NEBRASKA PUBLIC POWER DISTRICT

COOPER NUCLEAR STATION

THIRD INTERVAL

INSERVICE TESTING PROGRAM

REVISION 2

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM

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I. INTRODUCTION

A. Basis for the Program

The Cooper Nuclear Station (CNS), Inservice Testing Program (IST) is required by 10CFR50.55a(f). Burns and Roe, the Architect Engineer for CNS during construction, was NPPD's agent in determining the ASME Code classifications of plant components. NRC Regulatory Guide 1.26 was not yet published; hence it was not used during construction. NPPD has since developed a procedure for equipment safety classification. This procedure and the following guidance documents were used in developing this revision to the IST Program:

- Regulatory Guide 1.26, Revision 3, February 1976, "Quality Group Standards for Water-, Steam-, and Radioactive Waste-Containing Components of Nuclear Power Plants",
- Regulatory Guide 1.147, "Inservice Inspection Code Case Acceptability, ASME Section XI, Division I",
- ANSI/ANS-52.1-1983, American National Standard, "Nuclear Safety Criteria for the Design of Stationary Boiling Water Reactor Plants"
- Standard Review Plan 3.9.6, "Inservice Testing of Pumps and Valves"
- Updated Final Safety Analysis Report, Cooper Nuclear Station,
- Technical Specifications, Cooper Nuclear Station,
- Generic Letter 89-04, Supplement 1: "Guidance On Developing Acceptable Inservice Testing Programs", dated April 4, 1995,
- NUREG-1482, Guidelines for Inservice Testing at Nuclear Power Plants".

B. The Third Ten Year Interval

The commercial operation date for Cooper Nuclear Station is July 1, 1974. The first and second intervals were extended as allowed by IWA-2400(c). CNS will begin the third interval on March 1, 1996.

C. Applicable ASME Code

Inservice Testing of ASME Class 1, 2, and 3 pumps and valves is performed in accordance with ASME Section XI 1989 Edition except as allowed by 10CFR50 or where specific written relief has been granted by the NRC pursuant to 10CFR50.55a(f)(6)(iii) for examinations and tests determined to be impracticable. Provided the guidance of Generic Letter 89-04 and NUREG 1482 are followed, the proposed alternative examinations or tests may be implemented prior to receiving written NRC approval.

ASME Section XI, Subsections IWP and IWV invoke ANSI/ASME Operations and Maintenance (OM) Standards Part 6, and Part 10, 1987 Edition with the 1988 Addenda. The OM Standards are approved for use in 10CFR50.55a(b)(2)(viii).

ASME Code Cases that have been approved by the NRC per Regulatory Guide 1.147 and are adopted for use at CNS, will be identified in the IST Program. No Code Cases are currently being used in the IST Program.

D. Program Scope

ASME Class 1, 2, or 3 pumps which are provided with an emergency power source and perform a function to bring the plant to the safe shutdown condition, maintain the plant in the safe shutdown condition, or mitigate the consequences of an accident are included in the IST Program. ASME Class 1, 2, or 3 valves which perform these functions and safety or relief valves which provide over pressure protection for systems or portions of systems which are required to perform these functions, are also included. The safe shutdown condition at CNS is hot shutdown. The term "accident" refers not only to the design basis accidents analyzed in Section XIV of the USAR, but to a broad range of possible adverse events which could affect plant safety. Additional accidents and operational transients, and the equipment required to mitigate the possible consequences thereof, are identified in the USAR, Appendix G, "Station Nuclear Safety Operational Analysis."

The scope of the IST regulations is limited to ASME Class 1, 2, and 3 components. Non-Code Class components whose functions are essential to the safety or reliability of the plant are also included in the CNS IST Program as augmented components. These augmented components are tested to the same accepted standards for component testing to the extent practicable. Since Non-Code components are outside the scope of the regulations, requests for relief are not required if the OM Standards cannot be met. However, deviations from the Standards are documented and justified in the program.

E. IST Basis Document

A separate IST Basis Document has been prepared for the third inspection interval. It documents the safety functions and the basis for the tests specified for the components in the third interval program, and provides the justification for certain components excluded from the testing program.

F. Testing Frequency

The required test frequency for pumps and valves is established in the OM Standards. The actual test frequency is identified in the summary tables. A band of +25% of the test interval may be applied to the test schedule, as allowed by the Technical Specifications, to provide necessary operational flexibility.

G. Skid-Mounted Components and Component Subassemblies

Skid-mounted components are pumps and valves in skid systems of major equipment that are integral to the operation of the major equipment. These components are typically designed and installed without provisions for testing. Per the guidance of NUREG 1482, Section 3.4, skid-mounted components and component subassemblies need not be individually tested to the Code requirements provided their operational readiness is adequately demonstrated by testing of the associated major equipment. Examples of skid-mounted components would be the diesel fuel oil booster pump and engine driven fuel oil pump, and the HPCI and RCIC turbine stop valves. Skid-mounted components are identified in the CNS IST Program Basis Document. Examples of skid-mounted subassemblies would be the solenoid operated pilot valves for air operated valves.

H. Program Description

The IST Program is organized in five major sections. The first section is the introduction, which provides the background for the development of the IST Program; the second section describes pump testing requirements; the third section provides the pump tables and associated relief requests; the fourth section describes valve testing requirements; and the fifth section provides the valve tables, cold shutdown test justifications, and associated relief requests.

II. TESTING PROGRAM FOR PUMPS

A. Description

The Pump Summary Listing, Section III, identifies the pumps included in the CNS IST Program, the inservice test quantities to be measured, the test frequency, references to pump relief requests, and other pertinent information.

B. Allowable Ranges of Test Quantities

The allowable ranges specified in OMa Part 6, Tables 3a, and 3b are used for pressure, flow, and vibration measurements except as provided in relief requests. In some cases, the performance of a pump may be adequate to fulfill its safety function even though there may be a measurement that falls outside the allowable range. Should this situation occur, an operability determination may be performed, in accordance with Generic Letter 91-18, NUREG 1482, and CNS administrative procedures.

C. Instrumentation

Instrumentation used in the IST Program will conform to the requirements of OMa Part 6 except where specific relief is requested. Two or more instruments or components working together to provide a single output are considered an instrument loop. The allowable inaccuracy of an instrument loop is based on the square root of the sum of the squares of the inaccuracies of each instrument in the loop. The instrument accuracy requirements refer to the calibration of the instrument. The Code does not require consideration of other factors which could contribute to measurement error such as orifice wear, instrument location, etc. However, excessive measurement error would be detected by erratic or unacceptable test results which would require corrective action. If test results are due to out of calibration instruments, the instruments may be recalibrated and the test rerun. If it is determined that unacceptable test results are due to other instrument problems, corrective action shall be by repair or replacement of the instrument system.

The Code requires that flowrate be measured using a rate of quantity meter installed in the pump test circuit. Differential pressure may be measured using a dp gauge or transmitter, or may be determined by the difference between the pressure at the inlet and outlet of the pump.. Per NUREG-1482, Section 5.5.3, suction pressure may be calculated based on inlet tank or bay level.

Vibration instrumentation shall be calibrated over the required frequency response range of one third minimum pump speed to at least 1000 HZ. OMa Part 6 requires vibration velocity measurements to be peak. For a simple sinusoidal waveform, NUREG 1482, Section 5.4 allows RMS values to be converted to peak values with a multiplier of 1.414.

D. Reference Values

Reference values are determined from the results of the previous interval's inservice tests. Reference values will be reestablished following pump replacement. Reference values will only be established when the pump is known to be operating properly.

When any reference value may have been affected by repair or routine servicing of a pump, a reference value or set of reference values shall be determined, or the previous values(s) reconfirmed by an inservice test run prior to declaring the pump operable.

Pumps may be tested at more than one point of pump operation. Additional reference values must be established for these points in accordance with Code requirements. Whenever an additional set of reference values is established, the reasons for doing so shall be documented in the record of tests.

The Code requires that reference values be established at points of pump operation that can be readily duplicated during subsequent tests. It may not be possible, or it may be extremely difficult, to vary system resistance such that the reference conditions are duplicated exactly. NUREG 1482, Section 5.3, allows variation in the setting of fixed reference value of either differential pressure or flowrate provided the combination of this variation and the associated instrument error does not exceed $\pm 2\%$.

III. PUMP SUMMARY LISTING

A. Notations

The following notations are used in the pump summary tables:

SYSTEM: The plant system in which the pump is located.

PUMP CIC: The pump component identification code.

ISI CLASS: The ASME Inservice Inspection (ISI) classification of the component. Augmented components are classified "A".

P&ID: The associated piping and instrumentation drawing number.

P&ID COOR: The drawing coordinate location for the pump.

PARAMETERS: Refers to the test quantities to be measured or observed. The symbols used for designating which parameters will be measured or observed are as follows:

dP - Differential Pressure
Pi - Inlet Pressure
Pd - Discharge Pressure
Q - Pump Flowrate
N - Rotative Speed
V - Vibration Amplitude

FREQUENCY: The frequency of testing each pump. The letter "Q" denotes quarterly testing; the letters "CS" denote cold shutdown testing; and the letters "RF" denote refueling outage testing.

NOTES: This column contains a brief component description, references any applicable relief request(s), and contains any other component-related information. Relief Requests are designated RP-XX. Augmented Relief Requests are designated ARP-XX.

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PUMP SUMMARY TABLES

SYSTEM: CORE SPRAY (CS), P&ID No. 2045 Sheet 1							
PUMP CIC	P&ID COOR	ISI CLASS	PARAMETERS				NOTES
			Q	dP	V	N	
CS-P-A	F-3	2	Q	Q	Q	(1)	CS PUMP 1A, LOOP A RP-01, RP-02
CS-P-B	D-3	2	Q	Q	Q	(1)	CS PUMP 1B, LOOP B RP-01, RP-02

NOTES:

(1) Pump is directly coupled to a constant speed synchronous or induction type driver.

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PUMP SUMMARY TABLES

SYSTEM: DIESEL GENERATOR FUEL OIL TRANSFER, P&ID No. 2011 Sheet 1							
PUMP CIC	P&ID COOR	ISI CLASS	PARAMETERS				NOTES
			Q	dP	V	N	
DGDO-P-DOTA	A-8	A	Q	Q	Q	(1)	PUMP 1A
DGDO-P-DOTB	A-10	A	Q	Q	Q	(1)	PUMP 1B

NOTES:

(1) Pump is directly coupled to a constant speed synchronous or induction type driver.

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PUMP SUMMARY TABLES

SYSTEM: HIGH PRESSURE COOLANT INJECTION (HPCI), P&ID No. 2044							
PUMP CIC	P&ID COOR	ISI CLASS	PARAMETERS				NOTES
			Q	dP	V	N	
HPCI-P-MP	E-4	2	Q	Q	Q	Q	HPCI PUMP 1A (MAIN), (1) RP-01, RP-02
HPCI-P-BP	E-3	2	Q	Q	Q	Q	HPCI PUMP 1B (BOOSTER), (1) RP-01, RP-02

NOTE:

(1) HPCI main and booster pumps will be tested simultaneously.

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PUMP SUMMARY TABLES

SYSTEM: RADIOACTIVE WASTE (RW), P&ID No. 2005 Sheet 2							
PUMP CIC	P&ID COOR	ISI CLASS	PARAMETERS				NOTES
			Q	dP	V	N	
RW-P-Z1	G-10	A	RF	N/A	N/A	(1)	ELEVATED RELEASE POINT SUMP PUMP 1A, ARP-01
RW-P-Z2	G-10	A	RF	N/A	N/A	(1)	ELEVATED RELEASE POINT SUMP PUMP 1B, ARP-01

NOTES:

(1) Pump is directly coupled to a constant speed synchronous or induction type driver.

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PUMP SUMMARY TABLES

SYSTEM: REACTOR CORE ISOLATION COOLING (RCIC), P&ID No. 2043							
PUMP CIC	P&ID COOR	ISI CLASS	PARAMETERS				NOTES
			Q	dP	V	N	
RCIC-P-MP	G-3	2	Q	Q	Q	Q	RCIC PUMP 1A RP-01, RP-02, RP-04

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PUMP SUMMARY TABLES

SYSTEM: REACTOR EQUIPMENT COOLING (REC), P&ID No. 2031 Sheet 2							
PUMP CIC	P&ID COOR	ISI CLASS	PARAMETERS				NOTES
			Q	dP	V	N	
REC-P-A	G-1	3	Q	Q	Q	(1)	REC PUMP 1A, LOOP A RP-03
REC-P-B	G-2	3	Q	Q	Q	(1)	REC PUMP 1B, LOOP A RP-03
REC-P-C	G-3	3	Q	Q	Q	(1)	REC PUMP 1C, LOOP B RP-03
REC-P-D	G-3	3	Q	Q	Q	(1)	REC PUMP 1D, LOOP B RP-03

NOTES:

(1) Pump is directly coupled to a constant speed synchronous or induction type driver.

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PUMP SUMMARY TABLES

SYSTEM: RESIDUAL HEAT REMOVAL (RHR), P&ID No. 2046							
PUMP CIC	P&ID COOR	ISI CLASS	PARAMETERS				NOTES
			Q	dP	V	N	
RHR-P-A	G-4	2	Q	Q	Q	(1)	RHR PUMP 1A, LOOP A RP-01, RP-02
RHR-P-B	G-9	2	Q	Q	Q	(1)	RHR PUMP 1B, LOOP B RP-01, RP-02
RHR-P-C	H-4	2	Q	Q	Q	(1)	RHR PUMP 1C, LOOP A RP-01, RP-02
RHR-P-D	H-9	2	Q	Q	Q	(1)	RHR PUMP 1D, LOOP B RP-01, RP-02

NOTES:

(1) Pump is directly coupled to a constant speed synchronous or induction type driver.

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PUMP SUMMARY TABLES

SYSTEM: SERVICE WATER (SW), P&ID No. 2006 Sheets 1 and 4

PUMP CIC	P&ID COOR	ISI CLASS	PARAMETERS				NOTES
			Q	dP	V	N	
SW-P-A	B-10	3	Q	Q	Q	(1)	SW PUMP 1A, RP-05
SW-P-B	B-9	3	Q	Q	Q	(1)	SW PUMP 1B, RP-05
SW-P-C	B-8	3	Q	Q	Q	(1)	SW PUMP 1C, RP-05
SW-P-D	B-7	3	Q	Q	Q	(1)	SW PUMP 1D, RP-05
SW-P-BPA	F-7	3	Q	Q	Q	(1)	SW BOOSTER PUMP 1A, RP-02
SW-P-BPB	C-7	3	Q	Q	Q	(1)	SW BOOSTER PUMP 1B, RP-02
SW-P-BPC	E-7	3	Q	Q	Q	(1)	SW BOOSTER PUMP 1C, RP-02
SW-P-BPD	A-7	3	Q	Q	Q	(1)	SW BOOSTER PUMP 1D, RP-02

NOTES:

(1) Pump is directly coupled to a constant speed synchronous or induction type driver.

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PUMP SUMMARY TABLES

SYSTEM: STANDBY LIQUID CONTROL (SLC), P&ID No. 2045 Sheet 2							
PUMP CIC	P&ID COOR	ISI CLASS	PARAMETERS				NOTES
			Q	P	V	N	
SLC-P-A	E-10	A	Q	Q	Q	(1)	PUMP 1A, ARP-02
SLC-P-B	F-10	A	Q	Q	Q	(1)	PUMP 1B, ARP-02

Notes: (1) Positive displacement pump

C. Pump Relief Requests

RR No.	Description	Notes
RP-01	CS, RHR, HPCI, RCIC Pumps Suction Pressure	1
RP-02	CS, RHR, HPCI, RCIC, SW, and SWB Pumps Instrument Accuracy	1
RP-03	REC Pumps Flowrate Gauge Range	1
RP-04	RCIC Pump/Turbine Speed Measurement Range	1
RP-05	SW Pumps Differential Pressure	

Notes:

1 Approved by NRC letter dated February 19, 1997 (TAC NO. M94530)

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RELIEF REQUEST RP-01

PUMP:	Core Spray CS-P-A, CS-P-B Residual Heat Removal RHR-P-A, RHR-P-B, RHR-P-C, RHR-P-D High Pressure Coolant Injection HPCI-P-MP/BP Reactor Core Isolation Cooling RCIC-P-MP
CLASS:	2
FUNCTION:	Emergency core cooling.
REQUIRED TEST:	The full scale range of each analog instrument shall be not greater than three times the reference value [OMa Part 6, 4.6.1.2.(a)].
BASIS FOR RELIEF:	The permanently installed suction pressure gauge of a pump is generally sized to accommodate the maximum pressure it would experience under normal or emergency conditions. In many cases, this results in an instrument range that exceeds the Code requirements since, under test conditions, normal or emergency condition suction pressures are typically not experienced. Suction pressure measurements serve two primary functions. First, they provide assurance that the pump has an adequate suction pressure head for proper operation. For suction head determination, the accuracy and range requirement is overly restrictive. Since, in most cases, plant pumps are provided with a considerable margin of suction head, an accuracy of 1.0 percent or better is adequate. Secondly, the suction pressure is used to determine the pump differential pressure. When used in determining differential pressure, the accuracy of the suction pressure measurement has little or no effect on the calculation since, generally, the pump discharge pressure is higher than the suction pressure by two or three orders of magnitude.
ALTERNATE TEST:	When measuring pump suction pressure, the range requirement of OMa Part 6, para. 4.6.1 will not be followed, however, instruments used shall have an accuracy of 1.0 percent or better.

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RELIEF REQUEST RP-02

PUMP: Core Spray CS-P-A, CS-P-B
Residual Heat Removal RHR-P-A, RHR-P-B, RHR-P-C, RHR-P-D
High Pressure Coolant Injection HPCI-P-MP/BP
Reactor Core Isolation Cooling RCIC-P-MP
Service Water Booster SW-P-BPA, SW-P-BPB, SW-P-BPC, SW-P-BPD

CLASS: 2 - CS, RHR, HPCI, and RCIC
3 - SW Booster (SWB)

FUNCTION: CS, RHR, HPCI, RCIC - Emergency core cooling.
SWB - Residual heat removal equipment cooling.

REQUIRED TEST: Instrument accuracy shall be within the limits of Table 1 (OMa Part 6, 4.6.1.1).

BASIS FOR TEST: The percentages of total loop accuracy for the combination of instruments listed below does not meet the requirements of Table 1:

FUNCTION	LOOP ACCURACY (%)
CS Pump Discharge Pressure	2.06
CS Pump Flowrate	2.02
RHR Pump Flowrate	2.08
HPCI Pump Flowrate	2.03
RCIC Pump Flowrate	2.03
SWB Pump Flowrate	2.03

The difference between the existing loop accuracy for instrument combinations and that required by the Code is a maximum of 0.08 percent as exhibited above. This difference is insignificant when compared to the cost of manpower required to obtain the 2 percent accuracy without providing a compensating increase in the level of quality or safety.

RELIEF REQUEST RP-02 Continued

ALTERNATE TEST: Inservice test measurements of pressure and flowrate, as described above, will be made using existing instruments with loop accuracies as indicated.

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RELIEF REQUEST RP-03

PUMP:	Reactor Equipment Cooling REC-P-A, REC-P-B, REC-P-C, REC-P-D
CLASS:	3
FUNCTION:	Provide cooling to critical equipment.
REQUIRED TEST:	The full scale range of each analog instrument shall be not greater than three times the reference value [OMa Part 6, 4.6.1.2.(a)].
BASIS FOR RELIEF:	Permanent plant flow gauges, REC-FI-450A and REC-FI-450B, for measurement of REC pump flowrate have ranges of 0-4000 gpm. This does not meet the range limitation imposed by OMa Part 6, 4.6.1.2(a) in that the instrument ranges exceeds the respective reference value (1000 gpm) by greater than a factor of three. However, the full scale accuracy of these gauges is 1.5% which is 60 gpm. 60 gpm accuracy on a range of 0-3000 gpm is 2% which is acceptable per OMa Part 6, 4.6.1.1. Therefore, flow gauges REC-FI-450A and REC-FI-450B are acceptable for flowrate measurement.
ALTERNATE TEST:	REC pump inservice test flowrates will be measured via flow indicators REC-FI-4501 and REC-FI-450B.

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RELIEF REQUEST RP-04

PUMP:	Reactor Core Isolation Cooling, RCIC-P-MP
CLASS:	2
FUNCTION:	Emergency core cooling.
REQUIRED TEST:	The full scale range of each analog instrument shall be not greater than three times the reference value [OMa Part 6, 4.6.1.2.(a)].
BASIS FOR RELIEF:	Based on previous work history, permanent plant tachometer, RCIC-SI-3067, for measurement of RCIC pump/turbine speed, may not provide the required consistency needed for inservice testing unless instrument calibration is performed immediately prior to each test. This "extra" calibration places an additional burden on limited Instrument & Control personnel resources without a compensating increase in the level of quality and safety. Hand-held tachometers have proven to be more reliable instruments as far as producing consistent readings. The tachometers available for IST, have ranges of 10-99,999 rpm or 6-30,000 rpm. The respective reference value is 4500 rpm. Therefore, the range limitation imposed by OMa Part 6, 4.6.1.2(a) (3 times the reference value or less) is not met by these hand held tachometers. However, the accuracy of the 10-99,999 rpm tachometer is ± 9 rpm. An instrumental accuracy of ± 9 rpm on a full range of 0-13,500 rpm (3 x 4500 rpm) would be ± 0.07 percent of the full range which is better than the accuracy required by 4.6.1.1 (i.e. ± 2 percent of full scale). For the 6-30,000 rpm tachometer, accuracy is ± 99 rpm. ± 99 rpm accuracy on a range of 0-13,500 rpm is ± 0.73 percent which is also better than ± 2 percent. Therefore, the proposed range and accuracy results in measurement with accuracy better than Code requirements and will provide reasonable assurance of component operational readiness.

RELIEF REQUEST RP-04 Continued

ALTERNATE TEST: RCIC pump/turbine speed will be measured via available tachometers identified in the Basis For Relief.

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RELIEF REQUEST RP-05

PUMP:	Service Water, SW-P-A, B, C, and D
CLASS:	3
FUNCTION:	Provide cooling for essential systems and components.
REQUIRED TEST:	The alert range for differential pressure for vertical line shaft pumps shall be 0.93 to $<0.95\Delta P_r$ [OMa Part 6, Table 3b].
BASIS FOR RELIEF:	Previous experience has shown that the high silt content of Missouri River water decreases the life of the Service Water pump internals. Under the rules of the 1981 ASME Code, pump differential pressure was allowed to degrade to $0.90\Delta P_r$ before corrective action was required. When this condition was reached the pump lift was adjusted, the baseline was re-established, and the pump was returned to service. The OM Code requires corrective action when the differential pressure is $<0.95\Delta P_r$. The average differential pressure after a lift adjustment is 63 psid. The required action level would be <58.6 psid. Howevr the Service Water pumps can meet their design basis required flows of 5500 gpm with a minimum differential pressure of 56.2 psid. The new limit in the OM Code results in more frequent pump maintenance. The difference in the acceptance criteria between the 1981 ASME Code and the 1988 OMa Part 6 is only 3%. This difference is insignificant when compared to the cost of manpower required to perform pump maintenance without providing a compensating increase in the level of quality or safety.
ALTERNATE TEST:	The low alert level for the Service Water pumps differential pressure will be 0.90 to $<0.93\Delta P_r$. The low required action level shall be $<0.90\Delta P_r$. A pump differential pressure <56.2 psid at 5500 gpm will not be acceptable for continued operation.

D. Augmented Pump Relief Requests

RR No.	Description
ARP-01	Elevated Release Point Sump Pump - Alternate Test
ARP-02	SLC Pump Vibration Measurement

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AUGMENTED RELIEF REQUEST ARP-01

PUMP:	RW-P-Z1 and RW-P-Z2
CLASS:	A
FUNCTION:	Elevated release point sump pumps (Z-Sumps) remove water from the sump supporting the Standby Gas Treatment system drains. Pump failure could cause SGT drains line to backup and interfere with SGT operation.
REQUIRED TEST:	An inservice test shall be run on each pump, nominally every 3 months, except as provided in OMa Part 6, paras. 5.3, 5.4, and 5.5. Perform operational readiness testing quarterly.
BASIS FOR RELIEF:	These pumps operate intermittently depending on sump level. Testing requires manually providing sufficient sump inventory to facilitate pump operation. The pumps receive automatic actuation signals from sump level switches. Pump testing with insufficient inventory would result in damage to the pumps. Additionally, the pumps are submerged and water cooled. Suction pressure, differential pressure, flowrate, and vibration measurements are not feasible due to inaccessibility, the short time the pump runs, lack of available test instrumentation, and the change in suction pressure throughout the test. These sump pumps are not within the scope of ASME Section XI. NRC approval of this relief request is not required.
ALTERNATE TEST:	The time (TM) to pump a specified quantity of water from the sump will be measured and trended. The acceptance range will be between 0.90 to 1.10 TM_r, there will not be an alert range, and the required action range will be <0.90 or > 1.10 Tm_r.

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AUGMENTED RELIEF REQUEST ARP-02

PUMP:	SLC-P-A and SLC-P-B
CLASS:	A
FUNCTION:	The SLC pumps function to pump a boron neutron absorber solution into the reactor if the reactor cannot be shut down or kept shut down with control rods.
REQUIRED TEST:	Vibration meter accuracy shall be +/- 5% over the calibrated range [OMa-1988, Part 6, Table 1].
BASIS FOR RELIEF:	The Code requires vibration equipment to be calibrated at +/- 5% across the frequency response range, which includes the minimum frequency response of 1/3 pump shaft speed. For the SLC pumps this is 173.3 rpm or 2.8 Hz. The vibration meters used at CNS can only be calibrated at +/- 5% down to and including 6 Hz. Below 6 Hz, the accuracy is > 5%, however the calibration lab strives to maintain accuracy below 6 Hz, as low as reasonably achievable for the required frequency response range. The average velocity for an IST test is a single, average energy reading. The effect of this change in accuracy, when averaged into the overall reading, is quite small. It would only be a concern if a single frequency in the spectrum were being evaluated between 2 - 6 Hz. Furthermore, detection of pump degradation via vibration data is based on changes in vibration measurement from one test to another. Thus, if the calibration accuracy is consistent, then the change in vibration measurement from one test to another is appropriate information for trending purposes. Therefore, existing vibration equipment will provide adequate trending information and may be used for SLC pump vibration data collection.
ALTERNATE TEST:	Vibration data for the SLC pumps will be taken with equipment calibrated from 6 Hz. to at least 1000 Hz. at +/- 5%, and will not be calibrated to +/- 5% or lower below 6 Hz.

IV. TESTING PROGRAM FOR VALVES

A. Description

The Valve Summary Listing, Section V, identifies the valves included in the CNS IST Program, the inservice test quantities to be measured, the test requirements, the test frequencies, references to cold shutdown justifications, refueling outage justifications, valve relief requests, and other pertinent information.

B. Cold Shutdown Testing

For those valves designated to be tested at cold shutdown, testing will commence as soon as practicable after the plant reaches a stable cold shutdown condition as defined in CNS Technical Specifications, but no later than 48 hours after reaching cold shutdown. If an outage is sufficiently long enough to allow testing of all valves required to be tested during cold shutdown, then the 48 hour requirement need not apply if all the valves are tested during the outage. Furthermore, valve testing will not necessarily be performed more often than once every three months. Completion of all valve testing during a cold shutdown outage will not be required if plant conditions preclude testing of specific valves or if the cold shutdown duration is insufficient to complete all testing. Testing not completed before startup will be completed during subsequent cold shutdown outages in sequence such that scheduled testing does not omit or favor certain valves or groups of valves. Additional restrictions may be applied as stated in specific cold shutdown justifications or relief requests.

C. Limiting Values of Full-Stroke Times

Where stroke time measurement of power-operated valves is required, the limiting values of full-stroke times are based on the valve's reference or average stroke time when it is known to be in good condition and operating properly. Technical Specifications or safety analysis stroke time limits will be used in lieu of the calculated limiting values of full-stroke time if they are more restrictive.

In addition, stroke time acceptance criteria are assigned to each valve in accordance with OMa Part 10 based on valve type and normal stroke times.

D. Reference Values

Stroke time reference values are determined from the results of the previous interval's inservice tests. Reference values will be reestablished following valve replacement. Reference values will only be established when the valve is known to be operating properly.

When any reference value may have been affected by repair or routine servicing of a valve or its control system, a new reference value shall be determined, or the previous values(s) reconfirmed by an inservice test run prior to declaring the valve operable.

Valves may be tested at more than one mode of plant operation. Additional reference values must be established for these points in accordance with Code requirements. Whenever an additional reference value is established, the reasons for doing so shall be documented in the record of tests.

E. Instrumentation Requirements

OMa Part 10 does not stipulate instrument accuracy or range requirements for instruments used in valve testing. Any instruments used will be selected to ensure valid test results.

F. Active/Passive Valves

For the purpose of IST, active valves are defined as those which may be required to change obturator position to accomplish their required safety function(s).

Passive valves are defined as those which are not required to change obturator position to accomplish any required safety function(s). Valves that are locked, sealed, or deenergized in their required position are passive. Valves that are not periodically repositioned and whose normal position is the required safety position are considered passive. Valves that are only occasionally repositioned from their safety position to support the performance of surveillance procedures or infrequent operations, and are administratively controlled while out of their safety position, are also considered passive.

G. Fail-safe Testing

Required fail-safe mechanisms are tested by observing the operation of the valve actuator upon loss of actuating power. A valve may fail open or closed by design on a loss of actuating power; however, fail-safe testing is performed only if the valve is required to fail to a safety position to mitigate the consequences of an accident, bring the plant to the safe shutdown condition, or maintain the plant in the safe shutdown condition. If a valve is repositioned by the fail-safe position actuator by operation of the control switch, as is the case with most air operated valves, quarterly exercise test satisfy fail-safe test requirements and no special tests need be performed. All CNS motor operated valves fail "as is"; therefore no fail-safe tests are required for these valves.

