CALVERT CLIFFS NUCLEAR POWER PLANT

BALTIMORE GAS & ELECTRIC COMPANY

ASME SECTION XI

PUMP AND VALVE TEST PROGRAMS - UNITS 1 AND 2

SECOND TEN-YEAR INTERVAL

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INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES CALVERT CLIFFS NUCLEAR POWER PLANT UNITS 1 AND 2

1.0 INTRODUCTION

Under the provisions of 10CFR50.55a, inservice testing of safety related pumps and valves will be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda. As specified in 10CFR50.55a(b), the effective edition of Section XI with regard to this program is the 1983 Edition through the Summer 1983 Addenda. This program identifies the pump and valve inservice testing that will be performed at the Calvert Cliffs Nuclear Power Plant Units 1 and 2 to comply with the requirements of 10CFR50.55a. This program applies to the Second Ten Year Inservice Inspection Interval beginning April 1, 1987.

1.1 Relationship with Technical Specifications

The ASME Section XI Pump and Valve Test Program is required by Calvert Cliffs Nuclear Power Plant Technical Specification 4.0.5 as well as 10CFR50. Based on Technical Specification requirements, in the event of any conflicts between ASME Section XI requirements and the requirements of Technical Specifications, the plant Technical Specifications shall govern. Since Calvert Cliffs may be updating its Refueling Cycle to 24 months, ASME Section XI requirements tied to the time interval of 2 years, will be tested during each refueling.

1.2 Qualification of Test Personnel

Personnel performing pump and valve testing per ASME Section XI Subsections IWP and IWV will be qualified in accordance with the Calvert Cliffs Quality Assurance Program. This is in keeping with the requirements of ASME Section XI, as clarified by ASME Code Interpretation XI-1-82-06R.

2.0 PUMP INSERVICE TESTING PROGRAM

The pump test program shall be conducted in accordance with Subsection IWP of Section XI of the 1983 Edition of the ASME Boiler and Pressure Vessel Code through Summer 1983 Addenda, except for relief requested under the provisions of 10CFR50.55a(g) (5) (iii). Appendix A details the inservice testing program for all safety related pumps at Calvert Cliffs Nuclear Power Plant Units 1 and 2. These tables list each pump required Nuclear Power Plant Units 1 and 2. These tables list each pump required to be tested in accordance with IWP-1100 of Section XI of the Code. Each parameter to be measured, as well as specific relief requests concerning non-conformance, are also listed.

2.1 Pump Bearing Temperature/Vibration Measurement

Subsection IWP-3300 requires pump bearing temperatures be measured at least once each year. Industry experience demonstrates that bearing temperatures typically rise only minutes prior to failure. Any bearing failure predicted by a yearly recording of bearing temperature would be a random event and thus, yearly measurement of bearing temperatures does not increase the level of confidence in component reliability. The expense of adding the additional testing both in component degradation and man-hours expended is, therefore, not justified.

Further, IWP-3500(b) specifies that pumps be run until bearing temperatures stabilize as determined by three measurements at 10 minute intervals. Clearly the pump would have to run in excess of one-half hour to obtain these readings. The pump degradation caused by this requirement does not justify the very limited assurance it might provide.

Vibration data taken on at least a quarterly basis will be used to define pump mechanical condition. This request for relief should apply for all bearings presently required to be temperature tested.

2.2 Pump Testing Ranges

Calvert Cliffs will revise the upper boundary for Alert and Action ranges of differential pressure and flow for selected pumps. This position reflects the approved relief request from the first ten year program and meets with ASME Code Requirements per IWP-3210. Pump performance will be adequately evaluated using upper differential pressure or flow range limits of 1.05 and 1.07 (times delta P/flow reference, as appropriate) for the Alert and Action ranges respectively. Normal operation of the pumps in these ranges will still meet their required safety function. As identified in the first ten year testing program NRC safety evaluation, "Small positive increases in observed delta P are most likely not significant with regard to centrifugal pumps. More over, such factors as instrument uncertainty, water density, and instrument error might lead to spurious actuation of alert and action ranges." Based on the above, these reduced range limits are felt to meet the intent and requirements of ASME Section XI.

2.3 Emergency Diesel Systems

The inservice operability testing of pumps (and valves) associated with the Emergency Diesels, including the Diesel Oil Transfer System, are excluded from the enclosed test programs. These components are considered an integral part of the Emergency Diesel System and are functionally tested at least monthly per Technical Specifications. Thus, the functional operability testing of the pumps and valves is performed at a frequency greater than that required by Section XI for either pumps or valves. Additionally, the failure of a pump or valve to perform its intended function will be identified by the failure of the associated Emergency Diesel to

meet its functional requirements. Calvert Cliffs Technical Specifications and plant maintenance schedules together provide assurance of operability as well as information concerning equipment degradation over time.

2.4 Multiple Reference Values

Based on plant operating conditions and pump testing hydrau ic circuit, Calvert Cliffs may choose to generate multiple sets of reference values (per IWP-3112) in order to more fully describe pum hydraulic condition. Each set of pump reference values will meet all appropriate requirements of IWP-3000.

3.0 VALVE INSERVICE TESTING PROGRAM

The valve test program for Calvert Cliffs Nuclear Power Flant Units 1 and 2 shall be conducted in accordance with Subsection IWV of Section XI of the 1983 Edition of the ASME Boiler and Pressure Vessel Code through the Summer 1983 Addenda, except for relief requested under the provisions of 10CFR50.55a(g) (5) (iii). The valve test program for Unit 1 is included as Appendix C, and Unit 2 is included as Appendix D. The codes and symbols used to abbreviate the tables in Appendices C and D are explained in Appendix B.

3.1 Category A Valves

Valve for which seat leakage 1 important may generally be classified as pressure isolation valves (PSIV), containment isolation valves (CIV), or both pressure nd containment isolation valves. Containment isolation valves falling within the scope of ASME Section XI are tested in accordance with the Section XI requirements of IWV-3410, Category A, with the exception of the seat leakage tests (IWV-3420). The seat leakage testing performed on these valves meets the intent of Section XI, but the actual test procedures shall be conducted in accordance with the 10CFR50, Appendix J, Type C, CIV test program. For valves performing a containment isolation function, individual valve leak rates are not in themselves significant. The only pertinent leak rate criteria for CIV's is that the total leak rate for all penetrations and valves be less than 0.60 L. The Calvert Cliffs Nuclear Power Plant Units 1 and 2 were designed to perform the Appendix J, Type C cests, not the individua? Category A leak test (i.e., some penetration test connections test more than one valve at a time). Accordingly, all CIV seat leak testing shall be performed in accordance with the requirements of 10CFR50, Appendix J, Type C, in lieu of the Category A requirements of Section XI.

All CIVs have been categorized as A-Active or A-Passive, and will, as a minimum, be leak tested per 10CFR50, Appendix J. Passive valves will in general have no other testing performed. Valves 1-CVC-103 and 1-CVC-105 in the Reactor Coolant Letdown Line (P&ID 0.1-73) have been analyzed as passively open, however, a leak test will be performed per Appendix J at refueling intervals. Valves 1-CV-518 and 1-CV-519 are also leak tested, even though the valves fail open upon loss of power. A similar situation exists on Unit 2.

3.2 Pressure Isolation Valves

The purpose of the Pressure System Isolation Valves (PSIV's) is to reduce the possibility of an inter-system LOCA which would pressurize low pressure systems to pressures exceeding their design limits.

At Calvert Cliffs Nuclear Power Plant Units 1 and 2, the following PSIV's are leak tested:

SI-118 (11A (21B) SI header check)
SI-128 (11B (21A) SI header check)
SI-138 (12A (22B) SI header check)
SI-148 (12B (22A) SI header check)
SI-217 (11A (21B) loop inlet check)
SI-227 (11B (21A) loop inlet check)
SI-237 (12A (22B) loop inlet check)
SI-247 (12B (22A) loop inlet check)
SI-245 (11A (21B) SI tank outlet check)
SI-225 (11B (21A) SI tank outlet check)
SI-235 (12A (22B) SI tank outlet check)
SI-245 (12B (22A) SI tank outlet check)

Valves SI-118, SI-128, SI-138, and SI-148 isolate the Safety Injection Headers (LPSI and HPSI) from the Safety Injection Tank discharges. These valves are individually leak tested in accordance with IWV-3420.

For the loop inlet check valves, there is a pressure indicator that alarms on high pressure between adjacent loop inlet and tank cutlet valves displayed in the control room. Using this indication, it is possible to determine the pressure between the valves (for example, SI-215 and SI-217). Thus, should reactor coolant loop inlet check valve SI-217 fail, the pressure increase between SI-217 and SI-215 would be noted in the control room. Procedures require the operator take positive measures to assess check valve leakage following receipt of an alarm. See also Relief Request SI-4.

For the tank outlet valves, these valves are leak tested by pressurizing the downstream side of the valve and then determining the valve leakage by noting the change in SI Tank level.

Calvert Cliffs feels that these tests meet the intent of leak testing per IWV-3420, and the above positions were approved by the NRC during the first ten year pump and valve program.

3.3 Thermal Relief Valves

Many safety related system, particularly those with heat exchangers, have been provided with relief valves. These relief valves are thermal relief valves (TRV) of small capacity intended to relieve pressure due to thermal expansion of fluid in a "bottl2d-up" condition. Experience has shown that failure of these valves will not result in failure of a system to fulfill its safety related function. Thus, thermal relief valves are not considered to perform a function important to safety and such valves have not been included in the program.

3.4 Cold Shutdown Testing

Where the test frequency in Appendices C and D is specified as "C" (Cold Shutdown) the following definition for cold shutdown testing applies:

For unplanned or forced outages, testing will commence not later than 48 hours after cold shutdown (Mode 5) is achieved. Completion of all valve testing is not a prerequisite to subsequent startup. Any testing not completed at one cold shutdown will be performed during subsequent cold shutdowns (excluding refuelings) to meet as close as practical the specified Section XI testing frequency. In planned outages where all required testing can be completed to the above start time may be taken. However, a. esting must be completed consistent with Section XI required testing can be completed to startup.

Appendix E specifically identifies those valves tested during Cold Shutdowns, with operational justifications for each. Valves tested on a Cold Shutdown frequency may be tested in Modes 2, 3, 4, or 5 as appropriate for each specific valve (i.e., some valves may be tested during outage recovery, etc.).

3.5 Part-Stroke Testing

The goal of the Calvert Cliffs Inservice Program for valves is to perform full-stroke tests of all appropriate valves. With the exception of those valves for which specific relations been requested, all valves will be full stroke tested whene er possible.

Part-stroke testing of power-operated valves is generally not possible, due to valve logic circuitry which only allows full-open or full-closed valve movement. Moreover, the intent of Section XI is to assess valve operability through inservice testing; while a part-stroke exercise does provide some measure of confidence in valve operability, it does not provide assurance of valve safety-related function. In addition, a part-stroke of a power-operated valve has the possibility, through human or mechanical error, to cause adverse plant consequences (isolation of cooling water, plant transients, etc.) via an inadvertent full-stroke. Based on the above, Calvert Cliffs will full-stroke

test power-operated valves in accordance with the Valve Test Program (with associated relief requests as appropriate).

Check valves whose safety function is to open will be full-stroked when possible. Since disk position is not siways observable, the NRC staff has stated that "verification" of the plant's safety analymis flow rate through the check valve would be an adequate demonstration of full stroke requirement. Any flow rate less than design will be considered part-stroke exercising unless it can be shown that the check valve's disk position at the lower flow rate would be equivalent to or greater than the design flow rate through Based on this position, check valves within the scope of this test program will be at least part-stroke exercised whenever any flow is passed through the valve. Check valves are considered to be full-stroke tested on at least the Code-required frequency, unless identified by Relief Request. Check valves for which a full-stroke exe-cise can not be confirmed, therefore, will be identified by a appropriate relief request. Calvert Cliffs feels that this polition meats the intent of IWV-3522(b) regarding exercising of check valves.

3.6 Fail-Safe Actuators

All those velves which have a fail-safe actuator are exercised normally using that actuator. Thus, the fail-safe actuator is regularly tested when the valve is tested.

3.7 Valve Position Indicator Verification

Verification of valve position indicator accuracy will be performed in accordance with Section XI IWV-3300. The verification of the valve position of solenoid operated valves may be done by observation of appropriate system parameter such as pressure or flow changes.

3.3 Passive Valves

These valves, which have no Section XI operability testing requirements, are valves in safety-related system which are not required to change position in order to accomplish their required safety-function. Calvert Cliffs has categorized valves as passive which are administratively locked-open or locked-closed in their safety-related position. Due to the lack of testing requirements, B-Passive valves have been excluded from Appendices C and D.

3.9 Stroke Times

The valve stroke view entifies Appendices C and D may change due to modification stenance, ver plant lifetime. Calvert Cliffs will change the requirements of A standard through the requirement of A standard through the requirement

3.10 Shutdown Cooling Valves

Power-operated valves used for Shutdown Cooling (SDC) function will be tested in accordance with ASME Section XI. Manual valves in the system that require a position change to align the systems for SDC system that require a position change to align the systems for SDC soperation are considered to be functionally tested whenever SDC is operation are considered to be functionally tested whenever SDC is in use (at least during each Cold Shutdown). Based on this functional test, these manual valve have been excluded from the associated Valve Test Program Tables.

3.11 Post-Maintenance Testing

Valves tested on a Cold Shutdown frequency cannot be tested during power operation due to system limitations, personnel safety, etc. Therefore, for minor maintenance on such valves during power operation which does not remove the valve from service, valve post-maintenance testing will be performed at the earliest available opportunity, i.e., in Cold Shutdown

3.12 Relief Valve Testing

Calvert Cliffs will perform all Relief Valve Testing using POSRC-approved procedures under the requirements of the Technical Specification Surveillance Testing Program. This level of administrative control, including the requirements for Quality Assurance/Control per 10CFR50 Appendix B, ensures the overall test quality is maintained. Therefore, Calvert Cliffs feels that the intent of PTC-25.3 for relief valve testing regarding test personnel qualifications and test group makeup, are met. In addition, the test personnel are trained and qualified in accordance with Calvert Cliffs Administrative Requirements for Surveillance Test Personnel. Therefore, the requirement of PTC 25.3 to have the test witnessed by a degreed engineer is not necessary. However, all test results of relief valve testing are reviewed by appropriate supervisory and engineering personnel prior to test acceptance. See Relief Request 4-3 for Units 1 & 2.

