Proc No EM-09-02
Revision 12
Date 4/21/88

PALISADES NUCLEAR PLANT
ENGINEERING MANUAL PROCEDURE
Revision and Approval Summary

TITLE: INSERVICE TESTING OF PLANT VALVES

1. Prepared
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Responsible Individual — Date

2. QA Concurrence
N/A per admin 10.42 — Date

3. Recommend Approval/Q-List (Yes) No
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4. PRC Reviewed
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Date

5 Approved
[illegible] — 4/18/88
Final Approver — Date

6. Word Processing Incorporated
4/20/88 CLK
Date

7. Periodic Review

_____ — _____ Date

_____ — _____ Date

_____ — _____ Date

_____ — _____ Date

_____ — _____ Date

em0685-0008i-93-89

ATTACHMENT

Consumers Power Company
Palisades Plant
Docket 50-255

INSERVICE TESTING OF PLANT VALVES

May 17, 1988

92 Pages

OC0588-0007-NL04

TITLE: INSERVICE TESTING OF PLANT VALVES

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ATTACHMENTS

TITLE: INSERVICE TESTING OF PLANT VALVES

1.0 PURPOSE

To establish a program for the Inservice Testing (IST) of selected plant valves in accordance with ASME Boiler and Pressure Vessel (B&PV) Code, Section XI 1983 edition, with addenda through Summer 1983.

2.0 SCOPE

This procedure provides general requirements for the performance, administration, and evaluation of Inservice Testing and exercising of selected Plant valves. Attachment 1 gives a complete listing of those valves included under this program and specifies the frequency and the procedure to be used for each test.

3.0 REFERENCES

3.1 ASME Boiler and Pressure Vessel Code, Section XI, Subsection IWV, 1983 edition.

3.2 10CFR50.55(a)(g)(4)

3.3 Palisades Administrative Procedure 9.22, "Technical Specifications Surveillance Procedure Scheduling and Issue"

3.4 10CFR10, Appendix J

3.5 Technical Specifications 4.3.c

3.6 NRC letter dated January 13, 1978

3.7 FSAR 4.3.9, 6.9.2.2

4.0 RESPONSIBILITIES

4.1 ISI ENGINEER

ISI Engineer is assigned to evaluate test results and identify equipment deficiencies to the System Engineer and is responsible for the development and administration of the IST program for plant valves.

4.2 SYSTEM ENGINEER

System Engineer is responsible for the maintenance and technical aspects of the test performance of the equipment in his assigned system.

4.3 TECHNICAL SPECIFICATION SURVEILLANCE PROGRAM ADMINISTRATOR (TSSPA)

Technical Specification Surveillance Program Administrator (TSSPA) is responsible to oversee scheduling and administrative performance of the required Technical Specification Surveillance Tests.

5.0 PROCEDURE

5.1 PROGRAM DESCRIPTION

5.1.1 The Palisades Inservice Valve Test Program is summarized in the Attachment 1 and in alpha numeric order in Attachment 2. The valves were selected in accordance with reference 3.1, reference 3.6 and general discussions with the NRC.

5.1.2 Where testing a piece of equipment is impractical as required by Subsection IWV, specific relief shall be requested to perform alternate testing in lieu of the required testing. Attachment 4, Relief Request Basis, contains valves meeting this condition.

5.1.3 IWV-3412 and IWV-3522 requires the owner to specifically identify valves which cannot be full or part stroked during normal operation and are full stroked during cold shutdown. Attachment 3, Cold Shutdown Test Basis, provides this information.

5.1.4 Relief requests shall be submitted to the Nuclear Licensing Department upon identification of need. The Nuclear Licensing Department shall review the submittal requests, ask appropriate questions and prepare the requests for submittal to the United States Nuclear Regulatory Commission within 60 days of the identification of need. Identification of need is defined as the point in time a revision to this procedure is determined to be necessary.

5.2 VALVE TESTING REQUIREMENTS

5.2.1 Category A and B Exercise Testing (IWV-3400)

a. Category A and B active valves shall be exercised to the position required to fulfill their function unless such operation is not practical during plant operation. If only limited operation is practical during plant operation, the valve shall be part-stroke exercised during plant operations, and full stroked during cold shutdowns. Valves that cannot be exercised during plant operation shall be specifically identified by the Owner and shall be full-stroke exercised during cold shutdowns. Full-stroke exercising during cold shutdown for all valves not full-stroke exercised during plant operation shall be on a frequency determined by the intervals between shutdowns as follows: for intervals of 3 months or longer, exercise during each shutdown; for intervals of less than 3 months, full-stroke exercise is not required unless 3 months have passed since last shutdown exercise.

b. For exercising Category A and B active valves, the necessary valve disk movement shall be determined by exercising the valve while observing an appropriate indicator which signals the required change of disk position, or observing indirect evidence, such as changes in system pressure, flow rate, level, or temperature, which reflect stem or disk position. Valves with remote position indicators shall be observed at least once every 2 years to verify that valve operation is accurately indicated.

c. For power operated valves, the stroke time shall be measured to the nearest second or 10% of the maximum allowable stroke time, whichever is less, whenever such a valve is full-stroke tested.

d. Fail-Safe valves - IWV-3415 requires that valves with fail-safe positions also be tested by removing actuator power or air to verify that the valves actually move to their fail positions. At Palisades, normal operation of these valves has exactly the same effect as removing the power or air supply; ie, on a fail-shut valve, going to the shut position on the switch removes power from the solenoid valve which, in turn, removes the air supply. These valves, therefore, need not be additionally tested.

5.2.2 Category C Safety and Relief Valve Testing (Table IWV-3510-1)

a. All Category C Safety and Relief Valves shall have their setpoints verified every 5 years; the valve tests shall be distributed over a 60 month period, such that (N/60)xZ valves have been tested each refueling outage (N is the number of months from the start of the 60 month period to the end of each refueling and Z is the number of relief valves in the program.

b. When any valve fails to function properly during a regular test, additional valves in the system shall be tested such that the total number tested in $[(N+12)/60]Z$. If any of the additional valves fail to function properly all valves in the system in this category shall be tested.

5.2.3 Category C Check Valve Testing

a. Category C check valves shall be exercised to the position required to fulfill their function unless such operation is not practical during plant operation. If only limited operation is practical during plant operation, the check valve shall be part-stroke exercised during plant operation and full-stroke exercised during cold shutdowns. Valves that cannot be exercised during plant operation shall be specifically identified by the Owner and shall be full-stroke exercised during cold shutdowns. Full-stroke exercising during cold shutdowns for all valves not full-stroke exercised during plant operation shall be on a frequency determined by the intervals between shutdowns as follows: for intervals of 3 months or longer, exercise during each shutdown; for intervals of less than 3 months, full-stroke exercise is not

required unless 3 months have passed since the last shutdown exercise.

b. Category C normally open check valves whose function is to prevent reversed flow shall be tested in a manner that proves that the disk travels to the seat promptly on cessation or reversal of flow. Confirmation that the disk is on its seat shall be by visual observation, by an electrical signal initiated by a position indicating device, by observation of appropriate pressure indications in the system, by obervation of pumps for reverse rotation, or by any other positive means.

c. Category C normally closed check valves whose function is to open on reversal of pressure differential shall be tested by proving that the disk moves promptly away from the seat when the closing pressure differential is removed and flow through the valve is initiated, or when a mechanical opening force is applied to the disk. Confirmation that the disk moves away from the seat shall be by visual observation, by electrical signal initiated by a position indicating device, by observation of substantially free flow through the valve as indicated by appropriate pressure indications in the system, or by other positive means. This test may be made with or without flow through the valve. If it is made without flow through the valve, a mechanical exerciser shall be used to move the disk. The force or torque delivered to the disk by the exerciser must be limited to less than 10% of the equivalent force or torque represented by the minimum emergency condition pressure differential acting on the disk, or to 200% of the actual observed force or torque required to perform the exercise on the valve when the valve is new and in good operating condition, whichever is less, except that for vacuum breaker valves the exerciser force or torque delivered to the disk may be equivalent to the desired functional pressure differential force. The disk movement shall be sufficient to prove that the disk moves freely off the seat. For swing or tilting disk valves, if the test is made by use of fluid flow through the valve, the pressure differential for equivalent flow shall be no greater than that observed during the preoperational test. For other types of check valves, it shall be shown that disk movement is sufficient to provide a flow area at least 50% of the area of the seat port, or to permit flow adequate for the function of the valve.

5.2.4 Cateogry A Valve Leak Testing (IWV-3420)

a. Category A valves shall be leakage tested, except that valves which function in the course of plant operation in a manner that demonstrates functionally adequate seat leak-tightness need not be additionally leakage tested. In such cases, the valve record shall provide the basis for the conclusion that operational observations constitute satisfactory demonstration.

b. Category A valves, which are containment isolation valves, shall be tested in accordance with Federal Regulation 10CFR50 Appendix J, per relief request in Attachment 4 page 12. Containment isolation valves which also provide a pressure isolation function shall additionally be tested in accordance with item c.

c. Valve leak rate testing other than containment isolation valves shall be performed in accordance with IWV-3420. EM-09-02 Revision 12 has no valves meeting this requirement.

5.2.5 Category D Valves

EM-09-02 Revision 12 has no valves meeting this requirement.

5.3 PROGRAM ADMINISTRATION

5.3.1 Test Procedures

Each valve test required under this program shall be performed under a Technical Specification Surveillance Procedure, Operating Procedure, or Maintenance Procedure written to comply with all requirements of this Engineering Manual Procedure and Reference 3.1 as amended by the Technical Specifications. A single procedure may be used to test a group of valves, but applicable data-taking requirements, precautions, operating requirements, setpoints, etc, shall be addressed for each valve.

5.3.2 Scheduling

The basic scheduling mechanism for monthly, quarterly, and refueling outage tests shall be in accordance with Reference 3.3 and will be administered by the Technical Specifications Surveillance Program Administrator (TSSPA).

5.3.3 Modified Test Frequencies

It is the responsibility of the ISI Engineer or other assigned individual to notify the TSSPA of Any Change in the testing frequency for a particular valve. This change shall be documented in the test record.

5.3.4 Nonconformances/Data Evaluation

a. If any valve fails to exhibit the required change of valve stem or disk position by this testing, corrective action shall be initiated immediately. When corrective action is required as a result of tests made during cold shutdown, the condition shall be corrected before startup. A retest showing acceptable operations shall be run following any required corrective action before the valve is returned to service.

b. For power operated valves, three evaluations are performed on the as-received stroke time.

1. The Shift Supervisor compares the recorded stroke time with the limiting value of stroke time. This initial evaluation will ensure the valves are capable of performing their function; if the valve fails to stroke in the required time or exhibits other unsatisfactory actions, it shall be so stated on the test and a corrective action document initiated. The Shift Supervisor shall also review the Technical Specifications for potential LCO conditions. Additionally, per item a (IWV-3417) if the power operated valve fails to exhibit the required change of position, corrective action shall be initiated immediately.

2. A followup evaluation is performed by the ISI Engineer. Per reference 3.1 if an increase in stroke time of 25% or more from the previous test for valves whose previous stroke times were greater than 10 sec, or 50% or more for valves whose previous stroke times were less than or equal to 10 sec is observed, test frequency shall be increased to once each month until corrective action is taken, at which time the original test frequency shall be resumed. In any case, any abnormality or erratic action shall be reported. In the case of valves which are stoked tested during non-operational plant conditions, increased test frequency is inefficient in corrective action. In those cases, repairs should be effected and subsequent testing completed prior to leaving the required plant condition.

3. The ISI Engineer shall also establish a reference, which shall be used to identify trend changes. A reference stroke time is derived from consistant performance following the latest valve maintenance. This reference value is then increased by 25% for valves which stroke in more than 10 seconds, and 50% for valves which stroke in 10 seconds or less. Those values are considered the alert stroke time. For valves which trend upward and exceed this value, the ISI Engineer shall coordinate with the cognizant System Engineer to initiate maintenance or determine new reference values as approprite. Increased test frequency is not required, but may be implemented at the discretion of the ISI Engineer or System Engineer. The valves reference values and alert stroke times shall be maintained and controlled by the ISI Engineer, and become part of the valve test records.

5.4 RECORDS

5.4.1 For monthly, quarterly, and refueling outage tests, the working copy of the Technical Specifications Surveillance Procedure, Valve Inservice Testing Program Data Book, and any applicable Work Orders shall constitute the permanent test record. These documents are maintained as lifetime Plant records. Any additional documents such as relief valve test reports should be maintained with the above records, or filed separately under the same UFI index numbers as Technical Specifications Suveillance Procedures and also with a lifetime retention period.

6.0 ATTACHMENTS

Attachment 1, "Valves Tested by P&ID"

Attachment 2, "Valve Reference List in Alpha/Numberic Order"

Attachment 3, "Cold Shutdown Testing Basis"

Attachment 4, "Relief Request Basis"

Attachment 5, "Special Clarifications"

VALVES TESTED BY P&ID
LEGEND

VALVE TYPE	
GA	Gate
GL	Globe
RV	Relief
AGL	Angle
B	Butterfly

TESTING REQUIREMENTS	
QO	Quarterly Operating
CS	Cold Shutdown
LT	Leak Test
F	Five Years
PI	Remote Position Indication Verified Every Refueling
HS/CS	Hot or Cold Shutdown
RO	18 Months - Refueling Outage

ACTUATOR TYPE	
AO	Air to Open
AC	Air to Close
M	Manual
SA	System Actuated
MO	Motor Operated
SV	Solenoid Actuated

POSITION, SAFETY POSITION	
O	Open
C	Closed
LO	Locked Open
LC	Locked Closed
EL	Electrically Locked

TABLE NOTES:

1. Where full stroke or part stroke testing is not specifically indicated, full stroke testing is implied.

   Check valve flow testing at a substantial flow approximately equivalent to normal operating flow is considered to be full stroke testing.

2. Tests requiring cold shutdown conditions are also performed during refueling outages.

3. RR/CS Basis Page # references which Relief Request (RR) or Cold Shutdown (CS) Test Basis is applicable.

4. IWV-3421 excludes category A valves from leak testing if they function in the course of plant operations in a manner that demonstrates functionally adequate seat tightness.