H. Valve Position Indication Verification

The valve position indicators on active and passive valves are verified at least once every two years. Per NUREG-1482, Section 4.2.6, only the position indicators at the remote location used for exercising and stroke timing a valve need be verified for those valves equipped with remote position indicators in multiple locations.

The valve position indicators on passive manual valves are also verified at least once every two years. Passive manual valves that are locked, sealed, or tagged are provided for system or component maintenance and testing. These valves are excluded by OMa Part 10, para. 1.2(a), and are not subject to position indication verification.

I. Water Sealed Valves

Valves on piping systems that penetrate the torus and terminate below the minimum water level of the suppression pool are considered water sealed. This seal is a barrier against bypass leakage of the post accident gaseous primary reactor containment atmosphere to the environment. Loss of coolant accident analyses and the postulated containment response to these types of accidents are based on this minimum water level being maintained post-accident. Therefore these valves will remain water sealed. These valves are considered Category B per OMa Part 10, and are not required to be tested in accordance with 10CFR50 Appendix J, Section III.C.2.

The discharge lines for several relief valves are directed to the suppression pool and are also water sealed. These relief valves are located in systems which are normally in

operation following an accident, such as the Core Spray and Residual Heat Removal systems. The seat tightness of these valves is verified during relief valve testing. Additionally, all flanges in the relief valve discharge lines are of testable design and are leak rate tested. Since these relief valves are water sealed, they do not present a credible leakage path from the primary containment to the environment and no additional leak rate testing is performed.

J. Check Valve Testing

Only valves that have a specified maximum required accident flow are subject to position 1 of Generic Letter 89-04. Either the flow through the valve is measured or other quantitative parameters with acceptance criteria are monitored to demonstrate required flow through the valve. Check valves that do not have a specified maximum required accident flow are tested to the open position by either flow or other positive means. Per OMa Part 10 para. 4.3.2.4(c), check valves may be disassembled, manually exercised, and inspected in lieu of flow (or flow reversal) testing as described in the Code. Non-intrusive methods, such as radiography, may be used to verify valve position.

K. Relief Valve Testing

Only relief valves that have a specified safety function for over pressure protection of systems, or portions of systems, which perform a specific function in mitigating the consequences of an accident, bring the plant to a safe shutdown condition, or maintaining the plant in a safe shutdown condition, are included in this program. Relief valves that are provided for over pressure protection of individual components due to thermal expansion when they are isolated (thermal reliefs) are excluded from testing.

OMa Part 10, Section 4.3.1, requires safety and relief valves to be tested in accordance with OM Part 1. If the "as found" lift set point of a valve is out-of-tolerance, then two additional valves from the same sample group shall be tested. If any of these additional valves fail to meet the set point acceptance criteria, then all valves in that sample group shall be tested. Relief valve sample groups shall contain only valves of the same manufacturer, type, system application, and service media. All test failures shall be evaluated for generic concerns; however, additional testing of valves outside the sample group shall not be required unless the evaluation determines that the operability of other valves may be in question.

Per NUREG-1482, Section 4.3.6, when the test of a safety or relief valve fails due to out-of-tolerance set point, an adjustment of the set point is an acceptable corrective action in lieu of repair or replacement of the valve, provided the lift set point is within tolerance during the subsequent retest.

OMa Part 10, Section 4.4.2, requires rupture disks to be tested in accordance OM Part 1. Rupture discs will be replaced every five years after the implementation of the third interval program in accordance with OM Part 1, para. 1.3.4.2. The replacement rupture discs will be receipt inspected in accordance with plant procedures.

L. Vacuum Breaker Testing

Vacuum breakers that are simple check valves are required to be full-stroked exercised in accordance with OM-10, and set point tested in accordance with OM-1-1987. Since OM-1 is not clear as to the testing frequency for vacuum breakers, CNS has elected to follow the later guidance of the OM-1 committee and will test vacuum breakers to verify set point, opening, and closing functions, once per refueling cycle. Vacuum breakers will not be full-stroked exercised per OM-10. Seat leakage tests will only be performed on vacuum breakers that are part of the primary containment boundary or that have a specified leakage limit.

V. VALVE SUMMARY LISTING

A. Notations

The following notations are used in the valve summary tables:

SYSTEM:	The plant system in which the component is located.
VALVE CIC:	The component identification code.
P&ID:	The associated piping and instrumentation drawing number.
P&ID COOR:	The drawing coordinate location for the component.
ISI CLASS:	The ASME Inservice Inspection (ISI) classification of the component. Augmented components are classified "A".
IST CAT:	The category or categories assigned to the valve based on the definitions in OMa Part 10, Section 1.4.
VALVE SIZE:	The nominal size of the component in inches.
VALVE TYPE:	The component body design as indicated by the following abbreviations:

ANG Angle
BAL Ball
BTF Butterfly
CK-B Ball Check
CK-D Dual Disk Check
CK-L Lift Check
CK-P Piston Check
CK-S Swing Check
CK-T Tilting Disk Check
DIA Diaphragm
FOV Float Valve
GB Globe

GT	Gate
RD	Rupture Disk
RV	Relief/Safety
SOV	Solenoid Valve
S-CK	Stop Check
SHR	Squib

ACT TYPE: The type of actuator as indicated by the following abbreviations:

AO	Air Operated
EX	Explosive Charge
HO	Hydraulic Operated
MA	Manual
MO	Motor Operated
SA	Self Actuated
SO	Solenoid Operated
PA	Pilot Actuated

NORMAL POS: The normal position of the valve, specified as follows:

O	Open
C	Closed
T	Throttled

TEST RQMT: The test(s) that will be performed to fulfill the requirements of OMa Part 10. The abbreviations are as follows:

LJ-1	Leakage test in accordance with the CNS Appendix J Program
LJ-2	Excess flow check valve leakage test in accordance with the CNS Technical Specifications
LT-1	Leakage test of air/nitrogen accumulator check valves
LT-2	Leakage tests other than those already specified
FSO	Full stroke exercise test to the open position (includes stroke time measurement except for

check valvesand manual valves)
- FSC Full stroke exercise test to the closed position (includes stroke time measurement except for check valves and manual valves)
- PSO Partial stroke exercise to the open position
- PSC Partial stroke exercise to the closed position
- FST Fail safe position test (includes stroke time measurement unless otherwise noted)
- PIT Position indication test
- RD Rupture Disc test per OM-1
- RVT Set point test of safety/relief valves per OM-1
- EX Explosive valve test
- VBT Vacuum breaker testing per OM-1

FREQUENCY: The frequency of testing each valve, specified as follows:

- Q Quarterly test
- CS Cold shutdown
- RF Refueling outage
- 2Y At least once every 2 years
- 5Y At least once every five years per OM-1
- 10Y At least once every ten years per OM-1

NOTES: This column contains a brief component description, references any applicable cold shutdown test justifications(s), refueling outage justification(s), relief request(s), and contains any other component related information. All valves are considered "active" unless otherwise noted in this column. Cold shutdown justifications are designated CSJ-XX; Refueling Outage Justifications are designated ROJ-XX; Relief Requests are designated RV-XX. Augmented Cold shutdown justifications are designated ACSJ-XX; Augmented Refueling Outage Justifications are designated AROJ-XX; Augmented Relief Requests are designated ARV-XX.

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM
VALVE SUMMARY TABLES

SYSTEM: CONTROL ROD DRIVE (CRD)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
CRD-AOV-CV32A	2039	H3	2	B	1	GB	AO	O	FSC FST PIT	Q Q 2Y	SOUTH SDIV INBOARD VENT ISOLATION VALVE
CRD-AOV-CV32B	2039	H4	2	B	1	GB	AO	O	FSC FST PIT	Q Q 2Y	NORTH SDIV INBOARD VENT ISOLATION VALVE
CRD-AOV-CV33	2039	H2	2	B	2	GB	AO	O	FSC FST PIT	Q Q 2Y	SOUTH SDIV INBOARD DRAIN ISOLATION VALVE
CRD-AOV-CV34	2039	H4	2	B	2	GB	AO	O	FSC FST PIT	Q Q 2Y	NORTH SDIV INBOARD DRAIN ISOLATION VALVE
CRD-AOV-CV35	2039	H2	2	B	2	GB	AO	O	FSC FST PIT	Q Q 2Y	SOUTH SDIV OUTBOARD DRAIN ISOLATION VALVE
CRD-AOV-CV36	2039	H4	2	B	2	GB	AO	O	FSC FST PIT	Q Q 2Y	NORTH SDIV OUTBOARD DRAIN ISOLATION VALVE
CRD-AOV-CV38A	2039	H3	2	B	1	GB	AO	O	FSC FST PIT	Q Q 2Y	SOUTH SDIV OUTBOARD VENT ISOLATION VALVE
CRD-AOV-CV38B	2039	H4	2	B	1	GB	AO	O	FSC FST PIT	Q Q 2Y	NORTH SDIV OUTBOARD VENT ISOLATION VALVE

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM
VALVE SUMMARY TABLES

SYSTEM: CONTROL ROD DRIVE (CRD)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
CRD-AOV-CV126 (TYP. OF 137)	2039	C10	2	B	1	DIA	AO	C	FSO FST	RF RF	SCRAM OUTLET. RV-02
CRD-AOV-CV127 (TYP. OF 137)	2039	B10	2	B	3/4	DIA	AO	C	FSO FST	RF RF	SCRAM OUTLET. RV-02
CRD-CV-13CV	2039	A9	1	A/C	3/4	CK-P	SA	O	LJ-1 FSC	RF RF	CRD WATER TO REACTOR RECIRCULATION PUMP A. ROJ-01
CRD-CV-14CV	2039	B9	1	A/C	3/4	CK-P	SA	O	LJ-1 FSC	RF RF	CRD WATER TO REACTOR RECIRCULATION PUMP A. ROJ-01
CRD-CV-15CV	2039	A8	1	A/C	3/4	CK-P	SA	O	LJ-1 FSC	RF RF	CRD WATER TO REACTOR RECIRCULATION PUMP B. ROJ-01
CRD-CV-16CV	2039	B8	1	A/C	3/4	CK-P	SA	O	LJ-1 FSC	RF RF	CRD WATER TO REACTOR RECIRCULATION PUMP B. ROJ-01
CRD-CV-25CV	2039	B4	A	A/C	1 1/2	CK-S	SA	O	LT-2 FSC	RF CS	CRD SYSTEM ISOLATION CHECK VALVE. ACSJ-01
CRD-CV-26CV	2039	B4	A	A/C	1 1/2	CK-S	SA	O	LT-2 FSC	RF CS	CRD SYSTEM ISOLATION CHECK VALVE. ACSJ-01
CRD-CV-28CV	2039	J2	A	C	1/2	CK-P	SA	C	FSO	CS	SOUTH SDIV DRAIN VALVE AIR SUPPLY BYPASS CV
CRD-CV-29CV	2039	J4	A	C	1/2	CK-P	SA	C	FSO	CS	NORTH SDIV DRAIN VALVE AIR SUPPLY BYPASS CV
CRD-CV-32CV	2039	J2	A	C	1/2	CK-P	SA	C	FSO	CS	SOUTH SDIV DRAIN VALVE AIR SUPPLY BYPASS CV

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM
VALVE SUMMARY TABLES

SYSTEM: CONTROL ROD DRIVE (CRD)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
CRD-CV-33CV	2039	J4	A	C	1/2	CK-P	SA	C	FSO	CS	NORTH SDIV DRAIN VALVE AIR SUPPLY BYPASS CV
CRD-CV-CV114 (TYP. OF 137)	2039	B11	2	C	3/4	CK-B	SA	O	FSO	RF	SCRAM OUTLET CHECK VALVE, RV-02
CRD-CV-CV115 (TYP. OF 137)	2039	D9	2	C	1/2	CK-B	SA	O	FSC	RF	SCRAM INLET CHECK VALVE, RV-03
CRD-CV-138 (TYP. OF 137)	2039	C9	2	C	1/2	CK-B	SA	O	FSC	Q	COOLING/SCRAM HEADER CHECK VALVE, RV-04
CRD-SOV-SO120 (TYP. OF 137)	2039	B10	2	B	1/4	SOV	SO	C	FSC FST	Q Q	CRD WITHDRAWAL EXHAUST VALVE, RV-05
CRD-SOV-SO121 (TYP. OF 137)	2039	B10	2	B	1/4	SOV	SO	C	FSC FST	Q Q	CRD INSERT EXHAUST VALVE, RV-05
CRD-SOV-SO122 (TYP. OF 137)	2039	B10	2	B	1/4	SOV	SO	C	FSC FST	Q Q	CRD WITHDRAWAL VALVE, RV-05
CRD-SOV-SO123 (TYP. OF 137)	2039	B10	2	B	1/4	SOV	SO	C	FSC FST	Q Q	CRD INSERT VALVE, RV-05

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SYSTEM: CORE SPRAY (CS)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
CS-CV-10CV	2045	F4	2	C	12	CK-S	SA	C	FSO	Q	CS PUMP A DISCHARGE CHECK
CS-CV-11CV	2045	D4	2	C	12	CK-S	SA	C	FSO	Q	CS PUMP B DISCHARGE CHECK
CS-CV-12CV	2045	G5	A	C	2	CK-P	SA	C	FSC	Q	CS LOOP A OUTBOARD PRESSURE MAINTENANCE SUPPLY, RV-06
CS-CV-13CV	2045	G5	2	C	2	CK-P	SA	C	FSC	Q	CS LOOP A INBOARD PRESSURE MAINTENANCE SUPPLY, RV-06
CS-CV-14CV	2045	D5	A	C	2	CK-P	SA	C	FSC	Q	CS LOOP B OUTBOARD PRESSURE MAINTENANCE SUPPLY, RV-06
CS-CV-15CV	2045	D5	2	C	2	CK-P	SA	C	FSC	Q	CS LOOP B INBOARD PRESSURE MAINTENANCE SUPPLY, RV-06
CS-CV-18CV	2045	C6	1	A/C	10	CK-S	SA	C	LJ-1 LT-2 FSO FSC PIT	RF RF CS CS 2Y	CS SYSTEM A TESTABLE CHECK CSJ-01
CS-CV-19CV	2045	B6	1	A/C	10	CK-S	SA	C	LJ-1 LT-2 FSO FSC PIT	RF RF CS CS 2Y	CS SYSTEM B TESTABLE CHECK CSJ-01
CS-MOV-MO5A	2045	E4	2	B	3	GT	MO	O	FSO FSC PIT	Q Q 2Y	CS PUMP A MINIMUM FLOW RECIRCULATION ISOLATION

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM
VALVE SUMMARY TABLES

SYSTEM: CORE SPRAY (CS)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
CS-MOV-MO5B	2045	B4	2	B	3	GT	MO	O	FSO FSC PIT	Q Q 2Y	CS PUMP B MINIMUM FLOW RECIRCULATION ISOLATION
CS-MOV-MO7A	2045	F2	2	B	14	GT	MO	O	FSO FSC PIT	Q Q 2Y	CS PUMP A SUCTION
CS-MOV-MO7B	2045	D2	2	B	14	GT	MO	O	FSO FSC PIT	Q Q 2Y	CS PUMP B SUCTION
CS-MOV-MO11A	2045	F5	2	B	10	GT	MO	O	FSO PIT	Q 2Y	LOOP A INJECTION THROTTLE
CS-MOV-MO11B	2045	D5	2	B	10	GT	MO	O	FSO PIT	Q 2Y	LOOP B INJECTION THROTTLE
CS-MOV-MO12A	2045	F6	1	A	10	GT	MO	C	LJ-1 LT-2 FSO FSC PIT	RF RF Q Q 2Y	LOOP A INJECTION BLOCK
CS-MOV-MO12B	2045	D6	1	A	10	GT	MO	C	LJ-1 LT-2 FSO FSC PIT	RF RF Q Q 2Y	LOOP B INJECTION BLOCK
CS-MOV-MO26A	2045	F5	2	B	10	GB	MO	C	PIT	2Y	CS PUMP A TEST LINE PASSIVE ISOLATION

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THIRD INTERVAL
INSERVICE TESTING PROGRAM
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SYSTEM: CORE SPRAY (CS)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
CS-MOV-MO26B	2045	C5	2	B	10	GB	MO	C	PIT	2Y	CS PUMP B TEST LINE PASSIVE ISOLATION
CS-RV-10RV	2045	F2	2	C	3/4	RV	SA	C	RVT	10Y	CS PUMP A SUCTION RELIEF
CS-RV-11RV	2045	F4	2	C	2	RV	SA	C	RVT	10Y	CS PUMP A DISCHARGE RELIEF
CS-RV-12RV	2045	C3	2	C	3/4	RV	SA	C	RVT	10Y	CS PUMP B SUCTION RELIEF
CS-RV-13RV	2045	C4	2	C	2	RV	SA	C	RVT	10Y	CS PUMP B DISCHARGE RELIEF

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THIRD INTERVAL
INSERVICE TESTING PROGRAM
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SYSTEM: DEMINERALIZED WATER SYSTEM (DW)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
DW-V-133	2029	G8	2	A	4	GT	MA	C	LJ-1	RF	PASSIVE DRYWELL OUTBOARD SUPPLY VALVE
DW-V-219	2029	G8	2	A	4	GT	MA	C	LJ-1	RF	PASSIVE DRYWELL INBOARD SUPPLY VALVE

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THIRD INTERVAL
INSERVICE TESTING PROGRAM
VALVE SUMMARY TABLES

SYSTEM: DIESEL GENERATOR (DG)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
DG-AOV-MB1	KSV-96-3	C2	A	B	30	BFL	AO	C	FSO FST	Q Q	DG1 MUFFLER BYPASS VALVE, ARV-03
DG-AOV-MB2	KSV-96-3	C2	A	B	30	BFL	AO	C	FSO FST	Q Q	DG2 MUFFLER BYPASS VALVE, ARV-03

SYSTEM: DIESEL GENERATOR DIESEL OIL (DGDO)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTIONS
DGDO-CV-10CV	2011 SH 1	A8	A	C	2	CK-P	SA	C	FSO	Q	DGDO TRANSFER PUMP A DISCHARGE
DGDO-CV-11CV	2011 SH 1	A10	A	C	2	CK-P	SA	C	FSO	Q	DGDO TRANSFER PUMP B DISCHARGE
DGDO-CV-12CV	2011 SH 1	A4	A	C	2	CK-P	SA	C	FSO FSC	Q Q	DGDO DAY TANK 1 INLET
DGDO-CV-13CV	2011 SH 1	B4	A	C	2	CK-P	SA	C	FSO FSC	Q Q	DGDO DAY TANK 2 INLET
DGDO-FOV-FLTV10	2077	H1	A	C	3/4	FOV	SA	O/C	FSO FSC	Q Q	DGDO DAY TANK 1 INLET FLOAT VALVE, ARV-01
DGDO-FOV-FLTV11	2077	H6	A	C	3/4	FOV	SA	O/C	FSO FSC	Q Q	DGDO DAY TANK 2 INLET FLOAT VALVE, ARV-01
DGDO-RV-10RV	2077	H2	A	C	3/4	RV	SA	C	RVT	10Y	DGDO PUMP 1 SUCTION RELIEF
DGDO-RV-11RV	2077	H5	A	C	3/4	RV	SA	C	RVT	10Y	DGDO PUMP 2 SUCTION RELIEF
DGDO-SOV-SSV5028	2077	H1	A	B	3/4	SOV	SO	O/C	FSO FSC FST	Q Q Q	DGDO DAY TANK 1 INLET FUEL SAFETY VALVE, ARV-01
DGDO-SOV-SSV5029	2077	H6	A	B	3/4	SOV	SO	O/C	FSO FSC FST	Q Q Q	DGDO DAY TANK 2 INLET FUEL SAFETY VALVE, ARV-01

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SYSTEM: DIESEL GENERATOR STARTING AIR (DGSA)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
DGSA-AOV-AV5	117.10 -IC-09	E3	A	B	2 1/2	GB	AO	C	FSO FSC FST	Q Q Q	DG-1 LEFT BANK STARTING AIR VALVE, ARV-02
DGSA-AOV-AV6	117.10 -IC-09	E3	A	B	2 1/2	GB	AO	C	FSO FSC FST	Q Q Q	DG-2 LEFT BANK STARTING AIR VALVE, ARV-02
DGSA-AOV-AV7	117.10 -IC-09	E1	A	B	2 1/2	GB	AO	C	FSO FSC FST	Q Q Q	DG-1 RIGHT BANK STARTING AIR VALVE, ARV-02
DGSA-AOV-AV8	117.10 -IC-09	E1	A	B	2 1/2	GB	AO	C	FSO FSC FST	Q Q Q	DG-2 RIGHT BANK STARTING AIR VALVE, ARV-02
DGSA-CV-10CV	2077	D8	A	C	2	CK-L	SA	C	FSO FSC	Q Q	STARTING AIR COMPRESSOR 1A DISCHARGE
DGSA-CV-11CV	2077	D8	A	C	2	CK-L	SA	C	FSO FSC	Q Q	STARTING AIR COMPRESSOR 1B DISCHARGE
DGSA-CV-12CV	2077	D10	A	C	2	CK-L	SA	C	FSO FSC	Q Q	STARTING AIR COMPRESSOR 2B DISCHARGE
DGSA-CV-13CV	2077	D10	A	C	2	CK-L	SA	C	FSO FSC	Q Q	STARTING AIR COMPRESSOR 2A DISCHARGE
DGSA-CV-14CV	2077	C8	A	C	2	CK-S	SA	C	FSO FSC	Q CS	AIR RECEIVER 1A INLET, ACSJ-02
DGSA-CV-15CV	2077	C8	A	C	2	CK-S	SA	C	FSO FSC	Q CS	AIR RECEIVER 1B INLET, ACSJ-02

COOPER NUCLEAR STATION
THIRD INTERVAL
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VALVE SUMMARY TABLES

SYSTEM: DIESEL GENERATOR STARTING AIR (DGSA)

VALVE ID	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
DGSA-CV-16CV	2077	C10	A	C	2	CK-S	SA	C	FSO FSC	Q CS	AIR RECEIVER 2A INLET, ACSI-02
DGSA-CV-17CV	2077	C10	A	C	2	CK-S	SA	C	FSO FSC	Q CS	AIR RECEIVER 2B INLET, ACSI-02
DGSA-CV-18CV	2077	B7	A	C	3	CK-S	SA	C	FSO FSC	Q Q	AIR RECEIVER 1A OUTLET
DGSA-CV-19CV	2077	B8	A	C	3	CK-S	SA	C	FSO FSC	Q Q	AIR RECEIVER 1B OUTLET
DGSA-CV-20CV	2077	B10	A	C	3	CK-S	SA	C	FSO FSC	Q Q	AIR RECEIVER 2A OUTLET
DGSA-CV-21CV	2077	B11	A	C	3	CK-S	SA	C	FSO FSC	Q Q	AIR RECEIVER 2B OUTLET
DGSA-CV-32CV	117.1 0-IC- 09	F5	A	C	1/4	CK-S	SA	C	FSO FSC	Q Q	DG1 LEFT BANK AIR START SHUTTLE VALVE
DGSA-CV-33CV	117.1 0-IC- 09	F1	A	C	1/4	CK-S	SA	C	FSO FSC	Q Q	DG1 RIGHT BANK AIR START SHUTTLE VALVE
DGSA-CV-34CV	117.1 0-IC- 09	F5	A	C	1/4	CK-S	SA	C	FSO FSC	Q Q	DG2 LEFT BANK AIR START SHUTTLE VALVE
DGSA-CV-35CV	117.1 0-IC- 09	F1	A	C	1/4	CK-S	SA	C	FSO FSC	Q Q	DG2 RIGHT BANK AIR START SHUTTLE VALVE

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM
VALVE SUMMARY TABLES

SYSTEM: DIESEL GENERATOR STARTING AIR (DGSA)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
DGSA-SOV-SPV1	117.10 -IC-09	F5	A	B	1/2	GB	SO	C	FSO FSC FST	Q Q Q	SOLENOID PILOT VALVE FOR DGSA-AOV-AV5 (DG1 LEFT BANK). ARV-02
DGSA-SOV-SPV2	117.10 -IC-09	F5	A	B	1/2	GB	SO	C	FSO FSC FST	Q Q Q	SOLENOID PILOT VALVE FOR DGSA-AOV-AV6 (DG2 LEFT BANK). ARV-02
DGSA-SOV-SPV3	117.10 -IC-09	F1	A	B	1/2	GB	SO	C	FSO FSC FST	Q Q Q	SOLENOID PILOT VALVE FOR DGSA-AOV-AV7 (DG1 RIGHT BANK). ARV-02
DGSA-SOV-SPV4	117.10 -IC-09	F1	A	B	1/2	GB	SO	C	FSO FSC FST	Q Q Q	SOLENOID PILOT VALVE FOR DGSA-AOV-AV8 (DG2 RIGHT BANK). ARV-02
DGSA-RV-14RV	2077	B7	A	RV	1	RV	SA	C	RVT	10Y	DGSA AIR RECEIVER 1A RELIEF
DGSA-RV-15RV	2077	B8	A	RV	1	RV	SA	C	RVT	10Y	DGSA AIR RECEIVER 1B RELIEF
DGSA-RV-16RV	2077	B10	A	RV	1	RV	SA	C	RVT	10Y	DGSA AIR RECEIVER 1C RELIEF
DGSA-RV-17RV	2077	B11	A	RV	1	RV	SA	C	RVT	10Y	DGSA AIR RECEIVER 1D RELIEF

COOPER NUCLEAR STATION
THIRD INTERVAL
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SYSTEM: HIGH PRESSURE COOLANT INJECTION (HPCI)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
HPCI-AOV-AO42	2041	G5	2	B	1	GB	AO	O	FSC FST PIT	Q Q 2Y	STEAM LINE DRIPLEG DRAIN
HPCI-AOV-AO70	2044	E9	2	A	1	BAL	AO	C	LJ-1 FSC FST PIT	RF Q Q 2Y	HPCI EXHAUST BOOTLEG DRAIN INBOARD
HPCI-AOV-AO71	2044	E9	2	A	1	BAL	AO	C	LJ-1 FSC FST PIT	RF Q Q 2Y	HPCI EXHAUST BOOTLEG DRAIN OUTBOARD
HPCI-AOV-PCV50	2044	G4	2	B	2	GB	AO	O	PSO FSO FST	Q CS CS	HPCI AUXILIARY COOLING SUPPLY PRESSURE CONTROL, CSJ-03
HPCI-CV-10CV	2044	J3	2	C	16	CK-S	SA	C	FSO FSC	Q CS	ECST SUPPLY TO HPCI PUMP, CSJ-11
HPCI-CV-11CV	2044	H10	2	C	16	CK-S	SA	C	FSO FSC	RF RF	HPCI PUMP SUCTION FROM SUPPRESSION POOL, ROJ-02
HPCI-CV-13CV	2044	H5	2	C	4	CK-S	SA	C	FSO FSC	Q Q	HPCI AUXILIARY COOLING RETURN
HPCI-CV-14CV	2044	H5	2	C	2	CK-P	SA	C	FSC	Q	HPCI CONDENSATE PUMP DISCHARGE TO AUXILIARY COOLING RETURN

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM
VALVE SUMMARY TABLES

SYSTEM: HIGH PRESSURE COOLANT INJECTION (HPCI)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
HPCI-CV-15CV	2044	D9	2	A/C	20	CK-S	SA	C	LJ-1 FSO FSC	RF Q RF	HPCI TURBINE EXHAUST, ROI-03
HPCI-CV-16CV	2044	F9	2	C	2	CK-P	SA	C	FSC	RF	HPCI TURBINE EXHAUST DRAIN TO SUPPRESSION POOL, ROI-03
HPCI-CV-17CV	2044	D6	2	C	4	CK-S	SA	C	PSO FSO FSC	Q RF RF	HPCI PUMP MINIMUM FLOW LINE, ROI-03, ROI-20
HPCI-CV-18CV	2044	B8	2	C	2	CK-P	SA	C	FSC	Q	CONDENSATE SUPPLY TO HPCI SYSTEM, RV-07
HPCI-CV-19CV	2044	B8	A	C	2	CK-P	SA	C	FSC	Q	CONDENSATE SUPPLY TO HPCI SYSTEM, RV-07
HPCI-CV-24CV	2044	E10	2	C	3	CK-S	SA	C	VBT	RF	HPCI VACUUM BREAKER, RV-14
HPCI-CV-25CV	2044	E11	2	C	3	CK-S	SA	C	VBT	RF	HPCI VACUUM BREAKER, RV-14
HPCI-CV-26CV	2044	E10	2	C	3	CK-S	SA	C	VBT	RF	HPCI VACUUM BREAKER, RV-14
HPCI-CV-27CV	2044	E11	2	C	3	CK-S	SA	C	VBT	RF	HPCI VACUUM BREAKER, RV-14
HPCI-CV-29CV	2044	C9	1	A/C	14	CK-S	SA	C	LJ-1 FSO FSC PIT	RF CS CS 2Y	INJECTION CHECK VALVE, CSJ-02
HPCI-MOV-MO14	2041	G3	2	B	10	GT	MO	C	FSO PIT	Q 2Y	STEAM SUPPLY TO TURBINE

