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United States Nuclear Regulatory Commission
ATTENTION: Document Control Desk
Washington, DC 20555

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261/LICENSE NO. DPR-23
SUBMITTAL OF REVISED INTERVAL 2 IN-SERVICE INSPECTION
TESTING PROGRAM (PUMPS AND VALVES)

Gentlemen:

Carolina Power & Light Company hereby submits the revised Interval 2 In-Service Inspection Testing Program For Pumps and Valves at H.B. Robinson Steam Electric Plant Unit No. 2. This revision incorporates responses provided in our December 29, 1986 response to the NRC's September 22, 1986 request for additional information and reflects comments provided in a November 10, 1987 meeting in Bethesda.

Questions regarding this matter may be referred to Mr. R. W. Prunty at (919) 836-7318.

Yours very truly,

L. I. Loflin
Manager
Nuclear Licensing Section

JSK/lah (5405JSK)

cc: Dr. J. Nelson Grace
Mr. R. Lo
Mr. L. Garner (NRC - HBR)

A047
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CAROLINA POWER AND LIGHT COMPANY

H. B. ROBINSON STEAM ELECTRIC PLANT UNIT 2

IN-SERVICE INSPECTION TESTING

INTERVAL 2

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PEM:88-1787(2)

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1.0 PURPOSE

1.1 This program is performed to comply with Subsections IWP and IWV of Section XI of the 1977 Edition of the ASME Boiler and Pressure Vessel Code Through the Summer, 1978 Addenda, except for specific reliefs requested in accordance with 10CFR50.55a(g)(5)(iii), which are identified in Sections 5.2 and 5.3 for pumps and valves respectively.

2.0 REFERENCES

2.1 Subsections IWP and IWV of Section XI of the 1977 Edition of the ASME Boiler and Pressure Vessel Code Through the Summer, 1978 Addenda

2.2 10CFR50.55a(g)(5)(iii)

2.3 10CFR50.2(v)

2.4 Regulatory Guide 1.26, Revision 2

2.5 ANSI N-18.2, 1973 and N-18.2a, 1975

2.6 10CFR50 Appendix J

2.7 Drawings

2.7.1 G-190196, Main and Extraction Steam Systems

2.7.2 G-190197, Feedwater, Condensate and Air Evacuation Systems

2.7.3 G-190199, Service and Cooling Water System

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2.7.5 G-190204A, Emergency Diesel Generator System

2.7.6 G-190204D, Fuel Oil System

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2.7.8 G-190261, Penetration Pressurization System

2.7.9 G-190262, Isolation Valve Seal Water System

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2.7.12 5379-376, Component Cooling Water System

2.7.13 5379-685, Chemical and Volume Control System

2.0 REFERENCES (Continued)

2.7.14 5379-686, Chemical and Volume Control System

2.7.15 5379-920, Liquid Waste Disposal System

2.7.16 5379-921, Gaseous Waste Disposal System

2.7.17 5379-1082, Safety Injection System

2.7.18 5379-1484, Residual Heat Removal System

2.7.19 5379-1971, Reactor Coolant System

2.7.20 HBR2-6490, Containment Vapor and Pressure Sampling System

2.7.21 HBR2-6933, Post Accident Containment Venting System

2.7.22 HBR2-8255, Fire Protection System

2.7.23 SK-2, Fuel Transfer Tube

2.8 H.B. Robinson Unit 2 Technical Specifications

3.0 RESPONSIBILITIES

3.1 Engineering Supervisor - Performance - The Engineering Supervisor - Performance is responsible for compliance with this program.

3.2 ISI Coordinator - The ISI Coordinator is responsible for performance of this program.

4.0 DEFINITIONS/ABBREVIATIONS

4.1 CFR - Code of Federal Regulations

4.2 ASME - American Society of Mechanical Engineers

4.3 ANSI - American Nuclear Society Institute

4.4 ISI - In-Service Inspection

4.5 PASS - Passive

4.6 Test Intervals

W - Weekly

M - Monthly

Q - Quarterly

QQ - Prior to use if not tested within previous 90 days.

C - Cold Shutdown

R - Refueling

3R - Every Third Refueling

4.0 DEFINITIONS/ABBREVIATIONS (Continued)

A - Annual

X - Frequency Determined from Table IWV-3510-1

J - Frequency Determined by 10CFR50 App. J.

BW - Biweekly

4.7 Actuator Types (ACT TYPE)

AO - Air

M - Manual

MO - Motor

SA - Self Actuate

SO - Solenoid

4.8 Valve Types (VLV TYPE)

BF - Butterfly

CK - Check

DA - Diaphragm

GA - Gate

GL - Globe

ND - Needle

REG - Regulator

RV - Relief/Safety

3W - 3-Way

VB - Vacuum Breaker

4.9 Valve Position (NORM POS)

CL - Closed

O - Open

LC - Locked Closed

LO - Locked Open

4.10 Valve Test Method

F - Observe Failure Mode

FF - Normally closed check valves are given a forward flow test to verify that disc opens.

J - Category A containment isolation valve tested in accordance with 10CFR50 App. J.

LT - Leak Test

RF - Normally open check valves are given a reverse flow test to show that disc seats.

4.0 DEFINITIONS/ABBREVIATIONS (Continued)

RV - Relief Valve (Test per IWV-3510)

S - Full Stroke

T - Measure Time

VI - Verify Remote Indication

4.11 Misc. Symbols

NA - Not Applicable

NR - Not Required

5.0 PROGRAM

5.1 General

In accordance with 10CFR50.55a(g)(4)(ii) the H. B. Robinson Unit 2 ISI Program is being updated to ASME Section XI, 1977 Edition with Addenda Through the Summer, 1978, Addenda. Steam generator inspections will continue to be inspected under Plant Technical Specifications, Section 4.2.1.1. Specific reliefs are requested in accordance with 10CFR50.55a(g)(5)(iii).

The interval for which this program is applicable will commence on March 7, 1981, and end on February 19, 1992.

The ISI Program was developed employing the classification guidelines contained in 10CFR50.2(v) and 10CFR50.55a(c)(2) for Quality Group A. Regulatory Guide 1.26, Revision 2, was used for classification of items in Quality Groups B and C, along with ANSI N18.2, 1973, and ANSI N18.2a, 1975. Quality Groups A, B, and C are the same as ASME Classes 1, 2 and 3 respectively.

The Attachments describe the Class 1, 2, and 3 pump and valve inspection program developed in accordance with Subsections IWP and IWV of ASME Section XI.

ATTACHMENT 6.1 lists all safety related Class 1, 2, and 3 pumps included in the testing program. The test parameters measured and the testing frequency are also listed.

ATTACHMENTS 6.2 thru 6.24 lists all safety related Class 1, 2, and 3 valves included in the program. Specifically excluded per IWV-1200 are valves used for operating convenience only, such as manual vent, drain, instrument, test maintenance, pressure regulating, thermal relief, and system control valves. Test methods and frequencies are also listed. Valve maximum stroke

5.0 PROGRAM (Continued)

times are listed. Valves which cannot be tested during normal operation have the next acceptable frequency listed as allowed by IWV-3412(a), IWV-3415 and IWV-3416.

ATTACHMENT 6.25 provides additional information concerning testing requirements as they were applied to specific valves.

Cold Shutdown testing for short duration outages will begin within 48 hours after reaching cold shutdown. For these outages, testing will continue until completed or until the unit is ready to return to operation. Completion of all testing will not be a prerequisite to returning to service.

The 48 hour requirement on commencing cold shutdown testing will not apply to scheduled outages with durations sufficient to complete all testing. For these shutdowns, testing will commence in accordance with outage schedules.

PUMP RELIEF REQUESTS

5.0 PROGRAM (Continued)

5.2 Pump Relief Requests

This section provides justification for the specific relief requested from Code test requirements as provided for in 10CFR50.55a(g)(5)(iii). Each request is identified by a unique number and identifies the pump(s) for which the request is being made. The specific Code test requirement found to be impractical is defined and the basis for exclusion from Code requirements is specified.

5.2.1 Specific Relief Request:

Monthly In-service Test per IWP-3400(a)

Applicable To:

All pumps

Basis for Relief Request:

Monthly Section XI operability testing has been a requirement for most of these pumps since plant operation began. An analysis of the results of these tests and comparable data from other operating plants has shown no significant changes in performance. Based on this analysis, the continuation of Section XI monthly testing would not significantly increase plant safety.

Monthly pump testing requires a total of at least 250 hours per year of pump operation, at least 575 man-hours per year for data acquisition, and at least 50 man-hours per year for data reduction, analysis, and record keeping. This amounts to a total of 625 man-hours per year. At a conservative total cost of $20 per man-hour, this amounts to $12,500 per year. Based upon the average exposure rates in the pump access areas, the total manrem exposure per year for pump testing is approximately 1.0 manrem. At the present conservatively estimated cost of $10,000 per manrem to plant personnel, this exposure costs an additional $10,000 per year. Total cost is approximately $22,500 per year, for no measurable increase in safety.

5.0 PROGRAM (Continued)

Alternate Testing:

Pumps will be tested in compliance with ASME Section XI, 1977, Edition Summer, 1978 agenda and this program once per quarter. This is in agreement with changes that were implemented in Subsection IWP of the Code in the Winter, 1979, addenda.

5.2.2 Specific Relief Request:

Measuring pump bearing temperature annually per IWP-3300

Applicable To:

All pumps

Basis for Relief Request:

The referenced Edition of the Code requires bearing temperature to be recorded annually. The detection of possible bearing failure by a yearly temperature measurement is highly unlikely. It requires at least an hour of pump operation to achieve stable bearing temperatures. The small probability of detection of bearing failure by temperature measurement does not justify the additional pump operating time required to obtain the measurements. The vibration measurement performed during quarterly intervals will provide better indication of impending bearing failure than an annual bearing temperature measurement. A review of historical bearing temperature data collected bears this out.

Alternate Testing:

Vibration measurements will be performed at quarterly intervals per IWP-4500.

5.2.3 Specific Relief Request:

A. Flow Rate Measurements as Required by IWP-3000

B. Differential Pressure Measurements as Required by IWP-3000

Applicable To:

Service Water Pumps

5.0 PROGRAM (Continued)

Basis for Relief Request:

The Service Water Pumps are used for removing heat from certain secondary system components during normal operation. Since heat load varies and inlet temperatures vary, automatic temperature control valves will vary the flow rates through the individual components, thus varying pump resistance. The system has no installed flow measuring devices capable of measuring flow from the pumps. The piping is concrete lined which prohibits the use of ultrasonic flow measuring techniques. There is insufficient room on the outlet piping of each individual pump to allow installation of any accurate flow devices.

The effect of each pump on Service Water System pressure is assessed quarterly. This is done by determining system pressure with three pumps running, then with four pumps running. The fourth pump contribution to the header pressure can then be evaluated. This practice is repeated for each pump. Vibration is also checked on each pump on a quarterly basis.

In addition, H. B. Robinson assesses Service Water Pump operation during refueling by conducting a "dead head" (zero flow) test on each pump. This test provides a point for comparison to determine the condition of the pumps since the previous tests. These tests are used to supplement the quarterly Section XI test. If a pump is declared inoperable and maintenance performed, the pump is tested using the "dead head" test to reestablish the base line.

Performing a "dead head" test quarterly would place the Service Water System in a Technical Specification limiting condition of operation. This is considered an unnecessary challenge to this system. Additionally, performing a "dead head" test on a multistage pump increases the potential for equipment damage. Therefore, it is desirable to keep such tests at a minimum.

Alternative Testing:

Assessment of pump operation during refueling by conducting "dead head" (zero flow) test on each pump.

5.2.4 Specific Relief Request:

Measure Flow Rate per Table IWP-3100-1

Applicable To:

Auxiliary Feedwater "A", "B", and Steam Driven; Safety Injection "A", "B", and "C"; Residual Heat Removal "A" and "B"; Boric Acid Transfer "A" and "B".

Basis for Relief Request:

The H. B. Robinson Unit #2 Construction permit was issued prior to January 1, 1981. Therefore, from 10CFR50.55a(g)a, the following applies:

"...components (including supports) shall meet the requirements of paragraphs (g)(4) and (5) of this section to the extent practical."

Paragraph (g)(4) of 10CFR50.55(a) requires that code class components meet the requirements of later code editions that become effective with the exception of the design and access provisions. It further states that these requirements shall be met to the extent practical within the limitations of design, geometry, and materials of construction of the components. Paragraph (g)(5) allows licensees to request relief from requirements determined to be impractical. The Robinson Plant design did not incorporate the flow instrumentation necessary to meet Section XI 1977 Edition, Summer 1978 Addenda requirements under all operating modes. Flow

measurement must be conducted under specific modes of operation or by placing the equipment in a configuration that prevents its normal function, thus placing the unit in a Limited Condition for Operation. Therefore, alternate testing is requested for selected equipment.

Alternative Testing:

Pump operating assessments will be made quarterly using differential pressure measurements. In addition, this testing will be supplemented as follows (Note that where flow is measured it will be to the accuracy allowed by existing Plant calibrated instrumentation):

a. Auxiliary Feedwater Pumps "A" and "B"; Steam Driven Auxiliary Feedwater Pump: Flow, differential pressure, and vibration will be measured at cold shutdown. Quarterly flow measurement would require feeding the steam generators at power. This is undesirable due to the unnecessary potential thermal shocking of the feedwater nozzles and feedrings. Therefore, cold shutdown testing constitutes the only practical interval that this test can be performed.

b. Safety Injection Pumps "A", "B", and "C": Flow, differential pressure, and vibration will be measured at refueling intervals when the reactor vessel head is removed for filling the refueling cavity. Flow measurement quarterly during normal operation is impractical due to the shutoff head of the pumps (1,500 psig) being below Reactor Coolant System operating pressure (2,235 psig). Injecting into the reactor coolant system at cold shutdown is impractical due to the potential for low temperature overpressurization of Reactor Coolant System components. Therefore, the refueling test constitutes the only practical interval for performing this test.

5.0 PROGRAM (Continued)

c. Residual heat removal pumps "A" and "B": Flow, differential pressure, and vibration will be measured at cold shutdown. Instrumentation is not installed that would allow accurate quarterly flow measurement. Therefore, the cold shutdown test constitutes the only practical interval for perform this test.

d. Boric Acid Transfer Pumps: Flow, differential pressure, and vibration will be measured at cold shutdown to supplement the testing performed quarterly. This test will measure the flow rate of the boric acid transfer pumps by performing a volume versus run time calculation. The test will pump the contents of one storage tank to the other. The level drop in one tank will be quantified and divided by the pump run time to determine the flow rate. Due to the valve lineup required, one boric acid pump at a time will be isolated during the testing. This will place the Plant in an LCO condition if the test is performed at any condition other than cold shutdown. Therefore, this testing will be performed at cold shutdown to preclude removing one train of safety-related equipment from service when the RCS temperature exceeds 200 degrees.