5. Valves denoted as MZ- (number) are part of a containment penetration identified by the number.

VALVES TESTED BY P&ID

P&ID NUMBER: M-201 SYSTEM: PRIMARY COOLANT SYSTEM

Valve Number	Class	Coordinates	Valve Category	Valve Size (Inches)	Valve Type	Actuator Type	Normal Position	Section XI Test	RR/CS Basis Page No	Test Alternative	Safety	Procedures Remarks
**CK-0155B	2	3/E-4	A,B	2	CK	SA	C	QO,LT	-	-	C	QO-11, RO-32-42
**CK-3410	1	1/C-3	C	2	CK	SA	C	QO	RR-1	CS,RO	C	QO-8B (Part Stroke),RO-65
**CV-0155	2	3/E-4	A	2	GL	AO	C	QO,LT	-	-	O	QO-5, RO-32-42
**PRV-1042B	1	2/F-7	C	2½	GL	SV,SA	C	F	-	-	C,O	RM-56
**PRV-1043B	1	2/F-7	C	2½	GL	SV,SA	C	F	-	-	C,O	RM-56
**PRV-1067	1	2/A-6	B	1	GL	SV	C	QO	CS-1	CS	C,O	QO-6
**PRV-1068	1	2/A-6	B	1	GL	SV	C	QO	CS-1	CS	C,O	QO-6
**PRV-1069	1	2/B-7	B	1	GL	SV	C	QO	CS-1	CS	C,O	QO-6
**PRV-1070	1	2/B-7	B	1	GL	SV	C	QO	CS-1	CS	C,O	QO-6
**PRV-1071	1	2/C-8	B	1	GL	SV	C	QO	CS-1	CS	C,O	QO-6
**PRV-1072	1	2/C-7	B	1	GL	SV	C	QO	CS-1	CS	C,O	QO-6
**RV-1039	1	2/E-5	C	3	RV	SA	C	F	-	-	C,O	RM-41
**RV-1040	1	2/E-5	C	3	RV	SA	C	F	-	-	C,O	RM-41
**RV-1041	1	2/E-5	C	3	RV	SA	C	F	-	-	C,O	RM-41

VALVES TESTED BY P&ID

P&ID NUMBER: M-202 SYSTEM: CHEMICAL & VOLUME CONTROL SYSTEM

Valve Number	Class	Coordinates	Valve Category	Valve Size (Inches)	Valve Type	Actuator Type	Normal Position	Section XI Test	RR/CS Basis Page No	Test Alternative	Safety	Procedures Remarks
**CK-2093	2	1B/E-3	C	1½	CK	SA	C	QO	-	-	C,O	QO-17
**CK-2099	2	1B/C-3	C	1½	CK	SA	C	QO	-	-	C,O	QO-17
**CK-2105	2	1B/B-3	C	1½	CK	SA	C	QO	-	-	O	QO-17
**CK-2110	2	1B/E-5	C	2	CK	SA	O	-	SC-2	-	O	-
**CK-2114	2	1B/B,C-7	C	2	CK	SA	O	-	SC-2	-	O	-
**CK-2116	2	1B/B-7	C	2	CK	SA	O	-	SC-2	-	O	-
**CK-2138	2	1A/B-4	C	3	CK	SA	C	QO	CS-3	CS	C,O	CL2.2
**CK-2139	2	1A/B-4	C	3	CK	SA	C	QO	CS-3	CS	C,O	CL2.2
**CK-2141	2	1A/C-7	C	3	CK	SA	C	QO	CS-3	CS	O	CL2.2
**CK-2161	2	1A/D-7	C	3	CK	SA	C	QO	CS-3	CS	O	CL2.2
**CK-2171	2	1A/C-7	C	4	CK	SA	C	QO	CS-3	CS	O	CL2.2
**CV-2009	2	1/G-4	A	25	GL	AO,M	O	QO,LT	CS-4	CS,LT	C	QO-6, RO-32-36, G-CL.2
**CV-2083	2	1/F-4	A,B	3/4	GL	AO,M	O	QO,LT	CS-2	CS,LT	C	QO-6, RO-32-44
**CV-2099	2	1/F-4	A,B	3/4	GL	AO,M	O	QO,LT	CS-2	CS,LT	C	QO-6, RO-32-44
**CV-2111	2	1B/E-4,5	-	2	GL	AC	O	-	SC-3	-	O	-
**CV-2130	2	1A/F-3	B	2	GL	AO	O	QO	-	-	C	QO-5
**CV-2136	2	1A/F-4	B	2	GL	AO	O	QO	-	-	C	QO-5

VALVES TESTED BY P&ID

P&ID NUMBER: M-202 SYSTEM: CHEMICAL & VOLUME CONTROL SYSTEM

Valve Number	Class	Coordinates	Valve Category	Valve Size (Inches)	Valve Type	Actuator Type	Normal Position	Section XI Test	RR/CS Basis Page No	Test Alternative	Safety	Procedures Remarks
**CV-2155	2	1A/E-7	B	3	AGL	AO	O	QO	-	-	C,O	QO-5
**MO-2087	2	1A/F-7	B	4	GA	MO,M	O	QO	CS-5	CS	C	QO-6
**MO-2140	2	1A/C-6	B	3	GA	MO,M	C	QO	-	-	C,O	QO-5
**MO-2169	2	1A/D-2	B	4	GA	MO,M	C	QO	CS-6	CS	C,O	QO-6
**MO-2170	2	1A/D-3	B	4	GA	MO,M	C	QO	CS-6	CS	C,O	QO-6
**RV-2092	2	1B/F-2	C	1½	RV	SA	C	F	-	-	C,O	RM-100
**RV-2098	2	1B/D-3	C	3/4	RV	SA	C	F	-	-	C,O	RM-100
**RV-2104	2	1B/B-3	C	3/4	RV	SA	C	F	-	-	C,O	RM-100

VALVES TESTED BY P&ID

P&ID NUMBER: M-203 SYSTEM: ENGINEERING SAFEGUARDS SYSTEM

Valve Number	Class	Coordinates	Valve Category	Valve Size (Inches)	Valve Type	Actuator Type	Normal Position	Section XI Test	RR/CS Basis Page No	Test Alternative	Safety	Procedures Remarks	
**CK-3101	1	1/C-7	A,C	12	CK	SA	C	OT,LT	CS-7	HS CS	C,O	QO-8 (Part Stroke) QO-8 (Full Stroke)	Note 4
**CK-3102	1	1/D-7	A,C	12	CK	SA	C	QO,LT	RR-2	HS F	C,O	QO-8 (Part Stroke) FM-04 (Disassemble)	Note 4
**CK-3103	1	2/F-8	A,C	6	CK	SA	C	QO,LT	CS-9	CS	C,O	QO-8 (Full Stroke)	Note 4
**CK-3104	1	2/G-8	A,C	2	CK	SA	C	QO,LT	RR-4	CS RO	C,O	QO-8 (Part Stroke) RO-65 (Full Stroke)	Note 4
**CK-3116	1	1/B-7	A,C	12	CK	SA	C	QO,LT	CS-7	HS CS	C,O	QO-8 (Part Stroke) QO-8 (Full Stroke)	Note 4
**CK-3117	1	1/D-5	A,C	12	CK	SA	C	QO,LT	RR-2	HS F	C,O	QO-8 (Part Stroke) FM-04 (Disassemble)	Note 4
**CK-3118	1	2/D-8	A,C	6	CK	SA	C	QO,LT	CS-9	CS	C,O	QO-8 (Full Stroke)	Note 4
**CK-3119	1	2/E-8	A,C	2	CK	SA	C	QO,LT	RR-4	CS RO	C,O	QO-8 (Part Stroke) RO-65 (Full Stroke)	Note 4
**CK-3131	1	1/B-7	A,C	12	CK	SA	C	QO,LT	CS-7	HS CS	C,O	QO-8 (Part Stroke) QO-8 (Full Stroke)	Note 4
**CK-3132	1	1/D-4	A,C	12	CK	SA	C	QO,LT	RR-2	HS F	C,O	QO-8 (Part Stroke) FM-04 (Disassemble)	Note 4
**CK-3133	1	2/C-8	A,C	6	CK	SA	C	QO,LT	CS-9	CS	C,O	QO-8 (Full Stroke)	Note 4
**CK-3134	1	2/D-8	A,C	2	CK	SA	C	QO,LT	RR-4	CS RO	C,O	QO-8 (Part Stroke) RO-65 (Full Stroke)	Note 4

VALVES TESTED BY P&ID

P&ID NUMBER: M-203

SYSTEM: SAFETY INJECTION CONTAINMENT SPRAY, AND SHUTDOWN COOLING

Valve Number	Class	Coordinates	Valve Category	Valve Size (Inches)	Valve Type	Actuator Type	Normal Position	Section XI Test	RR/CS Basis Page No	Test Alternative	Safety	Procedures Remarks
**CK-3146	1	1/B-7	A,C	12	CK	SA	C	QO,LT	CS-7	HS CS	C,O	QO-8 (Part Stroke) Note 4 QO-8 (Full Stroke)
**CK-3147	1	1/D-2	A,C	12	CK	SA	C	QO,LT	RR-2	HS F	C,O	QO-8 (Part Stroke) Note 4 FM-04 (Disassemble)
**CK-3148	1	2/A-8	A,C	6	CK	SA	C	QO,LT	CS-9	CS	C,O	QO-8 (Full Stroke) Note 4
**CK-3149	1	2/B-8	A,C	2	CK	SA	C	QO,LT	RR-4	CS RO	C,O	QO-8 (Part Stroke) Note 4 RO-65 (Full Stroke)
**CK-3216	2	2/B-2	C	8	CK	SA	C	QO	RR-3	CS	O	QO-10 (Part Stroke)
**CK-3226	2	2/C-2	C	8	CK	SA	C	QO	RR-3	CS	O	QO-10 (Part Stroke)
**CK-3250	1	2/G-8	C	2	CK	SA	C	QO	RR-5	HS,CS RO	C,O	QO-8 (Part Stroke) RO-65 (Full Stroke)
**CK-3251	1	2/E-8	C	2	CK	SA	C	QO	RR-5	HS,CS RO	O	QO-8 (Part Stroke) RO-65 (Full Stroke)
**CK-3252	1	2/C-8	C	2	CK	SA	C	QO	RR-5	HS,CS RO	O	QO-8 (Part Stroke) RO-65 (Full Stroke)
**CK-3253	1	2/B-8	C	2	CK	SA	C	QO	RR-5	HS,CS RO	O	QO-8 (Part Stroke) RO-65 (Full Stroke)
**CK-3408	1	2/E-5	C	2	CK	SA	C	QO	RR-1	CS,RO		QO-8A, RO-65
**CK-3409	1	2/E-5	C	2	CK	SA	C	QO	RR-1	CS,RO		QO-8A, RO-65
**CV-3001	2	2/C-3	B	6	GL	AC	C	QO	CS-8	CS	O	QO-10
**CV-3002	2	2/B-3	B	6	GL	AC	C	QO	CS-8	CS	O	QO-10
**CV-3038	1	1/D-3	B	1	GL	AO	C	QO,PI	-	-	C	QO-5, QO-1
**CV-3042	1	1/D-7	B	1	GL	AO	C	QO,PI	-	-	C	QO-5, QO-1
**CV-3046	1	1/D-6	B	1	GL	AO	C	QO,PI	-	-	C	QO-5, QO-1

VALVES TESTED BY P&ID

P&ID NUMBER: M-203

SYSTEM: SAFETY INJECTION CONTAINMENT SPRAY, AND SHUTDOWN COOLING

Valve Number	Class	Coordinates	Valve Category	Valve Size (Inches)	Valve Type	Actuator Type	Normal Position	Section XI Test	RR/CS Basis Page No	Test Alternative	Safety	Procedures Remarks
**CV-3047	1	1/D-4	B	1	GL	AO	C	QO,PI	-	-	C	QO-5, QO-1
**CV-3069	3	1/C-8	B	2	GL	AC	O	QO,PI	-	-	C	QO-5, QO-1
**MO-3007	1	2/G-7	B	2	GL	MO	C	QO,PI	-	-	O	QO-5, QO-1
**MO-3008	1	2/F-7	B	6	GL	MO	C	QO,PI	-	-	O	QO-5, QO-1
**MO-3009	1	2/F-7	B	2	GL	MO	C	QO,PI	-	-	O	QO-5, QO-1
**MO-3010	1	2/D-7	B	6	GL	MO	C	QO,PI	-	-	O	QO-5, QO-1
**MO-3011	1	2/D-7	B	2	GL	MO	C	QO,PI	-	-	O	QO-5, QO-1
**MO-3012	1	2/C-7	B	6	GL	MO	C	QO,PI	-	-	O	QO-5, QO-1
**MO-3013	1	2/B-7	B	2	GL	MO	C	QO,PI	-	-	O	QO-5, QO-1
**MO-3014	1	2/A-7	B	6	GL	MO	C	QO,PI	-	-	O	QO-5, QO-1
**MO-3062	1	2/B-7	B	2	GL	MO	C	QO,PI	-	-	O	QO-5, QO-1
**MO-3064	1	2/C-7	B	2	GL	MO	C	QO,PI	-	-	O	QO-5, QO-1
**MO-3066	1	2/E-7	B	2	GL	MO	C	QO,PI	-	-	O	QO-5, QO-1
**MO-3068	1	2/G-7	B	2	GL	MO	C	QO,PI	-	-	O	QO-5, QO-1
**MO-3080	2	2/F-5	B	6	GA	MO	O	QO,PI	-	-	O,C	QO-5
**MO-3081	2	2/F-5	B	6	GA	MO	O	QO,PI	-	-	O,C	QO-5

VALVES TESTED BY P&ID

P&ID NUMBER: M-203

SYSTEM: SAFETY INJECTION CONTAINMENT SPRAY, AND SHUTDOWN COOLING

Valve Number	Class	Coordinates	Valve Category	Valve Size (Inches)	Valve Type	Actuator Type	Normal Position	Section XI Test	RR/CS Basis Page No	Test Alternative	Safety	Procedures Remarks
**MO-3082	2	2/F-4	B	2	GL	MO	C	QO,PI	-	-	O	QO-5
**MO-3083	2	2/F-5	B	2	GL	MO	C	QO,PI	-	-	O	QO-5
**MV-3217	2	2/C-2	A	1	MV	M	C	RO,QO,MO	RR-11	-	C	RO-32-33
**MV-3227	2	2/C-2	A	1	MV	M	C	RO,QO,MO	RR-11	-	C	RO-32-33
**RV-3162	2	2/D-5	C	1½	RV	SA	C	F	-	-	C,O	RM-100

VALVES TESTED BY P&ID

P&ID NUMBER: M-204 SYSTEM:

Valve Number	Class	Coordinates	Valve Category	Valve Size (Inches)	Valve Type	Actuator Type	Normal Position	Section XI Test	RR/CS Basis Page No	Test Alternative	Safety	Procedures Remarks
**CK-3166	2	1A/D-3	C	24	CK	SA	C	QO	RR-6	CS	O	QO-2 (Part Stroke)
**CK-3168	2	1B/C-6	C	8	CK	SA	C	QO	RR-8	QO,RO	O	QO-19 (Part Stroke) RO-65 (Full Stroke)
**CK-3177	2	1/G-4	C	3	CK	SA	C	QO	RR-8	CS	C,O	RO-65 (Full Stroke)
**CK-3181	2	1A/E-3	C	24	CK	SA	C	QO	RR-6	CS	O	QO-2 (Part Stroke)
**CK-3183	2	1A/C-4	C	6	CK	SA	C	QO	RR-8	QO,RO	O	QO-19 (Part Stroke) RO-65 (Full Stroke)
**CK-3186	2	1A/C-6	C	3	CK	SA	C	QO	RR-8	RO	C,O	RO-65 (Full Stroke)
**CK-3192	2	1/E-4	C	10	CK	SA	C	QO	CS-11	CS	C,O	QO-10
**CK-3201	2	1A/E-5	C	10	CK	SA	C	QO	CS-11	CS	C,O	QO-10
**CK-3208	2	1/D-3	C	8	CK	SA	C	QO	RR-9	CS	C,O	QO-10 (Part Stroke)
**CK-3220	2	1/B-3	C	8	CK	SA	C	QO	RR-9	CS	C,O	QO-10 (Part Stroke)
**CK-3230	2	1A/D-3	C	8	CK	SA	C	QO	RR-9	CS	C,O	QO-10 (Part Stroke)
**CK-3233	2	1A/F-4	C	3	CK	SA	O	QO	-	-	O	QO-20
**CK-3239	2	1B/D-6	C	18	CK	SA	C	QO	RR-7	QO	C,O	QO-20 (Part Stroke)
**CK-3240	2	1B/D-6	C	18	CK	SA	C	QO	RR-7	QO	C,O	QO-20 (Part Stroke)
**CK-3330	2	1/F,G-2	C	3	CK	SA	O	QO	-	-	O	QO-20
**CK-3331	2	1/H-2	C	4	CK	SA	O	QO	-	-	O	QO-20
**CK-3332	2	1/H-2	C	4	CK	SA	O	QO	-	-	O	QO-20

VALVES TESTED BY P&ID

P&ID NUMBER: M-204 SYSTEM:

Valve Number	Class	Coordinates	Valve Category	Valve Size (Inches)	Valve Type	Actuator Type	Normal Position	Section XI Test	RR/CS Basis Page No	Test Alternative	Safety	Procedures Remarks
**CK-3339	2	1/G-2	C	2	CK	SA	O	QO	-	-	O	QO-19
**CK-3340	2	1A/C-4	C	2	CK	SA	O	QO	-	-	O	QO-19
**CK-3400	3	1B/E-4	C	2	CK	SA	C	QO	CS-12	CS	O	QO-13
**CK-3401	3	1B/E-5	C	2	CK	SA	C	QO	CS-12	CS	O	QO-13
**CK-3402	3	1B/D-4	C	2	CK	SA	C	QO	CS-12	CS	O	QO-13
**CK-3403	3	1B/D-5	C	2	CK	SA	C	QO	CS-12	CS	O	QO-13
**CK-3404	3	1B/F-3	C	2	CK	SA	C	QO	CS-12	CS	O	QO-13
**CK-3405	3	1B/F-3	C	2	CK	SA	C	QO	CS-12	CS	O	QO-13
**CK-3406	3	1B/D-3	C	2	CK	SA	C	QO	CS-12	CS	C,O	QO-13
**CK-3407	3	1B/D-3	C	2	CK	SA	C	QO	CS-12	CS	C,O	QO-13
**CK-3411	3	1A/C-6	C	3	CK	SA	C	QO	RR-8	QO,RO	O	QO-8 (Part Stroke), RO-65 (Full Stroke)
**CV-0437A	3	1B/E-4	B	2	GA	AO	C	QO	CS-12	CS	C,O	QO-13
**CV-0437B	3	1B/E-5	B	2	GA	AO	C	QO	CS-12	CS	C,O	QO-13
**CV-0438A	3	1B/E-3	B	2	GA	AO	C	QO	CS-12	CS	C,O	QO-13
**CV-0438B	3	1B/E-3	B	2	GA	AO	C	QO	CS-12	CS	C,O	QO-13
**CV-3018	2	1A/D-7	B	4	GA	AO	ELC	QO	-	-	O	QO-5
**CV-3027	2	1B/G-7	B	6	GA	A	O	QO	CS-10	CS	C	QO-2

VALVES TESTED BY P&ID

P&ID NUMBER: M-204 SYSTEM:

Valve Number	Class	Coordinates	Valve Category	Valve Size (Inches)	Valve Type	Actuator Type	Normal Position	Section XI Test	RR/CS Basis Page No	Test Alternative	Safety	Procedures Remarks
**CV-3029	2	1A/E-3	B	24	GA	A	C	QO	CS-14	CS	O	QO-2
**CV-3030	2	1A/D-3	B	24	GA	A	C	QO	CS-14	CS	O	QO-2
**CV-3031	2	1B/D-6	B	18	GA	A	O	QO	CS-13	CS	C,O	QO-2
**CV-3036	2	1A/C-6	B	3	GA	A	ELC	QO	-	-	O,C	QO-5
**CV-3037	2	1A/C-6	B	3	GA	AC	ELC	QO	-	-	O,C	QO-5
**CV-3056	2	1B/G-7	B	6	GA	A	O	QO	CS-10	CS	C	QO-2
**CV-3057	2	1B/D-6	B	18	GA	A	O	QO	CS-13	CS	C,O	QO-2
**CV-3059	2	1A/D-6	B	4	GL	AC	ELO	QO	-	-	C,O	QO-5
**CV-3070	2	1/H-6	B	4	GA	A	C	QO	-	-	C,O	QO-5
**CV-3071	2	1A/B-4	B	4	GA	A	C	QO	-	-	O	QO-5
**MO-3072	2	1A/C-8	B	2	GL	M	C	QO	-	-	O	QO-5
**MV-3234	2	1/G-7	A,E	2	GA	-	LC	LT	-	-	C	RO-32-33
**MV-3234A	2	1/G-7	A,E	2	GA	-	LC	LT	-	-	C	RO-32-33
**RV-3164	2	1B/B-5	C	1½	RV	SA	C	F	-	-	C,O	RM-100

VALVES TESTED BY P&ID

P&ID NUMBER: M-205 SYSTEM: MAIN STEAM SYSTEM

Valve Number	Class	Coordinates	Valve Category	Valve Size (Inches)	Valve Type	Actuator Type	Normal Position	Section XI Test	RR/CS Basis Page No	Test Alternative	Safety	Procedures Remarks
**CK-MS401	3	2/F-8	C	4	CK	SA	C	QO	-	-	C,O	MO-38, QO-21
**CK-MS402	3	2/F-7	C	4	CK	SA	C	QO	-	-	C,O	MO-38, QO-21
**CV-0501	2	1/G-8	B,C	30	CK	A	O	QO	CS-15	CS	C	GOP/GCL2
**CV-0510	2	1/G-7	B,C	30	CK	A	O	QO	CS-15	CS	C	GOP/GCL2
**CV-0521	3	2/G-8	B	4	GA	A	C	QO	-	-	O	MO-38, QO-21
**CV-0522A	2	2/H-3	B	4	GL	M,AC	C	QO	-	-	C,O	MO-38, QO-21
**CV-0522B	2	2/F-7	B	4	GL	M,AO	C	QO	-	-	C,O	MO-38, QO-21
**RV-0521	3	2/E-8	C	3	RV	SA	C	F	-	-	C,O	RM-100

VALVES TESTED BY P&ID

P&ID NUMBER: M-207 SYSTEM: MAIN STEAM, FEEDWATER, AND CONDENSATE SYSTEM

Valve Number	Class	Coordinates	Valve Category	Valve Size (Inches)	Valve Type	Actuator Type	Normal Position	Section XI Test	RR/CS Basis Page No	Test Alternative	Safety	Procedures Remarks
**CK-FW701	2	1A/G-5	C	18	CK	SA	O	QO	*	CS	C	QO-24
**CK-FW702	2	1A/G-6	C	18	CK	SA	O	QO	*	CS	C	QO-24
**CK-FW703	3	2/C-3	C	6	CK	SA	C	QO	-	-	C,O	QO-21
**CK-FW704	2	2/A-3	C	6	CK	SA	C	QO	-	-	C,O	QO-21
**CK-FW725	3	2/B-7	C	6	CK	SA	C	QO	-	-	O	MO-38, QO-21
**CK-FW726	3	2/B-5	C	6	CK	SA	C	QO	-	-	O	QO-21
**CK-FW728	2	2/E-2	C	4	CK	SA	C	QO	-	-	C,O	QO-21
**CK-FW729	2	2/D-3	C	4	CK	SA	C	QO	-	-	C,O	QO-21
**CK-FW741	3	2/E-6	C	6	CK	SA	C	QO	-	-	C,O	MO-38, QO-21
**CK-FW743	3	2/H-6	C	6	CK	SA	C	QO	-	-	C,O	MO-38, QO-21
**CV-0727	2	2/G-4	B	4	GL	AC	C	QO	-	-	C,O	QO-21
**CV-0736A	2	2/C-4	B	4	GL	AC	C	QO	-	-	C,O	QO-21
**CV-0737A	2	2/A-4	B	4	GL	AC	C	QO	-	-	C,O	QO-21
**CV-0749	2	2/E-4	B	4	GL	AC	C	QO	-	-	C,O	QO-21
**MV-FW774	3	2/F-7	B	4	GA	M	C	QO	-	-	O	QO-21
**MV-FW775	3	2/F-7	B	4	GA	M	C	QO	-	-	O,C	QO-21
**RV-0701	2	1/H-4	C	6	RV	SA	C	F	-	-	C,O	RM-29

*See procedure Step 5.3.2a

VALVES TESTED BY P&ID

P&ID NUMBER: M-207 SYSTEM: MAIN STEAM, FEEDWATER, AND CONDENSATE SYSTEM

Valve Number	Class	Coordinates	Valve Category	Valve Size (Inches)	Valve Type	Actuator Type	Normal Position	Section XI Test	RR/CS Basis Page No	Test Alternative	Safety	Procedures Remarks
**RV-0702	2	1/H-4	C	6	RV	SA	C	F	-	-	C,O	RM-29
**RV-0703	2	1/H-6	C	6	RV	SA	C	F	-	-	C,O	RM-29
**RV-0704	2	1/H-6	C	6	RV	SA	C	F	-	-	C,O	RM-29
**MO-0743	2	2/G-3	B	4	GA	MO	O	QO	-	-	C,O	QO-21
**MO-0748	2	2/C-3	B	4	GA	MO	O	QO	-	-	C,O	QO-21
**MO-0753	2	2/E-3	B	4	GA	MO	O	QO	-	-	C,O	QO-21
**MO-0754	2	2/A-4	B	4	GA	MO	O	QO	-	-	C,O	QO-21
**MO-0755	2	2/C-3	B	4	GA	MO	O	QO	-	-	C,O	QO-21
**MO-0759	2	2/A-3	B	4	GA	MO	O	QO	-	-	C,O	QO-21
**MO-0760	2	2/E-3	B	4	GA	MO	O	QO	-	-	C,O	QO-21
**MO-0798	2	2/G-3	B	4	GA	MO	O	QO	-	-	C,O	QO-21
**RV-0705	2	Sh1/H-7	C	6	RV	SA	C	F	-	-	C,O	RM-29
**RV-0706	2	Sh1/H-7	C	6	RV	SA	C	F	-	-	C,O	RM-29
**RV-0707	2	Sh1/H-4	C	6	RV	SA	C	F	-	-	C,O	RM-29
**RV-0708	2	Sh1/H-4	C	6	RV	SA	C	F	-	-	C,O	RM-29
**RV-0709	2	Sh1/G-4	C	6	RV	SA	C	F	-	-	C,O	RM-29

VALVES TESTED BY P&ID

P&ID NUMBER: M-207 SYSTEM: MAIN STEAM, FEEDWATER, AND CONDENSATE SYSTEM

Valve Number	Class	Coordinates	Valve Category	Valve Size (Inches)	Valve Type	Actuator Type	Normal Position	Section XI Test	RR/CS Basis Page No	Test Alternative	Safety	Procedures Remarks
**RV-0710	2	Sh1/G-4	C	6	RV	SA	C	F	-	-	C,O	RM-29
**RV-0711	2	Sh1/G-4	C	6	RV	SA	C	F	-	-	C,O	RM-29
**RV-0712	2	Sh1/G-4	C	6	RV	SA	C	F	-	-	C,O	RM-29
**RV-0713	2	Sh1/G-7	C	6	RV	SA	C	F	-	-	C,O	RM-29
**RV-0714	2	Sh1/G-7	C	6	RV	SA	C	F	-	-	C,O	RM-29
**RV-0715	2	Sh1/G-7	C	6	RV	SA	C	F	-	-	C,O	RM-29
**RV-0716	2	Sh1/G-6	C	6	RV	SA	C	F	-	-	C,O	RM-29
**RV-0717	2	Sh1/G-6	C	6	RV	SA	C	F	-	-	C,O	RM-29
**RV-0718	2	Sh1/G-6	C	6	RV	SA	C	F	-	-	C,O	RM-29
**RV-0719	2	Sh1/G-4	C	6	RV	SA	C	F	-	-	C,O	RM-29
**RV-0720	2	Sh1/G-4	C	6	RV	SA	C	F	-	-	C,O	RM-29
**RV-0721	2	Sh1/G-4	C	6	RV	SA	C	F	-	-	C,O	RM-29
**RV-0722	2	1/G-4	C	6	RV	SA	C	F	-	-	C,O	RM-29
**RV-0723	2	1/G-7	C	6	RV	SA	C	F	-	-	C,O	RM-29
**RV-0724	2	1/G-7	C	6	RV	SA	C	F	-	-	C,O	RM-29
**RV-0783	3	2/F-5	C	2½"	RV	SA	C	F	-	-	C,O	RM-100

