PGE-1048
Revision 2

TROJAN NUCLEAR PLANT
INSERVICE TESTING PROGRAM FOR
PUMPS AND VALVES
SECOND 10-YEAR INTERVAL

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TROJAN NUCLEAR PLANT
PUMP AND VALVE
INSERVICE TESTING PROGRAM

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RECORD OF REVISIONS

Interval	Revision No.	Date
First Ten-Year (PGE-1022)	0	June 1979
	1	December 1980
	2	September 1982
	3	September 1986
Second Ten-Year (PGE-1048)	0	October 1986
	1	April 1988
	2	November 1989

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TROJAN NUCLEAR PLANT
PUMP AND VALVE
INSERVICE TESTING PROGRAM
SECOND 10-YEAR INTERVAL

1.0 INTRODUCTION

Title 10, Chapter 1, Code of Federal Regulations - Energy, Part 50, Section 50.55a(g) [10 CFR 50.55a(g)] sets forth the requirements for inservice inspection of nuclear power plant components.

The American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, is referenced by 10 CFR 50.55a(g) as the standard to be used in developing a program for testing the operational readiness of pumps and valves. The Trojan ASME Code, Section III, Class 1, 2, and 3 components are committed to design and provision for access to enable the performance of tests for the operational readiness of pumps and valves in accordance with ASME Code, Section XI, 1971 edition, and addenda through the winter of 1972. The effective date for commercial operation of Trojan is May 20, 1976. The initial Pump and Valve Inservice Testing (IST) program for Trojan was developed for the first 10 years of commercial operation, which extended through May 20, 1986. The first 10-year test program is described in Topical Report PGE-1022. (2)

This Topical Report describes the second 10-year interval extending through May 20, 1996.

Revisions to the Pump and Valve IST program are required to be made at 120-month intervals to upgrade the program to reflect subsequently approved editions and addenda of ASME Code Section XI. Approved editions and addenda are referenced in the effective issue of 10 CFR 50.55a(b)(2).

Successive 120-month intervals are required to meet the standards of the approved edition and addenda in effect 12 months prior to the commencement of the applicable 120-month period. The 1985 edition of 10 CFR 50,

in effect at that time, required the use of the 1980 edition, winter 1982 addenda of ASME Code Section XI. Paragraph 10 CFR 50.55a(g)(4)(iv) was invoked to write the program to meet the requirements set forth in the subsequent addition and addenda of the Code which was incorporated by reference in the 1986 edition of 10 CFR 50. This program will implement, to the maximum extent possible, the requirements of the 1983 edition, summer 1983 addenda of ASME Code Section XI, Subsections IWP and IWV for Pump and Valve IST.

(2) Certain systems at Trojan are safety-related or are required for safe shutdown, but were not designed to ASME Code, Section III, Class 1, 2, or 3 standards (eg, component cooling water, service water, etc). For (1)(2) Trojan, those portions of systems designated Quality Group 1, 2, 3A, and 3B in the Final Safety Analysis Report (FSAR) and which are within the scope of ASME Section XI are included in the IST program to meet the intent of proving operational readiness of components required to function in the event of an accident.

(2) Subsections IWP and IWV of Section XI of the ASME Code, 1983 edition and addenda through the summer of 1983, give the specific requirements for IST of pumps and valves which are a part of the Trojan Pump and Valve IST program. Implementing procedures for the IST program are to comply with these standards.

(2) Those pumps and valves for which conformance with certain provisions of the approved Code requirements is impractical are identified by relief request. These relief requests form the basis for the alternative tests to be listed herein as provided for in Part D of Nuclear Regulatory Commission (NRC) Generic Letter 89-04, "Guidance on Developing Acceptable Inservice Testing Programs".

2.0 ADMINISTRATIVE CONTROLS

The Inservice Testing (IST) Program for pumps and valves is required by Trojan Technical Specifications, Appendix A to Facility Operating License (FOL) NPF-1. Changes involving additional relief requests from American Society of Mechanical Engineers (ASME) Code Section XI requirements will be made in accordance with the guidance provided in Part D of Nuclear Regulatory Commission (NRC) Generic Letter 89-04. (2)

Implementation of this program will be accomplished through Plant procedures in accordance with the Nuclear Quality Assurance Program, PGE-8010. These procedures will identify the specific Plant status, valve lineups, operating steps, and return of valves to a normal lineup to accomplish the required testing at the established frequency. Compliance with the provisions of the testing requirements of ASME Code Section XI, Subsections IWP and IWV, shall be assured by an Inspector as required by Paragraph IWA-2120.

3.0 INSERVICE TESTING OF PUMPS

The Inservice Testing (IST) Program for pumps is described in Section 3.1. Section 3.2 provides the alternative testing of specific pumps and the basis for such test variance. (2)

3.1 PUMP SUMMARY

Table 3.1-1 is a complete listing of all pumps to be tested under the Trojan Pump and Valve IST program. The listing includes: (2)

(1) The identification number, description, and Piping & Instrument Diagram (P&ID) location of each pump to be tested; (2)

(2) The applicable American Society of Mechanical Engineers (ASME) Code class designation for each pump; (2)

(3) The test parameters to be measured for each pump; and

(4) The required test frequency for each pump.

Pump design criteria for Trojan are summarized in Section 3.2 and tabulated in Table 3.2-3 of the Final Safety Analysis Report (FSAR). (2)
Pump design code designations used in this program for determining IST requirements are summarized below:

ASME XI Testing Code Class Designation	1	2	3	
ASME Design Code Class Designation	1	2	3	ASME VIII Division 1
Trojan Quality Group	1	2	3A/3B	3B
Minimum Code Application	ASME III Class A	P&V Class II	P&V Class III	ASME VIII Division 1

(1)

(1)

For clarification, the following notes are provided for the pump design code designations used in the previous table:

ASME III: ASME Boiler & Pressure Vessel Code, 1968, Nuclear Vessels plus addenda and code interpretations to the date of purchase award. For purchase awards on or after July 1, 1971, reference to ASME III should be to ASME Boiler & Pressure Vessel Code, Nuclear Power Plant Components, 1971 edition, plus addenda to the date of purchase award.

P&V: the November 1968 Draft ASME Code for Pumps and Valves plus addenda to the date of purchase award.

ASME VIII means ASME Boiler & Pressure Vessel Code, Section VIII, Pressure Vessels, 1968 edition plus addenda to the date of purchase award. These pumps are to meet the IST requirements for ASME XI Code Class 3 pumps. (1)

(1) For pumps designed to Quality Group 3B operating above 150 psi and 212°F, Section VIII, Division 1 of the ASME Boiler & Pressure Vessel Code was used as a guide in calculating the thickness of the pressure rating parts and in sizing the cover bolting. Below 150 psi and 212°F the manufacturer's standard for service was used.

Abbreviations for measured parameters in Table 3.1-1 are identical to those listed in Article IWP-3000 and are repeated below for convenience:

N = Rotative speed (rpm).

Rotative speed is not required to be measured for pumps directly coupled to motor drivers per Paragraph IWP-4400.

(1) P_i = Inlet pressure (psig or feet).

(1) Inlet pressure is measured prior to starting the pump and during testing or following the test for pumps which were in service.

ΔP = Differential pressure across the pump (psid or ft). (1)

This value is determined by measuring the pump discharge pressure (P_o) and subtracting pump inlet pressure (P_i).

Q = Pump flow rate (gpm).

V = Vibration amplitude (mils) or velocity (in./sec.). (2)

In addition to the ASME Section XI requirements, major safety-related pumps will be tested as a performance check following critical maintenance. Examples of maintenance which could change pump performance include new motors, pump housings/casings and impeller replacement. Pumps included in this augmented test program are: (1) residual heat removal pumps (P202A/B), (2) safety injection pumps (P203A/B), (3) Containment spray pumps (P204A/B), and (4) centrifugal charging pumps (P205A/B). Consideration should be given to extending similar test requirements to the Emergency Core Cooling System (ECCS) support systems (Class 3), but these tests are not mandatory by this program. The performance check will monitor the approximate range required to demonstrate satisfactory accident mitigation. Areas evaluated should include: (1) pump curve (head versus flow), (2) starting current, (3) power factor, and (4) time to speed (for degraded grid voltage concerns). (1)

3.1.1 REFERENCE VALUES AND TOLERANCES

Reference values are to be determined from the results of testing during the IST for each pump and are to be taken from procedures which are readily duplicated for future testing. The reference values and allowable ranges of IST quantities are specified in Plant procedures. The limits of operability are established according to the criteria set forth in the Trojan Technical Specifications, limitations imposed by the Trojan FSAR, and Paragraph IWP-3210. (2)(1)

After a pump has been repaired in a manner that affects the established reference values, the old reference values are to be reconfirmed or a new set of reference values are to be established within 96 hours after returning the pump to service. Testing to reverify operability will be done in accordance with applicable IST procedures, and the reason for changing a set of reference values will be documented.

The criteria for establishing reference values is defined in Paragraph IWP-3110. Administrative control of deviations or revisions to procedures will comply with the Trojan Administrative Orders (AOs).

3.1.2 RECORDS

All IST records shall be retained for the service lifetime of the pump. Records shall be readily accessible for review and shall be maintained in accordance with the Trojan procedure for the control of Plant records. The records of IST of pumps shall be in accordance with Article IWP-6000. (2)

TABLE 3.1-1

INSERVICE TESTING PROGRAM FOR PUMPS

Pump ID No.	Description	ASME Code Class	P&ID No. (Coordinates)	Measures Parameters	Test Frequency	Relief Request Remarks
P102 A	Auxiliary Feedwater (Turbine)	ASME VIII Division 1	M-213, Sheet 4 (B-7)	N, P_i, ΔP, Q, V	3 Months	3.2.3[a,b,e]
P102 B	Auxiliary Feedwater (Diesel)	ASME VIII Division 1	M-213, Sheet 4 (C-7)	N, P_i, ΔP, Q, V	3 Months	3.2.3[a,b,e]
P108 A	Service Water	ASME VIII Division 1	M-218, Sheet 1 (G-8)	P_i, ΔP, Q, V	3 Months	3.2.1[c,e]
P108 B	Service Water	ASME VIII Division 1	M-218, Sheet 1 (D-8)	P_i, ΔP, Q, V	3 Months	3.2.1[c,e]
P108 C	Service Water	ASME VIII Division 1	M-218, Sheet 1 (E-8)	P_i, ΔP, Q, V	3 Months	3.2.1[c,e]
P144 A	Diesel Fuel Oil	ASME VIII Division 1	M-226 (F-7)	P_i, ΔP, Q	3 Months	3.2.2[c,e] (2)
P144 B	Diesel Fuel Oil	ASME VIII Division 1	M-226 (D-7)	P_i, ΔP, Q	3 Months	3.2.2[c,e]
P148 A	Service Water Booster	3	M-218, Sheet 1 (G-5)	P_i, ΔP, Q, V	3 Months	[a,b,c,e]
P148 B	Service Water Booster	3	M-218, Sheet 1 (C-5)	P_i, ΔP, Q, V	3 Months	[a,b,c,e]
P148 C	Service Water Booster	3	M-218, Sheet 1 (F-5)	P_i, ΔP, Q, V	3 Months	[a,b,c,e]
P148 D	Service Water Booster	3	M-218, Sheet 1 (D-5)	P_i, ΔP, Q, V	3 Months	[a,b,c,e]

TABLE 3.1-1

Pump ID No.	Description	ASME Code Class	P&ID No. (Coordinates)	Measures Parameters	Test Frequency	Relief Request Remarks
P202 A	Residual Heat Removal	2	M-205 (F-4)	P_i, ΔP, Q, V	3 Months	[a,b,c,e]
P202 B	Residual Heat Removal	2	M-205 (C-4)	P_i, ΔP, Q, V	3 Months	[a,b,c,e]
P203 A	Safety Injection	2	M-206, Sheet 2 (C-4)	P_i, ΔP, Q, V	3 Months	[a,b,c,e]
P203 B	Safety Injection	2	M-206, Sheet 2 (B-4)	P_i, ΔP, Q, V	3 Months	[a,b,c,e]
P204 A	Containment Spray	2	M-207 (G-5)	P_i, ΔP, Q, V	3 Months	[a,b,c,e]
P204 B	Containment Spray	2	M-207 (B-5)	P_i, ΔP, Q, V	3 Months	[a,b,c,e] (2)
P205 A	Centrifugal Charging	2	M-202, Sheet 1 (F-5)	P_i, ΔP, Q[d], V	3 Months	3.2.4[a,b,c,e]
P205 B	Centrifugal Charging	2	M-202, Sheet 1 (E-5)	P_i, ΔP, Q[d], V	3 Months	3.2.4[a,b,c]
P210 A	Component Cooling Water	3	M-215, Sheet 1 (G-7)	P_i, ΔP, Q, V,	3 Months	3.2.5[a,b,c,e]
P210 B	Component Cooling Water	3	M-215, Sheet 1 (C-7)	P_i, ΔP, Q, V,	3 Months	3.2.5[a,b,c,e]
P210 C	Component Cooling Water	3	M-215, Sheet 1 (E-7)	P_i, ΔP, Q, V,	3 Months	3.2.5[a,b,c,e]

TABLE 3.1-1

Pump ID No.	Description	ASME Code Class	P&ID No. (Coordinates)	Measures Parameters	Test Frequency	Relief Request Remarks
P211 A	Boric Acid Transfer	3	M-202 (C-2)	P_i, ΔP, Q[d], V,	3 Months	3.2.6[a,b,c,e]
P211 B	Boric Acid Transfer	3	M-202 (C-1)	P_i, ΔP, Q[d], V,	3 Months	3.2.6[a,b,c,e]
P218 A	Component Cooling Water Makeup	3	M-215, Sheet 1 (H-7)	P_i, ΔP, Q, V	3 Months	3.2.7[c,e] (2)
P218 B	Component Cooling Water Makeup	3	M-215, Sheet 1 (A-7)	P_i, ΔP, Q, V	3 Months	3.2.7[c,e]

[a] Lubricant level and/or pressure are to be observed and/or verified to be within applicable specifications for each individual component. The requirement for observation of lubricant level and/or pressure is to be incorporated into each pump test procedure per IWP-3110.

[b] Bearing temperature measurement has been deleted per Relief Request 3.2.9. (2)

[c] Pump is directly coupled to a motor driver of either the synchronous or the induction type; therefore, pump speed will not be measured per IWP-4400. (2) (1)

[d] Direct flow indication measurement contingent upon flow indictor installation schedule defined in PGE response to NRC Generic Letter 89-04.

[e] Each pump shall be run for approximately two minutes after stabilizing flow, prior to measuring and recording pump performance parameters (reference Relief Request 3.2.10). (2)

3.2 RELIEF REQUESTS FOR PUMPS

The Title 10, Chapter 1, Code of Federal Regulations - Energy, Part 50, Section 55a(g)(5)(iii) [10 CFR 50.55a(g)(5)(iii)], states that, "If the licensee has determined that conformance with certain code requirements is impractical for his facility the licensee shall notify the Commission and submit information to support his determinations." (2)

By interpretation, testing of pumps which does not conform to the standard test requirements for measurement of specific parameters or for the frequency of performance of tests is assumed to be a nonconformance. This section identifies those pumps for which Trojan is in nonconformance with the standard test requirements and provides the basis for the relief request and the provisions for alternate testing of those pumps. Testing for these pumps will be performed in accordance with the following descriptions. (2)

3.2.1 SERVICE WATER SYSTEM: PUMPS P108A, P108B, and P108C (2)

Code Class: ASME VIII, Division 1

Function: The service water pumps provide cooling and makeup water for safety-related and non-safety-related equipment and systems. The pumps are also used for dilution of liquid radwaste during discharge.

Test Requirement: Measure/observe pump inlet pressure, vibration amplitude, bearing temperature, and lubricant.

Basis for Variance: "Instrumentation Not Originally Provided." ASME VIII pumps at Trojan were not required to be designed for testing for operational readiness as per 10 CFR 50.55a(g).

The pumps are totally submerged inside the Intake Structure. Pump bearings are inaccessible and the instrumentation required for measurement of pump inlet pressure, vibration amplitude, and bearing temperature was not provided in the original system design.

Relief Request: Inlet pressure for these pumps will be determined by measuring the Intake Structure water level. The pump bearing vibration amplitude will not be measured; however, the pump motor inboard bearing will be monitored quarterly for vibration amplitude. Motor inboard bearing vibration measurements provide indication of pump shaft alignment and deterioration. The pump bearing temperature will not be measured.

(2)

3.2.2 DIESEL FUEL OIL SYSTEM: PUMPS P144A AND P144B

Code Class: ASME VIII, Division 1

Function: The diesel oil transfer pumps provide flow of fuel oil from the diesel oil storage tanks to the fuel oil day tanks.

Test Requirement: Measure pump inlet pressure, differential pressure, flow rate, vibration amplitude, bearing temperature, and lubricant. The resistance of the system shall be varied until either the measured differential pressure or the measured flow rate equals the corresponding reference value.

Basis for Variance: "Instrumentation Not Originally Provided." ASME VIII pumps at Trojan were not required to be designed for testing for operational readiness as per 10 CFR 50.55a(g). Instrumentation was not provided for measurement of inlet pressure or differential pressure. (2)

"Accessibility". These pumps are located inside the diesel oil storage tanks. The pumps are inaccessible for measurement of vibration amplitude and bearing temperature.

Relief Request: The inlet pressure will be calculated from diesel oil storage tank level to determine the suction head on the pump. The differential pressure will be taken as the difference between pump discharge pressure and calculated suction pressure. The pumps are enclosed within the diesel oil storage tanks; accessibility is not available for measuring pump vibration amplitude or bearing temperature, and the lubricant cannot be observed. (2) (2)

3.2.3 FEEDWATER SYSTEM: PUMPS P102A and P102B (2)

Code Class: ASME VIII, Division 1

Function: The auxiliary feedwater (AFW) pumps provide a backup to the normal feedwater pumps to ensure the safety of the Plant and protection of steam generators when the normal feedwater pumps are unavailable.

Test Requirement: Measure the flow rate every 3 months.

Basis for Variance: "Instrumentation Not Originally Provided." ASME Section VIII pumps at Trojan were not required to be designed for testing for operational readiness as per 10 CFR 50.55a(g). These pumps are tested using a fixed resistance flow path (recirculation flow to the condensate storage tank) since instrumentation was not provided for measurement of flow rate in the flow path.

Relief Request: These pumps will be tested quarterly on an uninstrumented recirculation line (miniflow). During this quarterly test, pump differential pressure and bearing vibration will be measured. At cold shutdown frequencies, these pumps will be tested on an instrumented flow path at full or substantial flow conditions. The cold shutdown test will include measurement of differential pressure, flow rate, and bearing vibration. Data from both of these tests will be trended as required by IWP-6000. This relief request is consistent with the NRC position stated in Generic Letter 89-04.

(2)

3.2.4 CHEMICAL AND VOLUME CONTROL SYSTEM: PUMPS P205A and P205B

Code Class: 2

Function: These pumps normally are in service supplying makeup flow to the Reactor Coolant System (RCS) and reactor coolant pumps

(RCP) seals. During a Loss-of-Coolant Accident, both of these pumps operate as part of the Safety Injection System (SIS).

Test Requirement: Measure the flow rate every 3 months.

Basis for Variance: "Instrumentation Not Provided." Class 2 pumps at Trojan were not required to be designed for testing for operational readiness as per 10 CFR 50.55a(g). These pumps are tested using a fixed resistance flow path [recirculation flow to the refueling water storage tank (RWST)] since instrumentation was not provided for measurement of flow rate.

Relief Request: The inlet pressure, differential pressure, and vibration amplitude will be measured for each of these pumps. Measurement of these pump parameters will provide evidence to assess the operational readiness of these pumps. Flow rate can be adequately evaluated from the pump differential pressure measurement since a fixed resistance path is used. This relief request will be deleted in its entirety when the flow instrumentation has been added to the recirculation flow path. (2)

3.2.5 COMPONENT COOLING WATER SYSTEM: PUMPS P210A, P210B, and P210C

Code Class: 3

Function: Supply and maintain the required cooling water flow to safety-related and other equipment vital to the safe shutdown and normal operation of the Plant. These loads include the RCPs, letdown heat exchanger, residual heat removal (RHR) heat exchangers, and seal water heat exchanger.

Test Requirement: The resistance of the system shall be varied until either the measured differential pressure or the measured flow rate equals the corresponding reference value.

Basis for Variance: A set or sets of reference values cannot be established for either differential pressure or flow in accordance with IWP-3110 due to piping configuration and operating loads supplied by the Component Cooling Water (CCW) System. A recirculation (test) flow path is not available to establish a reference flow rate. Attempts to establish a reference differential pressure or flow rate would require adjusting flow to various critical operating loads which could affect the operability of the inservice equipment. This system is used during all modes of Plant operation, all requiring different minimum cooling flows to the supplied components.

Relief Request: Reference values will be established with respect to the manufacturer's pump curve and allowable ranges specified in accordance with IWP-3210 to monitor pump performance. Flow and differential pressure will be measured and compared to the specified ranges to determine pump operational readiness.