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM
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SYSTEM: HIGH PRESSURE COOLANT INJECTION (HPCI)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES DESCRIPTION
HPCI-MOV-MO15	2041	D5	1	A	10	GT	MO	O	LJ-1 FSC PIT	RF Q 2Y	STEAM SUPPLY INBOARD ISOLATION
HPCI-MOV-MO16	2041	D4	1	A	10	GT	MO	O	LJ-1 FSC PIT	RF Q 2Y	STEAM SUPPLY OUTBOARD ISOLATION
HPCI-MOV-MO17	2044	J3	2	B	16	GT	MO	O	FSO FSC PIT	Q Q 2Y	PUMP SUCTION FROM EMERGENCY CONDENSATE STORAGE TANK
HPCI-MOV-MO19	2044	C8	2	B	14	GT	MO	C	FSO PIT	Q 2Y	HPCI INJECTION
HPCI-MOV-MO20	2044	C8	2	B	14	GT	MO	O	FSO PIT	Q 2Y	HPCI PUMP DISCHARGE
HPCI-MOV-MO21	2044	D3	2	B	10	GB	MO	C	PIT	2Y	HPCI PUMP TEST BYPASS TO EMERGENCY CONDENSATE STORAGE TANK
HPCI-MOV-MO24	2044	E3	A	B	10	GT	MO	O	PIT	2Y	HPCI PUMP TEST BYPASS REDUNDANT SHUTOFF
HPCI-MOV-MO25	2044	D7	2	B	4	GB	MO	C	FSO FSC PIT	Q Q 2Y	HPCI PUMP MINIMUM FLOW BYPASS LINE ISOLATION

COOPER NUCLEAR STATION
THIRD INTERVAL
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SYSTEM: HIGH PRESSURE COOLANT INJECTION (HPCI)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
HPCI-MOV-MO58	2044	G10	2	B	16	GT	MO	C	FSO FSC PIT	Q Q 2Y	HPCI PUMP SUCTION FROM SUPPRESSION POOL
HPCI-RD-S241	2044	D5	2	D	16	RD	SA	C	RD	5Y	EXHAUST LINE RUPTURE DISK
HPCI-RV-10RV	2044	J3	2	C	1	RV	SA	C	RVT	10Y	HPCI PUMP SUCTION RELIEF
HPCI-RV-12RV	2044	G5	2	C	1	RV	SA	C	RVT	10Y	HPCI AUXILIARY COOLING WATER SUPPLY
HPCI-SOV-SSV64	2044	F4	2	B	1	SOV	SOV	C	FSC FST	Q Q	HPCI EXHAUST DRIP LEG DRAIN, RV-08
HPCI-SOV-SSV87	2044	F4	2	B	1	SOV	SOV	C	FSC FST	Q Q	HPCI TURBINE DRIP LEG DRAIN, RV-08
HPCI-V-44	2044	D9	2	C	20	S-CK	MA	O	LJ-1 FSO FSC	RF Q RF	HPCI TURBINE EXHAUST TO SUPPRESSION POOL ISOLATION, ROI-04
HPCI-V-50	2044	F9	2	C	2	S-CK	MA	O	FSC	RF	TURBINE DRAIN TO SUPPRESSION POOL ISOLATION, ROI-04

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM
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SYSTEM: HEATING AND VENTILATION (HV)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
HV-AOV-257AV	2020	D4	A	B	72 IN	BTF	AO	O	FSC FST PIT	Q Q 2Y	REACTOR BUILDING VENTILATION OUTBOARD SUPPLY
HV-AOV-259AV	2020	B12	A	B	72 IN	BTF	AO	O	FSC FST PIT	Q Q 2Y	REACTOR BUILDING VENTILATION INBOARD EXHAUST
HV-AOV-261AV	2020	B12	A	B	72 IN	BTF	AO	O	FSC FST PIT	Q Q 2Y	REACTOR BUILDING VENTILATION INBOARD EXHAUST
HV-AOV-263AV	2020	E9	A	B	72 IN	BTF	AO	O	FSC FST PIT	CS CS 2Y	REACTOR MG SET 1A VENTILATION OUTBOARD SUPPLY, ACSJ-03
HV-AOV-265AV	2020	E9	A	B	72 IN	BTF	AO	O	FSC FST PIT	CS CS 2Y	REACTOR MG SET 1B VENTILATION OUTBOARD SUPPLY, ACSJ-03
HV-AOV-267AV	2020	D11	A	B	72 IN	BTF	AO	O	FSC FST PIT	CS CS 2Y	REACTOR MG SET 1A VENTILATION INBOARD EXHAUST, ACSJ-03
HV-AOV-269AV	2020	E11	A	B	72 IN	BTF	AO	O	FSC FST PIT	CS CS 2Y	REACTOR MG SET 1B VENTILATION OUTBOARD EXHAUST, ACSJ-03
HV-AOV-270AV	2019 SH 1	B2	A	B	20 IN	BTF	AO	O	FSC FST	Q Q	CONTROL RM HVAC INLET VALVE
HV-AOV-271AV	2019 SH 1	A1	A	B	12 IN	BTF	AO	C	FSO FST	Q Q	CONTROL RM HVAC EMERGENCY BYPASS

COOPER NUCLEAR STATION
THIRD INTERVAL
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SYSTEM: HEATING AND VENTILATION (HV)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
HV-AOV-272AV	2019 SH 1	B6	A	B	8 IN	BTF	AO	O	FSC FST	Q Q	CONTROL RM PANTRY EXHAUST ISOLATION
HV-MOV-258MV	2020	B12	A	B	48 IN	BTF	MO	O	FSC PIT	Q 2Y	REACTOR BUILDING VENTILATION OUTBOARD EXHAUST
HV-MOV-260MV	2020	B12	A	B	48 IN	BTF	MO	O	FSC PIT	Q 2Y	REACTOR BUILDING VENTILATION OUTBOARD EXHAUST
HV-MOV-262MV	2020	E9	A	B	48 IN	BTF	MO	O	FSC PIT	CS 2Y	RR MG SET 1A VENTILATION INBOARD SUPPLY, ACSJ-03
HV-MOV-264MV	2020	E9	A	B	48 IN	BTF	MO	O	FSC PIT	CS 2Y	RR MG SET 1B VENTILATION INBOARD SUPPLY, ACSJ-03
HV-MOV-266MV	2020	D9	A	B	48 IN	BTF	MO	O	FSC PIT	CS 2Y	RR MG SET 1A VENTILATION OUTBOARD EXHAUST, ACSJ-03
HV-MOV-268MV	2020	E11	A	B	48 IN	BTF	MO	O	FSC PIT	CS 2Y	RR MG SET 1B VENTILATION OUTBOARD EXHAUST, ACSJ-03
HV-MOV-272MV	2020	D4	A	B	72 IN	BTF	MO	O	FSC PIT	Q 2Y	REACTOR BUILDING VENTILATION INBOARD SUPPLY

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM
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SYSTEM: INSTRUMENT AIR (IA)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
IA-CV-17CV	2010 SH 2	E8	A	A/C	1/2	CK-L	SA	O	LT-1 FSC	2Y RF	MS-RV-71A ACCUMULATOR SUPPLY, AROI-01
IA-CV-18CV	2010 SH 2	E8	A	A/C	1/2	CK-L	SA	O	LT-1 FSC	2Y RF	MS-RV-71B ACCUMULATOR SUPPLY, AROI-01
IA-CV-19CV	2010 SH 2	D8	A	A/C	1/2	CK-L	SA	O	LT-1 FSC	2Y RF	MS-RV-71C ACCUMULATOR SUPPLY, AROI-01
IA-CV-20CV	2010 SH 2	D9	A	A/C	1/2	CK-L	SA	O	LT-1 FSC	2Y RF	MS-RV-71E ACCUMULATOR SUPPLY, AROI-01
IA-CV-21CV	2010 SH 2	E9	A	A/C	1/2	CK-L	SA	O	LT-1 FSC	2Y RF	MS-RV-71G ACCUMULATOR SUPPLY, AROI-01
IA-CV-22CV	2010 SH 2	E9	A	A/C	1/2	CK-L	SA	O	LT-1 FSC	2Y RF	MS-RV-71H ACCUMULATOR SUPPLY, AROI-01
IA-CV-28CV	2010 SH 2	F9	A	A/C	1/2	CK-L	SA	O	LT-1 FSC	2Y RF	MSIV-AO80A SUPPLY AROI-02
IA-CV-29CV	2010 SH 2	F8	A	A/C	1/2	CK-L	SA	O	LT-1 FSC	2Y RF	MSIV-AO80B SUPPLY AROI-02
IA-CV-30CV	2010 SH 2	F8	A	A/C	1/2	CK-L	SA	O	LT-1 FSC	2Y RF	MSIV-AO80C SUPPLY AROI-02
IA-CV-31CV	2010 SH 2	F9	A	A/C	1/2	CK-L	SA	O	LT-1 FSC	2Y RF	MSIV-AO80D SUPPLY AROI-02
IA-CV-32CV	2010 SH 2	D12	A	A/C	1/2	CK-L	SA	O	LT-1 FSC	2Y RF	MSIV-AO86A SUPPLY AROI-02

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM
VALVE SUMMARY TABLES

SYSTEM: INSTRUMENT AIR (IA)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
IA-CV-33CV	2010 SH 2	D12	A	A/C	1/2	CK-L	SA	O	LT-1 FSC	2Y RF	MSIV-AO86B SUPPLY AROJ-02
IA-CV-34CV	2010 SH 2	D12	A	A/C	1/2	CK-L	SA	O	LT-1 FSC	2Y RF	MSIV-AO86C SUPPLY AROJ-02
IA-CV-35CV	2010 SH 2	E12	A	A/C	1/2	CK-L	SA	O	LT-1 FSC	2Y RF	MSIV-AO86D SUPPLY AROJ-02
IA-CV-36CV	2010 SH 2	E8	A	A/C	1/2	CK-L	SA	O	LT-1 FSC	2Y RF	MS-RV-71D ACCUMULATOR SUPPLY, AROJ-01
IA-CV-37CV	2010 SH 2	E10	A	A/C	1/2	CK-L	SA	O	LT-1 FSC	2Y RF	MS-RV-71F ACCUMULATOR SUPPLY, AROJ-01
IA-CV-50CV	2010 SH 2	H5	A	A/C	1/4	CK-L	SA	O	LT-1 FSC	2Y Q	ACCUMULATOR AO-82 IA CHECK VALVE
IA-CV-51CV	2010 SH 2	H5	A	A/C	1/4	CK-L	SA	O	LT-1 FSC	2Y Q	ACCUMULATOR AO-83 IA CHECK VALVE
IA-CV-52CV	2010 SH 2	H6	A	A/C	1/4	CK-L	SA	O	LT-1 FSC	2Y Q	ACCUMULATOR AO94 IA CHECK VALVE
IA-CV-53CV	2010 SH 2	H6	A	A/C	1/4	CK-L	SA	O	LT-1 FSC	2Y Q	ACCUMULATOR AO95 IA CHECK VALVE
IA-CV-54CV	2010 SH 2	A7	A	A/C	1/4	CK-L	SA	O	LT-1 FSC	2Y CS	HV-AOV-257AV ACCUMULATOR CHECK, ACSJ-04
IA-CV-55CV	2010 SH 2	A6	A	A/C	1/4	CK-L	SA	O	LT-1 FSC	2Y CS	HV-AOV-259AV ACCUMULATOR CHECK, ACSJ-04

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SYSTEM: INSTRUMENT AIR (IA)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
IA-CV-56CV	2010 SH 2	A7	A	A/C	1/4	CK-L	SA	O	LT-1 FSC	2Y CS	HV-AOV-261AV ACCUMULATOR CHECK, ACSJ-04
IA-CV-57CV	2010 SH 2	B9	A	A/C	1/4	CK-L	SA	O	LT-1 FSC	2Y CS	HV-AOV-263AV ACCUMULATOR CHECK, ACSJ-04
IA-CV-58CV	2010 SH 2	B9	A	A/C	1/4	CK-L	SA	O	LT-1 FSC	2Y CS	HV-AOV-265AV ACCUMULATOR CHECK, ACSJ-04
IA-CV-59CV	2010 SH 2	B9	A	A/C	1/4	CK-L	SA	O	LT-1 FSC	2Y CS	HV-AOV-267AV ACCUMULATOR CHECK, ACSJ-04
IA-CV-60CV	2010 SH 2	A8	A	A/C	1/4	CK-L	SA	O	LT-1 FSC	2Y CS	HV-AOV-269AV ACCUMULATOR CHECK, ACSJ-04
IA-CV-65CV	2010 SH 2	F8	2	A/C	2	CK-L	SA	O	LJ-1 FSC	RF RF	X-22 INBOARD ISOLATION, ROJ-05
IA-CV-78CV	2010 SH 2	F8	2	A/C	2	CK-L	SA	O	LJ-1 FSC	RF RF	X-22 OUTBOARD ISOLATION, ROJ-05
IA-CV-111CV	2010 SH 1	E11	A	A/C	1/4	CK-L	SA	O	LT-1 FSC	2Y CS	IA-271AV ACCUMULATOR CHECK, ACSJ-04
PC-V-559	2028	D8	2	A	1	GB	MA	C	LJ-1	RF	PASSIVE MANUAL ISOLATION
PC-V-560	2028	D8	2	A	1	GB	MA	C	LJ-1	RF	PASSIVE MANUAL ISOLATION
PC-V-561	2028	C8	2	A	1	GB	MA	C	LJ-1	RF	PASSIVE MANUAL ISOLATION
PC-V-562	2028	C8	2	A	1	GT	MA	C	LJ-1	RF	PASSIVE MANUAL ISOLATION

COOPER NUCLEAR STATION
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SYSTEM: INSTRUMENT AIR (IA)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
PC-V-563	2028	C8	2	A	1	GT	MA	C	LJ-1	RF	PASSIVE MANUAL ISOLATION
PC-V-564	2028	C8	2	A	1	GT	MA	C	LJ-1	RF	PASSIVE MANUAL ISOLATION
PC-V-565	2028	D8	2	A	1	GT	MA	C	LJ-1	RF	PASSIVE MANUAL ISOLATION
PC-V-566	2028	D8	2	A	1	GT	MA	C	LJ-1	RF	PASSIVE MANUAL ISOLATION
PC-V-569	2027	J3	2	A	1	GT	MA	C	LJ-1	RF	PASSIVE MANUAL ISOLATION
PC-V-570	2027	J3	2	A	1/2	GB	MA	C	LJ-1	RF	PASSIVE MANUAL ISOLATION
PC-V-571	2027	J3	2	A	1	GB	MA	C	LJ-1	RF	PASSIVE MANUAL ISOLATION
PC-V-572	2027	J3	2	A	1/2	GB	MA	C	LJ-1	RF	PASSIVE MANUAL ISOLATION
PC-V-573	2027	J4	2	A	1	GT	MA	C	LJ-1	RF	PASSIVE MANUAL ISOLATION
PC-V-574	2027	J4	2	A	1/2	GB	MA	C	LJ-1	RF	PASSIVE MANUAL ISOLATION
PC-V-575	2027	J4	2	A	1	GB	MA	C	LJ-1	RF	PASSIVE MANUAL ISOLATION
PC-V-576	2027	J4	2	A	1/2	GB	MA	C	LJ-1	RF	PASSIVE MANUAL ISOLATION
PC-V-577	2027	J5	2	A	1	GB	MA	C	LJ-1	RF	PASSIVE MANUAL ISOLATION
PC-V-578	2027	J5	2	A	1/2	GB	MA	C	LJ-1	RF	PASSIVE MANUAL ISOLATION
PC-V-579	2027	J5	2	A	1	GB	MA	C	LJ-1	RF	PASSIVE MANUAL ISOLATION
PC-V-580	2027	J5	2	A	1/2	GB	MA	C	LJ-1	RF	PASSIVE MANUAL ISOLATION
PC-V-581	2027	J6	2	A	1	GB	MA	C	LJ-1	RF	PASSIVE MANUAL ISOLATION

COOPER NUCLEAR STATION
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SYSTEM: INSTRUMENT AIR (IA)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
PC-V-582	2027	J6	2	A	1/2	GB	MA	C	LJ-1	RF	PASSIVE MANUAL ISOLATION
PC-V-583	2027	J6	2	A	1	GB	MA	C	LJ-1	RF	PASSIVE MANUAL ISOLATION
PC-V-584	2027	J6	2	A	1/2	GB	MA	C	LJ-1	RF	PASSIVE MANUAL ISOLATION
PC-V-585	2027	J7	2	A	1	GB	MA	C	LJ-1	RF	PASSIVE MANUAL ISOLATION
PC-V-586	2027	J7	2	A	1/2	GB	MA	C	LJ-1	RF	PASSIVE MANUAL ISOLATION
PC-V-587	2027	J7	2	A	1	GB	MA	C	LJ-1	RF	PASSIVE MANUAL ISOLATION
PC-V-588	2027	J7	2	A	1/2	GB	MA	C	LJ-1	RF	PASSIVE MANUAL ISOLATION
PC-V-589	2027	J8	2	A	1	GB	MA	C	LJ-1	RF	PASSIVE MANUAL ISOLATION
PC-V-590	2027	J8	2	A	1/2	GB	MA	C	LJ-1	RF	PASSIVE MANUAL ISOLATION

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THIRD INTERVAL
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SYSTEM: MAIN STEAM (MS)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
MS-AOV-AO80A	2041	B5	1	A	24	GB	AO	O	LJ-1 FSC FST PIT	RF Q Q 2Y	MSIV A INBOARD ISOLATION. CSJ-04
MS-AOV-AO80B	2041	B5	1	A	24	GB	AO	O	LJ-1 FSC FST PIT	RF Q Q 2Y	MSIV B INBOARD ISOLATION. CSJ-04
MS-AOV-AO80C	2041	P5	1	A	24	GB	AO	O	LJ-1 FSC FST PIT	RF Q Q 2Y	MSIV C INBOARD ISOLATION. CSJ-04
MS-AOV-AO80D	2041	B6	1	A	24	GB	AO	O	LJ-1 FSC FST PIT	RF Q Q 2Y	MSIV D INBOARD ISOLATION. CSJ-04
MS-AOV-AO86A	2041	B3	1	A	24	GB	AO	O	LJ-1 FSC FST PIT	RF Q Q 2Y	MSIV A OUTBOARD ISOLATION CSJ-04
MS-AOV-AO86B	2041	A4	1	A	24	GB	AO	O	LJ-1 FSC FST PIT	RF Q Q 2Y	MSIV B OUTBOARD ISOLATION CSJ-04

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THIRD INTERVAL
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SYSTEM: MAIN STEAM (MS)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
MS-AOV-AO86C	2041	A8	1	A	24	GB	AO	O	LJ-1 FSC FST PIT	RF Q Q 2Y	MSIV C OUTBOARD ISOLATION CSI-04
MS-AOV-AO86D	2041	B8	1	A	24	GB	AO	O	LJ-1 FSC FST PIT	RF Q Q 2Y	MSIV D OUTBOARD ISOLATION CSI-04
MS-AOV-738AV	2028	B9	1	B	1/2	GB	AO	C	PIT	2Y	RPV HEAD VENT DRAIN TO SUMP, PASSIVE ISOLATION
MS-AOV-739AV	2028	B9	1	B	1/2	GB	AO	C	PIT	2Y	RPV HEAD VENT DRAIN TO SUMP, PASSIVE ISOLATION
MS-CV-20CV	2028	C11	3	C	10	CK-S	SA	C	VBT	RF	71A RV DISCHARGE VACUUM BREAKER VB 71 A1
MS-CV-21CV	2028	C11	3	C	10	CK-S	SA	C	VBT	RF	71A RV DISCHARGE VACUUM BREAKER VB 71 A2
MS-CV-22CV	2028	C11	3	C	10	CK-S	SA	C	VBT	RF	71B RV DISCHARGE VACUUM BREAKER VB 71 B1
MS-CV-23CV	2028	C11	3	C	10	CK-S	SA	C	VBT	RF	71B RV DISCHARGE VACUUM BREAKER VB 71 B2
MS-CV-24CV	2028	D11	3	C	10	CK-S	SA	C	VBT	RF	71C RV DISCHARGE VACUUM BREAKER VB 71 C1

SYSTEM: MAIN STEAM (MS)

VALVE ID	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
MS-CV-25CV	2028	D11	3	C	10	CK-S	SA	C	VBT	RF	71C RV DISCHARGE VACUUM BREAKER VB 71 C2
MS-CV-26CV	2028	D11	3	C	10	CK-S	SA	C	VBT	RF	71D RV DISCHARGE VACUUM BREAKER VB 71 D1
MS-CV-27CV	2028	D11	3	C	10	CK-S	SA	C	VBT	RF	71D RV DISCHARGE VACUUM BREAKER VB 71 D2
MS-CV-28CV	2028	D9	3	C	10	CK-S	SA	C	VBT	RF	71E RV DISCHARGE VACUUM BREAKER VB 71 E1
MS-CV-29CV	2028	D9	3	C	10	CK-S	SA	C	VBT	RF	71E RV DISCHARGE VACUUM BREAKER VB 71 E2
MS-CV-30CV	2028	D9	3	C	10	CK-S	SA	C	VBT	RF	71F RV DISCHARGE VACUUM BREAKER VB 71 F1
MS-CV-31CV	2028	D9	3	C	10	CK-S	SA	C	VBT	RF	71F RV DISCHARGE VACUUM BREAKER VB 71 F2
MS-CV-32CV	2028	E9	3	C	10	CK-S	SA	C	VBT	RF	71G RV DISCHARGE VACUUM BREAKER VB 71 G1
MS-CV-33CV	2028	E9	3	C	10	CK-S	SA	C	VBT	RF	71G RV DISCHARGE VACUUM BREAKER VB 71 G2
MS-CV-34CV	2028	E9	3	C	10	CK-S	SA	C	VBT	RF	71H RV DISCHARGE VACUUM BREAKER VB 71 H1

COOPER NUCLEAR STATION
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SYSTEM: MAIN STEAM (MS)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
MS-CV-35CV	2028	E9	3	C	10	CK-S	SA	C	VBT	RF	71B RV DISCHARGE VACUUM BREAKER VB 71 B2
MS-MOV-MO74	2041	C6	1	A	3	GT	MO	O	LJ-1 FSC PIT	RF Q 2Y	MS LINE DRAIN INBOARD ISOLATION
MS-MOV-MO77	2041	C10	1	A	3	GT	MO	O	LJ-1 FSC PIT	RF Q 2Y	MS LINE DRAIN OUTBOARD ISOLATION
MS-RV-70ARV	2028	C10	1	C	6	RV	SA	C	RVT	5Y	SAFETY VALVE MS LINE A
MS-RV-70BRV	2028	E9	1	C	6	RV	SA	C	RVT	5Y	SAFETY VALVE MS LINE D
MS-RV-70CRV	2028	E9	1	C	6	RV	SA	C	RVT	5Y	SAFETY VALVE MS LINE D
MS-RV-71ARV	2028	C10	1	B/C	6	RV	AO	C	RVT FSO FSC PIT	5Y RF RF RF	SAFETY RELIEF VALVE MS LINE A, RV-09
MS-RV-71BRV	2028	C11	1	B/C	6	RV	AO	C	RVT FSO FSC PIT	5Y RF RF RF	SAFETY RELIEF VALVE MS LINE A, RV-09

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SYSTEM: MAIN STEAM (MS)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
MS-RV-71CRV	2028	D11	1	B/C	6	RV	AO	C	RVT FSO FSC PIT	5Y RF RF RF	SAFETY RELIEF VALVE MS LINE B, RV-09
MS-RV-71DRV	2028	D11	1	B/C	6	RV	AO	C	RVT FSO FSC PIT	5Y RF RF RF	SAFETY RELIEF VALVE MS LINE B, RV-09
MS-RV-71ERV	2028	D9	1	B/C	6	RV	AO	C	RVT FSO FSC PIT	5Y RF RF RF	SAFETY RELIEF VALVE MS LINE C, RV-09
MS-RV-71FRV	2028	D9	1	B/C	6	RV	AO	C	RVT FSO FSC PIT	5Y RF RF RF	SAFETY RELIEF VALVE MS LINE C, RV-09
MS-RV-71GRV	2028	E9	1	B/C	6	RV	AO	C	RVT FSO FSC	5Y RF	SAFETY RELIEF VALVE MS LINE D, RV-09
MS-RV-71HRV	2028	E9	1	B/C	6	RV	AO		FSO FSC PIT	RF RF RF	SAFETY RELIEF VALVE MS LINE D, RV-09

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SYSTEM: NEUTRON MONITORING TRAVERSING INCORE PROBE (NMT)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
NM-CV-CV2	2083	J2	2	A/C	3/8	CK-P	SA	C	LJ-1 FSC	2Y CS	N2 PURGE ISOLATION, CSJ-10
NM-CV-CV4	2083	J2	2	A/C	3/8	CK-P	SA	C	LJ-1 FSC	2Y CS	N2 PURGE ISOLATION, CSJ-10
NMT-NVA-104AX	2083	J2	2	D	3/8	SHR	EX	O	EX	2Y	VALVE ASSEMBLY CH-A
NMT-NVA-104BX	2083	J2	2	D	3/8	SHR	EX	O	EX	2Y	VALVE ASSEMBLY CH-B
NMT-NVA-104CX	2083	J2	2	D	3/8	SHR	EX	O	EX	2Y	VALVE ASSEMBLY CH-C
NMT-NVA-104DX	2083	J2	2	D	3/8	SHR	EX	O	EX	2Y	VALVE ASSEMBLY CH-D
NMT-NVA-104A	2083	J2	2	A	3/8	BAL	SO	O	LJ-1 FSC FST PIT	RF Q Q 2Y	VALVE ASSEMBLY CH-A
NMT-NVA-104B	2083	J2	2	A	3/8	BAL	SO	O	LJ-1 FSC FST PIT	RF Q Q 2Y	VALVE ASSEMBLY CH-B

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SYSTEM: NEUTRON MONITORING TRAVERSING INCORE PROBE (NMT)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
NMT-NVA-104C	2083	J2	2	A	3/8	BAL	SO	O	LJ-1 FSC FST PIT	RF Q Q 2Y	VALVE ASSEMBLY CH-C
NMT-NVA-104D	2083	J2	2	A	3/8	BAL	SO	O	LJ-1 FSC FST PIT	RF Q Q 2Y	VALVE ASSEMBLY CH-D

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SYSTEM: NUCLEAR BOILER INSTRUMENTATION (NBI) AND VARIOUS OTHER EXCESS FLOW CHECK VALVES

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
NBI-AOV-736AV	2028	C9	1	B	1/2	GB	AO	O	PIT	2Y	RPV FLANGE LEAKOFF PASSIVE ISOLATION
NBI-AOV-737AV	2028	C9	1	B	1/2	GB	AO	C	PIT	2Y	RPV FLANGE LEAKOFF PASSIVE ISOLATION
NBI-CV-10BCV	2026	C4	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	UPPER CHECK FOR LI-61, RV-10
NBI-CV-11BCV	2026	D4	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	CONDENSING CHAMBER 2A UPPER TO 25-5 RACK, RV-10
NBI-CV-12BCV	2026	D4	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	CONDENSING CHAMBER 2A LOWER TO 25-5 RACK, RV-10
NBI-CV-13BCV	2026	E4	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	CONDENSING CHAMBER 3A TO LITS-73A, RV-10
NBI-CV-14BCV	2026	E4	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	CONDENSING CHAMBER 3A TO 25 5 & 25-5-1 RACK, RV-10
NBI-CV-15BCV	2026	E4	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	LT-52A; LIS-83A & C; LT-61; DPT-65; LIS-101A & B, RV-10
NBI-CV-16BCV	2026	F4	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	LOW SIDE, FT-64T, RV-10
NBI-CV-17BCV	2026	F4	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	LOW SIDE FT-64R; FT-63D, RV-10
NBI-CV-18BCV	2026	G4	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	HIGH SIDE FT-63D, RV-10

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SYSTEM: NUCLEAR BOILER INSTRUMENTATION (NBI) AND VARIOUS OTHER EXCESS FLOW CHECK VALVES

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
NBI-CV-19BCV	2026	G4	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	ABOVE CORE PLATE PRESS, RV-10
NBI-CV-20BCV	2026	G4	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	BELOW CORE PLATE TO INSTRUMENT RACK 25-51, RV-10
NBI-CV-21BCV	2026	D8	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	CONDENSING CHAMBER 2B UPPER TO 25-6 RACK, RV-10
NBI-CV-22BCV	2026	D8	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	CONDENSING CHAMBER 2B UPPER TO 25-6 RACK, RV-10
NBI-CV-23BCV	2026	E8	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	CONDENSING CHAMBER 3B LT-70, LITS-73B, RV-10
NBI-CV-24BCV	2026	E8	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	CONDENSING CHAMBER 3B TO 25-6 & 25-6-1 RACKS, RV-10
NBI-CV-25BCV	2026	E8	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	LOW SIDE LIS-83B, LT-52B, LIS-101C & D, RV-10
NBI-CV-26BCV	2026	F8	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	LOW SIDE FT-64L, RV-10
NBI-CV-27BCV	2026	F8	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	LOW SIDE FT-63C, FT-64N, RV-10
NBI-CV-28BCV	2026	G8	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	HIGH SIDE FT-63C, RV-10
NBI-CV-29BCV	2026	G8	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	BELOW CORE PLATE TO INSTRUMENT RACK 25-52, RV-10

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SYSTEM: NUCLEAR BOILER INSTRUMENTATION (NBI) AND VARIOUS OTHER EXCESS FLOW CHECK VALVES