5.2.5 Specific Relief Request:

Measure Flow Rate Within ±2% Accuracy per Table IWP-4110-1

Applicable To:

Diesel Fuel Oil Transfer Pumps "A" and "B"

Basis for Relief Request:

These pumps will be tested quarterly by determining the amount of time necessary to refill the Diesel Fuel Oil Day Tank to a given level. These time and volume values will then be converted to gallons per minute flow rate.

5.0 PROGRAM (Continued)

No flow instrumentation is installed in this system. These are rotary pumps which deliver the same volume of liquid regardless of the discharge pressure. Therefore, differential pressure is not a limiting parameter. This method will adequately assess the flow delivery capability of the Transfer Pumps. However, using this method ±2% accuracy of the measurement cannot be assured. Relief from the ±2% accuracy requirement of Table IWP-4110-1 is requested.

Alternative Testing:

Using a time and volume calculation at quarterly intervals to determine flow rate is considered adequate to determine the above pumps' performance.

5.2.6 Specific Relief Request:

Lubricant level observation after five minutes of pump operation, IWP-3100 and IWP-3500.

Applicable To:

Steam Driven Auxiliary Feedwater Pump

Motor Driven Auxiliary Feedwater Pumps A and B

Charging Pumps A, B, and C

Residual Heat Removal Pumps A and B

Basis For Relief Request:

Oil levels in these pumps fluctuate during operation. Therefore, oil levels cannot be verified during operation since pump operation affects the oil levels.

Alternative Testing:

Oil levels will be verified as adequate prior to pump operation at quarterly intervals, as a minimum.

5.2.7 Specific Relief Request:

Differential pressure measurements as required by IWP-3000.

Applicable To:

Charging Pumps A, B and C

5.0 PROGRAM (Continued)

Basis For Relief:

The charging pumps are positive displacement pumps and, therefore, differential pressure is not a limiting parameter. The quantity of the discharge is the same for a given speed regardless of the discharge pressure. The pump cylinder volume is fixed making rotative speed the controlling variable affecting the flow rate.

Alternative Testing:

Pump operability will be determined using flow rate measurements taken at a reference value rotative speed. Differential pressure will not be measured.

5.2.8 Specific Relief Request:

Flow rate measurements as required by IWP-3000.

Applicable To:

Component Cooling Water Pumps A, B, and C

Basis For Relief Request:

The Robinson Plant design did not incorporate the flow instrumentation necessary to meet Section XI 1977 Edition Summer 1978 Addenda requirements. Therefore, this flow measurement would require a Plant design change. This design change is exempted based on 10CFR50.55a(g)(4) and (g)(5) guidelines due to the date of issue of the Robinson construction permit. These pumps are tested in essentially fixed resistance loops during normal operation. Quarterly testing and operability assessments will be based on differential pressure readings. This practice is allowed by the 1974 Edition Summer 1975 Addenda of Section XI.

5.0 PROGRAM (Continued)

Alternative Testing:

A refueling interval test will be performed which will allow measurement of pump flow, differential pressure, and vibration. The refueling interval is chosen due to the need to isolate components from the supply header in order to account for all the flow from the pumps. FI-622 in the cooling water supply to the spent fuel heat exchanger will be used to measure pump flow. Other loads on the component cooling water system will be isolated as practicable during this test.

5.2.9 Specific Relief Request:

Measure pump suction pressure prior to and during pump operation.

Applicable To:

Safety Injection A, B, C; Containment Spray A and B; Boric Acid Transfer A and B; Residual Heat Removal Pumps A and B; Service Water A, B, C, and D.

Basis For Reliefs:

There are no installed suction pressure gauges on the pumps. These pumps take suction from vented static head reservoirs during testing. Suction pressure is calculated from this reservoir level. Flow from the pumps is routed through closed systems back to the suction source. Suction pressure differences prior to and during pump operation are negligible. Static head/reservoir level will be determined immediately prior to pump operation and not during.

Alternative Testing:

None required since suction pressure values do not vary during test.

5.0 PROGRAM (Continued)

5.2.10 Specific Relief Request:

Gauge range not exceeding three times the reference value per IWP-4120.

Applicable To:

A and B RHR pump discharge pressure gauges PI-600 and PI-601.

Basis For Relief:

Applying the range criteria contained in IWP-4120 would result in requiring the subject gauges to have a full scale value of no greater than approximately 420 psi. The installed gauges have a range of 0-600 psi due to the need to operate the residual heat removal system at pressures greater than 420 psi. A 0-600 psi range is also necessary due to the 600 psi relief setpoint of valve RHR-706. A lower gauge range would result in possible overranging and equipment damage. Therefore, the installed 0-600 psi range gauge will be used in these locations.

Alternative Testing:

Applying ±2% full scale accuracy requirement of IWP-4110 would result in a calibration tolerance of approximately ±8 psi for a 0-420 psi gauge. A more conservative requirement of ±1% full scale accuracy will be applied to the 0-600 psi range gauges PI-600 and PI-601. This will result in a calibration tolerance of ±6 psi. This tolerance is more conservative than the Section XI requirement for a 0-420 psi range gauge.

VALVE RELIEF REQUESTS

5.0 PROGRAM (Continued)

5.3 Valve Relief Requests

This section provides justification for specific requests for relief from code requirements as provided for in 10CFR50.55a(g)(5)(iii). Each relief requested is identified by a unique number and identifies the valve(s) for which the relief request is being made. The code test requirement found to be impractical is defined and the basis for exclusion from code requirements is presented. Any alternate testing is specified.

5.3.1 Specific Relief Request:

Seat leak testing and Category A valves as required by IWV-3420

Applicable To:

All Category A valves for which test method is designated as J

Basis for Relief Request:

10CFR50 Appendix J requires periodic leak testing of Containment Isolation Valves. All Section XI Category A valves for this plant are containment isolation valves and require Section XI leak testing. In order to preclude redundant test requirements on these valves, the Appendix J requirements will be met in lieu of the Section XI requirements.

The H. B. Robinson containment has two features in its design that assure adequate integrity during and following a loss of Coolant Accident. These are the Isolation Valve Seal Water System and the Penetration Pressurization System. These two systems are conservatively designed, seismically qualified, and operated in accordance with Unit Technical Specifications and the requirements of 10CFR50 Appendix J for seal and surveillance systems that can be used in lieu of local Type C valve testing.

Alternate Testing:

The PPS and IVSW system will be tested as required by 10CFR50 Appendix J.

5.0 PROGRAM (Continued)

5.3.2 Specific Relief Request:

Exercising of valves as required by IWV-3520

Applicable To:

MS-261A, B, and C

Basis for Relief Request:

These valves are the Main Steam Check valves downstream of the MSIV's. Normal steam flow verifies the proper opening of the valves. Section XI requires reverse flow seating of the valves. These valves cannot be exercised shut during power operation since this would result in a plant trip. Verifying closure of these valves during cold shutdown could result in delaying start-up due to the complicated test methods needed to verify closure (i.e., valve disassembly or visual inspection from inside the main steam lines). Also, since these valves are nonisolable during power operation, any steam leaks of appreciable size would require a plant shutdown to correct. Therefore, since disassembly on a frequent basis would increase the probability of such leaks, such maintenance is not considered a feasible alternative.

Alternate Testing:

These valves will be verified shut during refueling outages by disassembly on a rotating basis (i.e., one valve each refueling). If a problem is noted with a valve during an outage inspection, the other two valves will be inspected also.

5.3.3 Specific Relief Request:

Full Stroke Testing as Required by IWV-3520

Applicable To:

Valves SI-875D, SI-875E, and SI-875F

5.0 PROGRAM (Continued)

Basis for Relief Request:

These Accumulator Check Valves are partially stroked at cold shutdown by varying reactor coolant system pressure and observing a decrease in accumulator level. Stroke verification by passing design flow during cold shutdown or refueling outages is not practical due to the large volume of water that would be added to the Reactor Coolant System and the lack of instrumentation to measure the discharge rate. During accident conditions, these check valves will function if RCS pressure drops below approximately 600 psi. Calculations have shown that a differential pressure of approximately 25 psi will shear any particles that may attempt to prevent the valve from functioning (FSAR Section 6.2.3). These measures are considered adequate to verify opening of the valve.

Alternate Testing:

These valves will be disassembled for full stroke verification each refueling on a rotating basis (i.e., one valve each refueling). The partial stroke test will continue at cold shutdown.

5.3.4 Specific Relief Request:

Full Stroke Testing as Required by IWV-3520.

Applicable To:

Valves SI-873A, SI-873B, SI-873C, SI-873D, SI-873E, SI-873F, SI-874A, and SI-874B.

Basis for Relief Request:

These valves cannot be full stroke exercised during normal operation due to the difference in pressure between the RCS (2235 psig) and the discharge head of the SI Pumps (1500 psig). Injection into the RCS during cold shutdown is not desirable due to the possibility for low temperature overpressurization of the RCS.

5.0 PROGRAM (Continued)

Alternative Testing:

At refueling intervals, these valves are fully stroked during the Safety Injection System Test while the Reactor Vessel Head is removed and the Refueling Cavity can be filled. This constitutes the only practical interval that this test can be performed.

5.3.5 Specific Relief Request:

Full Stroke Testing as Required by IWV-3520

Applicable To:

Valve SW-544

Basis for Relief Request:

This valve is partially stroked quarterly by verifying flow through a downstream tell-tale drain. Valve SW-544 is in the service water supply to the Auxiliary Feedwater (AFW) Pump Suction Line. It is a back-up water supply that would only be initiated in emergency conditions (condensate tank level less than 10% with no means of makeup). The Deep Well Water System also serves as a back-up AFW Pump suction supply source. Locked closed valves are installed downstream of SW-544. Therefore, no flow is introduced through this valve during normal plant operation. Wear due to flow fluctuations is not a concern.

Full stroke testing can only be accomplished by adding untreated lake water to the AFW System which has controlled water chemistry. Therefore, system design does not allow full stroke testing. Dismantling the valve at each cold shutdown is not considered necessary nor practical since this would disable portions of the Service Water System. Disassembly at each refueling for full stroke verification does not add to the safety margin verified by a quarterly partial stroke test. In fact, disassembly for full stroke verification may prove detrimental and could possible add to Service Water System leakage during operation. Alternative testing is

5.0 PROGRAM (Continued)

appropriate considering partial stroke testing now performed quarterly, the redundant role this system shares with the Deep Well Water System, and the absence of flow induced wear.

Alternate Testing:

This valve was disassembled during the 1984 Steam Generator Replacement Outage. Internal conditions and operability of the valve were found to be satisfactory. This valve will be disassembled at every third refueling outage. The starting point for this frequency shall be the 1984 Steam Generator Replacement Outage.

5.3.6 Specific Relief Request:

Individual Full Stroke Verification of Valves per IWV-3412

Applicable To:

Valves SW-542 and SW-543

Basis for Relief Request:

These valves are installed in parallel, nonisolable flowpaths. Therefore, full stroke verification cannot be performed individually on each valve.

Alternate Testing:

Flow through these valves is verified collectively at quarterly intervals.

5.3.7 Specific Relief Request:

Full Stroke Testing as Required by IWV-3520

Applicable To:

Valves SI-879A, SI-879B, and SI-879C

Basis for Relief:

These valves cannot be full stroke exercised during normal operation due to the difference in pressure between the RCS (2235 psig) and the discharge head of the SI Pumps (1500 psig). Design flow through these valves cannot be achieved with the system aligned for miniflow recirculation.

Injection into the RCS via the SI Pumps during cold shutdown is not desirable due to the possibility for low temperature overpressurization of the RCS.

Alternate Testing:

These valves pass design flow at Refueling outages during the SI System flow test. These valves are partial-stroke exercised quarterly by observing a pressure increase from PT-943 when each Safety Injection Pump is tested.

5.3.8 Specific Relief Request:

Full Stroke Testing as Required by IWV-3520

Applicable To:

Valves SI-890A and SI-890B

Basis for Relief Request:

These valves are partially stroked tested at cold shutdown by injecting air upstream and observing a pressure increase on a temporary test gauge downstream. The cold shutdown test constitutes the only method to verify disk travel short of initiating flow through the spray nozzles or disassembly.

Alternate Testing:

These valves are disassembled and manually stroked at refueling on a rotating basis (i.e., one valve each refueling). If a problem is noted with a valve during an outage inspection, the other valve will be inspected for full stroke operation also.

5.3.9 Specific Relief Request:

Reverse Flow Testing per IWV-3412

Applicable To:

Valve IA-525

Basis for Relief Request:

This valve, in the Instrument Air supply line to Containment, cannot be aligned for reverse flow testing during normal operation. Such testing would isolate air to certain valves in containment and would result in a potential plant trip.

5.0 PROGRAM (Continued)

A test connection was installed during the 1984 Steam Generator Replacement Outage that allows seat leakage testing and reverse flow seating verification. Due to the special set-up requirements needed to perform this test, relief from reverse flow seating verification at cold shutdown intervals is requested.

Alternate Testing:

This testing will be performed at refueling intervals coincident with the seat leakage testing.

5.3.10 Specific Relief Request:

Full Stroke Forward Testing

Applicable To:

Valve CVC-357

Basis for Relief Request:

Full stroke exercising valve CVC-357 during power operation would result in overboration of the RCS, which could result in a plant shutdown. During cold shutdown, full stroke exercising this valve could result in a low temperature overpressurization of the RCS.

Alternate Testing:

This valve will be partial stroke exercised quarterly and full stroke exercised with flow during refueling outages.

5.3.11 Specific Relief Request:

Stroke Test Required by IWV-3520

Applicable To:

Valves SI-899D and SI-899E

Basis for Relief Request:

Due to special techniques that must be performed to ensure the vacuum breaking capability of these valves, a refueling test frequency is required.

Alternate Testing:

A modification has been performed to allow bench testing of these valves.

5.0 PROGRAM (Continued)

5.3.12 Specific Relief Request:

Cycle Timing of Solenoid Actuated Valves Required by IWV-3413

Applicable To:

1. Emergency Diesel "A" Valves
   A. FO-27A: Fuel Oil Day Tank Isolation
   B. FO-29A: Fuel Oil Day Tank Isolation
   C. DA-19A and 23A: Diesel Air Start Solenoid Valves
2. Emergency Diesel "B" Valves
   A. FO-27B: Fuel Oil Day Tank Isolation
   B. FO-29B: Fuel Oil Day Tank Isolation
   C. DA-19B and 23B: Diesel Air Start Solenoid Valves

Basis for Relief Request:

Operators for these valves are designed such that actuation cannot be verified by direct observation of valve stem movement. Additionally, these valves are actuated by automatic signals from other diesel generator system components. Specifically FO-27A, 29A, 27B, and 29B are actuated by the Diesel Day Tank Level switches. The Diesel Air Start Solenoid valves are actuated in the diesel start sequence.

The design features of these valves and the inability to accurately determine the time of the actuation signals make cycle timing of these valves impractical.

Alternative Testing:

The Fuel Oil Day Tank isolation valves are cycled during the biweekly performance of the diesel generator periodic test. The air start solenoids are also cycled during this test. However, only one air start solenoid valve per diesel is tested during each biweekly diesel test. The periodic test contains instructions to isolate one of these valves per diesel

5.0 PROGRAM (Continued)

by closing an upstream isolation valve. The selection of which valve to isolate is based on the date of the test. If the test is to be performed during the first 14 days of the month, one valve per diesel would be isolated. For a test performed on or after the 15th of the month, the other valve would be isolated. Therefore, each air start solenoid valve is tested on a monthly basis.