(2) 3.2.6 CHEMICAL AND VOLUME CONTROL SYSTEM: PUMPS P211A and P211B

Code Class: 3

Function: Normally, one of these pumps is aligned with one boric acid tank and starts on demand from the reactor makeup control system. Emergency boration, the supplying of 4-weight percent boric acid solution to the suction of the charging pumps, can

be accomplished by either/or both of these pumps. These pumps are also used to transfer 4-weight percent boric acid solution from the batching tank to the boric acid tanks.

Test Requirement: Measure the flow rate every 3 months.

Basis for Variance: "Instrumentation Not Provided." Class 3 pumps at Trojan were not required to be designed for testing for operational readiness as per 10 CFR 50.55a(g).

These pumps are tested using a fixed resistance flow path (recirculation flow to the boric acid tanks) since instrumentation was not provided for measurement of flow rate.

Relief Request: The inlet pressure, differential pressure, and vibration amplitude will be measured for each of these pumps. Measurement of these pump parameters will provide evidence to assess the operational readiness of these pumps. Flow rate can be evaluated from the pump differential pressure measurement since a fixed resistance path is used. This relief request will be deleted in its entirety when the flow instrumentation has been added to the recirculation flow path. (2)

3.2.7 COMPONENT COOLING WATER SYSTEM: PUMPS P218A AND P218B (2)

Code Class: 3

Function: Provides makeup water to the CCW system from either the demineralized water storage tank (normal) or the service water system (emergency).

Test Requirement: Measure pump bearing temperature and observe proper lubricant level or pressure.

Basis for Variance: The design of this centrifugal, single-stage process pump does not incorporate the use of pump bearings or any independent lubrication system. The pump and motor do not form an integral unit, so the driver bearings are not considered pump bearings.

Relief Request: Verify the operational readiness of this pump by measuring pump inlet pressure, differential pressure, flow rate, and vibration amplitude only.

3.2.8 GENERIC PUMP RELIEF REQUEST: VIBRATION MEASUREMENT

Code Class: 2, 3, and ASME VIII, Division 1

(2)

Function: These pumps perform a specific function in shutting down the reactor or in mitigating the consequences of an accident, and that are provided with an emergency power source.

Test Requirement: Per IWP-4510, "At least one displacement vibration amplitude (peak-to-peak composite) shall be read during each inservice test".

Basis for Variance: As noted in ASME/American National Standards Institute (ANSI) Operations and Maintenance Standard Number 6 (OM-6), "Inservice Testing of Pumps in Light Water Reactor Power Plants", velocity is a better indicator of pump degradation than displacement when measuring vibration on equipment with speeds greater than 600 rpm.

Relief Request: Allow the use of either displacement readings or velocity readings when measuring pump vibration in accordance with ASME Section XI, Subsection IWP. The completion of the transition from displacement to velocity is expected to be completed by 1991.

3.2.9 GENERIC PUMP RELIEF REQUEST: BEARING TEMPERATURE

Code Class: 2, 3, and ASME VIII, Division 1

Function: These pumps perform a specific function in shutting down the reactor or in mitigating the consequences of an accident, and that are provided with an emergency power source.

Test Requirement: Measure bearing temperature annually (IWP-3300). (2)

Basis for Variance: The rise in temperature due to bearing degradation is a very sudden occurrence which typically would only provide warning of pending pump bearing failure if it was continuously monitored. It is very unlikely that bearing failure would be detected by a yearly test.

Relief Request: Pump/bearing mechanical condition will be determined using the vibration monitoring philosophy described in Relief Request 3.2.8. Bearing temperature will not be measured. This is consistent with the requirements of OM-6.

3.2.10 GENERIC PUMP RELIEF REQUEST: DURATION OF TESTS

Code Class: 2, 3, and ASME VIII, Division 1

Function: These pumps are those that perform a specific function in shutting down the reactor or in mitigating the consequences of an accident, and that are provided with an emergency power source.

Test Requirement: Per IWP-3500, "When measurement of bearing temperature is not required, each pump shall be run at least 5 minutes under conditions as stable as the system permits. At the end of this time, at least one measurement or observation of each of the quantities specified shall be made and recorded.

(2)

Basis for Variance: Recent industry publications indicate that extended operation of a pump at very low flow conditions (i.e., miniflow) may actually contribute to pump degradation.

Relief Request: In accordance with the requirements of OM-6, "After pump conditions are as stable as the system permits, each pump shall be run at least two minutes. At the end of this time, at least one measurement or observation of each of the quantities required shall be made and recorded."

4.0 INSERVICE TESTING OF VALVES

The IST program for valves is described in this section.

4.1 VALVE SUMMARY

Table 4.1-1 is a complete listing of all valves to be tested under the Trojan Pump and Valve Inservice Testing (IST) program. The listing includes: (2)

(1) The identification number, description, Piping and Instrument Diagram (P&ID) location, valve size, valve type, actuator type, and normal position of each valve to be tested;

(2) The applicable American Society of Mechanical Engineers (ASME) Code Class designation and Section XI category for each valve;

(3) The required tests for each valve; and

(4) The required test frequency for each valve.

Valve design criteria for Trojan are summarized in Section 3.2 and tabulated in Table 3.2-3 of the Final Safety Analysis Report (FSAR). Valve design code designations used in this program for determining IST requirements are summarized below: (2)

ASME XI Testing Code Class Designation	1	2	3	
ASME Design Code Class Designation	1	2	3	ANSI B31.1
Trojan Quality Group	1	2	3A	3B
Minimum Code Application	ANSI B16.5 MSS-SP-66	P&V Class II	P&V Class III	Non-Nuclear ANSI B31.1

(1)

(2) For clarification, the following notes are provided for the valve design code designations used in the previous table:

P&V: means the November 1968 Draft ASME Code for Pumps and Valves plus addenda to date of purchase award.

(1) (2) Valves designated American National Standard Institute (ANSI) B31.1 are to meet the IST requirements for ASME XI Code Class 3 valves.

(1) Valves whose test requirements deviate from the standard frequency requirements of Subsection IWV are referenced to their applicable justification or relief request.

(2) Valves which have a limitation on their maximum stroke time in fulfilling their accident function are annotated in the Stroke Time column. The limiting value of full-stroke time is specified in Plant Operating Procedures for implementing the Valve Test program.

(2) Refer to Table 4.1-1 for a listing of valves included in the IST Program and the applicable testing requirements.

4.2 CATEGORY A AND B VALVES

Preservice testing of new valves which fall under the scope of this program is mandatory. Valves which have been repaired or replaced must be tested prior to being returned to service. Test requirements resulting from maintenance or replacement of a valve are to be controlled in accordance with Trojan Administrative Orders (AOs) and maintenance procedures. (2)

Testing of valves is to be accomplished in accordance with the designated reference procedure. Administrative control of deviations or revisions to procedures shall comply with Trojan AOs. (2)

Containment isolation valves are not to be tested for seat leakage rate under ASME Code Section XI. Seat leakage rate testing and analyses are to comply with Appendix J to Title 10, Chapter 1, Code of Federal Regulations - Energy, Part 50 (10 CFR 50) for establishing Containment isolation valve integrity. Paragraph 4.9 provides the basis for relief and justification for exemption of seat leakage rate testing from the requirements of ASME Code Section XI. (2) (2)

Valves whose test data is outside the tolerance ranges are to be evaluated for corrective action in accordance with Paragraphs IWV-3417 and IWV-3427, with the exception that a 24-hour grace period is not allowed before declaring inoperable a valve that is not capable of performing its specified function. Test data outside the established tolerance ranges is to be reported in accordance with the Trojan procedure for documentation of IST of valves. (2)

4.3 CATEGORY C VALVES

Preservice testing of new valves which fall under the scope of this program is mandatory. Valves which have been repaired or replaced must be tested prior to being returned to service. Test requirements resulting from maintenance or replacement of a valve are to be controlled in accordance with Trojan AOs and maintenance procedures. (2)

Testing of valves is to be accomplished in accordance with the designated reference procedure. Administrative control of deviations or revisions to procedures shall comply with Trojan AOs. (2)

Corrective action for safety and relief valves is to be in accordance with Paragraph IWV-3514. Corrective action for check valves is to be in accordance with Paragraph IWV-3523, with the exception that a 24-hour grace period is not allowed before declaring inoperable a check valve that is not capable of performing its specified function.

4.4 MULTIPLE CATEGORY VALVES

When a valve has a multiple category classification, such as AC, the test requirements of both categories must be met; however, duplication of testing is not required. Documentation shall meet the requirements of both categories.

4.5 PASSIVE VALVES

Passive valves, as defined in Paragraph IWV-2100(b), will not be exercised, as noted in Table IWV-3700-1. The passive valves which are included in this program are manual valves or check valves which are shut during power operation and are required to be shut to mitigate the consequences of an accident as Containment isolation boundaries. Valves which are normally open and remain open during accident conditions represent passive valves used only for operating convenience or maintenance and are exempted by Paragraph IWV-1200(a).

4.6 RECORDS

All inservice inspection records shall be retained for the service lifetime of the valve. Records shall be readily accessible for review and shall be in accordance with Trojan procedures for control of Plant records. Records of IST of valves shall be in accordance with Article IWV-6000.

4.7 FULL-STROKE EXERCISING

Category A, B, and C active valves that cannot be exercised during Plant operation will be full-stroke exercised during cold shutdowns or refueling outages. Table 4.1-2 lists these valves and includes the basis for why each valve cannot be tested during Plant operation.

4.8 PART-STROKE EXERCISING

Category A, B, and C active valves where only limited operation is practical during Plant operation will be part-stroke exercised during Plant operations and full-stroke exercised during cold shutdowns. Table 4.1-3 lists these valves and includes the basis for why only limited operation is practical during Plant operation.

4.9 CONTAINMENT ISOLATION VALVES

These valves provide Containment isolation during reactor operation and/or isolate Containment to prevent release of radioactive products following a design basis accident.

Containment isolation valves are tested for seat leakage under the criteria of Appendix J to 10 CFR 50. These valves are tested and analyzed for seat tightness in accordance with the Trojan "Containment Local Leak Rate Test". This procedure provides for local leak rate testing of valves. The acceptance criteria for allowable leakage rate under Appendix J to 10 CFR 50 varies from the acceptance criteria of Subsection IWV of ASME Code Section XI in that the allowed (2)

leakage is based on the total Containment leakage rate rather than on individual valve seat leakage criteria. This test program provides adequate documentation and individual analysis for valves to verify maintenance of Containment integrity. Failure of any valve to provide adequate seat tightness in maintaining Containment integrity will require the same corrective action for repair and replacement of the valve. (2)

These valves are tested for seat leakage rate during local leakage rate testing in accordance with Appendix J to 10 CFR 50. Individual valve leakage rate criteria is specified by PGE in accordance with IWV-3426 and corrective actions will be in accordance with IWV-3427(a). (2)

4.10 WASH-1400, EVENT V VALVES

These valves are designated from a configuration of in-series check valves which provide a boundary between a high-pressure system and a system with a design pressure below that of the normal operating pressure of the high-pressure system. These valves will be leak tested at reduced pressures prior to entering Mode 2 after each refueling and prior to entering Mode 2 whenever the Plant has been in cold shutdown for 72 hours or more, and if leakage testing has not been performed in the previous 9 months. Testing of these valves is in accordance with Technical Specification 4.4.6.2.2.

4.11 LEAK TESTING MO-8701 AND MO-8702

Portland General Electric Company (PGE) committed to individually leak test these valves in accordance with the requirements of IWV-3420 in a letter dated May 18, 1984 in response to Nuclear Regulatory Commission (NRC) request dated March 14, 1984 in Safety Evaluation Report (SER) 180. (2) (2)

4.12 LEAK TESTING MO 8812 AND 8958

(2)

Amendment 26 of the Original Trojan FSAR (dated December 1975) committed PGE to submit a test program for MO 8812, RHR Suction From the RWST, to meet applicable safety requirements. The test program was submitted by PGE letter dated August 29, 1978 (C. Goodwin, Jr. to A. Schwencer) and accepted by NRC letter dated January 15, 1979 (A. Schwencer to C. Goodwin, Jr.). Changes to this program were made and accepted by NRC letter dated October 15, 1985 (E. Butcher to B. Withers).

(1)

4.13 RELIEF REQUESTS

Pursuant to the provisions of 10 CFR 50.55a(g)(5)(iii), PGE has determined that conformance with certain ASME Code requirements is impractical and relief from these requirements is necessary. The requests for relief are included in Table 4.1-2 as Items C, F, G, H, and I under M201; as Item G under M205; as Item I under M206; as Item A under M207; as Item A under M208; as Item F under M215, as Item A under M223; and as Item A under J781. In addition to the above Table 4.1-2 locations, relief requests are also located in Table 4.1-3 as Item A under M207 and in Table 4.1-4 under Generic Relief Requests.

(2)

4.14 LEAK TEST/DISASSEMBLY OF FW/AFW VALVES

PGE committed to either leak test or perform valve disassembly and inspection of the four main feedwater check valves (FW-2017, FW-2018, FW-2019, and FW-2020) and the four auxiliary feedwater header check valves (FW-2013, FW-2014, FW-2015, and FW-2016) at a two-year frequency. This commitment was made in a letter from D. W. Cockfield to the NRC dated April 15, 1988.

TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

This table identifies the system valves that are subject to the testing requirements of ASME Section XI, Subsection IWV and the requests for relief from code requirements.

LEGEND:

VALVE CLASS (VLV CLASS)
ASME Code Class Taken From FSAR Drawings

VALVE CATEGORY (VLV CAT)
ASME IWV-2200 Valve Categories

VALVE TYPE (VLV TYPE) NOTATION

NOTATION	TYPE
BF	Butterfly Valve
CK	Check Valve
DI	Diaphragm Valve
GA	Gate Valve
GL	Globe Valve
NV	Needle Valve
PSV	Pressure Safety Valve
SV	Solenoid Valve

ACTUATOR TYPE (ACT TYPE) NOTATION

NOTATION	TYPE
A	Air Operated
E	Electric Motor
M	Manual
N	None
S	Solenoid Operated

(2)

TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTINGS

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

LEGEND: (continued)

NORMAL POSITION (NRM POS) NOTATION

NOTATION	TYPE
O	Open
C	Closed
T	Throttled

TEST REQUIREMENTS (TEST REQ) NOTATION

NOTATION	TYPE
EF	Exercise of valve - full stroke
EP	Exercise of valve - partial stroke
LT	Valve Leak Test
PI	Position Indication Verification
SVT	Safety Valve Test

TEST FREQUENCY (TEST FRQ) NOTATION

NOTATION	TYPE
Q	At least once per 92 days
CS	At least once per Cold Shutdown if not tested - in previous 92 day period
R	At least once per Refueling Outage
2A	At least once per 24 months
RR	Tested on a rotational basis during Refueling Outages - (Sample Disassembly / Inspection)
T	Tested per IWV-3311

TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

LEGEND: (continued)

STROKE TIME (STR TIME) NOTATION

NOTATION	TYPE
C	Stroke timed in closing direction
N	Stroke timing not applicable
O	Stroke timed in opening direction
OC	Stroke timed in both opening and closing direction

COMMENTS NOTATION

The notes listed in the comments section are defined just prior tc Table 4.1-1.

(2)

TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : REACTOR COOLANT

P & ID : M201, Sheet 1, Revision 37

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
SV-1015A	RPV Head Vent	E-6	2	B	1	GL	S	C	EF	CS	OC	4.7,
									PI	2A	N	
SV-1015B	RPV Head Vent	D-6	2	B	1	GL	S	C	EF	CS	OC	4.7,
									PI	2A	N	
SV-1016A	RPV Head Vent	E-6	2	B	1	GL	S	C	EF	CS	OC	4.7,
									PI	2A	N	
SV-1016B	RPV Head Vent	D-6	2	B	1	GL	S	C	EF	CS	OC	4.7,
									PI	2A	N	
CV-8032	RPV Flange Leakoff	F-5	2	B	3/8	GL	A	O	EF	Q	C	
									PI	2A	N	
8900 A	BIT To Lp. A Coldleg Inj.	C-5	1	C	1.5	CK	N	C	EF	CS	N	4.7,
8900 B	BIT To Lp. B Coldleg Inj.	G-5	1	C	1.5	CK	N	C	EF	CS	N	4.7,
8900 C	BIT To Lp. C Coldleg Inj.	G-4	1	C	1.5	CK	N	C	EF	CS	N	4.7,
8900 D	BIT To Lp. D Coldleg Inj.	C-5	1	C	1.5	CK	N	C	EF	CS	N	4.7,
8948 A	SI/RHR To Lp. A Cl. Inj.	B-6	1	AC	10	CK	N	C	EF	CS	N	4.7,4.10,4.13
									LT	CS	N	

(2)

TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : REACTOR COOLANT P & ID : M201, SHEET 1, REVISION 37

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
8948 B	SI/RHR To Loop B Cl. Inj.	H-6	1	AC	10	CK	N	C	EF	CS	N	4.7,4.10,4.13
									LT	CS	N	
8948 C	SI/RHR To Loop C Cl. Inj.	H-3	1	AC	10	CK	N	C	EF	CS	N	4.7,4.10,4.13
									LT	CS	N	
8948 D	SI/RHR To Loop D Cl. Inj.	B-3	1	AC	10	CK	N	C	EF	CS	N	4.7,4.10,4.13
									LT	CS	N	
8949 A	SI To Loop A Hotleg Inj.	D-7	1	AC	6	CK	N	C	EF	CS	N	4.7, 4.10,
									LT	CS	N	
8949 B	SI To Loop B Hotleg Inj.	F-7	1	AC	6	CK	N	C	EF	CS	N	4.7, 4.10,
									LT	CS	N	
8949 C	SI To Loop C Hotleg Inj.	F-3	1	AC	6	CK	N	C	EF	CS	N	4.7, 4.10,
									LT	CS	N	
8949 D	SI To Loop D Hotleg Inj.	D-4	1	AC	6	CK	N	C	EF	CS	N	4.7, 4.10
									LT	CS	N	

(2)

TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : REACTOR COOLANT

P & ID : M201, SHEET 2, REVISION 8

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
PCV-455A	Pressurizer PORV	G-7	1	B	3	GL	A	C	EF	CS	OC	4.7
									PI	2A		
PCV-456	Pressurizer PORV	G-7	1	B	3	GL	A	C	EF	CS	OC	4.7
									PI	2A		
IA-2003	Inst. Air Sup.CK/ PCV-456	B-4	B31.1	C	1	CK	N	C	EF	R	N	4.7, 4.13
IA-2004	Inst. Air Sup.CK/ PCV-456	B-4	B31.1	C	1	CK	N	C	EF	R	N	4.7, 4.13
IA-2005	Inst. Air Sup.CK/PCV-455A	A-4	B31.1	C	1	CK	N	C	EF	R	N	4.7, 4.13
IA-2006	Inst. Air Sup.CK/PCV-455A	A-4	B31.1	C	1	CK	N	C	EF	R	N	4.7, 4.13
MO-8000A	Pres. PORV Block Valve	G-7	1	B	3	GA	E	O	EF	Q	C	
									PI	2A	N	
MO-8000B	Pres. PORV Block Valve	G-7	1	B	3	GA	E	O	EF	Q	C	
									PI	2A	N	
PSV-8010A	Pressurizer Safety Valve	G-6	1	C	6	PSV	N	C	SVT	T	N	
PSV-8010B	Pressurizer Safety Valve	G-5	1	C	6	PSV	N	C	SVT	T	N	
PSV-8010C	Pressurizer Safety Valve	G-5	1	C	6	PSV	N	C	SVT	T	N	

(2)

TROJAN NUCLEAR POWER PLANT

ASME SECTION XI PUMP VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : REACTOR COOLANT

P & ID : M201, SHEET 2, REVISION 8

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
CV-8025	PRT To AGA Cont. Isol.	G-1	2	A	3/8	GL	A	C	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
CV-8026	PRT To AGA Cont. Isol.	G-2	2	A	3/8	GL	A	O	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
CV-8028	M/U Water To PRT Cont.Isol	F-1	2	A	3	DI	A	O	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
CV-8033	N2 Supply To PRT Cont.Isol	F-2	2	A	3/4	DI	A	O	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
8046	M/U Water To PRT Cont.Isol	F-2	2	AC	3	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	
8047	N2 Supply To PRT Cont.Isol	F-2	2	AC	3/4	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	

(2)

TROJAN NUCLEAR POWER PLANT

ASME SECTION XI PUMP VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : REACTOR COOLANT

P & ID : M201, SHEET 2, REVISION 8

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
8079	Misc. ECCS PSV's To PRT	D-2	2	AC	4	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	
8090A	Pres. Deadweight Tester	E-5	2	A	1/8	N	M	C	LT	2A	N	4.5, 4.9
8090B	Pres. Deadweight Tester	E-5	2	A	1/8	N	M	C	LT	2A	N	4.5, 4.9

(2)

TROJAN NUCLEAR POWER PLANT

ASME SECTION XI PUMP VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : CHEMICAL AND VOLUME CONTROL P & ID : M202 SHEET 1, REVISION 36