VALVES TESTED BY P&ID

P&ID NUMBER: M-208 SYSTEM: SERVICE WATER SYSTEM

Valve Number	Class	Coordinates	Valve Category	Valve Size (Inches)	Valve Type	Actuator Type	Normal Position	Section XI Test	RR/CS Basis Page No	Test Alternative	Safety	Procedures Remarks
**CK-SW407	3	1B/F-5	C	8	CK	SA	O	-	SC-4	-	O	-
**CK-SW408	3	1B/B-5	C	8	CK	SA	O	-	SC-4	-	O	-
**CK-SW409	3	1B/B-7	C	8	CK	SA	O	-	SC-4	-	O	-
**CK-SW410	3	1B/F-7	C	8	CK	SA	O	-	SC-4	-	O	-
**CV-0823	3	1B/F-3	B	24	B	AC	C	QO	CS-16	CS	O	QO-6
**CV-0824	3	1B/D-4	B	16	B	AC	O	QO	CS-20	-	C,O	QO-6
**CV-0825	3	1B/E-2	B	3	GA	AC	C	QO	CS-20	-	O	QO-6
**CV-0826	3	1B/D-3	B	16	B	AC	C	QO	CS-16	CS	O	QO-6
**CV-0847	3	1B/D-3	B	16	B	AC	O	QO	CS-20	-	C,O	QO-5
**CV-0861	3	1B/F-5	B	8	B	AC	C	QO,PI	-	-	O	QO-5
**CV-0862	3	1B/D,E-6	-	8	B	AC	O	-	SC-5	-	O	-
**CV-0864	3	1B/B-5	B	8	B	AC	C	QO,PI	-	-	O	QO-5
**CV-0865	3	1B/C,D-6	-	8	B	AC	O	-	SC-5	-	O	-
**CV-0867	3	1B/F-7	B	8	B	AC	C	QO,PI	-	-	O	QO-5
**CV-0869	3	1B/D-7	-	8	B	AC	O	-	SC-5	-	O	-
**CV-0870	3	1B/C,D-7	-	8	B	AC	O	-	SC-5	-	O	-
**CV-0873	3	1B/B-7	B	8	B	AC	C	QO,PI	-	-	O	QO-5

VALVES TESTED BY P&ID

P&ID NUMBER: M-208 SYSTEM: SERVICE WATER SYSTEM

Valve Number	Class	Coordinates	Valve Category	Valve Size (Inches)	Valve Type	Actuator Type	Normal Position	Section XI Test	RR/CS Basis Page No	Test Alternative	Safety	Procedures Remarks
**CV-0878	3	1A/C-3	B	3	GA	AC	C	QO	CS-20	-	O	QO-6
**CV-0884	3	1A/D-6	B	6	B	AC	C	QO	RR-10	-	O	MO-7A
**CV-0885	3	1A/D-5	B	6	B	AC	C	QO	RR-10	-	O	MO-7A

VALVES TESTED BY P&ID

P&ID NUMBER: M-209 SYSTEM: COMPONENT COOLING WATER SYSTEM

Valve Number	Class	Coordinates	Valve Category	Valve Size (Inches)	Valve Type	Actuator Type	Normal Position	Section XI Test	RR/CS Basis Page No	Test Alternative	Safety	Procedures Remarks
**CK-CC401	2	2/C-7	C	3	CK	SA	O	QO	RR-13	-	O,C	QO-19
**CK-CC402	2	2/C-7	C	3	CK	SA	O	QO	RR-13	-	O,C	QO-19
**CK-CC910	2	2/F-7	A	10	CK	SA	O	QO,LT	RR-11	CS,LT	C,O	QO-6, RO-32-14
**CK-CC941	3	3/B-4	B	16	CK	SA	O,C	QO	-	-	C,O	QO-15
**CK-CC943	3	3/B-4	B	16	CK	SA	O,C	QO	-	-	C,O	QO-15
**CK-CC944	3	3/A-4	B	16	CK	SA	O,C	QO	-	-	C,O	QO-15
**CV-0910	2	2/F-7	A	10	B	AC,M	O	QO,LT	CS-17	CS,LT	C	QO-6, RO-32-14
**CV-0911	2	2/A-7	A	10	B	AC,M	O	QO,LT	CS-17	CS,LT	C	QO-6, RO-32-15
**CV-0913	3	2/E-3	B	4	GA	AC	C	QO		-	O	QO-5
**CV-0937	3	3/G-7	B	18	B	AC	C	QO	-	-	O	QO-5
**CV-0938	3	3/G-7	B	18	B	AC	C	QO	-	-	O	QO-5
**CV-0940	2	2/A-8	A	10	B	AC,M	O	QO,LT	CS-17	CS,LT	C	QO-6, RO-32-15
**CV-0944	3	3/E-2	B	10	B	AO,M	O	QO	RR-12	-	C	QO-1
**CV-0944A	3	3/E-3	B	10	B	AO,M	O	QO	-	-	C	QO-5, QO-1
**CV-0945	3	3/F-4	B	16	B	AC	O	QO	CS-18	CS	O	QO-6
**CV-0946	3	3/E-5	B	16	B	AC	O	QO	CS-18	CS	O	QO-6
**CV-0950	3	2/D-7	B	4	GA	AC	C	QO	-	-	O	QO-5

VALVES TESTED BY P&ID

P&ID NUMBER: M-209 SYSTEM: COMPONENT COOLING WATER SYSTEM

Valve Number	Class	Coordinates	Valve Category	Valve Size (Inches)	Valve Type	Actuator Type	Normal Position	Section XI Test	RR/CS Basis Page No	Test Alternative	Safety	Procedures Remarks
**CV-0977B	3	3/D-3	B	10	B	AO,M	O	QO	RR-12	-	C	QO-1
**RV-0915	3	3/G-3	C		RV	SA	C	F	-	-	C	RM-100

VALVES TESTED BY P&ID

P&ID NUMBER: M-210 SYSTEM: RADWASTE TREATMENT SYSTEM

Valve Number	Class	Coordinates	Valve Category	Valve Size (Inches)	Valve Type	Actuator Type	Normal Position	Section XI Test	RR/CS Basis Page No	Test Alternative	Safety	Procedures Remarks
**CK-CRW403	2	2/E-5	AC	1½	CK	SA	C	QO,LT	-	-	C	QO-11, RO-32-37
**CK-CRW407	2	1A/H-8	AC	3	CK	SA	O	QO,LT	-	-	C	QO-11, RO-32-41
**CK-CRW408	2	1A/B-5	AC	3	CK	SA	O	QO,LT	-	-	C	QO-11, RO-32-67
**CV-1001	2	2/E-5	A	1½	GL	AO	C	QO,LT	-	-	C	QO-5, RO-32-37
**CV-1002	2	2/C-7	A	4	GL	AO	O	QO,LT	-	-	C	QO-5, RO-32-47
**CV-1004	2	1A/H-8	A	3	GL	AO	O	QO,LT	-	-	C	QO-5, RO-32-41
**CV-1007	2	2/B-7	A	4	GL	AO	O	QO,LT	-	-	C	QO-5, RO-32-47
**CV-1036	2	1A/B-6	A	6	GL	AO	O	QO,LT	-	-	C	QO-5, RO-32-49
**CV-1037	2	1A/B-5	A	3	GL	AO	O	QO,LT	-	-	C	QO-5, RO-32-67
**CV-1038	2	1A/B-7	A	6	GL	AO	O	QO,LT	-	-	C	QO-5, RO-32-49
**CV-1044	2	1B/F-1	A	4	GL	AO	O	QO,LT	-	-	C	QO-5, RO-32-69
**CV-1045	2	1B/G-1	A	4	GL	AO	O	QO,LT	-	-	C	QO-5, RO-32-69
**CV-1064	2	1A/F-1	A	2	GL	AO	O	QO,LT	-	-	C	QO-5, RO-32-25
**CV-1065	2	1A/F-2	A	2	GL	AO	O	QO,LT	-	-	C	QO-5, RO-32-25

VALVES TESTED BY P&ID

P&ID NUMBER: M-211 SYSTEM: DIRTY AND GASEOUS WASTE SYSTEM

Valve Number	Class	Coordinates	Valve Category	Valve Size (Inches)	Valve Type	Actuator Type	Normal Position	Section XI Test	RR/CS Basis Page No	Test Alternative	Safety	Procedures Remarks
**CV-1101	2	2/F-6	A	4	GL	AO	O	QO,LT	-	-	C	QO-5, RO-32-46
**CV-1102	2	2/F-6	A	4	GL	AO	O	QO,LT	-	-	C	QO-5, RO-32-46
**CV-1103	2	1/F-7	A	4	GL	AO	C	QO,LT	-	-	C	QO-5, RO-32-52
**CV-1104	2	1/F-7	A	4	GL	AO	C	QO,LT	-	-	C	QO-5, RO-32-52

VALVES TESTED BY P&ID

P&ID NUMBER: M-212 SYSTEM: SERVICE & INSTRUMENT AIR SYSTEM

Valve Number	Class	Coordinates	Valve Category	Valve Size (Inches)	Valve Type	Actuator Type	Normal Position	Section XI Test	RR/CS Basis Page No	Test Alternative	Safety	Procedures Remarks
**CK-CA400	2	4/E-2	C	2	CK	SA	O	RO	-	-	C	RO-32-65
**CV-1211	2	4/E-2,3	A	2	GB	AO	O	RO	-	-	C	RO-32-65
**MV-CA728	2	1/B-2	A	2	GA	M	C	LT	-	-	C	RO-32-10
**MV-CA122	2	1/B-2	A	2	GA	M	LC	LT	-	-	C	RO-32-10

VALVES TESTED BY P&ID

P&ID NUMBER: M-213 SYSTEM: SERVICE WATER SYSTEM

Valve Number	Class	Coordinates	Valve Category	Valve Size (Inches)	Valve Type	Actuator Type	Normal Position	Section XI Test	RR/CS Basis Page No	Test Alternative	Safety	Procedures Remarks
**CK-SW401	3	D-6	C	16	CK	SA	O,C	QO	-	-	O,C	QO-14
**CK-SW402	3	D-5	C	16	CK	SA	O,C	QC	-	-	O,C	QO-14
**CK-SW403	3	1/E-4	C	16	CK	SA	O,C	QO	-	-	O,C	QO-14
**CV-1359	3	E-7	B	24	B	AO	O	QO	-	-	C	QO-1

VALVES TESTED BY P&ID

P&ID NUMBER: M-215 SYSTEM: PLANT HEATING SYSTEM

Valve Number	Class	Coordinates	Valve Category	Valve Size (Inches)	Valve Type	Actuator Type	Normal Position	Section XI Test	RR/CS Basis Page No	Test Alternative	Safety	Procedures Remarks
**CV-1501	2	G-3	A,E	2	GA	AC	C	LT,QO	-	-	C	QO-5,RO-32-38
**CV-1502	2	G-3	A,E	2	GA	AO	C	LT,QO	-	-	C	QO-5,RO-32-38
**CV-1503	2	H-3	A,E	4	GA	AO	C	LT,QO	-	-	C	QO-5,RO-32-39
4"-257	2	H-3	A,C	4	CK	SA	C	LT	-	-	C	RO-32-39

VALVES TESTED BY P&ID

P&ID NUMBER: M-218 SYSTEM: HVAC SYSTEM

Valve Number	Class	Coordinates	Valve Category	Valve Size (Inches)	Valve Type	Actuator Type	Normal Position	Section XI Test	RR/CS Basis Page No	Test Alternative	Safety	Procedures Remarks
**CV-1805	2	2/D-6	A,B	8	B	AO	C	LT,QO	CS-19	C		QO-6,RO-32-1A
**CV-1806	2	2/D-6	A,B	8	B	AO	C	LT,QO	CS-19	-	C	QO-6,RO-32-1A
**CV-1807	2	2/D-6	A,B	8	B	AO	C	LT,QO	CS-19	-	C	QO-6,RO-32-1C
**CV-1808	2	2/D-6	A,B	8	B	AO	C	LT,QO	CS-19	-	C	QO-6,RO-32-1C
**CV-1813	2	2/C-3	A	12	B	AC	C	LT	-	-	C	RO-32-68
**CV-1814	2	2/B-3	A	12	B	AO	C	LT	-	-	C	RO-32-68
**MO-P1	2	2/E-1	A	6	B	MO	C	LT	-	-	C	RO-32-27
**MO-P2	2		A	6	B	MO	C	LT	-	-	C	RO-32-27
**MO-P3	2		A	6	B	MO	C	LT	-	-	C	RO-32-27
**MV-VA100	2	2/E-2	A	4	GA	M	C	LT	-	-	C	RO-32-1B
**MV-VA101	2	2/E-2	A	4	GA	M	C	LT	-	-	C	RO-32-1B
**MV-VA601	2	2/F-1	A	1½	GL	M	C	LT	-	-	C	RO-32-66
**MV-VA603		2/F-1	A	1	GL	M	C	LT	-	-	C	RO-32-66
**MV-VA604	2	2/E-1	A	½	GL	M	C	LT	-	-	C	RO-32-27
**MV-VA605	2	2/E-1	A	½	GL	M	C	LT	-	-	C	RO-32-27
**MV-VA-L-6	2	2/F-1	A	1	GL	M	C	LT	-	-	C	RO-32-66
**MV-1801B	2	Sh 2	A	½	GA	M	C	LT	-	-	C	RO-32-48

VALVES TESTED BY P&ID

P&ID NUMBER: M-218 SYSTEM: HVAC SYSTEM

Valve Number	Class	Coordinates	Valve Category	Valve Size (Inches)	Valve Type	Actuator Type	Normal Position	Section XI Test	RR/CS Basis Page No	Test Alternative	Safety	Procedures Remarks
**MV-1801C	2	Sh 2	A	½	GA	M	C	LT	-	-	C	RO-32-48
**MV-1802B	2	Sh 2	A,E	½	GA	M	C	LT	-	-	C	RO-32-17
**MV-1802C	2	Sh 2	A,E	½	GA	M	C	LT	-	-	C	RO-32-17
**MV-1803B	2	Sh 2	A,E	½	GA	M	C	LT	-	-	C	RO-32-48
**MV-1803C	2	Sh 2	A,E	½	GA	M	C	LT	-	-	C	RO-32-48
**MV-1804B	2	Sh 2	A,E	½	GA	M	C	LT	-	-	C	RO-32-17
**MV-1804C	2	Sh 2	A,E	½	GA	M	C	LT	-	-	C	RO-32-17
**MV-1805A	2	Sh 2	A,E	½	GA	M	C	LT	-	-	C	RO-32-48
**MV-1805C	2	Sh 2	A,E	½	GA	M	C	LT	-	-	C	RO-32-48
**MV-1812A	2	Sh 2	A,E	½	GA	M	C	LT	-	-	C	RO-32-17
**MV-1812C	2	Sh 2	A,E	½	GA	M	C	LT	-	-	C	RO-32-17
**MV-1814A	2	Sh 2	A,E	½	GA	M	C	LT	-	-	C	RO-32-17
**MV-1814B	2	Sh 2	A,E	½	GA	M	C	LT	-	-	C	RO-32-17
**MV-1815A	2	Sh 2	A,E	½	GA	M	C	LT	-	-	C	RO-32-48
**MV-1815B	2	Sh 2	A,E	½	GA	M	C	LT	-	-	C	RO-32-48