REFERENCES

- o 1983 Edition with Addenda through Summer 1983 ASME Boiler and Pressure Vessel Code - Section XI: Rules for Inservice Inspection of Nuclear Power Plant Components
- o Calvert Cliffs Nuclear Power Plant Units 1 & 2; Piping and Instrument Diagrams
- O Calvert Cliffs Nuclear Power Plant Units 1 & 2; Operations Drawings (see Appendix F)
- o Calvert Cliffs Nuclear Power Plant Units 1 & 2; Technical Specifications
- o CCI-104H, Appendix 104.60 Attachment (4), Pages 1 through 28 ASME Section XI Pump and Valve List
- o STP-M-571-1 (Revision 6) of LLRT-1, Pages 1 through 13
- o GTP-M-571-2 (Revision 13) of LLRT-1, Pages 218 through 230
- O Unit 1 Pump and Valve Inservice Test Program, 1st Ten Year Interval (see Appendix G)
- O Unit 2 Pump and Valve Inservice Test Program, 1st Ten Year Interval (see Appendix G)
- o M-601 (Proposer Revision 26) Piping Class Summary Sheets March 3, 1986
- O Calvert Cliffs Nuclear Power Plant Units 1 & 2; Inservice Inspection and Pump and Valve Programs Request for Rollief from ASME Code Section XI Requirements Determined to be Impractical August 30, 1982 (see Appendix H)
- o Safety Evaluation and Federal Register Notice December 22, 1982 (see Appendix H)
- o Safety Evaluation Granting Relief From ASME Code Section XI Inservice Testing Requirements - February 2, 1982 (see Appendix H)

APPENDIX A

CALVERT CLIFFS NUCLEAR POWER PLANT UNITS 1 AND 2

PUMP INSERVICE TESTING PROGRAM

APPENDIX A

CALVERT CLIFFS NUCLEAR POWER PLANT UNITS 1 AND 2 PUMP INSERVICE TESTING PROGRAM

Summary of Information Provided

The pump test table provides the following information on testing requirements:

- o Pump Name/No.
- o ASME Class
- o Drawing on which the pump is depicted
- o Inlet Pressure
- o Differential Pressure
- o Flow Rate
- o Vibration Amplitude
- o Observation of Lube Oil Level
- o Bearing Temperature
- o Speed

Specific Relief Requests are identified as notes in the Tables, and immediately follow each Unit's Table. Test frequency for all parameters is identified by a "Q" for Quarterly, unless revised by Relief Request.

CALVERT CLIFFS NUCLEAR POWER PLANT - UNIT 1 REQUIRED PUMP TESTS

oump Name/Number	ASME Class	P&ID No. (OM-)	Inlet Pressure	Differential Pressure	Flowrate	Vibration	Lubricant	Bearing Temperature	Speed ^a	Remarks
ligh Pressure SI/11	2	74	Q	Q	7	Q	Q	3	NA	RR6
	2	74	Q	Q	. 7	Q	Q	3	NA	RR6
ligh pressure SI/12		74	0	Q	7	Q	Q	3	NA	RR6
High Pressure SI/13	2			Q	7	Q	Q	3	NA	ĸR6
Low Pressure 8 /11	2	74	Q		7	Q	Q	3	NA	RR6
Low Pressure SI/12	2	74	Q	Q				3	NA	RR6
Containment Spray/11	2	74	Q	Q	7	Q	Q	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	NA	RR6
Containment Spray/12	2	74	Q	Q	7	Q	Q	3		
Boric Acid/11	2	73	Q	Q	Q	Q	Q	3	NA	RR6
Boric Acid/12	2	73	Q	Q	Q	Q	Q	3	NA	RR6
Reactor Coolant	2	73	4	5	Q	Q	Q	3	NA	RR6
Charging/11		,,,			18				N. 1	RR6
Reactor Coolant Charging/12	2	73	4	5	Q	Q	Q	3	NA	KKO
Reactor Coolant Charging/13	2	73	4	5	Q	Q	Q	3	NA	RR6

e - Other than those identified for testing, all pumps are s chronous/induction wound motors

Money Money	ASME	No.	Inlet	Differential	Flowrate	Vibration	Lubricant	Bearing Temperature	Speed	Remarks
rump vame/vamos	6	67	1	0	2	0	2	3	NA	KR6
Sait water/ 11		07		0	0	0	2	3	NA	RR6
Salt Water/12	0 0	47		0	~	0	2	3	NA	RR6
Salt Water/13	2	17	. 0	0	o	0	0	3	NA	RR6
Sarvice Water/11	2	07	, 0	0	0	0	Ö	3	NA	RR6
Service Water/12	0	0#	,	,		20	0	3	NA	RR6
Service Water/13	3	97	0	o	9	7	,			7.600
The Contine	8	51	0	0	0	0	2	3	VA	RK6
of cohent coorms/ 11		:	0	0	0	0	2	0	NA	RR6
Component Cooling/12	75	21	7				6	6	NA	RR6
Component Cooling/13	10	51	0	0	o	9	,			700
Aux Foodwater/11	2	800	0	o	7	0	0	m	0	ERO
	2	800	0	0	7	0	0	3	a	RP.6
Aux. reedwatel/12					7	0	0	3	NA	RR6
Aux. Feedwater/13	2	800	0	7						

System: Circulating Salt Water Cooling

P&ID: 0M-49

Pumps: Salt Water Pumps Nos. 11, 12, and 13

Class:

Impractical Test Requirement: IWP-3100 requirement to measure inlet pressure before startup and during test.

Basis for Relief: Salt water pump suction pressure taps do not exist. The pumps take suction directly from the intake bay through two redundant suction canals. Pump suction is situated seven feet below Chesapeake Bay mean low water level; therefore, pump suction is a function of bay water level. Chesapeake Bay mean level is not considered to change during test performance.

Alternative Testing: Bay water level is recorded once during the test and used to compute pump suction pressure.

Circulating Salt Water Cooling and Component Cooling Water System:

OM-49 and OM-51 P&ID:

Salt Water Pumps Nos. 11, 12, and 13 and Component Cooling Water Pumps:

Pumps Nos. 11, 12, and 13

Class:

IWP-3100 requirement to observe proper impractical Test Requirement:

lubricant level or pressure.

The salt water pumps and component cooling pumps have Basis for Relief:

grease lubricated bearings. Therefore, observation of

lubricant level or pressure is not appropriate.

None. The bearings are greased in accordance with Alternative Testing: the manufacturer's instructions on a regular

preventative maintenance schedule.

Chemical and Volume Control (Lath Charging and Boric Acid), Low Systems:

Pressure Safety Injection, High Pressure Safety Injection, Containment Spray, Salt Water Cooling, Component Cooling, Auxiliary

Feedwater, Service Water

Various P&ID's:

All Safety Related Pumps Pumps:

2/3 Class:

Impractical Test Requirement:

IWP-3100 requirement to measure bearing temperature, and IWP-3000 requirements to measure vibration amplitude.

Basis for Relief:

The referenced code requires bearing temperature to be recorded annually. It has been demonstrated by experience that bearing temperature rise occurs only minutes prior to bearing failure. Therefore, the detection of possible bearing failure by a yearly temperature measurement is extremely unlikely. It requires at least one half hour of pump operation to achieve stable bearing temperatures. The small probability of detecting bearing failure by temperature measurement does not justify the additional pump operating time required to obtain the measurements. As an alternative, the pump vibration testing will be expanded from one to multiple readings in two orthogonal directions.

These pumps are part of the Calvert Cliffs Vibration Testing Program, and as such, are tested at least on a quarterly basis utilizing a vibration analysis system. The results of this rigorous analysis provide much more definite information regarding pump mechanical condition than do bearing temperature measurements. Based upon this, CCNPP does not require annual bearing temperature measurements per the ASME Section XI Code in order to assess pump mechanical condition.

Alternative Testing:

Results of the regular vibration evaluation will be utilized to assess pump mechanical condition at least Results of this calculation will be maintained as a part of the Pump Record.

System: Chemical and Volume Control

P&ID: 0M-73

Pumps: Reactor Coolant Charging Pumps Nos. 11, 12, and 13

Class: 2

Impractical Test Requirement: IWP-3100 requirement to measure pump suction pressure.

Basis for Relief:

The reactor coolant charging pumps normally take their suction from the outlet of the volume control tank. The volume control tank is equipped with an automatic make-up system to prevent low level operation. If volume control ank level should decrease, a low level alarm is provided to alert the operator to the need for corrective action. If volume control tank level continues to decrease, a low-low level alarm is actuated and charging pump suction is automatically shifted to the refueling water tank. Should the charging pumps be starved for flow as the result of a piping rupture or inadvertent valve closure, a decreasing flow rate would be observed and the pump would trip on low suction pressure.

Alternative Testing:

None. The system design discussed above provides adequate indication of and protection from a low suction pressure condition.

System: Chemical and Volume Control

P&ID: 0M-73

Pumps: Reactor Coolant Charging Pumps Nos. 11, 12, and 13

Class:

Impractical Test Requirement: IWP-3100 requirement to measure pump

differential pressure.

Basis for Relief: Due to pump design, the pump differential pressure is not indicative of pump performance. Positive displacement pump differential pressure varies across a wide spectrum, based on system conditions, without a change in flowrate.

Alternative Testing: Pump flowrate will be measured and used to assess pump hydraulic condition in lieu of pump differential pressure.

As Required, Unit 1 System:

Where Applicable P&ID:

As Required rumps:

Impractical Test Requirement: Table IWP-4110-1 requires the instrument

accuracy of the flow instrument used in testing

to be + 2% of full scale.

Basis for Relief:

Many of the pumps within the scope of IWP are tested by using ultrascnic or annubar flow meters. Due to the timeframe of construction for CCNPP, specific test flow monitoring equipment was not part of the original design basis. To install instrumentation meeting the requirement of Table IWP-4110-1 would require extensive piping re-configuration of most systems. In addition, to improve the accuracy of existing methods would result in extreme expense for continuous vendor or national labs re-calibration of instruments between every test. Current experience with the existing instrumentation provides confidence that the proposed accuracy will be adequate to determine if a pump is degrading.

Alternative Requirements:

All flow measuring instruments will meet a loop accuracy of + 4% of full scale accuracy. The repeatability of the instruments will be within the requirement of Table IWP-4110-1.

Systems: Auxiliary Feedwater (AFW)/High Pressure Safety Injection (HPSI)/Low

Pressure Safety Injection (LPSI)/Containment Spray (CS).

M-800/74 P&IDs:

AFW: 11, 12, and 13 Pumps:

HPSI; 11, 12, and 13 LPSI; 11 and 12 CS; 11 and 12

2 and 3 Class:

Impractical Test Requirement: Table IWP-3100-2 requires that flow be monitored and maintained within a set allowable range.

Basis for Relief:

These pumps are tested in a mini-recirculation flow loop due to the impracticability of full flow testing during power operation. The AFW, HPSI, LPSI, and CS Pumps, if full flow tested, would result in thermal shock to equipment nozzles or deluge of equipment in containment with borated water. A recirculation loop provides a relatively fixed resistance flow path. Tank level does not have a significant impact on recirculation flow for any of these pumps. Each of the pumps has a relatively flat hydraulic characteristic curve within the recirculation flow range. Monitoring flow and checking against an allowable range provides no meaningful input to pump performance.

Alternative Testing:

Quarterly testing will be performed without evaluating flow. At each refueling outage a large flow test will be conducted with flowrate being evaluated along with all other pump vibration and hydraulic performance indicators.

CALVERT CLIFFS NUCLEAR POWER PLANT - UNIT 2 REQUIRED PUMP TESTS

	No.	Inlet Pressure	Differential Pressure	Fiowrate	Vibration	Lubricant		Speed	Remarks
			0	7	Q	Q	3	NA	RR-6
2	462	Q				0	3	NA	RR-6
2	462	Q	Q	7	Q	4		*14	RK-6
	142	0	Q	7	Q	Q	3	NA	KK-0
2	462			7	0	Q	3	NA	RR-6
2	462	Q	Q				3	NA	RR-6
7	462	Q	Q	7	Q	Q	3		
			0	7	Q	Q	3	NA	RR-6
2	462	· · ·				0	3	NA.	RR-6
2	462	Q	Q	7				NA	RR-6
	461	0	Q	Q	Q	Q	3	NA	
-			-	0	0	Q	3	NA	RR-6
2	461	Q	Q						
	461	4	5	Q	Q	Q	3	NA	RR-6
Z	401								nn c
2	461	4	. 5	Q	Q	Q	3	NA	RR-6
	461	4	5	Q	Q	4	3	NA	RR-6
	2 2 2 2 2 2 2 2	Class (OM-) 2 462 2 462 2 462 2 462 2 462 2 462 2 461 2 461 2 461	ACME No. Inlet Class (OM-) Pressure 2 462 Q 2 461 Q 2 461 Q 2 461 4	ACME No. Inlet Differential Pressure 2 462 Q Q 2 461 Q Q 2 461 Q Q 2 461 4 5	ACME No. Inlet Differential Pressure Flowrate 2 462 Q Q 7 2 461 Q Q Q 7 2 461 Q Q Q 7 2 461 Q Q Q Q 2 461 4 5 Q 2 461 4 5 Q	ACME No. Inlet Class (OM-) Pressure Pressure Flowrate Vibration 2 462 Q Q 7 Q 2 461 Q Q Q 7 Q 2 461 Q Q Q Q 3 Q Q Q 461 Q Q Q Q 461 Q Q Q Q 461 Q Q Q Q	ASME No. Inlet Class (OM-) Pressure Pressure Flowrate Vibration Lubricant 2 462 Q Q 7 Q Q 2 461 Q Q Q Q Q 2 461 Q Q Q Q Q Q 2 461 Q Q Q Q Q Q 2 461 Q Q Q Q Q Q 3 61 Q Q Q Q Q Q Q 4 61 Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q	ASME Class (OM-) Pressure Pressure Pressure Fiowrate Vibration Lubricant Temperature 2 462 Q Q 7 Q 3 2 462 Q Q 7 Q Q 3 2 461 Q Q Q Q Q Q 3 2 461 Q Q Q Q Q Q 3 2 461 Q Q Q Q Q 3	ACME Class (OM-) Pressure Pressure Pressure Fiowrate Vibration Lubricant Temperature Speed 2

a - Other than those identified for testing, all pumps are synchronous/induction wound motors

CALVERT CLIFFS NOCLEAR POWER PLANT - UNIT 2 REQUIRED PUMP TESTS (CONT.)