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
MO-112 B	VCT To Charg.Pump Suction	B-4	2	B	4	GA	E	O	EF	CS	C	4.7
									PI	2A	N	
MO-112 C	VCT To Charg.Pump Suction	B-4	2	B	4	GA	E	O	EF	CS	C	4.7
									PI	2A	N	
MO-112 D	RWST To Charg.Pump Suction	G-5	2	B	8	GA	E	C	EF	Q	O	
									PI	2A	N	
MO-112 E	RWST To Charg.Pump Suction	G-5	2	B	8	GA	E	C	EF	Q	O	
									PI	2A	N	
MO-8105	Normal Charg. Cont. Isol.	E-7	2	A	3	GA	E	O	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
MO-8106	Normal Charg. Flowpath	E-6	2	B	3	GA	E	O	EF	Q	C	
									PI	2A	N	
PSV-8117	Letdown To PRT/Cont. Isol	G-7	2	AC	3	PSV	N	C	SVT	T	N	4.9
									LT	2A	N	
PSV-8118	Charging PDP Disc. Safety	B-5	2	C	3/4	PSV	N	C	SVT	T	N	
PSV-8119	Low Press, Letdown Safety	H-4	2	C	2	PSV	N	C	SVT	T	N	

(2)

TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : CHENICAL AND VOLUME CONTROL P & ID : M202 SHEET 1, REVISION 36

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
PSV-8120	Volume Control Tank Safety	E-1	2	C	3	PSV	N	C	SVT	T	N	
PSV-8124	Charg. Pump Suction Safety	E-5	2	C	3/4	PSV	N	C	SVT	T	N	
CV-8149A	Letdown Orifice Cont.Isol.	F-8	2	A	2	GL	A	C	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
CV-8149B	Letdown Orifice Cont.Isol.	F-7	2	A	2	GL	A	O	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
CV-8149C	Letdown Orifice Cont.Isol.	F-7	2	A	2	GL	A	C	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
CV-8152	Letdown Cont. Isol.	F-7	2	A	2	GL	A	O	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
8381	Norm.Charg.Check Cont.Isol	E-7	2	AC	3	CK	N	O	EF	CS	N	4.7, 4.9
									LT	2A	N	

(2)

TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : CHEMICAL AND VOLUME CONTROL P & ID : M202, SHEET 1, REVISION 36

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
8440	VCT Outlet Check Valve	B-4	2	C	4	CK	N	O	EF	CS	N	4.7
8480 A	Charging Pump Miniflow	F-5	2	C	2	CK	N	C	EF	Q	N	
8480 B	Charging Pump Miniflow	E-5	2	C	2	CK	N	C	EF	Q	N	
8481 A	Charging Pump Discharge	F-6	2	C	4	CK	N	C	EP	Q	N	4.8
									EF	CS	N	
8481 B	Charging Pump Discharge	E-6	2	C	4	CK	N	C	EP	Q	N	4.8
									EF	CS	N	
8546	RWST To Charg.Pump Suction	G-5	2	C	8	CK	N	C	EF	CS	N	4.7

(2)

TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : CHEMICAL AND VOLUME CONTROL P & ID : M202 SHEET 2, REVISION 0

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
MO-8104	Emerg. Boration Flowpath	D-6	2	B	2	GL	E	C	EF	Q	O	
									PI	2A	N	
8442	Emerg.Boration Check Valve	D-6	2	C	2	CK	N	C	EF	CS	N	4.7
8473	BATP Discharge Check Valve	D-1	3	C	2	CK	N	C	EF	Q	N	
8487	BATP Discharge Check Valve	D-3	3	C	2	CK	N	C	EF	Q	N	

(2)

TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : CHEMICAL AND VOLUME CONTROL P & ID : M203, REVISION 24

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
MO-8100	RCP Seal Wtr Rtn Cont Isol	G-2	2	A	4	GA	E	O	EF	CS	C	4.7, 4.9
									LT	2A	N	
									PI	2A	N	
MO-8110	CCP Miniflow Isol.	H-3	2	B	2	GL	E	O	EF	CS	OC	4.7
									PI	2A	N	
MO-8111	CCP Miniflow Isol.	H-3	2	B	2	GL	E	O	EF	CS	OC	4.7,
									PI	2A	N	
MO-8112	RCP Seal Wtr Rtn Cont Isol	F-2	2	A	4	GA	E	O	EF	CS	C	4.7, 4.9
									LT	2A	N	
									PI	2A	N	
PSV-8121	Seal Rtn. Safety Valve	F-2	2	C	2	PSV	N	C	SVT	T	N	
PSV-8123	Seal Rtn. Safety Valve	H-2	2	C	2	PSV	N	C	SVT	T	N	
8180	Seal Rtn Bypass @ MD-8112	F-2	2	AC	3/4	CK	N	C	LT	2A	N	4.5, 4.9
8368 A	RCP Seal Supply Check	B-7	2	C	2	CK	N	O	N/A	N/A	N	4.5
8368 B	RCP Seal Supply Check	B-6	2	C	2	CK	N	O	N/A	N/A	N	4.5
8368 C	RCP Seal Supply Check	B-4	2	C	2	CK	N	O	N/A	N/A	N	4.5
8368 D	RCP Seal Supply Check	B-2	2	C	2	CK	N	O	N/A	N/A	N	4.5

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : RESIDUAL HEAT REMOVAL P & ID : M205, REVISION 24

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
HCV-606	RHR HX Outlet	F-7	2	B	8	BF	A	O	EF	Q	O	
									PI	2A	N	
HCV-607	RHR HX Outlet	C-7	2	B	8	BF	A	O	EF	Q	O	
									PI	2A	N	
FCV-610	RHR Miniflow Isol.	G-4	2	B	2	GL	E	C	EF	Q	OC	
									PI	2A	N	
FCV-611	RHR Miniflow Isol.	D-4	2	B	2	GL	E	C	EF	Q	OC	
									PI	2A	N	
CV-1782	RHR Sample	G-6	2	B	3/4	GL	A	C	EF	Q	C	
									PI	2A	N	
CV-1783	RHR Sample	G-7	2	B	3/4	GL	A	C	EF	Q	C	
									PI	2A	N	
MO-8700A	RHR Pump Suction	E-3	2	B	14	GA	E	O	EF	Q	C	
									PI	2A	N	
MO-8700B	RHR Pump Suction	D-2	2	B	14	GA	E	O	EF	Q	C	
									PI	2A	N	

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1898)

SYSTEM : RESIDUAL HEAT REMOVEL P & ID : M205, REVISION 24

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
MO-8701	RCS To RHR Suction	D-2	1	A	14	GA	E	C	EF	CS	OC	4.7, 4.11
									LT	2A	N	
									PI	2A	N	
MO-8702	RCS To RHR Suction	E-2	1	A	14	GA	E	C	EF	CS	OC	4.7, 4.11
									LT	2A	N	
									PI	2A	N	
MO-8703	RHR To RCS Hotleg 2/4	D-5	2	B	12	GA	E	C	EF	CS	OC	4.7
									PI	2A	N	
PSV-8708	RHR Suction Safety	E-2	2	C	3	PSV	N	C	SVT	T	N	
PSV-8709	RHR Hotleg Disc. Safety	D-6	2	C	3/4	PSV	N	C	SVT	T	N	
MO-8716A	RHR Discharge X-Conn.	E-7	2	B	8	GA	E	O	EF	CS	C	4.7
									PI	2A	N	
MO-8716B	RHR Discharge X-Conn.	C-7	2	B	8	GA	E	O	EF	CS	C	4.7
									PI	2A	N	
8730 A	RHR Pump Discharge	F-4	2	C	8	CK	N	C	EP	Q	N	4.8
									EF	CS	N	

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : RESIDUAL HEAT REMOVAL P & ID : M205, REVISION 24

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
8730 B	RHR Pump Discharge	C-4	2	C	8	CK	N	C	EP	Q	N	4.8
									EF	CS	N	
8736 A	RHR To RCS Hotleg 2	D-5	1	AC	8	CK	N	C	EF	CS	N	4.7, 4.10
									LT	CS	N	
8736 B	RHR To RCS Hotleg 4	D-5	1	AC	8	CK	N	C	EF	CS	N	4.7, 4.10
									LT	CS	N	
MO-8804A	RHR To SI/CCP Suction	G-7	2	B	8	GA	E	C	EF	CS	O	4.7
									PI	2A	N	
MO-8804B	RHR To SI/CCP Suction	A-7	2	B	8	GA	E	C	EF	CS	O	4.7
									PI	2A	N	
MO-8809A	RHR To RCS Coldleg	F-7	2	B	8	GA	E	O	EF	CS	OC	4.7
									PI	2A	N	
MO-8809B	RHR To RCS Coldleg	B-7	2	B	8	GA	E	O	EF	CS	OC	4.7
									PI	2A	N	
MO-8811A	Recirc. Sump To RHR Suct.	F-3	2	A	14	GA	E	C	EF	Q	O	4.9
									LT	2A	N	
									PI	2A	N	

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : RESIDUAL HEAT REMOVAL P & ID : M205, REVISION 24

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
MO-8811B	Recirc. Sump To RHR Suct.	B-2	2	A	14	GA	E	C	EF	Q	O	4.9
									LT	2A	N	
									PI	2A	N	
MO-8812	RWST To RHR Suction	D-2	2	B	14	[illegible]	E	O	EF	CS	C	4.7, 4.12
									LT	2A	N	
									PI	2A	N	
8818 A	RHR To RCS Coldleg Inj.	G-8	1	AC	6	CK	N	C	EF	CS	N	4.7, 4.10
									LT	CS	N	
8818 B	RHR To RCS Coldleg Inj.	F-8	1	AC	6	CK	N	C	EF	CS	N	4.7, 4.10
									LT	CS	N	
8818 C	RHR To RCS Coldleg Inj.	B-8	1	AC	6	CK	N	C	EF	CS	N	4.7, 4.10
									LT	CS	N	
8818 D	RHR To RCS Coldleg Inj.	A-8	1	AC	6	CK	N	C	EF	CS	N	4.7, 4.10
									LT	CS	N	
PSV8856A	RHR To RCS Coldleg Safety	G-7	2	C	2	PSV	N	C	SVT	T	N	
PSV8856B	RHR To RCS Coldleg Safety	B-7	2	C	2	PSV	N	C	SVT	T	N	

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : RESIDUAL HEAT REMOVAL P & ID : M205, REVISION 24

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
8958	RWST Supply To RHR Suction	D-3	2	C	14	CK	N	C	EF	R	N	4.7,4.12,4.13
									LT	2A	N	

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : SAFETY INJECTION — P & ID : M206, SHEET 1, REVISIONS 31

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
8956 A	Accumulator Outlet Check	D-7	1	AC	10	CK	N	C	EF	R	N	4.7, 4.13
									LT	2A	N	
8956 B	Accumulator Outlet Check	D-6	1	AC	10	CK	N	C	EF	R	N	4.7, 4.13
									LT	2A	N	
8956 C	Accumulator Outlet Check	D-4	1	AC	10	CK	N	C	EF	R	N	4.7, 4.13
									LT	2A	N	
8956 D	Accumulator Outlet Check	D-3	1	AC	10	CK	N	C	EF	R	N	4.7, 4.13
									LT	2A	N	
CV-8964	SIS Testline Cont. Isol.	C-3	2	A	3/4	GL	A	C	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
8968	N2 Supply To SI Accum.	H-6	2	AC	1	CK	N	C	EF	Q	N	4.9
									LT	2A	N	
MO-8808A	Accumulator Isol. Valve	D-7	1	B	10	GA	E	O	EF	CS	OC	4.7
									PI	2A	N	
MO-8808B	Accumulator Isol. Valve	D-6	1	B	10	GA	E	O	EF	CS	OC	4.7
									PI	2A	N	

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : SAFETY INJECTION

P & ID : M206, SHEET 1, REVISIONS 31

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
MO-8808C	Accumulator Isol. Valve	D-4	1	B	10	GA	E	O	EF	CS	OC	4.7
									PI	2A	N	
MO-8808D	Accumulator Isol. Valve	D-3	1	B			E	O	EF	CS	OC	4.7
									PI	2A	N	
PSV-8855A	Accumulator Safety Valve	F-7	2	C	1				SVT	T	N	
PSV-8855B	Accumulator Safety Valve	F-6	2	C					SVT	T	N	
PSV-8855C	Accumulator Safety Valve	F-4	2	C				C	VT	T	N	
PSV-8855D	Accumulator Safety Valve	F-3	2	C	1	PS	N		SVT	T	N	
CV-8871	SIS Test line Isol.	C-4	2	A	3/4	GL	A	C	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
CV-8880	N2 Supply To Accumulators	H-7	2	A	1	GL	A	C	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : SAFETY INJECTION

P & ID : M206, SHEET 2, REVISION 8

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
MO-8801A	BIT Outlet	G-6	2	B	4	GA	E	C	EF	CS	O	4.7
									PI	2A	N	
MO-8801B	BIT Outlet	F-6	2	B	4	GA	E	C	EF	CS	O	4.7
									PI	2A	N	
MO-8802A	SI To RCS Hotleg	D-6	2	B	4	GA	E	C	EF	Q	O	
									PI	2A	N	
MO-8802B	SI To RCS Hotleg	B-6	2	B	4	GA	E	C	EF	Q	O	
									PI	2A	N	
MO-8806	RWST To SIP Suction	C-2	2	B	8	GA	E	O	EF	CS	C	4.7
									PI	2A	N	
MO-8807A	CCP/SIP X-Conn.	C-2	2	B	6	GA	E	C	EF	Q	O	
									PI	2A	N	
MO-8807B	CCP/SIP X-Conn.	B-2	2	B	6	GA	E	C	EF	Q	O	
									PI	2A	N	
MO-8813	SIP Miniflow Isol.	F-2	2	B	2	GL	E	O	EF	CS	C	4.7
									PI	2A	N	

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : SAFETY INJECTION

P & ID : M206, SHEET 2, REVISION 8

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
MO-8814	SIP Miniflow Isol.	F-2	2	B	2	GL	E	O	EF	CS	C	4.7
									PI	2A	N	
8815	BIT Outlet	F-7	1	C	3	CK	N	C	EF	CS	N	4.7
8819 A	SIP To RCS Coldleg Inj.	E-8	1	AC	2	CK	N	C	EF	CS	N	4.7, 4.10
									LT	CS	N	
8819 B	SIP To RCS Coldleg Inj.	E-8	1	AC	2	CK	N	C	EF	CS	N	4.7, 4.10
									LT	CS	N	
8819 C	SIP To RCS Coldleg Inj.	E-8	1	AC	2	CK	N	C	EF	CS	N	4.7, 4.10
									LT	CS	N	
8819 D	SIP To RCS Coldleg Inj.	D-8	1	AC	2	CK	N	C	EF	CS	N	4.7, 4.10
									LT	CS	N	
MO-8821A	SIP Discharge X-Conn.	C-5	2	B	4	GA	E	O	EF	Q	C	
									PI	2A	N	
MO-8821B	SIP Discharge X-Conn.	C-5	2	B	4	GA	E	O	EF	Q	C	
									PI	2A	N	
MO-8835	SIP To RCS Clodleg Iso Vlv	E-6	2	B	4	GA	E	O	EF	CS	OC	4.7
									PI	2A	N	

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : SAFETY INJECTION — P & ID : M206, Sheet 2, Revision 8

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
PSV-8851	SI Coldleg Inj. Saftey	C-5	2	C	3/4	PSV	N	C	SVT	T	N	
PSV-8853A	SI Hotleg Recirc. Safety	D-5	2	C	3/4	PSV	N	C	SVT	T	N	
PSV-8853B	SI Hotleg Recirc. Safety	C-5	2	C	3/4	PSV	N	C	SVT	T	N	
PSV-8858	SIP Suction Safety	C-3	2	C	3/4	PSV	N	C	SVT	T	N	
CV-8888	SIS Test Line Cont. Isol.	C-6	2	A	3/4	GL	A	C	EF	Q	C	4.9,
									LT	2A	N	
									PI	2A	N	
8905 A	SI To RCS Hotleg Inj.	D-7	1	AC	2	CK	N	C	EF	CS	N	4.7, 4.10
									LT	CS	N	
8905 B	SI To RCS Hotleg Inj.	B-7	1	AC	2	CK	N	C	EF	CS	N	4.7, 4.10
									LT	CS	N	
8905 C	SI To RCS Hotleg Inj.	C-7	1	AC	2	CK	N	C	EF	CS	N	4.7, 4.10
									LT	CS	N	
8905 D	SI To RCS Hotleg Inj.	B-7	1	AC	2	CK	N	C	EF	CS	N	4.7, 4.10
									LT	CS	N	
8919 A	SIP Miniflow	C-4	2	C	3/4	CK	N	C	EF	Q	N	
8919 B	SIP Miniflow	B-4	2	C	3/4	CK	N	C	EF	Q	N	

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : SAFTEY INJECTION P & ID : M206, SHEET 2, REVISION 8

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
8922 A	SIP Discharge	D-2	2	C	4	CK	N	C	EF	CS	N	4.7
8922 B	SIP Discharge	B-4	2	C	4	CK	N	C	EF	CS	N	4.7
MO-8923A	SIP Suction Isol.	C-3	2	B	6	GA	E	O	EF	Q	C	
									PI	2A	N	
MO-8923B	SIP Suction Isol.	B-3	2	B	6	GA	E	O	EF	Q	C	
									PI	2A	N	
MO-8924	SIP/CCP Suction X-Conn.	B-2	2	B	6	GA	E	O	EF	Q	C	
									PI	2A	N	
8926	RWST To SIP Suction	C-2	2	C	8	CK	N	C	EP	Q	N	4.8
									EF	CS	N	

TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : CONTAINMENT SPRAY P & ID : M207, REVISION 22

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
CS-028	Spray Header Supply	G-8	2	C	10	CK	N	C	EF	RR	N	4.7, 4.13
CS-029	Spray Header Supply	B-8	2	C	10	CK	N	C	EF	RR	N	4.7, 4.13
CS-2001	RWST To CSP Suction	G-3	2	C	14	CK	N	C	EP	Q	N	4.8, 4.13
									EF	R	N	
CS-2002	RWST To CSP Suction	B-3	2	C	14	CK	N	C	EP	Q	N	4.8, 4.13
									EF	R	N	
CS-2003	NaOH To Eductor	E-4	2	C	2	CK	N	C	EF	Q	N	
CS-2004	NaOH To Eductor	C-4	2	C	2	CK	N	C	EF	Q	N	
MO-2050A	RWST To CSP Suction	G-3	2	B	14	GA	E	O	EF	Q	C	
									PI	2A	N	
MO-2050B	RWST To CSP Suction	B-3	2	B	14	GA	E	O	EF	Q	C	
									PI	2A	N	
MO-2052A	Recirc.Sump To CSP Suction	F-4	2	A	14	GA	E	C	EF	Q	OC	4.9
									LT	2A	N	
									PI	2A	N	

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : CONTAINMENT SPRAY & ID : M207, REVISION 22

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. PCS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
MO-2052B	Recirc.Sump To CSP Suction	B-3	2	A	14	GA	E	C	EF	Q	OC	4.9
									LT	2A	N	
									PI	2A	N	
MO-2053A	CSP Discharge	G-7	2	B	10	GA	E	C	EF	Q	O	
									PI	2A	N	
MO-2053B	CSP Discharge	B-7	2	B	10	GA	E	C	EF	Q	O	
									PI	2A	N	
MO-2056A	NaOH To CSP Eductor	D-5	2	B	2	GL	E	C	EF	CS	OC	4.7
									PI	2A	N	
MO-2056B	NaOH To CSP Eductor	D-5	2	B	2	GL	E	C	EF	CS	OC	4.7
									PI	2A	N	
MO-2069A	Recirc. Sump Suction	D-3	2	A	18	GA	E	O	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
MO-2069B	Recirc. Sump Suction	D-3	2	A	18	GA	E	O	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : CONTAINMENT SPRAY P & ID : M207, REVISION 22

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STK. TIME	COMMENTS
PSV-2078	NaOH Tank Safety	F-6	2	C	1.5	PSV	N	C	SVT	T	N	
PSV-2084	NaOH Tank Safety	E-6	2	C	2	PSV	N	C	SVT	T	N	
PSV-2085	NaOH Tank Safety	E-6	2	C	2	PSV	N	C	SVT	T	N	