VALVES TESTED BY P&ID

P&ID NUMBER: M-219 SYSTEM: SAMPLE SYSTEM

Valve Number	Class	Coordinates	Valve Category	Valve Size (Inches)	Valve Type	Actuator Type	Normal Position	Section XI Test	RR/CS Basis Page No	Test Alternative	Safety	Procedures Remarks
**CV-1910	2	1B/C-8	A	½	GL	AO	O	QO,LT	-	-	C	QO-5, RO-32-40
**CV-1911	2	1B/B-8	A	½	GL	AO	O	QO,LT	-	-	C	QO-5, RO-32-40

VALVES TESTED BY P&ID

P&ID NUMBER: M-221

SYSTEM: SPENT FUEL POOL AND SHIELD COOLING SYSTEMS

Valve Number	Class	Coordinates	Valve Category	Valve Size (Inches)	Valve Type	Actuator Type	Normal Position	Section XI Test	RR/CS Basis Page No	Test Alternative	Safety	Procedures Remarks
**CK-CD401	2	1/D-2	A,C	1½	CK	SA	O	QO,LT	-	-	C	QO-11, RO-32-11
**CV-0939	2	1/D-3	A	1½	GA	AO	O	QO,LT	-	-	C	QO-5, RO-32-11
**MV-SFP117	2	2/C-2	A,E	8	GA	M	LC	LT	-	-	C	RO-32-72
**MV-SFP118	2	2/C-2	A,E	8	GA	M	LC	LT	-	-	C	RO-32-72
**MV-SFP120	2	2/D-2	A,E	6	GA	M	LC	LT	-	-	C	RO-32-64
**MV-SFP121	2	2/D-2	A,E	6	GA	M	LC	LT	-	-	C	RO-32-64

VALVES TESTED BY P&ID

P&ID NUMBER: M-222 SYSTEM: MISCELLANEOUS GAS SUPPLY SYSTEM

Valve Number	Class	Coordinates	Valve Category	Valve Size (Inches)	Valve Type	Actuator Type	Normal Position	Section XI Test	RR/CS Basis Page No	Test Alternative	Safety	Procedures Remarks
**CK-N_2/400	2	1/G-3	A,E	1	CK	SA	C	LT	-	-	C	RO-32-26
**CV-1358	2	1/G-3	A,C	1	GA	AO	C	LT	-	-	C	RO-32-26

VALVES TESTED BY P&ID

P&ID NUMBER: M-224 SYSTEM: GAS ANALYZING SYSTEM

Valve Number	Class	Coordinates	Valve Category	Valve Size (Inches)	Valve Type	Actuator Type	Normal Position	Section XI Test	RR/CS Basis Page No	Test Alternative	Safety	Procedures Remarks
**MV-VA141	2	1/E-7	A,E	½	GL	M	C	LT	-	-	C,O	RO-32-28
**MV-VA142	2	1/E-7	A,E	½	GL	M	C	LT	-	-	C,O	RO-32-28
**SV-2412A	2	2/B-10	A,E	½	GL	SV	C	LT	SC-1	-	C	RO-32-40B, QO-5
**SV-2412B	2	2/B-9	A,E	½	GL	SV	C	LT	SC-1	-	C	RO-32-40B, QO-5
**SV-2413A	2	2/E-10	A,E	½	GL	SV	C	LT	SC-1	-	C	RO-32-21A, QO-5
**SV-2413B	2	2/E-9	A,E	½	GL	SV	C	LT	SC-1	-	C	RO-32-21A, QO-5
**SV-2414A	2	2/C-10	A,E	½	GL	SV	C	LT	SC-1	-	C	RO-32-40A, QO-5
**SV-2414B	2	2/C-9	A,E	½	GL	SV	C	LT	SC-1	-	C	RO-32-40A, QO-5
**SV-2415A	2	2/F-10	A,E	½	GL	SV	C	LT	SC-1	-	C	RO-32-21, QO-5
**SV-2415B	2	2/F-9	A,E	½	GL	SV	C	LT	SC-1	-	C	RO-32-21, QO-5

VALVES TESTED BY P&ID

P&ID NUMBER: M-226 SYSTEM: MAIN STEAM SYSTEM

Valve Number	Class	Coordinates	Valve Category	Valve Size (Inches)	Valve Type	Actuator Type	Normal Position	Section XI Test	RR/CS Basis Page No	Test Alternative	Safety	Procedures Remarks
**CV-0738	2	1/C-7	B	2	AGL	AO	O	QO	-	-	C	QO-5
**CV-0739	2	1/C-7	B	2	AGL	AO	O	QO	-	-	C	QO-5
**CV-0767	2	1/F-8	B	2	AGL	AO	O	QO	-	-	C	QO-5
**CV-0768	2	1/E-8	B	2	AGL	AO	O	QO	-	-	C	QO-5
**CV-0770	2	1/E-7	B	2	AGL	AO	O	QO	-	-	C	QO-5
**CV-0771	2	1/F-7	B	2	AGL	AO	O	QO	-	-	C	QO-5

VALVE REFERENCE LIST

IN ALPHA/NUMERIC ORDER

VALVE NUMBER	COORDINATES	RELATED TESTS	COMMENTS
4"-257	M-215-H/3	RO-32-39	MZ-39, Structural Spacer
**CK-0155B	M-201-3/E-4	RO-32-42, QO-11	MZ-42
**CK-N_2/400	M-222-1/G-3	RO-32-26	MZ-26
**CK-CA400	M-212-4/E-2	RO-32-65	MZ-65
**CK-CC401	M-209-2/C-7	QO-19	RR-13
**CK-CC402	M-209-2/C-7	QO-19	RR-13
**CK-CD401	M-221-1/D-2	QO-11, RO-32-11	MZ-11
**CK-MS401	M-205-2/F-8	MO-38, QO-21	
**CK-SW401	M-213/D-6	MO-16, QO-14	
**CK-MS402	M-205-2/F-7	MO-38, QO-21	
**CK-SW402	M-213/D-5	MO-16, QO-14	
**CK-CRW403	M-210-2/E-5	QO-11, RO-32-37	MZ-37
**CK-SW403	M-213/D-4	MO-16, QO-14	
**CK-CRW407	M-210-1A/H-8	QO-11, RO-32-41	MZ-41
**CK-SW407	M-208-1B/F-5	-	SC-4
**CK-CRW408	M-210-1A/B-5	QO-11, RO-32-67	MZ-67
**CK-SW408	M-208-1B/B-5	-	SC-4
**CK-SW409	M-208-1B/B-7	-	SC-4
**CK-SW410	M-208-1B/F-7	-	SC-4
**CK-0701	M-207-1A/G-5	QO-24	
**CK-0702	M-207-1A/G-6	QO-24	
**CK-FW703	M-207-2/C-3	QO-21	
**CK-FW704	M-207-2/A-3	QO-21	
**CK-FW725	M-207-2/B-7	MO-38, QO-21	

VALVE REFERENCE LIST

IN ALPHA/NUMERIC ORDER

VALVE NUMBER	COORDINATES	RELATED TESTS	COMMENTS
**CK-FW726	M-207-2/B-5	QO-21	
**CK-FW728	M-207-2/E-2	QO-21	
**CK-FW729	M-207-2/D-3	QO-21	
**CK-FW741	M-207-2/E-6	MO-38, QO-21	
**CK-FW743	M-207-2/H-6	MO-38, QO-21	
**CK-CC910	M-209-2/F-7	QO-6, RO-32-14	MZ-14, CS-16
**CK-CC941	M-209-3/B-4	MO-15	
**CK-CC943	M-209-3/B-4	QO-15	
**CK-CC944	M-209-3/A-4	QO-15	
**CK-2093	M-202-1B/E-3	QO-17	
**CK-2099	M-202-1B/C-3	QO-17	
**CK-2105	M-202-1B/B-3	QO-17	
**CK-2110	M-202-1B/E-5	-	SC-2
**CK-2114	M-202-1B/B,C-7	-	SC-2
**CK-2116	M-202-1B/B-7	-	SC-2
**CK-2138	M-202-1A/B-4	CL2.2	CS-3
**CK-2139	M-202-1A/B-4	CL2.2	CS-3
**CK-2141	M-202-1A/C-7	CL2.2	CS-3
**CK-2161	M-202-1A/D-7	CL2.2	CS-3
**CK-2171	M-202-1A/C-7	CL2.2	CS-3
**CK-3101	M-203-1/C-7	QO-8	CS-7
**CK-3102	M-203-1/D-7	QO-8,FM-04	RR-2
**CK-3103	M-203-2/F-8	QO-8	CS-7
**CK-3104	M-203-2/G-8	QO-8, RO-65	RR-4

VALVE REFERENCE LIST

IN ALPHA/NUMERIC ORDER

VALVE NUMBER	COORDINATES	RELATED TESTS	COMMENTS
**CK-3116	M-203-1/B-7	QO-8	CS-7
**CK-3117	M-203-1/D-5	QO-8, FM-04	RR-2
**CK-3118	M-203-2/D-8	QO-8	CS-9
**CK-3119	M-203-2/E-8	QO-8, RO-65	RR-4
**CK-3131	M-203-1/B-7	QO-8	CS-7
**CK-3132	M-203-1/D-4	QO-8, FM-04	RR-2
**CK-3133	M-203-2/C-8	QO-8	CS-9
**CK-3134	M-203-2/D-8	QO-8, RO-65	RR-4
**CK-3146	M-203-1/B-7	QO-8	CS-7
**CK-3147	M-203-1/D-2	QO-8, FM-04	RR-2
**CK-3148	M-203-2/A-8	QO-8	CS-9
**CK-3149	M-203-2/B-8	QO-8, RO-65	RR-4
**CK-3166	M-204-1A/D-3	QO-2	RR-6
**CK-3168	M-204-1B/C-6	RO-65, QO-19	RR-8
**CK-3177	M-204-1/G-4	RO-65	RR-8
**CK-3181	M-204-1A/E-3	QO-2	RR-6
**CK-3183	M-204-1A/C-4	RO-65, QO-19	RR-8
**CK-3186	M-204-1A/C-6	RO-65	RR-8
**CK-3192	M-204-1/E-4	QO-10	CS-11
**CK-3201	M-204-1A/E-5	QO-10	CS-11
**CK-3208	M-204-1/D-3	QO-10	RR-9
**CK-3216	M-203-2/B-2	QO-10	RR-3
**CK-3220	M-204-1/B-3	QO-10	RR-9
**CK-3226	M-203-2/C-2	QO-10	RR-3

VALVE REFERENCE LIST

IN ALPHA/NUMERIC ORDER

VALVE NUMBER	COORDINATES	RELATED TESTS	COMMENTS
**CK-3230	M-204-1A/D-3	QO-10	RR-9
**CK-3233	M-204-1A/F-4	QO-20	-
**CK-3239	M-204-1B/D-6	QO-20	RR-7
**CK-3240	M-204-1B/D-6	QO-20	RR-7
**CK-3250	M-203-2/G-8	QO-8, RO-65	RR-5
**CK-3251	M-263-2/E-8	QO-8, RO-65	RR-5
**CK-3252	M-203-2/C-8	QO-8, RO-65	RR-5
**CK-3253	M-203-2/B-8	QO-8, RO-65	RR-5
**CK-3330	M-204-1/F,G-2	QO-20	-
**CK-3331	M-204-1/H-2	QO-20	-
**CK-3332	M-204-1/H-2	QO-20	-
**CK-3339	M-204-1/G-2	QO-19	-
**CK-3340	M-204-1A/C-4	QO-19	-
**CK-3400	M-204-1B/E-4	QO-13	CS-12
**CK-3401	M-204-1B/E-5	QO-13	CS-12
**CK-3402	M-204-1B/D-4	QO-13	CS-12
**CK-3403	M-204-1B/D-5	QO-13	CS-12
**CK-3404	M-204-1B/F-3	QO-13	CS-12
**CK-3405	M-204-1B/F-3	QO-13	CS-12
**CK-3406	M-204-1B/D-3	QO-13	CS-12
**CK-3407	M-204-1B/D-3	QO-13	CS-12
**CK-3408	M-203-2/E-5	QO-8A, RO-65	RR-1
**CK-3409	M-203-2/E-5	QO-8A, RO-65	RR-1
**CK-3410	M-201-1/C-3	QO-8B, RO-65	RR-1

VALVE REFERENCE LIST

IN ALPHA/NUMERIC ORDER

VALVE NUMBER	COORDINATES	RELATED TESTS	COMMENTS
**CK-3411	M-204-1A/C-6	QO-8, RO-65	RR-8
**CV-0155	M-201-3/E-4	QO-5, RO-32-42	MZ-42
**CV-0437A	M-204-1B/E-4	QO-13	CS-12
**CV-0437B	M-204-1B/E-5	QO-13	CS-12
**CV-0438A	M-204-1B/E-3	QO-13	CS-12
**CV-0438B	M-204-1B/E-3	QO-13	CS-12
**CV-0501	M-205-1/G-8	GOP/GCL2	CS-15
**CV-0510	M-205-1/G-7	GOP/GCL2	CS-15
**CV-0521	M-205-2/G-8	QO-21, MO-38	
**CV-0522A	M-205-2/H-3	QO-21, MO-38	
**CV-0522B	M-205-2/F-7	QO-21, MO-38	
**CV-0727	M-207-2/G-4	QO-21	
**CV-0736A	M-207-2/C-4	QO-21	
**CV-0737A	M-207-2/A-4	QO-21	
**CV-0738	M-226-1/C-7	QO-5	MZ-55
**CV-0739	M-226-1/C-7	QO-5	MZ-16
**CV-0749	M-207-2/E-4	QO-21	
**CV-0767	M-226-1/F-8	QO-5	MZ-5
**CV-0768	M-226-1/E-8	QO-5	MZ-6
**CV-0770	M-226-1/E-7	QO-5	MZ-6
**CV-0771	M-226-1/F-7	QO-5	MZ-5
**CV-0823	M-208-1B/F-3	QO-6	CS-15
**CV-0824	M-208-1B/D-4	QO-6	MZ-13, CS-20
**CV-0825	M-208-1B/E-2	QO-6	CS-20

