports ALARA goals as well as reduces radwaste generation resulting from system flushes.

These operational considerations preclude establishment of flow in the involved line during plant operation, cold shutdowns or refueling outages. The system would have to be substantially redesigned and modified to perform the code required testing. Valve removal and inspection with exercising to assess operational readiness provides a reasonable alternative to the Code test method.

At a refueling frequency valve removal and manual exercising with closure verification ensures operational readiness. Proper orientation of this valve is achieved through direct visual observation. Visual verification of orientation upon reinstallation is sufficient to ensure operability and is the only practical method since initiation of flow through this line is undesirable.

1P45-F575

1P45-F575 is a check valve in a line providing an alternative emergency source of water from the Emergency Service Water (ESW) system (i.e., raw untreated water from Lake Erie) for the RHR system. This valve is one valve in a series of three normally closed valves. Flow through this line is extremely undesirable except under actual emergency conditions. This emergency line-up is never expected to be used.

These operational considerations preclude establishment of flow in the involved line during plant operation, cold shutdowns or refueling outages. The system would have to be substantially redesigned and modified to perform the code required testing. Valve removal and inspection with exercising to assess operational readiness provides a reasonable alternative to the Code test method.

At a refueling frequency valve removal and manual exercising with closure verification ensures operational readiness. Proper orientation of these valves is achieved through direct visual observation. Visual verification of orientation upon reinstallation is sufficient to ensure operability and is the only practical method since initiation of flow through this line is undesirable.

1E21-F501

1E21-F501 is a check valve in the LPCS minimum flow and test return to the suppression pool. This valve is exercised open quarterly by obtaining proper LPCS flow. The piping configuration does not include isolation capability downstream of the check valve, precluding closure verification without installation of a blind flange. Installation of the blind flange requires extensive preparation, equipment staging and would result in a significant period of inoperability of the LPCS (estimated 2 - 3 days). Therefore, no suitable method is available to verify this valve's closed position during operation or cold shutdown.

Although the possibility exists to perform this reverse flow test during refueling outages, the test requires expenditure of significantly more resources than simply removing the valve for exercise testing. Valve removal and inspection with exercising to assess its operational readiness provides a reasonable alternative to the Code test method. Currently, this valve is selected for periodic removal and testing in response to NRC Bulletin 83-03, Check Valve Failures In Raw Water Cooling Systems of Diesel Generators.

At a refueling frequency valve removal and manual exercising including closure verification ensures operational readiness. Visual verification of proper orientation during installation and verification of flow after installation ensures operability.

The NRC staff has previously approved similar surveillance interval extensions pursuant to 10 CFR 50.55a(f)(4)(iv), based on ASME Operations and Maintenance Standard Part 10 (OM-10), Inservice Testing of Valves In Light-Water Reactor Power Plants. 10 CFR 50.55a(f)(4)(iv) requires meeting related requirements from OM-10. These related requirements for Class C Valves are identified as OM-10, Paragraph 4.3.2.

OM-10, Paragraph 4.3.2.4(c) permits valve disassembly as an alternative to observing obturator movement.

Alternate Testing: At a refueling frequency each valve is removed and manually exercised including closure verification. Visual verification of proper orientation is performed upon reinstallation. For 1E21-F501 only, verification with flow is performed after installation.

Applicable related requirements contained in OM-10, Paragraph 4.3.2 shall be met.

Use of OM-10 Alternative Testing Frequency Is An Approved Alternative. This Justification Was Submitted To NRC (Log No. PY-CEI/NRR-1739L)

Refueling Outage Justification #

RO-3

(Previously VR-7)

System: Nuclear Closed Cooling Water System (P43)

Valves: 1P43-F055, 1P43-F140, 1P43-F215, 1P43-F355, 1P43-F400, 1P43-F410

Category: A (1P43-F055, 1P43-F140, 1P43-F215)
B (1P43-F355, 1P43-F400, 1P43-F410)

Class: 2

Function: Containment (i.e., drywell and primary) isolation valves for cooling water to the reactor recirculation coolant pumps and other safety-related systems.

Test Requirements: IWV-3411; Test Frequency - Exercise at least once every three months.

IWV-3413; Power operated valves - Full stroke time.

Basis for Justification: These valves are the inlet and outlet isolation valves for nuclear closed cooling water. Closing these valves would result in a loss of cooling water to the reactor recirculation pumps and motors causing serious damage to the equipment. The recirculation pumps are used during all modes of operation except for refueling to prevent reactor vessel water stratification. Therefore, conformance to the quarterly and cold shutdown requirements are impractical for the facility.

This alternate testing is acceptable for implementation in accordance with OM-10 pursuant to 10CFR50.55a(f)(4)(iv) if the related requirements of OM-10 are implemented. The related requirements for exercising during refueling outage are paragraphs 4.2.1.2(e) & (h).

Refueling Outage Justification #

RO-3 (Continued)

Alternate Testing: Exercise valves during cold shutdowns when both recirculation pumps are secured or each refueling outage. However, recirculation pumps need not be secured solely for the purpose of testing.

Applicable related requirements contained in OM-10 paragraphs 4.2.1.2(e) & (h) shall be met.

Use of OM-10 Alternative Testing Frequency Was Approved in NRC Safety Evaluation Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Refueling Outage Justification #

RO-4

(Previously VR-23)

System: Reactor Water Cleanup (G33)

Valves: 1G33-F052A, 1G33-F052B

Category: C

Class: 2

Function: Normal return flow path for Reactor Water Cleanup (RWCU) water to the reactor vessel via feedwater.

Test Requirements: IWV-3521; Test Frequency - Exercise at least once every three months, quarterly.

Basis for Justification: These simple check valves are within the normal flowpath for reactor water cleanup with a return to the feedwater system. The current test method requires access to the steam tunnel which is inaccessible during power operations and a high radiation and highly contaminated area during cold shutdowns. Also, test requires the isolation and venting of RWCU return line to the reactor vessel (via the feedwater system). The RWCU system is necessary for cleanup and chemistry control caused by transients (i.e., shutdowns) and loss of this capability could prolong any shutdown. Therefore, testing during operation and cold shutdowns would result in a hardship without a compensating increase in the level of safety due to an increased exposure to radiation and possibly prolonging the plants return to power because of inadequate chemistry control.

This alternate testing is acceptable for implementation in accordance with OM-10 pursuant to 10CFR50.55a(f)(4)(iv) if the related requirements of OM-10 are implemented. The related requirements for exercising during refueling outage are paragraphs 4.3.2.2(e) & (h).

Refueling Outage Jus.ification #

RO-4 (Continued)

Alternate Testing: Exercise and perform a normal position verification during refueling outage.

Applicable related requirements contained in OM-10 paragraphs 4.3.2.2(e) & (h) shall be met.

Use of OM-10 Alternative Testing Frequency Was Approved in NRC Safety Evaluation Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Refueling Outage Justification #

RO-5

(Previously VR-40)

System: Nuclear Boiler

Valves: 1B21-F036C, D, G, H, J, K, M, N, R, S

Category: C

Class: 3

Function: To prevent depressurization of air accumulators on a loss of instrument air to allow exercising the non-ADS SRV's.

Test Requirement: IWV-3521; Test Frequency - Exercise at least once every three months, quarterly.

Basis for Justification: To adequately verify the normal closed position of the non-ADS accumulator supply check valves on a quarterly or cold shutdown frequency, access is required into the drywell for test equipment installation and a depressurization of instrument air. Performance of this test during operation would expose personnel to high neutron radiation. During Cold Shutdowns personnel would still experience unnecessary radiation exposure. It would also make the instrument air system (which supplies engineered safety features systems) to the containment and drywell inoperative for an extended period of time. Therefore, testing for normal closed position verification during other than a refueling outage would result in a hardship without a compensating increase in the level of safety due to the aforementioned factors.

This alternate testing is acceptable for implementation in accordance with OM-10 pursuant to 10CFR50.55a(f)(4)(iv) if the related requirements of OM-10 are implemented. The related requirements for exercising during refueling outage are paragraphs 4.3.2.2(e) & (h).

Refueling Outage Justification #

RO-5 (Continued)

Alternate Testing: Perform the normal closed position verification during refueling outages.

Applicable related requirements contained in OM-10 paragraphs 4.3.2.2(e) & (h) shall be met.

Use of OM-10 Alternative Testing Frequency Was Approved in NRC Safety Evaluation Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Refueling Outage Justification #

RO-6

(Previously VR-42)

System: Fire Service Carbon Dioxide (P54)

Valve: 1P54-F1098

Category: AC

Class: 2

Function: This valve is the inboard containment isolation valve for the Recirculation Pump Carbon Dioxide System. Upon sensing a fire (heat) the CO2 is designed to extinguish the fire by releasing a measured amount of carbon dioxide to the affected area.

Test Requirement: IWV-3521; Test Frequency - Exercise at least once every three months, quarterly.

Basis for Justification: To adequately exercise the carbon dioxide supply check valve requires isolation of the penetration which in turn would require an alternate method of extinguishing a possible fire (local CO2 fire extinguishers) being available. Access to the drywell is not available during operation or during all normal cold shutdowns, to stage the alternate method of extinguishment. Therefore, testing to exercise the check valve other than every refueling outage, would result in a hardship and unusual difficulty without a compensating increase in the level of quality and safety.

This alternate testing is acceptable for implementation in accordance with OM-10 pursuant to 10CFR50.55a(f)(4)(iv) if the related requirements of OM-10 are implemented. The related requirements for exercising during refueling outage are paragraphs 4.3.2.2(e) & (h).

Alternate Testing: Exercise valve during refueling outage.

Applicable related requirements contained in OM-10 paragraphs 4.3.2.2(e) & (h) shall be met.

Use of OM-10 Alternative Testing Frequency Was Approved in NRC Safety Evaluation Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Refueling Outage Justification #

RO-7

Systems: Reactor Core Isolation Cooling System (RCIC)

Valves: 1E51-F021, 1E51-F040

Category: C

Class: 2

Function: These RCIC check valves serve various functions to allow for proper operation of the RCIC system, both turbine and pump. Each valve's function will be described briefly in the Basis for Justification.

Test Requirements: IWV-3521; Test Frequency - Exercise at least once every three months, quarterly

Basis for Justification:

The normal (closed) position verification of 1E51-F021 will be performed during refueling outage due to restrictions on system operability and radiation levels. The RCIC Pump Minimum Flow Check Valve allows for pump minimum flow when operating in a shutoff head condition and rapid penetration isolation on loss of pump prior to closure of the containment isolation valve. The closed position verification requires a significant test duration for equipment; installation, testing and removal.

The normal (closed) position verification of 1E51-F040 will be performed during refueling outage due to restrictions on system operability and radiation levels. The RCIC Turbine Exhaust Line Check Valve allows for turbine exhaust steam to be transferred into the suppression pool as part of the heat cycle and rapid penetration isolation on loss of turbine prior to closure of the containment isolation valve. The closed position verification requires a significant test duration for equipment; installation, testing and removal.

These check valves are located in the RHR "A" Heat Exchanger Room. Accessing the valves for testing requires entering a high radiation area during normal plant operation or cold shutdown with RHR "A" Loop in shutdown cooling mode of operation. The closure verification is performed by utilizing the standard seat leakage techniques which will require an impairment of a fire barrier door for the test duration.

Refueling Outage Justification #

RO-7 (Continued)

This alternate testing is acceptable for implementation in accordance with OM-10 pursuant to 10CFR50.55a(f)(4)(iv) if the related requirements of OM-10 are implemented. The related requirement for exercising during refueling outage are paragraphs 4.3.2.2(e) & (h) and closure verification per paragraph 4.3.2.4(a).

Paragraph OM-10 recognizes the limitations of performing testing during power operations and cold shutdown outages and allows testing to be performed during refueling outages for those valves which cannot be practically exercised otherwise. This testing is not practical to perform during cold shutdown outages because the installation and removal of test equipment could delay plant startup.

Alternate Testing: Perform the normal closed position verification during refueling outages.

Applicable related requirements contained in OM-10 paragraphs 4.3.2.2(e) & (h) and 4.3.2.4(a) shall be met.

Use of OM-10 Alternative Testing Frequency Is An Approved Alternative. This Justification Being Submitted To NRC

Refueling Outage Justification #

RO-8

System: Combustible Gas Control System

Valves: 1M51-F531A, 1M51-F531B, 1M51-F532A, 1M51-F532B, 1M51-F618A, 1M51-F618B

Category: C

Class: 2

Function: These sample line check valves allow automatic draining of condensate in sample lines and isolation to perform a localized sample.

Test Requirements: IWV-3521; Test Frequency - Exercise at least once every three months.

Basis for Justification: These sample line drain check valves are located; 1) 1M51-F531A/B and 1M51-F532A/B inside drywell and 2) 1M51-F618A/B inside containment. The forward flow opening of these valves is performed by passing air through the valve and monitoring the flowrate. The closure verification is satisfied by installing a calibrated flowmeter at the check valve's discharge port as to measure minimum bypass flow while drawing a sample.

The performance of the open exercise requires the completion of the following task: 1) securing the hydrogen analyzer combustible gas cabinet, 2) installation of blank flanges (for 1M51-F532A/B, test control tags and calibrated test equipment, 3) access to containment with scaffold over the suppression pool for test hookups and 4) restoration from testing. Returning the Hydrogen Analyzer (CGC) to an operable status following testing will require a minimum of 6 hours for temperature stabilization prior to declaring system as operable.

The performance of the closure verification requires the Hydrogen Analyzer (CGC) to be operational with access to each valve for installation of test equipment allowing a measurement of bypass flow. The limiting test concern is gaining access to the check valves since entry into the drywell is not always possible during each cold shutdown and scaffolding (or ladder) is required for containment valves. Therefore establishing the test conditions places a significant impact by the extended duration for test setup.

Refueling Outage Justification #

RO-8 (Continued)

This alternate testing is acceptable for implementation in accordance with OM-10 pursuant to 10CFR50.55a(f)(4)(iv) if the related requirements of OM-10 are implemented. The related requirement for exercising during refueling outage are paragraphs 4.3.2.2(e) & (h) and closure verification per paragraph 4.3.2.4(a).

OM-10 recognizes the limitations of performing testing during power operations and cold shutdown outages and allows testing to be performed during refueling outages for those valves which cannot be practically exercised otherwise. This testing is not practical to perform during cold shutdown outages because the installation and removal of test equipment could delay plant startup.

Alternate Testing: Perform the exercise and normal closed position verification during refueling outages.

Applicable related requirements contained in OM-10 paragraphs 4.3.2.2(e) & (h) and 4.3.2.4(a) shall be met.

Use of OM-10 Alternative Testing Frequency Is An Approved Alternative. This Justification Being Submitted To NRC

Valve Relief Request #

VR-1

Systems: All

Valves: All

Class: All

Function: As applicable

Test Requirements: ASME Section XI (IWV-3417b and IWV 3523) states that when corrective action is required as a result of testing, the condition must be corrected within 24 hours or the valve shall be declared inoperative. In the event of testing during cold shutdown, the condition shall be corrected prior to start-up.

Basis for Relief: The Perry Nuclear Power Plant Technical Specification limiting conditions for operations, and ASME Section XI, provide the controls by which valves and system are declared inoperative. PNPP Technical Specifications also control entry into various operational conditions, which is generally more restrictive than ASME Code, Section XI. Failure to meet Section XI testing criteria should not, therefore, preclude plant start-up with that particular component inoperable, nor should the declaration of component or system inoperability be extended to 24 hours. Technical Specification 3.0.4 requires that entry into an OPERATIONAL CONDITION or other specified condition shall not be made when the conditions for the Limiting Conditions for Operation are not met and the associated ACTION requires a shutdown if they are not met within a specified time interval. Entry into an OPERATIONAL CONDITION or other specified condition may be made in accordance with the ACTION requirements when conformance to them permits continued operation of the facility for an unlimited period of time. Exceptions to these requirements are stated in the individual technical specifications. Therefore, compliance with IWV-3417(b) and IWV-3523 would result in a hardship without a compensating increase in the level of quality or safety.

Alternate Testing: The ability to conduct plant start-up, shall be governed by PNPP Technical Specifications and not by ASME Section XI, IWV-3417b and IWV-3523.

Approved In NRC Safety Evaluation
Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Valve Relief Request #

VR-2

System: As Applicable

Valves: All fast-acting valves with short-stroke time less than or equal to 2 seconds.

Category: A and B

Class: As applicable

Function: As applicable

Test Requirements: IWV-3417(a) requires a comparison of the most recent stroke time measurement with that of the previous test.

Basis for Relief: Rapid acting valves have stroke times of such short durations that comparison of measurements with previous data for specified percentage increases is not indicative of degrading valve performance. With measurement of stroke times to the nearest second per IWV-3413(b), a very small increase in stroke time will result in an extremely large percentage of change. Verification that these meet a specified maximum stroke time of a relatively short duration, provides an acceptable level of quality and safety.

Alternate Testing: When stroke times of rapid acting valves are measured, the criterion for determining acceptability will be the specified maximum stroke time of 2 seconds. Actual trending or measurement of rapid acting valve stroke times will not be made other than confirmation that they stroke less than 2 seconds.

Valves affected by this request are:

1D17-F071A	1D23-F030A	1G43-F060	1M51-F250A	1P53-F025	1P87-F037
1D17-F071B	1D23-F030B	1M17-F055	1M51-F250B	1P53-F030	1P87-F046
1D17-F079A	1D23-F040A	1M17-F065	1M51-F260A	1P53-F035	1P87-F049
1D17-F079B	1D23-F040B	1M51-F210A	1M51-F260B	1P53-F040	1P87-F052
1D17-F081A	1D23-F050	1M51-F210B	1M51-F270A	1P53-F045	1P87-F055
1D17-F081B	1E12-F060A	1M51-F220A	1M51-F270B	1P53-F070	1P87-F065
1D17-F089A	1E12-F060B	1M51-F220B	1P52-F160	1P53-F075	1P87-F071
1D17-F089B	1E12-F075A	1M51-F230A	1P52-F170	1P87-F001	1P87-F074
1D23-F010A	1E12-F075B	1M51-F230B	1P53-F010	1P87-F007	1P87-F077
1D23-F010B	1G43-F050A	1M51-F240A	1P53-F015	1P87-F025	1P87-F083
1D23-F020A	1G43-F050B	1M51-F240B	1P53-F020	1P87-F028	1P87-F264
1D23-F020B					

Approved Per GL 89-04, Position 6
As Identified In NRC Safety Evaluation
Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Valve Relief Request #

VR-3

System: As applicable

Valves: Containment Isolation Valves

Category: A and AC

Class: 1 and 2

Function: These valves provide the primary containment barrier during an accident to minimize the consequences of the accident.

Test Requirements: IWV-3427(b); Corrective Action

For valves 6 in. nominal pipe size and larger, if a leakage rate exceeds the rate determined by the previous test by an amount that reduces the margin between measured leakage rate and the maximum permissible rate by 50% or greater, the test frequency shall be doubled.

Basis for Relief: Data trending for local leakage rate testing provides no meaningful information that would justify the burden of taking corrective action. Also, these valves are located inside containment or inside radiation areas during operation and testing on an increased frequency would increase radiation exposure for testing personnel. Testing is now being performed during refueling to minimize exposure. With increased frequency, operational constraints would be placed upon the plant requiring extended shutdowns. Therefore, corrective action per IWV-3427(b) will not be used due to ALARA considerations, operational constraints on the plant and misapplication of test data. This position is supported within Generic Letter No. 89-04 and provides an acceptable level of quality and safety.

Alternate Testing: Containment isolation valves will be replaced or repaired as required when the leakage rate exceeds that as stated in Perry Nuclear Power Plant Technical Specifications or IWA-3427(a).

Valves affected by this request are:

Valve Relief Request #

VR-3 (Continued)

1B21-F022A	1E12-F023	1E12-F064C	1E51-F063	1M14-F085	1N27-F559A
1B21-F022B	1E12-F024A	1E12-F105	1E51-F064	1M14-F090	1N27-F559B
1B21-F022C	1E12-F024B	1E12-F550	1E51-F066	1M14-F190	1P11-F060
1B21-F022D	1E12-F027A	1E12-F609	1E51-F068	1M14-F195	1P11-F080
1B21-F028A	1E12-F027B	1E12-F610	1E51-F076	1M14-F200	1P11-F090
1B21-F028B	1E12-F028A	1E21-F001	1G33-F001	1M14-F205	1P11-F545
1B21-F028C	1E12-F028B	1E21-F005	1G33-F004	1M17-F010	1P43-F055
1B21-F028D	1E12-F037A	1E21-F006	1G33-F039	1M17-F015	1P43-F140
1B21-F032A	1E12-F037B	1E21-F012	1G33-F040	1M17-F020	1P43-F215
1B21-F032B	1E12-F041C	1E22-F004	1G41-F100	1M17-F025	1P43-F721
1E12-F004A	1E12-F042A	1E22-F005	1G41-F140	1M17-F030	1P50-F060
1E12-F004B	1E12-F042B	1E22-F015	1G41-F145	1M17-F035	1P50-F140
1E12-F008	1E12-F042C	1E22-F023	1G41-F522	1M17-F040	1P50-F150
1E12-F009	1E12-F064A	1E51-F013	1M14-F040	1M17-F045	1P50-F539
1E12-F021	1E12-F064B	1E51-F031	1M14-F045		

Approved per GL 89-04, Position 10
As Identified In NRC Safety Evaluation
Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Valve Relief Request #

VR-4

System: As applicable

Valves: All fast-acting solenoid operated valves

Category: A and B

Class: As applicable

Test Requirements: IWV-3300, Valve Position Indicator Verification - valves with remote position indicators shall be observed at least once every two years to verify that valve operation is accurately indicated.

Basis for Relief: These valves require disassembly of the actuator components to verify operation. Additionally, each valve has minimal stroke time (less than 2 seconds) and stem travel (approximately 0.075 inch). The accurate visual verification of valve operation is not possible due to the minimal stem travel and short stroke period. This visual observation would not contribute significantly to the assurance of safe and proper valve operation. Therefore, the proposed alternative provides an equal to or better than acceptable level of quality and safety.

Alternate Testing: The valve open indication/position is verified by normal system parameters during operation. The valve shut indication/position is verified by 10CFR50 Appendix J testing, and ASME Code Section XI Seat Leakage Testing during refueling outages or by normal system operating parameters.

Valves affected by this request are:

1D17-F071A	1D23-F030A	1G43-F060	1M51-F250A	1P53-F025	1P87-F037
1D17-F071B	1D23-F030B	1M17-F055	1M51-F250B	1P53-F030	1P87-F046
1D17-F079A	1D23-F040A	1M17-F065	1M51-F260A	1P53-F035	1P87-F049
1D17-F079B	1D23-F040B	1M51-F210A	1M51-F260B	1P53-F040	1P87-F052
1D17-F081A	1D23-F050	1M51-F210B	1M51-F270A	1P53-F045	1P87-F055
1D17-F081B	1E12-F060A	1M51-F220A	1M51-F270B	1P53-F070	1P87-F065
1D17-F089A	1E12-F060B	1M51-F220B	1P52-F160	1P53-F075	1P87-F071
1D17-F089B	1E12-F075A	1M51-F230A	1P52-F170	1P87-F001	1P87-F074
1D23-F010A	1E12-F075B	1M51-F230B	1P53-F010	1P87-F007	1P87-F077
1D23-F010B	1G43-F050A	1M51-F240A	1P53-F015	1P87-F025	1P87-F083
1D23-F020A	1G43-F050B	1M51-F240B	1P53-F020	1P87-F028	1P87-F264
1D23-F020B					

Authorized in NRC Safety Evaluation
Dated April 5, 1993 (Log No. PY-NRR/CSI-0629L)

Valve Relief Request #

VR-5

Relief Request Deleted
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Re-Categorized Valves
Relief No Longer Required

Valve Relief Request #

VR-6

System: Control Rod Drive Hydraulic System (C11)

Valves: 1C11-114, 1C11-115, 1C11-126, 1C11-127 (Typical of 177)

Category: B (1C11-126, 1C11-127)
C (1C11-114, 1C11-115)

Class: 2

Function: Control Rod Drive Scram Inlet, Exhaust, Scram Discharge Header Check, and Accumulator Supply Check.

Test Requirements: IWV-3411; Test Frequency - Exercise at least once every three months and

IWV-3413; Power operated valves - Full stroke time

IWV-3521; Test Frequency - Exercise at least once every three months

Basis for Relief: These valves operate as an integral part of the hydraulic control unit to rapidly insert control rods. Valves will be tested in accordance with Technical Specifications (i.e., maximum scram insertion time). The surveillance requirement frequency of testing (i.e., all control rods prior to thermal power exceeding 40% of rated thermal power following core alterations or after a reactor shutdown exceeding 120 days and testing of 10% of the control rods, on a rotating basis, at least once per 120 days of operation) assures the necessary quality of the system and components is maintained, that facility operation will be within the safety limits and the Limiting Condition of Operation will be met. Therefore, compliance would result in a hardship without a compensating increase in the level of quality and safety.

Normal position verification of the charging water check valves (1C11-115) will be performed on a refueling outage frequency. The verification requires securing both CRD pumps allowing header depressurization. During plant operation, a CRD pump is always running. Securing these pumps removes the cooling and drive water from the individual HCU's, which (although it does not affect the scram function) could cause equipment damage and loss of

the ability to move rods using their normal drive system. Normal position verification will be performed during refueling outages as to prevent the possible equipment damage and the resultant plant shutdown for repairs.

Alternate Testing: Scram insertion timing shall be substituted for individual valve testing with the charging water check valve receiving a normal position verification each refueling outage.

Approved per GL 89-04, Position 7
As Identified In NRC Safety Evaluation
Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Valve Relief Request #

VR-7

Relief Request Deleted
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Revised To RO-3
In Accordance With NRC Safety Evaluation
Dated April 5, 1993 Resolution (Log No. PY-NRR/CEI-0629L)

Valve Relief Request #

VR-8

Relief Request Deleted
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Re-Categorized Valve
Relief No Longer Required

Valve Relief Request #

VR-9

Relief Request Deleted
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Re-Categorized Valves
Relief No Longer Required

Valve Relief Request #

VR-10

System: Standby Liquid Control (C41)

Valves: 1C41-F006, 1C41-F007

Category: AC

Class: 1

Function: Standby Liquid Control Injection Check Valve

Test Requirements: IWV-3521; Test Frequency - Exercise at least once every three months, quarterly.

Basis for Relief: To verify forward flow operability during normal operation would require firing a squib valve and injecting water into the reactor vessel using the SLC pumps. Injecting water during operation could result in adverse plant conditions such as changes in reactivity, power transients, thermal shock induced cracking, a dramatic change in plant water chemistry, and a possible plant trip.

The normal closed position verification of these valves will be satisfied by obtaining a satisfactory seat leakage measurement. Verifying the normal position by other means than a seat leakage test is not practical. This testing method requires prolonged periods in the drywell for isolating and draining the injection line causing increased radiation exposure. Therefore, normal position verification during operation or cold shutdown would result in a hardship without a compensating increase in the level of safety due to prolonged periods of SLC inoperability and increased exposure to radiation.

Alternate Testing: Verify forward flow operability during refueling outage and perform normal position verification for valves during refueling outage not to exceed two years.

Approved In NRC Safety Evaluation
Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Valve Relief Request #

VR-11

System: Nuclear Boiler (B21)

Valves: 1B21-F460, 1B21-F461, 1B21-F462, 1B21-F463,
1B21-F480, 1B21-F481, 1B21-F482, 1B21-F483

Category: B

Class: 3

Function: Solenoid valves provide air to MSIV operators to cycle MSIV's.

Test Requirement: IWV-3411; Test Frequency - Exercise at least once every three months, quarterly.

IWV-3413; Power operated valves - Full stroke time.

IWV-3415; Fail Safe - at least once every 3 months.

Basis for Relief: The solenoid valves are proven operable by cycling performed on the MSIV's. The MSIV exercising is performed during cold shutdown. Satisfactory completion of the MSIV exercising verifies the exercising of the solenoid operated control valves. If a MSIV fails to meet its stroke time acceptance criteria the associated solenoid valves will be evaluated to determine if corrective action should be taken. Therefore, the alternative test provides an acceptable level of quality and safety.

Alternate Testing: Valves shall be exercised during the exercising of MSIV's.

Approved In NRC Safety Evaluation
Dated April 5, 1993 (Log No. PY-NRR/CRI-0629L)

Valve Relief Request #

VR-12

Relief Request Deleted
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In accordance with NRC
Site Meeting Summary Correspondence
Dated May 29, 1991 (Log No. PY-NRR/CEI-0559L)

Valve Relief Request #

VR-13

System: Residual Heat Removal Shutdown Cooling (E12)

Valves: 1E12-F050A, 1E12-F050B

Category: AC

Class: 2

Function: Provide a flowpath for RHR water for shutdown cooling (e.g., using the feedwater nozzles).