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
NBI-CV-30BCV	2026	F3	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	FT-63B; FT-64B LOW SIDE, RV-10
NBI-CV-31BCV	2026	F3	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	FT-63B; HIGH SIDE, RV-10
NBI-CV-32BCV	2026	F3	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	FT-64D; LOW SIDE, RV-10
NBI-CV-33BCV	2026	F3	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	FT-64F; LOW SIDE, RV-10
NBI-CV-34BCV	2026	F3	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	FT-64K; LOW SIDE, RV-10
NBI-CV-35BCV	2026	F3	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	FT-64M; LOW SIDE, RV-10
NBI-CV-36BCV	2026	F3	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	FT-64V; LOW SIDE, RV-10
NBI-CV-37BCV	2026	F3	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	FT-64X; LOW SIDE, RV-10
NBI-CV-38BCV	2026	F3	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	FT-64Z; LOW SIDE, RV-10
NBI-CV-39BCV	2026	F3	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	FT-64A; FT-63A LOW SIDE, RV-10
NBI-CV-40BCV	2026	F9	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	FT-63A HIGH SIDE, RV-10

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SYSTEM: NUCLEAR BOILER INSTRUMENTATION (N3I) AND VARIOUS OTHER EXCESS FLOW CHECK VALVES

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
NBI-CV-41BCV	2026	F9	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	FT-64C LOW SIDE, RV-10
NBI-CV-42BCV	2026	F9	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	FT-64E LOW SIDE, RV-10
NBI-CV-43BCV	2026	F9	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	FT-64J LOW SIDE, RV-10
NBI-CV-44BCV	2026	F9	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	FT-64S LOW SIDE, RV-10
NBI-CV-45BCV	2026	F9	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	FT-64U LOW SIDE, RV-10
NBI-CV-46BCV	2026	F9	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	FT-64W LOW SIDE, RV-10
NBI-CV-47BCV	2026	F9	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	FT-64Y LOW SIDE, RV-10
NBI-CV-49BCV	2026	E1	3	C	1/2	CK-S	SA	C	FSO	RF	REFERENCE LEG LOOP A INJECTION, ROJ-06
NBI-CV-50BCV	2026	E1	3	C	1/2	CK-S	SA	C	FSO	RF	REFERENCE LEG LOOP A INJECTION, ROJ-06
NBI-CV-51BCV	2026	E12	3	C	1/2	CK-S	SA	C	FSO	RF	REFERENCE LEG LOOP B INJECTION, ROJ-06
NBI-CV-52BCV	2026	E12	3	C	1/2	CK-S	SA	C	FSO	RF	REFERENCE LEG LOOP B INJECTION, ROJ-06

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SYSTEM: NUCLEAR BOILER INSTRUMENTATION (NBI) AND VARIOUS OTHER EXCESS FLOW CHECK VALVES

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
NBI-CV-55CV	2026	A3	3	A/C	3/8	CK-S	SA	O	LT2 FSC	RF RF	REFERENCE LEG LOOP 3A OUTBOARD INJECTION, ROI-07
NBI-CV-56CV	2026	A3	3	A/C	3/8	CK-S	SA	O	LT2 FSC	RF RF	REFERENCE LEG LOOP 3B OUTBOARD INJECTION, ROI-07
NBI-SOV-SSV738	2026	E1	2	B	1/2	SOV	SOV	C	FSO FST PIT	RF RF 2Y	REFERENCE LEG LOOP A INJECTION, ROI-06
NBI-SOV-SSV739	2026	E12	2	B	1/2	SOV	SOV	C	FSO FST PIT	RF RF 2Y	REFERENCE LEG LOOP B INJECTION, ROI-06
CS-CV-16BCV	2045 SH 1	A6	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	DPIS-43A LOW SIDE EXCESS FLOW, RV-10
CS-CV-17BCV	2045 SH 1	B6	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	DPIS-43B LOW SIDE EXCESS FLOW, RV-10
HPCI-CV-10BCV	2041	D4	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	HIGH SIDE HPCI-DPIS-76; DPIS-77; PS-68A; PS-68C, RV-10
HPCI-CV-11BCV	2041	D4	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	LOW SIDE HPCI-DPIS-76; DPIS-77; PS-68B; PS-68D, RV-10
MS-CV-10BCV	2041	C4	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	FT-51A; DPIS-116A, B, C, & D HIGH SIDE, RV-10
MS-CV-11BCV	2041	C4	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF R.	FT-51A; DPIS-116A, B, C, & D LOW SIDE, RV-10

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SYSTEM: NUCLEAR BOILER INSTRUMENTATION (NBI) AND VARIOUS OTHER EXCESS FLOW CHECK VALVES

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
MS-CV-12BCV	2041	C4	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	FT-51B, DPIS-117A, B, C, & D LOW SIDE, RV-10
MS-CV-13BCV	2041	C4	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	FT-51B, DPIS-117A, B, C, & D HIGH SIDE, RV-10
MS-CV-14BCV	2041	C7	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	FT-51C, DPIS-118A, B, C, & D HIGH SIDE, RV-10
MS-CV-15BCV	2041	C7	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	FT-51D, DPIS-119A, B, C, & D HIGH SIDE, RV-10
MS-CV-16BCV	2041	C7	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	FT-51C, DPIS-118A, B, C, & D LOW SIDE, RV-10
MS-CV-17BCV	2041	C7	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	FT-51D, DPIS-119A, B, C, & D LOW SIDE, RV-10
RCIC-CV-10BCV	2041	E7	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	RCIC-DPIS-84 HIGH SIDE EXCESS FLOW CHECK VALVE, RV-10
RCIC-CV-11BCV	2041	E7	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	RCIC-DPIS-84 LOW SIDE EXCESS FLOW CHECK VALVE, RV-10
RCIC-CV-12BCV	2041	D7	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	RCIC-DPIS-83 HIGH SIDE EXCESS FLOW CHECK VALVE, RV-10
RCIC-CV-13BCV	2041	D7	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	RCIC-DPIS-83 LOW SIDE EXCESS FLOW CHECK VALVE, RV-10
RR-CV-10CV	2027	C1	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	PS-128A SENSING LINE, RV-10

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SYSTEM: NUCLEAR BOILER INSTRUMENTATION (NBI) AND VARIOUS OTHER EXCESS FLOW CHECK VALVES

VALVE CIC	P&ID	P&ID COORD	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
RR-CV-11CV	2027	[illegible]	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	PS-128A SENSING LINE, RV-10
RR-CV-12CV	2027	F[illegible]	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	DPT-111A LOW SIDE, RV-10
RR-CV-13CV	2027	B2	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	DPT-111A HIGH SIDE, RV-10
RR-CV-15CV	2027	E2	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	PT-25A SENSING LINE, RV-10
RR-CV-16CV	2027	E2	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	PT-24A SENSING LINE, RV-10
RR-CV-17CV	2027	B2	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	FT-110A AND B HIGH SIDE, RV-10
RR-CV-18CV	2027	B2	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	FT-110A AND B LOW SIDE, RV-10
RR-CV-27CV	2027	C9	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	DPT-111B LOW SIDE, RV-10
RR-CV-28CV	2027	B9	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	PT-111B HIGH SIDE, RV-10
RR-CV-30CV	2027	E9	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	PT-25B REACTOR RECIRCULATION PUMP 1B SEAL CAVITY LINE, RV-10
RR-CV-31CV	2027	E9	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	PT-24B SENSING LINE, RV-10

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VALVE SUMMARY TABLES

SYSTEM: NUCLEAR BOILER INSTRUMENTATION (NBI) AND VARIOUS OTHER EXCESS FLOW CHECK VALVES

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
RR-CV-32CV	2027	A9	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	FT-110C AND D HIGH SIDE, RV-10
RR-CV-33CV	2027	A9	1	A/C	1	CK-B	SA	O	LJ-2 FSC	RF RF	FT-110C AND D LOW SIDE, RV-10

COOPER NUCLEAR STATION
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VALVE SUMMARY TABLES

SYSTEM: PRIMARY CONTAINMENT (PC)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
PC-AOV-237AV	2022 SH 1	E4	2	A	24	BTF	AO	C	LJ-1 FSC FST PIT	RF Q Q 2Y	SUPPRESSION CHAMBER INLET OUTBOARD ISOLATION
PC-AOV-238AV	2022 SH 1	D4	2	A	24	BTF	AO	C	LJ-1 FSC FST PIT	RF Q Q 2Y	DRYWELL INLET OUTBOARD ISOLATION
PC-AOV-243AV	2022 SH 1	E5	2	A	20	BTF	AO	C	LJ-1 FSO FST PIT	RF Q Q 2Y	SUPPRESSION CHAMBER VACUUM RELIEF
PC-AOV-244AV	2022 SH 1	F5	2	A	20	BTF	AO	C	LJ-1 FSO FST PIT	RF Q Q 2Y	SUPPRESSION CHAMBER VACUUM RELIEF
PC-AOV-245AV	2022 SH 1	E1	2	A	24	BTF	AO	C	LJ-1 FSC FST PIT	RF Q Q 2Y	SUPPRESSION CHAMBER EXHAUST OUTBOARD ISOLATION
PC-AOV-246AV	2022 SH 1	C1	2	A	24	BTF	AO	C	LJ-1 FSC FST PIT	RF Q Q 2Y	DRYWELL EXHAUST OUTBOARD ISOLATION

COOPER NUCLEAR STATION
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VALVE SUMMARY TABLES

SYSTEM: PRIMARY CONTAINMENT (PC)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
PC-AOV-247AV	2022 SH 1	F11	2	A	24	BTF	AO	C	LJ-1 FSC FST	RF Q Q	DRYWELL EXHAUST OUTBOARD ISOLATION
PC-AOV-248AV	2022 SH 1	F11	2	A	24	BTF	AO	C	LJ-1 FSC FST	RF Q Q	DRYWELL EXHAUST OUTBOARD ISOLATION
PC-AOV-NRV20	2027	H3	2	A/C	20	CK-S	AO	C	LT-2 PIT VBT	RF 2Y RF	SUPPRESSION CHAMBER TO DRYWELL VACUUM BREAKER
PC-AOV-NRV21	2027	H3	2	A/C	20	CK-S	AO	C	LT-2 PIT VBT	RF 2Y RF	SUPPRESSION CHAMBER TO DRYWELL VACUUM BREAKER
PC-AOV-NRV22	2027	H4	2	A/C	20	CK-S	AO	C	LT-2 VBT PIT	RF RF 2Y	SUPPRESSION CHAMBER TO DRYWELL VACUUM BREAKER
PC-AOV-NRV23	2027	H4	2	A/C	20	CK-S	AO	C	LT-2 PIT VBT	RF 2Y RF	SUPPRESSION CHAMBER TO DRYWELL VACUUM BREAKER
PC-AOV-NRV24	2027	H5	2	A/C	20	CK-S	AO	C	LT-2 VBT PIT	RF RF 2Y	SUPPRESSION CHAMBER TO DRYWELL VACUUM BREAKER
PC-AOV-NRV25	2027	H5	2	A/C	20	CK-S	AO	C	LT-2 PIT VBT	RF 2Y RF	SUPPRESSION CHAMBER TO DRYWELL VACUUM BREAKER

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM
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SYSTEM: PRIMARY CONTAINMENT (PC)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
PC-AOV-NRV26	2027	H6	2	A/C	20	CK-S	AO	C	LT-2 PIT VBT	RF 2Y RF	SUPPRESSION CHAMBER TO DRYWELL VACUUM BREAKER
PC-AOV-NRV27	2027	H6	2	A/C	20	CK-S	AO	C	LT-2 PIT VBT	RF 2Y RF	SUPPRESSION CHAMBER TO DRYWELL VACUUM BREAKER
PC-AOV-NRV28	2027	H7	2	A/C	20	CK-S	AO	C	LT-2 PIT VBT	RF 2Y RF	SUPPRESSION CHAMBER TO DRYWELL VACUUM BREAKER
PC-AOV-NRV29	2027	H7	2	A/C	20	CK-S	AO	C	LT-2 PIT VBT	RF 2Y RF	SUPPRESSION CHAMBER TO DRYWELL VACUUM BREAKER
PC-AOV-NRV30	2027	H7	2	A/C	20	CK-S	AO	C	LT-2 PIT VBT	RF 2Y RF	SUPPRESSION CHAMBER TO DRYWELL VACUUM BREAKER
PC-AOV-NRV31	2027	H8	2	A/C	20	CK-S	AO	C	LT-2 PIT VBT	RF 2Y RF	SUPPRESSION CHAMBER TO DRYWELL VACUUM BREAKER
PC-CV-13CV	2022 SH 1	E5	2	A/C	20	CK-D	SA	C	LJ-1 VBT	RF RF	SUPPRESSION CHAMBER VACUUM RELIEF, ROJ-19
PC-CV-14CV	2022 SH 1	F5	2	A/C	20	CK-D	SA	C	LJ-1 VBT	RF RF	SUPPRESSION CHAMBER VACUUM RELIEF, ROJ-19

COOPER NUCLEAR STATION
THIRD INTERVAL
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VALVE SUMMARY TABLES

SYSTEM: PRIMARY CONTAINMENT (PC)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
PC-CV-21CV	2022 SH 2	E1	2	A/C	1/4	CK-S	SA	O/C	LJ-1 FSC	RF RF	N2 SUPPLY TO H_2O_2 MONITORS, ROJ-08
PC-CV-22CV	2022 SH 2	D3	2	A/C	1/4	CK-S	SA	O/C	LJ-1 FSC	RF RF	N2 SUPPLY TO H_2O_2 MONITORS, ROJ-08
PC-CV-23CV	2022 SH 2	C3	2	A/C	1/4	CK-S	SA	O/C	LJ-1 FSC	RF RF	O2 SUPPLY TO H_2O_2 MONITORS, ROJ-08
PC-CV-25CV	2022 SH 2	E5	2	A/C	1/4	CK-S	SA	O/C	LJ-1 FSC	RF RF	N2 SUPPLY TO H_2O_2 MONITORS, ROJ-08
PC-CV-26CV	2022 SH 2	D6	2	A/C	1/4	CK-S	SA	O/C	LJ-1 FSC	RF RF	N2 SUPPLY TO H_2O_2 MONITORS, ROJ-08
PC-CV-27CV	2022 SH 2	C6	2	A/C	1/4	CK-S	SA	O/C	LJ-1 FSC	RF RF	O2 SUPPLY TO H_2O_2 MONITORS, ROJ-08
PC-CV-33CV	2027	A2	2	A/C	3/8	CK-S	SA	C	LJ-1 FSC	RF CS	N2 SUPPLY TO RR-AOV-741AV, CSJ-05
PC-CV-34CV	2027	A2	2	A/C	3/8	CK-S	SA	C	LJ-1 FSC	RF CS	N2 SUPPLY TO RR-AOV-741AV, CSJ-05
PC-CV-35CV	2028	D8	2	A/C	3/8	CK	SA	C	LJ-1	2Y	X-45D PASSIVE ISOLATION
PC-CV-36CV	2028	D7	2	A/C	3/8	CK	SA	C	LJ-1	2Y	X-45D PASSIVE ISOLATION
PC-MOV-230MV	2022 SH 1	E1	2	A	24	BTF	MO	C	LJ-1 FSC PIT	RF Q 2Y	SUPPRESSION CHAMBER EXHAUST INBOARD ISOLATION

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SYSTEM: PRIMARY CONTAINMENT (PC)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
PC-MOV-231MV	2022 SH 1	C1	2	A	24	BTF	MO	C	LJ-1 FSC PIT	RF Q 2Y	DRYWELL EXHAUST INBOARD ISOLATION
PC-MOV-232MV	2022 SH 1	D4	2	A	24	BTF	MO	C	LJ-1 FSC PIT	RF Q 2Y	DRYWELL INLET INBOARD ISOLATION
PC-MOV-233MV	2022 SH 1	E4	2	A	24	BTF	MO	C	LJ-1 FSC PIT	RF Q 2Y	SUPPRESSION CHAMBER INLET INBOARD ISOLATION
PC-MOV-305MV	2022 SH 1	E1	2	A	2	GT	MO	C	LJ-1 FSC PIT	RF Q 2Y	PC-MOV-230MV BYPASS
PC-MOV-306MV	2022 SH 1	C1	2	A	2	GT	MO	C	LJ-1 FSC PIT	RF Q 2Y	PC-MOV-231MV BYPASS
PC-MOV-1301MV	2084	F8	2	A	1	GT	MO	O	LJ-1 FSC PIT	RF Q 2Y	SUPPRESSION CHAMBER ISOLATION SYSTEM B
PC-MOV-1302MV	2084	F7	2	A	1	GT	MO	O	LJ-1 FSC PIT	RF Q 2Y	SUPPRESSION CHAMBER ISOLATION SYSTEM B
PC-MOV-1303MV	2084	F4	2	A	1	GT	MO	C	LJ-1 FSC PIT	RF Q 2Y	SUPPRESSION CHAMBER ISOLATION SYSTEM A

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SYSTEM: PRIMARY CONTAINMENT (PC)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
PC-MOV-1304MV	2084	F4	2	A	1	GT	MO	C	LJ-1 FSC PIT	RF Q 2Y	SUPPRESSION CHAMBER ISOLATION SYSTEM A
PC-MOV-1305MV	2084	E4	2	A	1	GT	MO	C	LJ-1 FSC PIT	RF Q 2Y	DRYWELL ISOLATION SYSTEM A
PC-MOV-1306MV	2084	E4	2	A	1	GT	MO	C	LJ-1 FSC PIT	RF Q 2Y	DRYWELL ISOLATION SYSTEM A
PC-MOV-1308MV	2084	H7	2	A	1	GT	MO	C	LJ-1 FSC PIT	RF Q 2Y	BLEED ISOLATION FOR SUPPRESSION CHAMBER
PC-MOV-1310MV	2084	C7	2	A	1	GT	MO	C	LJ-1 FSC PIT	RF Q 2Y	BLEED ISOLATION FOR DRYWELL
PC-MOV-1311MV	2084	E7	2	A	1	GT	MO	O	LJ-1 FSC PIT	RF Q 2Y	DRYWELL DILUTION SUPPLY ISOLATION SYSTEM B
PC-MOV-1312MV	2084	E7	2	A	1	GT	MO	O	LJ-1 FSC PIT	RF Q 2Y	DRYWELL DILUTION SUPPLY ISOLATION SYSTEM B

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SYSTEM: RADIATION MONITORING (RMV)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
RMV-AOV-10AV	2022 SH 1	E10	2	A	3/4	GB	AO	O	LJ-1 FSC FST PIT	RF Q Q 2Y	RM-4 CONTAINMENT ISOLATION, INBOARD
RMV-AOV-11AV	2022 SH 1	E10	2	A	3/4	GB	AO	O	LJ-1 FSC FST PIT	RF Q Q 2Y	RM-4 CONTAINMENT ISOLATION, OUTBOARD
RMV-AOV-12AV	2022 SH 1	F10	2	A	3/4	GB	AO	O	LJ-1 FSC FST PIT	RF Q Q 2Y	RM-4 CONTAINMENT ISOLATION, INBOARD
RMV-AOV-13AV	2022 SH 1	F10	2	A	3/4	GB	AO	O	LJ-1 FSC FST PIT	RF Q Q 2Y	RM-4 CONTAINMENT ISOLATION, OUTBOARD

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SYSTEM: RADIOACTIVE WASTE (RW)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
RW-AOV-AO82	2038	G5	2	A	3	GT	AO	O	LJ-1 FSC FST PIT	RF Q Q 2Y	DRYWELL FLOOR DRAIN SUMP DISCHARGE
RW-AOV-AO83	2038	G5	2	A	3	GT	AO	O	LJ-1 FSC FST PIT	RF Q Q 2Y	DRYWELL FLOOR DRAIN SUMP DISCHARGE
RW-AOV-AO94	2028	G11	2	A	3	GT	AO	O	LJ-1 FSC FST PIT	RF Q Q 2Y	DRYWELL EQUIPMENT DRAIN SUMP DISCHARGE
RW-AOV-AO95	2028	G12	2	A	3	GT	AO	O	LJ-1 FSC FST PIT	RF Q Q 2Y	DRYWELL EQUIPMENT DRAIN SUMP DISCHARGE
RW-CV-58CV	2005 SH 2	G10	A	C	2	CK-S	SA	C	FSO FSC	Q Q	Z SUMP PUMP A DISCHARGE CHECK
RW-CV-59CV	2005 SH 2	G10	A	C	2	CK-S	SA	C	FSO FSC	Q Q	Z SUMP PUMP B DISCHARGE CHECK

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SYSTEM: REACTOR CORE ISOLATION COOLING (RCIC)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
RCIC-AOV-AO34	2041	G10	2	B	1	GB	AO	O	FSC FST PIT	Q Q 2Y	RCIC STEAM LINE DRIPLEG DRAIN
RCIC-CV-10CV	2043	J3	2	C	6	CK-S	SA	C	FSO FSC	Q CS	ECST SUPPLY TO RCIC PUMP, CSJ-11
RCIC-CV-11CV	2043	H10	2	C	6	CK-S	SA	C	FSO FSC	RF RF	RCIC SUPPLY FROM SUPPRESSION CHAMBER, ROJ-09
RCIC-CV-12CV	2043	G9	2	C	2	CK-S	SA	C	FSC	RF	VACUUM PUMP DISCHARGE TO SUPPRESSION CHAMBER, ROJ-10
RCIC-CV-13CV	2043	D5	2	C	2	CK-P	SA	C	FSO FSC	Q RF	MINIMUM FLOW LINE, ROJ-10
RCIC-CV-15CV	2043	D9	2	A/C	8	CK-S	SA	C	LJ-1 FSC FSO	RF RF Q	RCIC TURBINE EXHAUST TO SUPPRESSION CHAMBER, ROJ-10
RCIC-CV-18CV	2043	B8	2	C	2	CK-P	SA	C	FSC	Q	CONDENSATE SUPPLY TO RCIC PRESSURE MAINTENANCE, RV-11
RCIC-CV-19CV	2043	B8	A	C	2	CK-P	SA	C	FSC	Q	CONDENSATE SUPPLY TO RCIC PRESSURE MAINTENANCE, RV-11
RCIC-CV-20CV	2043	H7	A	C	2	CK-P	SA	C	PSO FSO	Q RF	RCIC LUBE OIL COOLING WATER RETURN, ROJ-17

COOPER NUCLEAR STATION
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VALVE SUMMARY TABLES

SYSTEM: REACTOR CORE ISOLATION COOLING (RCIC)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
RCIC-CV-21CV	2043	H7	2	C	2	CK-P	SA	C	PSO FSO FSC	Q RF RF	RCIC CONDENSATE PUMP DISCHARGE, ROJ-17
RCIC-CV-22CV	2043	E10	2	C	1 1/2	CK-L	SA	C	VBT	RF	RCIC VACUUM BREAKER, RV-14
RCIC-CV-23CV	2043	E10	2	C	1 1/2	CK-L	SA	C	VBT	RF	RCIC VACUUM BREAKER, RV-14
RCIC-CV-24CV	2043	E10	2	C	1 1/2	CK-L	SA	C	VBT	RF	RCIC VACUUM BREAKER, RV-14
RCIC-CV-25CV	2043	E10	2	C	1 1/2	CK-L	SA	C	VBT	RF	RCIC VACUUM BREAKER, RV-14
RCIC-CV-26CV	2043	C9	1	A/C	4	CK-S	SA	O	LJ-1 FSO FSC PIT	RF CS CS 2Y	INJECTION CHECK VALVE, CSJ-02
RCIC-MOV-MO15	2041	D6	1	A	3	GT	MO	O	LJ-1 FSC PIT	RF Q 2Y	RCIC STEAM INBOARD ISOLATION
RCIC-MOV-MO16	2041	D7	1	A	3	GT	MO	O	LJ-1 FSC PIT	RF Q 2Y	RCIC STEAM OUTBOARD ISOLATION

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THIRD INTERVAL
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SYSTEM: REACTOR CORE ISOLATION COOLING (RCIC)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
RCIC-MOV-MO18	2043	J3	2	B	6	GT	MO	O	FSO FSC PIT	Q Q 2Y	RCIC SUPPLY FROM CONDENSATE STORAGE
RCIC-MOV-MO20	2043	C8	2	B	4	GT	MO	O	FSO PIT	Q 2Y	RCIC PUMP DISCHARGE
RCIC-MOV-MO21	2043	C8	2	B	4	GT	MO	C	FSO PIT	Q 2Y	RCIC INJECTION TO REACTOR
RCIC-MOV-MO27	2043	D7	2	B	2	GB	MO	C	FSO FSC PIT	Q Q 2Y	RCIC PUMP MINIMUM FLOW RECIRCULATION TO SUPPRESSION CHAMBER
RCIC-MOV-MO30	2043	E1	2	B	4	GB	MO	C	PIT	2Y	RCIC TEST RETURN ROOT
RCIC-MOV-MO33	2043	E1	A	B	4	GT	MO	C	PIT	2Y	RCIC TEST RETURN SHUTOFF
RCIC-MOV-MO41	2043	G10	2	B	6	GT	MO	C	FSO FSC PIT	Q Q 2Y	RCIC SUPPLY FROM SUPPRESSION CHAMBER
RCIC-MOV-MO131	2041	F8	2	B	3	GB	MO	C	FSO PIT	Q 2Y	RCIC STEAM SUPPLY TO RCIC TURBINE
RCIC-MOV-MO132	2043	E3	2	B	2	GB	MO	C	FSO PIT	Q 2Y	AUXILIARY COOLING SUPPLY
RCIC-RD-S240	2043	E4	2	D	8	RD	SA	C	RD	5Y	EXHAUST LINE RUPTURE DISC

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SYSTEM: REACTOR CORE ISOLATION COOLING (RCIC)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
RCIC-RV-10RV	2043	H3	2	C	1	RV	SA	C	RVT	10Y	RCIC PUMP SUCTION RELIEF
RCIC-RV-11RV	2043	G5	2	C	1	RV	SA	C	RVT	10Y	RCIC AUXILIARY COOLING SYSTEM
RCIC-V-37	2043	D9	2	A/C	8	S-CK	MA	O	LJ-1 FSO FSC	RF Q RF	RCIC TURBINE EXHAUST TO SUPPRESSION CHAMBER ISOLATION, ROI-11
RCIC-V-42	2043	G9	2	C	2	S-CK	MA	O	FSC	RF	RCIC VACUUM PUMP DISCHARGE TO SUPPRESSION CHAMBER, ROI-11

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SYSTEM: REACTOR EQUIPMENT COOLING (REC)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
REC-AOV-TCV861	2031 SH 2	C10	3	B	1	GB	AO	T	FSO FST	Q Q	FC-R-E INLET
REC-AOV-TCV862	2031 SH 2	C9	3	B	1-1/4	GB	AO	T	FSO FST	Q Q	FC-R-H INLET
REC-AOV-TCV864	2031 SH 2	E9	3	B	1	GB	AO	T	FSO FST	Q Q	FC-R-F INLET
REC-AOV-TCV865	2031 SH 2	E8	3	B	1-1/4	GB	AO	T	FSO FST	Q Q	F-R-J INLET
REC-CV-10CV	2031 SH 2	F1	3	C	8	CK-T	SA	O	FSO FSC	Q Q	REC-P-A DISCHARGE
REC-CV-11CV	2031 SH 2	F2	3	C	8	CK-T	SA	O	FSO FSC	Q Q	REC-P-B DISCHARGE
REC-CV-12CV	2031 SH 2	F3	3	C	8	CK-T	SA	O	FSO FSC	Q Q	REC-P-C DISCHARGE
REC-CV-13CV	2031 SH 2	F4	3	C	8	CK-T	SA	O	FSO FSC	Q Q	REC-P-D DISCHARGE
REC-CV-16CV	2031 SH 2	H1	3	C	12	CK-S	SA	O	FSC	RF	NON-CRITICAL HEADER RETURN TO REC PUMPS, ROI-12
REC-MOV-694MV	2031 SH 2	J2	3	B	4	GT	MO	O	PIT	2Y	PASSIVE CRITICAL LOOP RETURN CROSSTIE
REC-MOV-695MV	2031 SH 2	D4	3	B	4	GT	MO	O	PIT	2Y	PASSIVE CRITICAL LOOP SUPPLY CROSSTIE

SYSTEM: REACTOR EQUIPMENT COOLING (REC)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
REC-MOV-697MV	2031 SH 2	J2	3	B	6	GT	MO	O	FSO FSC PIT	Q Q 2Y	NORTH CRITICAL LOOP RETURN
REC-MOV-698MV	2031 SH 2	J1	3	B	6	GT	MO	O	FSO FSC PIT	Q Q 2Y	SOUTH CRITICAL LOOP RETURN
REC-MOV-700MV	2031 SH 2	B1	3	B	10	GT	MO	O	FSC PIT	Q 2Y	NON-CRITICAL LOOP SUPPLY SHUTOFF
REC-MOV-702MV	2031 SH 2	A4	2	A	8	GT	MO	O	LJ-1 FSC PIT	RF Q 2Y	DRYWELL SUPPLY ISOLATION VALVE
REC-MOV-709MV	2031 SH 1	G3	2	A	8	GT	MO	O	LJ-1 FSC PIT	RF Q 2Y	DRYWELL RETURN ISOLATION VALVE
REC-MOV-711MV	2031 SH 2	D4	3	B	6	GT	MO	O	FSC FSO PIT	Q Q 2Y	NORTH CRITICAL LOOP SUPPLY
REC-MOV-712MV	2031 SH 2	D2	3	B	12	BFL	MO	O	FSC PIT	Q 2Y	REC HEAT EXCHANGER A OUTLET
REC-MOV-713MV	2031 SH 2	C2	3	B	12	BFL	MO	O	FSC PIT	Q 2Y	REC HEAT EXCHANGER B OUTLET

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SYSTEM: REACTOR EQUIPMENT COOLING (REC)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
REC-MOV-714MV	2031 SH 2	C4	3	B	6	GT	MO	O	FSC FSO PIT	Q Q 2Y	SOUTH CRITICAL LOOP SUPPLY
REC-MOV-1329MV	2031 SH 2	C2	3	B	8	GT	MO	O	FSC PIT	Q 2Y	AUXILIARY RADIOACTIVE WASTE BUILDING SUPPLY