VALVE REFERENCE LIST

IN ALPHA/NUMERIC ORDER

VALVE NUMBER	COORDINATES	RELATED TESTS	COMMENTS
**CV-0826	M-208-1B/D-3	QO-6	CS-15
**CV-0847	M-208-1B/D-3	QO-6	MZ-12, CS-20
**CV-0861	M-208-1B/F-5	QO-5	
**CV-0862	M-208-1B/D,E-6	-	SC-5
**CV-0864	M-208-1B/B-5	QO-5	
**CV-0865	M-208-1B/C,D-6	-	SC-5
**CV-0867	M-208-1B/F-7	QO-5	
**CV-0869	M-208-1B/D-7	-	SC-5
**CV-0870	M-208-1B/C-7	-	SC-5
**CV-0873	M-208-1B/F-7	QO-5	
**CV-0878	M-208-1A/C-3	QO-6	CS-20
**CV-0884	M-208-1A/D-6	MO-7A	RR-11
**CV-0885	M-208-1A/D-5	MO-7A	RR-11
**CV-0910	M-209-2/F-7	QO-6, RO-32-14	MZ-14, CS-16
**CV-0911	M-209-2/A-7	QO-6, RO-32-15	MZ-15, CS-16
**CV-0913	M-209-2/E-3	QO-5	
**CV-0937	M-209-3/G-7	QO-5	
**CV-0938	M-209-3/G-7	QO-5	
**CV-0939	M-221-1/D-3	QO-5, RO-32-11	MZ-11
**CV-0940	M-209-2/A-8	QO-6, RO-32-15	MZ-15, CS-16
**CV-0944	M-209-3/E-2	QO-1	RR-13
**CV-0944A	M-209-3/E-3	QO-1, QO-5	
**CV-0945	M-209-3/F-4	QO-6	CS-17
**CV-0946	M-209-3/E-5	QO-6	CS-17

VALVE REFERENCE LIST

IN ALPHA/NUMERIC ORDER

VALVE NUMBER	COORDINATES	RELATED TESTS	COMMENTS
**CV-0950	M-209-2/D-7	QO-5	
**CV-0977B	M-209-3/D-3	QO-1	RR-13
**CV-1001	M-210-2/E-5	QO-5, RO-32-37	MZ-37
**CV-1002	M-210-2/C-7	QO-5, RO-32-47	MZ-47
**CV-1004	M-210-1A/H-8	QO-5, RO-32-41	MZ-41
**CV-1007	M-210-2/B-7	QO-5, RO-32-47	MZ-47
**CV-1036	M-210-1A/B-6	QO-5, RO-32-49	MZ-49
**CV-1037	M-210-1A/B-5	QO-5, RO-32-67	MZ-67
**CV-1038	M-210-1A/B-7	QO-5, RO-32-49	MZ-49
**CV-1044	M-210-1B/F-1	QO-5, RO-32-69	MZ-69
**CV-1045	M-210-1B/G-1	QO-5, RO-32-69	MZ-69
**CV-1064	M-210-1A/F-1	QO-5, RO-32-25	MZ-25
**CV-1065	M-210-1A/F-2	QO-5, RO-32-25	MZ-25
**CV-1101	M-211-2/F-6	QO-5, RO-32-46	MZ-46
**CV-1102	M-211-2/F-6	QO-5, RO-32-46	MZ-46
**CV-1103	M-211-1/F-7	QO-5, RO-32-52	MZ-52
**CV-1104	M-211-1/F-7	QO-5, RO-32-52	MZ-52
**CV-1211	M-212-4/E-2,3	RO-32-65	MZ-65
**CV-1358	M-222-1/G-3	RO-32-26	MZ-26
**CV-1359	M-213/E-7	QO-1	
**CV-1501	M-215-G-3	QO-5, RO-32-38	MZ-38
**CV-1502	M-215-G-3	QO-5, RO-32-38	MZ-38
**CV-1503	M-215-H-3	QO-5, RO-32-39	MZ-39
**CV-1805	M-218-2/D-6	QO-6, RO-32-1A	MZ-1A

VALVE REFERENCE LIST

IN ALPHA/NUMERIC ORDER

VALVE NUMBER	COORDINATES	RELATED TESTS	COMMENTS
**CV-1806	M-218-2/D-6	QO-6, RO-32-1A	MZ-1A
**CV-1807	M-218-2/D-6	QO-6, RO-32-1C	MZ-1C
**CV-1808	M-218-2/D-6	QO-6, RO-32-1C	MZ-1C
**CV-1813	M-218-2/C-3	RO-32-68	MZ-68
**CV-1814	M-218-2/B-3	RO-32-68	MZ-68
**CV-1910	M-219-1B/C-8	QO-5, RO-32-40	MZ-40
**CV-1911	M-219-1B/B-8	QO-5, RO-32-40	MZ-40
**CV-2009	M-202-1/G-4	QO-6,RO-32-36,GCL2	MZ-36, CS-4
**CV-2083	M-202-1/F-4	QO-6, RO-32-44	MZ-44, CS-2
**CV-2099	M-202-1/F-4	QO-6, RO-32-44	MZ 44, CS-2
**CV-2111	M-202-1B/E-4,5	-	SC-3
**CV-2130	M-202-1A/F-3	QO-5	
**CV-2136	M-202-1A/F-4	QO-5	
**CV-2155	M-202-1A/E-7	QO-5	
**CV-3001	M-203-2/C-3	QO-10	CS-8
**CV-3002	M-203-2/B-3	QO-10	CS-8
**CV-3018	M-204-1A/D-7	QO-5	
**CV-3027	M-204-1B/G-7	QO-2	CS-10
**CV-3029	M-204-1A/E-3	QO-2	CS-14
**CV-3030	M-204-1A/D-3	QO-2	CS-14
**CV-3031	M-204-1B/D-6	QO-2	CS-13
**CV-3036	M-204-1A/C-6	QO-5	
**CV-3037	M-204-1A/C-6	QO-5	
**CV-3038	M-204-1/D-3	QO-5, QO-1	

VALVE REFERENCE LIST

IN ALPHA/NUMERIC ORDER

VALVE NUMBER	COORDINATES	RELATED TESTS	COMMENTS
**CV-3042	M-203-1/D-7	QO-5, QO-1	
**CV-3046	M-203-1/D-6	QO-5, QO-1	
**CV-3047	M-203-1/D-4	QO-5, QO-1	
**CV-3056	M-204-1B/G-7	QO-2	CS-10
**CV-3057	M-204-1B/D-6	QO-2	CS-13
**CV-3059	M-204-1A/D-6	QO-5	
**CV-3069	M-203-1/C-8	QO-5, QO-1	
**CV-3070	M-204-1/H-6	QO-5	
**CV-3071	M-204-1A/B-4	QO-5	
**MO-P1	M-218-2/E-1	RO-32-27	MZ-27
**MO-P2		RO-32	MZ-27
**MO-P3		RO-32	MZ-27
**MO-0743	M-207-2/G-3	QO-21	
**MO-0748	M-207-2/C-4	QO-21	
**MO-0753	M-207-2/E-3	QO-21	
**MO-0754	M-207-2/A-4	QO-21	
**MO-0755	M-207-2/C-3	QO-21	
**MO-0759	M-207-2/A-3	QO-21	
**MO-0760	M-207-2/E-3	QO-21	
**MO-0798	M-207-2/G-3	QO-21	
**MO-2087	M-202-1A/F-7	QO-6	CS-5
**MO-2140	M-202-1A/C-6	QO-5	
**MO-2169	M-202-1A/D-2	QO-6	CS-6
**MO-2170	M-202-1A/D-3	QO-6	CS-6

VALVE REFERENCE LIST

IN ALPHA/NUMERIC ORDER

VALVE NUMBER	COORDINATES	RELATED TESTS	COMMENTS
**MO-3007	M-203-2/G-7	QO-5, QO-1	
**MO-3008	M-203-2/F-7	QO-5, QO-1	
**MO-3009	M-203-2/F-7	QO-5, QO-1	
**MO-3010	M-203-2/D-7	QO-5, QO-1	
**MO-3011	M-203-2/D-7	QO-5, QO-1	
**MO-3012	M-203-2/C-7	QO-5, QO-1	
**MO-3013	M-203-2/B-7	QO-5, QO-1	
**MO-3014	M-203-2/A-7	QO-5, QO-1	
**MO-3062	M-203-2/B-7	QO-5, QO-1	
**MO-3064	M-203-2/C-7	QO-5, QO-1	
**MO-3066	M-203-2/E-7	QO-5, QO-1	
**MO-3068	M-203-2/G-7	QO-5, QO-1	
**MO-3072	M-204-1A/C-8	QO-5	
**MO-3080	M-203-2/F-5	QO-5	
**MO-3081	M-203-2/F-5	QO-5	
**MO-3082	M-203-2/F-4	QO-5	
**MO-3083	M-203-2/F-4	QO-5	
**MV-VAS-L-6	M-218-2/E-1	RO-32-66	MZ-66
**MV-VAS100	M-218-2/D-5	RO-32-1B	MZ-1B
**MV-VAS101	M-218-2/D-1	RO-32-1B	MZ-1B
**MV-SFP117	M-221-2/C-2	RO-32-72	MZ-72
**MV-SFP118	M-221-2/C-2	RO-32-72	MZ-72
**MV-SFP120	M-221-2/D-2	RO-32-64	MZ-64
**MV-SFP121	M-221-2/D-2	RO-32-64	MZ-64

VALVE REFERENCE LIST

IN ALPHA/NUMERIC ORDER

VALVE NUMBER	COORDINATES	RELATED TESTS	COMMENTS
**MV-CA122	M-212-1/B-2	RO-32-10	MZ-10
**MV-VAS141	M-224-1/E-7	RO-32-28	MZ-28
**MV-VAS142	M-224-1/E-7	RO-32-28	MZ-28
**MV-VAS601	M-218-2/F-1	RO-32-66	MZ-66
**MV-VAS603	M-218-2/F-1	RO-32-66	Mz-66
**MV-VAS604	M-218-2/E-1	RO-32-27	MZ-27
**MV-VAS605	M-218-2/E-1	RO-32-27	MZ-27
**MV-CA728	M-212-1/G-2	RO-32-10	MZ-10
**MV-FW774	M-207-2/F-7	QO-21	Ultimate Heat Sink
**MV-FW775	M-207-2/F-7	QO-21	Ultimate Heat Sink
**MV-1801B	M-218-2	RO-32-48	MZ-48
**MV-1801C	M-218-2	RO-32-48	MZ-48
**MV-1802B	M-218-2	RO-32-17	MZ-17
**MV-1802C	M-218-2	RO-32-17	MZ-17
**MV-1803B	M-218-2	RO-32-48	MZ-48
**MV-1803C	M-218-2	RO-32-48	MZ-48
**MV-1804B	M-218-2	RO-32-17	MZ-17
**MV-1804C	M-218-2	RO-32-17	MZ-17
**MV-1805A	M-218-2	RO-32-48	MZ-48
**MV-1805C	M-218-2	RO-32-48	MZ-48
**MV-1812A	M-218-2	RO-32-17	MZ-17
**MV-1812C	M-218-2	RO-32-17	MZ-17
**MV-1814A	M-218-2	RO-32-17	MZ-17
**MV-1814B	M-218-2	RO-32-17	MZ-17

VALVE REFERENCE LIST

IN ALPHA/NUMERIC ORDER

VALVE NUMBER	COORDINATES	RELATED TESTS	COMMENTS
**MV-1815A	M-218-2	RO-32-48	MZ-48
**MV-1815B	M-218-2	RO-32-48	MZ-48
**MV-3217	M-203-2/C-2	RO-32-33	RR-11, MZ-33
**MV-3227	M-203-2/C-2	RO-32-33	RR-11, MZ-33
**MV-3234	M-204-1/G-7	RO-32-33	MZ-33
**MV-3234A	M-204-1/G-7	RO-32	MZ-33
**PRV-1042B	M-201-2/F-7	RM-56	
**PRV-1043B	M-201-2/F-7	RM-56	
**PRV-1067	M-201-2/A-6	QO-6	CS-1
**PRV-1068	M-201-2/A-6	QO-6	CS-1
**PRV-1069	M-201-2/B-7	QO-6	CS-1
**PRV-1070	M-201-2/B-7	QO-6	CS-1
**PRV-1071	M-201-2/C-8	QO-6	CS-1
**PRV-1072	M-201-2/C-7	QO-6	CS-1
**RV-0521	M-205-2/E-8	RM-100	
**RV-0701	M-207-1/H-4	RM-29	
**RV-0702	M-207-1/H-4	RM-29	
**RV-0703	M-207-1/H-6	RM-29	
**RV-0704	M-207-1/H-6	RM-29	
**RV-0705	M-207-1/H-7	RM-29	
**RV-0706	M-207-1/H-7	RM-29	
**RV-0707	M-207-1/H-4	RM-29	
**RV-0708	M-207-1/H-4	RM-29	
**RV-0709	M-207-1/G-4	RM-29	

VALVE REFERENCE LIST

IN ALPHA/NUMERIC ORDER

VALVE NUMBER	COORDINATES	RELATED TESTS	COMMENTS
**RV-0710	M-207-1/G-4	RM-29	
**RV-0711	M-207-1/G-4	RM-29	
**RV-0712	M-207-1/G-7	RM-29	
**RV-0713	M-207-1/G-7	RM-29	
**RV-0714	M-207-1/G-6	RM-29	
**RV-0715	M-207-1/G-6	RM-29	
**RV-0716	M-207-1/G-6	RM-29	
**RV-0717	M-207-1/G-6	RM-29	
**RV-0718	M-207-1/G-6	RM-29	
**RV-0719	M-207-1/G-4	RM-29	
**RV-0720	M-207-1/G-4	RM-29	
**RV-0721	M-207-1/G-4	RM-29	
**RV-0722	M-207-1/G-4	RM-29	
**RV-0723	M-207-1/G-7	RM-29	
**RV-0724	M-207-1/G-7	RM-29	
**RV-0783	M-207-2/F-5	RM-100	
**RV-0915	M-209-3/G-3	RM-100	
**RV-1039	M-201-2/E-5	RM-41	
**RV-1040	M-201-2/E-5	RM-41	
**RV-1041	M-201-2/E-5	RM-41	
**RV-2092	M-202-1B/F-2	RM-100	
**RV-2098	M-202-1B/D-3	RM-100	
**RV-2104	M-202-1B/B-3	RM-100	
**RV-3162	M-203-2/D-5	RM-100	

VALVE REFERENCE LIST

IN ALPHA/NUMERIC ORDER

VALVE NUMBER	COORDINATES	RELATED TESTS	COMMENTS
**RV-3164	M-204-1B/B-5	RM-100	
**SV-2412A	M-224-2/B-10	RO-32-40B, QO-5	MZ-40B, SC-1
**SV-2412B	M-224-2/B-9	RO-32-40B, QO-5	MZ-40B, SC-1
**SV-2413A	M-224-2/E-10	RO-32-21A, QO-5	MZ-21A, SC-1
**SV-2413B	M-224-2/E-9	RO-32-21A, QO-5	MZ-21A, SC-1
**SV-2414A	M-224-2/C-10	RO-32-40A, QO-5	MZ-40A, SC-1
**SV-2414B	M-224-2/C-9	RO-32-40A, QO-5	MZ-40A, SC-1
**SV-2415A	M-224-2/F-10	RO-32-21, QO-5	MZ-21, SC-1
**SV-2415B	M-224-2/F-9	RO-32-21, QO-5	MZ-21, SC-1

COLD SHUTDOWN TESTING BASIS

SYSTEM: Primary Coolant System (M-201)

VALVES: **PRV-1067, **PRV-1068, **PRV-1069, **PRV-1070, **PRV-1071 and PRV-1072

CATEGORY: B CLASS: 1

FUNCTION: 1) Reactor Coolant Pressure Boundary Isolation Valves

2) Reactor Vessel vent valves, Primary Coolant System high point vent valves (from Pressurizer), added per Nureg 0737

TEST REQUIREMENT

Exercise Quarterly

BASIS

Exercising of these valves during operation breaches the Primary Coolant system and Reactor Coolant Pressure Boundary.