Test Requirement: IWV-3521; Test Frequency - Exercise at least once every three months, quarterly.

Basis for Relief: These simple check valves are within the normal flowpath for shutdown cooling (e.g., using the feedwater nozzles). The valves are normally closed during plant operation and require forward flow exercising. Initiation of shutdown cooling is used to verify the simple check valve forward flow exercising. Both loops of shutdown cooling may not be required during cold shutdown. The initiation of a loop of shutdown cooling requires flushing of the system generating thousands of gallons of liquid radwaste that would have to be processed. Therefore, compliance with the quarterly and cold shutdown requirements would result in hardship and unusual difficulty without a compensating increase in the level of quality and safety.

The normal closed position verification will be satisfied by obtaining a satisfactory seat leakage measurement. Verifying the normal position by other means than a seat leakage test is not practical. This test requires isolation of a loop of feedwater, reactor water cleanup system, and shutdown cooling by entry into the drywell and steam tunnel (includes scaffolding). Therefore, testing of these valves would result in a hardship without a compensating increase in the level of safety due to causing prolonged losses of reactor vessel heat removal sources and loss of cleanup water source, and increased exposure to radiation.

Alternate Testing: Exercise and perform a normal position verification for valves during refueling outage.

Approved In NRC Safety Evaluation
Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Valve Relief Request #

VR-14

System: Residual Heat Removal Head Spray Line (E12)

Valves: 1E12-F019

Category: AC

Class: 1

Function: Provide a flowpath for RHR water for head spray collapsing of the steam in the reactor vessel head.

Test Requirement: IWV-3521; Test Frequency - Exercise at least once every three months, quarterly.

Basis for Relief: The simple check valve is within the normal flowpath for RHR head spray to the reactor vessel head. This valve is normally closed and performs the safety function of a pressure isolation valve during plant operation. Exercising this valve during cold shutdown would require mandatory use of the "A" Loop of RHR for shutdown cooling and flushing of the head spray line. This flushing will generate thousands of gallons of liquid radwaste that would have to be processed. The initiation of head spray when shutting down for refueling outage or the reactor pressure boundary system leakage pressure test verifies forward flow exercising. Therefore compliance with the quarterly and cold shutdown requirements would result in hardship and unusual difficulty without a compensating increase in the level of quality and safety due to forced scheduling which would minimize testing of "B" Loop of RHR and increase generation of radwaste.

The normal closed position verification of this simple check valve quarterly or during cold shutdown would not increase the level of plant safety, but would increase personnel exposure and the duration of system inoperability. Performance of position verification should always be consistent with the exercise requirement (i.e., refueling outage) and in no case would closure verification more frequently then the valve's exercise satisfy a safety concern (redundant testing). This check valve has the unique characteristic of performing system pressure isolation function during plant operation thus requiring a seat leakage measurements. Leak testing provides an excellent method of closure verification and corresponds to the exercise test frequency.

Therefore normal position verification shall be satisfied during seat leakage testing.

Alternate Testing: Exercise and perform the normal closed position verification during refueling outage.

Approved In NRC Safety Evaluation
Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Valve Relief Request #

VR-15

Relief Request Deleted
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Revised To OM(10)-1 Justification
In Accordance With NRC Safety Evaluation
Dated April 5, 1993 (Log No. PY-NPR/CEI-0629L)

Valve Relief Request #

VR-16

Relief Request Deleted
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In accordance with NRC
Site Meeting Summary Correspondence
Dated May 29, 1991 (Log No. PY-NRR/CEI-0559L)

Valve Relief Request #

VR-17

System: Primary Containment Isolation Check Valve

Valves: 1B21-F032A, 1B21-F032B, 1C11-F122, 1G41-F522, 1N27-F559A, 1N27-F559B, 1P43-F721, 1P50-F539

Category: AC

Class: 1, 2

Function: System check valves for systems penetrating primary containment.

Test Requirement: IWV-3521; Test Frequency - Exercise at least once every three months, quarterly.

Basis for Relief: These check valves are the inboard and outboard primary containment isolation valves for systems considered inservice during plant operation. These normally open check valves require an exercise in the reverse flow direction which can be verified by leakage testing. Exercising of these valves on a quarterly or cold shutdown basis would result in a hardship without a compensating increase in the level of safety due to prolonged periods of component inoperability and increased exposure to radiation. These valves are listed below with a description of the system needs during operation or cold shutdown. Primary containment leak testing each refueling (i.e., 10CFR50, Appendix J) constitutes proper valve exercising. This testing method requires system draining and venting.

Normal (open) position verification of these valves is verified quarterly with the exception of the 1C11-F122. The 1C11-F122 open full flow can only be obtained by inserting a reactor scram. Therefore, the open position verification of the 1C11-F122 shall be verified on a refueling outage frequency when testing requires scram insertion.

Alternate Testing: Exercise valves during refueling outage (at least once every two years). System description for valves is as follows:

Approved In NRC Safety Evaluation
Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

These valves are open during normal plant operation and normally remain open during cold shutdown therefore imposing restrictions to exercise close to allow use of nonintrusive test techniques is not practical.

Valve No's.	System Description
1B21-F032A, B 1N27-F559A, B	These valves are the feedwater inboard and outboard containment isolation valves. The Feedwater System is the normal method of level control for the reactor vessel. Testing of these valves can only be performed during prolonged shutdowns when other sources of level control are available and area radiation levels are reduced. Therefore, compliance to a quarterly or cold shutdown frequency would result in a hardship without a compensating increase in the level of quality and safety.
1C11-F122	This valve is the inboard containment isolation valve for the Control Rod Drive System. The CRD System is required for normal rod motion and cooling of the control rod drive mechanisms. Thus, testing of this valve can only be performed during prolonged shutdowns when rod movement and cooling is not required. Therefore, compliance to a quarterly or cold shutdown frequency would result in a hardship without a compensating increase in the level of quality and safety.
1G41-F522	This valve is the inboard containment isolation valve for the Fuel Pool Cooling and Clean-up System. The FPCC System is required to remove heat and maintain the purity, clarity, and level of water in the upper containment pools. Thus, testing of this valve can only be performed during prolonged shutdowns. There, compliance to quarterly or cold shutdown frequency would result in a hardship without a compensating increase in the level of quality and safety.

Valve No's.	System Description
1P43-F721	This valve is the inboard containment isolation valve for the Nuclear Closed Cooling System. The NCC System is required to supply cooling water to numerous plant components which include: control complex chillers, fuel pool cooling and cleanup heat exchangers, air system compressors, reactor water cleanup pumps, CRD hydraulic pumps, drywell coolers, reactor recirculation pumps, and containment chillers. Thus, testing of this valve can only be performed during prolonged shutdowns. Therefore, compliance to a quarterly or cold shutdown frequency would result in a hardship without a compensating increase in the level of quality and safety.
1P50-F539	This valve is the inboard containment isolation valve for the Containment Vessel Chilled Water System. The CVCW System is required to maintain the containment environment acceptable for equipment qualification and personnel occupancy. Thus, testing of this valve can only be performed during prolonged shutdowns. Therefore, compliance to a quarterly or cold shutdown frequency would result in a hardship without a compensating increase in the level of quality and safety.

Valve Relief Request #

VR-18

Relief Request Deleted
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Test Frequency Revised
Relief No Longer Required

Valve Relief Request #

VR-19

Relief Request Deleted
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Revised To OM(10)-2 Justification
In Accordance With NRC Safety Evaluation
Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Valve Relief Request #

VR-20

System: Nuclear Boiler (B21)

Valves: 1B21-F410A, 1B21-F410B, 1B21-F411A, 1B21-F411B, 1B21-F412A, 1B21-F412B, 1B21-F413A, 1B21-F413B, 1B21-F414A, 1B21-F414B, 1B21-F415A, 1B21-F415B, 1B21-F416A, 1B21-F416B, 1B21-F417A, 1B21-F417B, 1B21-F420A, 1B21-F420B, 1B21-F421A, 1B21-F421B, 1B21-F422A, 1B21-F422B, 1B21-F423A, 1B21-F423B, 1B21-F424A, 1B21-F424B, 1B21-F425A, 1B21-F425B, 1B21-F440A, 1B21-F440B, 1B21-F441A, 1B21-F441B, 1B21-F442A, 1B21-F442B, 1B21-F443A, 1B21-F443B, 1B21-F444A, 1B21-F444B

Category: B

Class: 3

Function: Supply air to air operators of the nuclear boiler ADS and Safety/Relief valves.

Test Requirement: IWV-3411; Test Frequency - Exercise at least once every three months, quarterly.

IWV-3413; Power operated valves - Full stroke time

IWV-3415; Fail Safe - at least once every 3 months.

IWV-3300; Valve Position Indicator Verification - at least once every two years.

Basis for Relief: These solenoid operated valves are proven operable during testing of the Nuclear Boiler ADS and Safety/Relief valves. Also, in a recent study (BWR Owners Group Evaluation of NUREG-0737, Item II.K.3.16) the number of ADS and safety relief valve opening should be reduced as much as possible to minimize LOCA risk. The design of PNPP provides divisional separation of the solenoid valves for each Safety Relief Valve (SRV) such that SRV exercise would only exercise one of the two solenoid valves. Based on this study, and the potential for causing a LOCA condition, exercising these valves is delayed to refueling.

The solenoid valves are proven operable by remotely actuating the SRV to verify open and close capability of the valve prior to resumption of electric power generation. Satisfactory completion of the SRV cycling verifies the exercising of each train's solenoid operated control valve. If a SRV fails to meet its acceptance criteria during cycling the associated SRV solenoid valves will be evaluated to determine if corrective action should be taken. Therefore, the alternative test provides an acceptable level of quality and safety.

Alternate Testing: Exercising, stroke time, fail safe and position indication testing shall be accomplished on an refueling outage basis by exercising the SRV(s).

Approved In NRC Safety Evaluation
Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Valve Relief Request #

VR-21

Relief Request Deleted
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In accordance with NRC
Site Meeting Summary Correspondence
Dated May 29, 1991 (Log No. PY-NRR/CEI-0599L)

Valve Relief Request #

VR-22

Relief Request Deleted
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In accordance with NRC
Site Meeting Summary Correspondence
Dated May 29, 1991 (Log No. PY-NRR/CEI-0559L)

Valve Relief Request #

VR-23

Relief Request Deleted
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Revised To RO-4
In Accordance With NRC Safety Evaluation
Dated April 5, 1993 Resolution (Log No. PY-NRR/CEI-0629L)

Valve Relief Request #

VR-24

Relief Request Deleted
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**NRC Classified Valves as Non Safety-Related
with Relief Request Not Evaluated
in accordance with NRC Safety Evaluation
Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)
Valves will Remain in the Program and
Tested Weekly by Rod Notching**

Valve Relief Request #

VR-25

Relief Request Deleted
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In accordance with NRC
Site Meeting Summary Correspondence
Dated May 29, 1991 (Log No. PY-NRR/CEI-0559L)

Valve Relief Request #

VR-26

System: Safety-related Keep Fill Systems

Valves: 1E12-F084A, 1E12-F084B, 1E12-F084C, 1E22-F007, 1E51-F061

Category: C

Class: 2

Function: These simple check valves are used as in-line check valves for the safety-related keep fill pumps discharge lines.

Test Requirements: IWV-3521; Test Frequency - exercise at least once every three months, quarterly.

IWV-3522; Exercise Procedure.

Basis for Relief: These simple check valves are the outboard check of a series pair for the safety-related keep fill pump discharge. They provide the high to low pressure interface to prevent overpressurization of the low pressure portion of the system.

Both the associated inboard and involved outboard check valves are in close proximity to each other. At cold shutdown these valves are exercised open by verifying proper keep fill system flow. The associated inboard stop check valves can be verified closed using the manual handwheel (in accordance with the guidance provided in September 26, 1991, Supplement to the public meetings on Generic Letter 89-04). The system configuration does not include test connections between the involved outboard valves and their associated inboard stop check valves. Hence, the closure of the outboard check valves cannot be individually verified. The system would have to be redesigned and modified to perform the code required testing. Disassembly and inspection of these valves on a sampling basis to assess their closure capability provides a reasonable alternative to the Code test method.

The NRC staff previously accepted valve disassembly and inspection on a sampling basis as an alternative to full flow testing in Generic Letter 89-04, Attachment 1, Position 2. Due to the scope of the activity, the personnel hazards involved and system operating restrictions, this valve disassembly will be performed during reactor refueling outages. This deviation from the code frequency is specifically permitted in the Generic Letter Position.

Valve Relief Request #

VR-26 (Continued)

Alternate Testing: A sample disassembly and inspection plan which is consistent with Generic Letter 89-04, Attachment 1, Position 2, will be utilized. Sample groups may consist of more than 4 valves; however, all valves within each group must be disassembled within a maximum of 4 refueling outages. These valves are exercised open following their assembly by verifying proper keep fill pump flow.

Submitted To NRC For Evaluation
Dated February 3, 1994 (Log No. PY-NRR/CEI-1739L)

Valve Relief Request #

VR-27

Relief Request Deleted
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**Revised To OM(10)-3 Justification
In Accordance With NRC Safety Evaluation
Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)**

Valve Relief Request #

VR-28

Relief Requested Deleted
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In accordance with NRC
Site Meeting Summary Correspondence
Dated May 29, 1991 (Log No. PY-NRR/CEI-0559L)

Valve Relief Request #

VR-29

Relief Request Deleted
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In accordance with NRC
Site Meeting Summary Correspondence
Dated May 29, 1991 (Log No. PY-NRR/CEI-0559L)

Valve Relief Request #

VR-30

System: Reactor Coolant Pressure Isolation Testable Check Valves (RHR, LPCS, RCIC and HPCS).

Valves: 1E12-F041A, 1E12-F041B, 1E12-F041C, 1E21-F006, 1E22-F005, 1E51-F066

Category: AC

Class: 1

Function: Provide pressure isolation of the reactor coolant pressure boundary between the high pressure reactor coolant system and other safety-related systems containing low pressure designed components.

Test Requirements: IWV-3300; Valve Position Indicator Verification - Valves with remote position indicators shall be observed at least once every two (2) years to verify that valve operation is accurately indicated.

Basis for Relief: These check valves have no external means of visually verifying actual valve position. A housed indicator made of ferrous material is used to activate local proximity switches (refer to VR-36 Illustration). The position of the ferrous material indicator can be positively determined using a magnet. The alternative provides an equal to or better than acceptable level of quality and safety.

Alternate Testing: Verify actual valve open position by magnetic means or system operating parameters and closed position during seat leakage tests. Valve open position shall be verified by magnetic means and compared to indicator lights at least once every two years.

Approved In NRC Safety Evaluation
Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Valve Relief Request #

VR-31

Relief Request Deleted
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In accordance with NRC
Site Meeting Summary Correspondence
Dated May 29, 1991 (Log No. PY-NRR/CEI-0559L)

Valve Relief Request #

VR-32

System: Division 1 and 2 Standby Diesel Generator Starting Air (1R44) and
Division 3 HPCS Standby Diesel Generator Starting Air (1E22)

Valves: 1E22-F541A, 1E22-F541B, 1E22-F543A, 1E22-F543B, 1R44-F010A, 1R44-F011A, 1R44-F010B, 1R44-F011B, 1R44-F015A, 1R44-F016A, 1R44-F015B, 1R44-F016B, 1R44-F020A, 1R44-F021A, 1R44-F020B, 1R44-F021B, 1R44-F025A, 1R44-F026A, 1R44-F025B, 1R44-F026B

Category: B

Class: 3

Function: Starting Air Valves supply starting air for Division 1 and 2 Standby Diesel Generators and the HPCS Standby Diesel Generator.

Test Requirements: IWV-3411; Test Frequency - Exercise at least once every three months and

IWV-3413; Power Operated Valves - Full stroke time

IWV-3415; Fail Safe - At least once every three months

Basis for Relief: It is impractical to measure the stroke times of these valves because they are totally enclosed solenoid/air operated valves which have no externally visible indication of valve position. Failure of a valve to perform the required function will result in an increase in the starting time of the diesel generator or failure to secure starting air.

Division 3 HPCS requires both air start solenoids to open to satisfy its starting time for operability, thus normal monthly timing verifies operability. Therefore, the proposed alternative provides an equal level of quality and safety.

Division 1 and Division 2 Standby Diesel Air Starting Systems have two independent air banks with each air bank having two parallel starting air solenoid valves. All four starting air solenoid valves are verified operable on a monthly basis during performance of the monthly diesel surveillance tests. During performance of monthly diesel surveillance tests, a pre-start air roll and a post-shutdown air roll are performed on each standby diesel. During performance of the pre-start air roll, both air banks are operated and only one parallel starting air

solenoid valve in each air bank is energized to roll the diesel. The two energized starting air solenoid valves (one in each air bank) are (1) verified open, by verification of a pressure decrease in each air bank accumulator and (2) verified closed by verification of air being secured upon termination of the air roll. Likewise, the alternate solenoid valves (i.e., the other of the two parallel starting air solenoids in each air bank) are tested in the same manner during performance of the post-shutdown air roll.

In accordance with PNPP Facility License NPF-58, Attachment 2, the air roll portion of the monthly surveillance shall not be performed on an operable standby diesel if the other standby diesel is inoperable, since performance of the air rolls on the operable diesel requires declaring the operable diesel inoperable, thus rendering both emergency diesel generators inoperable. Consequently, an extended diesel outage (i.e., greater than quarterly) may cause the operable diesel air start solenoids to exceed the quarterly test requirements. In such cases, the diesel starting air solenoid valves shall be verified operable by satisfactory performance of the monthly diesel runs.

In summary, performance of monthly diesel air rolls provides an acceptable means of verifying diesel starting air solenoid valve operability. In those situations where conformance to the Code is impracticable for the facility, such as where monthly diesel air rolls cannot practicably be performed monthly diesel runs shall adequately demonstrate diesel air start solenoid valve operability. Therefore, the proposed alternatives provide an equivalent level of quality and safety.

Alternate Testing: Diesel starting air valves shall be verified operable during monthly diesel generator surveillance testing.

The operability of HPCS starting air valves shall be determined by monitoring HPCS diesel starting time.

The operability of Div. 1 and Div. 2 starting air valves shall be determined during performance of monthly air rolls by using one solenoid from each air bank and verifying pressure decrease. The air roll testing shall not be performed on an operable standby diesel if the other standby diesel is already

inoperable. In such cases, the diesel starting air solenoid valves shall be verified operable by satisfactory performance of the monthly diesel run.

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Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Valve Relief Request #

VR-33

Relief Request Deleted
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In accordance with NRC
Site Meeting Summary Correspondence
Dated May 29, 1991 (Log No. PY-NRR/CEI-0559L)

Valve Relief Request #

VR-34

Systems: High Pressure Isolation Valves (RHR, RCIC)

Valves: 1E12-F008, 1E12-F009, 1E12-F550, 1E12-F019, 1E12-F023, 1E51-F065, 1E51-F066

Category: A and AC

Class: 1, 2

Function: Provides Pressure Isolation for the Reactor Coolant Pressure Boundary System and provides high pressure to low pressure system isolation.

Test Requirements: IWV-3422; Test Frequency - Valves shall be leak tested at least once every two years.

IWV-3521; Test Frequency - Exercise at least once every three months, quarterly.

Basis for Relief: During cold shutdowns or refueling technical specifications require that two modes of shutdown cooling and two ECCS systems be maintained operable unless the plant is in the refueling outage with the reactor vessel head removed and the cavity flooded. High pressure seat leakage testing of any of these valves in any mode other than refueling with the head removed, renders one or more ECCS and shutdown cooling modes inoperable, in violation of Technical Specifications. Testing of any of these valves during refueling outages ensures that adequate alternate means of decay heat removal exists and enhances system availability.

The exercise of 1E12-F550 can not be performed quarterly or during cold shutdown because of its pressure isolation function during normal plant operation and being in the shutdown cooling flow path, which is inservice during cold shutdowns.

Normal (closed) position verification of the 1E12-F550 simple check valve quarterly or during cold shutdown would serve no useful safety concern, but it would increase personnel exposure and the duration of system inoperability. Performance of position verification should always be consistent with the exercise requirement (i.e., refueling outage) and in no case would closure verification more frequently satisfy a safety concern (redundant testing). This check valve has the unique characteristic of

performing a system pressure isolation function during plant operation thus requiring seat leakage measurement. Leak testing provides an excellent method of closure verification and corresponds to the exercise test frequency.

Therefore, exercise and normal position verification during operation or cold shutdown would result in a hardship without a compensating increase in the level of safety due to prolonged system inoperability and an increased exposure to radiation.

Alternate Testing: Leak test and perform the exercise with normal position verification of 1E12-F550 every two years, not to exceed two years plus 25% (2-1/2 years).

Approved In NRC Safety Evaluation
Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Valve Relief Request #

VR-35

Systems: Containment Vessel and Drywell Purge (M14)

Valves: 1M14-F040, 1M14-F090, 1M14-F190, 1M14-F195, 1M14-F200, 1M14-F205

Category: A and B

Class: 2

Function: To provide containment isolation for the Containment and Drywell Purge System

Test Requirements: IWV-3417(a) Corrective Action - for power operated valves, an increase in stroke time of 50% or more for valves with full-stroke times less than or equal to 10 seconds is observed, test frequency shall be increased to once each month until corrective action is taken.

Basis for Relief: These large (18 inch and 42 inch) air operated butterfly valves are provided with mechanical (50%) stops, and currently have a maximum stroke acceptance criteria for operability of 4 seconds.

These valves, although they close quickly, do not meet the Generic Letter 89-04 Position 6 application of "rapid-acting valves", therefore the Code specified "50% increase in stroke time" corrective action requirement would apply to these valves unless this requested relief is granted. A nominal time for the stroke of one of these valves is ≈ 2 seconds, such that an increase of 50% from this time (to ≈ 3 seconds) would require increased testing and corrective action as specified by the Code.

At PNPP, stroke time is measured (in tenths of seconds) utilizing the normal stroke time test method from control switch actuation to limit switch light energization. The quarterly measurements of stroke times for these valves are subject to deviations in air system pressure, valve ambient conditions, normal stroke deviations, in addition to variations in human reflexes. Although the human reflex parameter could be eliminated through application of a more complex electronic timing methodology, this would not preclude the occurrence of normal stroke time deviations greater than 50% which does not indicate actual valve degradation. This has been demonstrated

at PNPP, since measured stroke times for these valves have historically been observed to increase greater than 50% from the reference value, with subsequent valve disassembly and inspections showing no significant valve degradation.

Exceeding the reference value by 50% requires the test frequency to be increased to monthly. Excessive cycling (exercising) of these valves will cause unnecessary wear and can result in increased seat leakage. The consequential increased leakage could lead to a plant shutdown which would otherwise not have been necessary. These valves have their seat leakage measured on a quarterly frequency as specified by the PNPP Technical Specifications.

The existing 4 second maximum stroke time will be used to declare the valve inoperable per IWV-3417(b). However, since increased frequency testing can cause valve seat deterioration through excessive cycling, IWV-3417(a) which requires an increased test frequency of once per month for valves with an increase in stroke time of 50% from the reference value will not be followed.

Alternate Testing: Valve stroke times will be monitored and trended. When valve stroke times exceed the maximum allowable stroke time of 4 seconds, the valve will be declared inoperable and repaired or replaced.

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Dated February 3, 1994 (Log No. PY-NRR/CEI-1739L)

Valve Relief Request #

VR-36

System: Reactor Coolant Pressure Isolation Check Valves (RHR, LPCS, HPCS, and RCIC) of a Testable Nature

Valves: 1E12-F041A, 1E12-F041B, 1E12-F041C, 1E21-F006, 1E22-F005, 1E51-F066

Category: AC

Class: 1

Function: Provide pressure isolation of the reactor coolant pressure boundary between the high pressure reactor coolant system and other safety-related systems containing low pressure designed components.

Test Requirement: IWV-3522; Exercising Procedure - valves that cannot be exercised during plant operation shall be specifically identified by the owner and shall be full-stroke exercised during cold shutdowns.

IWV-3522(b); Normally Closed Valves - test may be made with or without flow through the valve. If it is made without flow through the valve, a mechanical exerciser shall be used to move the disk. The force or torque delivered to the disk by the exerciser must be limited to less than 10% of the equivalent force or torque represented by the minimum emergency condition pressure differential acting on the disk, or to 200% of the actual observed force or torque required to perform the exercise on the valve when the valve is new and in good operating condition, whichever is less.

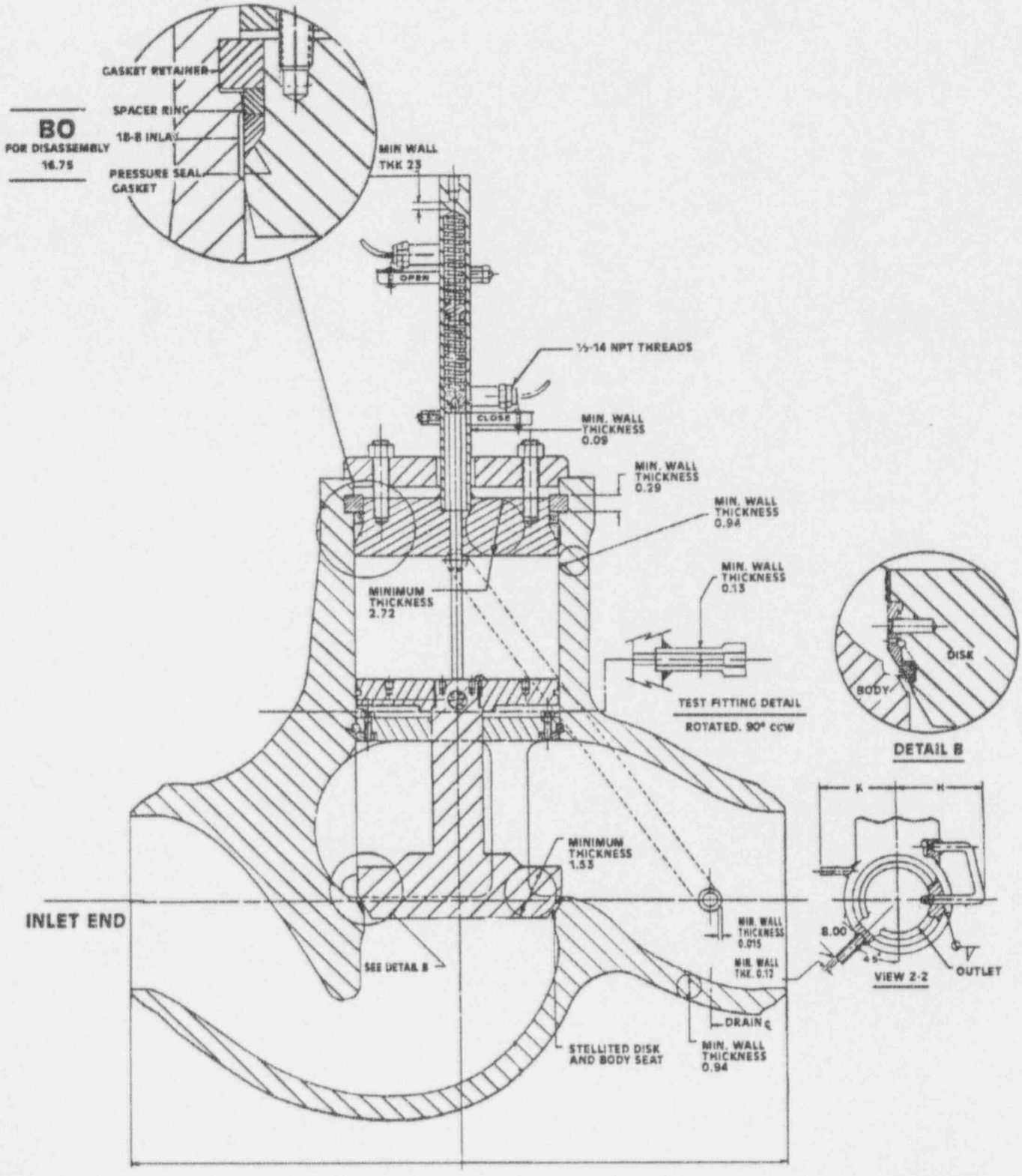
Basis for Relief: The full flow testing of these valves is considered impractical due to the high capacity flow rates required and the quality of water being injected. These two considerations were evaluated and the design specification utilized a hydraulic assist actuator to satisfy the ASME Code, Section XI exercising requirements.

The design provides remote position indication using proximity switches and an indicator rod. When the valve disk is raised the indicating rod shall be positioned in the housing as to activate the open proximity switch.