During performance of the periodic test, failure of these valves to operate would be evident by failure to fill the Fuel Oil Day Tanks or by failure of the diesel to start.

The increased cycle frequency has been determined to be an adequate method of ensuring proper valve operation without cycle timing. Proper operation of the valves is verified by monitoring the diesel fuel oil day tank replenishment and the starting of the emergency diesel generator.

5.3.13 Specific Relief Request:

Testing valves in systems out of service required by IWV-3416.

Applicable To:

Valves MS-263A, MS-263B, and MS-263C

Basis For Relief Request:

These valves are in the lines that supply steam to the Steam Driven Auxiliary Feedwater Pump. Adequate steam supply is not available to power the Steam Driven Auxiliary Feedwater Pump and thereby verify full flow through these valves prior to leaving cold shutdown conditions.

Alternative Testing:

These valves will be tested within one week after commencing power operation (greater than 2%) or prior to reaching cold shutdown. This will apply only to situations in which the normal quarterly interval for testing was exceeded during the shutdown.

5.0 PROGRAM (Continued)

5.3.14 Specific Relief Request:

Full Stroke Testing as Required by IWP-3520

Applicable To:

Valve SI-875A, SI-875B, SI-875C, SI-876A, SI-876B, and SI-876C

Basis for Relief Request:

These valves cannot be cycled quarterly due to the RCS pressure being greater than the SI and RHR pump shut-off head and the operating pressure of the accumulators. These valves are cycled during cold shutdown by passing RHR system flow. However, the flow through each valve cannot be positively determined using equipment presently installed. The ability of each valve to pass full flow is accepted.

To supplement this cold shutdown testing, the valves will be full stroke exercised at refueling intervals. This testing will be accomplished by aligning valves RHR-744A, RHR-744B, and SI-885 to divert RHR pump discharge to "B" RCS loop with "A" and "C" loops isolated; then, to "A" and "C" loops with the "B" loop isolated. By monitoring RHR pump flow rates, the quantity of discharge into the loops can then be determined. This testing will positively prove that the cold shutdown testing is adequate to assess valve operability. This supplemental testing places the RHR system in an abnormal alignment requiring considerable coordination. Therefore, it will not be performed at cold shutdown. It is intended as a proof test of the normal cold shutdown testing and will be performed under the more stable conditions of a refueling outage.

Alternative Testing:

Cold shutdown testing using RHR system flow will continue. As a supplemental proof test, the valves will be full stroked using diverted RHR flow at refueling intervals.

ATTACHMENTS

6.0 ATTACHMENTS

6.1 Pump Test Program

6.2 Main and Extraction Steam Systems

6.3 Feedwater, Condensate and Air Evacuation Systems

6.4 Service and Cooling Water System

6.5 Primary and Makeup Water System

6.6 Emergency Diesel Generator System

6.7 Fuel Oil System

6.8 Steam Generator Blowdown and Wet Layup System

6.9 Penetration Pressurization System

6.10 Isolation Valve Seal Water System

6.11 HVAC - Turbine, Fuel, Auxiliary and Reactor Building Systems

6.12 Primary Sampling System

6.13 Component Cooling Water System

6.14 Chemical and Volume Control System

6.15 Chemical and Volume Control System

6.16 Liquid Waste Disposal System

6.0 ATTACHMENTS (Continued)

6.17 Gaseous Waste Disposal System

6.18 Safety Injection System

6.19 Residual Heat Removal System

6.20 Reactor Coolant System

6.21 Containment Vapor and Pressure Sampling System

6.22 Post Accident Containment Venting System

6.23 Fire Protection System

6.24 Fuel Transfer Tube

6.25 Additional Information

PUMP TEST PROGRAM

PUMP NAME & DRAWING NUMBER	PUMP NO.	TEST PARAMETER MEASURED							RELIEF REQUEST AND REMARKS
		SPEED n	INLET PRESSURE P	DIFFERENTIAL PRESSURE ΔP	FLOW RATE Q	VIBRATION AMPLITUDE V	LUBRICANT LEVEL OR PRESSURE	BEARING TEMPERATURE T_b	
Auxiliary Feedwater G-190197	AFW-A*	NR	Q,C	Q,C	C	Q,C	Q,C	NR	OST-201, 207, 5.2.1, 5.2.2, 5.2.4, 5.2.6
	AFW-B*	NR	Q,C	Q,C	C	Q,C	Q,C	NR	OST-201, 207, 5.2.1, 5.2.2, 5.2.4, 5.2.6
	AFW-SD	Q	Q,C	Q,C	C	Q,C	Q,C	NR	OST-202, 206, 5.2.1, 5.2.2, 5.2.4, 5.2.6
Safety Injection 5379-1082	SI-A*	NR	Q,R	Q,R	R	Q,R	Q,R	NR	OST-151, 154, 5.2.1, 5.2.2, 5.2.4, 5.2.9
	SI-B*	NR	Q,R	Q,R	R	Q,R	Q,R	NR	OST-151, 154, 5.2.1, 5.2.2, 5.2.4, 5.2.9
	SI-C*	NR	Q,R	Q,R	R	Q,R	Q,R	NR	OST-151, 154, 5.2.1, 5.2.2, 5.2.4, 5.2.9

*Synchronous or induction motors do not require speed check (IWP-4400).

PUMP TEST PROGRAM

PUMP NAME & DRAWING NUMBER	PUMP NO.	TEST PARAMETER MEASURED							RELIEF REQUEST AND REMARKS
		SPEED n	INLET PRESSURE P	DIFFERENTIAL PRESSURE ΔP	FLOW RATE Q	VIBRATION AMPLITUDE V	LUBRICANT LEVEL OR PRESSURE	BEARING TEMPERATURE T_b	
Residual Heat Removal 5379-1484	RHR-A*	NR	Q,C	Q,C	C	Q,C	Q,C	NR	OST-251, 253, 5.2.1, 5.2.2, 5.2.4, 5.2.6, 5.2.9, 5.2.10
	RHR-B*	NR	Q,C	Q,C	C	Q,C	Q,C	NR	OST-251, 253, 5.2.1, 5.2.2, 5.2.4, 5.2.6, 5.2.9, 5.2.10
Containment Spray 5379-1082	CS-A*	NR	Q	Q	Q	Q	Q	NR	OST-352, 5.2.1, 5.2.2, 5.2.9
	CS-B*	NR	Q	Q	Q	Q	Q	NR	OST-352, 5.2.1, 5.2.2, 5.2.9
Service Water G-190199	SW-A*	NR	Q,R	Q,R	NR	Q	Q,R	NR	OST-301, 302, 5.2.1, 5.2.3, 5.2.9
	SW-B*	NR	Q,R	Q,R	NR	Q	Q,R	NR	OST-301, 302, 5.2.1, 5.2.3, 5.2.9
	SW-C*	NR	Q,R	Q,R	NR	Q	Q,R	NR	OST-301, 302, 5.2.1, 5.2.3, 5.2.9
	SW-D*	NR	Q,R	Q,R	NR	Q	Q,R	NR	OST-301, 302, 5.2.1, 5.2.3, 5.2.9

*Synchronous or induction motors do not require speed check (IWP-4400).

PUMP TEST PROGRAM

PUMP NAME & DRAWING NUMBER	PUMP NO.	TEST PARAMETER MEASURED							RELIEF REQUEST AND REMARKS
		SPEED n	INLET PRESSURE P	DIFFERENTIAL PRESSURE ΔP	FLOW RATE Q	VIBRATION AMPLITUDE V	LUBRICANT LEVEL OR PRESSURE	BEARING TEMPERATURE T_b	
Component Cooling 5379-376	CCW-A*	NR	Q,R	Q,R	R	Q,R	Q,R	NR	OST-908, OST-917, 5.2.1, 5.2.2, 5.2.8
	CCW-B*	NR	Q,R	Q,R	R	Q,R	Q,R	NR	OST-908, OST-917, 5.2.1, 5.2.2, 5.2.8
	CCW-C*	NR	Q,R	Q,R	R	Q,R	Q,R	NR	OST-908, OST-917, 5.2.1, 5.2.2, 5.2.8
Service Water Booster G-190199	SWBP-A*	NR	Q,R	Q,R	Q	Q	Q,R	NR	OST-301, OST-302, 5.2.1, 5.2.2
	SWBP-B*	NR	Q,R	Q,R	Q	Q	Q,R	NR	OST-302, OST-302, 5.2.1, 5.2.2
Charging 5379-685	CVC-A	Q	Q	Q	Q	Q	Q	NR	OST-101, 5.2.1, 5.2.2, 5.2.6, 5.2.7
	CVC-B	Q	Q	Q	Q	Q	Q	NR	OST-101, 5.2.1, 5.2.2, 5.2.6, 5.2.7
	CVC-C	Q	Q	Q	Q	Q	Q	NR	OST-101, 5.2.1, 5.2.2, 5.2.6, 5.2.7

*Synchronous or induction motors do not require speed check (IWP-4400).

PUMP TEST PROGRAM

PUMP NAME & DRAWING NUMBER	PUMP NO.	TEST PARAMETER MEASURED							RELIEF REQUEST AND REMARKS
		SPEED n	INLET PRESSURE P	DIFFERENTIAL PRESSURE ΔP	FLOW RATE Q	VIBRATION AMPLITUDE V	LUBRICANT LEVEL OR PRESSURE	BEARING TEMPERATURE T_b	
Boric Acid Transfer 5379-685	A*	NR	Q,R	Q,C	C	Q,C	NR	NR	OST-108, 5.2.1, 5.2.4, 5.2.9
	B*	NR	Q,R	Q,C	C	Q,C	NR	NR	OST-108, 5.2.1, 5.2.4, 5.2.9
Diesel Fuel Transfer G-190204-D	A*	NR	Q	Q	Q	Q	NR	NR	OST-402, 403, 5.2.1, 5.2.5
	B*	NR	Q	Q	Q	Q	NR	NR	OST-402, 403, 5.2.1, 5.2.5

*Synchronous or induction motors do not require speed check (IWP-4400).

MAIN & EXTRACTION STEAM SYSTEMS

P&ID NO. G-190196

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
V1-3A ISOLN.	2	1 of 3 (C-4)	X		26	STOP CK	AO	O	N	S F T VI	C C C C		5	OST-702
V1-3B ISOLN.	2	1 of 3 (E-4)	X		26	STOP CK	AO	O	N	S F T VI	C C C C		5	OST-702
V1-3C ISOLN.	2	1 of 3 (G-4)	X		26	STOP CK	AO	O	N	S F T VI	C C C C		5	OST-702
V1-8A	2	1 of 3 (B-4)	X		2	GL	MO	CL	N	S T VI	M M M		15	OST-202, 205
V1-8B	2	1 of 3 (D-4)	X		2	GL	MO	CL	N	S T VI	M M M		15	OST-202, 205
V1-8C	2	1 of 3 (F-4)	X		2	GL	MO	CL	N	S T VI	M M M		15	OST-202, 205
MS-261A (MS-V1-3A)	2	1 of 3 (C-4)	X		26	CK	SA	O	N	RF	R	5.3.2		EST-086

MAIN & EXTRACTION STEAM SYSTEMS

P&ID NO. G-190196

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
MS-261B (MS-V1-3B)	2	1 of 3 (E-4)	X		26	CK	SA	O	N	RF	R	5.3.2		EST-086
MS-261C (MS-V1-3C)	2	1 of 3 (G-4)	X		26	CK	SA	O	N	RF	R	5.3.2		EST-086
MS-263A (MS-V1-9A)	2	1 of 3 (C-5)	X		2	CK	SA	CL	N	FF	M	5.3.13		OST-202
MS-263B (MS-V1-9B)	2	1 of 3 (D-5)	X		2	CK	SA	CL	N	FF	M	5.3.13		OST-202
MS-263C (MS-V1-9C)	2	1 of 3 (F-5)	X		2	CK	SA	CL	N	FF	M	5.3.13		OST-202
SV1-1A	2	1 of 3 (C-6)	X		6	RV	SA	CL	N	RV	R			EST-028
SV1-1B	2	1 of 3 (E-6)	X		6	RV	SA	CL	N	RV	R			EST-028
SV1-1C	2	1 of 3 (G-6)	X		6	RV	SA	CL	N	RV	R			EST-028
SV1-2A	2	1 of 3 (C-6)	X		6	RV	SA	CL	N	RV	R			EST-028
SV1-2B	2	1 of 3 (E-6)	X		6	RV	SA	CL	N	RV	R			EST-028

MAIN & EXTRACTION STEAM SYSTEMS

P&ID NO. G-190196

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
SV1-2C	2	1 of 3 (G-6)	X		6	RV	SA	CL	N	RV	R			EST-028
SV1-3A	2	1 of 3 (C-5)	X		6	RV	SA	CL	N	RV	R			EST-028
SV1-3B	2	1 of 3 (E-5)	X		6	RV	SA	CL	N	RV	R			EST-028
SV1-3C	2	1 of 3 (G-5)	X		6	RV	SA	CL	N	RV	R			EST-028
SV1-4A	2	1 of 3 (C-5)	X		6	RV	SA	CL	N	RV	R			EST-028
SV1-4B	2	1 of 3 (E-5)	X		6	RV	SA	CL	N	RV	R			EST-028
SV1-4C	2	1 of 3 (G-5)	X		6	RV	SA	CL	N	RV	R			EST-028

FEEDWATER, CONDENSATE & AIR EVACUATION SYSTEMS

P&ID NO. G-190197

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
AFW-2	3	1 of 4 (B-7)	X		6	CK	SA	CL	N	FF RF	C C			Reverse Flow OST-702. Partial Stroke Quarterly - OST-201 Full Stroke Cold Shutdown - OST-207
AFW-9A	3	4 of 4 (D-4)	X		2	CK	SA	CL	N	FF	M			OST-202
V2-20A	3	4 of 4 (C-5)	X		4	GA	MO	O	N	S T VI	M M M		30	OST-201
V2-20B	3	4 of 4 (B-5)	X		4	GA	MO	O	N	S T VI	M M M		30	OST-201
AFW-24	3	4 of 4 (B-2)	X		6	GA	M	LC	N	S	Q			OST-701
AFW-40	3	4 of 4 (C-4)	X		4	CK	SA	CL	N	FF	C			Partial Stroke Quarterly - OST-201. Full Stroke Cold Shutdown - OST-207
AFW-41	3	4 of 4 (B-4)	X		4	CK	SA	CL	N	FF	C			Partial Stroke Quarterly - OST-201. Full Stroke Cold Shutdown - OST-207
AFW-68	2	4 of 4 (B-6)	X		4	CK	SA	CL	Y	FF	C			OST-207
AFW-69	2	4 of 4 (C-6)	X		4	CK	SA	CL	Y	FF	C			OST-207