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : MAIN STEAM

P & ID : M208 SHEET 1, REVISION 33

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
MS-220	Inst.Air Supply To CV-1451	G-2	2	C	1	CK	N	C	EF	Q	N	4.13
MS-221	Inst.Air Supply To CV-1452	E-2	2	C	1	CK	N	C	EF	Q	N	4.13
MS-222	Inst.Air Supply To CV-1453	C-2	2	C	1	CK	N	C	EF	Q	N	4.13
MS-223	Inst.Air Supply To CV-1454	B-2	2	C	1	CK	N	C	EF	Q	N	4.13
MS-224	Inst.Air Supply To CV-1451	G-2	2	C	1	CK	N	C	EF	Q	N	4.13
MS-225	Inst.Air Supply To CV-1452	E-2	2	C	1	CK	N	C	EF	Q	N	4.13
MS-226	Inst.Air Supply To CV-1453	C-2	2	C	1	CK	N	C	EF	Q	N	4.13
MS-227	Inst.Air Supply To CV-1454	B-2	2	C	1	CK	N	C	EF	Q	N	4.13
MS-2001	MS Non Return	H-1	2	C	28	CK	N	O	EF	CS	N	4.7
MS-2002	MS Non Return	F-1	2	C	28	CK	N	O	EF	CS	N	4.7
MS-2003	MS Non Return	D-1	2	C	28	CK	N	O	EF	CS	N	4.7
MS-2004	MS Non Return	B-1	2	C	28	CK	N	O	EF	CS	N	4.7
MS-2006	Steam Supply To AFW Turb.	G-3	B31.1	C	3	CK	N	C	EF	Q	N	
MS-2007	Steam Supply To AFW Turb.	E-3	B31.1	C	3	CK	N	C	EF	Q	N	
MS-2008	Steam Supply To AFW Turb.	C-3	B31.1	C	3	CK	N	C	EF	Q	N	
MS-2009	Steam Supply To AFW Turb.	A-3	B31.1	C	3	CK	N	C	EF	Q	N	

(2)

TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : MAIN STEAM P & ID : M208, SHEET 1, REVISION 23

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
CV-1451	Steam Supply To AFW Turb.	G-3	2	B	3	GA	A	C	EF	Q	OC	
									PI	2A	N	
CV-1452	Steam Supply To AFW Turb.	E-3	2	B	3	GA	A	C	EF	Q	OC	
									PI	2A	N	
CV-1453	Steam Supply To AFW Turb.	C-3	2	B	3	GA	A	C	EF	Q	[illegible]	
									PI	2A	N	
CV-1454	Steam Supply To AFW Turb.	A-3	2	B	3	GA	A	C	EF	Q	OC	
									PI	2A	N	
PSV-2207A	Accum. T-166A Safety	G-2	2	C	1	PSV	N	C	SVT	T	N	
PSV-2207B	Accum. T-166B Safety	E-2	2	C	1	PSV	N	C	SVT	T	N	
PSV-2207C	Accum. T-166C Safety	C-2	2	C	1	PSV	N	C	SVT	T	N	
PSV-2207D	Accum. T-166D Safety	B-2	2	C	1	PSV	N	C	SVT	T	N	
CV-2210	MS PORV	H-3	2	B	6	GL	A	C	EF	CS	OC	4.7
									PI	2A	N	
PSV-2211	MS Safety	H-3	2	C	6	PSV	N	C	SVT	T	N	
PSV-2212	MS Safety	H-3	2	C	6	PSV	N	C	SVT	T	N	
PSV-2213	MS Safety	H-3	2	C	6	PSV	N	C	SVT	T	N	

(2)

TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : MAIN STEAM

P & ID : M208, SHEET 1, REVISION 33

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
PSV-2214	MS Safety	H-3	2	C	6	PSV	N	C	SVT	T	N	
PSV-2215	MS Safety	H-3	2	C	6	PSV	N	C	SVT	T	N	
CV-2216	MSIV	H-2	2	B	28	CK	A	O	EF	CS	C	4.7
									PI	2A	N	
CV-2230	MS PORV	F-3	2	B	6	GL	A	C	EF	CS	OC	4.7
									PI	2A	N	
PSV-2231	MS Saftey	F-3	2	C	6	PSV	N	C	SVT	T	N	
PSV-2232	MS Safety	F-3	2	C	6	PSV	N	C	SVT	T	N	
PSV-2233	MS Saftey	F-3	2	C	6	PSV	N	C	SVT	T	N	
PSV-2234	MS Safety	F-3	2	C	6	PSV	N	C	SVT	T	N	
PSV-2235	MS Safety	F-3	2	C	6	PSV	N	C	SVT	T	N	
CV-2236	MSIV	F-2	2	B	28	CK	A	O	EF	CS	C	4.7
									PI	2A	N	
CV-2250	MS PORV	D-3	2	B	6	GL	A	C	EF	CS	OC	4.7
									PI	2A	N	
PSV-2251	MS Safety	D-3	2	C	6	PSV	N	C	SVT	T	N	
PSV-2252	MS Safety	D-3	2	C	6	PSV	N	C	SVT	T	N	

(2)

TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : MAIN STEAM P & ID : M206, SHEET 1, REVISION 33

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
PSV-2253	MS Safety	D-3	2	C	6	PSV	N	C	SVT	T	N	
PSV-2254	MS Safety	D-3	2	C	6	PSV	N	C	SVT	T	N	
PSV-2255	MS Safety	D-3	2	C	6	PSV	N	C	SVT	T	N	
CV-2256	MSIV	D-2	2	B	28	CK	A	O	EF	CS	C	4.7
									PI	2A	N	
CV-2270	MS PORV	C-3	2	B	6	GL	A	C	EF	CS	OC	4.7
									PI	2A	N	
PSV-2271	MS Safety	B-3	2	C	6	PSV	N	C	SVT	T	N	
PSV-2272	MS Safety	B-3	2	C	6	PSV	N	C	SVT	T	N	
PSV-2273	MS Safety	B-3	2	C	6	PSV	N	C	SVT	T	N	
PSV-2274	MS Safety	B-3	2	C	6	PSV	N	C	SVT	T	N	
PSV-2275	MS Safety	B-3	2	C	6	PSV	N	C	SVT	T	N	
CV-2276	MSIV	B-2	2	B	28	CK	A	O	EF	CS	C	4.7
									PI	2A	N	
CV-2277	MSIV Bypass	G-2	2	B	3	GL	A	O	EF	Q	C	
									PI	2A	N	

(2)

TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : MAIN STEAM

P & ID : M208, SHEET 1, REVISION 33

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
CV-2278	MSIV Bypass	E-2	2	B	3	GL	A	O	EF	Q	C	
									PI	2A	N	
CV-2279	MSIV Bypass	D-2	2	B	3	GL	A	O	EF	Q	C	
									PI	2A	N	
CV-2280	MSIV Bypass	B-2	2	B	3	GL	A	O	EF	Q	C	
									PI	2A	N	
CV-2294	MS Line Drain	E-4	2	B	1	GA	A	O	EF	Q	C	
									PI	2A	N	
CV-2295	MS Line Drain	C-4	2	B	1	GA	A	O	EF	Q	C	
									PI	2A	N	
CV-2296	MS Line Drain	B-4	2	B	1	GA	A	O	EF	Q	C	
									PI	2A	N	
CV-2297	MS Line Drain	G-4	2	B	1	GA	A	O	EF	Q	C	

(2)

TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : MAIN & AUXILIARY FEEDWATER P & ID : M213, SHEET 2, REVISION 14

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
FW-2005	AFWP P-102A To S/G A	G-7	B31.1	C	2	CK	N	C	EF	CS	N	4.7
FW-2006	AFWP P-102A To S/G B	G-1	B31.1	C	2	CK	N	C	EF	CS	N	4.7
FW-2007	AFWP P-102A To S/G C	G-3	B31.1	C	2	CK	N	C	EF	CS	N	4.7
FW-2008	AFWP P-102A To S/G D	G-5	B31.1	C	2	CK	N	C	EF	CS	N	4.7
FW-2009	AFWP P-102B To S/G A	G-8	2	C	3	CK	N	C	EF	CS	N	4.7
FW-2010	AFWP P-102B To S/G B	G-2	2	C	3	CK	N	C	EF	CS	N	4.7
FW-2011	AFWP P-102B To S/G C	G-4	2	C	3	CK	N	C	EF	CS	N	4.7
FW-2012	AFWP P-102B To S/G D	G-6	2	C	3	CK	N	C	EF	CS	N	4.7
FW-2013	Common AFWP To S/G A	G-7	2	C	3	CK	N	C	EF	CS	N	4.7, 4.14
FW-2014	Common AFWP To S/G B	G-2	2	C	3	CK	N	C	EF	CS	N	4.7, 4.14
FW-2015	Common AFWP To S/G C	G-4	2	C	3	CK	N	C	EF	CS	N	4.7, 4.14
FW-2016	Common AFWP To S/G D	G-6	2	C	3	CK	N	C	EF	CS	N	4.7, 4.14
FW-2017	Main FW To S/G A	F-8	2	C	14	CK	N	O	EF	CS	N	4.7, 4.14
FW-2018	Main FW To S/G B	F-2	2	C	14	CK	N	O	EF	CS	N	4.7, 4.14
FW-2019	Main FW To S/G C	F-4	2	C	14	CK	N	O	EF	CS	N	4.7, 4.14
FW-2020	Main FW To S/G D	F-6	2	C	14	CK	N	O	EF	CS	N	4.7, 4.14

(2)

TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : MAIN & AUXILIARY FEEDWATER P & ID : M213, SHEET 2, REVISION 14

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
CV-3004A1	AFW Feed Control To S/G A	F-6	B31.1	B	3	GL	E	T	EF	Q	C	
									PI	2A	N	
CV-3004A2	AFW Feed Control To S/G A	F-2	B31.1	B	3	GL	E	T	EF	Q	C	
									PI	2A	N	
CV-3004B1	AFW Feed Control To S/G B	F-3	B31.1	B	3	GL	E	T	EF	Q	C	
									PI	2A	N	
CV-3004B2	AFW Feed Control To S/G B	F-5	B31.1	B	3	GL	E	T	EF	Q	C	
									PI	2A	N	
CV-3004C1	AFW Feed Control To S/G C	G-6	B31.1	B	3	GL	E	T	EF	Q	C	
									PI	2A	N	
CV-3004C2	AFW Feed Control To S/G C	G-2	B31.1	B	3	GL	E	T	EF	Q	C	
									PI	2A	N	
CV-3004D1	AFW Feed Control To S/G D	G-3	B31.1	B	3	GL	E	T	EF	Q	C	
									PI	2A	N	
CV-3004D2	AFW Feed Control To S/G D	G-5	B31.1	B	3	GL	E	T	EF	Q	C	
									PI	2A	N	

(2)

TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : MAIN & AUXILIARY FEEDWATER P & ID : M213, SHEET 4, REVISION 7

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
FW-2027	CST To AFWP Suction	B-6	B31.1	C	6	CK	N	C	EF	Q	N	
FW-2028	SW To AFWP Suction	B-6	B31.1	C	6	CK	N	C	EF	Q	N	
FW-2029	CST To AFWP Suction	C-6	B31.1	C	6	CK	N	C	EF	Q	N	
FW-2030	SW To AFWP Suction	C-6	B31.1	C	6	CK	N	C	EF	Q	N	
FW-2031	AFWP P102A Disch.To S/G's	B-7	B31.1	C	6	CK	N	C	EF	CS	N	4.7
FW-2032	AFWP P102B Disch.To S/G's	D-7	B31.1	C	6	CK	N	C	EF	CS	N	4.7
MO-2947A	AFWP P182 Disch To S/G's	B-4	B31.1	B	6	GA	E	C	EF	Q	C	
									PI	2A	N	
MO-2947B	AFWP P182 Disch To S/G's	C-4	B31.1	B	6	GA	E	C	EF	Q	C	
									PI	2A	N	
MO-3045A	SW To AFWP Suction	B-6	B31.1	C	6	GA	E	C	EF	Q	O	
									PI	2A	N	
MO-3045B	SW To AFWP Suction	C-6	B31.1	B	6	GA	E	C	EF	Q	O	
									PI	2A	N	
MO-3060B	SW To AFWP Dsl. Cooler	C-6	B31.1	B	6	BF	E	C	EF	Q	O	
SW-2002	SW To AFWP Dsl. Cooler	D-6	B31.1	C	6	CK	N	C	EF	Q	N	

(2)

TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : AUXILIARY STEAM P & ID : M214, SHEET 1, REVISION 42

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
MO-3071	AFW Turb. Trip & Throttle	B-4	B31.1	B	4	GL	E	C	EF	Q	O	
									PI	2A	N	
MO-3170	AFW Turb. Stop Valve	B-4	B31.1	B	4	GL	E	O	EF	Q	O	
									PI	2A	N	

(2)

TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : COMPONENT COOLING WATER P & ID : M215, SHEET 1, REVISION 34

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
CC-203	CCW M/U P218A Em.Sup.Isol.	H-3	B31.1	B	2	GL	M	C	EF	Q	N	
CC-204	CCW M/U P218B Em.Sup.Isol.	A-5	B31.1	B	2	GL	M	C	EF	Q	N	
CC-205	CCW M/U P218A Em.Sup.Isol.	H-3	B31.1	B	2	GL	M	C	EF	Q	N	
CC-206	CCW M/U P218B Em.Sup.Isol.	A-5	B31.1	B	2	GL	M	C	EF	Q	N	
CC-283	CCW M/U P218A Em.Disch.By.	G-4	331.1	B	2	GL	M	C	EF	Q	N	
CC-284	CCW M/U P218B Em.Disch.By.	A-6	B31.1	B	2	GL	M	C	EF	Q	N	
CC-285	CCW M/U P218A Em.Disch.By.	G-4	B31.1	B	2	GL	M	C	EF	Q	N	
CC-286	CCW M/U P218B Em.Disch.By.	A-6	B31.1	B	2	GL	M	C	EF	Q	N	
GS-2001	Nml. N2 To CCW Sg. Tk.	D-2	B31.1	C	1	CK	N	O	EF	CS	N	4.7
GS-2002	Nml. N2 To CCW Sg. Tk.	B-3	B31.1	C	1	CK	N	O	EF	CS	N	4.7
GS-2003	Em. N2 To CCW Sg. Tic.	D-2	B31.1	C	1/2	CK	N	C	EF	CS	N	4.7
GS-2004	Em. N2 To CCW Sg. Tic.	A-3	B31.1	C	1/2	CK	N	C	EF	CS	N	4.7
CC-2037	CCWP P210B Discharge Check	C-6	B31.1	C	24	CK	N	O	EF	Q	N	
CC-2038	CCWP P210C Discharge Check	D-6	B31.1	C	24	CK	N	C	EF	Q	N	
CC-2039	CCWP P210A Discharge Check	G-6	B31.1	C	24	CK	N	O	EF	Q	N	
CC-2040	CCWP P210C Discharge Check	F-6	B31.1	C	24	CK	N	C	EF	Q	N	
CC-2048	CCW M/U P218A Em.Bypass Ck	G-4	B31.1	C	2	CK	N	C	EF	Q	N	

(2)

TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : COMPONENT COOLING WATER P & ID : M215, SHEET 1 REVISION 34

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
CC-2049	CCW M/U P218B Em.Bypass Ck	B-6	B31.1	C	2	CK	N	C	EF	Q	N	
CV-3303	CCW Return SCI/II Isol.	E-7	B31.1	B	18	BF	A	O	EF	Q	C	
									PI	2A	N	
CV-3304	CCW Return SCI/II Isol.	D-7	B31.1	B	18	BF	A	O	EF	Q	C	
									PI	2A	N	
PSV-3363	CCW Srg.Tank T204A Safety	B-4	B31.1	C	2	PSV	N	C	SVT	T	N	
PSV-3373	CCW Srg.Tank T204B Safety	E-3	B31.1	C	2	PSV	N	C	SVT	T	N	
PSV-3374	CCW Srg.Tank T204A Safety	B-4	B31.1	C	2	PSV	N	C	SVT	T	N	
PSV-3392	CCW Srg.Tank T204B Safety	E-3	B31.1	C	2	PSV	N	C	SVT	T	N	
SV-3715A	CCW M/U Pmp Telltale Drain	G-4	B31.1	B	3/4	GA	S	O	EF	Q	C	
									PI	2A	N	
SV-3715B	CCW M/U Pmp Telltale Drain	A-6	B31.1	B	3/4	GA	S	O	EF	Q	C	
									PI	2A	N	

(2)

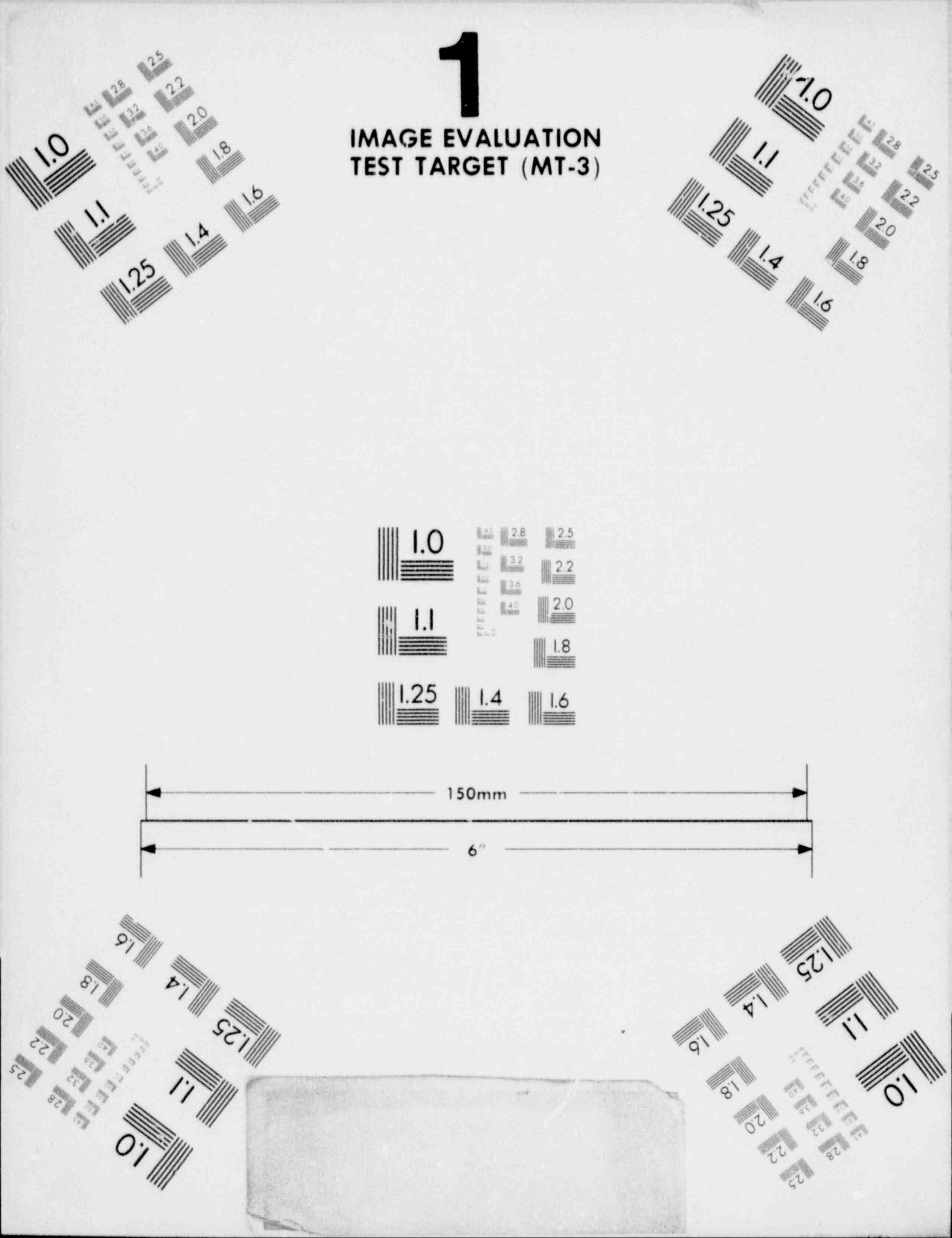
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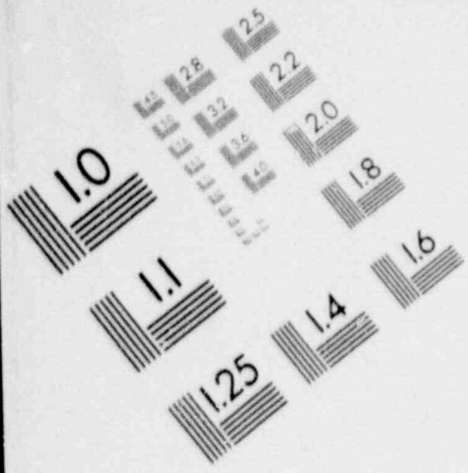
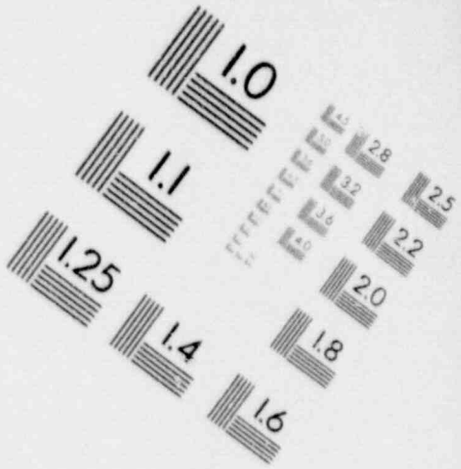
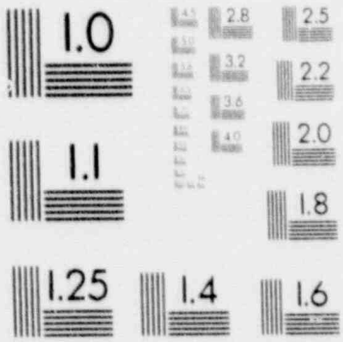
IMAGE EVALUATION
TEST TARGET (MT-3)
1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0
4.5
150mm
6"