Valve Relief Request #

VR-36 (Continued)

Typical Lift (testable piston) check valve with indicator:



These valves under normal conditions function as a typical lift check valve, seating with reactor system pressure. In the event of a rupture in the upstream piping, the check valve would act to limit the loss of coolant. To enable verification of valve operability, a hydraulic actuator is attached to the valve disc/piston. By energizing a hydraulic pump, the valve can be forced to lift fully off its seat, thereby verifying full freedom of movement. A local hydraulic pump is used to allow testing of these testable injection check valves. Due to the design of the valve and remote test equipment there is no way to measure the force or hydraulic pressure required to stroke the valve. The hydraulic medium is water from the Mixed-Bed Distribution System (P22). Therefore, conformance with the Code requirement is impractical for this facility.

Tests performed on these valves include:

a. Exercise each cold shutdown using the hydraulic pump and verifying valve movement using the remote position (Control Room) indicating lights.
b. Appendix J, Local Leak Rate Testing, at least once every two years (w/e of 1E12-F041A and 1E12-F041B) using air as a test medium.
c. ASME Code, Section XI Seat Leak Rate Test at least once every two years (w/e 1E51-F066) using water as a test medium. The 1E51-F066 is leak tested once each refueling outage. These valves (w/e 1E51-F066) are exercised prior to leak testing.
d. Position Indication Check at least once every two years. During the exercise a magnet shall be used to verify indicator rod position accurately reflects valve disk position which agrees with remote light indicators.

Alternate Testing: These valves shall be exercised using the hydraulic pump during cold shutdown with no torque measurement required.

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Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Valve Relief Request #

VR-37

Relief Request Deleted
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Revised To OM(10)-4
In Accordance With NRC Safety Evaluation
Dated April 5, 1993 Resolution (Log No. PY-NRR/CEI-0629L)

Valve Relief Request #

VR-38

System: As Applicable

Valves: All Power Operated Valves Requiring Stroke Timing

Category: A and B

Class: As Applicable

Test Requirement: IWV-3417(a); Corrective Action - for power operated valves, an increase in stroke time of 25% or more from the previous test for valves with full-stroke times greater than 10 seconds or 50% or more for valves with full-stroke times less than or equal to 10 seconds is observed, test frequency shall be increased to once each month until Corrective Action is taken.

Basis for Relief: Historical stroke time data has shown that establishing an increased test frequency based on the most recent previous stroke time is not the most reliable method for detecting a valve's degraded condition. This method allows for gradual degradation of a valve without requiring corrective action. A reference value based on stroke times will be determined when the valve is known to be in good condition and operating properly. Measuring deviations from this established bench mark will be more reliable to monitor for valve degradation. The use of reference values is recommended in Generic Letter 89-04. Therefore, the use of a reference stroke time as an alternative provides an equal to or better than acceptable level of quality and safety.

Alternate Testing: Valve stroke times shall be compared against a reference stroke time for IWV-3417(a) Corrective Action implementation. Reference stroke times will be determined by the owner when the valve is known to be in good condition and operating properly.

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Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Valve Relief Request #

VR-39

System: Emergency Closed Cooling System (P42)

Valves: P42-F260A, P42-F260B, P42-F265A, P42-F265B

Category: B

Class: 3

Function: These valves provide an alternate emergency cooling water supply to the fuel pool cooling and cleanup (FPCC) System Heat Exchangers upon loss of nuclear closed cooling (NCC) water due to a loss of coolant accident (LOCA) or system inoperability.

Test Requirement: IWV-3411; Test Frequency - Exercise at least once every three months.

Basis for Relief: The design of the FPCC system allows three methods of supplying cooling water to the FPCC Heat Exchangers. The supply methods include: 1) normal closed cooling water supply using Unit 1, Nuclear Closed Cooling System, 1P43; 2) emergency closed cooling water supply using Unit 2, Emergency Closed Cooling (ECC) System, 2P42; and 3) alternate emergency cooling water supply using Unit 1, Emergency Service Water (ESW) System, 1P45. Currently, the emergency closed cooling water (2P42) is under construction and not available for use. Therefore, the alternate emergency cooling water supply (1P45) must be available within 24 hours upon loss of the normal closed cooling water supply (1P43).

The emergency service water spectacle flanges were removed due to the safety concern raised over the 24 hour duration required for flange rotation, thus making these P42 valves the new interface between the closed loop cooling and the open loop cooling system. This alternate emergency cooling water supply (1P45) should be used only as a last resort since this would adversely affect the water chemistry of the NCC system (1P43) and eliminates the closed loop barrier establishing a potential direct leakage path for radioactive water into an open loop system (1P45).

Thus these valves are to be exercised on a refueling outage frequency when the FPCC Hx can be removed from service to allow valve cycling and minimal intrusion of ESW water into the NCC system. Upon completion of the exercise the FPCC Hx and portions of the NCC System require numerous flushes to remove the lake water. Therefore, testing of this normally inservice system would result in a hardship without a compensating increase in the level of quality and safety due to the increased likelihood of lake water intrusion and prolonged periods of system inoperability.

Alternate Testing: Exercise valves during refueling outage.

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Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Valve Relief Request #

VR-40

Relief Request Deleted
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Revised To RO-5
In Accordance With NRC Safety Evaluation
Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Valve Relief Request #

VR-41

System: As applicable.

Valves: Check valves requiring seat leakage measurement for alternate position verification listed below.

Category: AC

Class: 1, 2, and 3

Function: These valves are required to return to their normally closed position to minimize seat leakage.

Test Requirement: IWV-3521; Test Frequency - Exercise at least once every three months.

Basis for Relief: These check valves are required to return to their normal closed position to limit the seat leakage to a specific amount for fulfillment of their function. The normal position verification is assured by obtaining a satisfactory seat leakage measurement. Verifying the normal position by other means is not practical and performance of seat leakage tests on a quarterly or cold shutdown would place an undue hardship on the plant. The check valves that require normal position verification during seat leakage testing are listed with a brief explanation of the hardship if the quarterly or cold shutdown frequency was imposed.

Alternate Testing: Normal closed position verification for the listed check valves shall be in conjunction with the seat leakage test at least once every two years.

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Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

Valve No's.	Justification
1B21-F024A,B,C,D 1B21-F029A,B,C,D	The seat leakage test requires depressurization of the MSIV accumulator supply air and a reduction of the accumulator pressure. These accumulators are required for normal operation of the MSIV's and depressurization will require access to the drywell and steam tunnel for prolonged periods of time, imposing ALARA concerns. Testing for normal position verification other than in conjunction with the seat leakage test would result in a hardship without a compensating increase in the level of safety due to prolonged periods of component inoperability and increased personnel exposure to radiation.

Valve No's.	Justification
1C41-F033A,B	The seat leakage test requires isolation of a train of the Standby Liquid Control (a system required for safe shutdown) and draining for removal of the SLC pump relief valve. Testing for normal closed position verification other than once every two years (during the seat leakage test) would result in a hardship without a compensating increase in the level of safety due to the prolonged period of inoperability for this system.
1N27-F739A,B 1N27-F742A,B	These valves are the high to low pressure interface between the feedwater system and its low pressure makeup system. The current test method requires access to the steam tunnel which is inaccessible during power operations and a high radiation and highly contaminated area during cold shutdowns, to isolate and hook-up testing equipment. Therefore, testing for normal closed position verification other than once every 2 years (during seat leakage test) would result in a hardship without a compensating increase in the level of safety due to the increased exposure to radiation.
1P11-F545	This valve is the inboard containment isolation valve for the Condensate Transfer and Storage System penetration. This penetration is used for maintenance evolutions and routine system operations. Exercising this valve is not required in the open direction. But, since this valve may be used infrequently the normal closed position verification is to be performed. The only practical method of verification would be the leak test which would require entering the containment structure, draining and venting the penetration to allow test equipment installation. Testing to verify normal closed position other than during the seat leakage test would result in a hardship and unusual difficulty without a compensating increase in the level of quality and safety because of causing a prolonged period of exposure to radiation and major mobilization obstacles within containment.

Valve No's.	Justification
1P22-F577	This valve is the inboard containment isolation valve for the Mixed-Bed Demineralizer and Distribution System penetration. This penetration is used only for convenience. Exercising this valve is not required in the open direction, but since this valve may be used infrequently the normal closed position verification is to be performed. The only practical method of verification would be the seat leak test which would require entering the containment structure, draining and venting the penetration to allow test equipment installation. Therefore, testing to verify normal closed position other than during the seat leakage test would result in a hardship and unusual difficulty without a compensating increase in the level of quality and safety because of causing a prolonged period of exposure to radiation and major mobilization obstacles within containment.
1P51-F530	This valve is the inboard containment isolation valve for the Service Air Distribution System penetration. This penetration is used for maintenance evolutions or routine system evolutions. Exercising this valve is not required in the open direction, but since this valve may be used infrequently the normal closed position verification is to be performed. The only practical method of verification would be the seat leak test which would require entering the containment structure, draining and venting the penetration to allow test equipment installation. Therefore, testing to verify normal closed position other than during the seat leakage test would result in a hardship and unusual difficulty without a compensating increase in the level of quality and safety because of causing a prolonged period of exposure to radiation and major mobilization obstacles within containment.

Valve No's.	Justification
1P52-F550	This valve is the inboard containment isolation valve for the Instrument Air System penetration. The only practical method of normal closed position verification is the seat leakage test. The seat leakage test would require access to containment and isolation of the air supply to the non-ADS SRV's and MSIV's accumulators thus possibly making the associated SRV and MSIV valves inoperable. Therefore, testing to verify normal closed position other than during the seat leakage test would result in a hardship and unusual difficulty without a compensating increase in the level of quality and safety because of causing a prolonged period of exposure to radiation and isolation of the non-ADS SRV and MSIV accumulator air supply.
1P54-F1098	This valve is the inboard containment isolation valve for the Fire Service Carbon Dioxide System penetration. This penetration is used only in case of a recirculation pump motor fire. The only practical method of verification of the normal closed position would be a leak test. The isolation of the penetration would require an alternate method of extinguishing a possible recirculation pump motor fire (local drywell CO2 fire extinguishers). Access to the drywell is not prudent during operation or a normal cold shutdown. Testing to verify normal closed position other than during the seat leakage test would result in a hardship and unusual difficulty without a compensating increase in the level of quality and safety.
1P86-F528	This valve is the inboard containment isolation valve for the Nitrogen Supply System for the initial fill and makeup (maintenance only) of nitrogen gas to the scram accumulators. Exercising this valve is not required in the open direction, but since this valve may be used infrequently the normal closed position verification is to be performed. The only practical method of verification would be the leak test which would require entering the containment structure, isolation and venting the penetration to allow test equipment, installation. Therefore, testing to verify normal closed position other than during the seat leakage test would result in a hardship and unusual difficulty without a compensating increase in the level of quality and safety because of causing a prolonged period of exposure to radiation and major mobilization obstacles within containment.

1P57-F524A,B	These valves are the inboard containment isolation valves for the Safety Related Air System penetration. The only practical method of normal closed position verification is the seat leakage test. The seat leakage test would require access to containment and isolation of the air supply to the ADS SRV accumulators (i.e., an engineered safety feature) and possibly making the ADS SRV's inoperable. Therefore, testing to verify normal closed position and unusual difficulty without a compensating increase in the level of quality and safety because of causing a prolonged period of exposure to radiation and isolation of the ADS SRV accumulator air supply.

Valve Relief Request #

VR-42

Relief Request Deleted
Intentionally Left Blank

Revised To RO-6
In Accordance With NRC Safety Evaluation
Dated April 5, 1993 Resolution (Log No. PY-NRR/CEI-0629L)

Valve Relief Request #

VR-43

System: Division 1 and 2 Standby Diesel Generator Starting Air Accumulator Check Valves (1R44)
and
Division 3 HPCS Standby Diesel Generator Starting Air Accumulator Check Valves (1E22)

Valves: 1E22-F538A, 1E22-F538B, 1R44-F503A, 1R44-F503B, 1R44-F504A, 1R44-F504B

Category: C

Class: 3

Function: Starting Air Accumulator check valves provide and maintain air to Div. 1, 2, and 3 standby diesel generators starting air accumulators for engine rolls and starts.

Test Requirement: IWV-3521; Test Frequency - Exercise at least once every three months, quarterly.

Basis for Relief: System design prohibits the verification of the return to normal closed position verification of these check valves.

Alternate Testing: A sample disassembly and inspection plan will be utilized which selects one valve in each group to be disassembled every refueling outage. Sample groups may consist of more than 4 valves; however, all valves within each group must be disassembled within a maximum of 4 refueling outages. These valves are exercised open following the disassembly/reassembly by verifying both starting air accumulator compressors automatically started, or that, final air accumulator pressure is greater than or equal to initial air accumulator pressure during monthly diesel generator testing.

Approved In NRC Safety Evaluation
Dated April 5, 1993 (Log No. PY-NRR/CEI-0629L)

3.3 Valve Testing Index

Valve Testing Index

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	D-302-607/Rev. H	3.4-22
Reactor Water Recirculation (B33)	D-302-602/Rev. N	3.4-23
Control Rod Drive Hydraulics (C11)	D-302-871/Rev. U	3.4-24
	D-302-872/Rev. T	3.4-25 through 3.4-26
Standby Liquid Control (C41)	D-302-691/Rev. P	3.4-27 through 3.4-28
	D-302-692/Rev. K	3.4-29 through 3.4-30
Plant Radiation Monitoring (D17)	D-806-004/Rev. G	3.4-31
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Residual Heat Removal (E12)	D-302-641/Rev. Z	3.4-35 through 3.4-38
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Containment Integrated Leak Rate Testing (E61)	D-302-811/Rev. J	3.4-62
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Valve Testing Index (Cont.)

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Control Complex Chilled Water (P47)	D-913-001/Rev. BB D-913-002/Rev. N	3.4-104 3.4-105
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Valve Testing Index (Cont.)

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Valve Test Table

SYSTEM: NUCLEAR BOILER (B21)

DWG. NO. D-302-121

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-B21	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1B21-F016	1 C-10	A ACTIVE	3 GT	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2006 T2006 T9423 T2006	C * 20	1000.0 SCCM		OM(10)-2	
1B21-F019	1 C-10	A ACTIVE	3 GT	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2006 T2006 T9423 T2006	C * 20	1000.0 SCCM		OM(10)-2	SVI-B21-T2008 (PI) Remote S/D Local Brkr
1B21-F067A	2 C-7	A ACTIVE	1-1/2 GL	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2006 T2006 T9124 T2006	C * 22.5	11,800.0 SCCM		OM(10)-2	
1B21-F067B	2 C-6	A ACTIVE	1-1/2 GL	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2006 T2006 T9416 T2006	C * 22.5	11,800.0 SCCM		OM(10)-2	
1B21-F067C	2 C-8	A ACTIVE	1-1/2 GL	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2006 T2006 T9122 T2006	C * 22.5	11,800.0 SCCM		OM(10)-2	
1B21-F067D	2 C-7	A ACTIVE	1-1/2 GL	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2006 T2006 T9415 T2006	C * 22.5	11,800.0 SCCM		OM(10)-2	

Valve Test Table

SYSTEM: NUCLEAR BOILER (B21)

DWG. NO. D-302-605

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-B21	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1B21-F001	1 E-13	B ACTIVE	2 GL	MO C	FE-Q ST-Q PI-2Y	T2004 T2004 T2004	C 20			CS-13	
1B21-F002	1 D-13	B ACTIVE	2 GL	MO C	FE-Q ST-Q PI-2Y	T2004 T2004 T2004	C 20			CS-13	
1B21-F005	1 C-13	B PASSIVE	2 GL	MO O	FE-NA ST-NA PI-2Y	NA NA T2004					Note 2
1B21-F022A	1 C-8	A ACTIVE	26 GL	AO O	PE-Q FE-Q ST-Q FS-Q LJ-2Y PI-2Y	T0039(C71) T2001 T2001 T2001 T9124 T2001	C 2.5 to 5	11,800.0 SCCM		CS-5 OM(10)-2 VR-3	C61-T1104(PI) Remote S/D Panel
1B21-F022B	1 E-9	A ACTIVE	26 GL	AO O	PE-Q FE-Q ST-Q FS-Q LJ-2Y PI-2Y	T0039(C71) T2001 T2001 T2001 T9416 T2001	C 2.5 to 5	11,800.0 SCCM		CS-5 OM(10)-2 VR-3	C61-T1104(PI) Remote S/D Panel

Valve Test Table

SYSTEM: NUCLEAR BOILER (B21)

DWG. NO. D-302-605

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-B21	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1B21-F022C	1 F-9	A ACTIVE	26 GL	AO O	PE-Q FE-Q ST-Q FS-Q LJ-2Y PI-2Y	T0039(C71) T2001 T2001 T2001 T9122 T2001	C 2.5 to 5	11,800.0 SCCM		CS-5 OM(10)-2 VR-3	C61-T1104(PI) Remote S/D Panel
1B21-F022D	1 F-9	A ACTIVE	26 GL	AO O	PE-Q FE-Q ST-Q FS-Q LJ-2Y PI-2Y	T0039(C71) T2001 T2001 T2001 T9415 T2001	C 2.5 to 5	11,800.0 SCCM		CS-5 OM(10)-2 VR-3	C61-T1104(PI) Remote S/D Panel
1B21-F024A	3 B-8	AC ACTIVE	1 CH	SE C	FE-Q AP-Q LD-2Y	T2009 T2200 T2200		332,442.0 SCCM	F	CS-20 VR-41	MSIV (F022A) Accum. CH.
1B21-F024B	3 E-9	AC ACTIVE	1 CH	SE C	FE-Q AP-Q LD-2Y	T2009 T2200 T2200		332,442.0 SCCM	F	CS-20 VR-41	MSIV (F022B) Accum. CH.
1B21-F024C	3 F-9	AC ACTIVE	1 CH	SE C	FE-Q AP-Q LD-2Y	T2009 T2200 T2200		332,442.0 SCCM	F	CS-20 VR-41	MSIV (F022C) Accum. CH.
1B21-F024D	3 F-9	AC ACTIVE	1 CH	SE C	FE-Q AP-Q LD-2Y	T2009 T2200 T2200		332,442.0 SCCM	F	CS-20 VR-41	MSIV (F022D) Accum. CH.

Valve Test Table

SYSTEM: NUCLEAR BOILER (B21)

DWG. NO. D-302-605

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-B21	STROKE DIECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1B21-F028A	1 C-6	A ACTIVE	26 GL	AO O	PE-Q FE-Q ST-Q FS-Q LJ-2Y PI-2Y	T0039(C71) T2001 T2001 T2001 T9124 T2001	C 2.5 to 5	11,800.0 SCCM		CS-5 OM(10)-2 VR-3	
1B21-F028B	1 E-8	A ACTIVE	26 GL	AO O	PE-Q FE-Q ST-Q FS-Q LJ-2Y PI-2Y	T0039(C71) T2001 T2001 T2001 T9416 T2001	C 2.5 to 5	11,800.0 SCCM		CS-5 OM(10)-2 VR-3	
1B21-F028C	1 F-8	A ACTIVE	26 GL	AO O	PE-Q FE-Q ST-Q FS-Q LJ-2Y PI-2Y	T0039(C71) T2001 T2001 T2001 T9122 T2001	C 2.5 to 5	11,800.0 SCCM		CS-5 OM(10)-2 VR-3	
1B21-F028D	1 F-8	A ACTIVE	26 GL	AO O	PE-Q FE-Q ST-Q FS-Q LJ-2Y PI-2Y	T0039(C71) T2001 T2001 T2001 T9415 T2001	C 2.5 to 5	11,800.0 SCCM		CS-5 OM(10)-2 VR-3	
1B21-F029A	3 B-6	AC ACTIVE	1 CH	SE C	FE-Q AP-Q LD-2Y	T2009 T2201 T2201		332,442.0 SCCM	F	CS-20 VR-41	MSIV (F028A) Accum. CH.

Valve Test Table

SYSTEM: NUCLEAR BOILER (B21) DWG. NO. D-302-605

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. UNST. NO. SVI-B21	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1B21-F029B	3 E-8	AC ACTIVE	1 CH	SE C	FE-Q AP-Q LD-2Y	T2009 T2201 T2201		332,442.0 SCCM	F	CS-20 VR-41	MSIV (F028B) Accum. CH.
1B21-F029C	3 F-8	AC ACTIVE	1 CH	SE C	FE-Q AP-Q LD-2Y	T2009 T2201 T2201		332,442.0 SCCM	F	CS-20 VR-41	MSIV (F028C) Accum. CH.
1B21-F029D	3 F-8	AC ACTIVE	1 CH	SE C	FE-Q AP-Q LD-2Y	T2009 T2201 T2201		332,442.0 SCCM	F	CS-20 VR-41	MSIV (F028D) Accum. CH.
1B21-F036C	3 B-11	C ACTIVE	1 CH	SE C	FE-Q AP-Q	T2009 T2007			F	CS-20 RO-5	NON-ADS (F041C) Accum. CH.
1B21-F036D	3 B-11	C ACTIVE	1 CH	SE C	FE-Q AP-Q	T2009 T2007			F	CS-20 RO-5	NON-ADS (F041D) Accum. CH.
1B21-F036G	3 B-11	C ACTIVE	1 CH	SE C	FE-Q AP-Q	T2009 T2007			F	CS-20 RO-5	NON-ADS (F041G) Accum. CH.
1B21-F036H	3 B-11	C ACTIVE	1 CH	SE C	FE-Q AP-Q	T2009 T2007			F	CS-20 RO-5	NON-ADS (F041K) Accum. CH.
1B21-F036J	3 B-11	C ACTIVE	1 CH	SE C	FE-Q AP-Q	T2009 T2007			F	CS-20 RO-5	NON-ADS (F047B) Accum. CH.
1B21-F036K	3 B-11	C ACTIVE	1 CH	SE C	FE-Q AP-Q	T2009 T2007			F	CS-20 RO-5	NON-ADS (F047C) Accum. CH.

Valve Test Table

SYSTEM: NUCLEAR BOILER (B21)

DWG. NO. D-302-605

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-B21	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1B21-F036M	3 B-11	C ACTIVE	1 CH	SE C	FE-Q AP-Q	T2009 T2007			F	CS-20 RO-5	NON-ADS (F047F) Accum. CH.
1B21-F036N	3 B-11	C ACTIVE	1 CH	SE C	FE-Q AP-Q	T2009 T2007			F	CS-20 RO-5	NON-ADS (F047G) Accum. CH.
1B21-F036R	3 B-11	C ACTIVE	1 CH	SE C	FE-Q AP-Q	T2009 T2007			F	CS-20 RO-5	NON-ADS (F051A) Accum. CH.
1B21-F036S	3 B-11	C ACTIVE	1 CH	SE C	FE-Q AP-Q	T2009 T2007			F	CS-20 RO-5	NON-ADS (F051B) Accum. CH.
1B21-F036U	3 B-11	C ACTIVE	1 CH	SE C	FE-Q AP-Q	T2009 NA			F	CS-20	NON-ADS (F051D) Accum. CH.
1B21-F037A	3 B-10	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2004 T2004			F	CS-11	
1B21-F037B	3 B-10	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2004 T2004			F	CS-11	
1B21-F037C	3 B-10	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2004 T2004			F	CS-11	
1B21-F037D	3 B-10	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2004 T2004			F	CS-11	
1B21-F037E	3 B-10	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2004 T2004			F	CS-11	

Valve Test Table

SYSTEM: NUCLEAR BOILER (B21)

DWG. NO. D-302-605

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-B21	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1B21-F037F	3 B-10	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2004 T2004			F	CS-11	
1B21-F037G	3 B-10	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2004 T2004			F	CS-11	
1B21-F037H	3 B-10	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2004 T2004			F	CS-11	
1B21-F037J	3 B-10	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2004 T2004			F	CS-11	
1B21-F037K	3 B-10	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2004 T2004			F	CS-11	
1B21-F037L	3 B-10	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2004 T2004			F	CS-11	
1B21-F037M	3 B-10	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2004 T2004			F	CS-11	
1B21-F037N	3 B-10	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2004 T2004			F	CS-11	
1B21-F037P	3 B-10	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2004 T2004			F	CS-11	
1B21-F037R	3 B-10	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2004 T2004			F	CS-11	

Valve Test Table

SYSTEM: NUCLEAR BOILER (B21)

DWG. NO. D-302-605

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-B21	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1B21-F037S	3 B-10	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2004 T2004			F	CS-11	
1B21-F037T	3 B-10	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2004 T2004			F	CS-11	
1B21-F037U	3 B-10	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2004 T2004			F	CS-11	
1B21-F037V	3 B-10	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2004 T2004			F	CS-11	
1B21-F039A	3 D-10	C ACTIVE	1 CH	SE C	FE-Q AP-Q	T2009 NA			F	CS-20	ADS (F041A) Accum. CH.
1B21-F039B	3 D-10	C ACTIVE	1 CH	SE C	FE-Q AP-Q	T2009 NA			F	CS-20	ADS (F041B) Accum. CH.
1B21-F039E	3 D-10	C ACTIVE	1 CH	SE C	FE-Q AP-Q	T2009 NA			F	CS-20	ADS (F041E) Accum. CH.
1B21-F039F	3 D-10	C ACTIVE	1 CH	SE C	FE-Q AP-Q	T2009 NA			F	CS-20	ADS (F041F) Accum. CH.
1B21-F039L	3 D-10	C ACTIVE	1 CH	SE C	FE-Q AP-Q	T2009 NA			F	CS-20	ADS (F047D) Accum. CH.
1B21-F039P	3 D-10	C ACTIVE	1 CH	SE C	FE-Q AP-Q	T2009 NA			F	CS-20	ADS (F047H) Accum. CH.