V. Washer	ASME Class	P&ID No. (OM-)	Inlet Pressure	Differential Pressure	Flowrate	Vibration	Lubricant	Bearing Temperature	Speed	Remarks
ump Name/Number		450	1	Q	Q	Q	2	3	NA	RR-6
alt Water/21	3				Q	Q		3	NA	RR-6
Salt Water/22	3	450	1	Q		Q	2	3	NA	ER-6
Salt Water/23	3	450	1	Q	Q			3	NA	RR-6
Service Water/21	3	47	Q	Q	Q	Q	Q			
Service Water/22	3	47	Q	Q	Q	Q	Q	3	NA	RR-6
		47	Q	Q	Q	Q	Q	3	NA	RR-6
Service Water/23	3				Q	Q	2	3	NA	RR-6
Component Cooling/21	3	47	Q	Q			2	3	NA	RR-6
Component Cooling/22	3	452	Q	Q	Q	Q			NA	RR-6
Component Cooling/23	3	452	Q	Q	Q	Q	2	3		
	2	801	Q	Q	7	Q	Q	3	Q	RR-6
Aux. Feedwater/21			Q	Q	7	Q	Q	3	Q	RR-6
Aux. Feedwater/22	2	801			7	Q	Q	3	NA	RR-6
Aux. Feedwater/23	2	801	C	Q		*				

System: Circulating Salt Water Cooling

P&ID: 0M-450

Pumps: Salt Water Pumps Nos. 21, 22, and 23

Class:

Impractical Test Requirement: - IWP-3100 requirement to measure inlet pressure before pump start and during test.

Basis for Relief: Salt water pump saction pressure taps do not exist. The pumps take suction directly from the intake bay through two redundant suction canals. Pump suction is situated seven feet below Chesapeake Bay mean low water level; therefore, pump suction is a function of bay water level. Chesapeake Bay water level is not considered to change during the test.

Alternative Testing: Bay water level is recorded once during the test and used to compute pump suction pressure.

Circulating Salt Water Cooling and Component Cooling Water System:

OM-450 and OM-452 P&ID:

Salt Water Pumps No... 21, 22, and 23 and Component Cooling Water Pumps:

Pumps Nos. 21, 22, and 23

Class:

IWP-3100 requirement to observe proper Impractical Test Requirement:

lubricant level or pressure.

The salt water pumps and component cooling pumps have Basis for Relief:

grease lubricated bearings. Therefore, observation of lubricant level or pressure is not appropriate.

None. The bearings are greased in accordance with Alternative Testing:

the manufacturer's instructions on a regula-

preventative maintenance schedule.

Chemical and Volume Control (both Charging and Boric Acid), Low Systems:

Pressure Safety Injection, High Pressure Safety Injection, Containment Spray, Salt Water Cooling, Component Cooling, Auxiliary

Faedwater, Service Wathr

Various P&ID's:

All Safety Related Pumps Pur, s:

2/3 Class:

IWP-3100 requirement to measure bearing Impractical Test Requirement:

temperature.

Basis for Relief:

The referenced code requires bearing temperature to be recorded annually. it has been demonstrated by experience that bearing temperature rise occurs only minutes prior to bearing failure. Therefore, the detection of possible bearing failure by a yearly temporature measurement is extremely unlikely. It requires at least one half hour of pump operation to achieve stable bearing temperatures. The small probability of detecting bearing failure by temperature measurement does not justify the additional pump operating time required to obtain the measurements. As an alternative, the pump vibration testing will be expanded from one to multiple readings in two orthogonal directions.

These pumps are part of the Calvert Cliffs Vibration Testing Program, and as such, are tested at least on a quarterly basis atilizing a vibration analysis system. The results of this rigorous analysis provide much more definite information regarding pump mechanical condition than do bearing temperature measurements. Based upon this, CCNPP does not require annual bearing temperature measurements per the ASME Section XI Code in order to assess pump mechanical condition.

Alternative Testing:

Results of the regular vibration analysis evaluation will be utilized to assess pump mechanical condition at least quarterly. Results of this evaluation will be maintained as a part of the Prmp Record.

System: Chemical and Volume Control

P&ID: 0M-461

Pumps: Reactor Coolant Charging Pumps Nos. 21, 22, and 23

Class: 2

Impractical Test Requirement: IWP-3100 requirement to measure pump suction pressure

Basis for Relief:

The reactor coolant charging pumps normally take their suction from the outlet of the volume control tank. The volume control tank is equipped with an automatic make-up system to prevent low level operation. If volume control tank level should decrease, a low level alarm is provided to alert the operator to the need for corrective action. If volume control tank level continues to decrease, a low-low level alarm is actuated and charging pump suction is automatically shifted to the refueling water tank. Should the charging pumps be starved for flow as the result of a piping rupture or inadvertent valve closure, a decreasing flow rate would be observed and the pump would trip on low suction pressure.

Alternative Testing:

None. The system design discussed above provides adequate indication of and protection from a low suction pressure condition.

System: Chemical and Volume Control

P&ID: 0M-461

Pumps: Reactor Coolant Charging Pumps Nos. 21, 22, and 23

Class: 2

Impractical Test Requirement: IWP-3100 requirement to measure pump differential pressure.

Basis for Relief: Due to pump design, the pump differential pressure is not indicative of pump performance. Positive displacement pump differential pressure varies across a wide spectrum based on system condition, without a change in flowrate.

Alternative Testing: Pump flowrate will be measured and used to assess pump hydraulic condition in lieu of pump differential pressure.

As Required, Unit 2 System:

Where Applicable P&ID:

As Required Pumps:

Impractical Test Requirement: Table IWP-4110-1 requires the instrument

accuracy of the flow instrument used in testing

to be ± 2% of full shale.

Basis for Relief:

Many of the pumps within the scope of IWP are tested by using ultrasonic or annubar flow meters. Due to the timeframe of construction for CCNPP, specific test flow monitoring equipment was not part of the original design basis. To install instrumentation meeting the requirement of Table IWP-4110-1 would require extensive piping re-configuration of most systems. In addition, to improve the accuracy of existing methods would result in extreme expense for continuous vendor or national labs re-calibration of instruments between every test. Current experience with the existing instrumentation provides confidence that the proposed accuracy will be adequate to determine if & pump is degrading.

Alternative Requirement: All flow measuring instruments will meet a loop accuracy of + 4% of full scale accuracy. repeatability of the instruments will be within the requirement c Table IWP-4110-1.

Auxiliary Feedwater (AFW)/High Pressure Safety Injection (HPSI)/Low

Pressure Safety Injection (LPSI)/Containment Spray (CS).

M-801/462 P&IDs:

AFW; 21, 22, and 23 Pumps: HPSI; 21, 22, and 23

LPSI; 21 and 22

2 and 3 Class:

Impractical Test Requirement: Table IWP-3100-2 requires that flow be monitored and maintained within a set allowable range.

Basis for Relief:

These pumps are tested in a mini-recirculation flow loop due to the impracticability of full flow testing during power operation. The AFW, HPSI, LPSI, and CS Pumps, if full flow tested, would result in thermal shock to equipment nozzles or deluge of equipment in containment with borated water. A recirculation loop provides a relatively fixed resistance flow path. Tank level does not have a significant impact on recirculation flow for any of these pumps. Each of the pumps has a relatively characteristic curve within the hydraulis recirculation flow range. Monitoring flow and checking flat against an allowable range provides no meaningful input to pump performance.

Alternative Testing:

Quarterly testing will be performed without evaluating flow. At each refueling outage a large flow test will be conducted with flowrate being evaluated along with all other pump vibration and hydraulic performance indicators.

APPENDIX B

EXPLANATION OF CODES AND SYMBOLS USED IN THE CALVERT CLIFFS VALVE INSERVICE TESTING PROGRAM

This appendix defires the meaning of all codes and symbols used in the valve test program presented in Appendices C & D.

SYMBOLS USED TO DESIGNATE VALVE TYPE

VALVE TYPES

SYMBOL	MEANING
С	Check Valves
В	Butterfly Valve
G	Gate Valve
GL	Globe Valve
RV	Pressure Relief Valve
RD	Rupture Disk
A	Angle Valve

TABLE B-2

SYMBOLS USED TO DESIGNATE VALVE ACTUATOR TYPE

VALVE ACTUATOR TYPES

SYMBOL	MEANING
М	Motor
A	Air
S	Solenoid
Н	Hand (manual)
E/H	Electro Hydraulic
	None (self actuating)
P/H	Pneumatic Hydraulic

SYMBOLS USED TO DESIGNATE VALVE POSITION

VALVE POSITIONS

SYMBOLS	MEANING
0	Open
С	Shut

NOTE: Calvert Cliffs may revise the identified positions listed in "Normal Position" and "Required Position" based on changes in valve function.

SYMBOLS USED TO DESIGNATE TESTING REQUIREMENT

TEST

SYMBOL	MEANING
F	Stroke Test per IWV-3400
L	Leak Test per 10CFR50, App. J
V	Stroke Test of check valves per IWV-3520
S	Set Point Test per IWV-3510
1	Isolation Test per IWV-3420 (see Section 3.2 of the program)
RR	See Relief Request for testing

The symbols shown on Tables B-4 and B-5 will be arranged in the following manner:

These symbols will appear in the "Reg. Test" column as well as the "Alt. Test" column, as appropriate.

⁻ A two-letter designation will show Test Method (first letter) and Test Frequency (second letter). Thus the designation "FQ" relates to a full-stroke test (with timing, as appropriate) per IWV-3400 performed quarterly. A designation of "VC" relates to a check valve exercise test per IWV-3520 performed during Cold Shutdowns.

SYMBOLS USED TO DESIGNATE TEST FREQUENCY

FREQUENCY

SYMBOL	MEANING
Q	Quarterly
R	Refueling
Т	Per Table IWV-3510-1
С	Cold Shutdown* (Plant in Modes 2,3,4,5,6)

^{*} Frequency of Cold Shutdown is considered to be whenever the plant achieves a Mode 5 condition. Specific valves may be tested in Modes 2, 3, 4, or 5 as appropriate for each valve, (i.e., valves may be tested while achieving or recovering from a Mode 5 condition).

TABLE B-6

SYMBOLS USED TO DESIGNATE SECTION XI VALVE CATEGORY

SECTION XI VALVE CATEGORY

SYMBOL	MEANING
A	Valves with specified maximum leakage rate (pressure system isolation valves (PSIVs) and containment isolation valves (CIVs)).
В	Valves with no specific maximum leakage rate.
c	Self-actuating (check, relief valves)
D	Actuated by energy source capable of only one operation (rupture disks, explosive valves).

TABLE B-7

SYMBOLS USED TO DESIGNATE ACTIVE AND PASSING VALVES

ACTIVE & PASSIVE VALVES

SYMBOL	MEANING
1	Active - valves which are required to change position to accomplish a specific function.
2	Passive - valves which are not required to change position to accomplish a specific function.

APPENDIX C

CALVERT CLIFFS UNIT 1

SECOND TEN YEAR VALVE TESTING PROGRAM

SYSTEM	P&ID (OM-)	PAGE
	35	C-1
Main Steam	39	C-2
Condensate and Feedwater	46	C+3
Service Water	49	C-5
Salt Water	51	C-7
Component Cooling	53	C-9
Compressed Air		C-11
Fire Protection	56	C-12
Fuel Pool	58	C-13
Ventilation System	65	C-15
Post-Accident Sample	66	
Nitrogen Blanketing	68	C-17
Plant Heating	71	C-18
Reactor Coolant	7.2	C-19
	7.3	C-20
CVCS	74	C-24
Safety Injection	76	C+30
Waste Processing	77	C-32
RC Waste Processing	78	C-34
Woste Gas	98	C-35
Rad. Monitoring	463	C-36
Gas Analyzing	464	C-38
S.G. Blowdown	479	C+39
Plant Water & Air	800	C-41
Aux. Feedwater	800	

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SHEET

REL.