ALTERNATIVE TESTING

Exercise during cold shutdowns, but not necessarily more frequently than once each quarter.

COLD SHUTDOWN TESTING BASIS

SYSTEM: Chemical and Volume Control (M-202)

VALVES: **CV-2083, **CV-2099

CATEGORY: A CLASS: 2

FUNCTION

Containment isolation valve for primary coolant pump seal controlled bleedoff line to volume control tank.

TEST REQUIREMENT

Exercise quarterly, leak test each refueling outage.

BASIS

Shutting this valve during primary coolant pump operation (ie, any hot plant condition) stops pump seal leakoff flow. Since this flow provides both seal lubrication and cooling, interruption can cause seal failure and will cause a relief valve to lift, resulting in the unnecessary loss of primary coolant as radioactive waste.

ALTERNATIVE TESTING

Exercise each cold shutodwn, but not necessarily more frequently than once each quarter. Leak test each refueling outage.

COLD SHUTDOWN TESTING BASIS

SYSTEM: Chemical and Volume control (M-202)

VALVES: **CK-2138, **CK-2139, **CK-2141, **CK-2161, **CK-2171

CATEGORY: C CLASS: 2

FUNCTION

Prevent backflow of charging system water into the concentrated boric acid tanks while providing a flow path for boric acid injection to the charging pump suctions.

TEST REQUIREMENT

Exercise quarterly.

BASIS

These valves only open when there is flow of concentrated boric acid or highly borated SIRW tank water. Opening any of these valves during normal plant operation would result in a reactivity excursion from the injection of boric acid into the PCS. The resulting reactor power/PCS temperature excursion could result in a reactor trip. During hot shutdown, since significant PCS boration does not occur, exercising these valves would result in the unnecessary generation of large quantities of radioactive waste, especially late in core life.

ALTERNATIVE TESTING

Exercise during cold shutdown, but not necessarily more frequently than once each quarter.

COLD SHUTDOWN TESTING BASIS

SYSTEM: Chemical and Volume Control (M-202)

VALVE: **CV-2009

CATEGORY: A,B CLASS: 2

FUNCTION

Containment isolation valve for letdown flow.

TEST REQUIREMENT

Exercise quarterly, leak test each refueling outage.

BASIS

Interrupting letdown flow at normal operating temperature is undesirable because reinitiation of flow can thermally shock the regenerative heat exchanger. In addition, closing this valve at PCS pressures greater than 600 psia will cause relief valve **RV-2006 to lift unless the letdown line is isolated prior to exercising this valve. The isolation function can only be verified safely at lower PCS pressures and temperatures.

ALTERNATIVE TESTING

Exercise during cold shutdown. Leak test each refueling outage. The isolation function of this valve will be verified during each start-up from cold shutdown at a PCS pressure of 500-600 psia.

COLD SHUTDOWN TESTING BASIS

SYSTEM: Chemical and Volume Control (M-202)

VALVE: **MO-2087

CATEGORY: B CLASS: 2

FUNCTION

Outlet isolation valve for the volume control tank. Valve shuts on a safety injection signal so that full charging pump flow becomes concentrated boric acid.

TEST REQUIREMENT

Exercise quarterly.

BASIS:

Exercising this valve requires interruption of charging and letdown flow. If this were to occur while the PCS is hot, the regenerative heat exchanger could be thermally shocked when charging/letdown flow is reestablished.

ALTERNATIVE TESTING:

Exercise during cold shutdowns, but not necessarily more frequently than once each quarter.

COLD SHUTDOWN TESTING BASIS

SYSTEM: Chemical and volume Control (M-202)

VALVES: **MO-2169, **MO-2170

CATEGORY: B CLASS: 2

FUNCTION

Valves open on safety injection signal to open the concentrated boric acid gravity feed path to the charging pump suctions.

TEST REQUIREMENT

Exercise quarterly.

BASIS

Opening these valves during normal plant operation would result in a significant reactivity change from the injection of concentrated boric acid into the PCS. The resulting reactor power/PCS temperature excursion could cause a reactor trip. During hot shutdown, since significant PCS boration does not occur, exercising these valves can result in the unnecessary generation of large quantities of radioactive waste, especially late in core life.

ALTERNATIVE TESTING

Exercise during cold shutdown, but not necessarily more frequently than once each quarter.

COLD SHUTDOWN TESTING BASIS

SYSTEM: Engineered Safeguards (M-203)

VALVES: **CK-3101, **CK-3116, **CK-3131, **CK-3146

CATEGORY: C CLASS: 1

FUNCTION

Prevent backflow of primary coolant into safety injection piping while providing a flow path for safety injection water into the four PCS cold legs.

TEST REQUIREMENT

Exercise quarterly.

BASIS

During hot plant conditions, the LPSI pumps will not develop sufficient head to overcome PCS pressure, so full flow testing can only be performed during cold shutdown conditions. Part stroke exercising using a charging pump can be performed during hot or cold shutdowns. Part stroke exercising is not desirable during normal plant operation, however, because highly borated water would be injected into the PCS, potentially resulting in a reactor trip.

ALTERNATIVE TESTING

Part stroke exercise during hot shutdowns. Full stroke exercise during each cold shutdown. Exercising is not required more frequently than once each quarter.

COLD SHUTDOWN TESTING BASIS

SYSTEM: Engineered Safeguards (M-203)

VALVES: **CV-3001, **CV-3002

CATEGORY: B CLASS: 2

FUNCTION

Serve as containment isolation valves which open in accident conditions to initiate containment spray.

TEST REQUIREMENT

Exercise quarterly.

BASIS

Exercising these valves during normal operation could result in draining the containment headers.

ALTERNATIVE TESTING

Exercise during cold shutdowns, but not necessarily more frequently than once each quarter.

COLD SHUTDOWN TESTING BASIS

SYSTEM: Engineered Safeguards (M-203)

VALVES: **CK-3103, **CK-3118, **CK-3133, **CK-3148

CATEGORY: C CLASS: 1

FUNCTION

Prevent backflow of PCS/safety injection tank water into the LPSI piping and pumps piping while providing a flow path for LPSI water into the four loop safety injection lines.

TEST REQUIREMENT

Exercise quarterly.

BASIS

During hot plant conditions the LPSI pumps will not develop sufficient head to overcome PCS pressure. When the PCS is cold, however, the normal shutdown cooling flow path is through these valves.

ALTERNATIVE TESTING

Exercise these valves each cold shutdown but not necessarily more frequently than once each quarter.

COLD SHUTDOWN TESTING BASIS

SYSTEM: Engineered Safeguards (M-204)

VALVES: **CV-3027, **CV-3056

CATEGORY: B CLASS: 2

FUNCTION

SIRW tank minimum recirculation isolation valves

TEST REQUIREMENT

Exercise quarterly.

BASIS

**CV-3027 and **CV-3056, their failure in the closed position during a test, would reduce the capability of the safety injection system by elminating the minimum flow path for high pressure and low pressure pumps.

ALTERNATIVE TESTING

Exercise each cold shutdown, but not necessarily more frequently than once each quarter.

COLD SHUTDOWN TESTING BASIS

SYSTEM: Engineered Safeguards (M-204)

VALVES: **CK-3201, **CK-3192

CATEGORY: C CLASS: 2

FUNCTION

Prevent backflow through the LPSI pumps while providing flow paths for LPSI and shutdown cooling through the individual pumps.

TEST REQUIREMENT

Exercise quarterly.

BASIS

During hot plant conditions, the LPSI pumps will not develop sufficient head to overcome PCS pressure. When the plant is cold, however, these valves can be full stroke tested. Part stroke testing is not prudent during plant operation because it results in pressurizing piping up to **CV-3001 and **CV-3002. Full stroke testing is possible when the plant is in cold shutdown, with shutdown cooling in service.

ALTERNATIVE TESTING

Full stroke exercise each cold shutdown but not necessarily more frequently than once each quarter.

COLD SHUTDOWN TESTING BASIS

SYSTEM: Engineering Safeguards (M-204)

VALVES: **CK-3400, **CK-3401, **CK-3402, **CK-3403, **CK-3404, **CK-3405, **CK-3406, **CK-3407, **CV-0437A, **CV-0437B, **CV-0438A, **CV-0438B.

CATEGORY: C and B CLASS: 2

FUNCTION

The check valves prevent backflow of SIRW tank water into the hydrazine and sodium hydroxide tanks after RAS; the CVs allow automatic or remote actuation of the tanks.

TEST REQUIREMENT

Exercise quarterly.

BASIS

Exercising the check valves and CVs requires taking the tanks out of service; this is not allowed by Technical Specifications during hot plant conditions.

ALTERNATIVE TESTING

Exercise during cold shutdowns, but not more frequently than once each quarter.

COLD SHUTDOWN TESTING BASIS

SYSTEM: ENGINEERED SAFEGUARDS (M-204)

VALVES: **CV-3031, **CV-3057

CATEGORY: B CLASS: 2

FUNCTION

SIRW tank outlet valves.

TEST REQUIREMENT

Exercise quarterly.

BASIS

Shutting **CV3031 or **CV-3057 is not allowed by the Technical Specification; shutting either of these valves would eliminate a source of water to more than one high pressure or low pressure safety injection pump.

ALTERNATIVE TESTING

Exercise each cold shutdown, but not necessarily more frequently than once each quarter.

COLD SHUTDOWN TESTING BASIS

SYSTEM: Engineered Safeguards (M-204)

VALVES: **CV-3029, **CV-3030

CATEGORY: B CLASS: 2

FUNCTION

Containment sump valves.

TEST REQUIREMENT

Exercise quarterly.

BASIS

**CV-3029 and **CV-3030, their failure in the open position during a test would reduce the capability of the safety injection system, by eliminating a source of water to more than one high pressure or low pressure safety injection pump.

ALTERNATIVE TESTING

Exercise each cold shutdown, but not necessarily more frequently than once each quarter.

COLD SHUTDOWN TESTING BASIS

SYSTEM: Main Steam (M-205)

VALVES: **CV-0501, **CV-0510

CATEGORY: BC CLASS: 2

FUNCTION

These are the Main Steam Isolation Valves. They shut on steam generator low pressure from a MSLB to limit the PCS cooldown rate and the resultant reactivity insertion. Technical Specifications specify a maximum closing time of 5 seconds.

TEST REQUIREMENT

Exercise quarterly.

BASIS

These valves cannot be exercised during normal plant operation because it would result in a reactor trip. They may be exercised during cold or hot shutdown conditions.

ALTERNATIVE TESTING

Exercise each hot or cold shutdown, but not necessarily more freqently than once each quarter.

COLD SHUTDOWN TESTING BASIS

SYSTEM: Service Water (M-208)

VALVES: **CV-0823, **CV-0826

CATEGORY: B CLASS: 3

FUNCTION

Service water discharge from component cooling heat exchanger.

TEST REQUIREMENT

Exercise quarterly.

BASIS

During operation, exercising of these valves would cause a thermo-shock to heat exchangers E-54A and E-54B

ALTERNATIVE TESTING

Exercise valves to position required to fulfill their safety function each cold shutdown, but not necessarily more frequently than once each quarter.

COLD SHUTDOWN TESTING BASIS

SYSTEM: Component Cooling (M-209)

VALVES: **CV-0910, **CV-0911, **CV-0940

CATEGORY: A, AC CLASS: 2

FUNCTION

Containment isolation valves for component cooling supply and return from containment.

TEST REQUIREMENT

Exercise quarterly, leak test each refueling outage.

BASIS

These valves cannot be exercised in any hot plant mode because the resulting loss of cooling water flow to the primary coolant pumps would cause seal failures.

ALTERNATIVE TESTING

Exercise during cold shutdowns but not necessarily more frequently than once each quarter. Leak test each refueling outage.

COLD SHUTDOWN TESTING BASIS

SYSTEM: Component Cooling (M-209)

VALVES: **CV-0945, **CV-0946

CATEGORY: B CLASS: 3

FUNCTION

Component cooling water inlet to component cooling heat exchanger.

TEST REQUIREMENT

Exercise quarterly.

BASIS

During operation, exercising of **CV-0945 or **CV-0946 would cause a thermo-shock to heat exchangers E-54A, E-54B, E-60A and E-60B.

ALTERNATIVE TESTING

Exercise valves to position required to fulfill their safety function each cold shutdown, but not necessarily more frequently than once each quarter.