Valve Test Table

SYSTEM: NUCLEAR BOILER (B21)

DWG. NO. D-302-605

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-B21	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1B21-F039T	3 D-10	C ACTIVE	1 CH	SE C	FE-Q AP-Q	T2009 NA			F	CS-20	ADS (F051C) Accum. CH.
1B21-F039V	3 D-10	C ACTIVE	1 CH	SE C	FE-Q AP-Q	T2009 NA			F	CS-20	ADS (F051G) Accum. CH.
1B21-F040	3 E-14	C ACTIVE	2 CH	SE C	FE-Q AP-Q	T2004 T2004			F	CS-11	
1B21-F041A	1 D-10	C ACTIVE	10 RE	SE/AO C	RT-5Y FE-Q PI-2Y	T2100 T2005 T2005			1153.4 to 1176.6		Dikkers Valve (ADS)
1B21-F041B	1 D-10	C ACTIVE	10 RE	SE/AO C	RT-5Y FE-Q PI-2Y	T2100 T2005 T2005			1153.4 to 1176.6		Dikkers Valve (ADS)
1B21-F041C	1 C-10	C ACTIVE	10 RE	SE/AO C	RT-5Y FE-Q PI-2Y	T2100 T2005 T2005			1153.4 to 1176.6		Dikkers Valve
1B21-F041D	1 C-10	C ACTIVE	10 RE	SE/AO C	RT-5Y FE-Q PI-2Y	T2100 T2005 T2005			1153.4 to 1176.6		Dikkers Valve
1B21-F041E	1 D-10	C ACTIVE	10 RE	SE/AO C	RT-5Y FE-Q PI-2Y	T2100 T2005 T2005			1153.4 to 1176.6		Dikkers Valve (ADS)
1B21-F041F	1 D-10	C ACTIVE	10 RE	SE/AO C	RT-5Y FE-Q PI-2Y	T2100 T2005 T2005			1153.4 to 1176.6		Dikkers Valve (ADS)

Valve Test Table

SYSTEM: NUCLEAR BOILER (B21)

DWG. NO. D-302-605

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-B21	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CHK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1B21-F041G	1 C-10	C ACTIVE	10 RE	SE/AO DE	RT-5Y FE-Q PI-2Y	T2100 T2005 T2005			1153.4 to 1176.6		Dikkers Valve
1B21-F041K	1 C-10	C ACTIVE	10 RE	SE/AO C	RT-5Y FE-Q PI-2Y	T2100 T2005 T2005			1153.4 to 1176.6		Dikkers Valve
1B21-F047B	1 C-10	C ACTIVE	10 RE	SE/AO C	RT-5Y FE-Q PI-2Y	T2100 T2005 T2005			1168.2 to 1191.8		Dikkers Valve
1B21-F047C	1 C-10	C ACTIVE	10 RE	SE/AO C	RT-5Y FE-Q PI-2Y	T2100 T2005 T2005			1168.2 to 1191.8		Dikkers Valve
1B21-F047D	1 D-10	C ACTIVE	10 RE	SE/AO C	RT-5Y FE-Q PI-2Y	T2100 T2005 T2005			1168.2 to 1191.8		Dikkers Valve (ADS)
1B21-F047F	1 C-10	C ACTIVE	10 RE	SE/AO C	RT-5Y FE-Q PI-2Y	T2100 T2005 T2005			1168.2 to 1191.8		Dikkers Valve
1B21-F047G	1 C-10	C ACTIVE	10 RE	SE/AO C	RT-5Y FE-Q PI-2Y	T2100 T2005 T2005			1168.2 to 1191.8		Dikkers Valve
1B21-F047H	1 D-10	C ACTIVE	10 RE	SE/AO C	RT-5Y FE-Q PI-2Y	T2100 T2005 T2005			1168.2 to 1191.8		Dikkers Valve (ADS)

Valve Test Table

SYSTEM: NUCLEAR BOILER (B21)

DWG. NO. D-302-605

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-B21	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CHK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1B21-F051A	1 C-10	C ACTIVE	10 RE	SE/AO C	RT-5Y FE-Q PI-2Y	T2100 T2005 T2005			1178.1 to 1201.9		Dikkers Valve
1B21-F051B	1 C-10	C ACTIVE	10 RE	SE/AO C	RT-5Y FE-Q PI-2Y	T2100 T2005 T2005			1178.1 to 1201.9		Dikkers Valve
1B21-F051C	1 D-10	C ACTIVE	10 RE	SE/AO C	RT-5Y FE-Q PI-2Y	T2100 T2005 T2005			1178.1 to 1201.9		Dikkers Valve (ADS) C61-T1104 (PI) Remote S/D PNL Div. 1 & Remote S/D PNL No. 1C61-P002 Div. 2.
1B21-F051D	1 C-10	C ACTIVE	10 RE	SE/AO C	RT-5Y FE-Q PI-2Y	T2100 T2005 T2005			1178.1 to 1201.9		Dikkers Valve C61-T1104 (PI) Remote S/D PNL Div. 1 & Remote S/D PNL No. 1C61-P002 Div. 2.
1B21-F051G	1 D-10	C ACTIVE	10 RE	SE/AO C	RT-5Y FE-Q PI-2Y	T2100 T2005 T2005			1178.1 to 1201.9		Dikkers Valve (ADS) C61-T1104 (PI) Remote S/D PNL Div. 1 & Remote S/D PNL No. 1C61-P002 Div. 2.
1B21-F078A	3 B-10	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2004 T2004			F	CS-11	

Valve Test Table

SYSTEM: NUCLEAR BOILER (B21)

DWG. NO. D-302-605

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-B21	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1B21-F078B	3 B-10	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2004 T2004			F	CS-11	
1B21-F078C	3 B-10	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2004 T2004			F	CS-11	
1B21-F078D	3 B-10	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2004 T2004			F	CS-11	
1B21-F078E	3 B-10	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2004 T2004			F	CS-11	
1B21-F078F	3 B-10	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2004 T2004			F	CS-11	
1B21-F078G	3 B-10	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2004 T2004			F	CS-11	
1B21-F078H	3 B-10	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2004 T2004			F	CS-11	
1B21-F078J	3 B-10	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2004 T2004			F	CS-11	
1B21-F078K	3 B-10	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2004 T2004			F	CS-11	
1B21-F078L	3 B-10	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2004 T2004			F	CS-11	
1B21-F078M	3 B-10	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2004 T2004			F	CS-11	

Valve Test Table

SYSTEM: NUCLEAR BOILER (B21)

DWG. NO. D-302-605

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-B21	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1B21-F078N	3 B-10	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2004 T2004			F	CS-11	
1B21-F078P	3 B-10	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2004 T2004			F	CS-11	
1B21-F078R	3 B-10	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2004 T2004			F	CS-11	
1B21-F078S	3 B-10	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2004 T2004			F	CS-11	
1B21-F078T	3 B-10	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2004 T2004			F	CS-11	
1B21-F078U	3 B-10	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2004 T2004			F	CS-11	
1B21-F078V	3 B-10	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2004 T2004			F	CS-11	
1B21-F410A	3 D-11	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2005 T2005 T2005 T2005	NA			VR-20	SRV (F041A) Control Vlv.
1B21-F410B	3 D-11	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2005 T2005 T2005 T2005	NA			VR-20	SRV (F041A) Control Vlv.

Valve Test Table

SYSTEM: NUCLEAR BOILER (B21)

DWG. NO. D-302-605

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-B21	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1B21-F411A	3 D-11	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2005 T2005 T2005 T2005	NA			VR-20	SRV (F041B) Control Vlv.
1B21-F411B	3 D-11	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2005 T2005 T2005 T2005	NA			VR-20	SRV (F041B) Control Vlv.
1B21-F412A	3 B-11	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2005 T2005 T2005 T2005	NA			VR-20	SRV (F041C) Control Vlv.
1B21-F412B	3 B-11	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2005 T2005 T2005 T2005	NA			VR-20	SRV (F041C) Control Vlv.
1B21-F413A	3 B-11	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2005 T2005 T2005 T2005	NA			VR-20	SRV (F041D) Control Vlv.
1B21-F413B	3 B-11	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2005 T2005 T2005 T2005	NA			VR-20	SRV (F041D) Control Vlv.

Valve Test Table

SYSTEM: NUCLEAR BOILER (B21)

DWG. NO. D-302-605

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-B21	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1B21-F414A	3 D-11	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2005 T2005 T2005 T2005	NA			VR-20	SRV (F041E) Control Vlv.
1B21-F414B	3 D-11	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2005 T2005 T2005 T2005	NA			VR-20	SRV (F041E) Control Vlv.
1B21-F415A	3 D-11	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2005 T2005 T2005 T2005	NA			VR-20	SRV (F041F) Control Vlv.
1B21-F415B	3 D-11	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2005 T2005 T2005 T2005	NA			VR-20	SRV (F041F) Control Vlv.
1B21-F416A	3 B-11	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2005 T2005 T2005 T2005	NA			VR-20	SRV (F041G) Control Vlv.
1B21-F416B	3 B-11	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2005 T2005 T2005 T2005	NA			VR-20	SRV (F041G) Control Vlv.

Valve Test Table

SYSTEM: NUCLEAR BOILER (B21)

DWG. NO. D-302-605

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-B21	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1B21-F417A	3 B-11	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2005 T2005 T2005 T2005	NA			VR-20	SRV (F041K) Control Vlv.
1B21-F417B	3 B-11	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2005 T2005 T2005 T2005	NA			VR-20	SRV (F041K) Control Vlv.
1B21-F420A	3 B-11	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2005 T2005 T2005 T2005	NA			VR-20	SRV (F047B) Control Vlv.
1B21-F420B	3 B-11	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2005 T2005 T2005 T2005	NA			VR-20	SRV (F047B) Control Vlv.
1B21-F421A	3 B-11	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2005 T2005 T2005 T2005	NA			VR-20	SRV (F047C) Control Vlv.
1B21-F421B	3 B-11	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2005 T2005 T2005 T2005	NA			VR-20	SRV (F047C) Control Vlv.

Valve Test Table

SYSTEM: NUCLEAR BOILER (B21)

DWG. NO. D-302-605

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-B21	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1B21-F422A	3 D-11	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2005 T2005 T2005 T2005	NA			VR-20	SRV (F047D) Control Vlv.
1B21-F422B	3 D-11	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2005 T2005 T2005 T2005	NA			VR-20	SRV (F047D) Control Vlv.
1B21-F423A	3 B-11	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2005 T2005 T2005 T2005	NA			VR-20	SRV (F047F) Control Vlv.
1B21-F423B	3 B-11	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2005 T2005 T2005 T2005	NA			VR-20	SRV (F047F) Control Vlv.
1B21-F424A	3 B-11	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2005 T2005 T2005 T2005	NA			VR-20	SRV (F047G) Control Vlv.
1B21-F424B	3 B-11	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2005 T2005 T2005 T2005	NA			VR-20	SRV (F047G) Control Vlv.

Valve Test Table

SYSTEM: NUCLEAR BOILER (B21)

DWG. NO. D-302-605

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-B21	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1B21-F425A	3 D-11	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2005 T2005 T2005 T2005	NA			VR-20	SRV (F047H) Control Vlv.
1B21-F425B	3 D-11	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2005 T2005 T2005 T2005	NA			VR-20	SRV (F047H) Control Vlv.
1B21-F440A	3 B-11	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2005 T2005 T2005 T2005	NA			VR-20	SRV (F051A) Control Vlv.
1B21-F440B	3 B-11	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2005 T2005 T2005 T2005	NA			VR-20	SRV (F051A) Control Vlv.
1B21-F441A	3 B-11	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2005 T2005 T2005 T2005	NA			VR-20	SRV (F051B) Control Vlv.
1B21-F441B	3 B-11	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2005 T2005 T2005 T2005	NA			VR-20	SRV (F051B) Control Vlv.

Valve Test Table

SYSTEM: NUCLEAR BOILER (B21)

DWG. NO. D-302-605

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-B21	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1B21-F442A	3 D-11	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2005 T2005 T2005 T2005	NA			VR-20	SRV (F051C) Control Vlv.
1B21-F442B	3 D-11	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2005 T2005 T2005 T2005	NA			VR-20	SRV (F051C) Control Vlv.
1B21-F443A	3 B-11	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2005 T2005 T2005 T2005	NA			VR-20	SRV (F051D) Control Vlv.
1B21-F443B	3 B-11	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2005 T2005 T2005 T2005	NA			VR-20	SRV (F051D) Control Vlv.
1B21-F444A	3 D-11	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2005 T2005 T2005 T2005	NA			VR-20	SRV (F051G) Control Vlv.
1B21-F444B	3 D-11	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2005 T2005 T2005 T2005	NA			VR-20	SRV (F051G) Control Vlv.

Valve Test Table

SYSTEM: NUCLEAR BOILER (B21)

DWG. NO. D-302-605

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ.	SURV. INST. NO. SVI-B21	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1B21-F460	3 B-8	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2001 T2001 T2001 T2001	NA			VR-11	MSIV (F022A) Control Vlv.
1B21-F461	3 B-8	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2001 T2001 T2001 T2001	NA			VR-11	MSIV (F022B) Control Vlv.
1B21-F462	3 B-8	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2001 T2001 T2001 T2001	NA			VR-11	MSIV (F022C) Control Vlv.
1B21-F463	3 B-8	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2001 T2001 T2001 T2001	NA			VR-11	MSIV (F022D) Control Vlv.
1B21-F480	3 B-6	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2001 T2001 T2001 T2001	NA			VR-11	MSIV (F028A) Control Vlv.
1B21-F481	3 B-6	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2001 T2001 T2001 T2001	NA			VR-11	MSIV (F028B) Control Vlv.

Valve Test Table

SYSTEM: NUCLEAR BOILER (B21)

DWG. NO. D-302-605

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ.	SURV. INST. NO. SVI-B21	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1B21-F482	3 B-6	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2001 T2001 T2001 T2001	NA			VR-11	MSIV (F028C) Control Vlv.
1B21-F483	3 B-6	B ACTIVE	2 TW	SO C	FE-Q ST-Q FS-Q PI-2Y	T2001 T2001 T2001 T2001	NA			VR-11	MSIV (F028D) Control Vlv.

Valve Test Table

SYSTEM: NUCLEAR BOILER (B21)

DWG. NO. D-302-607

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-B21	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1B21-R011A-F	2 B-10	AC ACTIVE	3/8 CH	SE O	FE-Q AP-Q LD-2Y	T2010 T2010 T2202		0.002 GPM	R	CS-23	
1B21-R011A-G	2 B-10	AC ACTIVE	3/8 CH	SE O	FE-Q AP-Q LD-2Y	T2010 T2010 T2202		0.002 GPM	R	CS-23	
1B21-R011B-F	2 B-10	AC ACTIVE	3/8 CH	SE C	FE-Q AP-Q LD-2Y	T2010 T2010 T2202		0.002 GPM	R	CS-23	
1B21-R011B-G	2 B-10	AC ACTIVE	3/8 CH	SE C	FE-Q AP-Q LD-2Y	T2010 T2010 T2202		0.002 GPM	R	CS-23	
1B21-R011C-F	2 B-10	AC ACTIVE	3/8 CH	SE C	FE-Q AP-Q LD-2Y	T2010 T2010 T2202		0.002 GPM	R	CS-23	
1B21-R011C-G	2 B-10	AC ACTIVE	3/8 CH	SE C	FE-Q AP-Q LD-2Y	T2010 T2010 T2202		0.002 GPM	R	CS-23	
1B21-R011D-F	2 B-10	AC ACTIVE	3/8 CH	SE C	FE-Q AP-Q LD-2Y	T2010 T2010 T2202		0.002 GPM	R	CS-23	
1B21-R011D-G	2 B-10	AC ACTIVE	3/8 CH	SE C	FE-Q AP-Q LD-2Y	T2010 T2010 T2202		0.002 GPM	R	CS-23	

Valve Test Table

SYSTEM: REACTOR WATER RECIRCULATION (B33)

DWG. NO. D-302-602

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-B33	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1B33-F019	2	B	3/4	AO	FE-Q	T2001	C				
	A-6	ACTIVE	DI	C	ST-Q	T2001	5				
					FS-Q	T2001					
					PI-2Y	T2001					
1B33-F020	2	B	3/4	AO	FE-Q	T2001	C				
	A-4	ACTIVE	DI	C	ST-Q	T2001	5				
					FS-Q	T2001					
					PI-2Y	T2001					

Valve Test Table

SYSTEM: CONTROL ROD DRIVE HYDRAULICS (C11)

DWG. NO. D-302-871

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-C11	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1C11-F010	2 D-11	B ACTIVE	1 GL	AO O	FE-Q ST-Q FS-Q XX-RO PI-2Y	T2004 T2004 T2004 P0006(PTI) T2004	C 30	NA			Note 4
1C11-F011	2 G-11	B ACTIVE	2 GL	AO O	FE-Q ST-Q FS-Q XX-RO PI-2Y	T2004 T2004 T2004 P0006(PTI) T2004	C 30	NA			Note 4
1C11-F083	2 J-5	A ACTIVE	2-1/2 GT	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2002 T2002 T9204 T2002	C * 12.5	1000.0 SCCM		CS-6	
1C11-F180	2 D-12	B ACTIVE	1 GL	AO O	FE-Q ST-Q FS-Q XX-RO PI-2Y	T2004 T2004 T2004 P0006(PTI) T2004	C 30	NA			Note 4
1C11-F181	2 G-12	B ACTIVE	2 GL	AO O	FE-Q ST-Q FS-Q XX-RO PI-2Y	T2004 T2004 T2004 P0006(PTI) T2004	C 30	NA			Note 4

Valve Test Table

SYSTEM: CONTROL ROD DRIVE HYDRAULICS (C11) DWG. NO. D-302-872

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-C11	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1C11-F122	2 F-14	AC ACTIVE	2-1/2 CH	SE O	FE-Q AP-Q LJ-2Y	T9204 T1300-1(ISI-B21) T9204		1000.0 SCCM	R	VR-17	ISI Instruction vs. SVI Instruction for AP.
Assembly 1C11-114	2 B-4	C ACTIVE	3/4 CH	SE C	FE-Q AP-Q	T1006 NA			F	VR-6	Typical of 177 CRD HYD Units, test using scram insertion time.
Assembly 1C11-115	2 C-10	C ACTIVE	1/2 CH	SE C	FE-Q AP-Q	T1006 T2001			F	VR-6	Typical of 177 CRD HYD Units.
Assembly 1C11-120	2 C-7	B ACTIVE	3/4 GT	SO C	FE-Q ST-Q FS-Q	T1003A(B) T1003A(B) T1003A(B)	NA				Typical of 177 CRD HYD Units, test using routine rod notch.
Assembly 1C11-121	2 C-6	B ACTIVE	3/4 GT	SO C	FE-Q ST-Q FS-Q	T1003A(B) T1003A(B) T1003A(B)	NA				Typical of 177 CRD HYD Units, test using routine rod notch.
Assembly 1C11-122	2 B-6	B ACTIVE	3/4 GT	SO C	FE-Q ST-Q FS-Q	T1003A(B) T1003A(B) T1003A(B)	NA				Typical of 177 CRD HYD Units, test using routine rod notch.
Assembly 1C11-123	2 B-7	B ACTIVE	3/4 GT	SO C	FE-Q ST-Q FS-Q	T1003A(B) T1003A(B) T1003A(B)	NA				Typical of 177 CRD HYD Units, test using routine rod notch.

Valve Test Table

SYSTEM: CONTROL ROD DRIVE HYDRAULICS (C11)

DWG. NO. D-302-872

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-C11	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
Assembly 1C11-126	2 B-9	B ACTIVE	1/2 GT	AO C	FE-Q ST-Q FS-Q	T1006 T1006 T1006	NA			VR-6	Typical of 177 CRD HYD Units, test using scram insertion time.
Assembly 1C11-127	2 B-5	B ACTIVE	3/4 GT	AO C	FE-Q ST-Q FS-Q	T1006 T1006 T1006	NA			VR-6	Typical of 177 CRD HYD Units, test using scram insertion time.
Assembly 1C11-134	2 D-9	D ACTIVE	1/2 RU	SE C	RD-NA	None					Typical of 177 CRD HYD Units, replace upon activation.
Assembly 1C11-137	2 C-7	C ACTIVE	1/2 CH	SE C	FE-Q AP-NA	T1003A(B) None			F		Typical of 177 CRD HYD Units, test using routine rod notch.
Assembly 1C11-138	2 C-8	C ACTIVE	1/2 CH	SE O	FE-Q AP-Q	T1003A(B) T2001 (GEN)			R		Typical of 177 CRD HYD Units, test using routine rod notch.

Valve Test Table

SYSTEM: STANDBY LIQUID CONTROL (C41)

DWG. NO. D-302-691

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-C41	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1C41-F001A	2 D-6	B ACTIVE	4 GL	MO C	FE-Q ST-Q PI-2Y	T2001A T2001A T2001A	0 20				
1C41-F001B	2 F-6	B ACTIVE	4 GL	MO C	FE-Q ST-Q PI-2Y	T2001B T2001B T2001B	0 20				
1C41-F004A	2 D-11	D ACTIVE	1-1/2 GT	EX C	EX-10Y	T2002					
1C41-F004B	2 G-11	D ACTIVE	1-1/2 GT	EX C	EX-10Y	T2002					
1C41-F006	1 E-12	AC ACTIVE	1-1/2 CH	SE C	FE-Q AP-Q LK-2Y	T2002 T2200 T2200		0.75 GPM	F	VR-10	
1C41-F007	1 E-13	AC ACTIVE	1-1/2 CH	SE C	FE-Q AP-Q LK-2Y	T2002 T2200 T2200		0.75 GPM	F	VR-10	
1C41-F029A	2 D-8	C ACTIVE	1-1/2 RE	SE C	RT-5Y	T2100(GEN)			1358.0 to 1442.0		
1C41-F029B	2 F-8	C ACTIVE	1-1/2 RE	SE C	RT-5Y	T2100(GEN)			1358.0 to 1442.0		
1C41-F033A	2 D-9	AC ACTIVE	1-1/2 CH	SE C	FE-Q AP-Q LD-2Y	T2001A T2201 T2201		1.0 GPM	F	VR-41	

Valve Test Table

SYSTEM: STANDBY LIQUID CONTROL (C41)

DWG. NO. D-302-691

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-C41	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1C41-F033B	2 G-9	AC ACTIVE	1-1/2 CH	SE C	FE-Q AP-Q LD-2Y	T2001B T2201 T2201		1.0 GPM	F	VR-41	
1C41-F036	1 E-14	NA PASSIVE	1-1/2 GT	MA O	PI-2Y	T2200					Maintenance Only

Valve Test Table

SYSTEM: STANDBY LIQUID CONTROL (C41)

DWG. NO. D-302-692

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-C41	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
C41-F511A	3 F-6	B ACTIVE	3/4 GL	MA C	XX-RO	P0001(PTI)					Note 1
C41-F511B	3 F-8	B ACTIVE	3/4 GL	MA C	XX-RO	P0001(PTI)					Note 1
C41-F513A	3 G-7	C ACTIVE	2 CH	SE C	XX-RO	P0001(PTI)			F		Note 1
C41-F513B	3 G-9	C ACTIVE	2 CH	SE C	XX-RO	P0001(PTI)			F		Note 1
C41-F514A	3 H-7	B ACTIVE	2 GL	MA C	XX-RO	P0001(PTI)					Note 1
C41-F514B	3 H-8	B ACTIVE	2 GL	MA C	XX-RO	P0001(PTI)					Note 1
C41-F515	3 H-7	B ACTIVE	2 GL	MA C	XX-RO	P0001(PTI)					Note 1
C41-F516A	3 G-6	B ACTIVE	2 GL	MA C	XX-RO	P0001(PTI)					Note 1
C41-F516B	3 G-8	B ACTIVE	2 GL	MA C	XX-RO	P0001(PTI)					Note 1
1C41-F518	2 H-5	A ACTIVE	2 GL	MA LC	XX-RO LJ-2Y	P0001(PTI) T9315		1000.0 SCCM			Note 1

Valve Test Table

SYSTEM: STANDBY LIQUID CONTROL (C41)

DWG. NO. D-302-692

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-C41	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1C41 [illegible]0	2 H-4	AC PASSIVE	2 CH	SE C	FE-Q AP-Q LJ-2Y	NA NA T9315		1000.0 SCCM			Normally isolated from tank
C41-F529A	3 G-7	C ACTIVE	1 RE	SE C	RT-5Y	T2100(GEN)			37.0 to 41.0		
C41-F529B	3 G-9	C ACTIVE	1 RE	SE C	RT-5Y	T2100(GEN)			37.0 to 41.0		
C41-F542A	3 D-6	C ACTIVE	3/4 CH	SE C	XX-RO	P0001(PTI)			F		Note 1
C41-F542B	3 D-8	C ACTIVE	3/4 CH	SE C	XX-RO	P0001(PTI)			F		Note 1

Valve Test Table

SYSTEM: PLANT RADIATION MONITORING (D17)

DWG. NO. D-806-004

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-D17	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1D17-F071A	2 B-13	A ACTIVE	1 BA	HO O	FE-Q ST-Q FS-Q LJ-2Y PI-2Y	T2001 T2001 T2001 T9201 T2001	C 2	1000.0 SCCM		VR-2 VR-4	Spring to close, on loss of power
1D17-F071B	2 B-14	A ACTIVE	1 BA	HO O	FE-Q ST-Q FS-Q LJ-2Y PI-2Y	T2001 T2001 T2001 T9201 T2001	C 2	1000.0 SCCM		VR-2 VR-4	Spring to close, on loss of power
1D17-F079A	2 B-11	A ACTIVE	1 GL	SO O	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9201 T9201	C 2	1000.0 SCCM		VR-2 VR-4	Solenoid to open, solenoid to close
1D17-F079B	2 B-11	A ACTIVE	1 GL	SO O	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9201 T9201	C 2	1000.0 SCCM		VR-2 VR-4	Solenoid to open, solenoid to close

Valve Test Table

SYSTEM: PLANT RADIATION MONITORING (D17)

DWG. NO. D-806-007

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-D17	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1D17-F081A	2 B-13	A ACTIVE	1 BA	HO O	FE-Q ST-Q FS-Q LJ-2Y PI-2Y	T2001 T2001 T2001 T8317 T2001	C 2	1000.0 SCCM		VR-2 VR-4	Spring to close, on loss of power
1D17-F081B	2 B-14	A ACTIVE	1 BA	HO O	FE-Q ST-Q FS-Q LJ-2Y PI-2Y	T2001 T2001 T2001 T8317 T2001	C 2	1000.0 SCCM		VR-2 VR-4	Spring to close, on loss of power
1D17-F089A	2 B-11	A ACTIVE	1 GL	SO O	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T8317 T8317	C 2	1000.0 SCCM		VR-2 VR-4	Solenoid to open, solenoid to close
1D17-F089B	3 B-11	A ACTIVE	1 GL	SO O	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T8317 T8317	C 2	1000.0 SCCM		VR-2 VR-4	Solenoid to open, solenoid to close

Valve Test Table

SYSTEM: CONTAINMENT ATMOSPHERE MONITORING (D23)

DWG. NO. D-302-881

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-D23	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1D23-F010A	2 B-4	A ACTIVE	3/4 GL	SO O	FE-Q ST-Q FS-Q LD-2Y PI-2Y	T2001 T2001 T2001 T2002 T2002	C 2	1000.0 SCCM		CS-18 VR-2 VR-4	CNTMT Instrument Line
1D23-F010B	2 B-11	A ACTIVE	3/4 GL	SO O	FE-Q ST-Q FS-Q LD-2Y PI-2Y	T2001 T2001 T2001 T2002 T2002	C 2	1000.0 SCCM		CS-18 VR-2 VR-4	CNTMT Instrument Line
1D23-F020A	2 C-4	A ACTIVE	3/4 GL	SO O	FE-Q ST-Q FS-Q LD-2Y PI-2Y	T2001 T2001 T2001 T2002 T2002	C 2	1000.0 SCCM		CS-18 VR-2 VR-4	CNTMT Instrument Line
1D23-F020B	2 C-11	A ACTIVE	3/4 GL	SO O	FE-Q ST-Q FS-Q LD-2Y PI-2Y	T2001 T2001 T2001 T2002 T2002	C 2	1000.0 SCCM		CS-18 VR-2 VR-4	CNTMT Instrument Line
1D23-F030A	2 F-4	A ACTIVE	3/4 GL	SO O	FE-Q ST-Q FS-Q LD-2Y PI-2Y	T2001 T2001 T2001 T2002 T2002	C 2	1000.0 SCCM		CS-18 VR-2 VR-4	CNTMT Instrument Line

Valve Test Table

SYSTEM: CONTAINMENT ATMOSPHERE MONITORING (D23)

DWG. NO. D-302-881

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-D23	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1D23-F030B	2 F-11	A ACTIVE	3/4 GL	SO O	FE-Q ST-Q FS-Q LD-2Y PI-2Y	T2001 T2001 T2001 T2002 T2002	C 2	1000.0 SCCM		CS-18 VR-2 VR-4	CNTMT Instrument Line
1D23-F040A	2 F-4	A ACTIVE	3/4 GL	SO O	FE-Q ST-Q FS-Q LD-2Y PI-2Y	T2001 T2001 T2001 T2002 T2002	C 2	1000.0 SCCM		CS-18 VR-2 VR-4	CNTMT Instrument Line
1D23-F040B	2 F-11	A ACTIVE	3/4 GL	SO O	FE-Q ST-Q FS-Q LD-2Y PI-2Y	T2001 T2001 T2001 T2002 T2002	C 2	1000.0 SCCM		CS-18 VR-2 VR-4	CNTMT Instrument Line
1D23-F050	2 B-4	A ACTIVE	3/4 GL	SO O	FE-Q ST-Q FS-Q LD-2Y PI-2Y	T2001 T2001 T2001 T2002 T2002	C 2	1000.0 SCCM		CS-18 VR-2 VR-4	CNTMT Instrument Line

Valve Test Table

SYSTEM: RESIDUAL HEAT REMOVAL (E12)

DWG. NO. D-302-641

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-E12	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1E12-F003A	2 D-12	B ACTIVE	18 GL	MO O	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	0 90 C 90				C61-T1101 (PI) Remote S/D Panel
1E12-F011A	2 C-10	A ACTIVE	4 GL	MO C	FE-Q ST-Q LW-2Y PI-2Y	T2001 T2001 T9105 T2001	0 40 C * 40	5.0 GPM		OM(10)-2	C61-T1101 (PI) Remote S/D Panel
1E12-F024A	2 F-4	A ACTIVE	18 GT	MO C	FE-Q ST-Q LW-2Y PI-2Y	T2001 T2001 T9105 T2001	0 90 C * 90	5.0 GPM		OM(10)-2 VR-3	C61-T1101 (PI) Remote S/D Panel
1E12-F025A	2 C-5	AC ACTIVE	1 RE	SE C	RT-5Y LJ-2Y	T2100(GEN) T9107		1670.58 SCCM	470.0 to 500.0	OM(10)-2	
1E12-F026A	2 C-13	B ACTIVE	4 GT	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	0 20 C 20				C61-T1101 (PI) Remote S/D Panel
1E12-F031A	2 K-7	C ACTIVE	18 CH	SE C	FE-Q AP-Q	T2001 T2001			F		
1E12-F040	2 E-7	B ACTIVE	8 GL	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	0 30 C 30				C61-T1101 (PI) Remote S/D Panel
1E12-F046A	2 G-6	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2001 T2001			F		

Valve Test Table

SYSTEM: RESIDUAL HEAT REMOVAL (E12)