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SYSTEM: REACTOR FEEDWATER (RF)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES DESCRIPTION
RF-CV-13CV	2044	B10	1	A/C	18	CK-T	SA	O	LJ-1 FSC	RF RF	FEEDWATER LINE B TO REACTOR OUTBOARD, ROI-13
RF-CV-14CV	2044	C11	1	A/C	18	CK-T	SA	O	LJ-1 FSO FSC	RF RF RF	FEEDWATER LINE B TO REACTOR INBOARD, ROI-13, ROI-14
RF-CV-15CV	2043	B10	1	A/C	18	CK-T	SA	O	LJ-1 FSC	RF RF	FEEDWATER LINE A TO REACTOR OUTBOARD, ROI-13
RF-CV-16CV	2043	C11	1	A/C	18	CK-T	SA	O	LJ-1 FSO FSC	RF RF RF	FEEDWATER LINE A TO REACTOR INBOARD, ROI-13, ROI-14

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VALVE SUMMARY TABLES

SYSTEM: REACTOR RECIRCULATION (RR)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
RR-AOV-740AV	2027	A1	1	A	3/4	GB	AO	O	LJ-1 FSC FST PIT	RF Q Q 2Y	SP-1 OUTBOARD ISOLATION
RR-AOV-741AV	2027	A2	1	A	3/4	GB	AO	O	LJ-1 FSC FST PIT	RF Q Q 2Y	SP-1 INBOARD ISOLATION
RR-MOV-MO53A	2027	B4	1	B	28	GT	MO	O	FSC PIT	CS 2Y	RR PUMP A DISCHARGE CSJ-06
RR-MOV-MO53B	2027	B7	1	B	28	GT	MO	O	FSC PIT	CS 2Y	RR PUMP B DISCHARGE CSJ-06

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM
VALVE SUMMARY TABLES

SYSTEM: REACTOR WATER CLEANUP (RWCU)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
RWCU-CV-15CV	2042 SH 1	C4	1	A/C	4	CK-S	SA	O	LJ-1 FSC	RF RF	RWCU RETURN TO REACTOR VESSEL, ROI-15
RWCU-MOV-MO15	2042 SH 1	E2	1	A	6	GT	MO	O	LJ-1 FSC PIT	RF Q 2Y	RWCU SUPPLY INBOARD ISOLATION
RWCU-MOV-MO18	2042 SH 1	B4	1	A	6	GT	MO	O	LJ-1 FSC PIT	RF Q 2Y	RWCU SUPPLY OUTBOARD ISOLATION

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM
VALVE SUMMARY TABLES

SYSTEM: RESIDUAL HEAT REMOVAL (RHR)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
RHR-CV-10CV	2040 SH 1	G3	2	C	3	CK-S	SA	C	PSO FSO FSC	Q RF Q	RHR PUMP A MINIMUM FLOW, ROJ-18
RHR-CV-11CV	2040 SH 1	G10	2	C	3	CK-S	SA	C	PSO FSO FSC	Q RF Q	RHR PUMP B MINIMUM FLOW, ROJ 18
RHR-CV-12CV	2040 SH 1	H4	2	C	3	CK-S	SA	C	PSO FSO FSC	Q RF Q	RHR PUMP C MINIMUM FLOW, ROJ-18
RHR-CV-13CV	2040 SH 1	H10	2	C	3	CK-S	SA	C	PSO FSO FSC	Q RF Q	RHR PUMP D MINIMUM FLOW, ROJ-18
RHR-CV-14CV	2040 SH 1	G3	2	C	16	CK-T	SA	C	FSO FSC	Q Q	RHR PUMP A DISCHARGE
RHR-CV-15CV	2040 SH 1	G10	2	C	16	CK-T	SA	C	FSO FSC	Q Q	RHR PUMP B DISCHARGE
RHR-CV-16CV	2040 SH 1	H3	2	C	16	CK-T	SA	C	FSO FSC	Q Q	RHR PUMP C DISCHARGE
RHR-CV-17CV	2040 SH 1	H10	2	C	16	CK-T	SA	C	FSO FSC	Q Q	RHR PUMP D DISCHARGE
RHR-CV-18CV	2040 SH 1	A9	A	C	4	CK-S	SA	C	FSC	Q	RHR LOOP B OUTBOARD PRESSURE MAINTENANCE SUPPLY, RV-12

SYSTEM: RESIDUAL HEAT REMOVAL (RHR)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
RHR-CV-19CV	2040 SH 1	A9	2	C	4	CK-S	SA	C	FSC	Q	RHR LOOP B INBOARD PRESSURE MAINTENANCE SUPPLY, RV-12
RHR-CV-24CV	2040 SH 1	C4	A	C	4	CK-S	SA	C	FSC	Q	RHR LOOP A OUTBOARD PRESSURE MAINTENANCE SUPPLY, RV-12
RHR-CV-25CV	2040 SH 1	C4	2	C	4	CK-S	SA	C	FSC	Q	RHR LOOP A INBOARD PRESSURE MAINTENANCE SUPPLY, RV-12
RHR-CV-26CV	2040 SH 1	C6	1	A/C	24	CK-S	SA	C	LJ-1 LT-2 FSO FSC PIT	RT RT CS CS 2Y	LOOP A INJECTION LINE TESTABLE CHECK, PRESSURE ISOLATION VALVE, CSJ-01
RHR-CV-27CV	2040 SH 1	C7	1	A/C	24	CK-S	SA	C	LJ-1 LT-2 FSO FSC PIT	RT RT CS CS 2Y	LOOP B INJECTION LINE TESTABLE CHECK, PRESSURE ISOLATION VALVE, CSJ-01
RHR-MOV-MO12A	2040 SH 1	E2	2	B	16	GT	MO	O	FSO PIT	Q 2Y	RHR HEAT EXCHANGER A OUTLET
RHR-MOV-MO12B	2040 SH 1	F11	2	B	16	GT	MO	O	FSO PIT	Q 2Y	RHR HEAT EXCHANGER B OUTLET
RHR-MOV-MO13A	2040 SH 1	G6	2	B	20	GT	MO	O	FSO FSC PIT	Q Q 2Y	RHR PUMP A SUCTION FROM SUPPRESSION CHAMBER

COOPER NUCLEAR STATION
THIRD INTERVAL
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SYSTEM: RESIDUAL HEAT REMOVAL (RHR)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
RHR-MOV-MO13B	2040 SH 1	G8	2	B	20	GT	MO	O	FSO FSC PIT	Q Q 2Y	RHR PUMP B SUCTION FROM SUPPRESSION CHAMBER
RHR-MOV-MO13C	2040 SH 1	G6	2	B	20	GT	MO	O	FSO FSC PIT	Q Q 2Y	RHR PUMP C SUCTION FROM SUPPRESSION CHAMBER
RHR-MOV-MO13D	2040 SH 1	G7	2	B	20	GT	MO	O	FSO FSC PIT	Q Q 2Y	RHR PUMP D SUCTION FROM SUPPRESSION CHAMBER
RHR-MOV-MO15A	2040 SH 1	G5	2	B	20	GT	MO	C	FSC PIT	Q 2Y	RHR PUMP A SDC SUCTION
RHR-MOV-MO15B	2040 SH 1	G8	2	B	20	GT	MO	C	FSC PIT	Q 2Y	RHR PUMP B SDC SUCTION
RHR-MOV-MO15C	2040 SH 1	H5	2	B	20	GT	MO	C	FSC PIT	Q 2Y	RHR PUMP C SDC SUCTION
RHR-MOV-MO15D	2040 SH 1	H8	2	B	20	GT	MO	C	FSC PIT	Q 2Y	RHR PUMP D SDC SUCTION
RHR-MOV-MO16A	2040 SH 1	E3	2	B	4	GT	MO	O	FSO FSC PIT	Q Q 2Y	PUMP A AND C MINIMUM FLOW

COOPER NUCLEAR STATION
THIRD INTERVAL
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SYSTEM: RESIDUAL HEAT REMOVAL (RHR)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
RHR-MOV-MO16B	2040 SH 1	E10	2	B	4	GT	MO	O	FSO FSC PIT	Q Q 2Y	PUMP B AND D MIMINUM FLOW
RHR-MOV-MO17	2040 SH 1	D5	1	A	20	GT	MO	C	LJ-1 LT-2 FSC PIT	RF RF CS 2Y	RHR SDC SUPPLY OUTBOARD PRESSURE ISOLATION VALVE, CSJ-07
RHR-MOV-MO18	2040 SH 1	D6	1	A	20	GT	MO	C	LJ-1 LT-2 FSC PIT	RF RF CS 2Y	RHR SDC SUPPLY INBOARD PRESSURE ISOLATION VALVE, CSJ-07
RHR-MOV-MO20	2040 SH 1	H1	2	B	20	GT	MO	C	PIT	2Y	RHR PASSIVE CROSSHEADER SHUTOFF
RHR-MOV-MO25A	2040 SH 1	C5	1	A	24	GT	MO	C	LJ-1 LT-2 FSO FSC PIT	RF RF Q Q 2Y	RHR LOOP A INJECTION INBOARD ISOLATION
RHR-MOV-MO25B	2040 SH 1	C8	1	A	24	GT	MO	C	LJ-1 LT-2 FSO FSC PIT	RF RF Q Q 2Y	RHR LOOP B INJECTION INBOARD ISOLATION

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THIRD INTERVAL
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SYSTEM: RESIDUAL HEAT REMOVAL (RHR)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
RHR-MOV-MO26A	2040 SH 1	B4	2	A	10	GT	MO	C	LJ-1 FSC PIT	RF Q 2Y	DRYWELL SPRAY LOOP A OUTBOARD ISOLATION
RHR-MOV-MO26B	2040 SH 1	B9	2	A	10	GT	MO	C	LJ-1 FSC PIT	RF Q 2Y	DRYWELL SPRAY LOOP B OUTBOARD ISOLATION
RHR-MOV-MO27A	2040 SH 1	C4	1	B	24	ANG	MO	O	FSO PIT	Q 2Y	LOOP A INJECTION OUTBOARD THROTTLE
RHR-MOV-MO27B	2040 SH 1	C9	1	B	24	ANG	MO	O	FSO PIT	Q 2Y	LOOP B INJECTION OUTBOARD THROTTLE
RHR-MOV-MO31A	2040 SH 1	B5	2	A	10	GT	MO	C	LJ-1 FSC PIT	RF Q 2Y	DRYWELL SPRAY LOOP A INBOARD ISOLATION
RHR-MOV-MO31B	2040 SH 1	B8	2	A	10	GT	MO	C	LJ-1 FSC PIT	RF Q 2Y	DRYWELL SPRAY LOOP B INBOARD ISOLATION
RHR-MOV-MO34A	2040 SH 1	E4	2	A	18	GB	MO	C	LJ-1 FSO FSC PIT	RF Q Q 2Y	SUPPRESSION CHAMBER COOLING LOOP A INBOARD THROTTLE

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SYSTEM: RESIDUAL HEAT REMOVAL (RHR)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
RHR-MOV-MO34B	2040 SH 1	E9	2	A	18	GB	MO	C	LJ-1 FSO FSC PIT	RF Q Q 2Y	SUPPRESSION CHAMBER COOLING LOOP B INBOARD THROTTLE
RHR-MOV-MO38A	2040 SH 1	D5	2	A	6	GB	MO	C	LJ-1 FSO FSC PIT	RF Q Q 2Y	SUPPRESSION CHAMBER SPRAY LOOP A INBOARD THROTTLE
RHR-MOV-MO38B	2040 SH 1	D9	2	A	6	GB	MO	C	LJ-1 FSO FSC PIT	RF Q Q 2Y	SUPPRESSION CHAMBER SPRAY LOOP B INBOARD THROTTLE
RHR-MOV-MO39A	2040 SH 1	D4	2	A	18	GT	MO	C	LJ-1 FSO FSC PIT	RF Q Q 2Y	SUPPRESSION CHAMBER COOLING LOOP A OUTBOARD ISOLATION
RHR-MOV-MO39B	2040 SH 1	D10	2	A	18	GT	MO	C	LJ-1 FSO FSC PIT	RF Q Q 2Y	SUPPRESSION CHAMBER COOLING LOOP B OUTBOARD ISOLATION
RHR-MOV-MO57	2040 SH 2	H2	2	B	4	GB	MO	C	LT-2 FSC PIT	RF Q 2Y	RHR DISCHARGE TO RADWASTE INBOARD THROTTLE

COOPER NUCLEAR STATION
THIRD INTERVAL
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SYSTEM: RESIDUAL HEAT REMOVAL (RHR)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
RHR-MOV-MO65A	2040 SH 1	G2	2	B	16	GT	MO	O	FSO PIT	Q 2Y	RHR HEAT EXCHANGER A INLET
RHR-MOV-MO65B	2040 SH 1	G11	2	B	16	GT	MO	O	FSO PIT	Q 2Y	RHR HEAT EXCHANGER B INLET
RHR-MOV-MO66A	2040 Sh 1	F2	2	B	20	GB	MO	O	FSO FSC PIT	Q Q 2Y	RHR HEAT EXCHANGER A BYPASS THROTTLE
RHR-MOV-MO66B	2040 SH 1	F11	2	B	20	GB	MO	O	FSO FSC PIT	Q Q 2Y	RHR HEAT EXCHANGER B BYPASS THROTTLE
RHR-MOV-MO67	2040 SH 2	H2	2	B	4	GT	MO	C	LT-2 FSC PIT	RF Q 2Y	RHR DISCHARGE TO RADWASTE OUTBOARD SHUTOFF
RHR-MOV-MO166A	2041	H2	2	A	1	GB	MO	C	LJ-1	RF	RHR HEAT EXCHANGER A VENT
RHR-MOV-MO166B	2041	H2	2	A	1	GB	MO	C	LJ-1	RF	RHR HEAT EXCHANGER B VENT
RHR-MOV-MO167A	2041	H1	2	A	1	GB	MO	C	LJ-1	RF	RHR HEAT EXCHANGER A VENT
RHR-MOV-MO167B	2041	H2	2	A	1	GB	MO	C	LJ-1	RF	RHR HEAT EXCHANGER B VENT

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THIRD INTERVAL
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SYSTEM: RESIDUAL HEAT REMOVAL (RHR)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
RHR-MOV-MO274A	2041	C6	2	A	2	GB	MO	C	LJ-1 LT-2 PIT	RF RF 2Y	RHR-CV-26CV PASSIVE BYPASS PRESSURE ISOLATION VALVE
RHR-MOV-MO274B	2041	C7	2	A	2	GB	MO	C	LJ-1 LT-2 PIT	RF RF 2Y	RHR-CV-27CV PASSIVE BYPASS PRESSURE ISOLATION VALVE
RHR-MOV-920MV	2041	E1	2	B	3	GT	MO	C	FSC PIT	CS 2Y	STEAM SUPPLY TO AOG UPSTREAM SHUTOFF, CSJ-08
RHR-MOV-921MV	2041	E1	A	B	3	GT	MO	C	FSC PIT	CS 2Y	STEAM SUPPLY TO AOG DOWNSTREAM SHUTOFF, CSJ-08
RHR-RV-10RV	2040 SH 1	G5	2	C	1	RV	SA	C	RVT	10Y	RHR PUMP A SUCTION RELIEF

COOPER NUCLEAR STATION
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SYSTEM: RESIDUAL HEAT REMOVAL (RHR)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
RHR-RV-11RV	2040 SH 1	G8	2	C	1	RV	SA	C	RVT	10Y	RHR PUMP B SUCTION RELIEF
RHR-RV-12RV	2040 SH 1	H5	2	C	1	RV	SA	C	RVT	10Y	RHR PUMP C SUCTION RELIEF
RHR-RV-13RV	2040 SH 1	H8	2	C	1	RV	SA	C	RVT	10Y	RHR PUMP D SUCTION RELIEF
RHR-RV-14RV	2040 SH 1	C3	2	C	1	RV	SA	C	RVT	10Y	RHR LOOP A SUPPLY RELIEF
RHR-RV-15RV	2040 SH 1	C10	2	C	1	RV	SA	C	RVT	10Y	RHR LOOP B SUPPLY RELIEF
RHR-RV-17RV	2040 SH 1	F5	2	C	1	RV	SA	C	RVT	10Y	SHUTDOWN COOLING SUPPLY RELIEF
RHR-RV-18RV	2041	G1	2	C	2½	RV	SA	C	RVT LJ-1	10Y RF	STEAM SUPPLY TO RHR HEAT EXCHANGER A RELIEF
RHR-RV-19RV	2041	G3	2	C	2½	RV	SA	C	RVT LJ-1	10Y RF	STEAM SUPPLY TO RHR HEAT EXCHANGER B RELIEF
RHR-RV-20RV	2041	G2	2	C	1	RV	SA	C	RVT LJ-1	10Y RF	RHR HEAT EXCHANGER A SHELL SIDE RELIEF
RHR-RV-21RV	2041	G2	2	C	1	RV	SA	C	RVT LJ-1	10Y RF	RHR HEAT EXCHANGER B SHELL SIDE RELIEF

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SYSTEM: RESIDUAL HEAT REMOVAL (RHR)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
RHR-SOV-SSV60	2040 SH 1	G2	2	B	¾	SOV	SO	C	FSC FST PIT	Q Q 2Y	RHR HEAT EXCHANGER B PASS SAMPLE VALVE
RHR-SOV-SSV61	2040 SH 1	F2	A	B	¾	SOV	SO	C	FSC FST PIT	Q Q 2Y	RHR HEAT EXCHANGER B PASS SAMPLE VALVE
RHR-SOV-SSV95	2040 SH 1	G12	2	B	¾	SOV	SO	C	FSC FST PIT	Q Q 2Y	RHR HEAT EXCHANGER A PASS SAMPLE VALVE
RHR-SOV-SSV96	2040 SH 1	F12	A	B	¾	SOV	SO	C	FSC FST PIT	Q Q 2Y	RHR HEAT EXCHANGER A PASS SAMPLE VALVE

COOPER NUCLEAR STATION
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SYSTEM: SERVICE WATER (SW)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
SW-AOV-850AV	2036	G8	3	B	2	BAL	AO	O	FSC FST PIT	Q Q 2Y	REC HEAT EXCHANGER A OUTLET PROCESS RAD MONITOR SUPPLY
SW-AOV-851AV	2036	G7	3	B	2	BAL	AO	O	FSC FST PIT	Q Q 2Y	REC HEAT EXCHANGER B OUTLET PROCESS RAD MONITOR SUPPLY
SW-AOV-852AV	2036	G8	3	B	2	BAL	AO	O	FSC FST PIT	Q Q 2Y	REC HEAT EXCHANGER A OUTLET PROCESS RAD MONITOR SUPPLY
SW-AOV-853AV	2036	G9	3	B	2	BAL	AO	O	FSC FST PIT	Q Q 2Y	REC HEAT EXCHANGER B OUTLET PROCESS RAD MONITOR SUPPLY
SW-AOV-854AV	2036	G8	3	B	2	BAL	AO	C	PIT	2Y	SW PASSIVE RAD MONITOR SAMPLE RETURN
SW-AOV-855AV	2036	G9	3	B	2	BAL	AO	C	PIT	2Y	SW PASSIVE RAD MONITOR SAMPLE RETURN
SW-AOV-TCV451A	2036 SH 1	E7	3	B	12	GB	AO	O/T	FSO FST PIT	Q Q 2Y	REC HEAT EXCHANGER A OUTLET TEMPERATURE CONTROL VALVE. CSJ-09
SW-AOV-TCV451B	2036 SH 1	F7	3	B	12	GB	AO	O/T	FSO FST PIT	Q Q 2Y	REC HEAT EXCHANGER B OUTLET TEMPERATURE CONTROL VALVE. CSJ-09
SW-CV-ARA	2036	E5	3	C	6	CK	SC	C	FSC	Q	SW AIR RELEASE

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SYSTEM: SERVICE WATER (SW)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
SW-CV-VRB	2036	C5	3	C	6	CK	SC	C	FSC	Q	SW AIR RELEASE
SW-CV-10CV	2006 SH 1	A11	3	C	20	CK-D	SA	O	FSO FSC	Q Q	SW PUMP A DISCHARGE
SW-CV-11CV	2006 SH 1	A8	3	C	20	CK-D	SA	O	FSO FSC	Q Q	SW PUMP B DISCHARGE
SW-CV-12CV	2006 SH 1	A10	3	C	20	CK-D	SA	O	FSO FSC	Q Q	SW PUMP C DISCHARGE
SW-CV-13CV	2006 SH 1	A7	3	C	20	CK-D	SA	O	FSO FSC	Q Q	SW PUMP D DISCHARGE
SW-CV-19CV	2036	G3	3	C	14	CK-T	SA	C	FSO FSC	Q Q	RHR SW BOOSTER PUMP A DISCHARGE
SW-CV-20CV	2036	F3	3	C	14	CK-T	SA	C	FSO FSC	Q Q	RHR SW BOOSTER PUMP B DISCHARGE
SW-CV-21CV	2036	G3	3	C	14	CK-T	SA	C	FSO FSC	Q Q	RHR SW BOOSTER PUMP C DISCHARGE
SW-CV-22CV	2036	F3	3	C	14	CK-T	SA	C	FSO FSC	Q Q	RHR SW BOOSTER PUMP D DISCHARGE
SW-CV-27CV	2036	C2	3	C	14	CK-D	SA	O	FSO	Q	REC HEAT EXCHANGER B SUPPLY
SW-CV-28CV	2036	C2	3	C	14	CK-D	SA	O	FSO	Q	REC HEAT EXCHANGER A SUPPLY
SW-CV-35CV	2077	D1	3	C	10	CK-S	SA	O	FSO FSC	Q Q	DG1 SUPPLY

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SYSTEM: SERVICE WATER (SW)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
SW-CV-36CV	2077	D2	3	C	10	CK-S	SA	O	FSO FSC	Q Q	DG1 SUPPLY
SW-CV-37CV	2077	D5	3	C	10	CK-S	SA	O	FSO FSC	Q Q	DG2 SUPPLY
SW-CV-38CV	2077	D5	3	C	10	CK-S	SA	O	FSO FSC	Q Q	DG2 SUPPLY
SW-CV-54CV	2036	G11	3	C	3	CK-S	SA	O	FSC	Q	SW PROCESS RAD MONITOR RETURN
SW-CV-81CV	2006 SH 1	G11	3	C	1	CK-S	SA	O	FSC	Q	RIVERWELL SUPPLY TO SW PUMPS A AND C
SW-CV-82CV	2006 SH 1	G10	3	C	1	CK-S	SA	O	FSC	Q	RIVERWELL SUPPLY TO SW PUMPS A AND C
SW-CV-84CV	2006 SH 1	G11	3	C	1	CK-S	SA	O	FSC	Q	RIVERWELL SUPPLY TO SW PUMPS B AND D
SW-CV-85CV	2006 SH 1	G10	3	C	1	CK-S	SA	O	FSC	Q	RIVERWELL SUPPLY TO SW PUMPS B AND D
SW-MOV-36MV	2006 SH 1	E10	3	B	24	BTF	MO	O	FSC PIT	Q 2Y	SW LOOP CRITICAL HEADER ISOLATION
SW-MOV-37MV	2006	E10	3	B	24	BTF	MO	O	FSC PIT	Q 2Y	SW PUMPS CROSSTIE
SW-MOV-MO89A	2036	C7	3	B	18	GB	MO	C	FSO PIT	Q 2Y	RHR HEAT EXCHANGER A SW OUTLET, RV-13

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SYSTEM: SERVICE WATER (SW)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
SW-MOV-MO89B	2036	C10	3	B	18	GB	MO	C	FSO PIT	Q 2Y	RHR HEAT EXCHANGER B SW OUTLET, RV-13
SW-MOV-650MV	2036	D4	3	B	18	BTF	MO	O	FSO FSC PIT	Q Q 2Y	REC HEAT EXCHANGER A OUTLET
SW-MOV-651MV	2036	C4	3	B	18	BTF	MO	O	FSO FSC PIT	Q Q 2Y	REC HEAT EXCHANGER B OUTLET
SW-MOV-886MV	2036	D2	3	B	4	GT	MO	C	FSO PIT	Q 2Y	EMERGENCY SUPPLY TO REC NORTH CRITICAL LOOP
SW-MOV-887MV	2036	D2	3	B	4	GT	MO	C	FSO PIT	Q 2Y	EMERGENCY SUPPLY TO REC SOUTH CRITICAL LOOP
SW-MOV-888MV	2036	E4	3	B	4	GT	MO	C	FSO PIT	Q 2Y	EMERGENCY RETURN FROM REC NORTH CRITICAL LOOP
SW-MOV-889MV	2036	C4	3	B	4	GT	MO	C	FSO PIT	Q 2Y	EMERGENCY RETURN FROM REC SOUTH CRITICAL LOOP
SW-MOV-2128MV	2006 SH 4	G1	3	C	1 1/2	GB	MO	C	FSO PIT	Q 2Y	SW GLAND SEAL WATER BACKUP FROM SW PUMPS A AND C
SW-MOV-2129MV	2006 SH 4	H1	3	C	1 1/2	GB	MO	C	FSO PIT	Q 2Y	SW GLAND SEAL WATER BACKUP FROM SW PUMPS B AND D
SW-RV-12RV	2006 SH 4	G8	3	C	3/4	RV	SA	C	RVT	10Y	SWBP 1A SEAL WATER RELIEF

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VALVE SUMMARY TABLES

SYSTEM: SERVICE WATER (SW)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
SW-RV-13RV	2006 SH 4	E8	3	C	3/4	RV	SA	C	RVT	10Y	SWBP 1C SEAL WATER RELIEF
SW-RV-14RV	2006 SH 4	C8	3	C	3/4	RV	SA	C	RVT	10Y	SWBP 1B SEAL WATER RELIEF
SW-RV-15RV	2006 SH 4	A8	3	C	3/4	RV	SA	C	RVT	10Y	SWBP 1D SEAL WATER RELIEF
SW-V-640	2006 SH 4	F7	3	B	1	BAL	MA	O	FSC	Q	SWBP C SEAL WATER RIVERWELL SHUTOFF
SW-V-649	2006 SH 4	G7	3	B	1	BAL	MA	O	FSC	Q	SWBP A SEAL WATER RIVERWELL SHUTOFF
SW-V-656	2006 SH 4	B7	3	B	1	BAL	MA	O	FSC	Q	SWBP D SEAL WATER RIVERWELL SHUTOFF
SW-V-665	2006 SH 4	D7	3	B	1	BAL	MA	O	FSC	Q	SWBP B SEAL WATER RIVERWELL SHUTOFF
SW-V-1422	2006 SH 4	G8	3	C	3/4	GB	MA	C	FSO	Q	SWBP A GLAND WATER SUPPLY
SW-V-1424	2006 SH 4	G8	3	C	3/4	GB	MA	C	FSO	Q	SWBP A GLAND WATER FLOW CONTROL
SW-V-1426	2006 SH 4	C8	3	C	3/4	GB	MA	C	FSO	Q	SWBP B GLAND WATER SUPPLY
SW-V-1428	2006 SH 4	C8	3	C	3/4	GB	MA	C	FSO	Q	SWBP B GLAND WATER FLOW CONTROL

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM
VALVE SUMMARY TABLES

SYSTEM: SERVICE WATER (SW)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
SW-V-1430	2006 SH 4	E8	3	C	3/4	GB	MA	C	FSO	Q	SWBP C GLAND WATER SUPPLY
SW-V-1432	2006 SH 4	E8	3	C	3/4	GB	MA	C	FSO	Q	SWBP C GLAND WATER FLOW CONTROL
SW-V-1434	2006 SH 4	B8	3	C	3/4	GB	MA	C	FSO	Q	SWBP D GLAND WATER SUPPLY
SW-V-1436	2006 SH 4	B8	3	C	3/4	GB	MA	C	FSO	Q	SWBP D GLAND WATER FLOW CONTROL

COOPER NUCLEAR STATION
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VALVE SUMMARY TABLES

SYSTEM: STANDBY GAS TREATMENT (SGT)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
SGT-AOV-249AV	2037	C2	A	B	12	BTF	AO	C	FSO FSC FST PIT	Q Q Q 2Y	SGT UNIT A INLET
SGT-AOV-250AV	2037	G2	A	B	12	BTF	AO	C	FSO FSC FST PIT	Q Q Q 2Y	SGT UNIT B INLET
SGT-AOV-251AV	2037	C6	A	B	12	BTF	AO	C	FSO FST PIT	Q Q 2Y	SGT UNIT A DISCHARGE
SGT-AOV-252AV	2037	G6	A	B	12	BTF	AO	C	FSO FST PIT	Q Q 2Y	SGT UNIT B DISCHARGE
SGT-AOV-255AV	2037	C6	A	B	10	BTF	AO	C	PIT	2Y	SGT UNIT A PASSIVE BYPASS
SGT-AOV-256AV	2037	G6	A	B	10	BTF	AO	C	PIT	2Y	SGT UNIT B PASSIVE BYPASS
SGT-AOV-270AV	2037	C1	A	B	10	BTF	AO	C	FSO FST PIT	Q Q 2Y	SGT UNIT A DILUTION AIR SHUTOFF
SGT-AOV-271AV	2037	G1	A	B	10	BTF	AO	C	FSO FST PIT	Q Q 2Y	SGT UNIT B DILUTION AIR SHUTOFF

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM
VALVE SUMMARY TABLES

SYSTEM: STANDBY GAS TREATMENT (SGT)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
SGT-AOV-DPCV546A	2037	C7	A	B	10	BTF	AO	C	FSO FST PIT	Q Q 2Y	SGT UNIT A DISCHARGE DIFFERENTIAL PRESSURE CONTROL
SGT-AOV-DPCV546B	2037	E7	A	B	10	BTF	AO	C	FSO FST PIT	Q Q 2Y	SGT UNIT B DISCHARGE DIFFERENTIAL PRESSURE CONTROL
SGT-CV-14CV	2037	C6	A	C	10	CK-D	SA	C	PSO FSO FSC	Q CS CS	SGT UNIT A FAN EXHAUST. ACSJ-05
SGT-CV-15CV	2037	G6	A	C	10	CK-D	SA	C	PSO FSO FSC	Q CS CS	SGT UNIT B FAN EXHAUST. ACSJ-05

COOPER NUCLEAR STATION
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INSERVICE TESTING PROGRAM
VALVE SUMMARY TABLES

SYSTEM: STANDBY LIQUID CONTROL (SLC)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
SLC-CV-10CV	2045 SH 2	E9	A	C	1½	CK-L	SA	C	FSO FSC	Q RF	SLC PUMP A DISCHARGE CHECK, AROI-05
SLC-CV-11CV	2045 SH 2	F9	A	C	1½	CK-L	SA	C	FSO FSC	Q RF	SLC PUMP B DISCHARGE CHECK, AROI-05
SLC-CV-12CV	2045 SH 2	E8	1	A/C	1½	CK-L	SA	C	LJ-1 FSO FSC	RF RF RF	SLC INJECTION LINE OUTBOARD CHECK, ROI-16, AROI-04
SLC-CV-13CV	2045 SH 2	E7	1	A/C	1½	CK-L	SA	C	LJ-1 FSO FSC	RF RF RF	SLC INJECTION LINE INBOARD CHECK, ROI-16, AROI-04
SLC-RV-10RV	2045 SH 2	D10	A	C	3/4	RV	SA	C	RVT	RF	SLC PUMP A DISCHARGE RELIEF
SLC-RV-11RV	2045 SH 2	G9	A	C	3/4	RV	SA	C	RVT	RF	SLC PUMP B DISCHARGE RELIEF
SLC-SQBV-14A	2045 SH 2	E8	A	D	1½	SHR	CH	C	EX	2Y	SLC EXPLOSIVE VALVE A
SLC-SQBV-14B	2045 SH 2	E8	A	D	1½	SHR	CH	C	EX	2Y	SLC EXPLOSIVE VALVE B

COOPER NUCLEAR STATION
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INSERVICE TESTING PROGRAM
VALVE SUMMARY TABLES

SYSTEM: STATION AIR (SA)

VALVE CIC	P&ID	P&ID COOR	ISI CLASS	IST CAT	VALVE SIZE	VALVE TYPE	ACT TYPE	NORM POS	TEST RQMT	TEST FREQ	NOTES/DESCRIPTION
SA-V-647	2010 SH 3	G4	2	A	1	GB	MA	C	LJ-1	RF	PASSIVE DRYWELL OUTBOARD SUPPLY ISOLATION
SA-V-648	2010 SH 3	G4	2	A	1	GB	MA	C	LJ-1	RF	PASSIVE DRYWELL INBOARD SUPPLY ISOLATION

C. Cold Shutdown Test Justifications

CSJ No.	DESCRIPTION
CSJ-01	CS-CV-18CV, CS-CV-19CV, RHR-CV-26CV, and RHR-CV-27CV
CSJ-02	HPCI-CV-29CV and RCIC-CV-26CV Test Frequency
CSJ-03	HPCI-AOV-PCV50 Test Frequency
CSJ-04	MSIV Test Frequency
CSJ-05	PC-CV-33CV and PC-CV-34CV Test Frequency
CSJ-06	RR-MOV-MO53A and RR-MOV-53B Testing Frequency
CSJ-07	RHR-MOV-MO17 and RHR-MOV-MO18 Testing Frequency
CSJ-08	RHR-MOV-920MV and RHR-MOV-921MV Testing Frequency
CSJ-09	SW-AOV-TCV451A and SW-AOV-TCV451B Testing Frequency
CSJ-10	NM-CV-CV2 and NM-CV-CV4 Testing Frequency
CSJ-11	HPCI-CV-10CV and RCIC-CV-10CV Testing Frequency

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM

COLD SHUTDOWN TEST JUSTIFICATION CSJ-01

VALVES: CS-CV-18CV, CS-CV-19CV, RHR-CV-26CV, and RHR-CV-27CV

CLASS: 1 CATEGORY: A/C

FUNCTION: These valves open for Core Spray or LPCI injection and close for primary containment isolation.