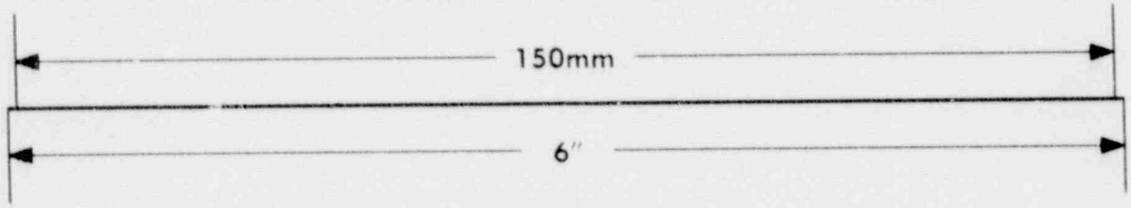
1

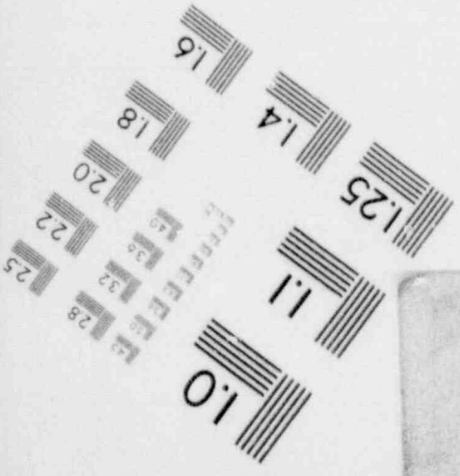
IMAGE EVALUATION TEST TARGET (MT-3)

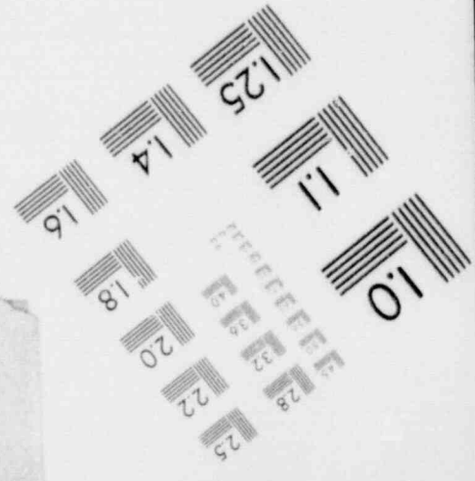


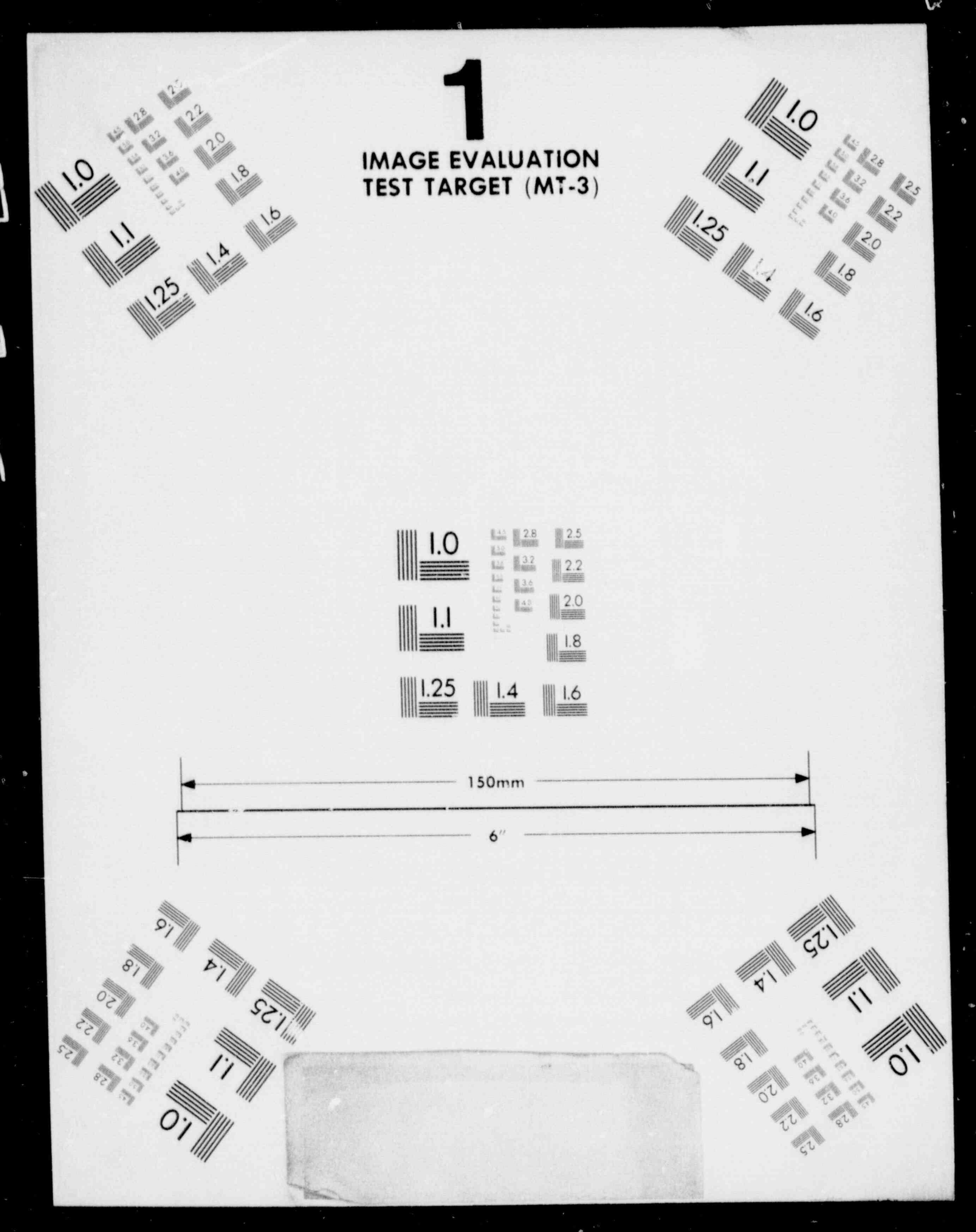











1
IMAGE EVALUATION
TEST TARGET (MT-3)
1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0
150mm
6"

TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : COMPONENT COOLING WATER P & ID : M215, SHEET 2, REVISION 9

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
CC-2035	CCW To RCP B Thm. Bar	B-3	B31.1	C	1.5	CK	N	O	EF	CS	N	4.7
CC-2036	CCW To RCP C Thm. Bar	B-4	B31.1	C	1.5	CK	N	O	EF	CS	N	4.7
CC-2046	CCW To RCP A Thm. Bar	G-3	B31.1	C	1.5	CK	N	O	EF	CS	N	4.7
CC-2047	CCW To RCP D Thm. Bar	H-4	B31.1	C	1.5	CK	N	O	EF	CS	N	4.7
MO-3210A	CCW To RHR Hx E-212A	F-7	B31.1	B	12	BF	E	C	EF	Q	O	
									PI	2A	N	
MO-3210B	CCW To RHR Hx E-212B	C-7	B31.1	B	12	BF	E	C	EF	Q	O	
									PI	2A	N	
PSV-3285A	CCW From RCP Thm.Bar.Sfty	G-5	B31.1	C	2	PSV	N	C	SVT	T	N	
PSV-3285B	CCW From RCP Thm.Bar.Sfty	A-4	B31.1	C	2	PSV	N	C	SVT	T	N	
CV-3287	CCW SCI/II Equip. Isol.	F-3	B31.1	B	18	BF	A	O	EF	Q	C	
									PI	2A	N	
CV-3288	CCW SCI/II Equip. Isol.	D-3	B31.1	B	18	BF	A	O	EF	Q	C	
									PI	2A	N	
MO-3290	CCW Inlet To SCI Equip.	C-2	2	B	14	BF	E	O	EF	CS	C	4.7
									PI	2A	N	

TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV.2
(NOVEMBER 1989)

SYSTEM : COMPONENT COOLING WATER P & ID : M215, SHEET 2, REVISION 9

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
MO-3291	CCW Inlet To SC I Equip.	G-2	2	B	14	BF	E	O	EF	CS	C	4.7
									PI	2A	N	
MO-3292	CCW Return From SC I Equip	G-8	2	B	14	BF	E	O	EF	CS	C	4.7
									PI	2A	N	
MO-3293	CCW A Train CAC Return	G-7	B31.1	B	14	BF	E	C	EF	Q	O	
									PI	2A	C	
MO-3294	RCP A/D & XLDHX CCW Supp.	H-2	B31.1	B	6	GA	E	O	EF	CS	C	4.7
									PI	2A	N	
MO-3295	LDHX & SWHX CCW Supply	C-3	B31.1	B	8	BF	E	O	EF	CS	C	4.7
									PI	2A	N	
MO-3296	RCP B/C CCW Supply	B-2	B31.1	B	4	GA	E	O	EF	CS	C	4.7
									PI	2A	N	
MO-3298A	CCW Disch.From RCP Thm.Bar	G-3	B31.1	B	1.5	GA	E	O	EF	CS	C	4.7
									PI	2A	N	
MO-3298B	CCW Disch.From RCP Thm.Bar	A-3	B31.1	B	1.5	GA	E	O	EF	CS	C	4.7
									PI	2A	N	

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : COMPONENT COOLING WATER P & ID : M215, SHEET 2, REVISION 9

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
MO-3298C	CCW Disch.Frm.RCP Thm.Bar	A-4	B31.1	B	1.5	GA	E	O	EF	CS	C	4.7
									PI	2A	N	
MO-3298D	CCW Disch.Frm.RCP Thm.Bar	G-4	B31.1	B	1.5	GA	E	O	EF	CS	C	4.7
									PI	2A	N	
MO-3300	RCP A/D & XLDHX CCW Rtn.	G-5	B31.1	B	6	GA	E	O	EF	CS	C	4.7
									PI	2A	N	
MO-3319	LDHX & SWHX CCW Return	B-4	B31.1	B	8	BF	E	O	EF	CS	C	4.7
									PI	2A	N	
MO-3320	RCP B/C CCW Return	A-5	B31.1	B	4	GA	E	O	EF	CS	C	4.7
									PI	2A	N	
PSV-3323A	RHR Hx CCW Th. Relief	F-7	B31.1	C	2	PSV	N	C	SVT	T	N	
PSV-3323B	RHR Hx CCW Th. Relief	C-7	B31.1	C	2	PSV	N	C	SVT	T	N	
MO-3346	CCW Return Frm.SCI Equip.	A-8	2	B	14	BF	E	O	EF	CS	C	4.7
									PI	2A	N	
MO-3347	CCW B Trn. CAC Return	A-7	B31.1	B	14	BF	E	C	EF	Q	O	
									PI	2A	N	

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : COMPONENT COOLING WATER P & ID : M215, SHEET 3, REVISION 2

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
CC-2001	CCW CAC Auto Vent	H-7	B31.1	AC	3/4	CK	N	C	LT	2A	N	4.13
CC-2002	CCW CAC Auto Vent Check	H-7	B31.1	AC	3/4	CK	N	C	LT	2A	N	4.13
CC-2003	CCW CAC Auto Vent Check	H-7	B31.1	AC	3/4	CK	N	C	LT	2A	N	4.13
CC-2004	CCW CAC Auto Vent Check	H-7	B31.1	AC	3/4	CK	N	C	LT	2A	N	4.13
CC-2005	CCW CAC Auto Vent Check	D-7	B31.1	AC	3/4	CK	N	C	LT	2A	N	4.13
CC-2006	CCW CAC Auto Vent Check	D-7	B31.1	AC	3/4	CK	N	C	LT	2A	N	4.13
CC-2007	CCW CAC Auto Vent Check	D-7	B31.1	AC	3/4	CK	N	C	LT	2A	N	4.13
CC-2008	CCW CAC Auto Vent Check	D-7	B31.1	AC	3/4	CK	N	C	LT	2A	N	4.13

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : COMPONENT COOLING WATER P & ID : M215, SHEET 3, REVISION 2

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
CC-2009	CCW CAC Auto Vent Check	H-5	B31.1	AC	3/4	CK	N	C	LT	2A	N	4.13
CC-2010	CCW CAC Auto Vent Check	H-5	B31.1	AC	3/4	CK	N	C	LT	2A	N	4.13
CC-2011	CCW CAC Auto Vent Check	H-5	B31.1	AC	3/4	CK	N	C	LT	2A	N	4.13
CC-2012	CCW CAC Auto Vent Check	H-5	B31.1	AC	3/4	CK	N	C	LT	2A	N	4.13
CC-2013	CCW CAC Auto Vent Check	D-5	B31.1	AC	3/4	CK	N	C	LT	2A	N	4.13
CC-2014	CCW CAC Auto Vent Check	D-5	B31.1	AC	3/4	CK	N	C	LT	2A	N	4.13
CC-2015	CCW CAC Auto Vent Check	D-5	B31.1	AC	3/4	CK	N	C	LT	2A	N	4.13
CC-2016	CCW CAC Auto Vent Check	D-5	B31.1	AC	3/4	CK	N	C	LT	2A	N	4.13

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : COMPONENT COOLING WATER P & ID : M215, SHEET 3, REVISION 2

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
CC-2017	CCW CAC Auto Vent Check	H-4	B31.1	AC	3/4	CK	N	C	LT	2A	N	4.13
CC-2018	CCW CAC Auto Vent Check	H-4	B31.1	AC	3/4	CK	N	C	LT	2A	N	4.13
CC-2019	CCW CAC Auto Vent Check	H-4	B31.1	AC	3/4	CK	N	C	LT	2A	N	4.13
CC-2020	CCW CAC Auto Vent Check	H-4	B31.1	AC	3/4	CK	N	C	LT	2A	N	4.13
CC-2021	CCW CAC Auto Vent Check	D-4	B31.1	AC	3/4	CK	N	C	LT	2A	N	4.13
CC-2022	CCW CAC Auto Vent Check	D-4	B31.1	AC	3/4	CK	N	C	LT	2A	N	4.13
CC-2023	CCW CAC Auto Vent Check	D-4	B31.1	AC	3/4	CK	N	C	LT	2A	N	4.13
CC-2024	CCW CAC Auto Vent Check	D-4	B31.1	AC	3/4	CK	N	C	LT	2A	N	4.13

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : COMPONENT COOLING WATER P & ID : M215, SHEET 3, REVISION 2

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
CC-2025	CCW CAC Auto Vent Check	H-2	B31.1	AC	3/4	CK	N	C	LT	2A	N	4.13
CC-2026	CCW CAC Auto Vent Check	H-2	B31.1	AC	3/4	CK	N	C	LT	2A	N	4.13
CC-2027	CCW CAC Auto Vent Check	H-2	B31.1	AC	3/4	CK	N	C	LT	2A	N	4.13
CC-2028	CCW CAC Auto Vent Check	H-2	B31.1	AC	3/4	CK	N	C	LT	2A	N	4.13
CC-2029	CCW CAC Auto Vent Check	D-2	B31.1	AC	3/4	CK	N	C	LT	2A	N	4.13
CC-2030	CCW CAC Auto Vent Check	D-2	B31.1	AC	3/4	CK	N	C	LT	2A	N	4.13
CC-2031	CCW CAC Auto Vent Check	D-2	B31.1	AC	3/4	CK	N	C	LT	2A	N	4.13
CC-2032	CCW CAC Auto Vent Check	D-2	B31.1	AC	3/4	CK	N	C	LT	2A	N	4.13

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : SERVICE WATER

P & ID : M218, SHEET 1, REVISION 43

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
SW-022	Train A Siamese Conn.	F-6	B31.1	B	12	BF	M	O	NA	NA	N	4.5
SW-023	Train A Siamese Conn.	G-6	B31.1	B	4	GA	M	C	EF	Q	N	
SW-024	Train A Siamese Conn.	G-6	B31.1	B	4	GA	M	C	EF	Q	N	
SW-025	Train B Siamese Conn.	D-7	B31.1	B	12	BF	M	O	NA	NA	N	4.5
SW-026	Train B Siamese Conn.	C-7	B31.1	B	4	GA	M	C	EF	Q	N	
SW-027	Train B Siamese Conn.	C-7	B31.1	B	4	GA	M	C	EF	Q	N	
SW-028	Train B Siamese Conn.	C-7	B31.1	B	4	GA	M	C	EF	Q	N	
SW-029	CW/SW X-Conn.	G-6	B31.1	B	30	BF	M	O	EF	CS	N	4.7
SW-030	CW/SW X-Conn.	B-6	B31.1	B	30	BF	M	O	EF	CS	N	4.7
SW-031	CW/SW X-Conn.	G-5	B31.1	B	30	BF	M	C	EF	Q	N	
SW-032	CW/SW X-Conn.	B-5	B31.1	B	30	BF	M	C	EF	Q	N	
SW-041	CW/SW X-Conn.	H-5	B31.1	B	30	BF	M	C	EF	Q	N	
SW-042	CW/SW X-Conn.	C-4	B31.1	B	30	BF	M	C	EF	Q	N	
SW-043	CW/SW X-Conn.	H-4	B31.1	B	30	BF	M	T	EP	Q	N	4.8
									EF	CS	N	
SW-044	CW/SW X-Conn.	C-4	B31.1	B	30	BF	M	T	EP	Q	N	4.8
									EF	CS	N	

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : SERVICE WATER P & ID : M218, SHEET 1, REVISION 43

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
SW-045	CW/SW X-Conn.	F-4	B31.1	B	30	BF	M	C	EF	Q	N	
SW-046	CW/SW X-Conn.	D-4	B31.1	B	30	BF	M	C	EF	Q	N	
SW-156	Sp. Fl. Pool Em. Fill	C-5	B31.1	B	4	GA	M	C	EF	Q	N	
SW-157	Sp. Fl. Pool Em. Fill	G-5	B31.1	B	4	GA	M	C	EF	Q	N	
SW-223	Train A Siamese Conn.	G-6	B31.1	B	4	GA	M	C	EF	Q	N	
SW-359	Sp. Fl. Pool Em. Fill	G-4	B31.1	B	4	BF	M	C	EF	Q	N	
SW-360	Sp. Fl. Pool Em. Fill	G-4	B31.1	B	4	BF	M	C	EF	Q	N	
SW-395	SWS BW Pump P-175B Bypass	C-6	B31.1	B	6	BF	M	O	N/A	N/A	N	4.5
SW-397	SWS BW Pump P-175A Bypass	F-6	B31.1	B	6	BF	M	O	N/A	N/A	N	4.5
SW-2003	SWP P108A Disch. Check	G-7	B31.1	C	30	CK	N	O	EF	Q	N	
SW-2004	SWP P108B Disch. Check	C-7	B31.1	C	30	CK	N	O	EF	Q	N	
SW-2005	SWP P108C Disch. Check	E-7	B31.1	C	30	CK	N	C	EF	Q	N	
SW-2008	SW Pump Lube Water Supply	G-7	B31.1	C	2	CK	N	C	EF	Q	N	
SW-2009	SW Pump Lube Water Supply	C-7	B31.1	C	2	CK	N	C	EF	Q	N	
SW-2010	Lube Wtr. Bst. Pump Disch	G-7	B31.1	C	1.5	CK	N	O	EF	Q	N	
SW-2011	Lube Wtr. Bst. Pump Disch	C-7	B31.1	C	1.5	CK	N	O	EF	Q	N	
SW-2012	Train A Siamese Conn.	F-6	B31.1	C	12	CK	N	C	EF	Q	N	

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : SERVICE WATER P & ID : M218, SHEET 1, REVISION 43

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
SW-2013	Train B Siamese Conn.	D-7	B31.1	C	12	CK	N	C	EF	Q	N	
SW-2014	SWBP P148A Discharge	G-5	B31.1	C	10	CK	N	O	EF	Q	N	
SW-2015	SWBP P148C Discharge	F-5	B31.1	C	10	CK	N	C	EF	Q	N	
SW-2019	SW Otlt. Frm P102B L.O.Hx	A-6	B31.1	C	2	CK	N	C	EF	Q	N	
SW-2020	SW Otlt. Frm K107B L.O.Hx	A-6	B31.1	C	2	CK	N	C	EF	Q	N	
SW-2021	SW Otlt.Frm P102B Gr. Clr	B-6	B31.1	C	1	CK	N	C	EF	Q	N	
SW-2023	SWBP P148B Discharge	C-5	B31.1	C	10	CK	N	O	EF	Q	N	
SW-2024	SWBP P148D Discharge	D-5	B31.1	C	10	CK	N	C	EF	Q	N	
PSV-3708A	SW To CCW Hx Safety	H-6	B31.1	C	3/4	PSV	N	C	SVT	T	N	
PSV-3708B	SW To CCW Hx Safety	C-6	B31.1	C	3/4	PSV	N	C	SVT	T	N	
CV-3712A	SW To EDG	F-3	B31.1	B	8	BF	A	C	EF	Q	O	
									PI	2A	N	
CV-3712B	SW To EDG	E-3	B31.1	B	8	BF	A	C	EF	Q	O	
									PI	2A	N	
CV-3714	Train A Non-ESF Isol.	E-3	B31.1	B	8	BF	A	O	EF	Q	C	
									PI	2A	N	