2 E-6 C-1 6 4 2 E-6 C-1 6 4 2 E-6 C-1 6 5 2 E-6 C-1 6 5 2 E-7 C-1 6 5 2 E-4 C-1 6 5 2 E-4 C-1 6 5 2 B-6 C-1 5 5 2 B-6 C-1 5 5 6-1 5 6 7 8-6 C-1 5 6 7 8-4 C-1 5 7 8-5 C-1 5 7 8-5 C-1 5 8-7 C-1 5 8-7 C-1 5 8-7 C-1 5 8-7 C-1	VALVE	ASME	P&ID	VALVE	SIZE (in.)	VLV	ACT	POS.	(sec.)	NOKEN POS.	POS.	TEST	NO.	TEST	KEMARKS
2 E-6 C-1 6 RV C 0 ST 2 E-6 C-1 6 RV C 0 ST 3 2 E-4 C-1 6 RV C 0 ST 3 2 E-4 C-1 6 RV C 0 ST 3 2 B-6 C-1 6 RV C 0 ST 3 2 B-6 C-1 6 RV C 0 ST 3 2 B-6 C-1 6 RV C 0 ST 3 2 B-6 C-1 6 RV C 0 ST 43 2 E-4 C-1 6 RV C 0 ST 6 C-1 6 RV C 0 ST 6 C-1 6 RV C 0 ST 7 C C C C C C C C C C C C C C C C C C C	NUMBER 00-3003	2		C-1	9	RV		1	*	3	0	ST			
2 E-6 C-1 6 KV C O ST 2 E-4 C-1 6 KV C O ST 3 2 E-4 C-1 6 KV C O ST 3 2 E-4 C-1 6 KV C O ST 3 2 E-4 C-1 6 KV C O ST 3 2 B-6 C-1 6 KV C O ST 43 2 B-4 C-1 6 KV C O ST 43 2 E-4 C-1 6 KV C O ST 43 2 E-4 C-1 6 KV C O ST 43 2 B-4 C-1 6 KV C O ST 43 2 B-4 C-1 6 KV C O ST 43 2 B-4 C-1 6 KV C O ST 43 2 B-4 C-1 6 KV C O ST 43 2 B-4 C-1 6 KV C O ST 43 2 B-4 C-1 6 KV C O ST 43 2 B-4 C-1 6 KV - C C O ST 44 2 B-5 C-1 6 KV - C C O ST 45 2 B-4 C-1 6 KV - C C O ST 47 2 B-4 C-1 6 KV - C C O ST 48 2 B-4 C-1 6 KV - C C O ST 48 2 B-4 C-1 6 KV - C C O ST 49 2 B-4 C-1 6 KV - C C O ST 40 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	KN-3774		4-3	- 1	9	RV	,	1		O	0	ST			
2 E-5 C-1 6 RV C C O ST	-KV-5993	4 6	E-6	- 1		RV	*		,	O	0	ST			
2 E-4 C-1 6 RV C C O SI 2 E-4 C-1 6 RV C C O SI 3 2 E-4 C-1 6 RV - C C C SI 4 2 B-6 C-1 6 RV - C C C SI 2 B-6 C-1 6 RV - C C C SI 3 2 B-5 C-1 6 RV - C C C SI 4 2 B-5 C-1 6 RV - C C C SI 5 2 B-6 C-1 6 RV - C C C SI 6 2 B-6 C-1 6 RV - C C C SI 7 2 B-6 C-1 6 RV - C C C SI 8 2 B-7 C-1 6 RV - C C C C SI 9 2 E-8 C-1 6 RV - C C C C SI 9 2 E-8 C-1 6 RV - C C C C C SI 9 2 B-8 C-1 6 RV - C C C C C C SI 9 2 B-8 C-1 6 RV - C C C C C C C C C C SI 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	-KV-23374		5.0	C-1	9	RV	1	,		0	0	ST			
2 E-4 C-1 6 RV C 0 ST 2 E-4 C-1 6 RV C 0 ST 2 E-4 C-1 6 RV C 0 ST 2 B-6 C-1 6 RV C 0 ST 2 B-6 C-1 6 RV C 0 ST 2 B-6 C-1 6 RV C 0 ST 3 2 B-5 C-1 6 RV C 0 ST 4 2 B-5 C-1 6 RV C 0 ST 4 2 B-4 C-1 6 RV C 0 ST 5 2 B-4 C-1 6 RV C 0 ST 6 2 B-4 C-1 6 RV C 0 ST 6 2 B-4 C-1 6 RV C 0 ST 6 2 B-4 C-1 6 RV - C C 0 ST 6 2 B-4 C-1 6 RV - C C C C C C C C C C C C C C C C C C	-KV-3993	4 0	3-3	C-1	9	KV	1			U	0	P.			
2 E-4 C-1 6 RV C O S 2 E-4 C-1 6 RV C O S 1 2 B-6 C-1 6 RV C O S 2 B-6 C-1 6 RV C O S 2 B-6 C-1 6 RV - C O S 3 2 B-6 C-1 6 RV - C O S 4 2 B-5 C-1 6 RV - C O S 4 2 B-5 C-1 6 RV - C O S 5 2 B-4 C-1 6 RV - C O S 5 2 B-4 C-1 6 RV - C O S 6 2 B-4 C-1 6 RV - C O S 7 2 B-4 C-1 6 RV - C O S 8 3 2 B-4 C-1 6 RV - C O S 8 4 C-1 6 RV - C O S 8 5 2 B-4 C-1 6 RV - C O S 8 6 C C C O S 8 7 C O C O S 8 8 8 8 C-1 6 RV - C O C O C O C O C O C O C O C O C O C	-KV-3990		2 4	1.0	4	RV		1	1	0	0	ST			
2 E-4 C-1 6 RV C O S 2 B-6 C-1 6 RV C O S 2 B-6 C-1 6 RV C O S 3 2 B-6 C-1 6 RV C O S 4 2 B-6 C-1 6 RV C O S 5 2 B-4 C-1 6 RV C O S 5 2 B-4 C-1 6 RV C O S 6 2 B-4 C-1 6 RV C O S 7 2 B-4 C-1 6 RV C O S 7 2 B-4 C-1 6 RV C O S 8 2 B-4 C-1 6 RV - C O C O S 9 2 B-4 C-1 6 RV - C C O S 9 2 B-4 C-1 6 RV - C C O S 9 2 B-4 C-1 6 RV - C C O C O C O C O C C O C C O C C O C C O C C O C C C O C C C C O C	-RV-3997	7	2.73			DO	,		1	C	0	ST			
2 B-6 C-1 6 RV C O S 2 B-6 C-1 6 RV C O S 3 2 B-6 C-1 6 RV C O S 4 2 B-5 C-1 6 RV C O S 5 2 B-4 C-1 6 RV C O S 6 2 B-4 C-1 6 RV C O S 7 2 B-4 C-1 6 RV - C O S 7 2 B-4 C-1 6 RV - C O S 8 2 B-4 C-1 6 C C O S 9 2 B-4 C-1 6 C C O S 9 2 B-4 C-1 6 C C O S 9 2 B-4 C-1 6 C C O S 9 2 B-4 C-1 6 C C O S 9 2 B-4 C-1 6 C C O S 9 2 B-4 C-1 6 C C O S	-RV-3998	2	4-3	1-3	0	W.				5	C	CT			
2 B-6 C-1 6 RV C 0 S 2 B-6 C-1 6 RV C 0 S 3 2 B-5 C-1 6 RV C 0 S 4 2 B-4 C-1 6 RV C 0 S 5 2 B-4 C-1 6 RV C 0 S 6 2 B-4 C-1 6 RV C 0 S 7 2 B-4 C-1 6 RV C 0 S 7 2 B-4 C-1 6 RV C 0 S 8 2 B-4 C-1 6 RV C 0 S 9 2 B-4 C-1 6 RV C 0 S 9 2 B-4 C-1 6 RV C C 0 S 9 2 B-4 C-1 6 RV C C C C C C C C C C C C C C C C C	-RV-3999	2	7-3	C-1	9	RV	*		*	,	0	10			
2 B-6 C-1 6 RV C 0 S 2 B-6 C-1 6 RV C 0 S 3 2 B-4 C-1 6 RV C 0 S 5 2 B-4 C-1 6 RV C 0 S 7 2 B-4 C-1 6 RV C 0 S 7 2 B-4 C-1 6 RV C 0 S 8 2 B-4 C-1 6 RV C 0 S 9 3 2 E-3 B-1 36 GL P/H X 6 0 C	0007-00-	2	8-6		9	RV	1	*		O	0	ST			
2 B-6 C-1 6 RV C C O S S S S S S S S S S S S S S S S S		0	4-0		9	RV	*	1	1	2	0	ST			
2 B-6 C-1 6 RV C 0 S 2 B-4 C-1 6 RV C 0 S 2 B-4 C-1 6 RV C 0 S 3 2 B-4 C-1 6 RV C 0 S 3 2 E-3 B-1 36 GL P/H X 6 0 C	-KV-4001	*				AG			1	3	1				
2 B-5 C-1 6 RV C C O S S S S S S S S S S S S S S S S S	-RV-4002		B-6		0	N.									
2 B-4 C-1 6 RV C 0 S 2 B-4 C-1 6 RV C 0 S 3 2 B-4 C-1 6 RV C 0 S 3 2 E-3 B-1 36 GL P/H X 6 0 C	-RV-4003	2	8-5		9	RV	*	1	1	o .					
2 B-4 C-1 6 RV C 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2000	6	8-8		9	RV	*			O					
2 B-4 C-1 6 RV C O O C O C O C O C O C O C O C O C	1-KV-4004									C					
2 B-4 C-1 6 RV C O 2 B-4 C-1 6 RV C O 2 E-3 B-1 36 GL P/H X 6 O C	1-RV-4005	64	7-8		0	KV									
2 E-3 B-1 36 GL P/H X 6 0 C	1-RV-4006	2	4-8		9	RV	*	•		3					
2 E-3 B-1 36 GL P/H X 6 0 C	1-RV-4007		20		9	RV	*			0					
2 R-3 B-1 36 GL P/H X 6 0 C	F404-V7-1		in)			19	1					1			
	8707 00 1			3 8-1	36			1							

Rev. 1 9/26/88

UNIT 30. 1

			-	1							EFT.		
ASME. CLASS	PSID	VALVE	SIZE (in.)	VLV	ACT TYPE	POS.	TIME (sec.)	NORM POS.	KBQ.	REQ.	REQ.	ALT. TEST	REMARKS
2	F-7	C-1	16	0				0	3	VC			
2	B-7	C-1	16	0				0	S	VC			
2	8-8		16	TO	E	×	70	0	0	FC			
2	80 - St		16	TO	Σ	×	7.0	0	U	FC			

UNIT NO. _ 1 SYSTEM NAME: Service Water Cooling System P&ID NO. OM-46 SHEET _ 2

VALVE NUMBER	ASME CLASS	P&ID COORD	VALVE	SIZE (in.)	VLV TYPE	ACT TYPE	POS.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
-SRW-314	3	E-3	C-1	14	С	-	-		0/C	0/C	VQ			
1-SRW-315	3	F-3	C-1	14	С	-			0/0	0/C	VQ			
1-SRW-316	3	G-3	C-1	14	С		-	-	0/C	O/C	VQ			DET THE
1-SRW-317	2	F-6	C-1	8	С	-	-	-	0/C	0	VQ	1100		
1-SRW-318	2	E-10	C-1	8	С	-	-		0/0	0	VQ			
1-SRW-319	2	H-5	C-1	8	С	-	-		0/0	0	VQ			
1-SRW-320	2	H-8	C-1	8	С	-	-	-	0/0	0	VQ			
1-SRW-321	3	F-8	C-1	6	C	-	-	-	С	0	VQ			
1-SRW-322	3	D-8	C-1	6	С	-	-		С	0	VQ			
1-SRW-323	3	H-2	C-1	18	С	-	-	-	0	c	AC			
1-SRW-324	3	F-2	C-1	18	С	-	-		0	С	VC	TH. 12		
1-SRW-325	3	H-2	C-1	18	С	-	-	-	0	С	VC			
1-CV-1582	2	E-6	B-1	8	В	A	X	60	С	0	FQ			
1-CV-1585	2	E-11	B-1	8	В	A	Х	60	С	0	FQ	11-11		
1-CV-1590	2	H-6	B-1	. 8	В	A	Х	60	С	0	FQ			
1-CV-1593	2	F-11	B-1	8	3	A	X	60	С	0	FQ	4.		
1-CY-1596	3	B-7	B-1	8	P	A	X	15	0	С	FQ	100		1.

UNIT NO. _ 1 SYSTEM NAME: Service Water Cooling System P&ID NO. _ OM-46 SHEET _ 2

VALVE NUMBER	ASME CLASS	P&ID COORD	VALVE CATEGORY	SIZE (in.)		ACT TYPE			NORM POS.			REL. REQ. NO.	ALT. TEST	REMARKS
-CV-1597	3	C-8	B-1	8	В	A	Х	18	0	С	FQ			
-CV-1600	3	B-9	B-1	14	В	Α	Х	30	0	С	FC			
-CV-1637	- 3	B-9	B-1	10	В	A	Х	30	0	С	FC	1:::::::		

UNIT NO.

		CUCTEM NAME.	Circulating Salt Water Cooling System	P&ID NO.	OM-49	SHEET _	1
UNIT NO.	1	SISIEM NAME.	Circuit				

VALVE A	ASME CLASS	P&ID COORD	VAI-VE CATEGORY	SIZE (in.)	VLV TYPE	ACT TYPE	POS. IND.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
-MOV-5250	3	A-2	B-1	6	В	M	Х	30	0	С	FQ			
									and the second name of the second		FQ			

		CHONEN NAME.	Circulating Salt Water Cooling System	P&ID NO.	OM-49	SHEET	2
UNIT NO.	_1_	SYSTEM NAME:	Circulating base				

VALVE NUMBER	ASME CLASS	P&ID COORD	VALVE	SIZE (in.)	VLV TYPE	ACT	POS. IND.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
1-SW-103	3	C-11	C-1	30	С	1	-		0/C	0/C	VQ		31	
1-SW-107	3	C-9	C-1	30	С	-		-	0/0	0/C	VQ			
1-SW-:11	3	C-6	C-:	30	С	-	-		0/0	0/C	VQ			
1-CV-5160	3	E-5	B-1	24	В	A	Х	15	0/C	0/C	FQ			
1-CV-5162	3	G-5	B-1	24	В	A	X	20	0/C	0/C	FQ			
1-CV-5163	3	Н-6	B-1	24	В	Α	Х	24	0/0	0/C	FQ			
1-CV-5170	3	E-3	B-1	8	В	A	X	12	0/0	0	FQ			
1-CV-5171	3	G-3	B-1	8	В	A	X	12	0/0	0	FQ			
1-CV-5173	3	D-3	B-1	8	В	A	Х	21	0/0	0	FQ			
1-CV-5206	3	J-7	B-1	24	В	A	X	140	0/0	0/0	FQ			
1-CV-5208	3	H-4	B-1	24	В	Δ	X	148	0/0	0/0	FQ			
1-CV-5210		F-10	B-1	30	В	A	Х	240	0/0	0	FQ			
1-CV-5212	3	H-10	B-1	30	В	A	Х	254	0/0	0	FQ			

UNIT NO. _ 1 SYSTEM NAME: Component Cooling System P&ID NO. _ OM-51 SHEET _ 1

VALVE NUMBER	ASME CLASS	P&ID COORD	VALVE	SIZE (in.)	VLV TYPE	ACT TYPE	POS.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
1-CC-115	3	E-4	C-1	16	C	-	-		0/0	O/C	VQ			
1-CC-120	3	G-4	C-1	16	С		-	-	0/C	0/C	VQ			
1-CC-125	3	J-4	C-1	16	C	-	-	-	0/C	O/C	VQ			

UNIT NO. 1 SYSTEM NAME: Component Cooling System P&ID NO. OM-51 SHEET 2

VALVE NUMBER	ASME CLASS	P&ID COORD	VALVE	SIZE (in.)	VLV TYPE	ACT TYPE	POS. IND.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
1-CV-3824	. 3	D-6	B-1	16	В	Α	X	27	O/C	0	FQ			
1-CV-3826	3	B-6	B-1	16	В	A	X	24	0/C	0	FQ			
1-CV-3828	3	H-9	B-1	16	В	A	Х	2.5	С	0	FQ			
1-CV-3830	3	E-9	B-1	16	В	A	X	28	С	0	FQ			
1-CV-3832	2	B-1	A-1	10	В	A	X	18	е	С	FC,LR	A-4	9,	CIV
1-CV-3833	2	J-3	A-1	10	В	A	Х	18	0	С	FC,LR	A-4		CIV
1-CV-3840	3	B-7	B-1	10	В	A	X	15	0	С	FQ			
1-CV-3842	3	B-8	B-1	10	9	A	X	15	0	С	FQ	The Control		