REQUIRED TEST: OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.

BASIS FOR DEFERRAL: These valves are normally closed for primary containment isolation. They are also closed to isolate the related low pressure systems from the Reactor Recirculation system and the reactor vessel. Opening these valves during power operation is not possible due to the downstream side being exposed to reactor pressure.

ALTERNATE TEST: These valves will be mechanically exercised, verifying open and closure capability, during cold shutdown periods, when the drywell is deinerted, in accordance with OMa Part 10, 4.3.2.2 and 4.3.2.4.

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COLD SHUTDOWN TEST JUSTIFICATION CSJ-02

VALVES: HPCI-CV-29CV and RCIC-CV-26CV

CLASS: 1 CATEGORY: A/C

FUNCTION: HPCI-CV-29CV - Opens to provide a flowpath from the HPCI pump to the reactor vessel via the feedwater system; closes for primary containment isolation.

RCIC-CV-26CV - Opens to provide a flowpath from the RCIC pump to the reactor vessel via the feedwater system; closes for primary containment isolation.

REQUIRED TEST: OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4,3.2.3, 4.3.2.4, and 4.3.2.5.

BASIS FOR DEFERRAL: These valves are normally closed to isolate the reactor coolant system and the HPCI and RCIC systems. Exercising these check valves to the open position during normal plant operation would require HPCI or RCIC injection to the reactor vessel. This would result in a perturbation of normal feedwater flow and unnecessary thermal cycling of the feedwater nozzles. It would also cause severe power fluctuations due to the relatively cold water from the Emergency Condensate Storage Tanks. Furthermore, these valves are located in the Steam Tunnel. During power operations, this area experiences temperatures of approximately 130 - 140°F, and whole body dose levels of approximately 3 Rem./HR. In general, plant personnel are prohibited from entering this area during power operation due to these conditions.

ALTERNATE TEST: These valves will be mechanically exercised, verifying open and closure capability, during cold shutdown periods in accordance with OMa Part 10, 4.3.2.2 and 4.3.2.4.

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM

COLD SHUTDOWN TEST JUSTIFICATION CSJ-03

VALVE: HPCI-AOV-PCV50

CLASS: 2 CATEGORY: B

FUNCTION: Air operated, pressure regulating valve for the cooling water supply line to the HPCI lube oil cooler. The valve performs an active safety function in the open/throttled position to allow cooling water flow to the lube oil cooler.

REQUIRED TEST: 1) OMa Part 10, 4.2.1.1 requires Category A and B power operated valves to be individually full stroke exercised nominally every 3 months, except as provided by paragraphs 4.2.1.2, 4.2.1.5, and 4.2.1.7.

2) OMa Part 10, 4.2.1.6 requires valves with fail-safe actuators to be tested by observing the operation of the actuator upon loss of valve actuating power in accordance with the exercising frequency of paragraph 4.2.1.1.

This valve would normally be exempt from IST requirements as permitted by OMa Part 10, 1.2(a)(2); however, the valve must be tested in accordance with the requirements of paragraph 4.2.1 because it performs a safety function in the fail-safe position.

BASIS FOR RELIEF: This valve functions to control pressure in the cooling water supply line to the HPCI turbine lube oil cooler. Cooling water is supplied from the HPCI booster pump discharge. The valve is normally maintained in the closed position as a result of the HPCI pump being idle and pressure maintenance, supplied by the auxiliary condensate system, maintaining the HPCI piping water solid.

The valve travels to a throttled position, when the HPCI pump starts, to automatically maintain pressure in the cooling water line at 50 psig. The valve's control circuitry prevents disk travel from the full-closed position to the full-open position. The valve is designed to fail to the open position on a loss of instrument air or electrical control power to ensure continuity of cooling water flow to the lube oil cooler. In the event the valve fails to the open position, the system design prevents over pressurization of the lube oil cooler by way of restricting orifices upstream and downstream of the valve in addition to a downstream relief valve.

COLD SHUTDOWN TEST JUSTIFICATION CSJ-03 (Continued)

Stroke timing and fail-safe testing to the open position would require isolation of pressure maintenance and the imposition of a calibration signal to the pressure controller causing the valve to close. Upon completion of valve closure, the imposed signal would then be removed allowing valve travel to the open position at which point stroke timing can be performed. This process is impracticable during power operation due to the necessity of placing the HPCI system in a condition which would compromise safe operation of the system upon automatic actuation. Additionally, due to the intrusive method of imposing a calibration signal, the system would also be rendered incapable of initiation by operator action.

ALTERNATE TEST: This pressure control valve shall be stroke timed and fail-safe tested during cold shutdowns by manipulating valve position with a calibration signal. A partial stroke exercise test will be performed quarterly.

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COLD SHUTDOWN TEST JUSTIFICATION CSJ-04

VALVE: MS-AOV-AO80A, MS-AOV-AO86A,
MS-AOV-AO80B, MS-AOV-AO86B,
MS-AOV-AO80C, MS-AOV-AO86C,
MS-AOV-AO80D, and MS-AOV-AO86D

CLASS: 1 CATEGORY: A

FUNCTION: The inboard and outboard main steam isolation valves (MSIVs) must be capable of automatic closure to limit the release of radioactivity during a reactor transient or accident condition.

REQUIRED TEST: 1) OMa Part 10, 4.2.1.1 requires Category A and B power operated valves to be individually full stroke exercised nominally every 3 months, except as provided by paragraphs 4.2.1.2, 4.2.1.5, and 4.2.1.7.

2) OMa Part 10, 4.2.1.6 requires valves with fail-safe actuators to be tested by observing the operation of the actuator upon loss of valve actuating power in accordance with the exercising frequency of paragraph 4.2.1.1.

BASIS FOR DEFERRAL: These valves are currently exercised in accordance with the surveillance requirements identified in the plant Technical Specification, Section 4.7.D.1.b.2 which states, "at least once per quarter, with the reactor power at less than 75%, trip main steam isolation valves individually and verify closure time." A Licensing Change Request (LCR) has been initiated to revise this Technical Specification surveillance requirement. The proposed revision will allow exercise testing to be performed in accordance with ASME Section XI.

Quarterly full closure testing, as currently required, is a financial burden due to the cost of reducing reactor power levels to facilitate valve testing. Full closure testing of the MSIVs during 100% power operation is impracticable due to the potential for reactor transients and scrams. Also, full MSIV closure could create the potential of lifting the main steam safety relief valves (SRVs) due to an increase in steam line pressure. Failure of an SRV to reclose could result in reactor vessel depressurization.

COLD SHUTDOWN TEST JUSTIFICATION CSJ-04 (Continued)

ALTERNATIVE TEST: After the Technical Specification change is approved the MSIVs shall be partially exercised approximately 10% closed, from the full open position, at least once per quarter. Stroke timing to the closed position and fail-safe testing shall be performed during cold shutdown periods in accordance with the requirements of OMa Part 10, 4.2.1.2. Until then the MSIV's shall be stroke timed closed and fail safe tested quarterly.

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COLD SHUTDOWN TEST JUSTIFICATION CSJ-05

VALVE: PC-CV-33CV and PC-CV-34CV

CLASS: 2 CATEGORY: A/C

FUNCTION: These check valves perform an active safety function in the closed position to provide containment isolation and are located in the instrument air/nitrogen line at penetrations X-29E and X-51F. The open function of these check valves is to provide actuating air to inboard recirculation Loop A sample line valve RR-AOV-741AV. However, this function is not safety related.

REQUIRED TEST: OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.

BASIS FOR DEFERRAL: These check valves are not provided with position indication. Therefore, exercising these check valves to the closed position would require isolating the downstream piping and applying an outside pressure source while venting the upstream piping. This test method would allow establishing a differential pressure across the valve seat to verify closure. Performing valve closure exercising during normal plant operation is impracticable due to the necessity of installing scaffolding, temporary test equipment and a breach of system pressure boundary to facilitate testing. This additional test activity during normal plant operation represents an unusual burden without a compensating increase in the level of quality and safety.

ALTERNATE TEST: The closure capability of these check valves will be verified during cold shutdown by demonstrating the ability to establish a differential pressure across the valve seat. The tests performed are pursuant to the requirements of OMa Part 10, 4.3.2.2.

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COLD SHUTDOWN TEST JUSTIFICATION CSJ-06

VALVES: RR-MOV-MO53A and RR-MOV-MO53B

CLASS: 1 CATEGORY: B

FUNCTION: Reactor Recirculation Pump 1A and 1B Discharge Isolation

REQUIRED TEST: OMa Part 10, 4.2.1.1 requires Category A and B power operated valves to be individually full stroke exercised nominally every 3 months, except as provided by paragraphs 4.2.1.2, 4.2.1.5, and 4.2.1.7.

BASIS FOR DEFERRAL: Closure of either of the RR pump discharge valves would reduce recirculation flow and result in reactor water temperature transients and reactivity transients. These transients would reduce control of power distribution and fuel usage, and increase the risk of other plant transients. This could lead to decreased fuel reliability and increase the possibility of a fuel element failure. In addition, failure of these valves during operation would require reactor shutdown due to inaccessibility.

ALTERNATE TEST: Valve exercising to the closed position will be performed during cold shutdowns in accordance with OMa Part 10, 4.2.1.2.

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THIRD INTERVAL
INSERVICE TESTING PROGRAM

COLD SHUTDOWN TEST JUSTIFICATION CSJ-07

VALVES: RHR-MOV-MO17 and RHR-MOV-MO18

CLASS: 1 CATEGORY: A

FUNCTION: Reactor vessel return to the RHR pump suction and containment isolation during reactor operations. These valves are only opened for low pressure shutdown cooling.

REQUIRED TEST: OMa Part 10, 4.2.1.1 requires Category A and B power operated valves to be individually full stroke exercised nominally every 3 months, except as provided by paragraphs 4.2.1.2, 4.2.1.5, and 4.2.1.7.

BASIS FOR DEFERRAL: Valves RHR-MOV-MO17 and RHR-MOV-MO18 are interlocked for pressure isolation during plant operation. Opening these valves during normal operation could possibly allow high pressure reactor coolant water into the low pressure suction lines of the RHR system. Therefore, it is essential that these valves remain closed during plant operations.

ALTERNATE TEST: Valve exercising to the closed poition will be performed during cold shutdowns in accordance with OMa Part 10, 4.2.1.2.

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COLD SHUTDOWN TEST JUSTIFICATION CSJ-08

VALVES: RHR-MOV-920MV and RHR-MOV-921MV

CLASS: 2, A (downstream) CATEGORY: B

FUNCTION: Provide isolation of main steam to the Augmented Off Gas (AOG) system.

REQUIRED TEST: OMa Part 10, 4.2.1.1 requires Category A and B power operated valves to be individually full stroke exercised nominally every 3 months, except as provided by paras. 4.2.1.2, 4.2.1.5, and 4.2.1.7.

BASIS FOR DEFERRAL: The steam supply cannot be isolated during normal plant operation without causing significant Augmented Off Gas (AOG) system transients. Transients could include a fast or uncontrolled burn of hydrogen gas in the AOG piping buried underground and leading outside the plant. Also, routine quarterly testing of either of these valves could cause a release of radioactive material several orders of magnitude above normal release activities.

ALTERNATE TEST: Valve exercising to the closed position will be performed during cold shutdowns in accordance with OMa Part 10, 4.2.1.2.

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COLD SHUTDOWN TEST JUSTIFICATION CSJ-09

VALVES: SW-AOV-TCV451A and SW-AOV-TCV451B

CLASS: 3 CATEGORY: B

FUNCTION: Open to provide a flow path for cooling water to the REC heat exchangers.

REQUIRED TEST: OMa Part 10, 4.2.1.1 requires Category A and B power operated valves to be individually full stroke exercised nominally every 3 months, except as provided by paras. 4.2.1.2, 4.2.1.5, and 4.2.1.7.

OMa Part 10, 4.2.1.6 requires valves with fail-safe actuators to be individually tested nominally every three months, except as provided by paras. 4.2.1.2, 4.2.1.5, and 4.2.1.7.

BASIS FOR DEFERRAL: One temperature control valve is normally open to control flow to the associated REC heat exchanger. During the hot summer months both heat exchangers are in service. Placing either valve in the closed position for an exercise test during this period would interupt the flow to the associated heat exchanger. The REC heat exchangers provide cooling water for a variety of essental and non-essential components. Therefore, it is essential that both of these valves remain open during plant operations. During cold shutdowns, when the heat load is reduced, one REC heat exchanger can be removed from service. The associated temperature control valve can then be closed and exercised to the full open position.

ALTERNATE TEST: Valve exercising to the open position will be performed quarterly except when both heat exchangers are in service. When both heat exchangers are in service valve exercising to the open position will be performed during cold shutdowns in accordance with OMa Part 10, 4.2.1.2.

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COLD SHUTDOWN TEST JUSTIFICATION CSJ-10

VALVES: NM-CV-CV2 and NM-CV-CV4

CLASS: 2 CATEGORY: A/C

FUNCTION: These valves close for primary containment isolation.

REQUIRED TEST: OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4,3.2.3, 4.3.2.4, and 4.3.2.5.

BASIS FOR DEFERRAL: These valves are normally closed for primary containment isolation. They are open intermitantly during power operation to support operation of the TIP system, which is not a safety function. These check valves are not provided with position indication. Therefore, exercising these check valves to the closed position would require isolating the downstream piping and applying an outside pressure source while venting the upstream piping. This test method would allow establishing a differential pressure across the valve seat to verify closure. Performing valve closure exercising during normal plant operation is impracticable due to the necessity of installing temporary test equipment and a breach of system pressure boundary to facilitate testing. This additional test activity during normal plant operation represents an unusual burden without a compensating increase in the level of quality and safety.

ALTERNATE TEST: The closure capability of these check valves will be verified during cold shutdown by demonstrating the ability to establish a differential pressure across the valve seat. The tests performed are pursuant to the requirements of OMa Part 10, 4.3.2.2.

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COLD SHUTDOWN TEST JUSTIFICATION CSJ-11

VALVES: HPCI-CV-10CV and RCIC-CV-10CV

CLASS: 2 CATEGORY: C

FUNCTION: These valves close to prevent reverse flow when the suction supply is changed from the ECST's to the suppression pool.

REQUIRED TEST: OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4,3.2.3, 4.3.2.4, and 4.3.2.5.

BASIS FOR DEFERRAL: These valves are normally closed. When the HPCI or RCIC pumps are running, these valves open to provide suction supply from the ECST's to the respective pumps. When the ECST's reach the low level setpoint, the suppression pool suction supply valves open and the motor operated ECST suction valves close. In the event of a failure of the motor operated valve, the associated check valve must close to prevent bypass leakage. These check valves are not provided with position indication. Therefore, exercising these check valves to the closed position would require isolating the ECST's and checking for a differential pressure across the valve seats to verify closure. Performing valve closure exercising during normal plant operation is impracticable due to isolating the primary source of water for HPCI and RCIC. This additional test activity during normal plant operation represents an unusual burden without a compensating increase in the level of quality and safety.

ALTERNATE TEST: The closure capability of these check valves will be verified during cold shutdown by demonstrating the ability to establish a differential pressure across the valve seat. The tests performed are pursuant to the requirements of OMa Part 10, 4.3.2.2.

D. Refueling Outage Justifications

ROJ No.	Description
ROJ-01	CRD-CV-13CV, CRD-CV-14CV, CRD-CV-15CV, and CRD-CV-16CV Exercise Testing Frequency
ROJ-02	HPCI-CV-11CV Testing Frequency
ROJ-03	HPCI-CV-15CV, HPCI-CV-16CV, and HPCI-CV-17CV Testing to the Closed Position
ROJ-04	HPCI-V-44 and HPCI-V-50 Testing to the Closed Position
ROJ-05	IA-CV-65CV and IA-CV-78CV Closure Test Frequency
ROJ-06	NBI-CV-49BCV, NBI-CV-50BCV, NBI-CV-51BCV, NBI-CV-52BCV, NBI-SOV-SSV738, and NBI-SOV-SSV739 Exercise Test Frequency
ROJ-07	NBI-CV-55CV and NBI-CV-56CV Exercise Test Frequency
ROJ-08	PC-CV-21CV, PC-CV-22CV, PC-CV-23CV, PC-CV-25CV, PC-CV-26CV, and PC-CV-27CV Closure Test Frequency
ROJ-09	RCIC-CV-11CV Testing Relief
ROJ-10	RCIC-CV-12CV, RCIC-CV-13CV, and RCIC-CV-15CV Testing to the Closed Position
ROJ-11	RCIC-V-37 and RCIC-V-42 Testing to the Closed Position
ROJ-12	REC-CV-16CV Closure Test Frequency
ROJ-13	RF-CV-13CV, RF-CV-14CV, RF-CV-15CV, and RF-CV-16CV Reverse Flow Test
ROJ-14	RF-CV-14CV and RF-CV-16CV Open Test Frequency
ROJ-15	RWCU-CV-15CV Test Frequency

ROJ-16	SLC-CV-12CV and SLC-CV-13CV Testing Frequency
ROJ-17	RCIC-CV-20CV and RCIC-CV-21CV Testing Frequency
ROJ-18	RHR-CV-10CV, RHR-CV-11CV, RHR-CV-12CV, and RHR-CV-13CV Testing Frequency
ROJ-19	PC-CV-13CV and PC-CV-14CV Testing Frequency
ROJ-20	HPCI-CV-17CV Testing Frequency

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REFUELING OUTAGE JUSTIFICATION ROJ-01

VALVE: CRD-CV-13CV, CRD-CV-14CV, CRD-CV-15CV, and CRD-CV-16CV

CLASS: 1 CATEGORY: A/C

FUNCTION: Containment isolation valves for Control Rod Drive (CRD) seal water injection for the Reactor Recirculation (RR) pumps.

REQUIRED TEST: OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.

BASIS FOR DEFERRAL: Exercising these valves to the closed position during normal plant operation would require stopping or reversal of seal water flow which would impose a severe thermal transient on the reactor recirculation pump seals resulting in premature seal failure. Drywell entry during cold shutdown would be necessary to facilitate testing, thereby requiring deinerting which could potentially delay restart. Valve exercising during cold shutdown when the drywell is deinerted, could also delay plant restart due to the necessity of using portable test equipment inside the drywell. The additional test activity during cold shutdown represents an unusual burden without a compensating increase in the level of quality and safety.

ALTERNATE TEST: The closure capability of these valves will be verified during refueling outages by performing a Type C local leak rate test per the requirements of OMa Part 10, 4.3.2.4 and the CNS Appendix J Program.

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM

REFUELING OUTAGE JUSTIFICATION ROJ-02

VALVE: HPCI-CV-11CV

CLASS: 2 CATEGORY: C

FUNCTION: Normally closed HPCI pump suction line check valve from the suppression pool.

REQUIRED TEST: OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.

BASIS FOR DEFERRAL: The HPCI pump normally takes suction from the Emergency Condensate Storage Tanks (ECST). When the ECSTs reach low level the pump suction is automatically realigned to the suppression pool and HPCI-CV-11CV opens. The valve is not equipped with position indication or a remote manual operator for exercising. The only method for exercising the valve during operation is to test it with flow. During performance testing the HPCI pump discharges to the ECSTs. Testing this valve with flow would result in a reduction of suppression pool inventory and the mixing of relatively impure water in the suppression pool with the ECST water.

ALTERNATE TEST: The valve will be partially disassembled and manually exercised to the full open and closed positions during each refueling outage in accordance with the requirements of OMa Part 10, 4.3.2.4.

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM

REFUELING OUTAGE JUSTIFICATION ROJ-03

VALVE: HPCI-CV-15CV, HPCI-CV-16CV and HPCI-CV-17CV

CLASS: 2 CATEGORY: A/C and C

FUNCTION: HPCI-CV-15CV - Opens to provide an exhaust path for the HPCI Turbine; closes for primary containment isolation.

HPCI-CV-16CV - Water sealed containment isolation valve.

HPCI-CV-17CV - Opens to provide a flowpath for HPCI pump minimum flow; closes to prevent diversion of RHR suppression pool cooling.

REQUIRED TEST: OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.

BASIS FOR DEFERRAL: These valves are simple check valves, and thus, have no mechanism by which valve closure can be verified. Thus, the only practicable method of testing in the closed position is to impose a reverse differential pressure on the valve seat to verify closure capability or to measure the seat leakage.

Performing such a test renders the HPCI system inoperable, thus it is impracticable to perform during plant operation. Performing such a test at cold shutdowns could increase and complicate the outage work scope considerably and prove to be an undue burden on the plant staff without a compensating increase in the level of quality and safety.

ALTERNATE TEST: The closure capability of these valves will be verified each refueling outage during the performance of leak rate testing (15CV) per the CNS Appendix J Program or by demonstrating the ability to maintain a differential pressure across the valve seat (16CV and 17CV).

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM

REFUELING OUTAGE JUSTIFICATION ROJ-04

VALVE: HPCI-V-44 and HPCI-V-50

CLASS: 2 CATEGORY: A/C

FUNCTION: HPCI-V-44 is a containment isolation globe stop check from the HPCI turbine exhaust to the suppression pool.

HPCI-V-50 is a water sealed containment isolation globe stop check valve from the HPCI turbine drain to the suppression pool.

These valves are normally closed and the manual operators are locked in the open position to allow free disk movement. They open during HPCI pump operation and are required to close for containment isolation.

REQUIRED TEST: OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.

BASIS FOR DEFERRAL: The operators on these valves are manual operators. Exercising these valves closed during plant operation or cold shutdown could result in undetected valve failure. Since the valve disk is not connected to the valve stem, the disk cannot be moved to the open position by stem manipulation. The disk can, however, be forced shut by the manual operator. If the disk should stick shut, the failure would go undetected until the turbine was operated. This would result in HPCI being unavailable to perform its safety function. Having HPCI unavailable, should an accident occur, could lead to reactor damage and potential release of radioactive material.

ALTERNATE TEST: The closure capability of these valves will be verified each refueling outage during the performance of leak rate testing (V-44) per the CNS Appendix J Program or by demonstrating the ability to maintain a differential pressure across the valve seat (V-50).

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM

REFUELING OUTAGE JUSTIFICATION ROJ-05

VALVES: IA-CV-65CV and IA-CV-78CV

CLASS: 2 CATEGORY: A/C

FUNCTION: These check valves have an active safety function in the closed position to provide containment isolation on the instrument air/nitrogen line which is the pneumatic supply to the MSIVs and SRVs located inside primary containment.

REQUIRED TEST: OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.

BASIS FOR DEFERRAL: These check valves are not provided with position indication. Therefore, exercising these check valves to the closed position would require isolating the downstream piping and applying an outside pressure source while venting the upstream piping. This test method would allow establishing a differential pressure across the valve seat to verify closure. This is not practicable during normal plant operation or cold shutdowns due to the location of the manual valve provided for downstream isolation, which is located inside the drywell. Entry into the drywell during power operation is not possible due to an inerted atmosphere and high levels of radiation. Valve exercising during cold shutdown, when the drywell is de-inerted, could potentially delay plant restart due to the installation of temporary test equipment.

ALTERNATE TEST: The closure capability of these valves will be verified during refueling outages by performing a Type C, local leak rate test per the requirements of OMa Part 10, 4.3.2.4 and the CNS Appendix J Program.

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM

REFUELING OUTAGE JUSTIFICATION ROJ-06

VALVE: NBI-CV-49BCV, NBI-CV-50BCV, NBI-CV-51BCV, NBI-CV-52BCV, NBI-SOV-SSV738, and NBI-SOV-SSV739

CLASS: 3 CATEGORY: C and B

FUNCTION: The reference leg injection check valves and solenoid operated valves have an active safety function in the open position to inject Core Spray water to the reactor vessel level instrumentation lines in case the reference leg water has flashed or boiled off due to accident conditions in the drywell.

REQUIRED TEST: OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.

OMa Part 10, 4.2.1 requires Category A and B power operated valves to be individually full stroke exercised and stroked timed nominally every 3 months, except as provided by paragraphs 4.2.1.2, 4.2.1.5, and 4.2.1.7.

OMa Part 10, 4.2.1.6 requires valves with fail-safe actuators shall be tested by observing the operation of the actuator upon loss of valve actuating power in accordance with the exercising frequency of paragraph 4.2.1.1.

BASIS FOR DEFERRAL: This system provides the capability for the Core Spray System to supply a backfill of water for maintaining inventory of the Nuclear Boiler Instrumentation System cold reference legs (condensing chambers 3A and 3B) during accident conditions in the drywell where the reference leg inventory could be compromised. Exercising these valves to the open position, full or partial, would require manually isolating and venting the Cold Reference Leg Backfill System. This is not practicable during power operation or cold shutdown, other than refueling, due to the possible introduction of air into the system. This could cause a spurious reactor vessel level indication which could cause a reactor trip during power operation. During cold shutdown spurious level indications could interrupt the operation of systems required for decay heat removal, thereby placing the reactor in an unsafe condition. During refueling outages, sufficient time exists for decay heat to be reduced to

REFUELING OUTAGE JUSTIFICATION ROJ-06 (Continued)

a level which minimizes the impact of momentary interruption in the operation of systems required for decay heat removal such that testing can be performed.

ALTERNATE TEST: Exercising these check valves to the full open position, and full exercising with stroke timing to the open position of the solenoid operated valves, shall be performed during refueling outages.