FEEDWATER, CONDENSATE & AIR EVACUATION SYSTEMS

P&ID NO. G-190197

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
AFW-70	2	4 of 4 (B-6)	X		4	CK	SA	CL	Y	FF	C			OST-207
AFW-84 (AFW-19)	3	4 of 4 (D-4)	X		6	CK	SA	CL	N	FF	C			Full Stroke Cold Shutdown - OST-206. Partial Stroke Monthly - OST-202
V2-14A	3	4 of 4 (G-4)	X		4	GA	MO	CL	Y	S T VI	M M M		30	OST-202, 205
V2-14B	3	4 of 4 (F-4)	X		4	GA	MO	CL	Y	S T VI	M M M		30	OST-202, 205
V2-14C	3	4 of 4 (E-4)	X		4	GA	MO	CL	Y	S T VI	M M M		30	OST-202, 205
V2-16A	2	4 of 4 (B-5)	X		4	GA	MO	CL	N	S T VI	M M M		30	OST-201
V2-16B	2	4 of 4 (C-5)	X		4	GA	MO	CL	N	S T VI	M M M		30	OST-201
V2-16C	2	4 of 4 (B-5)	X		4	GA	MO	CL	N	S T VI	M M M		30	OST-201

FEEDWATER, CONDENSATE [redacted]IR EVACUATION SYSTEM

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
FCV-479	3	4 of 4 (G-3)	X		4	GL	AO	CL	Y	S	C			OST-702
										F	C			
										T	C		15	
										VI	C			
FCV-489	3	4 of 4 (F-3)	X		4	GL	AO	CL	Y	S	C			OST-702
										F	C			
										T	C		15	
										VI	C			
FCV-499	3	4 of 4 (E-3)	X		4	GL	AO	CL	Y	S	C			OST-702
										F	C			
										T	C		15	
										VI	C			
FCV-1424 (AFW-45)	3	4 of 4 (C-4)	X		4	GA	MO	CL	N	S	Q			
										F	Q			OST-201
										T	Q		10	
										VI	Q			
FCV-1425 (AFW-46)	3	4 of 4 (B-4)	X		4	GA	MO	CL	N	S	Q			
										F	Q			OST-201
										T	Q		10	
										VI	Q			
FCV-6416 (AFW-26)	3	4 of 4 (D-4)	X		6	GA	MO	O	N	S	Q			
										F	Q			OST-202
V2-6A	3	4 of 4 (G-2)	X		16	GA	MO	O	N	S	C			OST-702
										T	C		80	
										VI	C			
V2-6B	3	4 of 4 (F-2)	X		16	GA	MO	O	N	S	C			OST-702
										T	C		80	
										VI	C			
V2-6C	3	4 of 4 (E-2)	X		16	GA	MO	O	N	S	C			OST-702
										T	C		80	
										VI	C			

SERVICE & COOLING WATER SYSTEM

P&ID NO. G-190199

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
118	3	10 of 12 (C-4)	X		6	GA	M	LC	N	S	Q			OST-701
261	3	10 of 12 (F-2)	X		1	CK	SA	CL	N	FF	Q			OST-204
272	3	10 of 12 (E-1)	X		1	CK	SA	CL	N	FF	Q			OST-204
374	3	2 of 12 (C-8)	X		18	CK	SA	O/CL	N	FF RF	M M			OST-302
375	3	2 of 12 (C-6)	X		18	CK	SA	O/CL	N	FF RF	M M			OST-302
376	3	2 of 12 (C-7)	X		18	CK	SA	O/CL	N	FF RF	M M			OST-302
377	3	2 of 12 (C-5)	X		18	CK	SA	O/CL	N	FF RF	M M			OST-302
541	3	9 of 12 (G-6)	X		30	CK	SA	O/CL	N	FF RF	M M			OST-302
542	3	10 of 12 (B-4)	X		1	CK	SA	O/CL	N	FF	M	5.3.6		OST-202
543	3	10 of 12 (B-4)	X		1	CK	SA	CL	N	FF	M	5.3.6		OST-202
544	3	10 of 12 (C-4)	X		6	CK	SA	CL	N	FF	Q 3R	5.3.5		OST-701 (Partial Stroke) EST-074

SERVICE & COOLING WATER SYSTEM

P&ID NO. G-190199

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
545	3	10 of 12 (B-3)	X		30	CK	SA	O/CL	N	FF RF	M M			OST-302
546	3	4 of 12 (F-4)	X		3/4 x 1	RV	SA	CL	Y	RV	X			EST-029
547	3	4 of 12 (F-4)	X		3/4 x 1	RV	SA	CL	Y	RV	X			EST-029
548	3	4 of 12 (E-4)	X		3/4 x 1	RV	SA	CL	Y	RV	X			EST-029
549	3	4 of 12 (D-4)	X		3/4 x 1	RV	SA	CL	Y	RV	X			EST-029
560	3	7 of 12 (F-5)	X		12	CK	SA	O/CL	N	FF RF	M			OST-302
561	3	7 of 12 (E-5)	X		12	CK	SA	O/CL	N	FF RF	M			OST-302
562	3	9 of 12 (D-6)	X		1	CK	SA	O/CL	N	FF	M			OST-201
563	3	9 of 12 (E-6)	X		1	CK	SA	O/CL	N	FF	M			OST-201
V6-16A	3	10 of 12 (B-3)	X		16	BF	MO	O	N	S T VI	M M M		30	OST-302

SERVICE & COOLING WATER SYSTEM

P&ID NO. G-190199

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
V6-16B	3	10 of 12 (C-3)	X		16	BF	MO	O	N	S T VI	M M M		30	OST-302
V6-33A	2	7 of 12 (E-3)	X		6	BF	MO	O	N	S T VI	M M M		30	OST-902
V6-33B	2	7 of 12 (E-3)	X		6	BF	MO	O	N	S T VI	M M M		30	OST-902
V6-33C	2	7 of 12 (G-3)	X		6	BF	MO	O	N	S T VI	M M M		30	OST-902
V6-33D	2	7 of 12 (F-3)	X		6	BF	MO	O	N	S T VI	M M M		30	OST-902
V6-33E	2	7 of 12 (E-4)	X		6	BF	MO	O	N	S T VI	M M M		30	OST-902
V6-33F	2	7 of 12 (F-4)	X		6	BF	MO	O	N	S T VI	M M M		30	OST-902
V6-34A	2	5 of 12 (C-6)	X		6	BF	MO	O	N	S T VI	M M M		20	OST-902

SERVICE & COOLING WATER SYSTEM

P&ID NO. G-190199

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
V6-34B	2	5 of 12 (D-6)	X		6	BF	MO	O	N	S T VI	M M M		20	OST-902
V6-34C	2	5 of 12 (E-6)	X		6	BF	MO	O	N	S T VI	M M M		20	OST-902
V6-34D	2	5 of 12 (F-6)	X		6	BF	MO	O	N	S T VI	M M M		20	OST-902
V6-35A	2	4 of 12 (G-3)	X		1	GL	MO	O	N	S T VI	M M M		8	OST-902
V6-35B	2	4 of 12 (G-4)	X		1	GL	MO	O	N	S T VI	M M M		8	OST-902
V6-35C	2	4 of 12 (G-3)	X		1	GL	MO	O	N	S T VI	M M M		8	OST-902
V6-35D	2	4 of 12 (G-3)	X		1	GL	MO	O	N	S T VI	M M M		8	OST-902
TCV-1660	3	6 of 12	X (C-1)		4	GL	AO	O	N	S T F	BW BW BW		10	OST-401

SERVICE & COOLING WATER SYSTEM

P&ID NO. G-190199

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
TCV-1661	3	6 of 12 (C-5)	X		4	GL	AO	O	N	S T F	BW BW BW		10	OST-401
TCV-1902A	3	10 of 12 (F-3)	X		1	GL	AO	O	N	S T F	M M M		10	OST-202, 205
TCV-1903A	3	9 of 12 (B-5)	X		1	GL	AO	O	N	S T F	M M M		10	OST-201
TCV-1903B	3	9 of 12 (F-5)	X		1	GL	AO	O	N	S T F	M M M		10	OST-201
V6-12A	3	2 of 12 (D-7)	X		30	BF	MO	O	N	S T VI	M M M		30	OST-302
V6-12B	3	2 of 12 (C-7)	X		30	BF	MO	O	N	S T VI	M M M		30	OST-302
V6-12C	3	2 of 12 (C-7)	X		30	BF	MO	O	N	S T VI	M M M		30	OST-302
V6-12D	3	2 of 12 (D-5)	X		30	BF	MO	O	N	S T VI	M M M		30	OST-302

PRIMARY & MAKE-UP WATER SYSTEM

P&ID NO. G-190202

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
DW-19	3	1 of 4 (A-7)	X		6	GA	M	LC	N	S	Q		NA	OST-701
DW-21	3	1 of 4 (A-8)	X		6	GA	M	LC	N	S	Q		NA	OST-701

EMERGENCY DIESEL GENERATOR SYSTEM

P&ID NO. G-190204A

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
DA-9A (DG-ASA-1)	3	1 of 3 (B-4)	X		3/4	CK	SA	-	N	FF RF	Q Q			OST-701
DA-9B (DG-ASB-1)	3	1 of 3 (E-4)	X		3/4	CK	SA	-	N	FF RF	Q Q			OST-701
DA-11A	3	1 of 3 (B-4)	X		1/2 x 3/4	RV	SA	CL	N	RV	X			EST-029
DA-11B	3	1 of 3 (E-4)	X		1/2 x 3/4	RV	SA	CL	N	RV	X			EST-029
DA-19A	3	1 of 3 (B-6)	X		1½	3W	SO	O/CL	N	S	M	5.3.12		OST-401
DA-19B	3	1 of 3 (E-6)	X		1½	3W	SO	O/CL	N	S	M	5.3.12		OST-401
DA-20A	3	1 of 3 (B-6)	X		1½	CK	SA	-	N	FF RF	M			OST-401
DA-20B	3	1 of 3 (E-6)	X		1½	CK	SA	-	N	FF RF	M			OST-401
DA-23A	3	1 of 3 (B-6)	X		1½	3W	SO	O/CL	N	S	M	5.3.12		OST-401
DA-23B	3	1 of 3 (E-6)	X		1½	3W	SO	O/CL	N	S	M	5.3.12		OST-401
DA-24A	3	1 of 3 (B-6)	X		1½	CK	SA	-	N	FF RF	M			OST-401
DA-24B	3	1 of 3 (E-6)	X		1½	CK	SA	-	N	FF RF	M			OST-401

EMERGENCY DIESEL GENERATOR SYSTEM

P&ID NO. G-190204A

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
DA-28 (DG-AS-10)	3	1 of 3 (D-4)	X		2	GL	M	CL	N	S VI	Q Q			OST-701
DA-30 (DG-AS-14)	3	1 of 3 (D-3)	X		3/4	GL	M	CL	N	S VI	Q Q			OST-701

FUEL OIL SYSTEM

P&ID NO. G-190204-D

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
FO-21A (V9-13)	3	2 of 2 (D-7)	X		2	CK	SA	-	N	FF	M			OST-403
FO-21B (V9-13)	3	2 of 2 (D-8)	X		2	CK	SA	-	N	FF	M			OST-403
FO-24 (DG-FO-14)	3	2 of 2 (C-7)	X		2	GL	M	CL	N	S	Q			OST-701
FO-27A (DG-FO-9A-1)	3	2 of 2 (C-6)	X		2	GA	SO	CL	N	S	Q	5.3.12		OST-701
FO-27B (DG-FO-9B-1)	3	2 of 2 (B-6)	X		2	GA	SO	CL	N	S	Q	5.3.12		OST-701
FO-28A (DG-FO-10A)	3	2 of 2 (C-6)	X		2	GL	M	CL	N	S	Q			OST-701
FO-28B (DG-FO-10B)	3	2 of 2 (B-6)	X		2	GL	M	CL	N	S	Q			OST-701
FO-29A (DG-FO-9A2)	3	2 of 2 (C-6)	X		2	GA	SO	CL	N	S	Q	5.3.12		OST-701
FO-29B (DG-FO-9B2)	3	2 of 2 (B-6)	X		2	GA	SO	CL	N	S	Q	5.3.12		OST-701

STEAM GENERATOR BLOWDOWN & WET LAYUP SYSTEM

P&ID NO. G-190234

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
FCV-1930A	2	1 of 3 (F-6)	X		3	GA	AO	O	N	S	Q			OST-701
										F	Q			
										T	Q		15	
										VI	Q			
										J	J	5.3.1		EST-004
FCV-1930B	2	1 of 3 (F-6)	X		3	GA	AO	O	N	S	Q			OST-701
										F	Q			
										T	Q		15	
										VI	Q			
										J	J	5.3.1		EST-004
FCV-1931A	2	1 of 3 (E-6)	X		3	GA	AO	O	N	S	Q			OST-701
										F	Q			
										T	Q		15	
										VI	Q			
										J	J	5.3.1		EST-004
FCV-1931B	2	1 of 3 (E-6)	X		3	GA	AO	O	N	S	Q			OST-701
										F	Q			
										T	Q		15	
										VI	Q			
										J	J	5.3.1		EST-004
FCV-1932A	2	1 of 3 (C-6)	X		3	GA	AO	O	N	S	Q			OST-701
										F	Q			
										T	Q		15	
										VI	Q			
										J	J	5.3.1		EST-004

STEAM GENERATOR BLOWDOWN & WET LAYUP SYSTEM

P&ID NO. G-190234

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
FCV-1932B	2	1 of 3 (C-6)	X		3	GA	AO	O	N	S	Q			OST-701
										F	Q			
										T	Q		15	
										VI	Q			
										J	J	5.3.1		EST-004
FCV-1933A	2	1 of 3 (F-6)	X		3/4	GA	AO	O	N	S	Q			OST-701
										F	Q			
										T	Q		15	
										VI	Q			
										J	J	5.3.1		EST-004
FCV-1933B	2	1 of 3 (F-6)	X		3/4	GA	AO	O	N	S	Q			OST-701
										F	Q			
										T	Q		15	
										VI	Q			
										J	J	5.3.1		EST-004
FCV-1934A	2	1 of 3 (D-6)	X		3/4	GA	AO	O	N	S	Q			OST-701
										F	Q			
										T	Q		15	
										VI	Q			
										J	J	5.3.1		EST-004
FCV-1934B	2	1 of 3 (D-6)	X		3/4	GA	AO	O	N	S	Q			OST-701
										F	Q			
										T	Q		15	
										VI	Q			
										J	J	5.3.1		EST-004

STEAM GENERATOR BLOWDOWN & WET LAYUP SYSTEM

P&ID NO. G-190234

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
FCV-1935A	2	1 of 3 (C-6)	X		3/4	GA	AO	O	N	S	Q			OST-701
										F	Q			
										T	Q		15	
										VI	Q			
										J	J	5.3.1		EST-004
FCV-1935B	2	1 of 3 (B-6)	X		3/4	GA	AO	O	N	S	Q			OST-701
										F	Q			
										T	Q		15	
										VI	Q			
										J	J	5.3.1		EST-004