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : SERVICE WATER P & ID : M218, SHEET 1, REVISION 43

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
CV-3720A	Non ESF Chiller Isol.	E-4	B31.1	B	8	BF	A	O	EF	Q	C	
									PI	2A	N	
CV-3720B	Non ESF Chiller Isol.	E-4	B31.1	B	8	BF	A	O	EF	Q	C	
									PI	2A	N	
CV-3725	Train B Non-ESF Isol.	E-3	B31.1	B	8	BF	A	O	EF	Q	C	
									PI	2A	N	
CV-3803	Dom. Water Supply Isol.	D-7	B31.1	B	3	BF	A	O	EF	Q	C	
									PI	2A	N	
CV-3804	Dom. Water Supply Isol.	F-7	B31.1	B	3	BF	A	O	EF	Q	C	
									PI	2A	N	
PSV-3834	AFWP P102A L.O.Clr. Safety	A-5	B31.1	C	2	PSV	N	C	SVT	T	N	
PSV-3835	AFWP P102B L.O.Clr. Safety	A-7	B31.1	C	2	PSV	N	C	SVT	T	N	

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : CLEAN RADIOACTIVE WASTE P & ID : M220, REVISION 37

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
CR-2035	N2 Sup. To RCDT Cont.Isol.	G-7	2	AC	1	CK	N	C	EF	Q	N	4.9
									LT	2A	N	
CV-4000	N2 Sup. To RCDT Cont.Isol.	H-8	2	A	1	GL	A	O	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
MO-4005	RCDT Drain Cont. Isol	F-7	2	A	3	GA	E	O	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
CV-4006	RCDT Drain Cont. Isol.	E-7	2	A	3	GA	A	O	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : GASEOUS RADIOACTIVE WASTE P & ID : M222, REVISION 31

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
MO-4300	PRT/RCDT To GCH Cont.Isol.	G-8	2	A	3	GA	E	O	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
CV-4301	PRT/RCDT To GCH Cont.Isol.	H-7	2	A	3	GA	A	O	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : DRITY RADIOACTIVE WASTE P & ID : M221, REVISION 33

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
MO-4180	Cont. Sump Dish.Cont.Isol.	G-7	2	A	3	GA	E	C	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
CV-4181	Cont. Sump Dish.Cont.Isol.	G-8	2	A	3	GA	A	C	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : INSTRUMENT AND SERVICE AIR P & ID : M223, SHEET 1, REVISION 25

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
SA-2005	Serv. Air Cont. Isol.	D-2	2	AC	2	CK	N	C	LT	2A	N	4.5, 4.9
CV-4470	Serv. Air Cont. Isol.	D-2	2	A	2	GL	A	C	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
CV-4471	Inst. Air Cont. Isol.	F-1	2	A	2	GL	A	O	EF	R	C	4.7, 4.9, 4.13
									LT	2A	N	
									PI	2A	N	

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : INSTRUMENT AND SERVICE AIR P & ID : M223, SHEET 7, REVISION 00

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
IA-2001	Inst. Air Cont. Isol.	E-8	2	AC	2	CK	N	O	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : DIESEL FUEL OIL P & ID : M226, REVISION 24

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
DO-007	DOTP Disch. X-Conn.	F-6	B31.1	B	3	GA	M	C	EF	Q	N	
DO-008	DOTP Disch. X-Conn.	E-6	B31.1	B	3	GA	M	C	EF	Q	N	
DO-009	DOTP Disch. X-Conn.	E-6	B31.1	B	3	GA	M	C	EF	Q	N	
DO-019	EDG FODT X-Conn.	E-4	B31.1	B	3	GA	M	C	EF	Q	N	
DO-022	EDG FODT X-Conn.	D-3	B31.1	B	3	GA	M	C	EF	Q	N	
DO-023	EDG FODT X-Conn.	D-3	B31.1	B	3	GA	M	C	EF	Q	N	
DO-2001	DFOTP P-144A Disch.	G-7	B31.1	C	3	CK	N	C	EF	Q	N	
DO-2002	DFOTP P-144B Disch.	D-7	B31.1	C	3	CK	N	C	EF	Q	N	
MO-4903A	EDG FO Day Tank Inlet.	G-5	B31.1	B	3	GA	E	C	EF	Q	O	
									PI	2A	N	
MO-4903B	EDG FO Day Tank Inlet.	D-5	B31.1	B	3	GA	E	C	EF	Q	O	
									PI	2A	N	
MO-4907A	AFW DFO Day Tk. Inlet.	C-6	B31.1	B	3	GL	E	C	EF	Q	O	
									PI	2A	N	
MO-4907B	AFW DFO Day Tk. Inlet.	B-6	B31.1	B	3	GL	E	C	EF	Q	O	
									PI	2A	N	

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : SPENT FUEL POOL COOLING P & ID : M227, REVISION 26

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
SF-046	RF. Cav. Supply	F-2	2	A	8	GA	M	C	LT	2A	N	4.5, 4.9
SF-052	Em. Makeup From SWS	F-3	B31.1	B	4	GA	M	C	EF	Q	N	
SF-053	Em. Makeup Drain From SWS	E-3	B31.1	B	3/4	GL	M	O	EF	Q	N	
SF-054	Em. Makeup Drain From SWS	E-3	B31.1	B	3/4	GL	M	O	EF	Q	N	
SF-055	Em. Makeup From SWS	E-3	B31.1	B	4	GA	M	C	EF	Q	N	
SF-062	RF Cavity Skimmer	E-2	2	A	3	GA	M	C	LT	2A	N	4.5, 4.9
SF-063	RF Cavity Skimmer	E-2	2	A	3	GA	M	C	LT	2A	N	4.5, 4.9
SF-073	RF Cavity Drain	B-2	2	A	10	GA	M	C	LT	2A	N	4.5, 4.9
SF-074	RF Cavity Drain	B-2	2	A	10	GA	M	C	LT	2A	N	4.5, 4.9
SF-080	RF Cavity Supply	F-2	2	A	8	GA	M	C	LT	2A	N	4.5, 4.9
CV-5075	RWST Clean Up	C-7	3	B	4	GA	A	C	EF	Q	C	
									PI	2A	N	
CV-5075	RWST Clean Up	D-7	3	B	4	GA	A	C	EF	Q	C	
									PI	2A	N	

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : MAKE-UP WATER TREATMENT P & ID : M228, SHEET 2, REVISION 07

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
MD-059	Demin. Wtr. To Cont.	F-4	2	A	3	GA	M	C	LT	2A	N	4.5,4.9
MD-2011	Demin. Wtr. To Cont.	F-3	2	AC	3	CK	N	C	LT	2A	N	4.5, 4.9

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : SAMPLING

P & ID : M231, Sheet 1, Revision 32

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
CV-2809	Stm. Gen. Blowdown	H-6	2	B	3/4	GL	A	O	EF	Q	C	
									PI	2A	N	
CV-2811	Stm. Gen. Blowdown	H-7	2	B	3/4	GL	A	O	EF	Q	C	
									PI	2A	N	
CV-2814	Stm. Gen. Blowdown	H-6	2	B	3/4	GL	A	O	EF	Q	C	
									PI	2A	N	
CV-2880	Stm. Gen. Blowdown	H-7	2	B	3/4	GL	A	O	EF	Q	C	
									PI	2A	N	
MO-5651A	SI Accum. Sample	H-3	2	A	3/4	GL	E	C	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
MO-5651B	SI Accum. Sample	H-3	2	A	3/4	GL	E	C	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
MO-5651C	SI Accum. Sample	H-3	2	A	3/4	GL	E	C	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : SAMPLING

P & ID : M231, SHEET 1, REVISION 32

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
MO-5651D	SI Accum. Sample	H-3	2	A	3/4	GL	E	C	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
CV-5652	SI Accum. Sample	G-3	2	A	3/4	GL	A	C	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
MO-5653	RCS HL Sample	G-5	2	A	3/4	GL	E	C	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
MO-5654	RCS HL Sample	G-5	2	A	3/4	GL	E	C	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
CV-5655	RCS HL Sample	G-5	2	A	3/4	GL	A	C	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : SAMPLING P & ID : M231, SHEET 1, REVISION 32

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
MO-5656	Pzr. Liq. Sample	G-4	2	A	3/4	GL	E	C	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
CV-5657	Pzr. Liq. Sample	G-4	2	A	3/4	GL	A	C	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
CV-5658	Pzr. Vap. Sample	G-4	2	A	3/4	GL	E	C	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
CV-5659	Pzr. Vap. Sample	G-4	2	A	3/4	GL	A	C	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
MO-5660	RCDT Sample	C-6	2	A	3/4	GL	E	O	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : SAMPLING

P & ID : M231, SHEET 1, REVISION 32

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
CV-5661	RCDT Sample	B-6	2	A	3/4	GL	A	O	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : CONTAINMENT VENTILATION P & ID : M243, REVISION 24

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
SV-5642	Cont. Atmos. Sample	F-6	2	A	3/4	GA	S	C	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
SV-5643	Cont. Atmos. Sample	E-6	2	A	3/4	GA	S	C	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
MO-5663	Cont. Atmos. Sample	E-7	2	A	1	GL	E	O	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
MO-5671	Cont. Atmos. Sample	E-7	2	A	1	GL	E	O	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
MO-5672	Cont. Atmos. Sample	E-5	2	A	1	GL	E	O	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : CONTAINMENT VENTILATION P & ID : M243, REVISION 24

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
MO-5673	Cont. Atmos. Sample	E-6	2	A	1	GL	E	O	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
MO-5674	Cont. Atmos. Sample	F-6	2	A	1	GL	E	C	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
MO-5675	Cont. Atmos. Sample	F-6	2	A	1	GL	E	C	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
MO-5676	Cont. Atmos. Sample	F-6	2	A	1	GL	E	C	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
MO-5677	Cont. Atmos. Sample	F-7	2	A	1	GL	E	C	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : CONTAINMENT VENTILATION P & ID : M243, REVISION 24

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
MO-5678	Cont. Atmos. Sample	F-7	2	A	1	GL	E	C	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
SV-5679	Cont. Atmos. Sample	E-6	2	A	1	GA	S	C	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
CV-10001	Cont. Purge Supply	D-2	2	A	54	BF	A	C	EF	CS	C	4.7, 4.9
									LT	2A	N	
									PI	2A	N	
MO-10002	Cont. Purge Supply	D-2	2	A	54	BF	E	C	EF	CS	C	4.7, 4.9
									LT	2A	N	
									PI	2A	N	
MO-10003	Cont. Purge Supply	E-6	2	A	54	BF	E	C	EF	CS	C	4.7, 4.9
									LT	2A	N	
									PI	2A	N	

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : CONTAINMENT VENTILATION P & ID : M243, REVISION 24

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
CV-10004	Cont. Atmos. Sample	E-7	2	A	54	BF	A	C	EF	CS	C	4.7, 4.9
									LT	2A	N	
									PI	2A	N	
MO-10005	Hyd. Vent Supply	C-2	2	A	8	BF	E	C	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
MO-10006	Hyd. Vent Supply	B-2	2	A	8	BF	E	C	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
MO-10007	Hyd. Vent Supply	C-2	2	A	8	BF	E	C	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
MO-10008	Hyd. Vent Supply	B-2	2	A	8	BF	E	C	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : CONTAINMENT VENTILATION P & ID : M-243, REVISION 24

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
MO-10009	Hyd. Vent Exh.	C-6	2	A	8	BF	E	C	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
MO-10010	Hyd. Vent Exh.	B-6	2	A	8	BF	E	C	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
MO-10011	Hyd. Vent Exh.	C-6	2	A	8	BF	E	C	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
MO-10012	Hyd. Vent Exh.	B-6	2	A	8	BF	E	C	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
10610 A	ILRT Pen. Isol.	D-6	2	A	3/4	GA	M	C	LT	2A	N	4.5, 4.9
10610 B	ILRT Pen. Isol.	D-6	2	A	3/4	GA	M	C	LT	2A	N	4.5, 4.9
10611 A	ILRT Pen. Isol.	D-6	2	A	3/4	GA	M	C	LT	2A	N	4.5, 4.9
10611 B	ILRT Pen. Isol.	D-6	2	A	3/4	GA	M	C	LT	2A	N	4.5, 4.9

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : CHILLED WATER P & ID : M248, SHEET 1, REVISION 20

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
MO-10013	Ch. Wtr. Return Isol.	B-3	2	A	4	BF	E	O	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
CV-10014	Ch. Wtr. Return Isol.	B-4	2	A	4	BF	A	O	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
CV-10015	Ch. Wtr. Supply Isol.	B-4	2	A	4	BF	A	O	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
MO-10016	Ch. Wtr. Supply Isol.	B-3	2	A	4	BF	E	O	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : STEAM GENERATOR BLOWDOWN P & ID : M348, REVISION 28

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
MO-2808	SGBD Isol.	D-7	2	B	2	GA	E	O	EF	Q	C	
									PI	2A	N	
MO-2810	SGBD Isol.	F-7	2	B	2	GA	E	O	EF	Q	C	
									PI	2A	N	
MO-2812	SGBD Isol.	D-7	2	B	2	GA	E	O	EF	Q	C	
									PI	2A	N	
MO-2813	SGBD Isol.	E-7	2	B	2	GA	E	O	EF	Q	C	
									PI	2A	N	
MO-6716	SGBD Isol.	F-8	2	B	2	GL	E	O	EF	Q	C	
									PI	2A	N	
MO-6717	SGBD Isol.	E-8	2	B	2	GL	E	O	EF	Q	C	
									PI	2A	N	
MO-6718	SGBD Isol.	D-8	2	B	2	GL	E	O	EF	Q	C	
									PI	2A	N	
MO-6719	SGBD Isol.	D-8	2	B	2	GL	E	O	EF	Q	C	
									PI	2A	N	

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : EDG COOLING WATER SYSTEM P & ID : M462, REVISION 01

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
PSV-3832A	EDG Comb.Air Clr. Safety	E-5	B31.1	C	2	PSV	N	C	SVT	T	N	
PSV-3832B	EDG Comb.Air Clr. Safety	E-5	B31.1	C	2	PSV	N	C	SVT	T	N	
PSV-3832C	EDG Comb.Air Clr. Safety	B-5	B31.1	C	2	PSV	N	C	SVT	T	N	
PSV-3832D	EDG Comb.Air Clr. Safety	B-5	B31.1	C	2	PSV	N	C	SVT	T	N	
PSV-3833A	EDG Jkt.Wrt. Clr. Safety	E-6	B31.1	C	3/4	PSV	N	C	SVT	T	N	
PSV-3833B	EDG Jkt.Wrt. Clr. Safety	A-6	B31.1	C	3/4	PSV	N	C	SVT	T	N	

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : EDG (K-106A) AIRSTART SYSTEM P & ID : M460, SHEET 1, REVISION 01

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
DA-2005	EDG Airstart Comp. Disch.	H-6	B31.1	C	3/4	CK	N	C	EF	Q	N	
DA-014	EDG Starting Air X-Conn.	F-6	B31.1	B	2	GA	M	C	EF	Q	N	
DA-014A	EDG Starting Air X-Conn.	H-6	B31.1	B	3/4	GA	M	C	EF	Q	N	

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : EDG (K-106B) AIRSTART SYSTEM

P & ID: M460, SHEET 2, REVISION 01

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
DA-2010	EDG Airestart Comp. Disch	H-6	B31.1	C	3/4	CK	N	C	EF	Q	N	4.5, 4.9
DA-013	EDG Starting Air X-Conn.	F-6	B31.1	B	2	GA	M	C	EF	Q	N	4.5, 4.9
DA-013	EDG Starting Air X-Conn.	H-6	B31.1	B	3/4	GA	M	C	EF	Q	N	4.9

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : CTMT PERSONNEL AIR LOCK LEAK DET. SYS. P & ID: M5008, REVISION 3

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
LD-001	45ft. Airlock Eql. Valve	C-7	2	A	3/8	GL	M	C	LT	2A	N	4.5, 4.9
LD-003	45ft. Airlock Eql. Valve	C-5	2	A	3/8	GL	M	C	LT	2A	N	4.5, 4.9
SV-6991	93ft. Airlock Eql. Valve	G-6	2	A	1/2	GA	S	C	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	
SV-6992	93ft. Airlock Eql. Valve	G-5	2	A	1/2	GA	S	C	EF	Q	C	4.9
									LT	2A	N	
									PI	2A	N	

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TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : ELECTRICAL PENETRATION N2 SUPPLY P & ID : N/A (REF DWG J-781, REVISION 0)

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
GS-2033	Elec.Pen.E-102 N2 Ct. Isol	B-7	B31.1	AC	3/8	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	
GS-2034	Elec.Pen.E-104 N2 Ct. Isol	B-7	B31.1	AC	3/8	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	
GS-2035	Elec.Pen.E-105 N2 Ct. Isol	B-7	B31.1	AC	3/8	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	
GS-2036	Elec.Pen.E-106 N2 Ct. Isol	B-7	B31.1	AC	3/8	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	
GS-2037	Elec.Pen.E-107 N2 Ct. Isol	B-7	B31.1	AC	3/8	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	
GS-2038	Elec.Pen.E-108 N2 Ct. Isol	B-7	B31.1	AC	3/8	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	
GS-2039	Elec.Pen.E-109 N2 Ct. Isol	B-7	B31.1	AC	3/8	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	
GS-2040	Elec.Pen.E-110 N2 Ct. Isol	B-7	B31.1	AC	3/8	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	

(2)

TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : ELECTRICAL PENETRATION N2 SUPPLY P & ID : N/A (REF. DWG. J-781, REVISION 0)

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
GS-2041	Elec.Pen.E-111 N2 Ct. Isol	B-7	B31.1	AC	3/8	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	
GS-2042	Elec.Pen.E-112 N2 Ct. Isol	B-7	B31.1	AC	3/8	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	
GS-2043	Elec.Pen.E-113 N2 Ct. Isol	B-7	B31.1	AC	3/8	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	
GS-2044	Elec.Pen.E-114 N2 Ct. Isol	B-7	B31.1	AC	3/8	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	
GS-2045	Elec.Pen.E-115 N2 Ct. Isol	B-7	B31.1	AC	3/8	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	
GS-2046	Elec.Pen.E-117 N2 Ct. Isol	B-7	B31.1	AC	3/8	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	
GS-2047	Elec.Pen.E-118 N2 Ct. Isol	B-7	B31.1	AC	3/8	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	
GS-2048	Elec.Pen.E-119 N2 Ct. Isol	B-7	B31.1	AC	3/8	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	

(2)

TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : ELECTRICAL PENETRATION N2 SUPPLY P & ID : N/A (REF. DWG. J-781, REVISION 0)

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
GS-2049	Elec.Pen.E-121 N2 Ct. Isol	B-7	B31.1	AC	3/8	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	
GS-2050	Elec.Pen.E-122 N2 Ct. Isol	B-7	B31.1	AC	3/8	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	
GS-2051	Elec.Pen.E-123 N2 Ct. Isol	B-7	B31.1	AC	3/8	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	
GS-2052	Elec.Pen.E-125 N2 Ct. Isol	B-7	B31.1	AC	3/8	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	
GS-2053	Elec.Pen.E-126 N2 Ct. Isol	B-7	B31.1	AC	3/8	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	
GS-2054	Elec.Pen.E-127 N2 Ct. Isol	B-7	B31.1	AC	3/8	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	
GS-2055	Elec.Pen.E-129 N2 Ct. Isol	B-7	B31.1	AC	3/8	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	
GS-2056	Elec.Pen.E-132 N2 Ct. Isol	B-7	B31.1	AC	3/8	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	

(2)

TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : ELECTRICAL PENETRATION N2 SUPPLY P & ID : N/A (REF. DWG. J-781, REVISION 0)

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
GS-2057	Elec.Pen.E-134 N2 Ct. Isol	B-7	B31.1	AC	3/8	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	
GS-2058	Elec.Pen.E-135 N2 Ct. Isol	B-7	B31.1	AC	3/8	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	
GS-2059	Elec.Pen.E-136 N2 Ct. Isol	B-7	B31.1	AC	3/8	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	
GS-2060	Elec.Pen.E-138 N2 Ct. Isol	B-7	B31.1	AC	3/8	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	
GS-2061	Elec.Pen.E-141 N2 Ct. Isol	B-7	B31.1	AC	3/8	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	
GS-2062	Elec.Pen.E-148 N2 Ct. Isol	B-7	B31.1	AC	3/8	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	
GS-2063	Elec.Pen.E-149 N2 Ct. Isol	B-7	B31.1	AC	3/8	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	
GS-2064	Elec.Pen.E-151 N2 Ct. Isol	B-7	B31.1	AC	3/8	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	

(2)

TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : ELECTRICAL PENETRATION N2 SUPPLY P & ID : N/A (REF. DWG. J-781, REVISION 0)

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
GS-2065	Elec.Pen.E-157 N2 Ct. Isol	B-7	B31.1	AC	3/8	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	
GS-2066	Elec.Pen.E-159 N2 Ct. Isol	B-7	B31.1	AC	3/8	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	
GS-2067	Elec.Pen.E-160 N2 Ct. Isol	F-7	B31.1	AC	1/4	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	
GS-2068	Elec.Pen.E-162 N2 Ct. Isol	B-7	B31.1	AC	3/8	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	
GS-2069	Elec.Pen.E-164 N2 Ct. Isol	B-7	B31.1	AC	3/8	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	
GS-2070	Elec.Pen.E-166 N2 Ct. Isol	B-7	B31.1	AC	3/8	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	
GS-2071	Elec.Pen.E-168 N2 Ct. Isol	F-7	B31.1	AC	1/4	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	
GS-2072	Elec.Pen.E-170 N2 Ct. Isol	B-7	B31.1	AC	3/8	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	

(2)

TROJAN NUCLEAR POWER PLANT

ASME SECTION XI VALVE SUMMARY LISTING

TABLE 4.1-1
REV. 2
(NOVEMBER 1989)

SYSTEM : ELECTRICAL PENETRATION N2 SUPPLY P & ID : N/A (REF. DWG. J-781, REVISION 0)

VALVE NO.	VALVE DESCRIPTION	DWG. LOC.	VLV. CLASS	VLV. CAT.	VLV. SIZE	VLV. TYPE	ACT. TYPE	NRM. POS.	TEST REQ.	TEST FRQ.	STR. TIME	COMMENTS
GS-2073	Elec.Pen.E-171 N2 Ct.Isol	B-7	B31.1	AC	3/8	CK	N	C	EF	R	N	4.7, 4.9, 4.13
									LT	2A	N	

(2)

(1)

VALVES NOT EXERCISED DURING POWER
OPERATION JUSTIFICATION/RELIEF

(2)

The following Category A, B, and C active valves cannot be exercised during Plant operation and will be full-stroke exercised during cold shutdowns as per Paragraphs IWV-3412 and IWV-3522 or during refueling outages as indicated by relief requests. (2)

M 201: Reactor Coolant System

A. Valves: SV-1015A, SV-1015B, SV-1016A, SV-1016B (2)

Category: B

Class: 2

Function: These valves are solenoid-operated isolation valves for the reactor vessel head vent lines. They permit venting of the reactor vessel head under abnormal conditions.