2 C 0/C C LR, VC A-4 CIV valve no. previously	VALVE SIZ		ACT	POS.	TIME (sec.)	NORM POS.	REQ.	KEQ.	KEL. KEQ. NO.	ALT. TEST	REMARKS
		4		,		0/0		LR.VC	4-4		CIV
	F4	ن		0							Valve no. previously
	VALVE ATEGOS	 SIZE (in.)		SIZE VIN (in.) TYPE 2 C	SIZE VLV ACT (in.) TYPE TYPE 2 C -	SIZE VLV ACT POS. (in.) TYPE TYPE IND. 2 C	SIZE VLV ACT POS. TIME N (in.) TYPE TYPE IND. (sec.) P	SIZE VLV ACT POS. TIME NORM (in.) TYPE TYPE IND. (sec.) POS. 2 C - 0/C	SIZE VLV ACT POS. TIME NORM (in.) TYPE TYPE IND. (sec.) POS. 2 C - 0/C	SIZE VLV ACT POS. TIME NORM REQ. REQ. (in.) TYPE IND. (sec.) POS. POS. TEST 2 C - 0/C C LR, VC	SIZE VLV ACT POS. TIME NORM REQ. REQ. REQ. (in.) TYPE IND. (sec.) POS. POS. TEST NO. 2 C - 0/C C LR, VC A-4

CHEFT

C-10

UNIT NO	1_	SYSTEM	NAME: Co	mpresse	d Air	System	Instr	ument &	Plant	P&ID N	0. 0	1-53	SHEET	
VALVE	ASME.	P&ID	VALVE	SIZE	VLV TYPE	ACT TYPE	POS.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
NUMBER	CLASS	COOME										A-6		CIV
1-MOV-2080	2	F-1	A-1	2	G	M	X	13	0	С	LK,FC	8-4		

UNIT NO. 1 SYSTEM NAME: Plant Fire Protection System Po	GID NO.	OM-56	SHEET	-
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ASME CLASS	P&ID COORD	VALVE	SIZE (in.)	VLV TYPE	ACT TYPE	POS.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
											h-4		CIV
										LR	A-4		CIV
											A-4		CIV
	2 2	2 C-2 2 C-3	2 C-2 AC-2 2 C-3 AC-2	2 C-2 AC-2 6 2 C-3 AC-2 6	2 C-2 AC-2 6 C 2 C-3 AC-2 6 C	2 C-2 AC-2 6 C - 2 C-3 AC-2 6 C -	2 C-2 AC-2 6 C 2 2 C-3 AC-2 6 C	2 C-2 AC-2 6 C	2 C-2 AC-2 6 C C 2 C-3 AC-2 6 C C	2 C-2 AC-2 6 C C C 2 C-3 AC-2 6 C C C	2 C-2 AC-2 6 C C C LR 2 C-3 AC-2 6 C C C LR	SME P&ID VALVE SIZE VLV ACT POS. TIME NORM REQ. REQ. REQ. RAC-2 (in.) TYPE TYPE IND. (sec.) POS. POS. TEST NO. 2 C-2 AC-2 6 C C C LR A-4 2 C-3 AC-2 6 C C C LR A-4	SME P6ID VALVE SIZE VLV ACT POS. TIME NORM REQ. REQ. REQ. ALT. CLASS COORD CATEGORY (in.) TYPE TYPE IND. (sec.) POS. POS. TEST NO. CLASS COORD CATEGORY (in.) TYPE TYPE IND. (sec.) POS. POS. TEST NO. CLASS COORD CATEGORY (in.) TYPE TYPE IND. (sec.) POS. POS. TEST NO. CLASS COORD CATEGORY (in.) TYPE TYPE IND. (sec.) POS. POS. TEST NO. CLASS COORD CATEGORY (in.) TYPE TYPE IND. (sec.) POS. POS. TEST NO. CLASS COORD CATEGORY (in.) TYPE TYPE IND. (sec.) POS. POS. TEST NO. CLASS COORD CATEGORY (in.) TYPE TYPE IND. (sec.) POS. POS. TEST NO. CLASS COORD CATEGORY (in.) TYPE TYPE IND. (sec.) POS. POS. TEST NO. CLASS COORD CATEGORY (in.) TYPE TYPE IND. (sec.) POS. POS. TEST NO. CLASS COORD CATEGORY (in.) TYPE TYPE IND. (sec.) POS. POS. TEST NO.

UNIT NO. 1 & 2 SYSTEM NAME: Spent Fuel Fool Cooling System

VALVE	ASHE	P&ID	VALVE	SIZE (in.)	VLV	ACT TYPE	POS.	TIME (sec.)	NORM POS.	REQ.	REQ.	REQ.	ALT. TEST	REMARKS
NUMBER 0-CFP-170	C S			80	S	100	1		3	0	23	A-4	7	CIV
0-889-171		8-1	A-2	90	0	H			0	0	27	A-4		CIV
6 (1-94		C-1	A-2	80	9	M	*		0	O	178	A-4		CIV
6 1 27		C-2	A-2	8	9	H			0	0	23	A-4		CIV
K 300		C-2	A-2	7	0	M			0	0	178	A-4		CIV
0.011.110.0		8-11	8-2	90	9	165	*		0	0	I.R	A-4		CIV
011-110-		E 10	A-2	40	9	=			0	0	LR	7-V		CIV
0-SFF-1/9	1	1			2	12			3	2	1.8	A-4		CIV
0-SFP-180	0	C-10	A-2	0	0 1			1	0	(4)	27	A-4		CIV
0-SFP-182	20	6-3	A-2		2						1.0	A-4		VIO
0-SFP-184	6	6-3	A-2	PA	O.	E .			3	3				CIU
0-SFP-186	6	0-0	A-2	8	0	H		1	۵	2	či.	A-4		1
0-SFP-189	3	D-2	A-2	60	D	×		*	0	0	LR	V-4		CIV

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UNIT NO. _1 SYSTEM NAME: Ventilation Systems P&ID NO. OM-65 SHEET _1

VALVE NUMBER	ASME CLASS	P&ID COORD	VALVE	SIZE (in.)	VLV TYPE	ACT TYPE	POS. IND.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REQ. NO.	ALT. TEST	REMARKS
1-CV-1410	2	B-11	A-1	48	В	A	X	7	С	С	LR,FQ	VS-1,A-4	RR	CIV
-CV-1411	2	B-11	A-1	48	В	A	X	7	С	С	LR, FQ	VS-1,A-4	RR	CIV
		C-11	A-1		В		X	7	С	С	LR, FQ	VS-1,A-4	RR	CIV
-CV-1412	2	C-11	A-1			A	×	7	С	С	LR,FQ	VS-1,A-4	- RR	CIV

UNIT NO. _1 SYSTEM NAME: Ventilation System P&ID NO. _UM-65 SHEET _2

VALVE	ASME CLASS	P&ID COORD	VALVE	SIZE (in.)	VLV TYPE	ACT TYPE	POS. IND.	TIME (sec.)	NORM POS.			REL. REQ. NO.	ALT. TEST	REMARKS
HUMBER	Gimoo	00000						-	С	С	LR	A-4	12000	CIV
-HP-104	2	F-4	AC-2	4	C									CIN
			4.1	4	G	М	¥.	-	C	C	FC, LR	A-4		CIV
-HP-6900	2	G-5	A-1			-								CIV
-HP-6901	2	G-5	A-1	4	G	M	X	* .	C	C	FC, LR	A-4		
-Hr-6901									-	C	LR	A-4		CIV
-HP-6903	2	G-5	A-1	4	G	M	X		С	10	2301			

SHEET 1 P&ID No. 0M-66 SYSTEM NAME: Reactor Coolant & Water Process Sample
System Post Accident Sample System UNIT NO. 1

VALVE	ASME	P&ID	VALVE	SIZE	VLV	ACT	POS.	TIME (sec.)	NOEM POS.	REQ.	REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
NUMBER	CLASS	COORD	CATEGORY	(in.)	TYPE	TYPE					FC	A-1	RR	
-SV-105	1	A-3	B-1	3/4	G	S	X	-3	C	0	FU			
			5-1	3/4	6	S	X	3	C	0	FC	A-1	RR	
-SV-106	1	A-3	B-1	3/4						-	TP F0	A-4		CIV
-CV-5464	1	C-4	A-1	3/4	G	A	X	7	C	С	LR,FQ	n		
-04-2404							X	7	С	С	LR,FQ	A-4		CIV
-CV-5465	1	B-2	A-1	3/4	G	A								CIV
-		B-2	A-1	3/4	G	A	×	7	C	C	LR,FQ	A-4		011
-CV-5466		8-2								-	1 P 100	A-4		CIV
1-CV-5467	1	C-2	A-1	3/4	G	A	Х	7	C	С	LR,FQ			

1	
SHEET	
99-90	
P&ID NO.	
Reactor Coolant & Water Process Sample	Gwetem Post Accident Sample System
SYSTEM NAME:	
T NOT THE	VICT. 1 10.

KEHARKS	CIV
ALT. TEST	
REQ.	A-4
KEQ.	1.2
REQ.	U
NORM POS.	S
TIME (sec.)	7
POS.	×
ACT TYPE	50
VLV	CI
SIZE (in.)	
VALVE	A-2
P&1D COORD	F-11
ASME	1
VALVE	-SV-6529

				DI mineting System	26ID NO.	OM-68	SHEET	1_
UNIT NO.	1 & 2	SYSTEM NAME:	Nitrogen Generating -	DI meeting oforces				

VALVE NUMBER	ASME CLASS	P&IIb COORD	VALVE	SIZE (in.)	VLV TYPE	ACT TYPE	POS.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
		W 7	AC-1	1	С	-	-	-	C	C	VQ, LR	NG-1,A-4	RR	CIV
-N ₂ -344	2	H-7			С		-		С	C	VQ, LR	NG-1,A-4	RR	CIV
-N ₂ -345	2	H-7	AC-1	1					C	C	VO.LR	NG-1,*-4	PR	CIV
-N ₂ -346	2	H-7	AC-1	1	С	- *	*					NG-1,A-4	RR	CIV
-N ₂ -347	2	H-7	AC-1	1	C		-	*	С	С			RR	CIV
)-N ₂ -348	2.	H-7	AC-1	1	C	-	-		C	С		NG-1,A-4		
-	2	H-7	aC-1	1	C		-	-	С	C	VQ,U	NG-1,A-4	RR	CIV
)-N ₂ -349			AC-1	1	С	-		-	C	C	VQ,L	NG-1,A-4	RR	CIV
)-N ₂ -389	2	H-7					-	-	С	C	VQ,L	R NG-1,5-4	RR	CIV
0-N ₂ -392	2	H-7	AC-1	1	С	1.21						R NG-1, A-4	RR	CIV
0-N ₂ -395	2	H-7	AC-1	1	C	-15		*	С				RR	CIV
0-N ₂ -398	2	1:-7	AC-1	1	c	-	-		C	C	VQ, L	R NG-1,A-4	N.N.	
U-Ng-390	-													

INIT NO	1	SYSTEM NAME:	Plant Heating System	F NO.	<u>OM-71</u>	SHEET	2
LINIT NO		DIDIES PROME.	I I division in the same of th				

VALVE NUMBER	ASME CLASS	P&ID COORD	VALVE	SIZE (in.)	VLV TYPE	ACT TYPE	POS. IND.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
0-PE-376														CIV
														CIV
-MOV-6579	2	B-2	A-2	3	G	M	х	2.3			A.er.			

VALVE NUMBER	ASME CLASS	P&TD COORD	VALVE	SIZE (in.)	VLV TYPE	ACT TYPE	POS.	TIME (sec.)	NORM POS.	REQ.	REQ. TEST	REL. REQ. MO.	ALT. TEST	REMARKS
-55-103	1	*-7	B-1	3/4	G	S	X	3	С	0	FC	A-1		
-SV-104	1	J-6	8-1	3/4	G	S	Х	3	С	0	FC	A-1		
-RV-200	1	B-4	C-1	2 1/2	RV	-	-		C	0	ST			
1-RV-201	1	2-8	C-1	2 1/2	RV				C	0	Sī			
1-ERV-402	1	A-5	C-1	2 1/2	RV	*	•		С	0	ST	RC-1	RR	*Electro- matic Relief Valve
1-MOV-403	1	8-5	B-1.	4	G	M	Х	45	0	0	FQ			H. H.
1-ERV-404	1	A-7	C-1	2 1/2	RV	*			C	0	ST	RC-1	RR	*Electro matic Relief Valve
1-MOV-405	1	B-7	B-1	4	G	М	Х	45	0	0	FQ		177.15	
1-DW-5460-C		A-11	A-1	2	GL	, A	*	7.5	0/0	C C	FQ.LR	A-4	a. Jiglai	CIV.

CVCS

SYSTEM NAME:

UNIT NO.