PENETRATION PRESSURIZATION SYSTEM

P&ID NO. G-190261

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
225C	2	4 of 4 (G-6)	X	X	3/8	GL	M	CL	N	J	J	5.3.1		
226C	2	4 of 4 (E-6)	X	X	3/8	GL	M	CL	N	J	J	5.3.1		
235C	2	4 of 4 (D-6)	X	X	3/8	GL	M	CL	N	J	J	5.3.1		
241C	2	4 of 4 (G-2)	X	X	3/8	GA	M	CL	N	J	J	5.3.1		
245A	2	4 of 4 (D-4)	X	X	3/8	GL	M	CL	N	J	J	5.3.1		
248A	2	4 of 4 (G-3)	X	X	3/8	GL	M	CL	N	J	J	5.3.1		
251C	2	4 of 4 (D-8)	X	X	3/8	GL	M	CL	N	J	J	5.3.1		
274D	2	2 of 4 (C-4)	X	X	3/8	GL	M	O	N	J	J	5.3.1		
275D	2	2 of 4 (C-4)	X	X	3/8	GL	M	O	N	J	J	5.3.1		
291A	2	4 of 4 (D-B)	X	X	3/8	GL	M	-	N	J	J	5.3.1		

PENETRATION PRESSURIZATION SYSTEM

P&ID NO. G-190261

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
EV-1721A	2	4 of 4 (C-7)	X		1	3W	SO	-	N	S J	Q J	5.3.1		OST-701
EV-1722	2	4 of 4 (D-4)	X	X	1	3W	SO	-	N	J	J	5.3.1		OST-703
EV-1723	2	4 of 4 (G-3)	X	X	1	3W	SO	-	N	J S	J C	5.3.1		OST-704
EV-1724	2	4 of 4 (G-1)	X	X	1	3W	SO	-	N	J S	J C	5.3.1		OST-704
EV-1727	2	4 of 4 (E-6)	X		3/8	3W	SO	-	N	S J	Q J	5.3.1		OST-701
EV-1728	2	4 of 4 (G-6)	X		3/8	3W	SO	-	N	S J	Q J	5.3.1		OST-701
EV-1743 (EV-H2B)	2	4 of 4 (D-6)	X		3/8	3W	SO	-	N	S J	C J	5.3.1		OST-703

ISOLATION VALVE SEAL WATER SYSTEM

P&ID NO. G-190262

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
IVSW-70	2	1 of 1 (D-2)	X X	X	3/8	CK	SA	CL	Y					
IVSW-71	2	1 of 1 (C-2)	X X	X	3/8	CK	SA	CL	Y					
IVSW-72	2	1 of 1 (C-2)	X X	X	3/8	CK	SA	CL	Y					
IVSW-73	2	1 of 1 (C-2)	X X	X	3/8	CK	SA	CL	Y					
IVSW-74	2	1 of 1 (B-2)	X X	X	3/8	CK	SA	CL	Y					
IVSW-75	2	1 of 1 (B-2)	X X	X	3/8	CK	SA	CL	Y					
IVSW-76	2	1 of 1 (C-4)	X X	X	3/8	CK	SA	CL	Y					
IVSW-77	2	1 of 1 (C-4)	X X	X	3/8	CK	SA	CL	Y					
IVSW-78	2	1 of 1 (C-4)	X X	X	3/8	CK	SA	CL	Y					
IVSW-79	2	1 of 1 (C-4)	X X	X	3/8	CK	SA	CL	Y					

ISOLATION VALVE SEAL WATER SYSTEM

P&ID NO. G-190262

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
IVSW-80	2	1 of 1 (B-4)	X X	X	3/8	CK	SA	CL	Y					
IVSW-81	2	1 of 1 (B-4)	X X	X	3/8	CK	SA	CL	Y					
IVSW-82	2	1 of 1 (E-8)	X X	X	3/8	CK	SA	CL	Y					
IVSW-83	2	1 of 1 (E-8)	X X	X	3/8	CK	SA	CL	Y					
IVSW-84	2	1 of 1 (D-8)	X X	X	3/8	CK	SA	CL	Y					
IVSW-85	2	1 of 1 (D-8)	X X	X	3/8	CK	SA	CL	Y					
IVSW-86	2	1 of 1 (D-8)	X X	X	3/8	CK	SA	CL	Y					
IVSW-87	2	1 of 1 (D-8)	X X	X	3/8	CK	SA	CL	Y					
IVSW-88	2	1 of 1 (C-8)	X X	X	3/8	CK	SA	CL	Y					
IVSW-89	2	1 of 1 (C-8)	X X	X	3/8	CK	SA	CL	Y					

ISOLATION VALVE SEAL WATER SYSTEM

P&ID NO. G-190262

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
IVSW-90	2	1 of 1 (C-7)	X X	X	3/8	CK	SA	CL	Y					
IVSW-91	2	1 of 1 (C-7)	X X	X	3/8	CK	SA	CL	Y					
IVSW-92	2	1 of 1 (B-7)	X X	X	3/8	CK	SA	CL	Y					
IVSW-93	2	1 of 1 (F-7)	X X	X	3/8	CK	SA	CL	Y					
IVSW-94	2	1 of 1 (F-7)	X X	X	3/8	CK	SA	CL	Y					
IVSW-95	2	1 of 1 (F-7)	X X	X	3/8	CK	SA	CL	Y					
IVSW-96	2	1 of 1 (G-7)	X X	X	3/8	CK	SA	CL	Y					
IVSW-97	2	1 of 1 (G-7)	X X	X	3/8	CK	SA	CL	Y					
IVSW-98	2	1 of 1 (C-2)	X X	X	3/8	CK	SA	CL	Y					
ADV-26-E	2	1 of 1 (B-4)	X	X	3/8	GA	SO	O	Y					

ISOLATION VALVE SEAL WATER SYSTEM

P&ID NO. C-190262

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
ADV-30A	2	1 of 1 (E-7)	X	X	3/8	GA	SO	O	Y					
ADV-30C	2	1 of 1 (C-7)	X	X	3/8	GA	SO	O	Y					
ADV-30C-1	2	1 of 1 (C-7)	X	X	3/8	GA	SO	O	Y					
ADV-30C-2	2	1 of 1 (B-7)	X	X	3/8	GA	SO	O	Y					

HVAC- TURBINE, FUEL, AUXILIARY & REACTOR BUILDING SYSTEMS

P&ID NO. G-190304

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
RMS-1	2	1 of 2 (1-18)	X		1	DA	AO	O	N	S	Q			OST-701
										F	Q			
										T	Q		15	
										VI	Q			
										J	J	5.3.1		
RMS-2	2	1 of 2 (I-19)	X		1	DA	AO	O	N	S	Q			OST-701
										F	Q			
										T	Q		15	
										VI	Q			
										J	J	5.3.1		
RMS-3	2	1 of 2 (I-18)	X		1	DA	AO	O	N	S	Q			OST-701
										F	Q			
										T	Q		15	
										VI	Q			
										J	J	5.3.1		
RMS-4	2	1 of 2 (I-19)	X		1	DA	AO	O	N	S	Q			OST-701
										F	Q			
										T	Q		15	
										VI	Q			
										J	J	5.3.1		
V12-6	2	1 of 2 (F-10)	X		42	BF	AO	CL	N	S	QQ			OST-704
										F	QQ			
										T	QQ		2	
										VI	QQ			
										J	J	5.3.1		

HVAC- TURBINE, FUEL, AUXILIARY & REACTOR BUILDING SYSTEMS

P&ID NO. G-190304

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
V12-7	2	1 of 2 (F-11)	X		42	BF	AO	CL	N	S F T VI J	QQ QQ QQ QQ J	 5.3.1	 2 	OST-704
V12-8	2	1 of 2 (G-18)	X		42	BF	AO	CL	N	S F T VI J	QQ QQ QQ QQ J	 5.3.1	 2 	OST-704
V12-9	2	1 of 2 (G-17)	X		42	BF	AO	CL	N	S F T VI J	QQ QQ QQ QQ J	 5.3.1	 2 	OST-704
V12-10	2	1 of 2 (H-18)	X		6	BF	AO	CL	Y	S F T VI J	Q Q Q Q J	 5.3.1	 10 	OST-701
V12-11	2	1 of 2 (H-17)	X		6	BF	AO	CL	Y	S F T VI J	Q Q Q Q J	 5.3.1	 10 	OST-701

HVAC- TURBINE, FUEL, AUXILIARY & REACTOR BUILDING SYSTEMS

P&ID NO. G-190304

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
V12-12	2	1 of 2 (G-10)	X	X	6	BF	AO	CL	N	S T VI F J	C C C C J	 5.3.1	10	OST-703
V12-13	2	1 of 2 (G-11)	X	X	6	BF	AO	CL	N	S T VI F J	C C C C J	 5.3.1	10	OST-703

PRIMARY SAMPLING SYSTEM

P&ID NO. 5379-353

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
956A	2	1 of 1 (G-6)	X		3/8	GL	AO	CL	Y	S	Q			OST-701
										F	Q			
										T	Q		10	
										VI	Q			
										J	J	5.3.1		EST-004
956B	2	1 of 1 (G-6)	X		3/8	GL	AO	CL	Y	S	Q			OST-701
										F	Q			
										T	Q		10	
										VI	Q			
										J	J	5.3.1		EST-004
956C	2	1 of 1 (F-6)	X		3/8	GL	AO	CL	Y	S	Q			OST-701
										F	Q			
										T	Q		10	
										VI	Q			
										J	J	5.3.1		EST-004
956D	2	1 of 1 (F-6)	X		3/8	GL	AO	CL	Y	S	Q			OST-701
										F	Q			
										T	Q		10	
										VI	Q			
										J	J	5.3.1		EST-004
956E	2	1 of 1 (E-6)	X		3/8	GL	AO	CL	Y	S	Q			OST-701
										F	Q			
										T	Q		10	
										VI	Q			
										J	J	5.3.1		EST-004

PRIMARY SAMPLING SYSTEM

P&ID NO. 5379-353

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
956F	2	1 of 1 (E-6)	X		3/8	GL	AO	CL	Y	S	Q			OST-701
										F	Q			
										T	Q		10	
										VI	Q			
										J	J	5.3.1		EST-004
956G	2	1 of 1 (E-6)	X		3/8	GL	AO	CL	Y	S	Q			OST-701
										F	Q			
										T	Q		10	
										VI	Q			
										J	J	5.3.1		EST-004
956H	2	1 of 1 (E-6)	X		3/8	GL	AO	CL	Y	S	Q			OST-701
										F	Q			
										T	Q		10	
										VI	Q			
										J	J	5.3.1		EST-004
959	2	1 of 1 (D-7)	X		3/8	GL	AO	CL	N	S	Q			OST-701
										F	Q			
										T	Q		10	
										VI	Q			

COMPONENT COOLING WATER SYSTEM

P&ID NO. 5379-376

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
702-A	3	1 of 4 (D-6)	X		16	CK	SA	O/CL	N	FF RF	M M			OST-908
702-B	3	1 of 4 (C-6)	X		16	CK	SA	O/CL	N	FF RF	M M			OST-908
702-C	3	1 of 4 (B-6)	X		16	CK	SA	O/CL	N	FF RF	M M			OST-908
715	2	3 of 4 (B-2)	X		3x4	RV	SA	CL	Y	RV	X			EST-036
716-A	2	3 of 4 (D-8)	X		6	GA	MO	O	Y	S T VI	C C C		15	OST-703
716-B	2	3 of 4 (D-8)	X		6	GA	MO	O	Y	S T J VI	C C J C	5.3.1	15	OST-703 EST-004
722-A	3	3 of 4 (B-5)	X		3/4 x 1	RV	SA	CL	Y	RV	X			EST-036
722-B	3	3 of 4 (E-5)	X		3/4 x 1	RV	SA	CL	Y	RV	X			EST-036

COMPONENT COOLING WATER SYSTEM

P&ID NO. 5379-376

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
722-C	3	3 of 4 (D-5)	X		3/4 x 1	RV	SA	CL	Y	RV	X			EST-036
729	3	3 of 4 (F-2)	X		3x4	RV	SA	CL	Y	RV	X			EST-036
730	2	3 of 4 (F-1)	X		6	GA	MO	O	Y	S T VI J	C C C J	 5.3.1	 15 	OST-703 EST-004
735	2	2 of 4 (C-5)	X		3	GL	MO	O	Y	S T VI J	C C C J	 5.3.1	 15 	OST-703 EST-004
737-A	2	3 of 4 (B-8)	X		3	GA	M	O	Y	S	M			OST-908
739	2	3 of 4 (B-1)	X		3	GL	AO	O	Y	S F T VI	M M M M		 10 	OST-908
749-A	3	2 of 4 (E-7)	X		16	GA	MO	O	Y	S T VI	Q Q Q		 150 	OST-252

COMPONENT COOLING WATER SYSTEM

P&ID NO. 5379-376

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
749-B	3	2 of 4 (E-5)	X		16	GA	MO	O	Y	S T VI	Q Q Q		150	OST-252
791-B	3	2 of 4 (B-3)	X		3/4 x 1	RV	SA	CL	Y	RV	X			EST-036
791-D	3	4 of 4 (B-4)	X		3/4 x 1	RV	SA	CL	Y	RV	X			EST-036
791-E	3	2 of 4 (C-3)	X		3/4 x 1	RV	SA	CL	Y	RV	X			EST-036
791-F	3	2 of 4 (C-3)	X		3/4 x 1	RV	SA	CL	Y	RV	X			EST-036
791-J	3	4 of 4 (G-6)	X		3/4 x 1	RV	SA	CL	Y	RV	X			EST-036
791-K	3	4 of 4 (F-6)	X		3/4 x 1	RV	SA	CL	Y	RV	X			EST-036
791-L	3	4 of 4 (C-4)	X		3/4 x 1	RV	SA	CL	Y	RV	X			EST-036
FCV-626	2	3 of 4 (D-1)	X		3	GA	MO	O	Y	S T VI J	C C C J	 5.3.1	15	OST-703 EST-004

CHEMICAL AND VOLUME CONTROL SYSTEM

P&ID NO. 5379-685

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
200-A	2	1 of 3 (F-5)	X		2	GL	AO	CL	Y	S F T VI	Q Q Q Q		10	OST-102 Stem travel verified at cold shutdown - OST-703
200-B	2	1 of 3 (G-5)	X		2	GL	AO	CL	Y	S F T VI	Q Q Q Q		10	OST-102 Stem travel verified at cold shutdown - OST-703
200-C	2	1 of 3 (G-5)	X		2	GL	AO	CL	Y	S F T VI	Q Q Q Q		10	OST-102 Stem travel verified at cold shutdown - OST-703
202-A	2	1 of 3 (F-4)	X		3	GA	M	O	N	S J	C J	5.3.1		OST-703 EST-004
203-A	2	1 of 3 (F-5)	X		1x2	RV	SA	CL	Y	RV	X			EST-029
203-B	2	1 of 3 (F-5)	X		2x3	RV	SA	CL	Y	RV	X			EST-029
204-A	2	1 of 3 (G-4)	X		2	GL	AO	O	Y	S F T VI J	C C C C J	 5.3.1	 10 	OST-703 EST-004