COLD SHUTDOWN TESTING BASIS

SYSTEM: HVAC (M-218)

VALVES: **CV-1805, **CV-1806, **CV-1807, **CV-1808

CATEGORY: A,B CLASS: 2

FUNCTION

Containment Purge Air Exhaust

TEST REQUIREMENT

Exercise quarterly.

BASIS

Valves are normally closed during operation for containment integrity.

ALTERNATIVE TESTING

Exercise valves to position required to fulfill their safety function each cold shutdown, but not necessarily more frequently than once each quarter.

COLD SHUTDOWN TESTING BASIS

SYSTEM: Service Water (M-208)

VALVES: **CV-0824, **CV-0825, **CV-0847, **CV-0878

CATEGORY: B CLASS: 3

FUNCTION

Containment Isolation Valves for service water supply and return. Safeguards Air Cooler supply.

TEST REQUIREMENT

Exercise quarterly

BASIS

Closing any one of these valves would result in an immediate action statement per the Technical Specifications. Closing any one of these valves would isolate service water flow to either the containment air coolers or the safeguards room air coolers.

ALTERNATE TESTING

Exercise each cold shutdown, but not necessarily more frequently than once each quarter.

RELIEF REQUEST BASIS

SYSTEM: Engineering Safeguards (HPSI/M-201 and M-203)

VALVES: **CK-3408, **CK-3409, **CK-3410

CATEGORY: C CLASS: 1

FUNCTION

Prevent PCS back leakage into the Hot Leg High Pressure Safety Injection lines.

TEST REQUIREMENT

Exercise per IWV-3522

BASIS FOR RELIEF

Full stroke testing during hot plant conditions is not possible since PCS pressure is greater than HPSI pump discharge pressure. Part stroke testing **CK-3410 during hot plant conditions is not practical due to nozzle thermal transient concerns. Full stroke testing **CK-3410 during cold shutdown is not practical since Technical Specifications require disabling the HPSI pumps for PCS overpressure concerns.

Part stroke **CK-3408 and **CK-3409 quarterly. Part stroke **CV-3410 during cold shutdowns, but not more frequently than once each quarter. Full stroke exercise all three vales during refueling outages (reactor head removed or equal).

RELIEF REQUEST BASIS

SYSTEM: Engineering Safeguards (Safety Injection/M-203)

VALVES: **CK-3102, **CK-3117, **CK-3132, **CK-3147

CATEGORY: C CLASS: 1

FUNCTION

Prevent PCS leakage into Safety Injection Tanks T-82A, B, C and D.

TEST REQUIREMENT

Exercise per IWV-3522

BASIS FOR RELIEF

Full flow testing to stroke these valves is not practical in any plant mode other than when the core is off loaded for the 10 year vessel ISI. Part stroking is possible but undesirable during normal operations due to the probability of tank levels being reduced below minimum Technical Specificication requirements.

ALTERNATIVE TESTING

Part stroke exercise during hot shutdowns. Disassemble valves and verify freedom of disk motion on a five year basis such that two valves are inspected each five years and all four valves are inspected each ten year interval. The ten year intervals will correspond to Palisades ten-year Inservice Inspection intervals.

RELIEF REQUEST BASIS

SYSTEM: Engineering Safeguards (Containment Spray/M-203)

VALVE: **CK-3216, **CK-3226

CATEGORY: C CLASS: 2

FUNCTION

Serve as a containment isolation valve while providing a containment spray flow path.

TEST REQUIREMENT

Exercise per IWV-3522

BASIS FOR RELIEF

Full stroke testing under any plant condition is not practical since it requires initiating containment spray. Part stroke testing requires taking both spray headers out of service to ensure spray is not introduced into containment; cold shutdown is required.

ALTERNATIVE TESTING

Part stroke every cold shutdown, but not more frequently than once each quarter.

RELIEF REQUEST BASIS

SYSTEM: Engineering Safeguards (HPSI/M-203)

VALVE: **CK-3104, **CK-3119, **CK3134, **CK3149

CATEGORY: C CLASS: 1

FUNCTION

Prevent back leakage of PCS/SI tank water into the HPSI System.

TEST REQUIREMENT

Exercise per IWV-3522

BASIS FOR RELIEF

System operation is not practical during power operation or hot shutdown conditions since it would introduce highly boated water into the PCS, and the piping design pressure is below that of the PCS pressure. Full stroke testing during cold shutdown is not practical due to PCS overpressure concerns.

ALTERNATIVE TESTING

Part stroke exercise during cold shutdown, but not more frequently than once each quarter. Full stroke exercise during refueling outages (reactor head removed or equal).

RELIEF REQUEST BASIS

SYSTEM: Engineering Safeguards (HPSI/M-203)

VALVES: **CK-3250, **CK-3251, **CK-3252, **CK-3253

CATEGORY: C CLASS: 1

FUNCTION

Prevent backleakage of PCS or SI tank water into the redundant HPSI system.

TEST REQUIREMENT

Exercise per IWV-3522

BASIS FOR RELIEF

System operation is not practical during power operation since it would introduce highly boated water into the PCS. Full stroke exercising is not possible in hot shutdown since PCS pressure is greater than HPSI pump discharge pressure. Full stroke testing in cold shutdown is not practical due to PCS overpressure concerns.

ALTERNATIVE TESTING

Part stroke exercise in hot or cold shutdown, but not more frequently than once each quarter. Full stroke exercise during refueling outages (reactor head removed or equal).

RELIEF REQUEST BASIS

SYSTEM: Engineering Safeguards (M-204)

VALVES: **CK-3166, **CK-3181

CATEGORY: C CLASS: 2

FUNCTION

Prevent backflow of water from the SIRW tank into containment sump.

TEST REQUIREMENT

Exercise per IWV-3522

BASIS FOR RELIEF

Full stroke testing is not practical during any plant condition since this would require flooding the containment sump and pumping this uncontrolled water into the ESS and PCS systems. Part stroke testing during hot plant conditions is not permissable since it requires disabling more safeguards equipment than allowed by Technical Specifications.

ALTERNATIVE TESTING

Part stroke exercise each cold shutdown, but not more frequently than once each quarter.

RELIEF REQUEST BASIS

SYSTEM: Engineering Safeguards (M-204)

VALVES: **CK-3239, **CK-3240

CATEGORY: C CLASS: 2

FUNCTION

Prevent backflow of containment sump water into the SIRW tank when SIS is in the recirculate mode (containment pressurized) while providing a flow path from the SIRW tank to the ESS pump suctions for safety injection flow.

TEST REQUIREMENT

Exercise per IWV-3522

BASIS FOR RELIEF

Full stroke exercising these valves with flow is not possible during any plant condition except a LOCA because it would require the use of the containment spray system along with one low pressure safety injection pump. Also valve disassembly and manual stroking is not practical because the valves cannot be isolated from the water in the SIRW tank. Part stroke testing can be performed when inservice testing safety related pumps.

ALTERNATIVE TESTING

Part stroke quarterly.

RELIEF REQUEST BASIS

SYSTEM: Engineering Safeguards (HPSI/M-204)

VALVES: **CK-3168, **CK-3177, **CK-3183, **CK-3186, **CK-3411

CATEGORY: C CLASS: 2

FUNCTION

Prevent backflow through the individual HPSI pumps.

TEST REQUIREMENT

Exercise per IWV-3522

BASIS FOR RELIEF

Full stroke exercising during hot plant conditions is not possible since PCS pressure is greater than HPSI pump discharge pressure. Part stroke exercising **CK-3177, **CK-3181 and **CK-3411 during hot plant operations is not practical since the piping design pressure is less than PCS pressure. Full stroke exercise during cold shutdown is impractical due to PCS overpressure concerns.

ALTERNATIVE TESTING

Full stroke exercise during refueling outages (reactor head removed or equal). Part stroke **CK-3168 and **CK-3183 quarterly.

RELIEF REQUEST BASIS

SYSTEM: Engineering Safeguards (Containment Spray/M-204)

VALVES: **CK-3208, **CK-3220, **CK-3230

CATEGORY: C CLASS: 2

FUNCTION

Prevent backflow of water through the containment spray pumps.

TEST REQUIREMENT

Exercise per IWV-3522

BASIS FOR RELIEF

Full stroke exercising these valves can not be perfromed using normal system lineups, with the exception of containment spray initiation. Alternate test paths exist capable of carrying approximately 80% required flow.

ALTERNATIVE TESTING

Part stroke the check valves at 80% flow capacity in accordance with Technical Specification Surveillance Procedure QO-10.

RELIEF REQUEST BASIS

SYSTEM: Service Water (M-208)

VALVES: **CV-0884, **CV-0885

CATEGORY: B CLASS: 3

FUNCTION

Provide service water to the Emergency Diesel Generator sets on demand.

TEST REQUIREMENT

Exercise per IWV-3410

BASIS FOR RELIEF

Technical Specifications require the EDGs to be functionally tested on a monthly basis. This entails starting, loading and continued operation to verify operability of the EDG and its support systems. These valves are normally closed and fail open on a diesel start. Impared operability will be detected through the performance of the EDG tests.

ALTERNATIVE TESTING

Perform monthly EDG operability testing in accordance with Technical Specifications.

RELIEF REQUEST BASIS

VALVES: ALL CATEGORY A VALVES

TEST REQUIREMENT

Leak test per IWV-3420

BASIS FOR RELIEF

Category A valves per ASME Section XI are defined as "valves for which seat leakage is limited to a specific maximum amount in the closed position in fulfillment of their function." Accordingly, containment isolation valves in water and steam systems covered by Section XI are also designated as Category A valves. The Appendix J Type C testing is considered more limiting than the ASME Section XI Category A test requirements.

ALTERNATIVE TESTING

Perform leak testing of all Category A valves per Appendix J, each refueling outage.

RELIEF REQUEST BASIS

SYSTEM: COMPONENT COOLING (M-209)

VALVES: **CV-0944, **CV-0977B

CATEGORY: B CLASS: 3

FUNCTION

Component Cooling isolation valves to/from the Rad Waste Evaps

TEST REQUIREMENT

Exercise per IWV-3410 and IWV-3413.

BASIS FOR RELIEF

**CV-0944 and **CV-0977B are normally open valves which close on SIS. There are no position switches to locally or remotely stroke the CVs. The SIS test is manpower intensive and would be extremely difficult to coordinate stroke timing. Relief is requested from the timing requirement of IWV-3413 on **CV-0944 and **CV-0977B.

ALTERNATIVE TESTING

**CV-0944 and **CV-0977B shall be stroke tested during every cold shutdown, but not more frequently than once each quarter, through the performance of the SIS test, without stroke timing the valves.

RELIEF REQUEST BASIS

SYSTEM: Component Cooling System

VALVES: **CK-CC401 and **CK-CC402

CATAGORY: C CLASS: 2

FUNCTION

Component Cooling Water to East and West Engineered Safeguards check valves.

TEST REQUIREMENT

Per **IWV-3522 valves which are normally open during operation and have a closed safety position shall be exercised once every three months to verify their safety position.

BASIS FOR RELIEF

Presently there exists no method to explicitly verify these valves seat in the closed position. Acceptable operation is assured by placing **CV-0913 and **CV-0950 in their normally closed position. This assures no backleakage through these check valves.

SPECIAL CLARIFICATION

SYSTEM: Miscellaneous Gas System

VALVES: **SV-2412A, **SV-2412B, **SV-2413A, **SV-2413B, **SV-2414A, **SV-2414B, **SV-2415A and **SV-2415B

CATEGORY: A,E CLASS: 2

FUNCTION: Containment penetrations 40A, 40B, 21 and 21A Isolation Valves

TEST REQUIREMENT ASME Section XI, Subsection IWV, Article IWV-3300 requires valves with remote position indicators shall be observed at least once every two years to verify that operation is accurately indicated.

CLARIFICATION

The listed valves do not have local position indication (ie, stem movement cannot be observed). However, position can be verified by the performance of the Hydrogen Monitoring System Functional Test RI-81A and RI-81B. This procedure is performed every refueling outage and meets the intent of the Code to verify the correct operation of these valves.

SPECIAL CLARIFICATION

SYSTEM: CHEMICAL AND VOLUME CONTROL (M-202)

VALVES: **CK-2110, **CK-2114 and **CK-2116

CATEGORY: C CLASS: 2

FUNCTION: Charging system check valves.

TEST REQUIREMENT: IWV-3520 requires check valves to be full stroke tested once per every three months.

CLARIFICATION

The safety function of the subject valves is to pass flow during an accident condition per FSAR 14. During normal operation these valves are in the open position and passing approximately 40 to 50 gpm. IWV-3522 "Excercise Procedure" addresses valves which are normally open and have a "closed" safety position. The subject check valves do not fit this criteria and are not included in the "Inservice Testing Program".

SPECIAL CLARIFICATION

SYSTEM: CHEMICAL AND VOLUME CONTROL (M-202)

VALVES: **CV-2111

CATEGORY: CLASS: 2

FUNCTION: Charging line and penetration 45 isolation valve.

TEST REQUIREMENT: None

CLARIFICATION:

The safety function of the subject valves is to pass flow during an accident condition per FSAR 14. During normal operation this valve is in the open position and passing approximately 40 to 50 gpm. **CV-2111 does not receive an auto isolation signal upon SIS or CHP. Thus, it is not required to test this valve in the closed position.

SPECIAL CLARIFICATION

SYSTEM: SERVICE WATER SYSTEM

VALVES: **CK-SW407, **CK-SW408, CK-SW409 and **CK-SW410

CATEGORY: C CLASS: 3

FUNCTION: Containment Air Cooler outlet check valves.

TEST REQUIREMENT: IWV-3520 requires check valves to be full stroke tested once per every three months.

CLARIFICATION:

The safety function of the subject valves is to pass flow during an accident condition per FSAR 14. During normal operation these valves are in the open position. IWV-3522 "Excercise Procedure" addresses valves which are normally open and have a "closed" safety position. The subject check valves do not fit this criteria and are not included in the "Inservice Testing Program".

SPECIAL CLARIFICATION

SYSTEM: SERVICE WATER SYSTEM

VALVES: **CV-0862, **CV-0865, **CV-0869 and **CV-0870

CATEGORY: N/A CLASS: 3

FUNCTION: Containment Air Cooler inlet isolation valves.

TEST REQUIREMENT: None

CLARIFICATION:

The safety function of the subject valves is to pass flow during an accident condition per FSAR 14. During normal operation these valves are in the open position. These valves are also containment penetration MZ-12 isolation valves. However, they receive no automatic actuation signal and remain open during an accidnt requiring containment cooling. According to the Basis Document for RO-32 these valves are exempt from the "Inservice Testing Program"