SHEET

REMARKS												
ALT. TEST												
REQ.												
REQ.	VC	VQ	VQ	VC	VC	FC	FQ	FQ	FQ	FQ	FQ	FQ
REQ.	0	0/0	0/0	0	0	3	0	0	Ü	S	0	0
NORM POS.	0	0/0	0/0	0	0	0	0	0	0	0	S	U
TIME (sec.)						30	20	20	30	30	36	20
POS.		1				×	×	×	×	×	×	×
ACT					1	×	X:	E	A	A	A	E
VLV	O	O	0	O	U	9	9	9	9	9	TO	9
SIZE (in.)	7	9	3	0	6	77	0	6	1 1/2	1 1/2	60	6
VALVE	C-1	1-0	C-1	C-1	C-1	B-1	B-1	B-1	B-1	B-1	B-1	B-1
P&10 COORD	F-2	8-9	H-10	H-2	4-4	F-2	H-12	6-8	E-9	£-13	p-q	F-6
ASME	2	2	2	2	2	2	2	2	2	2	2	2

1-MOV-514

1-CV-512

1-CV-511

1-MOV-508

1-CVC-228

1-CVC-222

1-CVC-162

VALVE

1-CVC-217

1-CVC-235

1-MOV-501

1-MOV-509

1-CV-510

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UNIT NO. 1 SYSTEM NAME: CVCS P&ID NO. OM-73 SHCET 2

VALVE NUMBER	ASME CLASS	P&ID COORD	VALVE	SIZE (in.)	VLV TYPE	ACT TYPE	POS.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
1-CVC-165	2	E-6	C-1	2	С	-	-	-	0/0	0/C	1.0			
1-CVC-171	2	G-6	C-1	2	С	-	-	-	0/0	0/0	VQ			
1-CVC-177	2	H-6	C-1	2	С	-	-	-	0/0	0/C	VQ			
1-CVC-184	1	D-5	AC-1	2	С				0	0/0	VC,LR	A-4		CIV, Tested OPEN During Power Oper- ation. Tested SHUT During Cold Shutdown
1-CVC-185	1	C-8	C-1	2	C		-	-	С	0/0	VC			
1-CVC-186	1	D-8	C-1	2	C				0	0/0	· vc			Tested OPEN Puring Power Oper- ation. Tested SHUT During Cold Shutdown
1-CVC-187	1	E-12	C-1	2	c				0	0/0	C VC			Tested OPEN During Power Oper- ation. Tested SHUT During Cold Shutdown
1-MOV-269	2	F-3	B-1	2	G	М	X	20	C	C	FC			

UNIT NO. 1 SYSTEM NAME: CVCS P&ID NO. OM-73 SHEET 2

VALVE	ASME CLASS	P&ID COORD	VALVE CATEGORY	SIZE (in.)	VLV TYPE	ACT TYPE	POS. IND.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
1-RV-311	2	G-10	C-1	3/4	RV	35	-	-	C	0	ST			
1-RV-315	2	E-8	C-1	3/4	RV	-	-	-	С	0	ST			
1-RV-318	2	F-8	C-1	3/4	RV	-	-		С	Э	ST			
1-RV-321	2	H-8	C-1	3/4	RV			-	С	0	ST			
1-RV-324	2	H-6	C-1	3/4	RV	-	-	-	C	G	ST			
1-RV-325	2	G-6	C-1	3/4	RV	-	4		С	0	ST			
1-RV-326	2	E-6	C-1	3/4	RV	-	-	-	С	0	ST			
	1	E-12	AC-1	2	C	-	-		С	0/0	VC, LR	A-4		CIV
1-CVC-435	1	B-6	A-1	3/4	GI.	A	Х	7	0	С	FC, LR	A-4		CIV

UNIT NO. 1 SYSTEM NAME: CVCS P&ID NO. OM-73 SHEET 2

VALVE NUMBER	ASME CLASS	P&ID COORD	YALVE CATEGORY	SIZE (in.)	VLV TYPE	ACT TYPE	POS.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REQ. NO.	ALT. TEST	REMARKS
1-CV-506	1	B-8	A-1	3/4	GL	A	X	7	0	С	FC,LR	A-4		CIV
1-CV-515	1	D-2	A-1	2	GL	A	X	13	0	С	FC, LR	A-4		CIV
1-CV-516	1	D-4	A-1	2	GL	A	Х	13	0	С	FC, LR	A-4		CIV
1-CV-517	1	C-10	A-1	2	GL	A	X	200	С	0/0	FC, LR	A-4		CIV
1-CV-518	1	D-10	A-1	2	GL	A	X	53	0	0	FQ, LR	A-4		CIV
1-CV-519	1	E-12	A-1	2	GL	A	X	38	0	0	FQ, LR	A-4		CIV

SYSTEM NAME: CVCS

1

UNIT NO.

3

•	ASHE	P&ID COOKD	VALVE	SIZE (in.)	VLV	ACT	POS.	TIME (sec.)	NORM POS.	REQ.	REQ.	REQ.	ALT. TEST	REMARKS
MODBER				-	(n			*5	*	LR	A-4		CIV
-CVC-103	2	B-3	A-2	7	D	117						A-6.		CIV
- CUC-105	2	B-3	A-2	2	9	H	1		B	ě	Y T	t-4		

Normally if CVC-103 is OPEN, CVC-105 is SHUT, and vice-versa.

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UNIT NO. 1 SYSTEM NAME: Safety Injection & Containment Spray P&ID NO. 0M-74 SHEET 1
System

VALVE NUMBER	ASME CLASS	P&ID COORD	VALVE CATEGORY	SIZE (in.)	VLV TYPE	ACT TYPE	POS.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
1-81-113	2	D-2	C-1	2	С				С	0/0	VC			Tested OPEN During Cold Shutdown. Tested SHUT During Power Operation.
1-\$1-123	2	E-2	C-1	2	С				С	0/0	VC			Tested OPEN During Cold Shutdown. Tested SHUT During Power Operation.
1-SI-133	2	F-2	C-1	2	С				С	0/0	VC			Tested OPEN During Cold Shutdown. Tested SHUT During Power Operation.
1-\$1-143	2	Н-2	C-1	2	С				С	0/0	· vc			Tested OPEN During Cold Shutdown. Tested SHUT During Powe Operation.
1-SI-401	2	r-9	C-1	6	C		-	-	С	0	VC			
1-81-405	2	F-6	C-1	3	С		-	-	С	0/	c vc			
1-RV-409	2	F-4	C-1	3/4	RV	-		-	C	0	ST			

UNIT NO. 1

P&ID NO.

VALVE	ASME	P&ID	VALVE	SIZE (in.)	VLV	ACT	POS.	TIME (sec.)	NORM POS.	REQ.	REQ.	REQ.	ALT. TEST	REMARKS
1-81-410	2	6-3	C-1	00	O				O	0	AC			
1-SI-414	- 1 -	E-6	C-1	3	D		1	1	0	0/0	VC			
1-RV-417	2	D-4	C-1	1	RV	1	,	1	O	0	ST			
1-81-422	2	D-9	C-1	2	C)	i .	1	,	0	0	VQ			
1-81-424		6-3	C-1	2	U	i i		1	C	0	VQ			
1-51-426	2	6-4	C-1	2	O	,			U	0	VQ			
244 10		0-6	C-1	9	U		1	1	0	0/0	VC			
1-21-471	4 4	7 17	173	10	0	1	1	1	S	0/0	VC			
1-51-434	7 6	1 3	C-1	10	O	,	1		S	0/0	VC			
1-21-448	2 2	A-9		2	O	3.		1	O	0	VQ			
157-15-1	2	6-9	C-1	2	O	*	*	1	S	0	VQ			

UNIT NO. 1 SYSTEM NAME: Safety Injection & Containment Spray P&ID NO. OM-74 SHEET 1

System

VALVE NUMBER	ASME CLASS	P&10 COORD	VALVE CATEGORY	SIZE (in.)	VLV TYPE	ACT TYPE	POS.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
1-MOV-616	2	C-3	B-1	2	GL	M	Х	20	С	0	FQ			
1-MOV-617	2	C-3	B-1	2	GL	М	Х	20	С	0	FQ			
1-MOV-626	2	D-3	B-1	2	GL	M	Х	20	С	0	FQ			
1-MOV-627	2	E-3	B-1	2	GL	М	Х	20	С	0	FQ			
1-MOV-636	2	F-3	B-1	2	GL	M	X	20	С	0	FQ			
1-MOV-637	2	7-3	B-1	2	GL	М	Х	20	С	0	FQ			41.54
1-MOV-646	2	G-3	B-1	2	GL	М	Х	20	С	0	FQ			
1-MOV-647	2	H-3	B-1	2	GL	M	X	29	С	0	FQ			
1-MOV-659	2	B-10	B-1	4	G	М	Х	70	0	0/C	FC			
1-MOV-660	2	B-10	B-1	4	G	М	X	70	0	0/C	FC			
1-MOV-4142	2	E-10	B-1	18	G	М	Х	124	0	0/0	FQ			Tested SHUT Only.
1-MOV-4143	2	F-10	B-1	18	G	М	Х	128	0	0/0	FQ			Tested SHUT Only.
1-SI-4146	2	E-10	C-1	18	С	-	-	-	С	0	VQ	SI-6	RR	
1-SI-4147	2	F-10	C-1	18	С	-	-	-	С	0	VQ	SI-6	RR	

P&ID NO. 0M-74 SHEET 2 UNIT NO. 1 SYSTEM NAME: Safety Injection & Containment Spray

System

VALVE NUMBER	ASME CLASS	P&ID COORD	VALVE CATEGORY	SIZE (in.)	VLV TYPE	ACT TYPE	POS.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
-SI-114	2	E-3	C-1	6	С	-	-		С	0/C	VC			
-SI-118	2	E-4	AC-1	6	С	-	-	-	С	0/C	VC, IR			PSIV
-SI-124	2	J-3	C-1	6	C		-		С	0/C	VC			DOT!!
1-51-128	2	J-4	AC-1	6	C	-			С	0/0	VC, IR			PSIV
1-SI-134	2	E-9	C-1	6	С	-	-	-	С	0/0	VC			DOT!
1-SI-138	2	E-8	AC-1	6	С	-			С	0/C	VC, IR			PSIV
1-81-144	2	H-9	C-1	6	С	-	-	*	С	0/C	VC			nerv
1-51-148	2	H-9	AC-1	6	C	-	-		С	0/C	VC,IR	Training		PSIV
1-RV-211	2	B-2	C-1	1	RV	-	-		С	0	ST			DOTU
1-81-215	1	D-2	AC-1	12	С	-	-	-	С	0/0	VQ,IR	SI-3	RR	PSIV
1-51-217	1	D-5	AC-1	12	C	-	-		С	0/0	VQ,IR	SI-4,5	RR	PSIV
1-RV-221	2	F-1	C-1	1.	RV	-	-		С	0	ST			
1-SI-225	2	H-2	AC-1	12	С	-	-	4.5	C	0/0		SI-3	RR	PSIV
1-SI-227	1	H-5	AC-1	12	С	-		-	С	0/0	VQ,IR	SI-4,5	RR	PSIV
1-RV-231	2	B-9	C-1	1	RV	-		14.	Х	0	ST		ha Pie	
1-SI-235	2	D-9	AC-1	12	C			-	С	0/0	VQ,IR	SI-3	RR	PSIV
1-SI-237	1	D-7	AC-1	12	C			-	C	0/0	C VQ, IR	\$1-4,5	RR	PSIV

sty Injection & Containment Spray P&ID NO.
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REMARKS		PSIV
ALT. TEST		RR
REJ. NO.		SI-3
REQ.	ST	VQ, IR
REQ.	0	0/0
NORM POS.	0	O
TIME (sec.)		1
POS.		
ACT		
VLV	RV	C
SIZE (in.)	-	12
VALVE	C-1	AC-1
P&1D COOKD	E-9	6-10
ASME	2	2
VALVE	1-RV-241	1-SI-245

UNIT NO. 1

2

VALVE	ASME	P&ID	VALVE	SIZE (in.)	VLV	ACT	POS.	TIME (sec.)	NORM POS.	REQ.	REQ.	REQ.	ALT. TEST	KEMARKS
NUMBER	CIADO	H-7		12	O	,			O	0/0	VQ, IR	SI-4,5	RR	PSIV
147-19-		H-7	100	2	9	Σ	×	20	0	O	FQ			
MUV-323	4 5	A-10	A-2	2	19	H	,		0	O	LR	A-4		CIV
-51-455	7 6	A-10	A-2	1 2	TS	H	1	1	O	0	LR	A-4		CIV
897-00	. 6	00-17	C-1	1 1/2	RV	1.	1		0	0	ST			
Der 1.40		1-5	C-1	3/4	RV				3	0	ST			
1-KV-409	4 6	7-80	A-1	-	5	A	×	9	0/0	O	FQ, LR	A-4		CIV
1-MOV-615	2	2-2	B-1	9	19	Σ	×	20	O	0	FQ			
CTO 400		7-0	1-86	-	9	A	×	30	0/0	O	FQ			
1-CV-618	4 6	5-4		1	9	A	×	9	0/0	0	FQ, LR	A-4		CIV
1-CV-642	4 6	3-2		9	79	E	×	20	O	0	FQ			
1-07-408		6-5		1	9	A	×	30	0/0	S	FQ			
1-CV-632	2	B-11	A-1	-	0	A	×	9	0/0	3	FQ, LR	A-4		CIV
1-MOV-635	. 64	E-10	B-1	9	G.	Σ	×	20	٥	0	FQ			
1-CV-638	-	1-0	8-1	1	9	A	X	30	0/0	0	FQ	1		

UNIT NO. 1 SYSTEM NAME: Safety Injection & Containment Spray P&ID NO. OM-74 SHEET

System

VALVE	ASME	P&ID	VALVE	SIZE (in.)	VLV TYPE	ACT TYPE	POS.	TIME (sec.)	NORM POS.	REQ.	REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
NUMBER 1-CV-642	CLASS	F-1	CATEGORY A-1	1	G	A	Х	6	0/C	С	FQ,LR	A-4		CIV
1-MOV-645	2	H-10	B-1	6	GL	М	Х	20	С	0	FQ			
1-CV-648	1	G-7	B-1	1	G	A	Х	30	0/C	С	FQ			
1-MOV-651	1	J-7	A-1	12	G	М	X	108	С	0/0	FC, LR	A-4		CIV
1-MOV-652	1	J-4	A-1	12	G	M	Х	102	0	0/0	FC, LR	A-4		CIV

UNIT NO. 1 SYSTEM NAME: Safety Injuntion & Containment Spray P&ID NO. 0M-74 SHEET 3
System

VALVE	ASME CLASS	P&ID COORD	VALVE CATEGORY	SIZE (in.)	VLV TYPE	ACT TYPE	POS.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REQ.	ALT. TES	REMARKS
-SI-313	2	B-8	C-1	8	С	-	-	-	С	0	VC	SI-7		
-SI-316	2	C-5	AC-1	8	С	-	-		С	0/C	VQ,LR	SI-1,A-4	RR	CIA
-SI-323	2	E-8	C-1	8	С	-	-		С	0	VC	SI-7		
-SI-326	2	C-4	AC-1	8	С	-	~	-	С	0/C	VQ,LR	SI-1,A-4	RR	CIV
-SI-330	2	C-4	AC-1	8	С	-	-		С	0/C	VQ,LR	SI-1,A-4	RR	CIV
I-SI-334	2	A-9	C-1	2	С	-	-	-	С	0	VQ			
1-SI-340	2	G-4	AC-1	8	С	-	-	-	С	0/0	VQ, LR	SI-1,A-4	RR	CIV
1-SI-344	2	E-9	C-1	2	С	-	- 2.		С	0	VQ			
1-CV-657	2	D-4	B-1	12	GL	Α	Х	60/121	С	0/0	FQ			
1-MOV-658	2	D-7	B-1	12	G	M	Х	97	С	0	FQ			
1-MOV-4144	2	J-5	B-1	24	G	М	Х	70	С	0/0	FQ			
1-MOV-4145	2	H-5	B-1	24	G	М	Х	70	С	0/0	FQ			
1-S1-4148	2	J-7	C-1	24	C	-	-	-	С	0/0	VQ	SI-2	RR	
1-SI-4149	2	H-7	C-1	24	С	-	-	-	С	0/0	VQ	SI-2	RR	
1-CV-4150	2	C-3	B-1	8	GL	A	Х	60	С	0	FQ			
1-CV-4151	2	G-3	B-1	8	GL	A	X	60	С	0	FQ			

0M-76
P&ID NO.
Area Drains
Equipment &
Waste Process
SYSTEM NAME:
1
UNIT NO.