Test Requirement: Exercise for operability every three months during Plant operation or during cold shutdown if the valves cannot be exercised during Plant operation.

Basis for Conclusion: The reactor vessel head vent valves should not be exercised during power operation by NRC direction provided by letter dated September 8, 1983. Should these valves fail to reseat, there is a potential for RCS leakage. These valves (2)

(1)

provide a direct flow path from the RCS to the containment atmosphere. They are provided as a contingency in the event a bubble is formed in the reactor vessel head and are not expected to be operated at full RCS pressure. Current emergency instructions are written to specifically preclude this event during plant recovery. Due to the serious consequences of leakage at full RCS pressure, PGE considers it prudent to stroke these valves during cold shutdown at pressures representative of those which may be present if these valves were required to be operated during an accident. Power is removed from these valves during power operation due to Appendix R concerns.

(2)

Alternate Testing: These valves will be full-stroke exercised for verification of operability during cold shutdown.

B. Valves: 8900A, 8900B, 8900C, 8900D

Category: C

Class: 1

Function: Each of these check valves prevents a backflow from its respective RCS cold leg during normal operation and allows flow to the RCS during safety injection.

(2)

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: Exercising these valves would require injecting highly borated solution into the RCS. While the RCS is at normal operating pressure the centrifugal charging pump (CCP) cannot develop check valve design flow. (2)

Alternate Test: These valves will be full-stroke exercised for verification of operability during cold shutdown at reduced RCS pressures where adequate flow can be obtained.

C. Valves: 8948A, 8948B, 8948C, 8948D

Category: AC

Class: 1

Function: Each of these check valves prevents backflow from its respective RCS cold leg during normal operation and allows flow from the SIS accumulators, the SIS pump discharge, and the RHR System during safety injection. (2)

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: During power operation, the SIS accumulators, SIS pumps and RHR pumps cannot develop sufficient head to overcome RCS pressure. During both cold shutdown and refueling outages, the piping system in which these valves are installed should not be subjected (2)

to maximum FSAR accident flowrate as a means of verifying valve disc position. Furthermore, due to the high radiation levels associated with valve disassembly and inspection at this installation, the sample disassembly, inspection, and manual stroke option discussed in NRC Generic Letter 89-04 is not a desirable option. (Note: In 1989, valve 8948A was disassembled and inspected. The total radiation exposure for this evolution was approximately 3.5 Man Rem). Thorough searches of both Trojan maintenance files and the Nuclear Plant Reliability Data System (NPRDS) produced no reports of valve internal failures at this location which would have impeded passing maximum FSAR design flow. The failures noted involved seat leakage which is actively monitored by PGE per Technical Specification 4.4.6.2.2. As a part of PGE's effort to satisfy Institute for Nuclear Power Operations (INPO) Significant Operating Event Report (SOER) 86-03, IMPELL Corporation was contracted to evaluate many check valves located in piping systems at Trojan. These four check valves were specifically evaluated for pressure drop, location with respect to sources of turbulence, minimum flow velocity, and water hammer. All calculations indicate that these valve are not subjected to flow

(2)

(1)

conditions which would accelerate degradation. PGE will comply with the IMPELL Corporation recommendations for monitoring valve condition in the future.

Relief Request/
Alternate Testing: These valves will be full-stroke exercised for verification of operability during cold shutdown using RHR pump flow while monitoring differential pressure across the check valve. PGE has performed a calculation (TM-132) which provides the minimum flow rate/velocity to full-stroke these valves. The test acceptance criteria is approximately 130% of this minimum value. In addition, PGE will attempt to confirm valve disc position via non-intrusive testing during this full-flow test. It should be noted that since 8948A and 8948B have been disassembled and inspected during the 1989 and 1988 refueling outages respectively, we have reasonable assurance that the data recorded in 1990 will provide a good baseline. Following the initial test in 1990, a differential pressure band will be established to evaluate future test results. Valves which do not meet the acceptance criteria will be disassembled and internally inspected Calibrated flow indicators will be used to create repeatable flow conditions.

(2)

D. Valves: 8949A, 8949B, 8949C, 8949D

Category: AC

Class: 1

Function: Each of these check valves prevents backflow from its respective RCS hot leg to the safety injection pump and RHR pump discharge during normal operation and allows flow for hot-leg recirculation during accident conditions.

Test Requirements: Exercise for operability every 3 months.

Basis for Conclusion: During power operation the safety injection and RHR system pumps cannot overcome RCS pressure.

Alternate Testing: These valves will be full-stroke exercised for verification of operability during cold shutdown.

(2) E. Valves: PCV-455A, PCV-456

Category: B

Class: 1

Function: These valves prevent reactor pressure from activating the high-pressure reactor trip or from reaching the setpoint of the code safety valves. During periods of reduced RCS temperature ($\leq$290°F), these valves are used in the over-pressure mitigation system to prevent brittle fracture.

Test Requirement: Exercise for operability every 3 months.

(1)

Basis for Conclusion: Testing these valves every 3 months increases the number of times each valve must open against design RCS pressures in excess of 2000 psig, thus deteriorating the valve seat and increasing the likelihood of damaging the valve seat and causing leakage. In addition, credit is not taken for these valves in the design accident analysis and since the Plant can operate without them, if they were to fail, they can be adequately isolated by the block valves (MO-8000A and MO-8000B). (2) (2)

Alternate Testing: These valves will be full-stroke exercised at cold shutdown.

F. Valves: IA-2003, IA-2004, IA-2005, IA-2006

Category: C

Class: ANSI B31.1

Function: These check valves are required to close to isolate the normal air supply to the Pressurizer Power Operated Relief Valves (PCV-455A and PCV-456). This feature is only required during a loss of the normal Seismic Category II instrument air supply system. (2)

Test Requirement: Exercise for operability every 3 months.

(1)

Basis for Conclusion: These valves are configured with two valves in series on each of the two normal air supply lines. The piping configuration has no test connections between check valves to allow individual valve testing. In addition, the system lineup necessary to test these check valves would limit the operability of the PORV's and consequentially the Low Temperature Overpressure Mitigation System (LTOPS).

Relief Request: Operational readiness will be shown by isolating the normal instrument air supply and performing a leakage test on each set of check valves. This leakage test will demonstrate operability of the series configuration of two check valves in each air supply line. This testing will be performed at each refueling outage due to LTOPS considerations.

(2)

G. Valve: 8046

Category: AC

Class: 2

Function: This check valve is located in the primary makeup water line to the pressurizer relief tank spray header. Its design function is to close or remain closed, providing containment isolation during an accident.

Test Requirement: Exercise for operability every 3 months.

(1)

Basis for Conclusion: The closure capability of this check valve would be verified by leakrate testing. Due to the inherent need for the manipulation of test connections and test boundary isolation valves inside containment and the need to use an artificial pressure source, (the pressurizer relief tank is typically maintained at approximately 3 psig), this testing cannot be performed at the specified code frequency.

Relief Request: Verify valve closure capability at a refueling outage frequency.

H. Valve: 8047

(2)

Category: AC

Class: 2

Function: This check valve is located in the nitrogen supply line to the pressurizer relief tank. Its function is to close or remain closed providing containment isolation during an accident.

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: The closure capability of this check valve would be verified by leakrate testing. Due to the inherent need for the manipulation of test connection and test boundary isolation valves inside containment and the need to use

an artificial pressure source, (the pressurizer relief tank is typically maintained at approximately 3 psig), this testing cannot be performed at the specified code frequency.

Relief Request: Verify valve closure capability at a refueling outage frequency.

I. Valve: 8079

Category: AC

Class: 2

Function: This check valve is located in the ECCS system pressure safety valves discharge header to the pressurizer relief tank. Its function is to close or remain closed providing containment isolation during an accident.

Test Requirement: Exercise for operability every 3 months.

Basis for conclusion: The closure capability of this check valve would be verified by leakrate testing. Due to the inherent need for the manipulation of test connection and test boundary isolation valves inside containment and the need to use an artificial pressure source, (the pressurizer relief tank is typically maintained at approximately 3 psig), this testing cannot be performed at the specified code frequency.

(1)

Relief Request: Verify valve closure capability at a refueling outage frequency. (2)

M 202: Chemical and Volume Control System

A. Valve: 8546

Category: C

Class: 2

Function: This check valve prevents backflow of water from the volume control tank (VCT) to the RWST during normal operation and allows flow from the RWST to the CCP suctions during safe shutdown.

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusions: Exercising of this valve would require injection of concentrated boric acid from the RWST into the RCS, causing a power transient which could result in a reactor trip.

Alternate Testing: This valve will be full-stroke exercised for verification of operability during cold shutdown.

B. Valve: 8381 (2)

Category: AC

(1)

Class: 2

Function: This check valve is located in the normal CVCS charging line. Its function is to close to provide containment isolation during an accident.

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: Reverse flow testing this check valve would require securing normal charging and letdown and establishing excess letdown, thus limiting the ability to control pressurizer level. Further redundancy is provided at this penetration by an additional motor operated valve in series with 8381 and MO-8105. This additional valve, MO-8106, also automatically closes on a safety injection signal.

(2)

Alternate Testing: This valve will be reverse flow tested for verification of closure capability at cold shutdown.

C. Valve: 8442

Category: C

Class: 2

(1)

Function: This check valve is located in the emergency boration flowpath. Its function is to open to provide concentrated boric acid to the charging pumps suction.

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: Full-stroke exercising of this check valve would require injecting concentrated boric acid into the RCS via the charging pumps causing a power transient which could result in a reactor trip.

Alternate Testing: This valve will be full-stroke exercised for verification of operability during cold shutdown.

(2)

D. Valve: 8440

Category: C

Class: 2

Function: This check valve is located in the VCT supply to the centrifugal charging pump suction. Its function is to allow forward flow under normal operating conditions and to close upon initiation of emergency boration.

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: The only method to verify the closure function of this check valve would involve injecting concentrated boric acid solution into the RCS. This procedure may cause a power transient which could result in a reactor trip.

Alternate Testing: This valve will be reverse flow tested for verification of closure function during cold shutdown.

E. Valves: MO-112B, MO-112C

Category: B

Class: 2

(2)

Function: These normally open volume control tank (VCT) outlet valves close on a safety injection signal to isolate the VCT and allow flow from the RWST to centrifugal charging pump suction.

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: Exercising these valves requires bypassing their automatic safety function in order to maintain a centrifugal charging pump suction source. Loss of the centrifugal charging pump suction would result in a loss of reactor coolant system level control.

Alternative Testing: These valves will be full-stroke exercised for verification of operability during cold shutdown when an alternate alignment is available for the centrifugal charging pumps. (2)

M 203: Chemical and Volume Control System

A. Valves: MO-8100, MO-8112 (2)

Category: A

Class: 2

Function: These normally open containment isolation valves close on a containment isolation signal to isolate the RCP seal water return.

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: Stroking either of these two valves to the closed position would result in loss of normal seal leakoff flowpath. The RCP seal water return line does include a safety valve which will actuate to allow seal leakoff but it is not desirable to require the safety valve to lift and reseat on a quarterly basis. Should either MO-8100 or MO-8112 fail in the closed position, the reactor coolant pump seals may be adversely affected by the seal water return line back pressure. If either valve failed (2)

and could not be immediately repositioned, the plant may have to come off line to accommodate the corrective maintenance. (2)

Alternate Testing: These valves will be full-stroke exercised for verification of operability during cold shutdown when the RCPs are shut down.

B. Valves: MO-8110, MO-8111 (2)

Category: B

Class: 2

Function: These series valves isolate CCP recirculation flow path return to the seal water heat exchanger.

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: Failure of either of these valves in the closed position renders the recirculation flow path inoperable. A minimum flow rate through the pumps is required to ensure pump cooling. A safety injection actuation while either valve is in the closed position could cause damage to both trains of high head safety injection if the RCS pressure increases above the discharge head of the CCP.

Alternate Testing: These valves will be full-stroke exercised for verification of operability during cold shutdown.

(1)

M 205: Residual Heat Removal System

(2)

A. Valves: MO-8701, MO-8702

Category: A

Class: 1

Function: These normally closed series valves connect the suction of the RHR pumps to the RCS Loop 4 hot leg. These valves are interlocked to prevent opening with RCS pressure >425 psig and to automatically close when RCS pressure exceeds 600 psig.

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: Exercising of these valves during normal operation would require overriding of a safety interlock. The potential for over-pressurization of the RHR system and depressurization of the RCS make testing of these valves at normal RCS pressure unsafe.

Alternate Testing: These valves will be full-stroke exercised for verification of operability during cold shutdown.

(1)

(2)

B. Valves: 8736A, 8736B

Category: AC

Class: 1

Function: These check valves prevent backflow from the RCS Loops 2 and 4 hot legs into the RHR system during normal operation and allows flow to the RCS hotleg Loops 2 and 4 during the recirculation mode of an accident.

(2)

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: During normal operation, the RHR pumps cannot overcome RCS pressure to achieve check valve design flow.

Alternate Testing: These valves will be full-stroke exercised for verification of operability during cold shutdown.

(2)

C. Valves: MO-8804A, MO-8804B

Category: B

Class: 2

(2)

Function: These valves are used during RCS cold-leg and hot-leg recirculation where the RHR pump discharge is aligned to provide flow to the suction of the CCPs and safety injection pumps.

(1)

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: Due to the interlock with MO-8813 and MO-8814, which are the safety injection pump miniflow valves, MO-8804A and MO-8804B cannot be full-stroke exercised quarterly. In order to open MO-8804A/B one of either MO-8813 or MO-8814 would be required to be closed to satisfy the open interlock. Closing either of these valves removes the recirculation flow path from the discharge of the safety injection (SI) pumps. If the SI pump were to start with RCS pressure greater than approximately 1520 psig the pump could be damaged due to dead head conditions. Closing MO-8813 or MO-8814 during power operation is not an acceptable operating condition and constitutes entry into Technical Specification 3.0.3.

(2)

Alternate Testing: These valves will be full-stroke exercised during cold shutdown with MO-8813 and MO-8814.

D. Valves: MO-8809A, MO-8809B

Category: B

Class: 2

Function: These valves are aligned to provide RCS cold-leg injection flow from the RHR system.

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: These valves are required to be in the open position to meet the flow assumptions in the accident analysis. Failure of either of these valves in the closed position of safety injection actuation while in the closed position could result in low head safety injection flow at rate below that assumed in the safety analysis.

Alternate Testing: These valves will be full-stroke exercised for verification of operability during cold shutdown.

E. Valve: MO-8812

Category: B

Class: 2

Function: This normally open valve is repositioned to isolate the RWST from the RHR pump suction during the accident recirculation phase.

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: Failure of this valve in the closed position would render the entire RHR system inoperable.

Alternate Testing: This valve will be full-stroke exercised for verification of operability during cold shutdown.

(1)

F. Valves: 8818A, 8818B, 8818C, 8818D

Category: AC

Class: 1

Function: Each of these check valves prevents backflow from one of the RCS cold legs into the RHR system during normal operation and allows flow from the RHR system into the RCS during cooldown, injection phase and cold-leg recirculation phase of accident mitigation.

Test Requirement: Exercise for operability every 3 months

Basis for Conclusion: During normal operation, the RHR pumps cannot overcome RCS pressure.

Alternate Testing: These valves will be full-stroke exercised for verification of operability during cold shutdown.

G. Valve: 8958

Category: C
Class: 2

Function: This check valve prevents backflow from the RHR suction header to the RWST during normal operation and supplies borated water from the RWST to the suction of the RHR pumps during a Design Basis Accident.

(2)

Test Requirement: Exercise for operability every 3 months.

(1)

Basis for Conclusion: Exercising check valve 8958 requires the RHR pumps drawing suction on the RWST under full flow conditions. The only feasible method to stroke this valve would require large scale RWST recirculation by opening manual valve 8735. However, the necessary valve lineup to perform this testing would cause entry into Technical Specification 3.0.3. If the Plant should experience a Design Basis Accident while PGE personnel are performing this test, the RHR system would not deliver Design Basis flow to each RCS cold leg until manual recirculation isolation Valve 8735 was returned to the closed position. Cold shutdown is not feasible because the RHR is in circulation to the RCS using the RCS as a suction source. The only feasible Plant condition for which this valve can be exercised is during refueling when the RHR system is utilized to fill the refueling cavity.

(2)

Relief Request: This valve will be full-stroke exercised during refueling outages when the refueling cavity is being filled.

(2)

H. Valves: MO-8716A, MO-8716B

Category: B

(1)

Class: 2

Function: These normally open valves cross-connect the discharge of the RHR pumps to ensure injection flow into all four RCS cold legs.

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: Failure of either of these valves in the closed position would place the system outside the design bases assumptions for single-active failure of an RHR pump. Flow could not be guaranteed to all four RCS cold legs from the RHR system.

Alternate Testing: This valve will be full-stroke exercised for verification of operability during cold shutdown. (1)

I. Valve: MO-8703

Category: B
Class: 2

Function: This normally closed valve isolates the RHR flow path to the RCS Loop 2 and 4 hot legs during normal operation.

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: Failure of this valve in the open position would redirect low head safety injection flow from the safety injection flow path.

(1) Alternate Testing: This valve will be full-stroke exercised for verification of operability during cold shutdown.

M 206: Safety Injection System

(2) A. Valves: MO-8801A, MO-8801B

Category: B

Class: 2

Function: These normally closed parallel valves isolate the BIT during normal operation and open on a safety injection actuation to provide high head Emergency Core Cooling System flow to the RCS cold legs from the CCPs.

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: Opening either of these two valves would divert flow from the normal RCS charging and RCP seal injection and flush the contents of the BIT into the RCS. Isolating the BIT inlet valves (normally open MO-8803A and MO-8803B) is not considered feasible should a safety injection actuation occur while testing, since these valves do not receive a signal to reposition. This condition could result in loss of both trains of high head safety injection and flow less than that assumed in the safety analysis.

Alternate Testing: Full-stroke exercise for verification of operability during cold shutdown.

(2)

B. Valves: MO-8806, MO-8835

Category: B

Class: 2

Function: These normally open valves isolate the RWST from the safety injection pump suction (MO-8806) and the cold-leg safety injection into the RCS (MO-8835).

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: Failure of either valve in the closed position would render both trains of safety injection pumps inoperable.

Alternate Testing: These valves will be full-stroke exercised for verification of operability during cold shutdown.

C. Valves: MO-8808A, MO-8808B, MO-8808C, MO-8808D

Category: B

Class: 1

Function: These normally open valves provide isolation for the SIS accumulators. The valves are also designed to open on receipt of a safety injection signal.