CHEMICAL AND VOLUME CONTROL SYSTEM

P&ID NO. 5379-685

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
204-B	2	1 of 3 (G-4)	X		2	GL	AO	O	Y	S F T VI J	C C C C J	5.3.1	10	OST-703 EST-004
209	3	2 of 3 (G-4)	X		2x3	RV	SA	CL	Y	RV	X			EST-029
257	3	2 of 3 (G-5)	X		2x3	RV	SA	CL	Y	RV	X			EST-029
266	3	2 of 3 (D-5)	X		4	CK	SA	O	Y	FF RF	Q C			FF Verified by Charging Flow OST-109
282	2	1 of 3 (F-4)	X		3	GL	M	O	Y	S J	C J	5.3.1		OST-703 EST-004
283-A	3	2 of 3 (D-7)	X		3/4 x 1	RV	SA	CL	Y	RV	X			EST-029
283-B	3	2 of 3 (C-7)	X		3/4 x 1	RV	SA	CL	Y	RV	X			EST-029
283-C	3	2 of 3 (B-7)	X		3/4 x 1	RV	SA	CL	Y	RV	X			EST-029
292-A	2	1 of 3 (A-2)	X		3/4	GL	M	O	N	S J	C J	5.3.1		OST-703 EST-004
293-A	2	1 of 3 (C-3)	X		2	GL	M	O/CL	N	S J	C J	5.3.1		OST-703 EST-004

CHEMICAL AND VOLUME CONTROL SYSTEM

P&ID NO. 5379-685

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
293-C	2	1 of 3 (B-3)	X		2	GL	M	O/CL	N	S J	C J	5.3.1		OST-703
295	2	1 of 3 (A-2)	X		3	GA	M	CL	N	S J	C J	5.3.1		OST-703 EST-004
297-A	2	1 of 3 (B-8)	X		1	ND	M	O	N	S J	C J	5.3.1		OST-703 EST-004
297-B	2	1 of 3 (B-6)	X		1	ND	M	O	N	S J	C J	5.3.1		OST-703 EST-004
297-C	2	1 of 3 (B-5)	X		1	ND	M	O	N	S J	C J	5.3.1		OST-703 EST-004
309-A	2	1 of 3 (F-3)	X	X	2	GL	M	CL	N	J	J	5.3.1		EST-004
350	3	2 of 3 (B-3)	X		2	GA	MO	CL	Y	S T VI	M M M		15	OST-107
351	3	2 of 3 (B-3)	X		2	CK	SA	CL	Y	FF	C			GP-007
355	3	2 of 3 (D-3)	X		1	CK	SA	CL	Y	FF	Q			OST-102
357	3	2 of 3 (C-4)	X		4	CK	SA	CL	Y	FF	Q R	5.3.10		OST-701 (Partial Stroke) GP-009

CHEMICAL AND VOLUME CONTROL SYSTEM

P&ID NO. 5379-685

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
381	2	1 of 3 (E-2)	X		3	GA	MO	O	N	S T VI J	C C C J	5.3.1	15	OST-703 EST-004
382	3	1 of 3 (E-3)		X	3	RV	SA	CL	Y	RV	X			EST-029
397A	3	3 of 3 (B-5)		X	2	CK	SA	CL	N	FF	Q			OST-102
397B	3	3 of 3 (B-5)		X	2	CK	SA	CL	N	FF	Q			OST-102
FCV-113A	3	2 of 3 (C-3)	X		1	GL	AO	CL	Y	S F T VI	M M M M		10	OST-107
CVC-115B	3	2 of 3 (C-5)	X		4	BF	AO	CL	N	S F T VI	M M M M		10	OST-107
LCV-115C	3	2 of 3 (D-5)	X		4	GA	MO	O	Y	S T VI	C C C		10	OST-703
2080	3	2 of 3 (B-5)		X	3/4 x 1	RV	SA	CL	Y	RV	X			EST-029

CHEMICAL AND VOLUME CONTROL SYSTEM

P&ID NO. 5379-685

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
2081	3	2 of 3 (C-5)	X		3/4 x 1	RV	SA	CL	Y	RV	X			EST-029
2082	3	2 of 3 (D-5)	X		3/4 x 1	RV	SA	CL	Y	RV	X			EST-029

CHEMICAL AND VOLUME CONTROL SYSTEM

P&ID NO. 5379-686

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
1118-A	3	1 of 2 (F-6)	X		2x3	RV	SA	CL	Y	RV	X			EST-029
1118-B	3	1 of 2 (E-6)	X		2x3	RV	SA	CL	Y	RV	X			EST-029
1118-C	3	1 of 2 (C-6)	X		2x3	RV	SA	CL	Y	RV	X			EST-029

LIQUID WASTE DISPOSAL SYSTEM

P&ID NO. 5379-920

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A	B	C	D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
1713	2	3 of 6 (E-6)	X	X		X		1	CK	SA	CL	Y	J	J	5.3.1		EST-061
1721	2	3 of 6 (C-6)	X					3	DA	AO	O	Y	S	Q		10	OST-701
													F	Q			
													T	Q			
													VI	Q			
													J	J	5.3.1		EST-004
1722	2	3 of 6 (C-7)	X					3	DA	AO	O	Y	S	Q			OST-701
													F	Q			
													T	Q		10	
													VI	Q			
													J	J	5.3.1		EST-004
1723	2	3 of 6 (B-7)	X					2	DA	AO	O	Y	S	Q			OST-701
													F	Q			
													T	Q		10	
													VI	Q			
													J	J	5.3.1		EST-004
1728	2	3 of 6 (B-7)	X					2	DA	AO	O	Y	S	Q			OST-701
													F	Q			
													T	Q		10	
													VI	Q			
													J	J	5.3.1		EST-004
1786	2	3 of 6 (F-6)	X					1	DA	AO	O	Y	S	Q			OST-701
													F	Q			
													T	Q		10	
													VI	Q			
													J	J	5.3.1		EST-004

LIQUID WASTE DISPOSAL SYSTEM

P&ID NO. 5379-920

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
1787	2	3 of 6 (D-7)	X		1	DA	AO	O	Y	S	Q			OST-701
										F	Q			
										T	Q		10	
										VI	Q			
										J	J	5.3.1		EST-004
1789	2	3 of 6 (D-7)	X		3/4	DA	AO	CL	Y	S	Q			OST-701
										F	Q			
										T	Q		10	
										VI	Q			
										J	J	5.3.1		EST-004
1793	2	3 of 6 (E-6)	X	X	1	DA	M	CL	Y	S	Q			OST-701
										J	J	5.3.1		EST-061
1794	2	3 of 6 (D-6)	X		3/4	DA	AO	CL	Y	S	Q			OST-701
										F	Q			
										T	Q		10	
										VI	Q			
										J	J	5.3.1		EST-004
1966	2	3 of 6 (E-6)	X	X	3/4	GL	M	CL	Y	J	J	5.3.1		EST-061

GASEOUS WASTE DISPOSAL SYSTEM

P&ID NO. 5379-921

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
1621	3	2 of 2 (F-3)	X		1x2	RV	SA	CL	N	RV	X			EST-029
1622	3	2 of 2 (G-3)	X		1x2	RV	SA	CL	N	RV	X			EST-029
1623	3	2 of 2 (D-3)	X		1x2	RV	SA	CL	N	RV	X			EST-029
1624	3	2 of 2 (E-3)	X		1x2	RV	SA	CL	N	RV	X			EST-029

SAFETY INJECTION SYSTEM

P&ID NO. 5379-1082

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
839	2	2 of 5 (D-4)	X		2	CK	SA	CL	N	FF	M			OST-151
844-A	2	3 of 5 (C-2)	X		8	GA	MO	O	N	S T VI	Q Q Q		20	OST-353
844-B	2	3 of 5 (E-2)	X		8	GA	MO	O	N	S T VI	Q Q Q		20	OST-353
845-A	3	3 of 5 (F-6)	X		2	GL	MO	CL	N	S T VI	C C C		15	OST-157
845-B	3	3 of 5 (E-6)	X		2	GL	MO	CL	N	S T VI	C C C		15	OST-157
855	2	5 of 5 (F-3)	X		1	GL	AO	CL	N	S F T VI J	Q Q Q Q J	 5.3.1	10	OST-152 EST-059

SAFETY INJECTION SYSTEM

P&ID NO. 5379-1082

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
857-A	2	1 of 5 (F-7)	X		3/4 x 1	RV	SA	CL	Y	RV	X			EST-029
857-B	2	1 of 5 (C-8)	X		3/4 x 1	RV	SA	CL	Y	RV	X			EST-029
858-A	2	5 of 5 (G-5)	X		2x3	RV	SA	CL	Y	RV	X			EST-029
858-B	2	5 of 5 (E-5)	X		2x3	RV	SA	CL	Y	RV	X			EST-029
858-C	2	5 of 5 (C-5)	X		2x3	RV	SA	CL	Y	RV	X			EST-029
859	2	4 of 5 (F-8)	X		3/4 x 1	RV	SA	CL	N	RV	X			EST-029
860-A	2	5 of 5 (C-2)	X		14	GA	MO	CL	Y	S T VI	Q Q Q		105	OST-252
860-B	2	5 of 5 (B-2)	X		14	GA	MO	CL	Y	S T VI	Q Q Q		105	OST-252
861-A	2	5 of 5 (C-2)	X		14	GA	MO	CL	Y	S T VI	Q Q Q		105	OST-252

SAFETY INJECTION SYSTEM

P&ID NO. 5379-1082

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
861-B	2	5 of 5 (B-2)	X		14	GA	MO	CL	Y	S T VI	Q Q Q		105	OST-252
862-A	2	2 of 5 (C-4)	X		14	GA	MO	O	Y	S T VI	C C C		105	OST-703
862-B	2	2 of 5 (C-3)	X		14	GA	MO	O	Y	S T VI	C C C		105	OST-703
863-A	2	2 of 5 (C-3)	X		8	GA	MO	CL	Y	S T VI	C C C		20	OST-703
863-B	2	2 of 5 (C-3)	X		8	GA	MO	CL	Y	S T VI	C C C		20	OST-703
864-A	2	2 of 5 (E-4)	X		16	GA	MO	O	N	S T VI	C C C		120	OST-157
864-B	2	2 of 5 (E-4)	X		16	GA	MO	O	N	S T VI	C C C		120	OST-157
865-A	2	4 of 5 (F-2)	X		10	GA	MO	O	Y	S T VI	C C C		10	OST-161

SAFETY INJECTION SYSTEM

P&ID NO. 5379-1082

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
865-B	2	4 of 5 (D-2)	X		10	GA	MO	O	Y	S T VI	C C C		10	OST-161
865-C	2	4 of 5 (C-2)	X		10	GA	MO	O	Y	S T VI	C C C		10	OST-161
866-A	1	4 of 5 (D-7)	X		2	GL	MO	CL	Y	S T VI	C C C		15	OST-703
866-B	1	4 of 5 (D-7)	X		2	GL	MO	CL	Y	S T VI	C C C		15	OST-703
867-A	2	1 of 5 (D-3)	X		4	GA	MO	O	Y	S T VI	Q Q Q		15	OST-151 (Stroke Monthly) OST-152
867-B	2	1 of 5 (C-3)	X		4	GA	MO	O	Y	S T VI	Q Q Q		15	OST-151 (Stroke Monthly) OST-152
868A	2	1 of 5 (B-7)	X	X		GA	MO	O	Y	J	J	5.3.1		EST-004
868B	2	1 of 5 (B-7)	X	X		GA	MO	O	Y	J	J	5.3.1		EST-004
868C	2	1 of 5 (B-7)	X	X		GA	MO	O	Y	J	J	5.3.1		EST-004

SAFETY INJECTION SYSTEM

P&ID NO. 5379-1082

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
869	2	1 of 5 (F-8)	X		3	GA	MO	O	N	S T VI J	Q Q Q J	 5.3.1	 15 	OST-152 EST-004
870-A	2	1 of 5 (D-8)	X		3	GA	MO	CL	N	S T VI J	Q Q Q J	 5.3.1	 10 	OST-151 (Stroke Monthly) OST-152 EST-004
870-B	2	1 of 5 (D-7)	X		3	GA	MO	CL	N	S T VI J	Q Q Q J	 5.3.1	 10 	OST-151 (Stroke Monthly) OST-152 EST-004
871	2	3 of 5 (E-2)		X	3/4 x 1	RV	SA	CL	N	RV	X			EST-029
872	3	3 of 5 (G-6)		X	3/4 x 1	RV	SA	CL	N	RV	X			EST-029
873-A	2	4 of 5 (C-6)		X	2	CK	SA	CL	Y	FF	R	5.3.4		OST-154
873-B	2	4 of 5 (C-6)		X	2	CK	SA	CL	Y	FF	R	5.3.4		OST-154
873-C	2	4 of 5 (C-5)		X	2	CK	SA	CL	Y	FF	R	5.3.4		OST-154
873-D	1	4 of 5 (B-6)		X	2	CK	SA	CL	Y	FF	R	5.3.4		OST-154

SAFETY INJECTION SYSTEM

P&ID NO. 5379-1082

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
873-E	1	4 of 5 (C-5)	X		2	CK	SA	CL	Y	FF	R	5.3.4		OST-154
873-F	1	4 of 5 (C-5)	X		2	CK	SA	CL	Y	FF	R	5.3.4		OST-154
874-A	1	4 of 5 (C-7)	X		2	CK	SA	CL	Y	FF	R	5.3.4		OST-154
874-B	1	4 of 5 (C-7)	X		2	CK	SA	CL	Y	FF	R	5.3.4		OST-154
875-A	1	4 of 5 (B-6)	X		10	CK	SA	CL	Y	FF	C R	5.3.14		OST-703 Full Stroke OST-161 Partial Stroke OST-255
875-B	1	4 of 5 (B-7)	X		10	CK	SA	CL	Y	FF	C R	5.3.14		OST-703 Full Stroke OST-161 Partial Stroke OST-255
875-C	1	4 of 5 (A-7)	X		10	CK	SA	CL	Y	FF	C R	5.3.14		OST-703 Full Stroke OST-161 Partial Stroke OST-255
875-D	1	4 of 5 (F-3)	X		10	CK	SA	CL	Y	FF RF	C R	5.3.3		OST-161 Partial Stroke GP-007, EST-096
875-E	1	4 of 5 (D-3)	X		10	CK	SA	CL	Y	FF RF	C R	5.3.3		OST-161 Partial Stroke GP-007, EST-096