DWG. NO. D-302-641

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-E12	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1E12-F047A	2 F-10	B ACTIVE	18 GT	MO O	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	0 90 C 90				C61-T1101 (PI) Remote S/D Panel
1E12-F048A	2 E-7	B ACTIVE	18 GL	MO O	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	0 90 C 90				C61-T1101 (PI) Remote S/D Panel
1E12-F049	2 E-7	B ACTIVE	8 GT	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	0 50 C 50				
1E12-F051A	2 B-10	B PASSIVE	10 DI	AO C	FE-Q FS-Q	T2004A T2004A				CS-16	Control Valve ST Not Applicable
1E12-F052A	2 B-12	B ACTIVE	10 GL	MO C	FE-Q ST-Q PI-2Y	T2004A T2004A T2004A	0 70 C 70			CS-16	C61-T1101 (PI) Remote S/D Panel
1E12-F054A	2 C-13	C ACTIVE	4 CH	SE C	FE-Q AP-Q	T2000(GEN) T2000(GEN)			F		Inoperable
1E12-F055A	2 E-9	AC ACTIVE	4 RE	SE C	RT-5Y LJ-2Y	T2100(GEN) T9107		1670.58 SCCM	475 to 495	OM(10)-2	
1E12-F060A	2 E-13	B ACTIVE	3/4 GL	SO C	FE-Q ST-Q FS-Q PI-2Y	T2001 T2001 T2001 T2017	0 2 C 2			VR-2 VR-4	

Valve Test Table

SYSTEM: RESIDUAL HEAT REMOVAL (E12) DWG. NO. D-302-641

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-E12	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1E12-F064A	2 H-6	A ACTIVE	6 GT	MO O	FE-Q ST-Q LW-2Y PI-2Y	T2001 T2001 T9105 T2001	0 14 C * 14	3.0 GPM		VR-3	C61-T1101 (PI) Remote S/D Panel
1E12-F065A	2 D-13	B PASSIVE	4 DI	AO C	FE-Q FS-Q	T2004A T2004A				CS-16	Control Valve ST Not Applicable
1E12-F073A	2 F-9	A ACTIVE	1 GL	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9118 T2001	0 15 C * 15	1000.0 SCCM			
1E12-F075A	2 E-14	B ACTIVE	3/4 GL	SO C	FE-Q ST-Q FS-Q PI-2Y	T2001 T2001 T2001 T2017	0 2 C 2			VR-2 VR-4	
1E12-F084A	2 J-7	C ACTIVE	1-1/2 CH	SE C	FE-Q AP-Q	T2004(E21) T2000(GEN)			F	CS-21 VR-26	
1E12-F085A	2 J-7	C ACTIVE	1-1/2 SC	SE C	FE-Q AP-Q	T2004(E21) T2001			F	CS-21	Closed using handwheel
1E12-F087A	2 B-11	B ACTIVE	6 GL	MO C	FE-Q ST-Q PI-2Y	T2004A T2004A T2004A	0 45 C 45			CS-16	
1E12-F099A	2 D-4	B ACTIVE	10 GT	MA C	XX-RO	P0004(PTI)					Note 1

Valve Test Table

SYSTEM: RESIDUAL HEAT REMOVAL (E12)

DWG. NO. D-302-641

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-E12	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1E12-F103A	2 E-9	C ACTIVE	1 1/2 CH	SE C	FE-Q AP-Q	T2015 T9107			F	RO-1	
1E12-F104A	2 E-8	C ACTIVE	1 1/2 CH	SE C	FE-Q AP-Q	T2015 T9107			F	RO-1	
1E12-F552A	2 C-4	C ACTIVE	10 SC	SE C	FE-Q AP-Q	T2002(G42) T2002(G42)			F		Close Using Handwheel
1E12-F609	2 F-3	A ACTIVE	6 GT	MO C	FE-Q ST-Q LW-2Y PI-2Y	T2001 T2001 T9105 T2001	0 30 C ★ 30	5.0 GPM		OM(10)-2 VR-3	C61-T1101 (PI) Remote S/D Panel
1E12-F610	2 E-3	A ACTIVE	6 GT	MO C	FE-Q ST-Q LW-2Y PI-2Y	T2001 T2001 T9105 T2001	0 30 C ★ 30	3.0 GPM		OM(10)-2 VR-3	

Valve Test Table

SYSTEM: RESIDUAL HEAT REMOVAL (E12)

DWG. NO. D-302-642

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-E12	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1E12-F004A	2 H-13	A ACTIVE	24 GT	MO O	FE-Q ST-Q LW-2Y PI-2Y	T2001 T2001 T9102 T2001	0 120 C * 120	5.0 GPM		VR-3	C61-T1101 (PI) Remote S/D Panel
1E12-F004B	2 H-5	A ACTIVE	24 GT	MO O	FE-Q ST-Q LW-2Y PI-2Y	T2002 T2002 T9402 T2002	0 120 C * 120	5.0 GPM		VR-3	C61-T1102 (PI) Remote S/D Local Brkr
1E12-F005	2 J-10	AC ACTIVE	1 RE	SE C	RT-5Y LJ-2Y	T2100(GEN) T9429		1670.58 SCCM	179.0 to 191.0	OM(10)-2	
1E12-F006A	2 H-14	B ACTIVE	18 GT	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	0 110 C 110				C61-T1101 (PI) Remote S/D Panel
1E12-F006B	2 H-4	B ACTIVE	18 GT	MO O	FE-Q ST-Q PI-2Y	T2002 T2002 T2002	0 110 C 110				C61-T1101 (PI) Remote S/D Panel
1E12-F008	1 G-12	A ACTIVE	20 GT	MO C	FE-Q ST-Q LJ-2Y LK-2Y PI-2Y	T2022 T2022 T9421 T2200 T2022	0 33 C * 33	5011.74 SCCM 5.0 GPM		CS-3 VR-3 VR-34	C61-T1101 (PI) Remote S/D Panel

SYSTEM: RESIDUAL HEAT REMOVAL (E12)

Valve Test Table

DWG. NO. D-302-642

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-E12	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1E12-F009	1 G-11	A ACTIVE	20 GT	MO C	FE-Q ST-Q LJ-2Y LK-2Y PI-2Y	T2022 T2022 T9421 T2200 T2022	0 33 C * 33	5011.74 SCCM 5.0 GPM		CS-3 OM(10)-2 VR-3 VR-34	C61-T1101 (PI) Remote S/D Panel
1E12-F010	1 F-10	NA PASSIVE	20 GT	MA O	PI-2Y	T2200					Maintenance only
1E12-F017A	2 H-13	AC ACTIVE	1 RE	SE C	RT-5Y LD-5Y	T2100(GEN) T2100(GEN)		0.004 GPM	194.0 to 206.0		
1E12-F017B	2 H-5	AC ACTIVE	1 RE	SE C	RT-5Y LD-5Y	T2100(GEN) T2100(GEN)		0.004 GPM	194.0 to 206.0		
1E12-F017C	2 G-4	AC ACTIVE	1 RE	SE C	RT-5Y LD-5Y	T2100(GEN) T2100(GEN)		0.004 GPM	194.0 to 206.0		
1E12-F019	1 A-13	AC ACTIVE	6 CH	SE C	FE-Q AP-Q LK-2Y	T2016 T2202 T2202		3.0 GPM	F	VR-14 VR-34	
1E12-F023	1 B-13	A ACTIVE	6 GL	MO C	FE-Q ST-Q LJ-2Y LK-2Y PI-2Y	T2004A T2004A T9123(E51) T2202 T2004A	0 50 C * 50	1670.58 SCCM 3.0 GPM		CS-3 OM(10)-2 VR-3 VR-34	C61-T1101 (PI) Remote S/D Panel
1E12-F025C	2 B-3	AC ACTIVE	1 RE	SE C	RT-5Y LJ-2Y	T2100(GEN) T9429		1670.58 SCCM	470.0 to 500.0	OM(10)-2	

Valve Test Table

SYSTEM: RESIDUAL HEAT REMOVAL (E12) DWG. NO. D-302-642

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-E12	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1E12-F027A	2 D-13	A ACTIVE	12 GT	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9113 T2001	0 60 C * 60	3341.16 SCCM		VR-3	C61-T1101 (PI) Remote S/D Panel
1E12-F027B	2 D-5	A ACTIVE	12 GT	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2002 T2002 T9412 T2002	0 60 C * 60	3341.16 SCCM		VR-3	C61-T1102 (PI) Remote S/D Local Brkr
1E12-F028A	2 A-11	A ACTIVE	12 GT	MO C	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9113 T2001	0 66 C * 66	3341.16 SCCM		VR-3	C61-T1101 (PI) Remote S/D Panel
1E12-F028B	2 A-7	A ACTIVE	12 GT	MO C	FE-Q ST-Q LJ-2Y PI-2Y	T2002 T2002 T9412 T2002	0 60 C * 60	3341.16 SCCM		VR-3	C61-T1102 (PI) Remote S/D Local Brkr
1E12-F037A	2 B-11	A ACTIVE	12 GL	MO C	FE-Q ST-Q LJ-2Y PI-2Y	T2004A T2004A T9113 T2004A	0 75 C * 75	3341.16 SCCM		CS-19 VR-3	C61-T1101 (PI) Remote S/D Panel
1E12-F037B	2 B-6	A ACTIVE	12 GL	MO C	FE-Q ST-Q LJ-2Y PI-2Y	T2004B T2004B T9412 T2004B	0 75 C * 75	3341.16 SCCM		CS-19 VR-3	C61-T1102 (PI) Remote S/D Local Brkr
1E12-F039A	1 D-10	NA PASSIVE	12 GT	MA O	PI-2Y	T2204					Maintenance only

Valve Test Table

SYSTEM: RESIDUAL HEAT REMOVAL (E12) DWG. NO. D-302-642

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-E12	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1E12-F039B	1 D-8	NA PASSIVE	12 GT	MA O	PI-2Y	T2205					Maintenance only
1E12-F039C	1 C-8	NA PASSIVE	12 GT	MA O	PI-2Y	T2206					Maintenance only
1E12-F041A	1 D-11	AC ACTIVE	12 CH	SE/HO C	FE-Q AP-Q LK-2Y PI-2Y	T2003(GEN) T2003(GEN) T2204 T2203(GEN)		5.0 GPM	F	CS-10 VR-30 VR-36	Testable check valve
1E12-F041B	1 D-7	AC ACTIVE	12 CH	SE/HO C	FE-Q AP-Q LK-2Y PI-2Y	T2003(GEN) T2003(GEN) T2205 T2203(GEN)		5.0 GPM	F	CS-10 VR-30 VR-36	Testable check valve
1E12-F041C	1 B-7	AC ACTIVE	12 CH	SE/HO C	FE-Q AP-Q LJ-2Y LK-2Y PI-2Y	T2003(GEN) T2003(GEN) T9411 T2206 T2203(GEN)		3341.16 SCCM 5.0 GPM	F	CS-10 VR-3 VR-30 VR-36	Testable check valve
1E12-F042A	1 D-12	A ACTIVE	12 GT	MO C	FE-Q ST-Q LJ-2Y LK-2Y PI-2Y	T2004A T2004A T9113 T2204 T2004A	0 32 C * 32	3341.16 SCCM 5.0 GPM		CS-3 VR-3	C61-T1101 (PI) Remote S/D Panel

Valve Test Table

SYSTEM: RESIDUAL HEAT REMOVAL (E12)

DWG. NO. D-302-642

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-E12	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1E12-F042B	1 D-6	A ACTIVE	12 GT	MO C	FE-Q ST-Q LJ-2Y LK-2Y PI-2Y	T2004B T2004B T9412 T2205 T2004B	0 27 C * 27	3341.16 SCCM 5.0 GPM		CS-3 VR-3	C61-T1102 (PI) Remote S/D Local Brkr
1E12-F042C	1 C-5	A ACTIVE	12 GT	MO C	FE-Q ST-Q LJ-2Y LK-2Y PI-2Y	T2004B T2004B T9411 T2206 T2004B	0 27 C * 27	3341.16 SCCM 5.0 GPM		CS-3 VR-3	
1E12-F050A	2 E-13	AC ACTIVE	12 CH	SE C	FE-Q AP-Q LK-2Y	T2016 T2210 T2210		5.0 GPM	F	VR-13	Intersystem Leakage Limit of 0.85 GPM
1E12-F050B	2 E-4	AC ACTIVE	12 CH	SE C	FE-Q AP-Q LK-2Y	T2021 T2211 T2211		5.0 GPM	F	VR-13	Intersystem Leakage Limit of 0.85 GPM
1E12-F053A	2 E-14	A ACTIVE	12 GL	MO C	FE-Q ST-Q LK-2Y PI-2Y	T2004A T2004A T2210 T2004A	0 33 C 33	5.0 GPM		CS-3	C61-T1101 (PI) Remote S/D Panel, Intersystem Leakage Limit 0.85 GPM
1E12-F053B	2 E-3	A ACTIVE	12 GL	MO C	FE-Q ST-Q LK-2Y PI-2Y	T2004B T2004B T2211 T2004B	0 33 C 33	5.0 GPM		CS-3	C61-T1102 (PI) Remote S/D Local Brkr, Intersystem Leakage Limit of 0.85 GPM

Valve Test Table

SYSTEM: RESIDUAL HEAT REMOVAL (E12)

DWG. NO. D-302-642

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-E12	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1E12-F105	2 G-5	A ACTIVE	24 GT	MO O	FE-Q ST-Q LW-2Y PI-2Y	T2003 T2003 T9403 T2003	0 120 C * 120	5.0 GPM		VR-3	
1E12-F537A	2 A-9	B ACTIVE	12 GT	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	0 70 C 70				
1E12-F537B	2 A-8	B ACTIVE	12 GT	MO C	FE-Q ST-Q PI-2Y	T2002 T2002 T2002	0 70 C 70				
1E12-F550	1 G-11	AC ACTIVE	3/4 CH	SE C	FE-Q AP-Q LJ-2Y LK-2Y	T2200 T2200 T9421 T2200		5011.74 SCCM 5.0 GPM	F	OM(10)-2 VR-3 VR-34	For Thermal Expansion
1E12-F558A	2 F-12	AC PASSIVE	1 CH	SE C	FE-Q AP-Q LJ-2Y	NA NA T9118		1000.0 SCCM			
1E12-F558B	2 F-6	AC PASSIVE	1 CH	SE C	FE-Q AP-Q LJ-2Y	NA NA T9431		1000.0 SCCM			
1E12-F605A	2 F-12	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2004(B21) T2004(B21)			F	CS-11	
1E12-F605B	2 F-6	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2004(B21) T2004(B21)			F	CS-11	

Valve Test Table

SYSTEM: RESIDUAL HEAT REMOVAL (E12)

DWG. NO. D-302-643

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-E12	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1E12-F003B	2 D-5	B ACTIVE	18 GL	MO O	FE-Q ST-Q PI-2Y	T2002 T2002 T2002	0 90 C 90				C61-T1102 (PI) Remote S/D Local Brkr
1E12-F011B	2 D-6	A ACTIVE	4 GL	MO C	FE-Q ST-Q LW-2Y PI-2Y	T2002 T2002 T9407 T2002	0 40 C * 40	5.0 GPM		OM(10)-2	C61-T1102 (PI) Remote S/D Local Brkr
1E12-F021	2 C-14	A ACTIVE	18 GL	MO C	FE-Q ST-Q LJ-2Y PI-2Y	T2003 T2003 T9408 T2003	0 90 C * 90	5011.74 SCCM		VR-3	
1E12-F024B	2 D-13	A ACTIVE	18 GT	MO C	FE-Q ST-Q LW-2Y PI-2Y	T2002 T2002 T9407 T2002	0 90 C * 90	5.0 GPM		OM(10)-2 VR-3	C61-T1102 (PI) Remote S/D Local Brkr
1E12-F025B	2 D-11	AC ACTIVE	1 RE	SE C	RT-5T LJ-2Y	T2100(GEN) T9429		1670.58 SCCM	470.0 to 500.0	OM(10)-2	
1E12-F026B	2 C-4	B ACTIVE	4 GT	MO C	FE-Q ST-Q PI-2Y	T2002 T2002 T2002	0 20 C 20				C61-T1102 (PI) Remote S/D Local Brkr
1E12-F031B	2 J-10	C ACTIVE	18 CH	SE C	FE-Q AP-Q	T2002 T2002			F		
1E12-F031C	2 E-11	C ACTIVE	18 CH	SE C	FE-Q AP-Q	T2003 T2003			F		

Valve Test Table

SYSTEM: RESIDUAL HEAT REMOVAL (E12)

DWG. NO. D-302-643

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-E12	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1E12-F036	2 B-2	AC ACTIVE	3 RE	SE C	RT-5Y LD-5Y	T2100(GEN) T2100(GEN)		0.004 GPM	73.0 to 77.0		
1E12-F046B	2 H-11	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2002 T2002			F		
1E12-F046C	2 F-13	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2003 T2003			F		
1E12-F047B	2 E-7	B ACTIVE	18 GT	MO O	FE-Q ST-Q PI-2Y	T2002 T2002 T2002	0 90 C 90				C61-T1102 (PI) Remote S/D Local Brkr
1E12-F048B	2 D-9	B ACTIVE	18 GL	MO O	FE-Q ST-Q PI-2Y	T2002 T2002 T2002	0 90 C 90				C61-T1102 (PI) Remote S/D Local Brkr
1E12-F051B	2 A-7	B PASSIVE	10 DI	AO C	FE-Q FS-Q	T2004B T2004B				CS-16	Control Valve ST Not Applicable
1E12-F052B	2 A-5	B ACTIVE	10 GL	MO C	FE-Q ST-Q PI-2Y	T2004B T2004B T2004B	0 70 C 70			CS-16	C61-T1102 (PI) Remote S/D Local Brkr
1E12-F054B	2 C-5	C ACTIVE	4 CH	SE C	FE-Q AP-Q	T2000(GEN) T2000(GEN)			F		Inoperable
1E12-F055B	2 E-8	AC ACTIVE	4 RE	SE C	RT-5Y LJ-2Y	T2100(GEN) T9429		1670.58 SCCM	475.0 to 495.0	OM(10)-2	

Valve Test Table

SYSTEM: RESIDUAL HEAT REMOVAL (E12)

DWG. NO. D-302-643

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-E12	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1E12-F060B	2 ~~D-4~~ E-2	B ACTIVE	3/4 GL	SO C	FE-Q ST-Q FS-Q PI-2Y	T2002 T2002 T2002 T2020	0 2 C 2			VR-2 VR-4	
1E12-F064B	2 H-11	A ACTIVE	6 GT	MO O	FE-Q ST-Q LW-2Y PI-2Y	T2002 T2002 T9407 T2002	0 8 C * 8	3.0 GPM		VR-3	C61-T1102 (PI) Remote S/D Local Brkr
1E12-F064C	2 F-13	A ACTIVE	6 GT	MO O	FE-Q ST-Q LW-2Y PI-2Y	T2003 T2003 T9408 T2003	0 8 C * 8	3.0 GPM		VR-3	
1E12-F065B	2 D-4	B PASSIVE	4 DI	AO C	FE-Q FS-Q	T2004B T2004B				CS-16	Control Valve ST Not Applicable
1E12-F073B	2 F-8	A ACTIVE	1 GL	MO C	FE-Q ST-Q LJ-2Y PI-2Y	T2002 T2002 T9431 T2002	0 15 C * 15	1000.0 SCCM			
1E12-F075B	2 E-2	B ACTIVE	3/4 GL	SO C	FE-Q ST-Q FS-Q PI-2Y	T2002 T2002 T2002 T2020	0 2 C 2			VR-2 VR-4	
1E12-F084B	2 G-9	C ACTIVE	1-1/2 CH	SE C	FE-Q AP-Q	T2023 T2000(GEN)			F	CS-21 VR-26	
1E12-F084C	2 E-10	C ACTIVE	1-1/2 CH	SE C	FE-Q AP-Q	T2023 T2000(GEN)			F	CS-21 VR-26	

Valve Test Table

SYSTEM: RESIDUAL HEAT REMOVAL (E12) DWG. NO. D-302-643

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST AND TEST FREQ.	SURV. INST. NO. SVI-E12	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1E12-F085B	2 G-9	C ACTIVE	1-1/2 SC	SE C	FE-Q AP-Q	T2023 T2002			F	CS-21	Closed using handwheel
1E12-F085C	2 E-11	C ACTIVE	1-1/2 SC	SE C	FE-Q AP-Q	T2023 T2003			F	CS-21	Closed using handwheel
1E12-F087B	2 B-6	B ACTIVE	6 GL	MO C	FE-Q ST-Q PI-2Y	T2004B T2004B T2004B	0 45 C 45			CS-16	
1E12-F099B	2 C-10	B ACTIVE	10 GT	MA C	XX-RO	P0004(PTI)					Note 1
1E12-F102	C E-9	A PASSIVE	1 1/2 GL	MA LC	FE-Q LJ-2Y	NA T9115(E51)		1000.00 SCCM		OM(10)-2	Manual
1E12-F103B	2 E-8	C ACTIVE	1 1/2 CH	SE C	FE-Q AP-Q	T2015 T9429			F	RO-1	
1E12-F104B	2 E-8	C ACTIVE	1 1/2 CH	SE C	FE-2 AP-Q	T2015 T9429			F	RO-1	
1E12-F552B	2 C-10	C PASSIVE	10 SC	SE C	FE-Q AP-Q	NA NA					

Valve Test Table

SYSTEM: LOW PRESSURE CORE SPRAY (E21)

DWG. NO. D-302-705

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-E21	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1E21-F001	2 G-10	A ACTIVE	24 GT	MO O	FE-Q ST-Q LW-2Y PI-2Y	T2001 T2001 T9103 T2001	C * 120	5.0 GPM		VR-3	
1E21-F003	2 C-6	C ACTIVE	14 CH	SE C	FE-Q AP-Q	T2001 T2001			F		
1E21-F005	1 C-9	A ACTIVE	12 GT	MO C	FE-Q ST-Q LJ-2Y LK-2Y PI-2Y	T2004 T2004 T9112 T2200 T2004	0 32 C * 32	3341.16 SCCM 5.0 GPM		CS-3 VR-3	
1E21-F006	1 C-12	AC ACTIVE	12 CH	SE/HO C	FE-Q AP-Q LJ-2Y LK-2Y PI-2Y	T2003(GEN) T2003(GEN) T9112 T2200 T2003(GEN)		3341.16 SCCM 5.0 GPM	F	CS-10 VR-3 VR-30 VR-36	Testable check valve
1E21-F007	1 C-13	NA PASSIVE	12 GT	MA O	PI-2Y	T2200					Maintenance only
1E21-F011	2 E-6	A ACTIVE	4 GT	MO O	FE-Q ST-Q LW-2Y PI-2Y	T2001 T2001 T9105(E12) T2001	C * 22	5.0 GPM		OM(10)-2	
1E21-F012	2 D-8	A ACTIVE	12 GL	MO C	FE-Q ST-Q LW-2Y PI-2Y	T2001 T2001 T9105(E12) T2001	C * 75	5.0 GPM		OM(10)-2 VR-3	

Valve Test Table

SYSTEM: LOW PRESSURE CORE SPRAY (E21)

DWG. NO. D-302-705

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-E21	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1E21-F018	2 B-8	AC ACTIVE	1-1/2 RE	SE C	RT-5Y LJ-2Y	T2100(GEN) T9107(E12)		1670.58 SCCM	567.0 to 603.0	OM(10)-2	
1E21-F031	2 F-9	AC ACTIVE	1 RE	SE C	RT-5Y LD-5Y	T2100(GEN) T2100(GEN)		0.004 GPM	97 to 103		
1E21-F033	2 F-7	C ACTIVE	1-1/2 CH	SE C	FE-Q AP-Q	T2004 T2001			F	CS-21	
1E21-F034	2 F-7	C ACTIVE	1-1/2 SC	SE C	FE-Q AP-Q	T2004 T2001			F	CS-21	Closed using handwheel
1E21-F501	2 E-8	C ACTIVE	12 CH	SE C	FE-Q AP-Q	T2001 T2000(GEN)			F	RO-2	IEB: 83-03

Valve Test Table

SYSTEM: HIGH PRESSURE CORE SPRAY (E22)

DWG. NO. D-302-701

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-E22	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1E22-F001	2 F-13	B ACTIVE	16 GT	MO O	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	C 80				
1E22-F002	2 F-13	C ACTIVE	16 CH	SE C	FE-Q AP-Q	T2001 T2004			F		
1E22-F004	1 B-7	A ACTIVE	12 GT	MO C	FE-Q ST-Q LJ-2Y LK-2Y PI-2Y	T2002 T2002 T9410 T2200 T2002	0 14 C * 14	3341.16 SCCM 5.0 GPM		CS-3 VR-3	
1E22-F005	1 B-4	AC ACTIVE	12 CH	SE/HO C	FE-Q AP-Q LJ-2Y LK-2Y PI-2Y	T2003(GEN) T2003(GEN) T9410 T2200 T2003(GEN)		3341.16 SCCM 5.0 GPM	F	CS-10 VR-3 VR-30 VR-36	Testable check valve
1E22-F006	2 E-9	C ACTIVE	1-1/2 SC	SE C	FE-Q AP-Q	T2002 T2001			F	CS-21	Closed using handwheel
1E22-F007	2 E-9	C ACTIVE	1-1/2 CH	SE C	FE-Q AP-Q	T2002 T2000(GEN)			F	CS-21 VR-26	
1E22-F010	2 B-9	B ACTIVE	10 GL	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	C 60				
1E22-F011	2 B-10	B ACTIVE	10 GL	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	C 60				

Valve Test Table

SYSTEM: HIGH PRESSURE CORE SPRAY (E22)

DWG. NO. D-302-701

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-E22	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1E22-F012	2 C-10	A ACTIVE	4 GT	MO C	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9409 T2001	0 5 C * 5	3341.16 SCCM		OM(10)-2	
1E22-F014	2 F-10	AC ACTIVE	1 RE	SE C	RT-5Y LD-5Y	T2100(GEN) T2100(GEN)		0.004 GPM	97.0 to 103.0		
1E22-F015	2 F-6	A ACTIVE	24 GT	MO C	FE-Q ST-Q LW-2Y PI-2Y	T2001 T2001 T9401 T2001	0 24 C * 24	5.0 GPM		VR-3	
1E22-F016	2 F-7	C ACTIVE	24 CH	SE C	FE-Q AP-Q	T2001 T2004		F			
1E22-F023	2 D-8	A ACTIVE	12 GL	MO C	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9409 T2001	C * 70	3341.16 SCCM		OM(10)-2 VR-3	
1E22-F024	2 C-9	C ACTIVE	16 CH	SE C	FE-Q AP-Q	T2001 T2001			F		
1E22-F035	2 C-7	AC ACTIVE	1-1/2 RE	SE C	RT-5Y LJ-2Y	T2100(GEN) T9409		3341.16 SCCM	1513.0 to 1607.0	OM(10)-2	
1E22-F036	1 B-4	NA PASSIVE	12 GT	MA O	PI-2Y	T2200					Maintenance only
1E22-F039	2 B-9	C ACTIVE	1 CH	SE C	FE-Q AP-Q	T2001 NA			F		For Thermal Expansion

Valve Test Table

SYSTEM: MSIV LEAKAGE CONTROL (E32)

DWG. NO. D-302-341

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-E32	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1E32-F001A	1 F-5	A ACTIVE	2-1/2 GT	MO C	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9124(B21) T2001	0 20 C * 20	11,800.0 SCCM		CS-15 OM(10)-2	
1E32-F001E	1 H-5	A ACTIVE	2-1/2 GT	MO C	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9416(B21) T2001	0 20 C * 20	11,800.0 SCCM		CS-15 OM(10)-2	
1E32-F001J	1 G-5	A ACTIVE	2-1/2 GT	MO C	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9122(B21) T2001	0 20 C * 20	11,800.0 SCCM		CS-15 OM(10)-2	
1E32-F001N	1 H-5	A ACTIVE	2-1/2 GT	MO C	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9415(B21) T2001	0 20 C * 20	11,800.0 SCCM		CS-15 OM(10)-2	
1E32-F002A	2 F-6	B ACTIVE	2-1/2 GT	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	0 30 C 30			CS-15	
1E32-F002E	2 H-6	B ACTIVE	2-1/2 GT	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	0 30 C 30			CS-15	

Valve Test Table

SYSTEM: MSIV LEAKAGE CONTROL (E32)

DWG. NO. D-302-341

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-E32	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1E32-F0C2J	2 G-6	B ACTIVE	2-1/2 GT	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	0 30 C 30			CS-15	
1E32-F002N	2 H-6	B ACTIVE	2-1/2 GT	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	0 30 C 30			CS-15	
1E32-F003A	2 F-8	B ACTIVE	2-1/2 GT	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	0 30 C 30			CS-15	
1E32-F003E	2 H-8	B ACTIVE	2-1/2 GT	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	0 30 C 30			CS-15	
1E32-F003J	2 G-8	B ACTIVE	2-1/2 GT	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	0 30 C 30			CS-15	
1E32-F003N	2 H-8	B ACTIVE	2-1/2 GT	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	0 30 C 30			CS-15	

Valve Test Table

SYSTEM: MSIV LEAKAGE CONTROL (E32)