SHEET

REMARKS	CIV
ALT. TEST	
REL. REQ. NO.	A-4
KEQ. TEST	LR, FQ
REQ.	O
NOKH POS.	0/0
TIME (sec.)	13
FOS.	×
ACT TYPE	E
VLV	9
SIZE (in.)	7
VALVE	A-1
P&ID COOKD	3-9
ASME	2
VALVE	-MOV-5463

	REMARKS	CIV
SHEET 4	ALT. TEST	
0M-76	REL. REQ. NO.	A-4
	REQ.	C FQ,LR
P&ID NO.	REQ.	1
	NORH POS.	0/0
rea Drair	TIME (sec.)	13
t & A	POS.	X
luipmen	ACT	N.
Sess	VLV	9
ste Pro	SIZE (in.)	4
SYSTEM NAME: Waste Process Equipment & Area Drains	VALVE	A-1
SYSTEM	P&1D COORD	C-3
1	ASME	2
UNIT NO.	VALVE	1-MOV-5462

1	
SHEET	
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0M-77	
&ID NO.	
ystem P	
Processing Sy	
ant Waste	
Reactor Cool	
SYSTEM JAME:	
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UNIT NO.	

	REMARKS	CIV	
ALT.	TEST		
REL.	NO.	A-4	
Uad	TEST	FQ, LR	
Van	POS.	3	
-	POS.	0/0	
	(sec.)	7	
	POS.	×	4
	ACT	*	Q
	VLV	TAY	QF.
	SIZE (in.)		
	VALVE		A-1
1	P&TD COORD		E-5
	ASME		2
	VALVE		1-07-4260

UNIT NO. 1	SYSTEM NAME:	Reactor Coolant Waste	Processing System	P&ID NO.	OM-77	ShEET	3_
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VALVE NUMBER	ASME CLASS	P&ID COORD	VALVE CATEGORY	SIZE (in.)	VLV TYPE	ACT TYPE	POS.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
			A-2									A-4		CIV
1-ES-142	3	E-3										A-4		CIV
-ES-144	3	E-9	A-2	1	GL	Н			C		Late			

UNIT NO. 1 SYSTEM NAME: Waste Gas & Misc. Waste Processing P&ID NO. 0M-78 SHEET 1

Systems

VALVE NUMBER	ASME CLASE	P&ID COORD	VAY.VE CATEGORY	SIZE (ir.)	VLV TYPE	ACT TYPE	POS. IND.	TIME (sec.)	NORM POS.	REQ. POS.	LEQ TEST	REL.	ALT. TEST	REMARKS
1-CV-2180	2	C-2	A-1	2	GL	A	X	7	0/C	С	LR, FQ	A-4		CIV
1-CV-2181			A-1									AND DESCRIPTION OF THE PERSON NAMED IN COLUMN 2 IN COL		CIV

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VALVE ASPE NUMBER CLASS	P&ID COORD	P6.1D VALVE COORD CATEGORY	Size (in.)	VLV	ACT TYPE	POS.	System F. SIZE VLV ACT POS. TIME OKY (in.) TYPE TYPE IND. (sec.)	POS.	REQ. POS.	REQ.	REL. REQ. NO.	ALT. TEST
2	6-9	A-1	-	P. P.	¢	4					1	
6963 3	0-8	A-1	1	TO	A	X	7	0	٥	O C FQ, LR	A-4	

REMARKS

CIV

CIV

UNIT NO. 1 SYSTEM NAME: Gas Analyzing System P&ID NO. 0M-463 SHEET 1

VALVE	ASME CLASS	P&ID COORD	VALVE	SIZE (in.)	VLV TYPE	ACT TYPE	POS.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
NUMBER				1/4	GL	S	X	3	С	C	LR	A-1,A-4	RR	CIV
-SV-6507A	- 3	B-9	A-2	1/4						C	LR	A-1,A-4	RR	CIV
-SV-6507B	3	B-2	A-2	1/4	GL	S	Х	3	С				55	CIV
1-SV-6507C	3	B-2	A-2	1/4	GL	S	Х	3	C	C	LR	A-1,A-4	RR	CIV
1-54-63076					GL	S	Х	3	C	С	LR	A-1,A-4	RR	CIV
1-SV-6507D	3	B-3	A-2	1/4	GD						1.0	A-1,A-4	RR	CIV
1-SV-6507E	3	3-10	A-2	1/4	GL	S	X	3	С	С	Alak	A-1,A-		CITI
	3	B-10	A-2	1/4	GL	S	X	3	C	C	LR	A-1,A-4	RR	CIV
1-SV-6507F	3	D-10			- CX	S	Х	7	С	С	LR	A-1,A-4	RR	CIV
1-SV-6531	2	E-5	A-2	1/4	GL	5	Α		100		7.0	A-1 A-6	RR	CIV
1-SV-6540A	3	B-9	A-2	1/4	GL	S	X	3	C	С	LK	A-1,A-4		
		P. 0	A-2	1/4	GL	S	X	3	C	С	LR	A-1,A-4	RR	CIV
1-SV-6540B	3	B-2	B-4					3	C	С	LR	A-1,A-4	RR	CIV
1-SV-6540C	3	B-2	A-2	1/4	GL	S	X	3					RR	CIV
1-SV-6540D	3	B-3	A-2	1/4	GL	S	X	3	C	C	LR	A-1,A-4	KK	
1-24-03400				3.75	GL	S	X	3	С	С	LR	A-1,A-4	RR	CIV
1-SV-6540E	3	B-10	A-2	1/4	OD					С	TD	A-1, A-4	RR	CIV
1-SV-6540F	3	B-10	A-2	1/4	GL	S	X	3	С	C	Lath	H 2,11		

UNIT NO. _1 SYSTEM NAME: Gas Analyzing System P&ID NO. _OM-463 SHEET _2_

VALVE	ASME	P&ID COORD	VALVE CATEGORY	SIZE (in.)	VLV TYPE	ACT TYPE	POS.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
NUMBER	CLASS								C	С	LR	A-1,A-4	RR	CIV
1-SV-6507G	3	H-6	A-2	1/4	GL	5	Α.						A CONTRACTOR OF THE PARTY OF TH	
1-24-63010	. ~									0	1.0	A-1,A-4	RR	CIV
1-SV-6540G	3	G-6	A-2	1/4	GL	S	X	3	C	C	Laft	B-110-7		

UNIT NO. 1 SYSTEM NAME: Steam Generator Blowdown Recovery P&ID NO. 0M-464 SHEET 1

VALVE NUMBER	ASME CLASS	P&ID COORD	VALVE CATEGORY	SIZE (in.)			POS. IND.	TIME (sec.)	NORM POS.		REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
1-CV-4010	2	D-2	B-1	2	G	A	Х	30	0/0	C	FQ			
1-CV-4011	2	E-2	8-1	2	G	A	Х	30	0/0	С	FQ			
1-CV-4012	2	B-2	B-1	2	G	A	Х	30	O/C	С	FQ	Herbit		
1-CV-4013	2	C-2	B-1	2	G	A	Х	30	O/C	С	FQ			

UNIT NO.	1	SYSTEM NAME:	Plant Water & Air Service System	P&ID NO.	OM-479	SHEET	_1_
	1.5		Stations				

VALVE NUMBER	ASME CLASS		VALVE CATEGORY								REL. REQ. NO.	ALT. TEST	REMARKS
1-PSW-1008	2	J-3	A-2	3	GL	Н	-	 С	C	LR	A-4		CIV

UNIT NO. 1 SYSTEM NAME: Plant Water & Air Service System P&ID NO. OM-479 SHEET 2

Stations

										_			
ASME CLASS	P&ID COORD	VALVE CATEGORY		VLV TYPE	ACT TYPE	POS.					REL. REQ. NO.	ALT. TEST	REMARKS
					- 2		-	C	C	LR	A-4		CIV
- 2	D-6	A-2	3	0	- 23								
		The second						f.	C	LR	A-4		CIV
2	D-2	A-2	2	G	H		-			A. C.			
-										TD	A-/-		CIV
2	F-8	A-2	2	G	H			C	С	Lik	A-4		
		2 D-6 2 D-2	2 D-6 A-2 2 D-2 A-2	CLASS COORD CATEGORY (ia.) 2 D-6 A-2 3 2 D-2 A-2 2	CLASS COORD CATEGORY (ia.) TYPE 2 D-6 A-2 3 G 2 D-2 A-2 2 G	CLASS COORD CATEGORY (ia.) TYPE TYPE 2 D-6 A-2 3 G H 2 D-2 A-2 2 G H	CLASS COORD CATEGORY (ia.) TYPE TYPE IND. 2 D-6 A-2 3 G H 2 D-2 A-2 2 G H	2 D-6 A-2 3 G H 2 D-2 A-2 2 G H	2 D-6 A-2 3 G H - C 2 D-2 A-2 2 G H - C	ASME CLASS COORD CATEGORY (ia.) TYPE 1YPE IND. (sec.) POS. POS. 2 D-6 A-2 3 G H - C C 2 D-2 A-2 2 G H - C C	ASME P&ID VALVE SIZE VLV ACT POS. TEST CLASS COORD CATEGORY (ia.) TYPE TYPE IND. (sec.) POS. POS. TEST 2 D-6 A-2 3 G H - C C LR 2 D-2 A-2 2 G H - C C LR	ASME P&ID VALVE SIZE VLV ACT POS. ITEL NO. CLASS COORD CATEGORY (ia.) TYPE TYPE IND. (sec.) POS. POS. TEST NO. 2 D-6 A-2 3 G ii - C C LR A-4 2 D-2 A-2 2 G H - C C LR A-4	ASME P&ID VALVE SIZE VLV ACT POS. TIME NORM REQ. REQ. REQ. ALT. TEST 2 D-6 A-2 3 G H - C C LR A-4 2 D-2 A-2 2 G H - C C LR A-4

VALVE	ASME	P&1D COORD	VALVE	SIZE (in.)	VLV	ACT	POS.	TIME (sec.)	NORM POS.	REQ.	REQ.	REQ.	ALT. TEST	REMARKS
1-AFW-102	6	8-0	6-1	9	O	1.			O.	0/0	3A			
1-MS-103	3	A-8	1-0	9	O	+			Ç	0/0	VC			
1-MS-106	6	88	1-0	w	C	,			0	0/0	VC			
1-MS-108	67	D-7	1-0	9	C	1			U	0	VC			
1-MS-110	60	B-7	6-1	9	C	1	4		O	0	VC			
1-AFW-114	2	6-8	C-1	9	C	1			O	0	VQ			
1-AFW-116	60	00 (da	C-1	9	0		1		S	0/0	VC			
1-AFW-128	275	6-3	C-1	9	C	1			O	0	GA			
1-AFW-129	2	B-2	C-1	4	0	1	1		O	0	VC			
1-AFW-130	2	6-1	C-1	4	0		1		0	0	VC			
1-AFW-183	6	80 -10	C-1	4	O	.1			0	0/0	NC NC			
1-AFW-190	m	Po phi	C-1	9	0	,	1	١	0	0	NC NC			
1-AFW-193	3	3-E	C-1	4	O	i	1		O	0	VC			
1-AFW-194	60	6-3	C-1	4	O	1			O	0	NC.			
1-AFW-199	2	6-2	C-1	4	O	*			U	0	VC			
1-AFW-200	14	6-2	C-1	7	U				O	0	VC			
1-AFW-201	6	H-10	C-1	2	0			1	O	0	VQ			

UNIT NO. 1

SYSTEM NAME: Auxiliary Feedwater System

UNIT KO. 1

REI.

VALVE	ASME	P&ID	VALVE	SIZE (in.)	VLV	ACT	POS.	TIME (sec.)	NOKH POS.	POS. 1	TEST.	NO.	TEST	REMARKS
1-CV-4520	3	B-6	B-1	.0	79	A	×	19	0	0/0	FQ			
1-CV-4521	es	4-100	8-1	9	CL	A	×	19	0	0/0	FQ			
1-CV-4522	3	D-4	8-1	9	79	A	×	19	0	0/0	FQ			
1-CV-4523	m	D-3	B-1	9	T9	A	×	19	0	0/0	FQ			
1-07-4530	3	B-5	12 - 83 12 - 13	9	TO	A	×	19	0	0/0	FQ			
1-70-4531	3	H-4-	200	0	79	A	×	19	0	2/6	FQ			
1-CV-4532	(1)	i de	11 - 80 11 - 80	9	79	A	×	61	0	0/0	FQ			
1-CV-4533	0	C7-54	8-1	9	79	A	×	19	0	0/0	FQ			
1-07-4550	0	H-7	B-1	9	79	A	×	06	0	0/0	FQ			

System: Various

P&JD: Various

Valves: Various valves which have actual stroke times of 2 seconds or less

Category: A and B Active

Class: Various

Impractical Test Requirement:

IWP-3413 to measure valve stroke time to the nearest second, and associated trending

requirements of IWV-3417.

Basis for Relief:

Valves with extremely short stoke times (less than 2 seconds) have stroke times of such short duration that comparison of measurements with previous data for specified percentage increases is not indicative of degrading valve performance. With measurement of stroke times to the nearest second per IWV-3413(b), a very small increase in stroke time will result in an extremely large percentage change, which could result in an uppacessary increase in test frequency and challenges to valves. Verificiation that valves meet a specified maximum stroke time of short duration provides adequate assurance of

operability.

Alternative Testing:

Only the maximum stroke time will be verified for those valves with nominal stroke times less than 2 seconds. The trending requirements of IWV-3417(a) will, therefore, not apply.

System:

Various

P&ID:

Various

Valves:

Various solenoid actuated valves

Category: A and B Active

Class:

Various

Impractical Test Requirement:

IWV-3300 requirement to locally veris;

remote position indication at least onme

every 2 years.

Basis for Relief: Relief request withdrawn

Alternative Testing:

System: As Required, Unit 1

P&ID: Where Applicable

Valves: As Required

Category: C

Class: As Required

Function: Relief Protection on Various Systems

Impractical Test Requirement:

IWV-3512 requires compliance to ASME PTC 25.3-1976. Paragraph 3.02 of PTC 25.3, 1977 Addendum, requires, "A person who supervises the test shall have a formal education in thermodynamics and fluid mechanics. In addition, he shall have at least two years practical experience in fluid flow measurement and have had experience in test supervision."

Basis For Relief:

The requirement of ASME PTC 25.3-1976 for the qualifications of a relief valve test supervisor are burdensome to a utility. It would result in additional staff requirements that are not warranted in light of the alternate means of meeting the intent of this paragraph.