SAFETY INJECTION SYSTEM

P&ID NO. 5379-1082

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
875-F	1	4 of 5 (C-3)	X		10	CK	SA	CL	Y	FF RF	C R	5.3.3		OST-161 Partial Stroke GP-007, EST-096
876-A	1	4 of 5 (F-3)	X		8	CK	SA	CL	Y	FF	C R	5.3.14		OST-703 OST-255
876-B	1	4 of 5 (D-4)	X		8	CK	SA	CL	Y	FF	C R	5.3.14		OST-703 OST-255
876-C	1	4 of 5 (C-3)	X		8	CK	SA	CL	Y	FF	C R	5.3.14		OST-703 OST-255
878-A	2	2 of 5 (D-7)	X		4	GA	MO	O	N	S T VI	C C C		40	OST-703
878-B	2	2 of 5 (F-7)	X		4	GA	MO	O	N	S T VI	C C C		40	OST-703
879-A	2	2 of 5 (D-7)	X		3	CK	SA	CL	N	FF	R	5.3.7		Refueling - OST-154 (Partial Stroke Monthly - OST-151)
879-B	2	2 of 5 (E-7)	X		3	CK	SA	CL	N	FF	R	5.3.7		Refueling - OST-154 (Partial Stroke Monthly - OST-151)
879-C	2	2 of 5 (F-7)	X		3	CK	SA	CL	N	FF	R	5.3.7		Refueling - OST-154 (Partial Stroke Monthly - OST-151)

SAFETY INJECTION SYSTEM

P&ID NO. 5379-1082

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
880-A	2	3 of 5 (C-5)	X		6	GA	MO	CL	N	S T VI	Q Q Q		15	OST-353
880-B	2	3 of 5 (C-5)	X		6	GA	MO	CL	N	S T VI	Q Q Q		15	OST-353
880-C	2	3 of 5 (E-5)	X		6	GA	MO	CL	N	S T VI	Q Q Q		15	OST-353
880-D	2	3 of 5 (E-5)	X		6	GA	MO	CL	N	S T VI	Q Q Q		15	OST-353
883-L	2	1 of 5 (C-6)	X	X	1	GL	M	LC	N	J	J	5.3.1		EST-004
883-W	2	1 of 5 (C-5)	X	X	1	GL	M	CL	N	J	J	5.3.1		EST-004
889-A	2	3 of 5 (D-3)	X		2	CK	SA	CL	N	FF RF	M			OST-352
889-B	2	3 of 5 (D-3)	X		2	CK	SA	CL	N	FF RF	M			OST-352
890-A	2	3 of 5 (C-5)	X		6	CK	SA	CL	N	FF	C R	5.3.8		OST-703 Partial Stroke EST-058

SAFETY INJECTION SYSTEM

P&ID NO. 5379-1082

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A	B	C	D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
890-B	2	3 of 5 (E-6)		X				6	CK	SA	CL	N	FF	C R	5.3.8		OST-703 Partial Stroke EST-058
891-A	2	3 of 5 (C-8)	X					6	GA	M	LO	N	S J	Q J	5.3.1		OST-353 EST-004
891-B	2	3 of 5 (E-8)	X					6	GA	M	LO	N	S J	Q J	5.3.1		OST-353 EST-004
893-A	2	2 of 5 (D-6)		X				3/4	CK	SA	CL	N	FF	M			OST-151
893-B	2	2 of 5 (E-6)		X				3/4	CK	SA	CL	N	FF	M			OST-151
893-C	2	2 of 5 (G-6)		X				3/4	CK	SA	CL	N	FF	M			OST-151
895-V	2	1 of 5 (G-7)	X			X		3/4	GL	M	LC	N	J	J	5.3.1		EST-004
898-F	2	1 of 5 (G-7)	X			X		3/4	GL	M	LC	N	J	J	5.3.1		EST-004
899-D	3	3 of 5 (G-7)		X				3/4	VB	SA	CL	N	S	R	5.3.11		EST-068
899-E	3	3 of 5 (G-7)		X				3/4	VB	SA	CL	N	S	R	5.3.11		EST-068

RESIDUAL HEAT REMOVAL SYSTEM

P&ID NO. 5379-1484

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
706	2	1 of 1 (B-8)	X		2x3	RV	SA	CL	Y	RV	X			EST-029
744-A	2	1 of 1 (B-8)	X		10	GA	MO	CL	Y	S T VI	Q Q Q		15	OST-252
744-B	2	1 of 1 (B-7)	X		10	GA	MO	CL	Y	S T VI	Q Q Q		15	OST-252
750	1	1 of 1 (B-2)	X		14	GA	MO	CL	Y	S T VI	C C C		210	OST-703
751	1	1 of 1 (B-2)	X		14	GA	MO	CL	Y	S T VI	C C C		210	OST-703
753-A	2	1 of 1 (D-5)	X		10	CK	SA	CL	Y	FF	C			Full Stroke Cold Shutdown GP-007 Partial Stroke Monthly OST-251
753-B	2	1 of 1 (F-5)	X		10	CK	SA	CL	Y	FF	C			Full Stroke Cold Shutdown GP-007 Partial Stroke Monthly OST-251

RESIDUAL HEAT REMOVAL SYSTEM

P&ID NO. 5379-1484

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
759A	2	1 of 1 (D-7)	X		10	GA	MO	O	Y	S T VI	Q Q Q		120	OST-252
759B	2	1 of 1 (F-7)	X		10	GA	MO	O	Y	S T VI	Q Q Q		120	OST-252

REACTOR COOLANT SYSTEM

P&ID NO. 5379-1971

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A	B	C	D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
516	2	2 of 2 (G-8)	X					3/8	GL	AO	CL	Y	S	Q			OST-701
													F	Q			
													T	Q		10	
													VI	Q			
													J	J	5.3.1		EST-004
518	2	2 of 2 (F-7)	X	X			X	3/4	CK	SA	CL	Y	J	J	5.3.1		EST-060
519-A	2	2 of 2 (F-8)	X					3	DA	AO	CL	Y	S	Q			OST-701
													F	Q			
													T	Q		10	
													VI	Q			
													J	J	5.3.1		EST-004
519-B	2	2 of 2 (F-8)	X					3	DA	AO	CL	Y	S	Q			OST-701
													F	Q			
													T	Q		10	
													VI	Q			
													J	J	5.3.1		EST-004
535	1	2 of 2 (F-2)		X				3	GA	MO	O	Y	S	Q			OST-701 (S, T)
													T	Q		60	
													VI	C			OST-703 (VI)
536	1	2 of 2 (F-2)		X				3	GA	MO	O	Y	S	Q			OST-701 (S, T)
													T	Q		60	
													VI	C			OST-703 (VI)
550	2	2 of 2 (F-7)	X					3/4	DA	AO	O	Y	S	Q			OST-701
													F	Q			
													T	Q		15	
													VI	Q			
													J	J	5.3.1		EST-060

REACTOR COOLANT SYSTEM

P&ID NO. 5379-1971

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
551-A	1	2 of 2 (G-4)	X		4x6	RV	SA	CL	Y	RV	R			EST-027
551-B	1	2 of 2 (G-3)	X		4x6	RV	SA	CL	Y	RV	R			EST-027
551-C	1	2 of 2 (G-3)	X		4x6	RV	SA	CL	Y	RV	R			EST-027
553	2	2 of 2 (G-8)	X		3/8	GL	AO	CL	Y	S F T VI J	Q Q Q Q J	 5.3.1	 10 	 OST-701 EST-004
567	1	1 of 2 (D-3)	X		1	GL	SO	CL	Y	F T VI	C C C		5 CLOSE	OST-703
568	1	1 of 2 (D-3)	X		1	GL	SO	CL	Y	F T VI	C C C		5 CLOSE	OST-703
569	1	1 of 2 (C-3)	X		1	GL	SO	CL	Y	F T VI	C C C		5 CLOSE	OST-703

REACTOR COOLANT SYSTEM

P&ID NO. 5379-1971

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
570	1	1 of 2 (C-3)	X		1	GL	SO	CL	Y	F T VI	C C C		5 CLOSE	OST-703
571	1	1 of 2 (D-2)	X		1	GL	SO	CL	Y	F T VI	C C C		5 CLOSE	OST-703
572	1	1 of 2 (D-1)	X		1	GL	SO	CL	Y	F T VI	C C C		5 CLOSE	OST-703
582 (DWC-1)	2	2 of 2 (E-1)	X	X	3/8	GA	M	CL	Y	J	J	5.3.1		
584 (DWC-2)	2	2 of 2 (E-1)	X	X	3/8	GA	M	CL	Y	J	J	5.3.1		
PCV-455C	1	2 of 2 (F-2)	X		3	GL	AO	CL	Y	S F T VI	C C C C		5.5	OST-703
PCV-456	1	2 of 2 (F-2)	X		3	GL	AO	CL	Y	S F T VI	C C C C		5.5	OST-703

CONTAINMENT VAPOR AND PRESSURE SAMPLING SYSTEM

P&ID NO. HBR2-6490

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
PAS-1	2	1 of 1 (C-6)	X	X	3/8	GL	M	CL	N	J	J	5.3.1		EST-046
PAS-2	2	1 of 1 (B-6)	X	X	3/8	GL	M	CL	N	J	J	5.3.1		EST-046
PAS-3	2	1 of 1 (D-6)	X	X	3/8	GL	M	CL	N	J	J	5.3.1		EST-046
PAS-4	2	1 of 1 (C-6)	X	X	3/8	GL	M	CL	N	J	J	5.3.1		EST-046
PAS-5	2	1 of 1 (E-6)	X	X	3/8	GL	M	CL	N	J	J	5.3.1		EST-046
PAS-6	2	1 of 1 (D-6)	X	X	3/8	GL	M	CL	N	J	J	5.3.1		EST-046
VCT-13	2	1 of 1 (G-8)	X	X	2	GL	M	CL	N	J	J	5.3.1		EST-009
VCT-18	2	1 of 1 (C-7)	X	X	3/8	GL	M	CL	N	J	J	5.3.1		EST-046
VCT-19	2	1 of 1 (D-7)	X	X	3/8	GL	M	CL	N	J	J	5.3.1		EST-046
VCT-20	2	1 of 1 (E-8)	X	X	3/8	GL	M	CL	N	J	J	5.3.1		EST-046

CONTAINMENT VAPOR AND PRESSURE SAMPLING SYSTEM

P&ID NO. HBR2-6490

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
VCT-21	2	1 of 1 (D-7)	X	X	3/8	GL	M	CL	N	J	J	5.3.1		EST-046
VCT-22	2	1 of 1 (C-7)	X	X	3/8	GL	M	CL	N	J	J	5.3.1		EST-046
VCT-23	2	1 of 1 (E-7)	X	X	3/8	GL	M	CL	N	J	J	5.3.1		EST-046

POST ACCIDENT CONTAINMENT VENTING SYSTEM

P&ID NO. HBR2-6933

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A	B	C	D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
PCV-1716	2	1 of 1 (C-7)	X					2	GL	AO	O	N	S F VI T J	C C C C J	 5.3.1	15	OST-703 EST-062
SA-43	2	1 of 1 (A-7)	X				X	2	DA	M	LC	N	J	J	5.3.1		
SA-44	2	1 of 1 (A-7)	X				X	2	DA	M	LC	N	J	J	5.3.1		
IA-525	2	1 of 1 (C-7)	X	X				2	CK	SA	O/CL	N	J	J	5.3.1, 5.1.9		EST-062
V12-14	2	1 of 1 (F-8)	X					3	DA	AO	CL	N	S F T VI J	C C C C J	 5.3.1	45	OST-703
V12-15	2	1 of 1 (G-6)	X					3	DA	AO	CL	N	S F T VI J	C C C C J	 5.3.1	45	OST-703

POST ACCIDENT CONTAINMENT VENTING SYSTEM

P&ID NO. HBR2-6933

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
V12-18	2	1 of 1 (E-8)	X		3	DA	AO	CL	Y	S F T VI J	C C C C J	 5.3.1	 20 	OST-703
V12-19	2	1 of 1 (E-7)	X		3	DA	AO	CL	N	S F T VI J	C C C C J	 5.3.1	 20 	OST-703

FIRE PROTECTION SYSTEM

P&ID NO. HBR2-8255

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
FP-248	2	2 of 5 (E-7)	X		4	GA	MO	O	Y	S T VI J	Q Q Q J	 5.3.1	 24 	OST-701 EST-063
FP-249	2	2 of 5 (E-7)	X		4	GA	MO	O	Y	S T VI J	Q Q Q J	 5.3.1	 24 	OST-701 EST-063
FP-256	2	2 of 5 (F-7)	X		4	GA	MO	O	Y	S T VI J	Q Q Q J	 5.3.1	 24 	OST-701 EST-063
FP-258	2	2 of 5 (F-7)	X		4	GA	MO	O	Y	S T VI J	Q Q Q J	 5.3.1	 24 	OST-701 EST-063

FUEL TRANSFER TUBE

P&ID NO. SK-2

VALVE NUMBER	CLASS	SH. NO. COORD.	VALVE CATEGORY A B C D	PASS	SIZE (IN)	VLV TYPE	ACT TYPE	NORM POS	HI RAD AREA	TEST METH	TEST FREQ	REL REQ	MAX STROKE TIME (SEC)	REMARKS
FP GATE	2	--	X	X		GA	M	CL	Y	J	J	5.3.1		

ADDITIONAL INFORMATION

SYSTEM	VALVE	DESCRIPTION	REMARKS
CVCS	LCV-115C 266	VCT to Charging Pumps	Testing of this valve during normal operation would disrupt suction to the Charging Pumps with potential loss of pumps and all RCP seal flow.
CVCS	351	Emergency Boration Flow Path to RCS	Valve CVC-351 is a check valve. Cycling CVC-351 quarterly would allow highly borated water (20,000 ppm) to enter the Reactor Coolant System. This will have a negative affect on reactor power that could lead to a reactor trip dependent on the amount of time the addition of highly borated water into the Reactor Coolant System continued. In any event, the addition of this borated water could require substantial Reactor Coolant System dilution to negate its effects on power level. Cycling of this check valve with highly borated water is an abnormal operation that can only be attempted at cold shutdown.
CVCS	202A & 282	Charging Line to RCS Manual Isolation	Closing of CVC-202A and/or CVC-282 will isolate charging flow to the Reactor Coolant System. This will cause deviations in pressurizer level to an extent dependent on the amount of time the valves are left closed. The control function of HCV-121 will be negated when either CVC-202A or CVC-282 are closed. This will result in fluctuations to reactor coolant pump seal injection flow and, thereby, increase the potential for seal damage. Inducing perturbations on pressurizer level and seriously affecting reactor coolant pump seal flow by quarterly cycling of these manual valves is not considered prudent. Cycling these manual valves quarterly is impractical and, therefore, they are cycled at cold shutdown in accordance with IWV-3412(a).