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM

REFUELING OUTAGE JUSTIFICATION ROJ-07

VALVE(s): NBI-CV-55CV and NBI-CV-56CV

CLASS: 3 CATEGORY: C

FUNCTION: These Cold Reference Leg Continuous Backfill System check valves have an active safety function in the closed position to isolate the Class 3 instrumentation piping from the Seismic IIS non-class CRD piping.

REQUIRED TEST: OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.

BASIS FOR DEFERRAL: This system provides for a continuous flow of water from the CRD drive water pumps to prevent noncondensible gases from building up in the Nuclear Boiler Instrumentation System cold reference legs (condensing chambers 3A and 3B). Exercising these valves to the closed position would require manually isolating and venting of the Cold Reference Leg Continuous Backfill System upstream of the check valves. This is not practicable during power operation or cold shutdown, other than refueling, due to the possibility of causing a spurious reactor vessel level indication from entrained air in the system. False level indications resulting from entrained air in the system may either cause a reactor trip during power operation or interrupt the operation of systems required during cold shutdown for decay heat removal, thereby placing the reactor in an unsafe condition. During refueling outages, sufficient time exists for decay heat to be reduced to a level which minimizes the impact of momentary interruption in the operation of systems required for decay heat removal such that testing can be performed.

ALTERNATE TEST: Exercising these check valves to the closed position shall be performed during refueling outages. Exercise testing shall be accomplished by performing a seat leakage test.

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM

REFUELING OUTAGE JUSTIFICATION ROJ-08

VALVE: PC-CV-21CV, PC-CV-22CV, PC-CV-23CV, PC-CV-25CV, PC-CV-26CV, and PC-CV-27CV

CLASS: 2 CATEGORY: A/C

FUNCTION: The drywell H_2/O_2 monitors nitrogen purge supply check valves perform an active safety function in the closed position to maintain primary containment integrity. These valves function in the open position only to supply nitrogen or oxygen to the H_2/O_2 monitors for calibration and functional testing which is not a safety function.

REQUIRED TEST: OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.

BASIS FOR DEFERRAL: Exercising these check valves to the closed position would require isolating the H_2/O_2 monitors from the drywell and suppression chamber atmosphere and applying an outside pressure source downstream of the check valves while venting the upstream piping. Performing this test activity during normal plant operation or cold shutdowns would require the removal of the H_2/O_2 Monitoring System from service during conditions when primary containment integrity is required. Plant Technical Specifications Tables 3.2.F and 3.2.H identifies the H_2/O_2 monitors as surveillance instrumentation required for the assessment of the containment atmosphere by monitoring the hydrogen and oxygen concentrations. Testing these valves during conditions when H_2/O_2 operability is required would result in a reduction in safety and would not provide a significant increase in assurance of continued operability.

ALTERNATE TEST: The closure capability of these check valves will be verified by local leak rate testing them as a group at least once each refueling outage or whenever the system is opened. If the system is opened, the H_2/O_2 monitoring system shall be local leak rate tested prior to resumption of service.

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM

REFUELING OUTAGE JUSTIFICATION ROJ-09

VALVE: RCIC-CV-11CV

CLASS: 2 CATEGORY: C

FUNCTION: Normally closed RCIC pump suction line check valve from the suppression pool.

REQUIRED TEST: OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.

BASIS FOR DEFERRAL: The RCIC pump normally takes suction from the Emergency Condensate Storage Tanks (ECST). When the ECSTs reach low level the pump suction is automatically realigned to the suppression pool and RCIC-CV-11CV opens. The valve is not equipped with position indication or remote manual operators for exercising. The only method for exercising the valve during operation is to test it with flow. During performance testing the RCIC pump discharges to the ECSTs. Testing this valve with flow would result in a reduction of suppression pool inventory and the mixing of relatively impure water in the suppression pool with the ECST water.

ALTERNATE TEST: The valve will be partially disassembled and manually exercised to the full open and closed positions during each refueling outage in accordance with the requirements of OMa Part 10, 4.3.2.4.

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM

REFUELING OUTAGE JUSTIFICATION ROJ-10

VALVES: RCIC-CV-12CV, RCIC-CV-13CV, and RCIC-CV-15CV

CLASS: 2 CATEGORY: C and A/C

FUNCTION: RCIC-CV-12CV - water sealed valve; closes for containment isolation.

RCIC-CV-13CV - Opens to provide a flowpath for RCIC pump minimum flow; closes to prevent diversion of RHR suppression pool cooling flow.

RCIC-CV-15CV - Opens to provide an exhaust path for the RCIC turbine; closes for primary containment isolation.

REQUIRED TEST: OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.

BASIS FOR DEFERRAL: These valves are simple check valves, and thus, have no mechanism by which valve closure can be verified. The only practicable method of testing in the closed position is to impose a reverse differential pressure on the valve seat to verify closure capability or to measure the seat leakage.

Performing such a test renders the RCIC system inoperable. It is impracticable to perform this test during plant operation. Performing such a test at cold shutdowns could increase and complicate the outage work scope considerably and prove to be an undue burden on the plant staff without a compensating increase in the level of quality and safety.

ALTERNATE TEST: The closure capability of these valves will be verified each refueling outage during the performance of leak rate testing (15CV) per the CNS Appendix J Program, or by demonstrating the ability to maintain a differential pressure across the valve seat (12CV and 13CV).

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM

REFUELING OUTAGE JUSTIFICATION ROJ-11

VALVE: RCIC-V-37 and RCIC-V-42

CLASS: 2 CATEGORY: C

FUNCTION: RCIC-V-37 is a containment isolation globe stop check from the RCIC turbine exhaust to the suppression pool.

RCIC-V-42 is a water sealed containment isolation globe stop check valve from the RCIC vacuum pump to the suppression pool.

These valves are normally closed and the manual operators are locked in the open position to allow free disk movement. They open during RCIC pump operation and are required to close for containment isolation.

REQUIRED TEST: OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.

BASIS FOR DEFERRAL: The operators on these valves are manual operators. Exercising these valves closed during plant operation or cold shutdown could result in undetected valve failure. Since the valve disk is not connected to the valve stem, the disk cannot be moved to the open position by stem manipulation. The disk can, however, be forced shut by the manual operator. If the disk should stick shut the failure would go undetected until the turbine was operated. For RCIC-V-37 this would result in RCIC being unavailable to perform its design function. Although RCIC does not have a safety function, it does provide cooling water when feedwater is unavailable. Failure of RCIC-V-42 to open would not prevent the RCIC system from operating, but would prevent the removal of noncondensible gases from the barometric condenser.

ALTERNATE TEST: The closure capability of these valves will be verified each refueling outage during the performance of leak rate testing (V-37) per the CNS Appendix J Program or by demonstrating the ability to maintain a differential pressure across the valve seat (V-42).

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM

REFUELING OUTAGE JUSTIFICATION ROJ-12

VALVE: REC-CV-16CV

CLASS: 3 CATEGORY: C

FUNCTION: This valve closes to prevent back flow into the non-critical Reactor Equipment Cooling (REC) return header from the suction of the REC pumps.

REQUIRED TEST: OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.

BASIS FOR DEFERRAL: Testing this valve in the closed direction requires depressurization of the non-critical REC return header. This, in turn, would interrupt cooling to important equipment, including the CRD pumps, RWCU pumps and heat exchangers, drywell ventilation coolers, reactor recirculation pumps, and the recirculation pump motor generator sets. This could not be done during normal operation without subjecting major equipment to damage from overheating. Exercising this check valve during cold shutdown would require the interruption of equipment operation which is normally maintained in service, e.g. RWCU, which is required to maintain water chemistry. Otherwise, testing during cold shutdown when component operability is not necessary would still require depressurization of the non-critical header which could delay plant restart and represents an unusual burden without a compensating increase in the level of quality and safety.

ALTERNATE TEST: The closure capability of this valve will be verified at least once each reactor refueling outage.

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM

REFUELING OUTAGE JUSTIFICATION ROJ-13

VALVE: RF-CV-13CV, RF-CV-14CV, RF-CV-15CV, and RF-CV-16CV

CLASS: 1 CATEGORY: A/C

FUNCTION: Main Feedwater check valves open to allow normal feedwater flow. Additionally, 14CV and 16CV open to allow HPCI and RCIC flow, respectively. These valves must be capable of closure to provide containment isolation. Additionally, 13CV and 15CV must be capable of closure to prevent diversion of HPCI and RCIC flow, respectively.

REQUIRED TEST: OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.

BASIS FOR DEFERRAL: These valves are normally open and must remain open during reactor operations to ensure adequate feedwater flow. Feedwater provides normal reactor core cooling during operation. Exercising these valves during plant operation could cause a transient in reactor water level resulting a reactor scram. The observation of specified leakage during local leak-rate testing provides the only means for verification to the closed position.

ALTERNATE TEST: These valves will be exercised to the closed position during the Type C leak rate test performed each refueling outage in accordance with the requirements of OMa Part 10, 4.3.2.2 and the CNS Appendix J Program.

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM

REFUELING OUTAGE JUSTIFICATION ROJ-14

VALVE: RF-CV-14CV and RF-CV-16CV

CLASS: 1 CATEGORY: A/C

FUNCTION: Open to provide a flowpath for HPCI (RF-CV-14CV) or RCIC (RF-CV-16CV) to the reactor vessel.

REQUIRED TEST: OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.

BASIS FOR DEFERRAL: The feedwater injection check valves are normally open during plant operation due to feedwater flow. However, individual flow rate cannot be measured during normal operation due to system configuration. These valves are located inside the drywell and are not accessible during normal operation or during cold shutdowns unless the drywell is de-inerted.

ALTERNATE TEST: Although these valves are verified open by the normal operation of the feedwater system, these valves will be verified to open to pass the required HPCI and RCIC flows during refueling outages by either a flow test or by valve disassembly and inspection.

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM

REFUELING OUTAGE JUSTIFICATION ROJ-15

VALVES: RWCU-CV-15CV

CLASS: 1 CATEGORY: A/C

FUNCTION: Normally open Reactor Water Cleanup (RWCU) return line check valve and containment isolation valve.

REQUIRED TEST: OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.

BASIS FOR DEFERRAL: This valve cannot be verified as being closed upon reversal or stopping of flow without opening and venting the line upstream of the check valve. Opening or venting the RWCU line during operations could cause a leak of high pressure reactor coolant and potentially lead to the release of radioactive material.

Stopping RWCU flow during normal operations or cold shutdown for an extended period would lead to a degradation of reactor water purity. This would add to the radioactive contamination in the reactor coolant system and could lead to additional exposure of site personnel. It is essential that RWCU remain in operation as much as possible and RWCU-CV-15CV be exercised to the closed position only during refueling outages.

ALTERNATE TEST: The closure capability of RWCU-CV-15CV will be verified during refueling outages by performing a Type C local leak rate test per the requirements of OMa Part 10, 4.3.2.4 and the CNS Appendix J Program.

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM

REFUELING OUTAGE JUSTIFICATION ROJ-16

VALVE: SLC-CV-12CV and SLC-CV-13CV

CLASS: 1 CATEGORY: A/C

FUNCTION: Inboard and outboard containment isolation valves which must open to allow injection of sodium pentaborate (neutron poison) for reactivity control. The injection of the neutron poison is not a safety function, but may be required in emergency situations. These valves must be capable of closure to provide containment isolation.

REQUIRED TEST: OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.

BASIS FOR DEFERRAL: These valves are normally closed with reactor pressure on the downstream side. Exercising these valves to the closed position during power operation would require drywell entry for the inboard valve and breach of reactor coolant pressure boundary when testing either valve. This is not practicable due to inaccessibility created by the inerted environment and the potential for a release of radioactivity as a result compromising the two-valve RCS isolation barrier. Valve exercising during cold shutdown, when the drywell is deinerted, could delay plant restart due to the necessity of using portable test equipment inside the drywell. The additional test activity during cold shutdown represents an unusual burden without a compensating increase in the level of quality and safety.

ALTERNATE TEST: The closure capability of the SLC check valves will be verified during refueling outages by performing a Type C, local leak rate test per the requirements of OMa Part 10, 4.3.2.4 and the CNS Appendix J Program.

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM

REFUELING OUTAGE JUSTIFICATION ROJ-17

VALVE: RCIC-CV-20CV and RCIC-CV-21CV

CLASS: A, 2 CATEGORY: C

FUNCTION: Reactor Core Isolation Cooling (RCIC) condensate pump discharge check valves. These valves open to provide a flow path for the RCIC condensate pump discharge, and RCIC-CV-21CV closes to prevent diversion of RCIC pump suction flow.

REQUIRED TEST: OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.

BASIS FOR DEFERRAL: These valves are normally closed check valves (in series). They open to provide a flow path for the RCIC condensate pump discharge. There is no practical means to verify sufficient flow to full-stroke exercise these valves open. System configuration and absence of appropriate instrumentation prohibits full stroke open verification.

Should the RCIC condensate pump fail to start, RCIC-CV-21CV closes to prevent diversion of RCIC pump suction flow. The current system design does not allow testing to ensure the valve has closed.

ALTERNATE TEST: The valves will be disassembled, inspected, and manually exercised during refueling outages. In addition, a partial stoke exercise test to the open position will be performed quarterly and after each disassembly and inspection.

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM

REFUELING OUTAGE JUSTIFICATION ROJ-18

VALVE: RHR-CV-10CV, RHR-CV-11CV, RHR-CV-12CV, and RHR-CV-13CV

CLASS: 2 CATEGORY: C

FUNCTION: Open to provide a flow path for RHR pump minimum flow.

REQUIRED TEST: OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.

BASIS FOR DEFERRAL: There is no practical means of verifying sufficient flow to full-stroke exercise the valves open. System configuration and absence of appropriate instrumentation prohibits full-stroke open verification.

ALTERNATE TEST: A different valve will be disassembled, inspected and manually exercised during each refueling outage until the entire group has been tested. If the disassembled valve is not capable of being full-stroke exercised or there is binding or failure of valve internals, the remaining valves in that group will also be disassembled, inspected and manually exercised during the same outage. In addition, a partial stroke exercise test, with flow, will be performed quarterly, and after each disassembly/inspection.

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM

REFUELING OUTAGE JUSTIFICATION ROJ-19

VALVE: PC-CV-13CV and PC-CV-14CV

CLASS: 2 CATEGORY: A/C

FUNCTION: Open to provide vacuum relief for the suppression chamber.

REQUIRED TEST: OM Part 1, 1.3.4.3 requires primary containment vacuum relief valves to have individual operability tests nominally every 6 months.

BASIS FOR DEFERRAL: These check valves open to provide assurance that the suppression chamber is not operated at a significantly lower pressure than the reactor building. They are not equipped with external operators for testing. These valves are located on top of the suppression chamber and are part of the primary containment boundary. Access to these valves is hazardous to personnel because there are no permanently installed walkways or handrails above the suppression chamber. These valve are not located in an environment that would degrade the valve seals. The valves are normally closed and are only opened for testing. A test frequency of every 6 months represents an unusual burden without a compensating increase in the level of quality and safety.

ALTERNATE TEST: The reactor building to suppression chamber vacuum relief valves will be operability tested each refueling outage in accordance with OM Part 1, 3.3.2.3.

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM

REFUELING OUTAGE JUSTIFICATION ROJ-20

VALVE: HPCI-CV-17CV

CLASS: 2 CATEGORY: C

FUNCTION: HPCI-CV-17CV - Open, to provide a flowpath for HPCI pump minimum flow; closes to prevent diversion of RHR suppression pool cooling.

REQUIRED TEST: OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.

BASIS FOR DEFERRAL: There is no practical means of verifying sufficient flow to full-stroke exercise this valve open. System configuration and absence of appropriate instrumentation prohibits full-stroke open verification.

ALTERNATE TEST: The valve will be disassembled, inspected and manually exercised during each refueling outage. In addition, a partial stroke exercise test, with flow, will be performed quarterly, and after each disassembly/inspection.

E. Valve Relief Requests

RR No.	Description	Notes
RV-01	Hot Shutdown Component Testing	1
RV-02	CRD-AOV-CV126, CRD-AOV-CV127, and CRD-CV-114CV (typical of 137) Exercising By Scram Testing	2
RV-03	CRD-CV-115CV (typical of 137) Testing to the Closed Position	2
RV-04	CRD-CV-138CV (typical of 137) Test Method	2
RV-05	CRD-SOV-SO120, SO121, SO122, and SO123 (Typical of 137) Test Method	2
RV-06	CS-CV-12CV, CS-CV-13CV, CS-CV-14CV, and CS-CV-15CV Testing to the Closed Position	
RV-07	HPCI-CV-18CV and 19CV Testing to the Closed Position	
RV-08	HPCI-SOV-SSV64 and SSV87 Stroke Timing Alternative	3
RV-09	MS-RV-71ARV to 71HRV Exercising Testing Frequency	3
RV-10	Excess Flow Check Valves Testing Per Technical Specifications	4
RV-11	RCIC-CV-18CV and 19CV Testing to the Closed Position	
RV-12	RHR-CV-18CV, 19CV, 24CV, and 25CV Testing to the Closed Position	
RV-13	SW-MOV-MO89A and MO89B Testing Relief	3
RV-14	HPCI-CV-24CV, 25CV, 26CV, 27CV, RCIC-CV-22CV, 23CV, 24CV, and 25CV Testing Relief	

Notes:

1 NRC Approval not required (TAC NO. M94530)

2 Approved by NRC letter dated February 19, 1997 (TAC NO. M94530)

3 Revised to address NRC comments.

4 Acceptable per OM-10, NRC approval not required (TAC NO. M94530)

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM

RELIEF REQUEST RV-01

VALVE: Non-component Specific

CLASS: All CATEGORY: All

FUNCTION: Various

REQUIRED TEST: OMa Part 10 provides the rules and requirements for inservice testing to verify operational readiness of certain valves (and their actuating and position indicating systems) in light-water cooled nuclear plants, which are required to perform a specific function in shutting down a reactor to the cold shutdown condition, in maintaining the cold shutdown condition, or in mitigating the consequences of an accident.

BASIS FOR RELIEF: Cooper Nuclear Station's accident analyses do not carry the response to an accident (e.g. Design Basis LOCA) to a point beyond the hot shutdown condition (i.e., to a cold shutdown condition). The licensing basis does not require the plant to get to the cold shutdown condition in order to satisfy 10CFR100 radiological release guidelines.

Since Safe Shutdown is defined in the CNS licensing basis as the hot shutdown condition, inservice testing of components which are required to achieve cold shutdown is unwarranted, and does not provide any increase in the level of program quality or safety to the public.

ALTERNATE TEST: Cooper Nuclear Station's Inservice Testing (IST) and Augmented Testing Programs will implement the rules and requirements for inservice testing to verify operational readiness of certain Class 1, 2, 3 and Non-Code Class valves (and their actuating and position indicating systems) which are required to perform a specific function in shutting down the reactor to the safe shutdown (hot shutdown) condition, in maintaining the hot shutdown condition, or in mitigating the consequences of an accident. Components which support achievement of cold shutdown only, are not required to be included in the IST or Augmented Test Programs.

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM

RELIEF REQUEST RV-02

VALVE: CRD-AOV-CV126, CRD-AOV-CV127, and CRD-CV-114CV (typical of 137)

CLASS: 1, 2 CATEGORY: B, C

FUNCTION: CRD-AOV-CV126 - Open with a scram signal to pressurize the lower side of the CRDM pistons from the accumulator or from the charging water header.

CRD-AOV-CV127 - Open with scram signal to vent the top of the CRDM pistons to the scram discharge header.

CRD-CV-114CV (typical of 137) - Open to allow flow from the top of the CRDM pistons to the scram discharge header.

REQUIRED TEST: 1) OMa Part 10, 4.2.1.1 requires Category A and B power operated valves to be individually full stroke exercised nominally every 3 months, except as provided by paragraphs 4.2.1.2, 4.2.1.5, and 4.2.1.7.

2) OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.

BASIS FOR RELIEF: These valves are required to operate for rapid insertion (scram) of control rods. Each valve is tested by scram-timing control rods in accordance with Technical Specification Sections 3.3 and 4.3. The Technical Specifications require testing 10 percent of the CRDs every 16 weeks and 100 percent of the drives each refueling. The CRDs must fully insert within specified time limits. Should either the insert or exhaust valves fail, the CRDs would not be able to meet Technical Specification requirements.

The air-operated valves fail-open on loss of air or power. Normal opening removes power to the pilot solenoid valve, simulating a loss of power. On loss of power, the solenoid vents the air operator and CRD-AOV-CV126 and CRD-AOV-CV127 are spring-driven open. Thus, each time a scram signal is

RELIEF REQUEST RV-02 (Continued)

given, the valves "experience" a loss of air/power to verify each valve's fail-safe open feature. In effect, scram testing meets or exceeds the functional testing requirements of Section XI to assess operational readiness. Individual stroke time measurements of CRD-AOV-CV126 and CRD-AOV-CV127 are impracticable due to their rapid acting operation.

One hundred percent of the valves cannot be tested more often than each refueling outage. Testing 100 percent of the valves simultaneously would result in a full reactor scram. An excess number of scrams performed routinely could cause thermal and reactivity transients, which could lead to fuel, vessel, CRD, or piping damage. The CRDs cannot be tested during cold shutdown because the control rods are inserted and must remain inserted. This testing method for the valves is consistent with GL 89-04, position 7.

ALTERNATE TEST: Scram testing per Technical Specifications will be substituted for all Section XI requirements. The test frequency will be 10% each 16 weeks and 100% each refueling cycle. Valve stroke times will not be measured. This testing method is consistent with GL 89-04, position 7.

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM

RELIEF REQUEST RV-03

VALVE: CRD-CV-115CV (typical of 137)

CLASS: 2 CATEGORY: C

FUNCTION: Prevent bypassing scram water (from the accumulator) to the charging water header (if depressurized).

REQUIRED TEST: OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.

BASIS FOR RELIEF: Exercising these valves requires the depressurization of the charging water header. The header is depressurized by either stopping the CRD pumps or by valving out and depressurizing the charging water header. Stopping the CRD pumps could result in seal damage to the control rod drive mechanisms (CRDM) from a loss of seal cooling water. Additionally, stopping the pumps would interrupt seal cooling water flow to the reactor recirculation pumps resulting in shaft seal damage. This is impracticable during normal plant operation since valving out and depressurizing the charging water header would render the CRD accumulators inoperable and stopping the CRD pumps could cause pressure variations in the CRD System during the test evolution.

Exercising these valves during cold shutdown is not possible due to the interruption of shaft seal cooling water flow as previously discussed. If the recirculation pump became idle stopping the CRD pumps or manually isolating the charging water header for reverse exercise testing could delay plant startup due to the necessity of depressurizing upstream of each individual valve (137 each) in order to accomplish an adequate test. This additional test activity during cold shutdown represents an unusual burden without a compensating increase in the level of quality and safety. This testing method for the charging water header check valves is consistent with GL 89-04, position 7.

ALTERNATE TEST: These valves will be tested during each reactor refueling outage. Proper closure shall be verified by isolating each of the CRD scram accumulators and venting pressure on the upstream side of the check valve. Accumulator pressure decay would be observed should the respective valve fail to close properly.

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM

RELIEF REQUEST RV-04

VALVES: CRD-CV-138CV (typical of 137)

CLASS: 2 CATEGORY: C

FUNCTION: Close in the event of a scram to prevent diversion of pressurized HCU accumulator water to the cooling water header.

REQUIRED TEST: OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.

BASIS FOR RELIEF: Normal control rod motion will verify that the associated cooling water check valve has moved to the safety function position. Industry experience has shown that rod motion may not occur if this check valve were to fail in the open position. This testing method for the cooling water header check valves is consistent with GL 89-04, position 7.

ALTERNATE TEST: During normal plant operation above 30 percent power, each partially or fully withdrawn operable control rod is exercised one notch at least once each week (Technical Specification 4.3.A.2). A cooling water header check valve is verified closed when the associated control rod is successfully exercised.

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM

RELIEF REQUEST RV-05

VALVES: CRD-SOV-SO120, SO121, SO122, and SO123 (Typical of 137)

CLASS: 1 CATEGORY: B

FUNCTION: Close to provide Class 1 to Non-Code Class boundary isolation.

REQUIRED TEST: OMa Part 10, 4.2.1.1 requires Category A and B power operated valves to be individually full stroke exercised nominally every 3 months, except as provided by paragraphs 4.2.1.2, 4.2.1.5, and 4.2.1.7.

BASIS FOR RELIEF: During normal operation these valves are used for control rod insertion and withdrawal. They are normally closed and must remain closed to prevent diverting water during a scram. They are exercised open and closed during normal operation of the associated CRD. They are not equipped with position indication. This testing method for the CRD insert and withdrawl solenoid valves is consistent with GL 89-04, position 7.

ALTERNATE TEST: During normal plant operation above 30 percent power, each partially or fully withdrawn operable control rod is exercised one notch at least once each week (Technical Specification 4.3.A.2). One pair of these solenoids is exercised when the associated CRD is withdrawn a notch, and the other pair is exercised when the CRD is inserted a notch. Proper operation of the CRD verifies the operation of the associated solenoid valves.

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM

RELIEF REQUEST RV-06

VALVE: CS-CV-12CV, CS-CV-13CV, CS-CV-14CV, and CS-CV-15CV

CLASS: 2, A (outboard) CATEGORY: C

FUNCTION: Core Spray (CS) Loop A and Loop B pressure maintenance check valves from the condensate supply system. These valves open to maintain the Core Spray system solid and close to prevent diversion of core spray flow.

REQUIRED TESTS: OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.

BASIS FOR RELIEF: These valves are normally closed check valves (with two in series). The inboard valve is essential (safety related). The redundant outboard valve is non-essential. The valves are the same make and model number and met the same quality assurance requirements at the time they were installed. They open as necessary to keep the CS system in a solid standby condition, which is not a safety function. When the CS pumps start, these valves close to ensure maximum flow to the reactor. These valves do not have perform a function which requires leakage to be limited to a specified amount.

Only one valve is required to close to prevent diversion of flow as determined and documented in accordance with CNS safety classification requirements. However, the current system design does not allow independent testing to ensure both valves have closed. Thus both valves will be tested together. When a CS Pump is started, should both valves fail to close, a relief valve would lift or a pressure sensor would alarm on the condensate supply side of the valves.

ALTERNATE TEST: The check valves in each loop will be tested closed simultaneously to assess the operational readiness of each pair of valves. Should the acceptance criteria be exceeded, both valves will be declared inoperable until they are repaired or replaced as necessary.

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM

RELIEF REQUEST RV-07

VALVE: HPCI-CV-18CV and HPCI-CV-19CV

CLASS: 2, A (outboard) CATEGORY: C

FUNCTION: High Pressure Coolant Injection (HPCI) pressure maintenance check valves from the condensate supply system. These valves open to maintain the HPCI system solid and close to prevent diversion of HPCI injection flow.

REQUIRED TESTS: OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.

BASIS FOR RELIEF: These valves are normally closed check valves (with two in series). The inboard valve is essential (safety related). The redundant outboard valve is non-essential. The valves are the same make and model number and met the same quality assurance requirements at the time they were installed. They open as necessary to keep the HPCI system in a solid standby condition, which is not a safety function. When the HPCI starts, these valves close to ensure maximum flow to the reactor. These valves do not have perform a function which requires leakage to be limited to a specified amount.

Only one valve is required to close to prevent diversion of flow as determined and documented in accordance with CNS safety classification requirements. However, the current system design does not allow independent testing to ensure both valves have closed. Thus both valves will be tested together. When HPCI is started, should both valves fail to close, a relief valve would lift or a pressure sensor would alarm on the condensate supply side of the valves.

ALTERNATE TEST: The check valves will be tested closed simultaneously to assess the operational readiness of the pair of valves. Should the acceptance criteria be exceeded, both valves will be declared inoperable until they are repaired or replaced as necessary.

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM

RELIEF REQUEST RV-08

VALVE: HPCI-SOV-SSV-64 and HPCI-SOV-SSV87

CLASS: 2 CATEGORY: B

FUNCTION: The HPCI turbine and exhaust steam drip leg drain to gland condenser (HPCI-SOV-SSV64) and HPCI turbine and exhaust steam drip leg drain to equipment drain isolation valve (HPCI-SOV-SSV87) have an active safety function in the closed position to maintain pressure boundary integrity of the HPCI turbine exhaust line. These valves serve as a Class 2 to Non-Code boundary barrier.

REQUIRED TEST: OMa Part 10, 4.2.1 requires Category A and B power operated valves to be individually full stroke exercised and stroked timed nominally every 3 months, except as provided by paragraphs 4.2.1.2, 4.2.1.5, and 4.2.1.7.

OMa Part 10, 4.2.1.6 requires that valves with fail-safe actuators shall be tested by observing the operation of the actuator upon loss of valve actuating power in accordance with the exercising frequency of paragraph 4.2.1.1.

BASIS FOR RELIEF: These valves are rapid acting, encapsulated, solenoid operated valves. Their control circuitry is provided with a remote manual switch for valve actuation to the Open position and an Auto function which allows the valves to actuate from signals received from the associated level switches HPCI-LS-98 and HPCI-LS-680. Both valves receive a signal to change disc position during operability testing of drain pot level switches. However, remote position indication is not provided for positive verification of disc position. Additionally, their encapsulated design prohibits the ability to visually verify the physical position of the operator, stem or internal components. Modification of the system to verify valve closure capability and stroke timing is not practicable nor cost beneficial since no commensurate increase in safety would be derived.

ALTERNATE TEST: Quarterly, each valve shall be exercised to the full closed position. Although valve stroke timing will not be performed, this test will verify that the valve moves to the safe position. Enhanced maintenance shall be performed each refueling outage by disassembling and inspecting each solenoid valve to monitor for degradation.