DWG. NO. D-302-342

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-E32	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1E32-F006	2 E-9	B ACTIVE	2 GT	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	0 30 C 30			CS-15	
1E32-F007	2 F-9	B ACTIVE	2 GT	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	0 30 C 30			CS-15	
1E32-F008	2 E-9	B ACTIVE	2-1/2 GT	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	0 30 C 30			CS-15	
1E32-F009	2 E-9	B ACTIVE	2-1/2 GT	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	0 30 C 30			CS-15	

Valve Test Table

SYSTEM: REACTOR CORE ISOLATION COOLING (E51)

DWG. NO. D-302-631

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-E51	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1E51-F010	2 F-5	B ACTIVE	6 GT	MO O	FE-Q ST-Q PI-2Y	T2001 T2001 T1272	C 30				T1272 (FE,ST) during S/U, and C61-T1100 (PI) Remote S/D Panel
1E51-F011	2 F-5	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2001 T2001			F		T1272 (FE) during S/U
1E51-F013	1 C-8	A ACTIVE	6 GT	MO C	FE-Q ST-Q LJ-2Y PI-2Y	T2003 T2003 T9123 T2003	0 15 C * 15	1670.58 SCCM		CS-4 OM(10)-2 VR-3	C61-T1100 (PI) Remote S/D Panel
1E51-F017	2 D-4	AC ACTIVE	1 RE	SE C	RT-5Y LD-5Y	T2100(GEN) T2100(GEN)		0.004 GPM	97.0 to 103.0		
1E51-F019	2 D-8	A ACTIVE	2 GL	MO C	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9104 T1272	0 5 C * 5	1000.0 SCCM			T1272 (FE,ST) during S/U, and C61-T1100 (PI) Remote S/D Panel
1E51-F021	2 D-7	C ACTIVE	2 CH	SE C	FE-Q AP-Q	T2001 T2009			F	RO-7	T1272 (FE) during S/U
1E51-F022	2 B-8	B ACTIVE	4 GL	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T1272	C 20				T1272 (FE,ST) during S/U, and C61-T1100 (PI) Remote S/D Panel
1E51-F030	2 G-8	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2000(GEN) T2000(GEN)			F	RO-2	

Valve Test Table

SYSTEM: REACTOR CORE ISOLATION COOLING (E51)

DWG. NO. D-302-631

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-E51	STROKE DIRECT. & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1E51-F031	2 G-8	A ACTIVE	6 GT	MO C	FE-Q ST-Q LW-2Y PI-2Y	T2001 T2001 T9101 T1272	C * 30	3.0 GPM		VR-3	T1272 (FE,ST) during S/U, and C61-T1100 (PI) Remote S/D Panel
1E51-F040	2 F-6	C ACTIVE	12 CH	SE C	FE-Q AP-Q	T2001 T2009			F	RO-7	T1272 (FE) during S/U, IEB: 83-03
1E51-F059	2 B-8	B ACTIVE	4 GT	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T1272	C 20				T1272 (FE,ST) during S/U, and C61-T1100 (PI) Remote S/D Panel
1E51-F061	2 E-4	C ACTIVE	1-1/2 CH	SE C	FE-Q AP-Q	T2003 T2000(GEN)			F	CS-21 VR-26	
1E51-F062	2 E-4	C ACTIVE	1-1/2 SC	SE C	FE-Q AP-Q	T2003 T2001			F	CS-21	Closed using handwheel
1E51-F065	1 C-9	AC ACTIVE	6 CH	SE C	FE-Q AP-Q LK-2Y	T2010 T2010 T2202(E12)		3.0 GPM	F	CS-10 VR-34	Manually testable, T2200 (FE, AP) during leak test
1E51-F066	1 C-10	AC ACTIVE	6 CH	SE/HO C	FE-Q AP-Q LJ-2Y LK-2Y PI-2Y	T2010 T2210 T9123 T2201 T2010		1670.58 SCCM 3.0 GPM	F	CS-10 VR-3 VR-30 VR-34 VR-36	Testable check valve

Valve Test Table

SYSTEM: REACTOR CORE ISOLATION COOLING (E51)

DWG. NO. D-302-631

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-E51	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1E51-F068	2 G-7	A ACTIVE	12 GT	MO O	FE-Q ST-Q LJ-2Y LW-2Y PI-2Y	T2001 T2001 T9106 T9106 T1272	C * 60	3341.16 SCCM 5.0 GPM		OM(10)-2 VR-3	T1272 (FE,ST) during S/U, and C61-T1100 (PI) Remote S/D Panel
1E51-F077	2 F-7	A ACTIVE	1-1/2 GL	MO O	FE-Q ST-Q LJ-2Y LJ-2Y PI-2Y	T2001 T2001 T9106 T9115 T1272	0 22.5 C * 22.5	3341.16 SCCM		OM(10)-2	T1272 (FE,ST) during S/U, and C61-T1100 (PI) Remote S/D Panel
1E51-F078	2 E-8	A ACTIVE	2 GL	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9115 T1272	0 20 C * 20	1000.00 SCCM			T1272 (FE,ST) during S/U, and C61-T1100 (PI) Remote S/D Panel
1E51-F079	2 E-7	C ACTIVE	1-1/2 CH	SE C	FE-Q AP-Q	T2008 T2008			F	CS-22	
1E51-F081	2 E-7	C ACTIVE	1-1/2 CH	SE C	FE-Q AP-Q	T2008 T2008			F	CS-22	
1E51-F090	2 B-8	C ACTIVE	1 CH	SE C	FE-Q AP-Q	T2001 NA			F		T1272 (FE) during S/U, for Thermal Expansion
1E51-F577	2 F-3	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2001 T2001			F		T1272 (FE,AP) during S/U

Valve Test Table

SYSTEM: REACTOR CORE ISOLATION COOLING (E51)

DWG. NO. D-302-632

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ.	SURV. INST. NO. SVI-E51	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1E51-D001	2 E-12	D ACTIVE	8 RU	SE C	RD	NONE					Replace upon activation
1E51-D002	2 F-13	D ACTIVE	8 RU	SE C	RD	NONE					Replace upon activation
1E51-F004	2 J-10	B ACTIVE	1 DI	AO O	FE-Q ST-Q FS-Q PI-2Y	T2001 T2001 T2001 T1272	0 5				T1272 (FE,ST,FS) during S/U
1E51-F005	2 J-11	B ACTIVE	1 DI	AO O	FE-Q ST-Q FS-Q PI-2Y	T2001 T2001 T2001 T1272	0 5				T1272 (FE,ST,FS) during S/U
1E51-F018	2 D-7	AC ACTIVE	1 RE	SE C	RT-5Y LD-5Y	T2100(GEN) T2100(GEN)		0.004 GPM	145.0 to 155.0		
1E51-F025	2 E-4	B ACTIVE	1 DI	AO C	FE-Q ST-Q FS-Q PI-2Y	T2001 T2001 T2001 T1272	0 5				T1272 (FE,ST,FS) during S/U
1E51-F026	2 F-4	B ACTIVE	1 DI	AO C	FE-Q ST-Q FS-Q PI-2Y	T2001 T2001 T2001 T1272	0 5				T1272 (FE,ST,FS) during S/U

Valve Test Table

SYSTEM: REACTOR CORE ISOLATION COOLING (E51)

DWG. NO. D-302-632

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-E51	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1E51-F045	2 E-6	B ACTIVE	4 GL	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T1272	0 15 C 15				T1272 (FE,ST) during S/U, and C61-T1100 (PI) Remote S/D Panel
1E51-F046	2 C-12	B ACTIVE	2 GL	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T1272	0 30				T1272 (FE,ST) during S/U, and C61-T1100 (PI) Remote S/D Panel
1E51-F047	2 H-10	C ACTIVE	1 CH	SE C	FE-Q AP-Q	T2001 NA			F		T1272 (FE) during S/U
1E51-F063	1 C-5	A ACTIVE	10 GT	MO 0	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9422 T9422	0 20 C * 20	2784.3 SCCM		OM(10)-2 VR-3	T1272 (FE,ST) during S/U, and C61-T1100 (PI) Remote S/D Panel
1E51-F064	1 C-4	A ACTIVE	10 GT	MO 0	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9422 T1272	0 18 C * 18	2784.3 SCCM		OM(10)-2 VR-3	T1272 (FE,ST) during S/U, and C61-T1100 (PI) Remote S/D Panel
1E51-F076	1 C-5	A ACTIVE	1 GL	MO C	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9422 T9422	0 15 C * 15	2784.3 SCCM		OM(10)-2 VR-3	T1272 (FE,ST) during S/U, and C61-T1100 (PI) Remote S/D Panel

Valve Test Table

SYSTEM: REACTOR CORE ISOLATION COOLING (E51)

DWG. NO. D-302-632

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-E51	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1E51-F510	2 D-9	B ACTIVE	4 GT	MO O	FE-Q ST-Q PI-2Y	T2001 T2001 T1272	C 20				T1272 (FE,ST) during S/U, RCIC trip valve and C61-T1100 (PI) Remote S/D Panel
1E51-F511	2 D-10	B ACTIVE	4 GT	HO O	FE-Q ST-Q PI-2Y	NA NA T1272					Skid mounted component, Pressure Regulating Vlv with No Safety FS Function
1E51-F561	NA	C ACTIVE	1/2 RE	SE C	RT-5Y	T2100(GEN)			25.0 to 29.0		RCIC Turbine Control Oil

Valve Test Table

SYSTEM: CONTAINMENT INTEGRATED LEAK RATE TESTING (E61)

DWG. NO. D-302-811

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-E61	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1E61-F549	2 D-11	A PASSIVE	1/2 GL	MA LC	LJ-2Y	T9317		1000.0 SCCM			
1E61-F550	2 D-11	A PASSIVE	3/4 GL	MA LC	LJ-2Y	T9317		1000.0 SCCM			
1E61-F551	2 D-10	A PASSIVE	3/4 GL	MA LC	LJ-2Y	T9319		1000.0 SCCM			
1E61-F552	2 D-10	A PASSIVE	1/2 GL	MA LC	LJ-2Y	T9319		1000.0 SCCM			

Valve Test Table

SYSTEM: REACTOR WATER CLEANUP (G33)

DWG. NO. D-302-671

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-G33	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1G33-F001	1 H-9	A ACTIVE	6 GT	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2003 T2003 T9131 T2003	C * 15	1670.58 SCCM		CS-14 VR-3	

Valve Test Table

SYSTEM: REACTOR WATER CLEANUP (G33)

DWG. NO. D-302-672

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-G33	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1G33-F004	1 H-8	A ACTIVE	6 GT	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2003 T2003 T9131 T2003	C * 15	1670.58 SCCM		CS-14 VR-3	SVI-G33-T2004 (PI) Remote S/D Local Brkr
1G33-F028	2 B-7	A ACTIVE	4 GT	MO C	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9424 T2001	C * 15	1113.72 SCCM			Test Volume Leakage Limit 2227.0 sccm
1G33-F034	2 B-6	A ACTIVE	4 GT	MO C	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9424 T2001	C * 15	1113.72 SCCM			Test Volume Leakage Limit 2227.0 sccm
1G33-F039	2 C-6	A ACTIVE	6 GT	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2003 T2003 T9132 T2003	C * 15	1670.58 SCCM		CS-14 VR-3	Test Volume Leakage Limit 3670.0 sccm
1G33-F040	2 C-7	A ACTIVE	6 GT	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2003 T2003 T9132 T2003	C * 15	1670.58 SCCM		CS-14 VR-3	Test Volume Leakage Limit 3670.0 sccm
1G33-F052A	2 C-2	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T2002A T2002A			R	RO-4	
1G33-F052B	2 C-2	C ACTIVE	6 CH	SE O	FE-Q AP-Q	T2002B T2002B			R	RO-4	

Valve Test Table

SYSTEM: REACTOR WATER CLEANUP (G33)

DWG. NO. D-302-672

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-G33	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1G33-F053	2 E-7	A ACTIVE	4 GT	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2003 T2003 T9419 T2003	C * 15	1113.72 SCCM		CS-14	
1G33-F054	2 E-6	A ACTIVE	4 GT	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2003 T2003 T9419 T2003	C * 15	1113.72 SCCM		CS-14	

Valve Test Table

SYSTEM: FUEL POOL COOLING AND CLEANUP (G41)

DWG. NO. D-302-651

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-G41	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1G41-F090	3 H-13	B ACTIVE	8 BF	MO O	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	C 40				
1G41-F100	2 G-13	A ACTIVE	8 BF	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9203 T2001	C 30	2227.44 SCCM		VR-3	
1G41-F140	2 C-11	A ACTIVE	10 BF	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9301 T2001	C 30	2784.30 SCCM		VR-3	
1G41-F145	2 C-13	A ACTIVE	10 BF	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9301 T2001	C 30	2784.30 SCCM		VR-3	
1G41-F522	2 F-13	AC ACTIVE	8 CH	SE O	FE-Q AP-Q LJ-2Y	T9203 T2001 T9203		2227.44 SCCM	R	VR-3 VR-17	

Valve Test Table

SYSTEM: FUEL POOL COOLING AND CLEANUP (G41)

DWG. NO. D-302-654

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-G41	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
G41-F280	3 C-4	B ACTIVE	12 BF	MO O	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	C 15				
G41-F285	3 C-5	B ACTIVE	12 BF	MO O	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	C 15				
G41-F290	3 C-10	B ACTIVE	12 BF	MO O	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	C 15				
G41-F295	3 C-11	B ACTIVE	12 BF	MO O	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	C 15				
G41-F545A	3 G-11	C ACTIVE	10 CH	SE C	FE-Q AP-Q	T2001 T2001			F		
G41-F545B	3 J-11	C ACTIVE	10 CH	SE C	FE-Q AP-Q	T2001 T2001			F		
G41-F548A	3 H-5	AC ACTIVE	3/4 RE	SE C	RT-5Y LD-5Y	T2100(GEN) T2100(GEN)		0.004 GPM	145.0 to 155.0		
G41-F548B	3 G-5	AC ACTIVE	3/4 RE	SE C	RT-5Y LD-5Y	T2100(GEN) T2100(GEN)		0.004 GPM	145.0 to 155.0		

Valve Test Table

SYSTEM: FUEL POOL COOLING AND CLEANUP (G41)

DWG. NO. D-302-655

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-G41	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
G41-F085	3 G-10	B ACTIVE	10 BF	MO O	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	C 40				
G41-F559A	3 J-5	B ACTIVE	10 BF	MA C	XX-RO	P0004(PTI-E12)					Note 1
G41-F597A	3 D-10	C ACTIVE	3 CH	SE C	FE-Q AP-Q	T2002 NA			F		
G41-F597B	3 D-12	C ACTIVE	3 CH	SE C	FE-Q AP-Q	T2002 NA			F		
G41-F619A	3 D-11	B ACTIVE	3 GT	MA C	XX-RO	T2002					Note 1
G41-F619B	3 D-14	B ACTIVE	3 GT	MA C	XX-RO	T2002					Note 1
G41-F746A	3 J-5	C ACTIVE	3/4 RE	SE C	RT-5Y	T2100(GEN)			145.0 to 155.0		

Valve Test Table

SYSTEM: SUPPRESSION POOL CLEANUP (G42)

DWG. NO. D-302-681

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-G42	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1G42-F010	2 H-4	B ACTIVE	12 BF	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	C 35				
1G42-F020	2 H-5	B ACTIVE	12 BF	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	C 35				
1G42-F060	3 H-7	B ACTIVE	10 BF	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	C 35				
1G42-F080	3 E-11	B ACTIVE	8 BF	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	C 35				
1G42-F506	3 D-3	B ACTIVE	10 BF	MA C	XX-RO	P0001(PTI)					Note 1
1G42-F509	3 G-11	B ACTIVE	10 BF	MA C	XX-RO	P0001(PTI)					Note 1
1G42-F511	3 F-6	B ACTIVE	10 BF	MA C	XX-RO	P0001(PTI)					Note 1

Valve Test Table

SYSTEM: SUPPRESSION POOL MAKEUP (G43)

DWG. NO. D-302-686

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-G43	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1G43-F030A	2 E-9	B ACTIVE	24 BF	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	0 30				
1G43-F030B	2 C-9	B ACTIVE	24 BF	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	0 30				
1G43-F040A	2 F-9	B ACTIVE	24 BF	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	0 30				
1G43-F040B	2 C-7	B ACTIVE	24 BF	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	0 30				
1G43-F050A	2 H-8	A ACTIVE	3/4 GL	SO O	FE-Q ST-Q FS-Q LD-2Y PI-2Y	T2001 T2001 T2001 T2002 T2002	C 2 0 2	1890.0 SCCM (Water)		VR-2 VR-4	CNTMT Instrument Line, Leakage Equivalent to 0.5 GPM (Water)
1G43-F050B	2 H-13	A ACTIVE	3/4 GL	SO O	FE-Q ST-Q FS-Q LD-2Y PI-2Y	T2001 T2001 T2001 T2002 T2002	C 2 0 2	1890.0 SCCM (Water)		VR-2 VR-4	CNTMT Instrument Line, Leakage Equivalent to 0.5 GPM (Water)
1G43-F060	2 H-5	A ACTIVE	3/4 GL	SO O	FE-Q ST-Q FS-Q LD-2Y PI-2Y	T2001 T2001 T2001 T2002 T2002	C 2 0 2	1890.0 SCCM (Water)		VR-2 VR-4	CNTMT Instrument Line, Leakage Equivalent to 0.5 GPM (Water)

Valve Test Table

DWG. NO. D-302-686

SYSTEM: SUPPRESSION POOL MAKEUP (G43)

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-G43	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1G43-F508A	2 E-9	C ACTIVE	2 CH	SE C	FE-Q AP-Q	T2003 NA			F		For Thermal Expansion
1G43-F508B	2 C-9	C ACTIVE	2 CH	SE C	FE-Q AP-Q	T2003 NA			F		For Thermal Expansion

Valve Test Table

SYSTEM: LIQUIRED RADWASTE (G50)

DWG. NO. D-302-737

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-G50	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1G50-F272	2 E-11	A ACTIVE	4 GT	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9420 T2001	C * 20	1113.72 SCCM			
1G50-F277	2 E-11	A ACTIVE	4 GT	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9420 T2001	C * 20	1113.72 SCCM			

Valve Test Table

SYSTEM: LIQUID RADWASTE SUMPS (G61)

DWG. NO. D-302-739

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-G61	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1G61-F030	2 A-9	B ACTIVE	2-1/2 GT	MO O	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	C 22				
1G61-F035	2 A-8	B ACTIVE	2-1/2 GT	MO O	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	C 22				
1G61-F075	2 C-6	A ACTIVE	3 GT	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9417 T2001	C * 22	1000.0 SCCM			
1G61-F080	2 C-5	A ACTIVE	3 GT	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9417 T2001	C * 22	1000.0 SCCM			

Valve Test Table

SYSTEM: LIQUID RADWASTE SUMPS (G61)

DWG. NO. D-302-740

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-G61	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1G61-F150	2 A-9	B ACTIVE	2-1/2 GT	MO O	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	C 22				
1G61-F155	2 A-9	B ACTIVE	2-1/2 GT	MO O	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	C 22				
1G61-F165	2 A-7	A ACTIVE	3 GT	MO C	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9418 T2001	C * 22	1000.0 SCCM			
1G61-F170	2 A-6	A ACTIVE	3 GT	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9418 T2001	C * 22	1000.0 SCCM			

Valve Test Table

SYSTEM: CONTAINMENT VESSEL AND DRYWELL PURGE (M14)

DWG. NO. D-912-604

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-M14	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1M14-F040	2 C-8	A ACTIVE	42 BF	AO C	FE-Q ST-Q FS-Q LJ-2Y PI-2Y	T2001 T2001 T2001 T9313 T2001	C 4	5011.74 SCCM		OM(10)-2 VR-3 VR-35	
1M14-F045	2 C-9	A ACTIVE	42 BF	AO C	FE-Q ST-Q FS-Q LJ-2Y PI-2Y	T2003 T2003 T2003 T9313 T2003	C 4	5011.74 SCCM		OM(10)-2 VR-3	
1M14-F055A	2 G-13	B ACTIVE	24 BF	AO C	FE-Q ST-Q FS-Q PI-2Y	T2003 T2003 T2003 T2003	C 4				
1M14-F055B	2 G-10	B ACTIVE	24 BF	AO C	FE-Q ST-Q FS-Q PI-2Y	T2003 T2003 T2003 T2003	C 4				
1M14-F060A	2 J-13	B ACTIVE	24 BF	AO C	FE-Q ST-Q FS-Q PI-2Y	T2003 T2003 T2003 T2003	C 4				
1M14-F060B	2 J-10	B ACTIVE	24 BF	AO C	FE-Q ST-Q FS-Q PI-2Y	T2003 T2003 T2003 T2003	C 4				

Valve Test Table

SYSTEM: CONTAINMENT VESSEL AND DRYWELL PURGE (M14)

DWG. NO. D-912-604

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-M14	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1M14-F065	2 F-13	B ACTIVE	36 BF	AO C	FE-Q ST-Q FS-Q PI-2Y	T2003 T2003 T2003 T2003	C 4				
1M14-F070	2 F-11	B ACTIVE	36 BF	AO C	FE-Q ST-Q FS-Q PI-2Y	T2003 T2003 T2003 T2003	C 4				
1M14-F085	2 F-9	A ACTIVE	42 BF	AO C	FE-Q ST-Q FS-Q LJ-2Y PI-2Y	T2003 T2003 T2003 T9314 T2003	C 4	5011.74 SCCM		OM(10)-2 VR-3	
1M14-F090	2 G-8	A ACTIVE	42 BF	AO C	FE-Q ST-Q FS-Q LJ-2Y PI-2Y	T2001 T2001 T2001 T9314 T2001	C 4	5011.74 SCCM		OM(10)-2 VR-3 VR-35	
1M14-F190	2 C-9	A ACTIVE	18 BF	AO C	FE-Q ST-Q FS-Q LJ-2Y PI-2Y	T2001 T2001 T2001 T9313 T2001	C 4	5011.74 SCCM		OM(10)-2 VR-3 VR-35	

Valve Test Table

SYSTEM: CONTAINMENT VESSEL AND DRYWELL PURGE (M14)

DWG. NO. D-912-604

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-M14	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1M14-F195	2 C-10	A ACTIVE	18 BF	AO C	FE-Q ST-Q FS-Q LJ-2Y PI-2Y	T2001 T2001 T2001 T9313 T2001	C 4	5011.74 SCCM		OM(10)-2 VR-3 VR-35	
1M14-F200	2 E-9	A ACTIVE	18 BF	AO C	FE-Q ST-Q FS-Q LJ-2Y PI-2Y	T2001 T2001 T2001 T9314 T2001	C 4	5011.74 SCCM		OM(10)-2 VR-3 VR-35	
1M14-F205	2 E-10	A ACTIVE	18 BF	AO C	FE-Q ST-Q FS-Q LJ-2Y PI-2Y	T2001 T2001 T2001 T9314 T2001	C 4	5011.74 SCCM		OM(10)-2 VR-3 VR-35	

Valve Test Table

SYSTEM: DRYWELL (M16) AND CONTAINMENT VACUUM RELIEF (M17)

DWG. NO. D-912-606

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-M17	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1M16-F010A	2 H-8	B ACTIVE	10 BF	MO C	FE-Q ST-Q PI-2Y	T2001(M16) T2001(M16) T2001(M16)	0 5 C 5				
1M16-F010B	2 H-5	B ACTIVE	10 BF	MO C	FE-Q ST-Q PI-2Y	T2001(M16) T2001(M16) T2001(M16)	0 5 C 5				
1M16-F020A	2 H-8	C ACTIVE	10 CH	SE/AO C	PC-Q AP-Q FE-Q PI-2Y	T2001(M16) T2001(M16) T0414(M16) T2001(M16)			F	OM(10)-4	Testable Vacuum Breaker
1M16-F020B	2 H-4	C ACTIVE	10 CH	SE/AO C	PC-Q AP-Q FE-Q PI-2Y	T2001(M16) T2001(M16) T0414(M16) T2001(M16)			F	OM(10)-4	Testable Vacuum Breaker
1M17-F010	2 B-13	AC ACTIVE	24 CH	SE/AO C	PC-Q AP-Q FE-Q LJ-2Y PI-2Y	T2002 T2002 T0408 T9114 T2002		5011.74 SCCM	F	OM(10)-4 VR-3	Testable Vacuum Breaker
1M17-F015	2 B-12	A ACTIVE	24 BF	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2002 T2002 T9114 T2002	0 5 C 5	5011.74 SCCM		VR-3	

Valve Test Table

SYSTEM: DRYWELL (M16) AND CONTAINMENT VACUUM RELIEF (M17)

DWG. NO. D-912-606

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-M17	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1M17-F020	2 D-13	AC ACTIVE	24 CH	SE/AO C	PC-Q AP-Q FE-Q LJ-2Y PI-2Y	T2002 T2002 T0408 T9208 T2002		5011.74 SCCM	F	OM(10)-4 VR-3	Testable Vacuum Breaker
1M17-F025	2 D-12	A ACTIVE	24 BF	MO C	FE-Q ST-Q LJ-2Y PI-2Y	T2002 T2002 T9208 T2002	0 5 C 5	5011.74 SCCM		VR-3	
1M17-F030	2 F-13	AC ACTIVE	24 CH	SE/AO C	PC-Q AP-Q FE-Q LJ-2Y PI-2Y	T2002 T2002 T0408 T9428 T2002		5011.74 SCCM	F	OM(10)-4 VR-3	Testable Vacuum Breaker
1M17-F035	2 F-12	A ACTIVE	24 BF	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2002 T2002 T9428 T2002	0 5 C 5	5011.74 SCCM		VR-3	
1M17-F040	2 H-13	AC ACTIVE	24 CH	SE/AO C	PC-Q AP-Q FE-Q LJ-2Y PI-2Y	T2002 T2002 T0408 T9436 T2002		5011.74 SCCM	F	OM(10)-4 VR-3	Testable Vacuum Breaker
1M17-F045	2 H-12	A ACTIVE	24 BF	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2002 T2002 T9436 T2002	0 5 C 5	5011.74 SCCM		VR-3	

Valve Test Table

SYSTEM: DRYWELL (M16) AND CONTAINMENT VACUUM RELIEF (M17)

DWG. NO. D-912-606

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-M17	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1M17-F055	2 D-8	A ACTIVE	3/4 GL	SO O	FE-Q ST-Q FS-Q LD-2Y PI-2Y	T2001 T2001 T2001 T2003 T2003	C 2	1000.0 SCCM		VR-2 VR-4	
1M17-F065	2 D-4	A ACTIVE	3/4 GL	SO O	FE-Q ST-Q FS-Q LD-2Y PI-2Y	T2001 T2001 T2001 T2003 T2003	C 2	1000.0 SCCM		VR-2 VR-4	

Valve Test Table

SYSTEM: COMBUSTIBLE GAS CONTROL (M51)

DWG. NO. D-302-831

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-M51	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1M51-F010A	2 B-12	B ACTIVE	4 GL	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	C 37				
1M51-F010B	2 F-12	B ACTIVE	4 GL	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	C 37				
1M51-F020A	2 A-9	B ACTIVE	2 GL	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	0 20				
1M51-F020B	2 E-9	B ACTIVE	2 GL	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	0 20				
1M51-F090	2 J-8	A ACTIVE	2 GL	MO C	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9302 T2001	C * 30	1000.0 SCCM			
1M51-F110	2 J-6	A ACTIVE	2 GL	MO C	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9302 T2001	C * 15	1000.0 SCCM			
1M51-F501A	2 B-11	C ACTIVE	4 CH	SE C	FE-Q AP-Q	T2003A NA			F		
1M51-F501B	2 F-11	C ACTIVE	4 CH	SE C	FE-Q AP-Q	T2003B NA			F		

Valve Test Table

SYSTEM: COMBUSTIBLE GAS CONTROL (M51) DWG. NO. D-302-832

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-M51	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1M51-F210A	2 E-4	A ACTIVE	1/2 GL	SO C	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9425 T9425	0 2 C 2	1000.0 SCCM		VR-2 VR-4	CNTMT Instrument Line, Solenoid open and solenoid closed
1M51-F210B	2 E-11	A ACTIVE	1/2 GL	SO C	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9318 T9318	0 2 C 2	1000.0 SCCM		OM(10)-2 VR-2 VR-4	CNTMT Instrument Line, Solenoid open and solenoid closed
1M51-F220A	2 F-4	A ACTIVE	1/2 GL	SO C	FE-Q ST-Q LJ-2Y PY-2Y	T2001 T2001 T9425 T9425	0 2 C 2	1000.0 SCCM		VR-2 VR-4	CNTMT Instrument Line, Solenoid open and solenoid closed
1M51-F220B	2 F-11	A ACTIVE	1/2 GL	SO C	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9318 T9318	0 2 C 2	1000.0 SCCM		VR-2 VR-4	CNTMT Instrument Line, Solenoid open and solenoid closed
1M51-F230A	2 F-4	A ACTIVE	1/2 GL	SO C	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9425 T9425	0 2 C 2	1000.0 SCCM		VR-2 VR-4	CNTMT Instrument Line, Solenoid open and solenoid closed
1M51-F230B	2 F-11	A ACTIVE	1/2 GL	SO C	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9318 T9318	0 2 C 2	1000.0 SCCM		OM(10)-2 VR-2 VR-4	CNTMT Instrument Line, Solenoid open and solenoid closed