ADDITIONAL INFORMATION

SYSTEM	VALVE	DESCRIPTION	REMARKS
CVCS	204A & 204B	RCS Letdown Flow Isolation	Charging flow is not secured periodically during operation. To do so would increase the probability of creating pressurizer level and pressure transients. Assuming no other measures were taken, cycling CVC-204A and 204B would isolate letdown flow causing pressurizer level to increase, relief valves CVC-203A and CVC-203B to lift, reactor coolant pump seal flow to increase, and a loss of regenerative heat resulting in lower temperature charging flows to the Reactor Coolant System. This would also result in the flashing of letdown flow downstream of CVC-204A or 204B and increase the potential for reactor coolant pump seal damage. These situations would result in abnormal operating conditions that are unwarranted primarily for valve testing purposes. Cycling CVC-204A and 204B quarterly is impractical. These valves are cycled at cold shutdown in accordance with IWV-3412(a).
CVCS	297A, B, C	RCP Seal Water Injection Isolation	Valves CVC-297A, B, and C are needle valves and do not need to be locked or secured in a throttled position.
CVCS	381	RCP Seal Water Return Line Isolation	Testing during normal operation would result in disruption of seal flow and raise the potential for seal damage.
CVCS	357	RWST to Charging Pumps Check Valve	See Relief Request 5.3.10.
CVCS	292A, 293A, 293C, 295	RCP Seal Water Return Line Isolation	Cycling of these valves has the potential to cause fluctuations in reactor coolant pump seal injection flow. Surges in seal flow can lead to erratic seal operation and, therefore, increase the potential for seal damage. These valves are required to affect containment isolation in the unlikely event seal injection to the reactor coolant pumps required securing. Since these are manual valves, the possibility of inducing seal flow fluctuations solely for quarterly cycling is not prudent. These valves are tested at cold shutdown pursuant to IWV-3412.

ADDITIONAL INFORMATION

SYSTEM	VALVE	DESCRIPTION	REMARKS
Auxiliary Feedwater Pump Suction Check Valve	AFW-2	Condensate Storage Tank to AFW Pump Suction Check Valve	This valve is partially stroked quarterly due to the running of AFW Pumps on miniflow recirculation. Design flow is passed through the valve at cold shutdown intervals when the AFW Pumps feed the Steam Generators pursuant to OP-402. The AFW pumps are not used to feed the Steam Generators during normal operation due to the potential for thermal shocking the Feedwater Nozzles and the Feed Rings.
Auxiliary Feedwater	AFW-84 (AFW-19)	Steam Driven AFW Pump Discharge Check Valve	Same as for AFW-2.
Auxiliary Feedwater	AFW-40, 41	Motor Driven AFW Pumps Discharge Check Valves	Same as for AFW-2.
Auxiliary Feedwater	AFW-68, 69 70	Auxiliary Feedwater to Main Feedwater Check Valves	These valves are not cycled at power due to the practice of not feeding Steam Generators via the AFW System during normal operation. The AFW Pumps are not used in this situation due to the potential for thermal shocking the Feedwater Nozzles and the Feed Rings.
RHR	750 & 751	RCS to RHR System Isolation	These valves cannot be opened unless valves 862A & B are closed (interlocked circuitry). Valves 862A & B are opened with A.C. control power removed when RCS pressure is above 1,000 psig (Tech. Spec. 3.3.1.1.g).
RHR	753A, B	RHR Pump Discharge Check Valves	With the plant at power, no flow path for the RHR System exists other than miniflow recirculation line. The flow path will not introduce design flow through 753A and B. These valves pass design flow during cold shutdown while the RHR System is providing core cooling.
Auxiliary Feedwater	FCV-6416 (AFW-26)	Steam Driven AFW Pump Flow Control Valve	This valve is normally open and fails open. It is a flow control valve and is not required to be tested per IWP-1200. It will be stroked and failure mode tested to verify operability during the performance of OST-202

ADDITIONAL INFORMATION

SYSTEM	VALVE	DESCRIPTION	REMARKS
Auxiliary Coolant (CCW)	FCV-626 & 735	CCW from RCP Thermal Barrier Isolation Valve	Testing during normal operation would result in loss of cooling water flow to the thermal barrier of the RCP's.
Auxiliary Coolant (CCW)	716A & 716B	Inlet Isolation for CCW Flow to the RCP's	Closing 716A or 716B will isolate all cooling water flow to the reactor coolant pumps. In accordance with abnormal operating procedures, all reactor coolant pumps must be stopped if any of the following situations occur: a. Two minutes of reactor coolant pump operation following loss of component cooling flow. b. Upper bearing temperature reaches 200°F. c. Lower bearing temperature exceeds 225°F. Should any of these situations occur during cycling of 716A and 716B, a reactor trip would result due to the loss of the reactor coolant pumps. Such a challenge to plant equipment due to quarterly valve testing is not considered prudent. Valves 716A and 716B are cycled at cold shutdown in accordance with IWV-3412.
Auxiliary Coolant (CCW)	730	Outlet Isolation for CCW Flow to RCP Upper and Lower Lube Oil Coolers	Cycling 730 will isolate flow to the control rod drive coolers and reactor coolant pump upper and lower bearings. A loss of reactor coolant pumps could result.
Reactor Coolant	PCV-455C & PCV-456	Pressurizer Power Operated Relief Valves	These valves are not taken credit for in any design basis accident analyses. Their design function is for system control. These valves are in the ISI program to provide testing to ensure operability for low temperature overpressure protection.
Reactor Coolant	535 & 536	Block Valves for Pressurizer Power Operated Relief Valves	These valves are not taken credit for in any accident analyses. These are maintenance valves with non-Q operators. These valves are in the ISI program due to earlier commitments made in response to IE Inspection Report 82-27.

ADDITIONAL INFORMATION

SYSTEM	VALVE	DESCRIPTION	REMARKS
Main Steam	V1-3A, B, C (Isolation)	Main Steam Isolation Valves	Cycling these valves during normal operation is not possible due to the resulting loss of steam flow and subsequent Reactor Trip. A partial stroke of these valves during normal operation is not possible since these are stop-check valves and a downward movement of the disk would tend to close the valve. The valve operators are tested weekly to ensure binding does not exist.
Reactor Coolant	567, 568 569, 570 571, 572	Head Vent System Valves	When the RCS is greater than 200°F, valves RC-567, 568, 569, and 570 are closed with power removed from the valve actuators in accordance with Technical Specification 3.1.1.4.a. Therefore, these valves cannot be cycled quarterly. Valves RC-571 and 572 are required to be closed above 200°F in accordance with Technical Specification 3.1.1.4.b. In accordance with this Technical Specification, valves RC-571 and 572 may not be cycled above 200°F unless needed to depressurize the head vent piping due to leakage past RC-567, 568, 569, or 570. Therefore, valves RC-567, 568, 569, 570, 571, and 572 are tested at cold shutdown.
Main Steam	MS-261A,B,C	Main Steam Check Valves	See Relief Request 5.3.2
Main Steam	MS-263A,B,C	Main Steam to Auxiliary Feedwater Pump Check Valves	See Relief Request 5.3.13
Feedwater	FCV-479, 489, 499	Main Feedwater Regulating Valve Bypass Valve	Cycling these valves during normal operation could result in a steam flow/feed flow mismatch and subsequent plant trip.
Feedwater	V2-6A, 6B, 6C	Main Feedwater Regulating Valve Block Valve	Same as for FCV-479, 489, and 499.

ADDITIONAL INFORMATION

SYSTEM	VALVE	DESCRIPTION	REMARKS
Post Accident Containment Vent	PCV-1716	Instrument Air to Containment Isolation	This valve closes only on a Phase "A" Containment Isolation Signal and can be opened only when the signal is overridden. Also, cycling this valve during normal operation would isolate air to certain valves in containment and would result in a potential plant trip.
Post Accident Containment Vent	IA-525	Instrument Air to Containment Check Valve	See Relief Request 5.3.9.
Safety Injection	890A, B	Containment Spray Pumps Discharge Check Valves	See Relief Request 5.3.8.
Safety Injection	875A, B, C	Accumulator Discharge Check Valves	See Relief Request 5.3.14
Safety Injection	875D, E, F	Accumulator Discharge Check Valves	See Relief Request 5.3.3.

ADDITIONAL INFORMATION

SYSTEM	VALVE	DESCRIPTION	REMARKS
Safety Injection	845A, B	Spray Additive Tank to Containment Spray Pump Isolation	To operate SI-845A and SI-845B would require the closing of normally open valve SI-845C to preclude sodium hydroxide from entering the refueling water storage tank. Valve SI-845A and 845B receive an automatic signal to open as part of the containment spray system actuation. Valve SI-845C does not receive an automatic signal to open. Closing SI-845C during power operation and thereby defeating the automatic sodium hydroxide addition feature is not considered prudent. Additionally, any cycling of SI-845A or 845B will allow some sodium hydroxide into the containment spray/safety injection system. Therefore, it is necessary to keep the cycling of these valves to a minimum to avoid contamination of the safety injection system. A cold shutdown testing interval is adequate to assess operability of valves SI-845A and 845B without jeopardizing the water chemistry of the refueling water storage tank contents.
Safety Injection	864A, B	RWST Discharge Isolation	Per Tech. Spec. 3.3.1.1.g, during conditions of operation with reactor coolant pressure in excess of 1,000 psig, the A.C. control power shall be removed from these valves with the valves in the open position. Cycling of these valves during normal operation would violate Tech. Spec.
Safety Injection	862A, B	RWST to RHR Pumps Isolation	Same as for 864A, B.
Safety Injection	865A, B, C	Accumulator Discharge Isolation	Same as for 864A, B.
Safety Injection	878A, B	SI Pump Discharge Header Cross Connect	Same as for 864A, B.

ADDITIONAL INFORMATION

SYSTEM	VALVE	DESCRIPTION	REMARKS
Safety Injection	873A, B, C D, E, F	High Head SI to RCS Cold Legs Check Valves	See Relief Request 5.3.4.
Safety Injection	874A, B	High Head SI to RCS Hot Legs Check Valves	See Relief Request 5.3.4.
Safety Injection	863A, B	RHR Pumps Discharge to SI Pumps Suction Isolation	Per Tech. Spec. 3.3.1.1.g, during conditions of operation with reactor coolant pressure in excess of 1,000 psig, the A.C. control power shall be removed from these valves with the valves in the closed position. Cycling of these valves during normal operation would violate Tech. Spec.
Safety Injection	866A, B	High Head SI to RCS Hot Legs Isolation	Same as for 863A, B.
Safety Injection	879A, B, C	SI Pumps Discharge Check Valves	See Relief Request 5.3.7.
Safety Injection	876A, B, C	RHR Pump Discharge to RCS Loop Cold Leg Check valves	See Relief Request 5.3.14.
Safety Injection	899D, E	Spray Additive Tank Vacuum Breakers	See Relief Request 5.3.11.
Penetration Pressurization	EV-1721A, EV-1743 (EV-H2B) EV-1727, EV-1728, EV-1723, & EV-1724	Penetration Pressurization Air Supply and Bleed Off Valves For V12-10 & V12-11, V12-18 & V12-19, RMS-1 & RMS-2, RMS-3 & RMS-4, V12-6 & V12-7, and V12-8 & V12-9 Innerspaces, respectively	These valves are normally deenergized, i.e., in the failed position, during normal operation with air being supplied to the penetration innerspace. Therefore, a failure mode test does not apply to these valves. A full stroke open timing test does not apply to these valves since they are enclosed and stem travel cannot be visually verified. Remote indication for valve position does not exist. The primary safety consideration is the operation of the valves listed in the description.

ADDITIONAL INFORMATION

SYSTEM	VALVE	DESCRIPTION	REMARKS
Isolation Valve Seal Water (IVSW)	Check valves on each branch line off four main headers	Containment Isolation Valves Seal Water Source Check Valves	The Isolation Valve Seal Water System is not taken credit for in the FSAR as reducing any calculated offsite dose. Containment integrity is verified during an ILRT with this system depressurized. Therefore, failure of this system to function would not result in any unreviewed safety question. The testing at refueling intervals pursuant to Technical Specification 4.4.2.c is adequate to assess proper system operation.
Post Accident Containment Vent	V12-14, V12-15, V12-18, & V12-19	Containment Vent Valves	At conditions above cold shutdown, these valves are required to be closed per Tech. Spec. 1.7.a to maintain containment integrity. Therefore, quarterly valve testing would violate Technical Specifications. These valves will be exercised during cold shutdowns.
Service Water	SW-544	Redundant Auxiliary Feedwater Pump Suction Source Check Valve	See Relief Request 5.3.5.
Service Water	SW-542, SW-543	Service Water to Auxiliary Feedwater Pump Check Valves	See Relief Request 5.3.6.
Emergency Diesel Generator	FO-27A & B FO-29A & B DA-19A & B DA-23A & B	Fuel Oil Day Tank Isolation Valves; Diesel Air Start Solenoid Valves	See Relief Request 5.3.12.
HVAC	V12-6, V12-7, V12-8, V12-9	Containment Purge Valves	Use of these valves is limited by Technical Specifications. The valves will be tested during power operation prior to use if not tested within the previous 90 days. The valves will also be tested at cold shutdown.
HVAC	V12-12, V12-13	Containment Pressure Vacuum Valves	Valves V12-12 and V12-13 are operated as a pair from one control switch. Operation of these valves with a positive pressure inside containment would result in an unmonitored containment ground release. Since drawing a vacuum inside containment to allow cycling of these valves quarterly is not possible, the valves are cycled at cold shutdown in accordance with IWV-3412.

SUMMARY SHEET

SECTION	ITEM	REVISION
Pump Relief Requests	5.2.4	Revise Basis for Relief Request
Pump Relief Requests	5.2.4a	Add Vibration to Test Measurement
Pump Relief Requests	5.2.4b	Add Vibration to Test Measurement
Pump Relief Requests	5.2.4c	Add Vibration to Test Measurement
Pump Relief Requests	5.2.4d	Deleted
Pump Relief Requests	5.2.4e	Add Vibration to Test Measurement
Pump Relief Requests	5.2.8	Alternative Testing Revised
Valve Relief Requests	5.3.2	Clarification Added for Valve Testing
Valve Relief Requests	5.3.8	Clarification Added for Valve Testing
Valve Relief Requests	5.3.9	Changed Valve Number V8-5 to IA-525
Pump Test Program	Attachment 6.1	Clarification Added for Cold Shutdown Testing
Valve Test Program	Attachment 6.3 Page 3 of 3	FCV-1424, FCV-1425, and FCV-6416 Added to Program
Valve Test Program	Attachment 6.4 Page 1 of 5	Add Monthly Test Frequency for Reverse Flow on Valve SW-541
Valve Test Program	Attachment 6.9 Page 2 of 2	Changed Valve Number EV-1721B to EV-1721A
Valve Test Program	Attachment 6.18 Page 4 of 9	Changed Normal Position of Valves 867-A and B from Closed to Open
Valve Test Program	Attachment 6.20 Page 3 of 3	Changed Maximum Stroke Time for PCV-455C and PCV-456
Valve Test Program	Attachment 6.25 Page 1 of 9	Clarification Added to Remarks
Valve Test Program	Attachment 6.25 Page 2 of 9	Clarification Added to Remarks
Valve Test Program	Attachment 6.25 Page 3 of 9	Clarification Added to Remarks Added Valve FCV-6416.
Valve Test Program	Attachment 6.25 Page 4 of 9	Clarification Added to Remarks
Valve Test Program	Attachment 6.25 Page 6 of 9	Changed Valve Number V8-5 to IA-525.
Valve Test Program	Attachment 6.25 Page 8 of 9	Changed Valve Number EV-1721B to EV-1721A
Valve Test Program	Attachment 6.25 Page 9 of 9	Clarification Added to Remarks Added HVAC System and Remarks

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