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM

RELIEF REQUEST RV-09

VALVE: MS-RV-71ARV, BRV, CRV, DRV, ERV, FRV, GRV, and HRV

CLASS: 1 CATEGORY: B/C

FUNCTION: The main steam power operated safety valves have an active safety function in the open position to prevent over pressurization of the reactor vessel. These safety valves have an active safety function in the closed position to maintain reactor vessel integrity.

REQUIRED TEST: OMa Part 10, 4.2.1 requires Category A and B power operated valves to be individually full stroke exercised and stroked timed nominally every 3 months, except as provided by paragraphs 4.2.1.2, 4.2.1.5, and 4.2.1.7.

BASIS FOR RELIEF: These valves are power actuated safety relief valves for the main steam lines. Each valve is exercised during startup following refueling outages. Exercising these valves during power operations can cause pressure, temperature, and reactivity transients.

Exercising during cold shutdown is impracticable since a minimum of 50 psig steam pressure is required to open the valves. The valve supplier does not recommend exercising these valves below 150 psig steam pressure because of the risk of valve seat damage and resultant leakage. Technical Specifications require testing once each refueling cycle at a reactor pressure >100 psig, which is adequate to assess the operational readiness of these valves.

Relief valves are quick acting and their stroke-times cannot be measured by conventional means. They do not have position indication in the usual sense. Pressure switches in the SRV discharge lines annunciate in the control room and indicate when the valve is open or closed. Should a relief valve fail to function as designed, corrective action is required.

RELIEF REQUEST RV-09 (Continued)

ALTERNATE TEST: In addition to testing to the requirements of OM-1987, Part 1, Paragraph 3.3.1.1, full stroke exercise tests of these valves open and closed will be performed during each refueling outage. The opening stroke time will be measured from the time the switch is actuated until the pressure switch in the discharge line annunciates. This testing method is consistent with GL 89-04, position 6.

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM

RELIEF REQUEST RV-10

VALVES: Excess Flow Check Valves

CLASS: 1 CATEGORY: A/C

FUNCTION: The excess flow check valves are installed in instrument lines that provide signals for operation of safety-related pumps and valves. They prevent excess flow of reactor water should an instrument line break outside containment.

REQUIRED TEST: OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.

Testing in accordance with OMa Part 10, 4.3.2.4 requires demonstration that the valve disk travels to the seat on cessation of flow. Confirmation that the disk is on the seat may be by direct indication, such as position indicating devices, or by other indicators such as changes in system pressure, flowrate, level, temperature, seat leakage testing or other positive means.

BASIS FOR RELIEF: Uninterrupted function of these valves is essential for safety. Routine testing in accordance with Section XI would cause instrument line interruptions. This would disable instruments required for safe plant operations, safety-system actuation, reactor shutdown, or sensing accident conditions. In addition, these valves cannot be exercised during cold shutdown because removal of multiple instruments from service could prevent or interrupt the operation of systems required for decay heat removal.

The excess flow check valves are tested using a modified leak-rate test to assess operability. Testing is performed at least once each operating cycle in accordance with Technical Specification 4.7.D.1.c. Testing more frequently could jeopardize the safety of the reactor.

ALTERNATE TEST: In lieu of Section XI testing, a modified leak-rate test will be performed at least once each operating cycle.

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM

RELIEF REQUEST RV-11

VALVE: RCIC-CV-18CV and RCIC-CV-19CV

CLASS: 2, A (outboard) CATEGORY: C

FUNCTION: Reactor Core Isolation Cooling (RCIC) pressure maintenance check valves from the condensate supply system. These valves open to maintain the RCIC system solid and close to prevent diversion of RCIC injection flow.

REQUIRED TESTS: OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.

BASIS FOR RELIEF: These valves are normally closed check valves (with two in series). The inboard valve is essential (safety related). The redundant outboard valve is non-essential. The valves are the same make and model number and met the same quality assurance requirements at the time they were installed. They open as necessary to keep the RCIC system in a solid standby condition, which is not a safety function. When the RCIC starts, these valves close to ensure maximum flow to the reactor. These valves do not have perform a function which requires leakage to be limited to a specified amount.

Only one valve is required to close to prevent diversion of flow as determined and documented in accordance with CNS safety classification requirements. However, the current system design does not allow independent testing to ensure both valves have closed. Thus both valves will be tested together. When RCIC is started, should both valves fail to close, a relief valve would lift or a pressure sensor would alarm on the condensate supply side of the valves.

ALTERNATE TEST: The check valves will be tested closed simultaneously to assess the operational readiness of the valves. Should the acceptance criteria be exceeded, both valves will be declared inoperable until they are repaired or replaced as necessary.

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM

RELIEF REQUEST RV-12

VALVE: RHR-CV-18CV, RHR-CV-19CV, RHR-CV-24CV, and RHR-CV-25CV

CLASS: 2, A (outboard) CATEGORY: C

FUNCTION: Residual Heat Removal (RHR) Loop A and Loop B pressure maintenance check valves from the condensate supply system. These valves open to maintain the RHR system solid and close to prevent diversion of LPCI injection flow.

REQUIRED TESTS: OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.

BASIS FOR RELIEF: These valves are normally closed check valves (with two in series). The inboard valve is essential (safety related). The redundant outboard valve is non-essential. Each pair of valves are the same design and met the same quality assurance requirements at the time they were installed. They open as necessary to keep the RHR system in a solid standby condition, which is not a safety function. When the RHR pumps start, these valves close to ensure maximum flow to the reactor. These valves do not have perform a function which requires leakage to be limited to a specified amount.

Only one valve is required to close to prevent diversion of flow as determined and documented in accordance with CNS safety classification requirements. However, the current system design does not allow independent testing to ensure both valves have closed. Thus both valves will be tested together. When a RHR Pump is started, should both valves fail to close, a relief valve would lift or a pressure sensor would alarm on the condensate supply side of the valves.

ALTERNATE TEST: The check valves in each loop will be tested closed simultaneously to assess the operational readiness of each pair of valves. Should the acceptance criteria be exceeded, both valves will be declared inoperable until they are repaired or replaced as necessary.

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM

RELIEF REQUEST RV-13

VALVE: SW-MOV-MO89A and SW-MOV-MO89B

CLASS: 3 CATEGORY: B

FUNCTION: Loop A and Loop B outlet isolation for the Service Water booster pump cooling water to the RHR heat exchangers. These normally closed valves have an active safety function in the throttled position to provide a flow path for cooling water flow through the RHR heat exchangers during transient and accident conditions.

REQUIRED TEST: OMa Part 10, 4.2.1 requires Category A and B power operated valves to be individually full stroke exercised and stroked timed nominally every 3 months, except as provided by paragraphs 4.2.1.2, 4.2.1.5, and 4.2.1.7.

BASIS FOR RELIEF: These valves are exercised during quarterly Service Water Booster Pump flow testing to a throttled position required to satisfy Technical Specification flow requirements. Valve stroke timing to the fully opened position is impracticable. Full opening will cause RHR Service Water Booster Pump run out. These valves cannot be accurately stroke timed because they are controlled with a thumb wheel type controller. After a pump associated with either valve has started, valve movement is subject to considerable variation. This type of controller provides an output signal that is dependant upon the speed with which the controller is operated. Stroke time measurements of these valves would be very difficult to repeat due to the absence of normal valve control switches and would not contribute meaningful data to utilize in monitoring valve degradation.

ALTERNATE TEST: These valves will be exercised to their safety-related throttled position quarterly, but stroke times will not be measured. At refueling outages, these valves will be tested under the CNS MOV Program in accordance with GL 89-10. Stroke times will be one of the parameters measured.

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM

RELIEF REQUEST RV-14

VALVE: HPCI-CV-24CV, HPCI-CV-25CV, HPCI-CV-26CV, HPCI-CV-27CV, RCIC-CV-22CV, RCIC-CV-23CV, RCIC-CV-24CV, and RCIC-CV-25CV

CLASS: 2 CATEGORY: C

FUNCTION: HPCI and RCIC Turbine Exhaust Line Vacuum Breakers open to prevent siphoning suppression pool water into the exhaust line.

REQUIRED TESTS: OM Part 1, 3.3.2.3(a) requires vacuum relief valves to be individually actuated to verify open and close capability, set pressure, and performance of any pressure and position sensing accessories.

OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.

BASIS FOR RELIEF: These valves are normally closed check valves with two in series cross connected to two in parallel (H pattern). The four RCIC valves are lift check valves, and the four HPCI valves are swing check valves. The valves are located in the suppression pool free space. In the closed position they prevent steam from the exhaust line entering the free space of the suppression chamber. Either two inboard valves or two outboard valves must be closed to perform this function. Two valves in series provides added assurance that steam will not enter the suppression chamber.

The valves open to prevent siphoning suppression pool water into the exhaust line due to steam condensing when the associated HPCI or RCIC systems are isolated. Each pair of valves is cross connected to the parallel pair of valves (H pattern) so that a single failure will not prevent the vacuum relief function. These valves are not required to be leak tight and are not equipped with position indication or pressure sensing devices. During power operation the suppression chamber is inerted and inaccessible.

Due to the location and configuration of these valves (located on the open ended turbine exhaust lines) a closure test can not be performed and the inboard check valves are not accessible for a set pressure test. Also due to the configuration, a set pressure test of the two outboard RCIC lift check valves can not be performed.

RELIEF REQUEST RV-14 (Continued)

ALTERNATE TEST: In lieu of the OM-1 and OM-10 requirements, each valve will be disassembled, inspected, and manually exercised open and closed during each refueling outage. In addition, the two outboard HPCI vacuum relief valves will be set point tested open in place each refueling outage.

F. Augmented Valve Cold Shutdown Test Justifications

ACSJ No.	Description
ACSJ-01	CRD-CV-25CV and CRD-CV-26CV Closure Test Frequency
ACSJ-02	DGSA-CV-14CV, DGSA-CV-15CV, DGSA-CV-16CV, and DGSA-CV-17CV Closure Test Frequency
ACSJ-03	HV-AOV-263AV, HV-AOV-265AV, HV-AOV-267AV, HV-AOV-269AV, HV-MOV-262MV, HV-MOV-264MV, HV-MOV-266MV, and HV-MOV-268MV Closure Test Frequency
ACSJ-04	IA-CV-54CV, IA-CV-55CV, IA-CV-56CV, IA-CV-57CV, IA-CV-58CV, IA-CV-59CV, IA-CV-60CV, and IA-CV-111CV Closure Test Frequency
ACSJ-05	SGT-CV-14CV and SGT-CV-15CV Open and Closure Test Frequency

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM

AUGMENTED COLD SHUTDOWN JUSTIFICATION ACSJ-01

VALVES: CRD-CV-25CV and CRD-CV-26CV

CLASS: A CATEGORY: A/C

FUNCTION: Close to prevent possible CRD bypass leakage from exiting secondary containment.

REQUIRED TEST: OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.

BASIS FOR DEFERRAL: It is impracticable to perform a closure test or a partial closure test on these valves during power operations. These valves are located in the line from the CRD pumps supplying drive water and charging water to the control rod's Hydraulic Control Units (HCUs). During power operations these valves are open since drive water is constantly supplied to the HCUs. Closure or partial closure testing would require the CRD pumps to be secured and the portion of the system containing these valves to be isolated. Isolating the valves or securing the CRD pumps terminates the constant drive water supply to the HCUs, which causes all the control rods to be inoperable. All control rods inoperable during power operations puts the plant into a Technical Specification LCO requiring shutdown within 24 hours, which is operationally undesirable. Also, without a continuous charging water supply, HCU accumulators would eventually depressurize, since the associated accumulator check valves are not designed to be leak tight. Administrative controls require a scram initiation upon depressurization of two accumulators, which is a highly undesirable situation.

The interruption of the drive water flow would also interrupt CRD seal water cooling to the Reactor Recirculation pumps. Stopping of flow would impose a severe thermal transient on the RR pump seals, which could possibly lead to premature seal failure.

AUGMENTED COLD SHUTDOWN JUSTIFICATION ACSJ-01 (Continued)

The increased potential for plant shutdown during testing at power operations outweighs the minor increase in confidence of component operational readiness when testing quarterly. These valves are not within the scope of ASME Section XI.

ALTERNATE TEST: Valve exercising, to the closed position, will be performed during cold shutdown by establishing a differential pressure across the valve seat. This test requires the recirculation and reactor water cleanup pumps to be removed from service.

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM

AUGMENTED COLD SHUTDOWN JUSTIFICATION ACSJ-02

VALVES: DGSA-CV-14CV, DGSA-CV-15CV, DGSA-CV-16CV, and DGSA-CV-17CV

CLASS: A CATEGORY: C

FUNCTION: Opens to provide sufficient starting air to start the diesel generators on loss of site electrical power and closes to provide system isolation and redundancy.

REQUIRED TEST: OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.

BASIS FOR DEFERRAL: Exercising these valves to the closed position requires isolating both emergency diesel generator starting air receivers causing the related emergency diesel generator to be considered inoperable during the test. Due to the importance of the diesel generator with respect to plant safety, intentionally creating an inoperable condition during plant operation is not justifiable. These valves are not within the scope of ASME Section XI.

ALTERNATE TEST: Valve exercising to the closed position will be performed during cold shutdown.

COOPER NUCLEAR STATION
THIRD INTERVAL
INSERVICE TESTING PROGRAM

AUGMENTED COLD SHUTDOWN JUSTIFICATION ACSJ-03

VALVES: HV-AOV-263AV, HV-AOV-265AV, HV-AOV-267AV, HV-AOV-269AV, HV-MOV-262MV, HV-MOV-264MV, HV-MOV-266MV, and HV-MOV-268MV

CLASS: A CATEGORY: B

FUNCTION: Open to provide flow paths for ventilation to be supplied through the casing of both MG sets for cooling purposes, and close upon receipt of a PCIS Group IV or VI signal to provide secondary containment isolation.

REQUIRED TEST: 1) OMa Part 10, 4.2.1.1 requires Category A and B power operated valves to be individually full stroke exercised nominally every 3 months, except as provided by paragraphs 4.2.1.2, 4.2.1.5, and 4.2.1.7.

2) OMa Part 10, 4.2.1.6 requires valves with fail-safe actuators to be tested by observing the operation of the actuator upon loss of valve actuating power in accordance with the exercising frequency of paragraph 4.2.1.1.

BASIS FOR DEFERRAL: These valves are required to remain in the open position during power operation to support reactor recirculation pump operation. Closure of these valves during reactor operation could result in overheating the MG set which would compromise reactor recirculation pump operation causing plant shutdown. Also, the valves' control circuitry does not provide for partial stroke capability. These valves are not within the scope of ASME Section XI.

ALTERNATE TEST: These valves will be exercised to the closed position during cold shutdowns when the reactor recirculation pumps are in an idle state. In addition, the AOVs will be fail-safe tested during cold shutdowns when the reactor recirculation pumps are in an idle state. During unscheduled cold shutdowns when the recirculation pumps are required to remain in operation, valve exercising and fail-safe testing will be deferred until the next available opportunity when the recirculation pumps can be removed from service.

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AUGMENTED COLD SHUTDOWN JUSTIFICATION ACSJ-04

VALVE: IA-CV-54CV, IA-CV-55CV, IA-CV-56CV, IA-CV-57CV, IA-CV-58CV, IA-CV-59CV, IA-CV-60CV, and IA-CV-111CV

CLASS: A CATEGORY: C

FUNCTION: IA-CV-54CV, IA-CV-55CV, IA-CV-56CV, IA-CV-57CV, IA-CV-58CV, IA-CV-59CV, IA-CV-60CV, and IA-CV-111CV - Close to maintain pressure in the associated air operated valve's accumulator in the event of a loss of the Instrument Air (IA) supply. These IA supplies are for various safety related H&V system AOV's.

REQUIRED TEST: OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.

BASIS FOR DEFERRAL: The acceptance test for these check valves requires that the IA supply piping upstream of the check valves to the associated accumulators be isolated and depressurized. The accumulator pressure is then monitored for one hour to verify that the check valve will hold. Isolation and depressurization of these IA lines will place these systems in an inoperable condition. The following summarizes the specific system impacts:

IA-CV-54CV, -55CV, and -56CV are in the IA supply lines to the Reactor Building supply and exhaust isolation dampers. Isolation and testing of these valves affects the operation of the Reactor Building H&V system which controls area air flows and pressures.

IA-CV-57CV, -58CV, -59CV, AND 60CV are in the IA supply lines to the H&V supply and exhaust for the MG Set 1A and 1B. Isolation and testing of these valves potentially affects the operation of the MG Sets.

AUGMENTED COLD SHUTDOWN JUSTIFICATION ACSJ-04 CONTINUED

IA-CV-111CV is in the IA supply line for the Control Room Emergency Bypass Filter inlet valve. Isolation and testing of this valve affects the operation of this filter train. Therefore, it is impracticable to perform a reverse flow leakage test of these check valves during power operations. These valves are not within the scope of ASME Section XI.

ALTERNATIVE TEST: A reverse flow leakage test of these check valves will be performed during cold shutdown conditions.

AUGMENTED COLD SHUTDOWN JUSTIFICATION ACSJ-05

VALVES: SGT-CV-14CV and SGT-CV-15CV

CLASS: A CATEGORY: C

REQUIRED TEST: OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.

FUNCTION: Open to provide flow paths from their respective SGT filter trains. Close to prevent back flow from the operating SGT train discharge.

BASIS FOR DEFERRAL: The acceptance full flowrate for these valves is > 1602 cfm. During plant power operations, system conditions exist that prevent the SGT system from achieving a flowrate of > 1602 cfm. Reactor building differential pressure and back pressure from the Off Gas Dilution Fans act against SGT system pressure restricting SGT system flowrate. Therefore, it is impracticable to perform a full flowrate test of these valves at power operations. These valves are not within the scope of ASME Section XI.

ALTERNATE TEST: A partial open stroke test will be performed on these valves during plant power operations on a quarterly frequency. A full flow open test will be performed on these valves during cold shutdown periods. The full flow test shall also satisfy the closure exercise requirements of the check valve in the idle train.

G. Augmented Valve Refueling Outage Justifications

AROJ No.	Description
AROJ-01	IA-CV-17CV, IA-CV-18CV, IA-CV-19CV, IA-CV-20CV, IA-CV-21CV, IA-CV-22CV, IA-CV-36CV, and IA-CV-37CV Closure Test Frequency
AROJ-02	IA-CV-28CV through IA-CV-CV35 Closure Test Method and Frequency
AROJ-03	Withdrawn
AROJ-04	SLC-CV-12CV and SLC-CV-13CV Opening Test Frequency
AROJ-05	SLC-CV-10CV and SLC-CV-11CV Opening and Closure Test Frequency
AROJ-06	Withdrawn

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AUGMENTED REFUELING OUTAGE JUSTIFICATION AROJ-01

VALVE: IA-CV-17CV, IA-CV-18CV, IA-CV-19CV, IA-CV-20CV, IA-CV-21CV, IA-CV-22CV, IA-CV-36CV, and IA-CV-37CV

CLASS: A CATEGORY: A/C

FUNCTION: Instrument Air/Nitrogen supply inlet check valves for Main Steam Relief Valve (SRV) accumulators. These check valves must be capable of closure to maintain accumulator integrity in the event of a loss of normal actuating air supply.

REQUIRED TEST: OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.

BASIS FOR DEFERRAL: These valves are located inside the drywell and are inaccessible during normal operations or cold shutdowns. They cannot be exercised during each cold shutdown because the drywell is not routinely deinerted each cold shutdown. Valve exercising during cold shutdown, when the drywell is deinerted, could delay plant restart due to the necessity of using portable test equipment inside the drywell. The additional test activity during cold shutdown represents an unusual burden without a compensating increase in the level of quality and safety. These valves are not within the scope of ASME Section XI.

ALTERNATE TEST: An extended time/pressure decay procedure will be used to verify each valve's closure. This will be done by venting the upstream side of the check valve and monitoring accumulator pressure to ensure each check valve functions properly. The above valves will be tested each refueling outage to verify valve closure.

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AUGMENTED REFUELING OUTAGE JUSTIFICATION AROJ-02

VALVE: IA-CV-28CV through IA-CV-CV35

CLASS: A CATEGORY: A/C

FUNCTION: Close to isolate individual Main Steam Isolation Valve accumulators for emergency gas supply.

REQUIRED TEST: OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.

BASIS FOR DEFERRAL: These check valves do not have position indication devices. The only practicable method to verify valve closure is a pressure decay test. The valves are located in the steam tunnel and the drywell. They are inaccessible during operation and normal cold shutdowns. The complexity of the pressure decay test could delay plant startup after a cold shutdown when the drywell is deinerted. Since these emergency air supply accumulators are a backup to the normal pneumatic supply, performing the test at refueling outages is adequate to assess valve operational readiness. These valves are not within the scope of ASME Section XI.

ALTERNATE TEST: A pressure decay test will be performed each refueling outage to verify valve closure.

AUGMENTED REFUELING OUTAGE JUSTIFICATION AROJ-03

Withdrawn

COOPER NUCLEAR STATION
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INSERVICE TESTING PROGRAM

AUGMENTED REFUELING OUTAGE JUSTIFICATION AROJ-04

VALVE: SLC-CV-12CV and SLC-CV-13CV

CLASS: 1 CATEGORY: A/C

FUNCTION: Inboard and outboard containment isolation valves must open to allow injection of sodium pentaborate (neutron poison) for reactivity control. The injection of the sodium pentaborate is not a safety function, but may be required in emergency situations.

REQUIRED TEST: OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.

BASIS FOR DEFERRAL: These valves are normally closed with reactor pressure on the downstream side. Exercising these valves to the open position during power operation would require firing the upstream squib valve and injecting demineralized water from the test tank to the reactor vessel. This activity would not only require flushing the system of sodium pentaborate prior to testing, but would also subject the SLC injection nozzle to thermal transients due to the relatively cold demineralized water temperature. This additional test activity during cold shutdown represents an unusual burden without a compensating increase in the level of safety and could delay plant restart due to the measures required to prevent inadvertent admission of boron to the reactor coolant system resulting in the potential for an imbalance in reactor water chemistry. The open function of these valves is not within the scope of ASME Section XI.

ALTERNATE TEST: The opening capability of the SLC check valves will be verified during refueling outages by performing a vessel injection from the SLC system as required by Technical Specification 4.4.A.2.c.

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AUGMENTED REFUELING OUTAGE JUSTIFICATION AROJ-05

VALVE: SLC-CV-10CV and SLC-CV-11CV

CLASS: A CATEGORY: C

FUNCTION: The SLC pump discharge check valves are required to open for sodium pentaborate injection (neutron poison) and close to isolate the inservice pump from the adjacent idle pump. The injection of the sodium pentaborate is not a safety function, but may be required in emergency situations.

REQUIRED TEST: OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.

BASIS FOR DEFERRAL: These pump discharge check valves are located in a segment of piping which is not provided with upstream vent/drain connections or pressure connections to facilitate valve closure testing. Additionally, the pumps' positive displacement design does not allow for any appreciable back flow which otherwise may be detected in the pump suction piping. Modification to the system for verification of valve closure capability is not practicable nor cost beneficial since no commensurate increase in safety would be derived. The only practicable method of valve closure verification is by performing radiography (RT) of the seat area. Performing RT on a quarterly or cold shutdown frequency, as opposed to once each refueling, increases personnel radiation exposure due to the presence of a radioactive source. Although exposure is low, this is an undesirable ALARA practice. The burden of performing a quarterly RT is not justified based on the previous discussion. These valves are not within the scope of ASME Section XI.

ALTERNATE TEST: Valve closure capability shall be verified at or prior to each refueling outage by performing radiography on the valve seating area.

AUGMENTED REFUELING OUTAGE JUSTIFICATION AROJ-06

Withdrawn

H. Augmented Valve Relief Requests

ARV No.	Description
ARV-01	DGDO-FOV-FLTV10, DGDO-FOV-FLTV11, DGDO-SOV-SSV5028, and DGDO-SOV-SSV5029 Test Method
ARV-02	DGSA-SOV-SPV1, DGSA-SOV-SPV2, DGSA-SOV-SPV3, DGSA-SOV-SPV4, DGSA-AOV-AV5, DGSA-AOV-AV6, DGSA-AOV-AV7, and DGSA-AOV-AV8 Test Method
ARV-03	DG-AOV-MB1 and DG-AOV-MB2 Test Method

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AUGMENTED RELIEF REQUEST ARV-01

VALVE: DGDO-FOV-FLTV10, DGDO-FOV-FLTV11, DGDO-SOV-SSV5028, and DGDO-SOV-SSV5029

CLASS: A CATEGORY: B and C (FLTV-10/11)

FUNCTION:

The DG Day Tank Inlet valves (DGDO-FOV-FLTV-10, FLTV-11) have an active safety function in the closed position to prevent overfilling of the associated Day Tank during fuel oil transfer operations. These float operated inlet valves also have an active safety function in the open position to permit filling of the associated Diesel Fuel Tanks.

The DG Day Tank Fuel Safety Solenoid Valves (DGDO-SOV-SSV5028, SSV5029) have an active safety function in the closed position to provide redundant isolation capabilities in the event day tank inlet valve (DGDO-FOV-FLTV-10, FLTV-11) fails to close, thereby preventing overfilling of the day tank. These solenoid valves also have an active safety function in the open position to permit filling of the associated Diesel Fuel Tanks.

REQUIRED TEST:

OMa Part 10, 4.2.1 requires Category A and B power operated valves to be individually full stroke exercised and stroked timed nominally every 3 months, except as provided by paragraphs 4.2.1.2, 4.2.1.5, and 4.2.1.7.

DGDO-SOV-SSV5028, and 5029 also require testing to the fail safe open position on loss of actuation power per OMa Part 10, 4.2.1.6.

OMa Part 10, 4.3.2.1 requires check valves to be individually exercised nominally every 3 months, except as provided by paragraphs 4.3.2.2, 4.3.2.3, 4.3.2.4, and 4.3.2.5.

AUGMENTED RELIEF REQUEST ARV-01 (Continued)

BASIS FOR RELIEF: Float valves, DGDO-FOV-FLTV-10/11 are encapsulated float operated valves and are not provided with remote position indication or remote manual switching capability. DGDO-SOV-SSV 5028, 5029 are encapsulated solenoid valves and are not provided with remote position indication or remote manual switches. Other positive means such as flow or pressure indication are not provided in the piping circuit. The design of these valves prohibits visual verification of the physical position of the valve operator, stem, or internal components. The float valve closes at 54 inches. Should the float valve fail to close, the solenoid valve will close at 58.5 inches. Modification of the system to verify individual valve exercising capability is not practicable nor cost beneficial since no commensurate increase in safety would be derived. These valves are not within the scope of ASME Section XI. NRC approval of this relief request is not required.

ALTERNATE TEST: Each diesel generator is started manually every month to demonstrate operational readiness. During this test the diesel fuel oil day tank level alarms and transfer pump control level switches are functionally tested. The operability of the float valves and solenoid valves shall be verified open by observing restoration of day tank level. The float valves shall be verified closed by the lack of continuous rise in level once proper volume is achieved. The sound of solenoid movement shall be used to verify valve movement to the closed position.

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AUGMENTED RELIEF REQUEST ARV-02

VALVE: DGSA-SOV-SPV1, DGSA-SOV-SPV2, DGSA-SOV-SPV3, DGSA-SOV-SPV4, DGSA-AOV-AV5, DGSA-AOV-AV6, DGSA-AOV-AV7, and DGSA-AOV-AV8

CLASS: A CATEGORY: B

FUNCTION: Diesel Generator Air Start Valves direct starting air to the emergency diesel generators.

REQUIRED TEST: OMa Part 10, 4.2.1 requires Category A and B power operated valves to be individually full stroke exercised and stroked timed nominally every 3 months, except as provided by paragraphs 4.2.1.2, 4.2.1.5, and 4.2.1.7.

BASIS FOR RELIEF: These valves are mounted on the diesel generator skid and are integral to the operation of the diesels. They are totally enclosed with no means to visually observe stem movement. Additionally, these valves are not provided with remote manual switches or position indicating lights. The control circuitry and design configuration of these valves is not conducive to performing valve stroke timing. Modification to the system in order to facilitate valve stroke timing is not practicable nor cost beneficial since no commensurate increase in safety would be derived. These valves are not within the scope of ASME Section XI. NRC approval of this relief request is not required.

ALTERNATE TEST: Starting the respective standby emergency diesel generator using the air start system with the opposing air start header valved out of service, will be adequate to demonstrate proper operation of the air start valves. Therefore, the air start valves will be tested when the diesel generators are tested. Satisfactory diesel testing will satisfy valve exercising requirements. Each air start valve train will be exercised during this testing at least quarterly.

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AUGMENTED RELIEF REQUEST ARV-03

VALVE: DG-AOV-MB1 and DG-AOV-MB2

CLASS: A CATEGORY: B

FUNCTION: Diesel Generator Muffler Bypass Valves.

REQUIRED TEST: OMa Part 10, 4.2.1 requires Category A and B power operated valves to be individually full stroke exercised and stroked timed nominally every 3 months, except as provided by paragraphs 4.2.1.2, 4.2.1.5, and 4.2.1.7.

BASIS FOR RELIEF: These valves are integral to the operation of the diesels. These valves are actuated by a pressure switch off the deisel exhaust. The are not provided with remote manual switches or position indicating lights. The control circuitry and design configuration of these valves is not conducive to performing valve stroke timing. Modification to the system in order to facilitate valve stroke timing is not practicable nor cost beneficial since no commensurate increase in safety would be derived. These valves are not within the scope of ASME Section XI. NRC approval of this relief request is not required.

ALTERNATE TEST: A pressure signal will be supplied to actuate the bypass valves. Each muffler bypass valve will be exercised open and fail safe tested at least quarterly. Stroke timing will not be performed.