Valve Test Table

SYSTEM: COMBUSTIBLE GAS CONTROL (M51)

DWG. NO. D-302-832

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-M51	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1M51-F240A	2 G-4	A ACTIVE	1/2 GL	SO C	FE-Q ST-Q LJ-27 PI-2Y	T2001 T2001 T9425 T9425	0 2 C 2	1000.0 SCCM		VR-2 VR-4	CNTMT Instrument Line, Solenoid open and solenoid closed
1M51-F240B	2 G-11	A ACTIVE	1/2 GL	SO C	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9318 T9318	0 2 C 2	1000.0 SCCM		OM(10)-2 VR-2 VR-4	CNTMT Instrument Line, Solenoid open and solenoid closed
1M51-F250A	2 C-5	A ACTIVE	1/2 GL	SO C	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9425 T9425	0 2 C 2	1000.0 SCCM		VR-2 VR-4	CNTMT Instrument Line, Solenoid open and solenoid closed
1M51-F250B	2 G-11	A ACTIVE	1/2 GL	SO C	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9318 T9318	0 2 C 2	1000.0 SCCM		OM(10)-2 VR-2 VR-4	CNTMT Instrument Line, solenoid open and solenoid closed
1M51-F260A	2 D-3	B ACTIVE	3/4 GL	SO O	FE-Q ST-Q PI-2Y	T2004 T2004 T2004	C 2			VR-2 VR-4	Solenoid open and solenoid closed
1M51-F260B	2 D-14	B ACTIVE	3/4 GL	SO O	FE-Q ST-Q PI-2Y	T2004 T2004 T2004	C 2			VR-2 VR-4	Solenoid open and solenoid closed
1M51-F270A	2 D-3	B ACTIVE	3/4 GL	SO O	FE-Q ST-Q PI-2Y	T2004 T2004 T2004	C 2			VR-2 VR-4	Solenoid open and solenoid closed

Valve Test Table

SYSTEM: COMBUSTIBLE GAS CONTROL (M51)

DWG. NO. D-302-832

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-M51	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1M51-F270B	2 D-14	B ACTIVE	3/4 GL	SO O	FE-Q ST-Q PI-2Y	T2004 T2004 T2004	C 2			VR-2 VR-4	Solenoid open and solenoid closed
1M51-F531A	2 F-7	C PASSIVE	1 CH	SE C	FE AP	T2006 T2005			F	RO-8	
1M51-F531B	2 F-9	C PASSIVE	1 CH	SE C	FE AP	T2006 T2005			F	RO-8	
1M51-F532A	2 F-7	C PASSIVE	1 CH	SE C	FE AP	T2006 T2005			F	RO-8	
1M51-F532B	2 F-9	C PASSIVE	1 CH	SE C	FE AP	T2006 T2005			F	RO-8	
1M51-F618A	2 E-6	C PASSIVE	1 CH	SE C	FE AP	T2006 T2005			F	RO-8	
1M51-F618B	2 E-10	C PASSIVE	1 CH	SE C	FE AP	T2006 T2005			F	RO-8	

Valve Test Table

SYSTEM: MAIN STEAM (N11)

DWG. NO. D-302-011

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-N11	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1N11-F020A	2 D-13	B ACTIVE	28 GT	MO O	FE-Q ST-Q PI-2Y	T2001(E32) T2001(E32) T2001(E32)	O 140 C 140			CS-2	
1N11-F020B	2 G-13	B ACTIVE	28 GT	MO O	FE-Q ST-Q PI-2Y	T2001(E32) T2001(E32) T2001(E32)	O 140 C 140			CS-2	
1N11-F020C	2 B-13	B ACTIVE	28 GT	MO O	FE-Q ST-Q PI-2Y	T2001(E32) T2001(E32) T2001(E32)	O 140 C 140			CS-2	
1N11-F020D	2 E-13	B ACTIVE	28 GT	MO O	FE-Q ST-Q PI-2Y	T2001(E32) T2001(E32) T2001(E32)	O 140 C 140			CS-2	

Valve Test Table

SYSTEM: MAIN, REHEAT, EXTRACTION, AND MISC. DRAINS (N22)

DWG. NO. D-302-121

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-N22	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1N22-F420A	2	B	1-1/2	AO	FE-Q	T2001	0				
	C-5	ACTIVE	GL	C	ST-Q	T2001	10				
					FS-Q	T2001	C				
					PI-2Y	T2001	10				
1N22-F420B	2	B	1-1/2	AO	FE-Q	T2001	0				
	C-4	ACTIVE	GL	C	ST-Q	T2001	10				
					FS-Q	T2001	C				
					PI-2Y	T2001	10				
1N22-F420C	2	B	1-1/2	AO	FE-Q	T2001	0				
	C-6	ACTIVE	GL	C	ST-Q	T2001	10				
					FS-Q	T2001	C				
					PI-2Y	T2001	10				
1N22-F420D	2	B	1-1/2	AO	FE-Q	T2001	0				
	C-5	ACTIVE	GL	C	ST-Q	T2001	10				
					FS-Q	T2001	C				
					PI-2Y	T2001	10				

Valve Test Table

SYSTEM: FEEDWATER (N27)

DWG. N

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-N27	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	R
1B21-F032A	1 B-8	AC ACTIVE	20 CH	SE O	FE-Q AP-Q LW-2Y	T9121 T2001(GEN) T9121		1.0 GPM	R	VR-3 VR-17	
1B21-F032B	1 C-7	AC ACTIVE	20 CH	SE O	FE-Q AP-Q LW-2Y	T9414 T2001(GEN) T9414		1.0 GPM	R	VR-3 VR-17	
1B21-F065A	2 B-12	A ACTIVE	20 GT	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2004(B21) T2004(B21) T9121 T2004(B21)	C * 100	0.0 SCCM		CS-1	L a
1B21-F065B	2 C-11	A ACTIVE	20 GT	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2004(B21) T2004(B21) T9414 T2004(B21)	C * 100	0.0 SCCM		CS-1	L a
1N27-F559A	1 B-5	AC ACTIVE	20 CH	SE O	FE-Q AP-Q LW-2Y	T9121 T2001(GEN) T9121		1.0 GPM	R	VR-3 VR-17	
1N27-F559B	1 C-5	AC ACTIVE	20 CH	SE O	FE-Q AP-Q LW-2Y	T9414 T2001(GEN) T9414		1.0 GPM	R	VR-3 VR-17	

Valve Test Table

SYSTEM: FEEDWATER (N27)

DWG. NO. D-302-971

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-N27	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1N27-F737	2 C-11	A ACTIVE	1-1/2 GL	MO C	FE-Q ST-Q LK-2Y PI-2Y	T2001 T2001 T2201 T2001	0 22.5	0.75 GPM		CS-3	
1N27-F739A	2 D-7	AC ACTIVE	1 CH	SE C	FE-Q AP-Q LK-2Y	T2001 T2201 T2201		1.0 GPM	F	CS-9 VR-41	
1N27-F739B	2 C-7	AC ACTIVE	1 CH	SE C	FE-Q AP-Q LK-2Y	T2001 T2201 T2201		1.0 GPM	F	CS-9 VR-41	
1N27-F740	2 G-11	A ACTIVE	1-1/2 GL	MO C	FE-Q ST-Q LK-2Y PI-2Y	T2001 T2001 T2202 T2001	0 22.5	0.75 GPM		CS-3	
1N27-F742A	2 H-7	AC ACTIVE	1 CH	SE C	FE-Q AP-Q LK-2Y	T2001 T2202 T2202		1.0 GPM	F	CS-9 VR-41	
1N27-F742B	2 G-7	AC ACTIVE	1 CH	SE C	FE-Q AP-Q LK-2Y	T2001 T2202 T2202		1.0 GPM	F	CS-9 VR-41	
1N27-F751	2 E-5	A PASSIVE	1 GL	MA LC	LJ-2Y	T9107(E12)		1000.0 SCCM			

Valve Test Table

SYSTEM: CONDENSATE TRANSFER AND STORAGE (P11)

DWG. NO. D-302-102

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-P11	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1P11-F060	2 C-10	A ACTIVE	12 BF	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2002 T2002 T9108 T2002	0 30 C 30	3341.16 SCCM		VR-3	
1P11-F080	2 B-4	A ACTIVE	10 BF	MO C	FE-Q ST-Q LJ-2Y PI-2Y	T2002 T2002 T9111 T2002	0 30 C 30	2784.30 SCCM		VR-3	
1P11-F090	2 B-5	A ACTIVE	10 BF	MO C	FE-Q ST-Q LJ-2Y PI-2Y	T2002 T2002 T9111 T2002	0 30 C 30	2784.30 SCCM		VR-3	
1P11-F545	2 C-11	AC ACTIVE	12 CH	SE C	FE-Q AP-Q LJ-2Y	NA T9108 T9108		3341.16 SCCM	NA	VR-3 VR-41	Maintenance only

Valve Test Table

SYSTEM: MIXED BED DEMIN & DISTRIBUTION (P22)

DWG. NO. D-302-713

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-P22	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1P22-F010	2 F-11	A ACTIVE	3 GT	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2002 T2002 T9309 T2002	C * 22.0	1000.0 SCCM			
1P22-F015	2 H-12	B ACTIVE	1-1/4 GL	MO O	FE-Q ST-Q PI-2Y	T2002 T2002 T2002	C 18.8				
1P22-F577	2 G-11	AC ACTIVE	3 CH	SE C	FE-Q AP-Q LJ-2Y	NA T9309 T9309		1000.0 SCCM	NA	VR-41	Convenience only

Valve Test Table

SYSTEM: SERVICE WATER SYSTEM (P41)

DWG. NO. D-302-212

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-P41	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
P41-F420	3 J-11	B ACTIVE	36 BF	MO O	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	C 15				
P41-F430	3 J-11	B ACTIVE	36 BF	MO O	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	C 15				

Valve Test Table

SYSTEM: EMERGENCY CLOSED COOLING SYSTEM (P42)

DWG. NO. D-302-621

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-P42	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
P42-F150A	3 D-8	B ACTIVE	10 BF	MO O	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	C 30				
P42-F150B	3 J-8	B ACTIVE	10 BF	MO O	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	C 30				
P42-F290	3 E-7	B ACTIVE	10 BF	MO O	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	C 30				
P42-F295A	3 C-7	B ACTIVE	10 BF	MO O	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	C 30				
P42-F295B	3 G-7	B ACTIVE	10 BF	MO O	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	C 30				
P42-F300A	3 B-7	B ACTIVE	10 BF	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	0 30				
P42-F300B	3 H-7	B ACTIVE	10 BF	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	0 30				
P42-F320	3 E-3	B ACTIVE	10 BF	MO O	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	C 30				

Valve Test Table

SYSTEM: EMERGENCY CLOSED COOLING SYSTEM (P42)

DWG. NO. D-302-621

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-P42	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
P42-F325A	3 D-3	B ACTIVE	10 BF	MO O	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	C 30				
P42-F325B	3 G-3	B ACTIVE	10 BF	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	C 30				
P42-F330A	3 B-3	B ACTIVE	10 BF	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	O 30				
P42-F330B	3 J-3	B ACTIVE	10 BF	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	O 30				
1P42-F519A	3 E-11	C ACTIVE	12 CH	SE C	FE-Q AP-Q	T2001 NA			F		
1P42-F519B	3 G-11	C ACTIVE	12 CH	SE C	FE-Q AP-Q	T2001 NA			F		
P42-F543A	3 C-5	C ACTIVE	3/4 RE	SE C	RT-5Y	T2100(GEN)			145.0 to 155.0		
P42-F543B	3 H-5	C ACTIVE	3/4 RE	SE C	RT-5Y	T2100(GEN)			145.0 to 155.0		
P42-F543C	3 F-5	C ACTIVE	3/4 RE	SE C	RT-5Y	T2100(GEN)			145.0 to 155.0		

Valve Test Table

SYSTEM: EMERGENCY CLOSED COOLING SYSTEM (P42)

DWG. NO. D-302-621

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-P42	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1P42-F550	3 F-6	B ACTIVE	10 BF	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	0 33 C 33				
1P42-F551	3 F-6	B ACTIVE	10 BF	MO C	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	0 33 C 33				

Valve Test Table

SYSTEM: EMERGENCY CLOSED COOLING SYSTEM (P42)

DWG. NO. D-352-621

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-P42	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
P42-F255A	3 C-7	B ACTIVE	10 BF	MO O	FE-Q ST-Q PI-2Y	T2002 T2002 T2002	C 40				
P42-F255B	3 F-6	B ACTIVE	10 BF	MO O	FE-Q ST-Q PI-2Y	T2002 T2002 T2002	C 40				
P42-F260A	3 C-8	B ACTIVE	10 BF	MO C	FE-Q ST-Q PI-2Y	T2003 T2003 T2003				VR-39	
P42-F260B	3 F-7	B ACTIVE	10 BF	MO C	FE-Q ST-Q PI-2Y	T2003 T2003 T2003				VR-39	
P42-F265A	3 C-4	B ACTIVE	10 BF	MO C	FE-Q ST-Q PI-2Y	T2003 T2003 T2003				VR-39	
P42-F265B	3 F-4	B ACTIVE	10 BF	MO C	FE-Q ST-Q PI-2Y	T2003 T2003 T2003				VR-39	
P42-F380A	3 D-7	B ACTIVE	10 BF	MO O	FE-Q ST-Q PI-2Y	T2002 T2002 T2002	C 35				
P42-F380B	3 E-7	B ACTIVE	10 BF	MO O	FE-Q ST-Q PI-2Y	T2002 T2002 T2002	C 35				

Valve Test Table

SYSTEM: EMERGENCY CLOSED COOLING SYSTEM (P42)

DWG. NO. D-352-621

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-P42	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
P42-F390A	3 D-4	B ACTIVE	10 BF	MO O	FE-Q ST-Q PI-2Y	T2002 T2002 T2002	C 35				
P42-F390B	3 E-3	B ACTIVE	10 BF	MO O	FE-Q ST-Q PI-2Y	T2002 T2002 T2002	C 35				
P42-F440	3 D-7	B ACTIVE	10 BF	MO O	FE-Q ST-Q PI-2Y	T2002 T2002 T2002	C 35				
P42-F445	3 D-2	B ACTIVE	10 BF	MO O	FE-Q ST-Q PI-2Y	T2002 T2002 T2002	C 35				
P42-F590A	3 C-5	C ACTIVE	3/4 RE	SE C	RT-5Y	T2100(GEN)			145.0 to 155.0		
P42-F590B	3 E-5	C ACTIVE	3/4 RE	SE C	RT-5Y	T2100(GEN)			145.0 to 155.0		

Valve Test Table

SYSTEM: EMERGENCY CLOSED COOLING SYSTEM (P42)

DWG. NO. D-302-622

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-P42	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCFM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1P42-F540	3 C-3	C ACTIVE	3/4 RE	SE C	RT-5Y	T2100(GEN)			89.0 to 99.0		56 PSI Back Pressure
1P42-F566A	3 C-7	C ACTIVE	3/4 RE	SE C	RT-5Y	T2100(GEN)			89.0 to 99.0		56 PSI Back Pressure
1P42-F566B	3 H-11	C ACTIVE	3/4 RE	SE C	RT-5Y	T2100(GEN)			89.0 to 99.0		56 PSI Back Pressure
1P42-F566C	3 H-6	C ACTIVE	3/4 RE	SE C	RT-5Y	T2100(GEN)			89.0 to 99.0		56 PSI Back Pressure
1P42-F570	3 C-11	C ACTIVE	3/4 RE	SE C	RT-5Y	T2100(GEN)			89.0 to 99.0		56 PSI Back Pressure

Valve Test Table

SYSTEM: NUCLEAR CLOSED COOLING (P43)

DWG. NO. D-302-613

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-P43	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1P43-F055	2 J-13	A ACTIVE	12 BF	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9310 T2001	C 30	3341.16 SCCM		RO-3 VR-3	
1P43-F140	2 J-3	A ACTIVE	12 BF	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9311 T2001	C 30	3341.16 SCCM		RO-3 VR-3	
1P43-F215	2 J-4	A ACTIVE	12 BF	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9311 T2001	C 30	3341.16 SCCM		RO-3 VR-3	
1P43-F355	2 J-11	B ACTIVE	10 BF	MO O	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	C 10			RO-3	
1P43-F400	2 J-7	B ACTIVE	10 BF	MO O	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	C 10			RO-3	
1P43-F410	2 J-6	B ACTIVE	10 BF	MO O	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	C 10			RO-3	
1P43-F721	2 J-12	AC ACTIVE	12 CH	SE O	FE-Q AP-Q LJ-2Y	T9310 T2001(GEN) T9310		3341.16 SCCM	R	VR-3 VR-17	Non-Safety Function except LJ

Valve Test Table

SYSTEM: EMERGENCY SERVICE WATER (P45)

DWG. NO. D-302-791

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-P45	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1P45-F130A	3 E-13	B ACTIVE	24 BF	MO O	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	C 35 O 35				C61-T1101 (PI) Remote S/D Panel
1P45-F130B	3 E-12	B ACTIVE	24 BF	MO O	FE-Q ST-Q PI-2Y	T2002 T2002 T2002	C 35 O 35				C61-T1102 (PI) Remote S/D Local Brkr
1P45-F140	3 E-11	B ACTIVE	8 BF	MO O	FE-Q ST-Q PI-2Y	T2003 T2003 T2003	C 35 O 35				
1P45-F501A	3 G-13	C ACTIVE	24 CH	SE C	FE-Q AP-Q	T2001 T2001			F		IEB: 83-03
1P45-F501B	3 G-12	C ACTIVE	24 CH	SE C	FE-Q AP-Q	T2002 T2002			F		IEB: 83-03
1P45-F502A	3 G-13	C ACTIVE	2 CH	SE C	FE-Q AP-Q	T2006 T2001			F		
1P45-F502B	3 G-12	C ACTIVE	2 CH	SE C	FE-Q AP-Q	T2006 T2002			F		
1P45-F506	3 G-11	C ACTIVE	2 CH	SE C	FE-Q AP-Q	T2006 T2003			F		

Valve Test Table

SYSTEM: EMERGENCY SERVICE WATER (P45)

DWG. NO. D-302-791

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-P45	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1P45-F517	3 C-8	C ACTIVE	3/4 RE	SE C	RT-5Y	T2100(GEN)			145.0 to 155.0		
1P45-F520	3 F-6	C ACTIVE	3/4 RE	SE C	RT-5Y	T2100(GEN)			89.0 to 99.0		56 PSI Back Pressure
1P45-F552	3 G-11	C ACTIVE	8 CH	SE C	FE-Q AP-Q	T2003 T2003			F		IEB: 83-03
1P45-F718	3 E-4	C ACTIVE	1 CH	SE O	FE-Q AP-Q	T2003 T2006			F		

Valve Test Table

SYSTEM: EMERGENCY SERVICE WATER (P45) DWG. NO. D-302-792

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-P45	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1P45-F014A	3 D-6	B ACTIVE	20 BF	MO O	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	0 35				C61-T1101 (PI) Remote S/D Panel
1P45-F014B	3 E-6	B ACTIVE	20 BF	MO O	FE-Q ST-Q PI-2Y	T2002 T2002 T2002	0 35				C61-T1102 (PI) Remote S/D Local Brkr
1P45-F068A	3 C-4	B ACTIVE	20 BF	MO O	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	0 35				C61-T1101 (PI) Remote S/D Panel
1P45-F068B	3 G-4	B ACTIVE	20 BF	MO O	FE-Q ST-Q PI-2Y	T2002 T2002 T2002	0 35				C61-T1102 (PI) Remote S/D Local Brkr
1P45-F531A	3 B-10	C ACTIVE	3/4 RE	SE C	RT-5Y	T2100(GEN)			89.0 to 99.0		56 PSI Back Pressure
1P45-F531B	3 G-10	C ACTIVE	3/4 RE	SE C	RT-5Y	T2100(GEN)			89.0 to 99.0		56 PSI Back Pressure
1P45-F534B	3 H-12	B ACTIVE	8 BF	MA O	XX-RO	P0004(PTI)					Note 1
1P45-F536B	3 F-8	B ACTIVE	14 BF	MA O	XX-RO	P0004(PTI)					Note 1
1P45-F537A	3 D-8	C ACTIVE	3/4 RE	SE C	RT-5Y	T2100(GEN)			89.0 to 99.0		56 PSI Back Pressure
1P45-F537B	3 F-8	C ACTIVE	3/4 RE	SE C	RT-5Y	T2100(GEN)			89.0 to 99.0		56 PSI Back Pressure

Valve Test Table

SYSTEM: EMERGENCY SERVICE WATER (P45)

DWG. NO. D-302-792

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-P45	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1P45-F543A	3 D-6	C ACTIVE	3/4 RE	SE C	RT-5Y	T2100(GEN)			145.0 to 155.0		
1P45-F543B	3 E-6	C ACTIVE	3/4 RE	SE C	RT-5Y	T2100(GEN)			145.0 to 155.0		
1P45-F571A	3 B-5	C ACTIVE	1-1/2 RE	SE C	RT-5Y	T2100(GEN)			121.0 to 129.0		
1P45-F571B	3 H-5	C ACTIVE	1-1/2 RE	SE C	RT-5Y	T2100(GEN)			121.0 to 129.0		
1P45-F572	3 E-6	B ACTIVE	18 BF	MA LC	XX-RO	P0004(PTI)					Note 1
1P45-F573	3 E-7	B ACTIVE	18 GT	MA LC	XX-RO	P0004(PTI)					Note 1
1P45-F575	2 E-7	C ACTIVE	18 CH	SE C	FE-Q AP-Q	T2000(GEN) T2000(GEN)			F	RO-2	
1P45-F578	3 E-6	B ACTIVE	1 GL	MA O	XX-RO	P0004(PTI)					Note 1
1P45-F589	3 E-4	B ACTIVE	3 GL	MA LC	XX-RO	P0004(PTI)					Note 1
1P45-F593	3 E-8	B ACTIVE	2 GL	MA LC	XX-RO	P0004(PTI)					Note 1

Valve Test Table

SYSTEM: EMERGENCY SERVICE WATER (P45)

DWG. NO. D-302-792

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-P45	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1P45-F631	3 E-9	B ACTIVE	3 GT	MA LC	XX-RO	P0004(PTI)					Note 1
1P45-F632	3 E-8	B ACTIVE	2 GL	MA LC	XX-RO	P0004(PTI)					Note 1
1P45-F722A	3 D-2	C ACTIVE	1-1/2 0	SE C	FE-Q AP-Q	T2001 T2006			F		
1P45-F722B	3 E-2	C ACTIVE	1-1/2 0	SE C	FE-Q AP-Q	T2002 T2006			F		

Valve Test Table

SYSTEM: CONTROL COMPLEX CHILLED WATER (P47) DWG. NO. D-913-001

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-P47	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
P47-F506A	3 C-5	C ACTIVE	10 CH	SE C	FE-Q AP-Q	T2001 T2001			F		
P47-F506B	3 H-5	C ACTIVE	10 CH	SE C	FE-Q AP-Q	T2001 T2001			F		
P47-F506C	3 E-5	C ACTIVE	10 CH	SE C	FE-Q AP-Q	T2001 T2001			F		
P47-F574A	3 C-5	C ACTIVE	3/4 RE	SE C	RT-5Y	T2100(GEN)			145.0 to 155.0		
P47-F574B	3 H-5	C ACTIVE	3/4 RE	SE C	RT-5Y	T2100(GEN)			145.0 to 155.0		
P47-F574C	3 E-5	C ACTIVE	3/4 RE	SE C	RT-5Y	T2100(GEN)			145.0 to 155.0		

Valve Test Table

SYSTEM: CONTROL COMPLEX CHILLED WATER (P47)

DWG. NO. D-913-002

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-P47	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
P47-F290A	3 D-3	B ACTIVE	6 BF	MO O	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	C 35				
P47-F290B	3 E-3	B ACTIVE	6 BF	MO O	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	C 40				
P47-F295A	3 E-4	B ACTIVE	6 BF	MO O	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	C 35				
P47-F295B	3 F-3	B ACTIVE	6 BF	MO O	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	C 35				

Valve Test Table

SYSTEM: ESW SCREEN WASH (P49)

DWG. NO. D-302-214

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. PTI-P49	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
P49-F502A	3 C-11	C ACTIVE	6 CH	SE C	XX-RO	P0001(PTI)			F		IEB: 83-03, Note 3
P49-F502B	3 G-11	C ACTIVE	6 CH	SE C	XX-RO	P0001(PTI)			F		IEB: 83-03, Note 3

Valve Test Table

SYSTEM: CONTAINMENT VESSEL CHILLED WATER (P50) DWG. NO. D-913-008

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-P50	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1P50-F060	2 E-3	A ACTIVE	6 BF	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9404 T2001	C 30	1670.58 SCCM		VR-3	
1P50-F140	2 D-5	A ACTIVE	6 BF	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9405 T2001	C 30	1670.58 SCCM		VR-3	
1P50-F150	2 D-3	A ACTIVE	6 BF	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9405 T2001	C 30	1670.58 SCCM		VR-3	
1P50-F539	2 E-5	AC ACTIVE	6 CH	SE O	FE-Q AP-Q LJ-2Y	T9404 T2001(GEN) T9404		1670.58 SCCM	R	VR-3 VR-17	

Valve Test Table

SYSTEM: SERVICE AIR DISTRIBUTION (P51) DWG. NO. D-302-242

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-P51	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1P51-F150	2 F-10	A ACTIVE	2-1/2 GL	AO O	FE-Q ST-Q FS-Q LJ-2Y PI-2Y	T2001 T2001 T2001 T9308 T2001	C 15	1000.0 SCCM			
1P51-F530	2 G-10	AC ACTIVE	2-1/2 CH	SE C	FE-Q AP-Q LJ-2Y	NA T9308 T9308		1000.0 SCCM	NA	VR-41	Maintenance only
1P51-F652	2 K-11	B ACTIVE	1-1/2 GL	MO O	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	C 15				

Valve Test Table

SYSTEM: INSTRUMENT AIR (P52) DWG. NO. D-302-243

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-P52	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1P52-F170	2	A	3/4	SO	FE-Q	T2002	C	1000.0		VR-2	
	G-11	ACTIVE	GL	O	ST-Q	T2002	2	SCCM		VR-4	
					FS-Q	T2002					
					LJ-2Y	T9312(P53)					
					PI-2Y	T9312(P53)					

Valve Test Table

SYSTEM: INSTRUMENT AIR (P52)

DWG. NO. D-302-244

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-P52	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1P52-F160	2 H-11	A ACTIVE	3/4 GL	SO O	FE-Q ST-Q FS-Q LJ-2Y PI-2Y	T2002 T2002 T2002 T9305(P53) T9305(P53)	C 2	1000.0 SCCM		VR-2 VR-4	
1P52-F200	2 G-10	A ACTIVE	2 GL	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9306 T2001	C * 30	1000.0 SCCM			
1P52-F550	2 G-10	AC ACTIVE	2 CH	SE C	FE-Q AP-Q LJ-2Y	T2009(B21) T9306 T9306		1000.0 SCCM	F	CS-20 VR-41	
1P52-F646	2 J-8	B ACTIVE	2 GL	MO O	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	C 30				

Valve Test Table

SYSTEM: PENETRATION PRESSURIZATION (P53)

DWG. NO. D-302-761

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-P53	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1P53-F010	2 A-9	A ACTIVE	3/4 GL	SO C	FE-Q ST-Q FS-Q LJ-2Y PI-2Y	T2001 T2001 T2001 T9305 T9305	0 2 C	1000.0 SCCM		OM(10)-2 VR-2 VR-4	
1P53-F015	2 B-9	A ACTIVE	3/4 GL	SO C	FE-Q ST-Q FS-Q LJ-2Y PI-2Y	T2001 T2001 T2001 T9305 T9305	0 2 C 2	1000.0 SCCM		OM(10)-2 VR-2 VR-4	
1P53-F020	2 E-9	A ACTIVE	3/4 GL	SO C	FE-Q ST-Q FS-Q LJ-2Y PI-2Y	T2001 T2001 T2001 T9312 T9312	0 2 C 2	1000.0 SCCM		OM(10)-2 VR-2 VR-4	
1P53-F025	2 F-9	A ACTIVE	3/4 GL	SO C	FE-Q ST-Q FS-Q LJ-2Y PI-2Y	T2001 T2001 T2001 T9312 T9312	0 2 C 2	1000.0 SCCM		OM(10)-2 VR-2 VR-4	
1P53-F030	2 C-10	A ACTIVE	3/4 GL	SO C	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9305 T9305	0 2 C 2	1000.0 SCCM		OM(10)-2 VR-2 VR-4	Solenoid open and solenoid closed