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: These valves are passive in that, under normal operating conditions, they are open and remain open in performance of their safety function. The valves have been included in the IST Program for testing due to their critical location in a safety-related system and the imposed administrative requirements which require Plant shutdown for failure of one of these valves in a closed position.

Alternate Testing: Exercise for verification of operability during cold shutdown.

(2) D. Valves: MO-8813, MO-8814

Category: B

Class: 2

Function: These normally open series valves isolate the safety injection pump miniflow return flow path to the RWST.

(2) Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: Failure of either valve in a closed position or safety injection actuation while closed would render the safety injection pumps inoperable. A minimum flow rate through the pumps is required to ensure pump cooling. The miniflow flow path guarantees this minimum flow during the safety injection initiation.

Alternate Testing: These valves will be full-stroke exercised for verification of operability during cold shutdown.

E. Valve: 8815

Category: C

Class: 1

Function: This check valve prevents backflow from the RCS cold legs during normal operation and allows CCP high head injection via the BIT during a safety injection. (2)

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: At normal RCS pressure, check valve design flow cannot be achieved. (2)

Alternate Testing: This valve will be full-stroke exercised for verification of operability during cold shutdown.

F. Valves: 8819A, 8819B, 8819C, 8819D

Category: AC

Class: 1

Function: Each of these check valves prevents backflow from its respective RCS loop cold leg during normal operation and allows flow from the discharge of the safety injection pumps during RCS cold-leg injection and recirculation. (2)

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: During power operation, the safety injection pumps cannot overcome RCS pressure to achieve check valve design flow.

Alternate Testing: These valves will be full-stroke exercised for verification of operability during cold shutdown.

G. Valves: 8905A, 8905B, 8905C, 8905D

Category: AC

Class: 1

Function: Each of these check valves prevent backflow from its respective RCS loop hot leg during normal operation and allows flow from the discharge of the safety injection pumps during RCS hot-leg recirculation. (2)

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: During power operation, the safety injection pumps cannot overcome RCS pressure to achieve check valve design flow.

Alternate Testing: These valves will be full-stroke exercised for verification of operability during cold shutdown.

H. Valves: 8922A, 8922B (2)

Category: C

Class: 2

Function: Check valves 8922A and 8922B are on the discharge of the safety injection pumps downstream of the recirculation return to the RWST and prevent backflow through the respective pump during normal operation. These valves open to allow SI pump flow during an accident. (2)

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: The safety injection pumps cannot overcome RCS pressure during power operation and, as a result, check valve design flow cannot be achieved.

Alternate Testing: Valves 8922A and 8922B will be full-stroke exercised for verification of operability during cold shutdown.

I. Valves: 8956A, 8956B, 8956C, 8956D (2)

Category: AC

Class: 1

(1)

(2)

(2)

Function: These normally closed check valves prevent backflow from the RCS into the accumulators during normal operation/and allow flow from the SIS accumulators to the RCS in an accident.

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: During power operation, the SIS accumulators cannot develop sufficient head to overcome RCS pressure. During both cold shutdown and refueling outages, the piping system in which these valves are installed should not be subjected to maximum FSAR accident flowrate as a means of verifying valve disc position. Furthermore, due to the high radiation levels associated with valve disassembly and inspection at this installation, the sample disassembly, inspection, and manual stroke option discussed in NRC Generic Letter 89-04 is not a desirable option. Thorough searches of both Trojan Maintenance files and the NPRDS system produced no reports of applicable valve internal failures at this location which would have prevented passing maximum FSAR design flow. The failure noted involved seat leakage which is monitored by PGE in accordance with IWV-3420. Due to its location, this valve experiences little movement and subsequently cannot experience significant degradation. As a part of PGE's effort to satisfy INPO SOER 86-03, IMPELL Corporation was contracted to evaluate many check valves located in piping

(1)

systems at Trojan. These four check valves were specifically evaluated and IMPELL Corporation recommended that all four of these check valve be disassembled and inspected over a ten year period. PGE will comply with this recommendation.

Relief Request/
Alternate Testing: These valves will be full-stroke exercised for verification of operability during refueling outages. The RV head will be removed and the respective SIS accumulator will be partially injected thus passing significant flow at each check valve while the differential pressure across the check valve is monitored. PGE has performed a calculation (TM-132) which provides the minimum flow rate/velocity to full-stroke these valves. The test acceptance criteria is approximately 130 percent of this minimum value. Since these four valves experience little movement and have responded satisfactorily to past reduced flow testing, we feel that by observing no degradation in valves of identical size, make, and model (ie... 8948A-D), during recent inspections (1988,1989) we can reasonably assume these valves are in at least the same condition. To comply with the Trojan Check Valve Program, one of these valves will be disassembled and inspected by 1991 and the acceptance criteria developed in the 1990 refueling outage may be revised to more closely resemble the differential

(2)

(1)

(2)

pressure measured across the disassembled valve. All test instrumentation will be calibrated and accurate to code standards.

M 207: Containment Spray System

(2)

A. Valves: CS-028, CS-029

Category: C

Class: 2

Function: These check valves open to allow the containment spray pumps to supply spray water to the containment spray ring header.

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: These valves do not have provision for testing under normal conditions. Exercising the valves would require injection of the test medium into the containment through the spray nozzles with no means available for verification of flow. Equipment damage and requirements for extensive cleanup of the containment would result. Since these valves do not operate during a typical power cycle, no degradation is expected.

(2)

Relief Request: These valves will be disassembled, internally inspected, and manual full-stroke exercised on a rotational basis, one valve each refueling outage.

If any degradation is detected that interferes with the valve's operability, then the opposite train valve will also be disassembled, internally inspected, and manual full-stroke exercised during the same outage.

B. Valves: MO-2056A, MO-2056B

Category: B

Class: 2

Function: These normally closed sodium hydroxide (NaOH) tank outlet valves open on a Containment spray actuation signal providing NaOH injection to the spray additive eductor.

Test Requirement: Exercise for operability every three months. (2)

Basis for Conclusion: These sodium hydroxide (NaOH) to Containment spray eductor isolation valves should not be exercised during power operation since they could introduce NaOH into the RWST and subsequently into the reactor coolant system causing Na-24 activation problems and possible chemical damage to components in the reactor coolant system. To prevent introducing NaOH into the RWST, manual Valves CS-003 and CS-004 would have to be closed which would require operator action to restore the valve lineup to provide spray additive in the event of an activation during the test.

(1)

(2)

Alterntive Testing: These valves will be full-stroke exercised at cold shutdown.

M 208: Main Steam System

A. Valves: MS-220, MS-221, MS-222, MS-223, MS-224, MS-225, MS-226, MS-227

Category: C

Class: 2

Function: These check valves are required to close to isolate the normal air supply to the steam supply valves (CV-1451, CV-1452, CV-1453, and CV-1454) for the turbine-driven auxiliary feedwater pump and allow the backup air supply accumulators to provide air to these valves. This feature is only required during a loss of the normal Seismic Category II instrument air supply system to the turbine steam supply valves to assure AC independence.

(2)

Test Requirement: Exercise each valve for operability every 3 months.

Basis for Conclusion: These valves are configured with two valves in series on each of the four normal air supply lines. The piping configuration has no test connections between check valves to allow individual valve testing.

Relief Request: Operational readiness will be shown by isolating the normal instrument air supply to each steam supply valve and performing the periodic operating test on the steam-driven AFW pump using the backup accumulator air supply. This test will demonstrate

(1)

operability of the series configuration of two check valves in each air supply line. Only one steam supply valve is required to be open to assure pump operability. (2)

B. Valves: CV-2210, CV-2230, CV-2250, CV-2270 (2)

Category: B

Class: 2

Function: These valves prevent reaching the safety valve setpoint during transients and dissipate reactor decay heat to the atmosphere if the main condenser is not available.

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: Testing these valves every 3 months increases the normal number of times each valve opens against a differential pressure, thus deteriorating the valve seat and increasing the likelihood of causing leakage.

Alternate Testing: These valves will be full-stroke exercised during cold shutdown.

C. Valves: CV-2216, CV-2236, CV-2256, CV-2276 (2)

Category: B

Class: 2

Function: These valves provide main steam isolation in each of the respective main steam headers.

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: Shutting of one of these valves during full-power operation would result in a transient which would lead to a reactor trip and/or a steam dump to atmosphere. Repeated closure of these valves at full power will reduce their reliability. Failure of a valve in the closed position would remove its respective steam generator from operation.

Alternate Testing: These valves will be exercised for verification of operability while in startup or hot standby during each reactor shutdown or subsequent startup, except that this test need not be performed more often than once per 92 days. Operability will be demonstrated by closure within 5 seconds on a closure activation signal.

(2) D. Valves: MS-2001, MS-2002, MS-2003, MS-2004

Category: C

Class: 2

Function: These check valves perform an accident-related function in that they are required to close in the event of a steam line break in containment in order to prevent blowing down of more than one steam generator to containment.

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: During normal operation, the main steam pressure cannot be overcome, and as a result the valves cannot be exercised.

Alternate Testing: These valves will be full-stroke exercised for verification of operability during recovery from cold shutdown.

M 213: Main and Auxiliary Feedwater System

A. Valves: FW-2005, FW-2006, FW-2007, FW-2008, FW-2009, FW-2010, FW-2011, FW-2012, FW-2013, FW-2014, FW-2015, FW-2016, FW-2031, FW-2032 (2)

Category: C

Class: 2 and ANSI B31.1

Function: These check valves prevent bac low from the main feed lines to the AFW system during normal operation and open to allow AFW flow to the steam generators during an accident. (2)

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: These valves cannot be exercised during power operation without thermal shocking of the feed system nozzles.

Alternate Testing: These valves will be full-stroke exercised during cold shutdown.

(2)

B. Valves: FW-2017, FW-2018, FW-2019, FW-2020

Category: C

Class: 2

Function: These check valves prevent backflow from the steam generators into the main feed system.

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: Shutting of one of these valves during full-power operation would result in a transient which could lead to a reactor trip. Repeated closure of these valves at full power will reduce their reliability.

Alternate Testing: These valves will be full-stroke exercised during cold shutdown.

M 215: Component Cooling Water System

A. Valves: MO-3290, MO-3291, MO-3292, MO-3294, MO-3296, MO-3300, MO-3320, MO-3346

Category: B

(1)

Class: 2 (MO-3290, MO-3291, MO-3292, MO-3346) and ANSI B31.1 (MO-3294, MO-3296, MO-3300, MO-3320)

Function: These normally open valves are on the supply and return lines of the CCW supply to containment and the RCPs.

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: Failure of one of these valves in the closed position would result in loss of cooling water to the RCPs.

Alternate Testing: These valves will be full-stroke exercised for verification of operability at cold shutdown.

B. Valves: MO-3295, MO-3319

(2)

Category: B

Class: ANSI B31.1

Function: These are the inlet and outlet isolation valves on the letdown and seal water heat exchangers. The valves are normally open and close on receipt of a containment isolation signal.

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: Failure of either of these valves in the closed position would result in loss of cooling water to the RCS letdown and the RCS pump seal water heat exchangers requiring reactor shutdown.

Alternate Testing: These valves will be full-stroke exercised for verification of operability during cold shutdown.

(2) C. Valves: GS-2001, GS-2002; GS-2003, GS-2004

Category: C

Class: ANSI B31.1

Function: GS-2001 and GS-2002 are the normal Seismic Category II nitrogen supply check valves to the CCW system surge tanks. GS-2003 and GS-2004 are the emergency backup Seismic Category I nitrogen supply check valves which are normally closed.

(1) Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: Testing of these valves requires lowering CCW surge tank pressure below the emergency backup supply pressure setpoints to demonstrate isolation of the normal supply check valves and opening of the emergency backup supply check valves. Changes in system pressure effect the flow to various critical operating

loads which could affect the operability of the inservice equipment vital to the operation of the Plant. (1)

Alternate Testing: These valves will be full-stroke exercised for verification of operability during cold shutdown. (1)

D. Valves: CC-2035, CC-2036, CC-2046, CC-2047 (2)

Category: C

Class: ANSI B31.1

Function: These normally open valves are required to isolate in the event of a RCP thermal barrier failure to assure continued operation of the associated CCW train. These valves are required to close to prevent over pressurization of the other portions of the CCW system. (1)

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: Exercising these valves during normal Plant operation cannot be performed remotely. RCPs must be shut down and test equipment connected to local vents and drains to demonstrate reverse flow check valve isolation. (2)

Relief Request: These valves will be full-stroke exercised for verification of operability at cold shutdown. (1)

(1) (2)

E. Valves: MO-3298A, MO-3298B, MO-3298C, MO-3298D

Category: B

Class: ANSI B31.1

Function: These valves are required to isolate in conjunction with the check valves in Item D above in the event of a RCP thermal barrier failure. These valves are required to close to prevent over pressurization of the other portions of the CCW system.

(1)

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: Failure of these valves in the closed position during normal Plant operation with the RCPs running renders thermal barrier cooling inoperable. Subsequent failure of seal injection to the pump could lead to rapid seal degradation in the RCP.

Alternate Testing: These valves will be full-stroke exercised for verification of operability during cold shutdown.

F. Valves: CC-2001 through CC-2032 (32 total valves)

Category: AC

(2)

Class: B31.1

Function: The containment air cooler air vent check valves allow venting of the respective containment air cooler when required and close to prevent containment atmosphere from entering the CCW system during a design basis accident.

(1)

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: Due to system configuration, these check valves can only be verified closed by leak rate testing. In addition, test connections do not exist at the point of valve installation. The valve cannot be leakrate tested within the piping system.

(2)

Relief Request: Closure capability of these valves will be demonstrated by leak rate testing at a 2 year frequency. The valves will be physically removed from the piping system, individually leak rate tested, and then reinstalled.

M 218: Service Water

(1) (2)

A. Valves: SW-029, SW-030

Category: B

Class: ANSI B31.1

Function: These manual valves supply service water cooling to the CCW heat exchangers. During a loss of river intake structure, they are closed to allow use of the Seismic Category II circulating water system from the cooling tower. The CCW heat exchangers provide the primary cooling to critical components cooled by the CCW system during normal operation.

(1)

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: Loss of cooling to the CCW heat exchanger from the Seismic Category I service water system due to a failure of the valve during the exercise test would require use of the Seismic Category II circulating water system backup from the cooling tower or else the applicable ECCS train would be lost. (1)

Alternate Testing: These valves will be full-stroke exercised for verification of operability during cold shutdown.

M 223: Instrument Air System

A. Valves: CV-4471, IA-2001 (2)

Category: A and AC, respectively

Class: 2

Function: These normally open series containment isolation valves are the instrument air supply to pneumatic valves and instrumentation inside containment. The valves close on receipt of a containment isolation signal.

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: Failure of either of the instrument air valves in a closed position removes the air supply to the containment air-operated valves and pneumatic instrumentation. In addition, IA-2001 can only be verified shut during leak testing at refueling outages. (2)

Relief Request: CV-4471 will be full-stroke exercised during refueling. Check valve IA-2001 will be full-stroke exercised for verification of operability during local leak rate testing per 10 CFR 50, Appendix J. (2)

M243: Containment Ventilation System

A. Valves: CV-10001, MO-10002, MO-10003, CV-10004

Category: A

Class: 2

Function: These valves are the containment isolation valves for the main containment purge system.

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: PGE has committed to maintaining these valves in the closed position during Modes 1, 2, 3, and 4 in response to an NRC concern over containment purging during normal operation.

Alternate Testing: These valves will be full-stroke exercised during cold shutdown.

DWG: J781: Electrical Penetrations Nitrogen Manifold Arrangement

A. Valves: GS-2033 through GS-2073 (41 total valves)

Category: AC

Class: ANSI B31.1

Function: This check valve will open to allow nitrogen to pressurize the respective electrical penetration and maintain a dry environment. It will close or remain closed providing containment isolation at the electrical penetration during a design basis accident.

(2)

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: These check valves can only be verified closed by leak-rate testing. This leakrate testing cannot be performed quarterly or during cold shutdown without violating containment integrity.

Relief Request: Verify the closure capability of these check valves by leak-rate testing at each refueling outage.

VALVES PARTIAL STROKE EXERCISED DURING
POWER OPERATION JUSTIFICATION/RELIEF (2)

The following Category A, B, and C active valves, where only limited operation is practical during Plant operation, will be part-stroke exercised during Plant operations and full-stroke exercised during cold shutdowns as per Paragraphs IWV-3412 and IWV-3522.

M 202: Chemical and Volume Control System

A. Valves: 8481A, 8481B (2)

Category: C

Class: 2

Function: Each of these check valves is on the discharge of a CCP and opens to provide high head safety injection in an accident. (2)

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: During power operation, check valve design flowrates cannot be achieved. (2)

Alternate Testing: These valves will be part-stroke exercised at power every 3 months. They will be full-stroke exercised at cold shutdown.

M 205: Residual Heat Removal System

A. Valves: 8730A, 8730B (2)

Category: C

Class: 2

Function: These check valves are on the discharge of the RHR pumps and prevent backflow through their respective pump during normal operation and open to provide flow during an accident. (2)

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: During power operation, the RHR pumps cannot overcome RCS pressure to achieve check valve design flow. The only alternate flow path which can accommodate full flow is on recirculation to the RWST. This flow path is unacceptable because it would require repositioning of the RWST return isolation valve, 8735 (normally locked closed), which would render the RHR injection system inoperable.

Alternate Testing: Check valves 8730A and 8730B will be part-stroke exercised on miniflow during power operation and full-stroke exercised during cold shutdown.

M 206: Safety Injection System

A. Valves: 8926

Category: C

Class: 2

Function: Check valve 8926 is between the safety injection pumps suction and the RWST and prevents backflow into the RWST during normal operation. It will open to allow flow of concentrated boric acid from the RWST to the SIP suction in an accident. (2)

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: The safety injection pumps cannot overcome RCS pressure during power operation and, as a result, full flow cannot be accommodated.

Alternate Testing: Check valve 8926 will be part-stroke exercised during power operation and full-stroke exercised for verification of operability during cold shutdown.

M 207: Containment Spray System

A. Valves: CS-2001, CS-2002 (2)

Category: C

Class: 2

(2) Function: These check valves open to provide flow of borated water from the RWST to the suction of the containment spray pumps.

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: Full-stroke exercising of these valves during power operation would require injection of the test medium into the containment in order to achieve design flow. Equipment damage and requirements for extensive cleanup of the containment would result. The alternate test method requires initiating check valve design flow using the RHR pump while discharging into the refueling cavity for flood-up in preparation for refueling.

Relief Request: These valves will be part-stroked every 3 months and full-stroke exercised during refueling outages.

(1) (2) M218: Service Water System

A. Valves: SW-043, SW-044

(1) Category: B

Class: ANSI B31.1

Function: These valves on the outlet of the CCW heat exchangers are required to be closed during a loss of river intake structure in order to valve in the Seismic Category II circulating water system from the cooling tower.

Test Requirement: Exercise for operability every 3 months.

Basis for Conclusion: Loss of cooling to the CCW heat exchanger due to failure of the valve during the exercise test would require use of the Seismic Category II circulating water system backup from the cooling tower or loss of the ECCS train. (1)

Alternate Testing: These valves will be part-stroked every 3 months and full-stroke exercised during cold shutdowns.

5834k

GENERIC RELIEF REQUESTS

A: Valves: Containment Isolation Valves

Category: A/AC

Class: Various

Function: These valves close or remain closed to provide containment isolation during a design basis accident (DBA).

Test Requirement: Leak test containment isolation valves per Section XI, Paragraphs IWV-3421 through IWV-3427.

Basis for Conclusion: The test procedures for containment isolation valves specified in 10 CFR 50, Appendix J, are equivalent to the requirements of IWV-3421 through IWV-3425. Also, IWV-3427(b) specifies additional requirements on increased test frequencies for valve sizes six inches and larger and repairs or replacement over the requirements of IWV-3427(a). Past testing data indicates the usefulness of IWV-3427(b) does not justify the burden of complying with this requirement.

Relief Request: Leak rate test containment isolation valves in accordance with 10 CFR 50, Appendix J requirements and the requirements of IWV-3426 and IWV-3427(a). This relief request is consistent with position #10 of NRC Generic Letter 89-04.

(2)

B. Valves: Rapid-Acting Valves

Category: A/B

Class: Various

Function: These valves perform various functions in shutting down the reactor to the cold shutdown condition or in mitigating the consequences of an accident.

Test Requirement: If, for power operated valves, an increase in stroke time of 50 percent or more from the previous test 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, at which time the original test frequency shall be resumed. (2)

Basis for Conclusion: Using a fixed reference value for power operated valves which stroke in three seconds or less, provides a more logical and stringent basis for determining increased test frequencies. Adhering to the code as stated above, a valve's stroke time could increase during each test and still be considered

acceptable, while in fact, the valve could be failing or at least worthy of being tested at an increased frequency. Using a fixed reference value as a standard would result in an increased test frequency much sooner than the standard set forth in the code. (2)

Relief Request: If a fixed reference value is exceeded by more than 50 percent for those reference values three seconds or less, the frequency of testing shall be increased to once a month until the condition is corrected.

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