Valve Test Table

SYSTEM: PENETRATION PRESSURIZATION (P53)

DWG. NO. D-302-761

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-P53	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1P53-F035	2 D-12	A ACTIVE	3/4 GL	SO C	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9305 T9305	0 2 C 2	1000.0 SCCM		OM(10)-2 VR-2 VR-4	Solenoid open and solenoid closed
1P53-F040	2 G-10	A ACTIVE	3/4 GL	SO C	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9312 T9312	0 2 C 2	1000.0 SCCM		OM(10)-2 VR-2 VR-4	Solenoid open and solenoid closed
1P53-F045	2 G-12	A ACTIVE	3/4 GL	SO C	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9312 T9312	0 2 C 2	1000.0 SCCM		OM(10)-2 VR-2 VR-4	Solenoid open and solenoid closed
1P53-F070	2 B-8	A ACTIVE	3/4 GL	SO O	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9305 T9305	C 2	1000.0 SCCM		OM(10)-2 VR-2 VR-4	Solenoid open and solenoid closed
1P53-F075	2 F-8	A ACTIVE	3/4 GL	SO O	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9312 T9312	C 2	1000.0 SCCM		OM(10)-2 VR-2 VR-4	Solenoid open and solenoid closed
1P53-F536	2 C-9	A PASSIVE	1 GL	MA LC	LJ-2Y	T9305		1000.0 SCCM		OM(10)-2	Manual
1P53-F541	2 G-9	A PASSIVE	1 GL	MA LC	LJ-2Y	T9312		1000.0 SCCM		OM(10)-2	Manual

Valve Test Table

SYSTEM: PENETRATION PRESSURIZATION (P53)

DWG. NO. D-302-761

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-P53	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1P53-F570	2 C-8	A PASSIVE	1 GL	MA LC	LJ-2Y	T9305		1000.0 SCCM		OM(10)-2	Manual
1P53-F571	2 G-8	A PASSIVE	1 GL	MA LC	LJ-2Y	T9312		1000.0 SCCM		OM(10)-2	Manual

Valve Test Table

SYSTEM: PENETRATION PRESSURIZATION (P53) DWG. NO. D-302-762

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-P53	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1P53-F572A	2 B-3	AC ACTIVE	1/2 CH	SE C	FE-Q AP-Q LD-2Y	T2022 T7305 T7305		NA	F	OM(10)-3	
1P53-F572B	2 B-6	AC ACTIVE	1/2 CH	SE C	FE-Q AP-Q LD-2Y	T2022 T7305 T7305		NA	F	OM(10)-3	
1P53-F573A	2 C-3	AC ACTIVE	1/2 CH	SE C	FE-Q AP-Q LD-2Y	T2022 T7305 T7305		NA	F	OM(10)-3	
1P53-F573B	2 C-6	AC ACTIVE	1/2 CH	SE C	FE-Q AP-Q LD-2Y	T2022 T7305 T7305		NA	F	OM(10)-3	
1P53-F574	2 B-5	C ACTIVE	1/2 CH	SE C	FE-Q AP-Q	T2022 NA			F		
1P53-F579A	2 C-2	A ACTIVE	1 BA	MA C	FE-Q LD-2Y	T2022 T7305		1000.0 SCCM			
1P53-F579B	2 C-5	A ACTIVE	1 BA	MA C	FE-Q LD-2Y	T2022 T7305		1000.0 SCCM			
1P53-F580A	2 C-3	A ACTIVE	1 BA	MA C	FE-Q LD-2Y	T2022 T7305		1000.0 SCCM			
1P53-F580B	2 C-6	A ACTIVE	1 BA	MA C	FE-Q LD-2Y	T2022 T7305		1000.0 SCCM			
1P53-F581	2 D-4	AC ACTIVE	1 RE	SE C	RT-5Y LD-2Y	T2100(GEN) T8305		1000.0 SCCM	10.0 to 12.0		

Valve Test Table

SYSTEM: PENETRATION PRESSURIZATION (P53)

DWG. NO. D-302-762

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-P53	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1P53-F582	2 D-5	AC ACTIVE	1 RE	SE C	RT-5Y AP-Q LD-2Y	T2100(GEN) T8305 T8305		1000.0 SCCM	10.0 to 12.0		
1P53-F587A	2 B-10	AC ACTIVE	1/2 CH	SE C	FE-Q AP-Q LD-2Y	T2022 T7312 T7312		NA	F	OM(10)-3	
1P53-F587B	2 B-13	AC ACTIVE	1/2 CH	SE C	FE-Q AP-Q LD-2Y	T2022 T7312 T7312		NA	F	OM(10)-3	
1P53-F588A	2 C-10	AC ACTIVE	1/2 CH	SE C	FE-Q AP-Q LD-2Y	T2022 T7312 T7312		NA	F	OM(10)-3	
1P53-F588B	2 C-13	AC ACTIVE	1/2 CH	SE C	FE-Q AP-Q LD-2Y	T2022 T7312 T7312		NA	F	OM(10)-3	
1P53-F593A	2 C-9	AC ACTIVE	1 BA	MA C	FE-Q LD-2Y	T2022 T7312		1000.0 SCCM			
1P53-F593B	2 C-12	AC ACTIVE	1 BA	MA C	FE-Q LD-2Y	T2022 T7312		1000.0 SCCM			
1P53-F594A	2 C-10	AC ACTIVE	1 BA	MA C	FE-Q LD-2Y	T2022 T7312		1000.0 SCCM			
1P53-F594B	2 C-13	AC ACTIVE	1 BA	MA C	FE-Q LD-2Y	T2022 T7312		1000.0 SCCM			

Valve Test Table

SYSTEM: PENETRATION PRESSURIZATION (P53)

DWG. NO. D-302-762

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-P53	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1P53-F595	2 D-11	AC ACTIVE	1 RE	SE C	RT-5Y LD-2Y	T2100(GEN) T8312		1000.0 SCCM	10.0 to 12.0		
1P53-F596	2 D-12	AC ACTIVE	1 RE	SE C	RT-5Y LD-2Y	T2100(GEN) T8312		1000.0 SCCM	10.0 to 12.0		
1P53-F601A	2 H-7	AC ACTIVE	1/2 CH	SE C	FE-Q AP-Q LD-2Y	T2021 T9023 T9023		NA	F	OM(10)-1 OM(10)-3	
1P53-F601B	2 H-10	AC ACTIVE	1/2 CH	SE C	FE-Q AP-Q LD-2Y	T2021 T9023 T9023		NA	F	OM(10)-1 OM(10)-3	
1P53-F602A	2 G-7	AC ACTIVE	1/2 CH	SE C	FE-Q AP-Q LD-2Y	T2021 T9023 T9023		NA	F	OM(10)-1 OM(10)-3	
1P53-F602B	2 G-10	AC ACTIVE	1/2 CH	SE C	FE-Q AP-Q LD-2Y	T2021 T9023 T9023		NA	F	OM(10)-1 OM(10)-3	
1P53-F633A	2 H-7	A ACTIVE	1 BA	MA C	FE-Q LD-2Y	T2021 T2021		NA		OM(10)-1	
1P53-F633B	2 J-9	A ACTIVE	1 BA	MA C	FE-Q LD-2Y	T2021 T2021		NA		OM(10)-1	
1P53-F638	2 J-9	AC ACTIVE	1 RE	SE C	RT-5Y LD-2Y	T2100(GEN) T2021		1000.0 SCCM	4.0 to 6.0		

Valve Test Table

SYSTEM: FIRE SERVICE WATER (P54)

DWG. NO. D-914-003

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-P54	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1P54-F726	2 G-5	A PASSIVE	4 GT	MA LC	LJ-2Y PI-2Y	T9406 T9406		1113.72 SCCM			Manual
1P54-F727	2 C-7	A PASSIVE	4 GT	MA LC	LJ-2Y PI-2Y	T9406 T9406		1113.72 SCCM			Manual

Valve Test Table

SYSTEM: FIRE SERVICE CARBON DIOXIDE (P54)

DWG. NO. D-914-005

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-P54	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1P54-F340	2 H-8	A ACTIVE	4 GT	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2002 T2002 T9210 T2002	C * 20	1113.72 SCCM			
1P54-F395	2 H-6	B ACTIVE	4 GT	MO O	FE-Q ST-Q PI-2Y	T2002 T2002 T2002	C 20				
1P54-F1098	2 H-7	AC ACTIVE	4 CH	SE C	FE-Q AP-Q LJ-2Y	T9210 T9210 T9210		1113.72 SCCM	F	RO-6 VR-41	
1P54-F5604	2 H-7	C ACTIVE	3/4 RE	SE C	RT-5Y	T2100(GEN)			490.0 to 510.0		

Valve Test Table

SYSTEM: SAFETY-RELATED INSTRUMENT AIR (P57)

DWG. NO. D-302-271

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-P57	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VL. DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1P57-F015A	2 B-7	A ACTIVE	1 GL	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9304 T2001	C * 15	1000.0 SCCM			SVI-P57-T2003 (PI) Remote S/D Local Brkr
1P57-F015B	2 G-7	A ACTIVE	1 GL	MO O	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9116 T2001	C * 15	1000.0 SCCM			
1P57-F020A	2 B-5	B ACTIVE	1 GL	MO O	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	C 15				SVI-P57-T2003 (PI) Remote S/D Local Brkr
1P57-F020B	2 G-5	B ACTIVE	1 GL	MO O	FE-Q ST-Q PI-2Y	T2001 T2001 T2001	C 15				
1P57-F524A	2 B-6	AC ACTIVE	1 CH	SE C	FE-Q AP-Q LJ-2Y	T2001 T9304 T9304		1000.0 SCCM	F	CS-20 VR-41	
1P57-F524B	2 G-6	AC ACTIVE	1 CH	SE C	FE-Q AP-Q LJ-2Y	T2001 T9116 T9116		1000.0 SCCM	F	CS-20 VR-41	
1P57-F555A	3 C-8	AC PASSIVE	1 CH	SE C	FE-Q AP-Q LD-2Y	NA NA T2200		295.0 SCCM	NA		Convenience use for initial fill

Valve Test Table

SYSTEM: SAFETY-RELATED INSTRUMENT AIR (P57)

DWG. NO. D-302-271

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-P57	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1P57-F555B	3 H-8	AC PASSIVE	1 CH	SE C	FE-Q AP-Q LD-2Y	NA NA T2201		295.0 SCCM	NA		Convenience use for initial fill
1P57-F556A	3 C-7	AC PASSIVE	1 CH	SE C	FE-Q AP-Q LD-2Y	NA NA T2200		295.0 SCCM	NA		Convenience use for initial fill
1P57-F556B	3 H-8	AC PASSIVE	1 CH	SE C	FE-Q AP-Q LD-2Y	NA NA T2201		295.0 SCCM	NA		Convenience use for initial fill
1P57-F559A	3 C-6	AC ACTIVE	1 RE	SE C	RT-5Y	T2100(GEN)		50.0 SCCM	175.0 to 185.0		
1P57-F559B	3 H-6	AC ACTIVE	1 RE	SE C	RT-5Y	T2100(GEN)		50.0 SCCM	175.0 to 185.0		

Valve Test Table

SYSTEM: NITROGEN (P86) DWG. NO. D-302-950

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-P86	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1P86-F002	2 E-8	A ACTIVE	2 GL	MO C	FE-Q ST-Q LJ-2Y PI-2Y	T2001 T2001 T9117 T2001	C * 20	1000.0 SCCM			
1P86-F528	2 E-6	AC ACTIVE	2 CH	SE C	FE-Q AP-Q LJ-2Y	NA T9117 T9117		1000.0 SCCM	NA	VR-41	Maintenance only

Valve Test Table

SYSTEM: POST ACCIDENT SAMPLING (P87) DWG. NO. D-302-431

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-P87	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1P87-F001	2 C-12	B ACTIVE	3/8 GL	SO C	FE-Q ST-Q FS-Q PI-2Y	T2001 T2001 T2001 T2002	0 2			VR-2 VR-4	
1P87-F007	2 D-12	B ACTIVE	3/8 GL	SO C	FE-Q ST-Q FS-Q PI-2Y	T2001 T2001 T2001 T2002	0 2			VR-2 VR-4	
1P87-F025	2 F-12	B ACTIVE	3/8 GL	SO C	FE-Q ST-Q FS-Q PI-2Y	T2001 T2001 T2001 T2002	0 2			VR-2 VR-4	
1P87-F028	2 G-12	B ACTIVE	3/8 GL	SO C	FE-Q ST-Q FS-Q PI-2Y	T2001 T2001 T2001 T2002	0 2			VR-2 VR-4	
1P87-F037	2 H-11	A ACTIVE	3/4 GL	SO C	FE-Q ST-Q FS-Q LW-2Y PI-2Y	T2001 T2001 T2001 T8401 T8401	0 2 C 2	0.5 GPM		VR-2 VR-4	CNTMT Instrument Line
1P87-F046	2 E-10	A ACTIVE	3/4 GL	SO C	FE-Q ST-Q FS-Q LJ-2Y PI-2Y	T2001 T2001 T2001 T9413 T9413	0 2 C 2	1000.0 SCCM		VR-2 VR-4	

Valve Test Table

SYSTEM: POST ACCIDENT SAMPLING (P87)

DWG. NO. D-302-431

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-P87	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1P87-F049	2 D-10	A ACTIVE	3/4 GL	SO C	FE-Q ST-Q FS-Q LJ-2Y PI-2Y	T2001 T2001 T2001 T9413 T9413	0 2 C 2	1000.0 SCCM		VR-2 VR-4	
1P87-F052	2 E-9	A ACTIVE	3/4 GL	SO C	FE-Q ST-Q FS-Q LJ-2Y PI-2Y	T2001 T2001 T2001 T9413 T9413	0 2 C 2	1000.0 SCCM		VR-2 VR-4	
1P87-F055	2 D-9	A ACTIVE	3/4 GL	SO C	FE-Q ST-Q FS-Q LJ-2Y PI-2Y	T2001 T2001 T2001 T9413 T9413	0 2 C 2	1000.0 SCCM		VR-2 VR-4	
1P87-F065	2 C-5	A ACTIVE	1/2 GL	SO C	FE-Q ST-Q FS-Q LJ-2Y PI-2Y	T2001 T2001 T2001 T9318(M51) T9318(M51)	0 2 C 2	1000.0 SCCM		OM(10)-2 VR-2 VR-4	CNTMT Instrument Line
1P87-F071	2 B-8	A ACTIVE	1/2 GL	SO C	FE-Q ST-Q FS-Q LJ-2Y PI-2Y	T2001 T2001 T2001 T9318(M51) T9318(M51)	0 2 C 2	1000.0 SCCM		OM(10)-2 VR-2 VR-4	CNTMT Instrument Line

Valve Test Table

SYSTEM: POST ACCIDENT SAMPLING (P87)

DWG. NO. D-302-431

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-P87	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1P87-F074	2 A-8	A ACTIVE	1/2 GL	SO C	FE-Q ST-Q FS-Q LJ-2Y PI-2Y	T2001 T2001 T2001 T9318(M51) T9318(M51)	0 2 C 2	1000.0 SCCM		OM(10)-2 VR-2 VR-4	CNTMT Instrument Line
1P87-F077	2 A-8	A ACTIVE	1/2 GL	SO C	FE-Q ST-Q FS-Q LJ-2Y PI-2Y	T2001 T2001 T2001 T9318(M51) T9318(M51)	0 2 C 2	1000.0 SCCM		OM(10)-2 VR-2 VR-4	CNTMT Instrument Line
1P87-F083	2 H-8	A ACTIVE	1/2 GL	SO C	FE-Q ST-Q FS-Q LJ-2Y PI-2Y	T2001 T2001 T2001 T9429(E12) T9429(E12)	0 2 C 2	1000.0 SCCM		OM(10)-2 VR-2 VR-4	
1P87-F264	2 H-8	A ACTIVE	1/2 GL	SO C	FE-Q ST-Q FS-Q LJ-2Y PI-2Y	T2001 T2001 T2001 T9429(E12) T9429(E12)	0 2 C 2	1000.0 SCCM		OM(10)-2 VR-2 VR-4	

Valve Test Table

SYSTEM: STANDBY DIESEL GENERATOR STARTING AIR (R44)

DWG. NO. D-302-351

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	AC TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-R44	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1R44-F010A	NC G-12	B ACTIVE	1/4 GL	SO C	FE-Q ST-Q FS-Q	T1317(R43) T1317(R43) T1317(R43)	NA			VR-32	
1R44-F011A	NC G-12	B ACTIVE	3 GT	AO C	FE-Q ST-Q FS-Q	T1317(R43) T1317(R43) T1317(R43)	NA			VR-32	
1R44-F010B	NC D-12	B ACTIVE	1/4 GL	SO C	FE-Q ST-Q FS-Q	T1318(R43) T1318(R43) T1318(R43)	NA			VR-32	
1R44-F011B	NC D-12	B ACTIVE	3 GT	AO C	FE-Q ST-Q FS-Q	T1318(R43) T1318(R43) T1318(R43)	NA			VR-32	
1R44-F015A	NC G-12	B ACTIVE	1/4 GL	SO C	FE-Q ST-Q FS-Q	T1317(R43) T1317(R43) T1317(R43)	NA			VR-32	
1R44-F016A	NC G-12	B ACTIVE	3 GT	AO C	FE-Q ST-Q FS-Q	T1317(R43) T1317(R43) T1317(R43)	NA			VR-32	
1R44-F015B	NC D-12	B ACTIVE	1/4 GL	SO C	FE-Q ST-Q FS-Q	T1318(R43) T1318(R43) T1318(R43)	NA			VR-32	
1R44-F016B	NC D-12	B ACTIVE	3 GT	AO C	FE-Q ST-Q FS-Q	T1318(R43) T1318(R43) T1318(R43)	NA			VR-32	

Valve Test Table

SYSTEM: STANDBY DIESEL GENERATOR STARTING AIR (R44)

DWG. NO. D-302-351

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-R44	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1R44-F020A	NC G-12	B ACTIVE	1/4 GL	SO C	FE-Q ST-Q FS-Q	T1317(R43) T1317(R43) T1317(R43)	NA			VR-32	
1R44-F021A	NC G-12	B ACTIVE	3 GT	AO C	FE-Q ST-Q FS-Q	T1317(R43) T1317(R43) T1317(R43)	NA			VR-32	
1R44-F020B	NC D-12	B ACTIVE	1/4 GL	SO C	FE-Q ST-Q FS-Q	T1318(R43) T1318(R43) T1318(R43)	NA			VR-32	
1R44-F021B	NC D-12	B ACTIVE	3 GT	AO C	FE-Q ST-Q FS-Q	T1318(R43) T1318(R43) T1318(R43)	NA			VR-32	
1R44-F025A	NC G-12	B ACTIVE	1/4 GL	SO C	FE-Q ST-Q FS-Q	T1317(R43) T1317(R43) T1317(R43)	NA			VR-32	
1R44-F026A	NC G-12	B ACTIVE	3 GT	AO C	FE-Q ST-Q FS-Q	T1317(R43) T1317(R43) T1317(R43)	NA			VR-32	
1R44-F025B	NC D-12	B ACTIVE	1/4 GL	SO C	FE-Q ST-Q FS-Q	T1318(R43) T1318(R43) T1318(R43)	NA			VR-32	
1R44-F026B	NC D-12	B ACTIVE	3 GT	AO C	FE-Q ST-Q FS-Q	T1318(R43) T1318(R43) T1318(R43)	NA			VR-32	

Valve Test Table

SYSTEM: STANDBY DIESEL GENERATOR STARTING AIR (R44)

DWG. NO. D-302-351

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-R44	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1R44-F503A	3 F-6	C ACTIVE	1-1/2 CH	SE C	FE-Q AP-Q	T1317(R43) T1317(R43)			F	VR-43	
1R44-F503B	3 C-6	C ACTIVE	1-1/2 CH	SE C	FE-Q AP-Q	T1318(R43) T1318(R43)			F	VR-43	
1R44-F504A	3 F-9	C ACTIVE	1-1/2 CH	SE C	FE-Q AP-Q	T1317(R43) T1317(R43)			F	VR-43	
1R44-F504B	3 C-9	C ACTIVE	1-1/2 CH	SE C	FE-Q AP-Q	T1318(R43) T1318(R43)			F	VR-43	
1R44-F508A	3 F-7	C ACTIVE	1 RE	SE C	RT-5Y	T2100(GEN)			270.0 to 286.0		
1R44-F508B	3 C-7	C ACTIVE	1 RE	SE C	RT-5Y	T2100(GEN)			270.0 to 286.0		
1R44-F518A	3 F-10	C ACTIVE	1 RE	SE C	RT-5Y	T2100(GEN)			270.0 to 286.0		
1R44-F518B	3 C-10	C ACTIVE	1 RE	SE C	RT-5Y	T2100(GEN)			270.0 to 286.0		

Valve Test Table

SYSTEM: HPCS DIESEL GENERATOR STARTING AIR (E22A)

DWG. NO. 302-358

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-E22	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1E22-F533A	3 B-7	C ACTIVE	1/2 RE	SE C	RT-5Y	T2100(GEN)			242.0 to 258.0		
1E22-F533B	3 F-7	C ACTIVE	1/2 RE	SE C	RT-5Y	T2100(GEN)			242.0 to 258.0		
1E22-F538A	3 B-7	C ACTIVE	1-1/2 CH	SE C	FE-Q AP-Q	T1319 T1319			F	VR-43	
1E22-F538B	3 G-7	C ACTIVE	1-1/2 CH	SE C	FE-Q AP-Q	T1319 T1319			F	VR-43	
1E22-F541A	3 C-3	B ACTIVE	1-1/2 GT	AO C	FE-Q ST-Q FS-Q	T1319 T1319 T1319	NA			VR-32	
1E22-F541B	3 F-3	A ACTIVE	1-1/2 GT	AO C	FE-Q ST-Q FS-Q	T1319 T1319 T1319	NA			VR-32	
1E22-F543A	3 C-4	B ACTIVE	3/8 GL	SO C	FE-Q ST-Q FS-Q	T1319 T1319 T1319	NA			VR-32	
1E22-F543B	3 F-4	B ACTIVE	3/8 GL	SO C	FE-Q ST-Q FS-Q	T1319 T1319 T1319	NA			VR-32	

Valve Test Table

SYSTEM: STANDBY DIESEL GENERATOR FUEL OIL (R45)

DWG. NO. D-302-352

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-R45	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1R45-F502A	3 H-12	C ACTIVE	3 CH	SE C	FE-Q AP-Q	T2001 T2001			F		
1R45-F502B	3 H-6	C ACTIVE	3 CH	SE C	FE-Q AP-Q	T2002 T2002			F		
1R45-F548A	3 H-12	C ACTIVE	3 CH	SE C	FE-Q AP-Q	T2001 T2001			F		
1R45-F548B	3 H-5	C ACTIVE	3 CH	SE C	FE-Q AP-Q	T2002 T2002			F		
1R45-F559A	3 D-11	C ACTIVE	1-1/2 RE	SE C	RT-5Y	T2100(GEN)			69.0 to 73.0		4 PSI Back Pressure
1R45-F559B	3 D-5	C ACTIVE	1-1/2 RE	SE C	RT-5Y	T2100(GEN)			69.0 to 73.0		4 PSI Back Pressure
1R45-F577A	3 G-10	C ACTIVE	3/4 CH	SE C	FE-Q AP-Q	T2001 NA			F		
1R45-F577B	3 G-4	C ACTIVE	3/4 CH	SE C	FE-Q AP-Q	T2002 NA			F		
1R45-F578A	3 G-10	C ACTIVE	3/4 CH	SE C	FE-Q AP-Q	T2001 NA			F		
1R45-F578B	3 G-4	C ACTIVE	3/4 CH	SE C	FE-Q AP-Q	T2002 NA			F		

Valve Test Table

SYSTEM: STANDBY DIESEL GENERATOR FUEL OIL (R45)

DWG. NO. D-302-356

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-R45	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1R45-F510A	3 H-5	C ACTIVE	3 CH	SE C	FE-Q AP-Q	T2003 T2003			F		
1R45-F510B	3 H-6	C ACTIVE	3 CH	SE C	FE-Q AP-Q	T2003 T2003			F		
1R45-F579A	3 G-4	C ACTIVE	3/4 CH	SE C	FE-Q AP-Q	T2003 NA			F		
1R45-F579B	3 G-3	C ACTIVE	3/4 CH	SE C	FE Q AP-Q	T2003 NA			F		

Valve Test Table

SYSTEM: STANDBY DIESEL GENERATOR JACKET WATER (R46) DWG. NO. D-302-354

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-R46	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1R46-F504A	3 D-10	C ACTIVE	1 CH	SE O	FE-Q AP-Q	T1317(R43) T1317(R43)			R		
1R46-F504B	3 D-4	C ACTIVE	1 CH	SE O	FE-Q AP-Q	T1318(R43) T1318(R43)			R		
1R46-F508A	3 F-12	C ACTIVE	8 CH	SE C	FE-Q AP-Q	T1317(R43) T1317(R43)			F		IEB: 83-03
1R46-F508B	3 F-6	C ACTIVE	8 CH	SE C	FE-Q AP-Q	T1318(R43) T1318(R43)			F		IEB: 83-03

Valve Test Table

SYSTEM: STANDBY DIESEL GENERATOR LUBE OIL (R47)

DWG. NO. D-302-353

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-R47	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1R47-F502A	3 J-11	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T1317(R43) T1317(R43)			F		
1R47-F502B	3 J-5	C ACTIVE	6 CH	SE C	FE-Q AP-Q	T1318(R43) T1318(R43)			F		
1R47-F504A	3 H-10	C ACTIVE	2 RE	SE C	RT-5Y	T2100(GEN)			48.0 to 52.0		
1R47-F504B	3 H-3	C ACTIVE	2 RE	SE C	RT-5Y	T2100(GEN)			48.0 to 52.0		
1R47-F506A	3 G-12	C ACTIVE	1-1/2 RE	SE C	RT-5Y	T2100(GEN)			68.0 to 72.0		
1R47-F506B	3 G-5	C ACTIVE	1-1/2 RE	SE C	RT-5Y	T2100(GEN)			68.0 to 72.0		

Valve Test Table

SYSTEM: STANDBY DIESEL GENERATOR EXHAUST AIR (R48) DWG. NO. D-302-355

VALVE NO.	CLASS AND DWG. COOR.	VALVE CAT. ACTIVE PASSIVE	SIZE (IN.) AND TYPE	ACTU. TYPE NORMAL POSIT.	TEST REQ. AND FREQ.	SURV. INST. NO. SVI-R48	STROKE DIRECT & TIME (SEC.)	LEAKAGE RATE (SCCM OR GPM)	CK VLV DIRECT/ RELIEF SET(PSIG)	RELIEF REQ. NO.	Remarks
1R48-D014A	3 A-12	D ACTIVE	30 RU	SE C	FE-RO	T2100					Testable
1R48-D014B	3 A-6	D ACTIVE	30 RU	SE C	FE-RO	T2101					Testable
1E22-D012	3 J-7	D ACTIVE	30 RU	SE C	FE-RO	T2102(E22)					Testable

3.5 Valve Test Table Notes

Note 1: These safety related valves are manipulated in the performance of Plant Emergency Instructions (PEI) for reasons other than satisfying Technical Specification 4.0.5 requirements (ASME Code, Section XI). Reference the resolutions to the Diagnostic Evaluation Team Report (PY-CEI/NRR-1043L) and resolution to NRC concerns on the ISTP submittal (NRC Site Meeting Summary Correspondence Dated May 29, 1991 Log No. PY-NRR/CEI-0559L).

Note 2: The exercising and stroke timing of the 1B21-F005 with SVI-B21-T2004 is for reasons other than satisfying Technical Specification 4.0.5 requirements (ASME Code, Section XI). Reference CS-13 and resolution to NRC concerns on the ISTP submittal (NRC Site Meeting Summary Correspondence Dated May 29, 1991 Log No. PY-NRR/CEI-0559L).

Note 3: These ESW screen wash pump check valves are being tested for reasons other than satisfying Technical Specification 4.0.5 requirements (ASME Code, Section XI).

Note 4: The scram volume vent and drain valves do not have a specific leakage limit and seat leakage is being tested for reasons other than satisfying Technical Specification 4.0.5 requirement (ASME Code, Section XI). The testing requirement for seat leakage, to address the concerns of IEN 85-72 involving failures of Scram Discharge Volume Vent and Drain Valves, is specified in PTI-C11-P0006.

* Identifies Containment Isolation Valves (Table 3.6.4-1) in which the Bypass Time must be considered.