Alternative Requirements:

The Plant Operating Safety Review Committee reviews all test procedures and any unacceptable results of relief valve testing. There are typically several members of this committee that meet the educational and experience level requirements of the Code. All test results are reviewed by the System Engineer responsible for the components i. the system the relief valve protects. The personnel who conduct the tests meet specific qualification requirements in accordance with ANSI/ASME N45.2.6 - 1978. All instruments used for testing are calibrated within the scope of the site Quality Assurance requirements.

System: Various

P&ID: Various

Volves: All those identified with "CIV" in the Remarks column of the

associated Valve Test Program.

Class: Various

Impractical Test Requirements: a. IWV-3421 through 3425 regarding leak rate test methodology.

 IWV-3427(b) regarding leak rate trending requirements.

Basis For Relief: A. In keeping with NRC Staff position, all CIV testing shall be performed under 10CFR50 Appendix J in additional to IWV-3426 and IWV-3427(a). Testing per 10CFR50 Appendix J meets the intent of leak rate testing per Section XI, but will be controlled via the Local Leak Rate Testing Program.

b. The attached data shows that the variability of leak rates for valves 6 inches and larger is excessive. CCNPP feels that this excessive variability shows the relative independence of one leak rate test to another. The tendency towards random leak rate data would cause unnecessary testing per IWV-3427(b), with no identifiable increase in benefit to public health and safety. The worth of performing this additional trending is also called into question by the recent ASME approval of OM-10 ("Inservice Testing of Valves"), which is the planned replacement to Section XI testing rules. OM-10 does not require trending of valve leak rates.

Alternative Testing:

- a. CCNPP shall test all CIVs under the requirements of 10CFR50 Apprendix J, in addition to IWV-3426 and IWV-3427(a).
- b. CCNPP shall perform no alternative testing in keeping with OM-10 guidance.

Ventilation System System:

OM-65, Sh. 1 P&ID:

1-CV-1410, 1-CV-1411, 1-CV-1412, 1-CV-1413 Valves:

Category: A-1

Class: 2

Function: Containment Isolation

IWV-3400 requirement to stroke test the Impractical Test Requirement:

valves quarterly.

These valve are normally locked shut with powe, removed. Basis for Relief:

They are only required to stroke in Mode 6. It is not desirable to stroke test these valves during each cold shutdown since unnecessary stroking could damage the sealing surfaces of these valves, causing degradation of the valve's leak-tight capability. This would result in an unnecessary increase in testing and valve maintenance.

The valves will be full stroke tested on a refueling Alternative Testing:

frequency.

Nitrogen Generating and Blanketing System System:

OM-68 P&ID:

O-N2-344, O-N2-345, O-N2-346, O-N2-347, O-N2-348, O-N2-349, Valves:

O-N2-389, O-N2-392, O-N2-395, O-N2-398

Category: AC-2

Class: 2

IWV-3520 requirement to full-stroke Impractical Test Requirement:

exercise the valves quarterly.

These containment isolation valves are normally shut, Basis for Relief:

passive valves. A quarterly test to ensure the valves are closed is not possible without using LLRT-type equipment,

and making an entry into containment.

These valves will be leak tested on a refueling Alternative Testing:

schedule in accordance with the Calvert Cliffs

Appendix J Program.

System: Reactor Coolant

P&ID: 0M-72

Valves: 1-ERV-402, 404

Category: C-1

Class: 1

Function: Relieve reactor coolant pressure.

Impractical Test Requirement: Setpoint test per IWV-3510.

Basis for Relief: These valves are categorized per Calvert Cliffs Technical

Specifications as ASME Section XI Category C-Active (relief valve). However, due to the unique valve design, these valves cannot be tested per IWV-3510, since the valves are actuated as the result of an electrical signal

from a pressure measurement device opening these valves

Alternative Testing:

Valves are tested per Technical Specificat; as at refueling intervals. The test includes a channel calibration of the actuation channel. A channel functional test, excluding valve operation, is performed within 31 days prior to entering a condition when this valve is required to serve as an MPT relief, and every 31 days thereafter when the valves are required to be operable. In addition, these valves will be functionally tested each cold shutdown prior to placing them in service for Low Temperature Overpressurization Protection.

Safety Injection and Containment Spray System:

OM-74, Sh. 3 P&ID:

SI-316, SI-326, SI-330, SI-340 Valves:

Category: AC-1

Class:

Function: Containment Spray Header inlet checks, inside and outside

containment isolation valves.

Impractical Test Requirement: IWV-3520 requirement to exercise the valves once

every 3 months.

Check valves SI-316, SI-326, SI-330, and SI-340 cannot be Basis for Relief:

stroked during operation without spraying large quantities of contaminated water into the containment. contaminated refueling pool water is also borated to approximately 2300 ppm. Spraying the containment would result in a radioactive contamination cleanup problem and seriously damage components such as lagging, reactor

coolant pumps, and control rod element assembly coils.

Alternative Testing:

One vrive will be disasse bled at each refueling outage to inspect the valve internal components. If degradation is found that would result in the valve being unable to pass full design flow, then all

valves will be inspected in the same refueling

outage.

Safety Injection and Containment Spray System:

OM-74, Sh. 3 P&ID:

SI-4148, SI-4149 Valves:

Category: C-1

2 Class:

Function: Containment Sump Outlet Check Valves

Impractical Test Requirement: IWV-3520 requirement to exercise valves once

every 3 months.

These check valves cannot be full-stroke exercised without Basis for Relief: flooding the containment floor with contaminated refueling

pool water that is borated to approximately 2300 ppm. This would result in serious damage to lagging and electrical systems control components in addition to the radioactive contamination cleanup problem of

containment sump and associated equipment.

One valve will be disassembled at each refueling Alternative Testing:

outage to inspect the valve internal components. If degradation is found that would result in the valve

being unable to pass full design flow, then all valves will be inspected in the same refueling

outage.

RELIEF REQUES! NUMBER SI-3

System: Safety Injection

P&ID: OM-74, Sh. 2

Valves: 1-SI-215, 1-SI-225, 1-SI-235, 1-SI-245

Category: AC-1

Class: 1

Function: Safety Injection Tank discharge check valves, pressure system

isolation valves

Impractical Test Requirement: IWV-3520 requirement to full-stroke exercise

valves.

Sasis for Relief: It is not possible to measure the flowrate through these

valves nor to simulate rapid depressurization of the RCS. Additionally, achieving the design flowrate through these valves would require removal of the reactor vessel head and the flowrate required could cause damage to the core

internals.

Alternative Testing:

One valve will be disassembled at each refueling outage to inspect the valve's internal components. If degradation is found that would result in the valve being unable to pass full design flow, then all valves will be inspected in the same refueling

outage.

Safety Injection System:

OM-74, Sh. 2 P&ID:

1-SI-217, 1-SI-227, 1-SI-237, 1-SI-2'7 Valves:

Category: AC-1

Class:

Function: Safety Injection to RCS loop check valves, pressure isolation valves

Impractical Test Requirement: IWV-3400 requirement to test the valves'

pressure isolation function.

The pressure upstream of these valves is continuously Basis for Relief:

monitored, and an increase results in an alarm in the control room, which requires operator action in accordance with the Calvert Cliffs alarm manual. This manual would require the operator to determine the leakage rate through

these valves.

Pressure upstream of these valves is continuously Alternative Testing:

monitored and an increase will be alarmed in the control room. This continuous monitoring provides assurance that these valves are meeting their

pressure isolation safety function.

Safety Injection System:

OM-74, Sh. 2 P&ID:

1-SI-217, 1-SI-227, 1-SI-237, 1-SI-247 Valves:

Category: AC-1

Class: 1

Function: Safety Injection to RCS loop check valves, pressure isolation valves

Impractical Test Requirement: IWV-3520 requirement to full-stroke exercise the

valves.

Basis for Relief:

It is not possible to measure the flowrate through these valves nor to simulate rapid depressurization of the RCS. Additionally, achieving the design flowrate through these valves would require a removal of the reactor vessel head and the flowrate required could cause damage to the core internals.

Alternative Testing:

The valves are part stroked whenever shutdown cooling is in operation. One valve will be disassembled at each refueling outage to inspect the valve's internal components. If degradation is found that would result in the valve being unable to pass full design flow, then all valves will be inspected in the same refueling outage.

Safety Injection System:

OM-74 P&ID:

1-SI-4146, 1-SI-4147 Valves:

Category: C

2 Class:

Function: Refueling Water Tank Outlet Check Valves

Impractical Test Requirement: IWV-3520 requires a check valve to be tested to

its design flow position once a quarter.

Basis for Relief:

It is not possible to provide full design flow through these check valves during any period of plant operation. The full design flow would require the simultaneous operation of 1 LPSI pump, 1 CS pump, and 1 HPSI pump for each valve with the combined discharge path that duplicates the design basis LOCA. It is not possible to provide simultaneous full design flow from all three pumps due to core damage from excessive reactor vessel flow and deluging of containment interior components from the spray header.

Alternative Testing:

These valves will be part-stroke tested once a quarter. One valve will be disassembled at each refueling outage to inspect the valve's internal components. If degradation is found that would result in the valve being unable to pass full design flow, then all valves will be inspected in the same refueling outage.

Containment Spray System:

OM-74 P&ID:

1-SI-313, 1-SI-323 Valves:

Category: C

Class:

Function: Containment Spray Pump Discharge Check Valve

Impractical Test Requirement: IWV-3520 requires a check valve to be tested to

its design flow position once a quarter.

Basis for Relief:

These valves cannot be full-flow stroke tested due to limitations on the bypass discharge flow paths. The valves can be full flow tested only during refueling outages where plant conditions can be established to allow the use of both Containment Stray pumps as alternate LPSI pumps to provide Shutdown Cooling flow. The core decay heat load is minimal and the need for a boration flow path dependent only on one charging pump occurs during refueling outages only.

Alternative Requirements:

On a COLD SHUTDOWN basis, the valves will be part-stroke tested. The valves will be Full Stroked each refueling outage during the Large Flow testing of the respective Containment Spray pumps.

APPENDIX D

CALVERT CLIFFS UNIT 2

SECOND TEN YEAR VALVE TESTING PROGRAM

SYSTEM	P&ID (OM-)	PAGE
	36	D-1
Main Steam	40	D+2
Condensate and Feedwater	46	D-3
Service Water		D-4
Service Water	47	D-5
Fire Protection	56	
Ventilation Eystem	65	D-6
Post-Accident Sample	66	D-8
Plant Heating	71	D-10
	76	D-11
Waste Processing	77	D-13
R.C. Waste Processing	78	D-15
Waste Gas	96	D-16
Rad. Monitoring	450	D-17
Salt Water Cooling	452	D-19
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Compressed Air		D-22
Reactor Coolant	460	D-23
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Safety Injection	462	
Gas Analyzing	463	D-33
S.G. Blowdown	465	D-35
Plant Water & Air	479	D-36
Aux. Feedwater	801	D-38

UNIT NO.

REL.

VALVE	ASPE	P&1D COORD	VALVE	SIZE (in.)	VLV	ACT	IND.	(sec.)	POS.	POS.	TEST	NO.	TEST	REMARKS
2-RV-3992	2	F-7	C-1	9	RV		1		U	0	ST			
2-RV-3993	2	9-3	C-1	9	RV	,		1	3	0	ST			
2-RV-3994	2	9-4	C-1	9	RV		1	1	0	0	ST			
2-RV-3995	2	F-6	C-1	9	RV			1	2	0	ST			
2-RV-5996	64	F-5	C-1	9	KV	1			0	0	ST			
2-RV-3997	2	5-4	C-1	9	RV		1		0	0	ST			
2-RV-3998	2	F-4	C-1	9	RV		1		D	0	ST			
2-RV-3999	2	7- 4	C-1	9	RV	1	1		2	0	ST			
2-RV-4000	2	67 = Ga	C-1	9	RV				O	0	ST			
2-RV-4001	2	B-6	C-1	9	RV	*	,		3	0	ST			
2-RV-4002	2	B-6	C-1	9	RV		1		3	0	ST			
2-RV-4003	2	B-5	C-1	9	RV	1	*	*	U	0	ST			
2-RV-4004	2	B-5	C-1	9	RV			,	0	0	ST			
2-RV-4005	2	7-8	C-1	9	RV	*	1		0	0	ST			
2-RV-4006	2	B-4	C-1	9	RV				J	0	ST			
2-RV-4007	2	B-3	C-1	9	RV	1	,		3	0	1º			
2-CV-4043	2	F-3	B-1	36	TO	E/H	×	9	0	0	FC			
0 101 0	0	B - 3	B-1	36	19	E/H	X I	9	0	0	FC			

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UNIT NO. 2 SYSTEM NAME: Cordensate and Feedwater System P&ID NO. OM-40 SHEET 4

VALVE NUMBER	ASME CI-ASS	P&ID COORD	VALVE CATEGORY	SIZE (in.)		ACT TYPE		TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
2-FW-130	2	F-7	C-1	16	С	-	-	-	C	С	VC			
2-FW-133	2	B-7	C-1	16	С	-	-		0	С	VC			
2-MOV-4516	2	B-8	B-1	16	G	М	Х	70	0	С	FC			
2-MOV-4517	2	F-8	B-1	16	G	М	Х	70	0	С	FC			

UNIT NO. 2 SYSTEM NAME: Service Water Cooling System P&ID NO. OM-47 SHEET 2

VALVE NUMBER	ASME CLASS	P&ID COORD	VALVE	SIZE (in.)	VLV TYPE	ACT TYPE	POS. IND.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
2-CV-1645	3	F-8	B-1	6	В	A	X	20	С	0	FQ			
2-CV-1646	3	D-9	B-1	6	В	A	Х	20	С	0	FQ			

SYSTEM WAME: Service Water Cooling System

UNIT NO. 2

REL.

2-SRW-314 2-SRW-315 2-SRW-316 2-SRW-317		F-3											1
	1 1 1 1 1 1	6-3	C-1	14	U	,			0/0	0/0	VQ		
	1 1 1 1		C-1	17	0	*			3/0	0/0	VQ		
	1. 1.	H-3	C-1	14	2			,	0/0	0/0	NO		
	100	9-9	C-1	80	0				0/0	0	99		
2-SRW-318		E-10	C-1	8	0				0/0	0	M		
2-SR#-319	2	H-5	1.3	1.5	0			,	0/0	0	VQ		
2-SRW-320	20	6-9	C-1	00	O	×	*		0,70	0	VQ		
2-SRW-321	0	H-8	C-1	9	0	,		1	2	0	VQ		
2-SRW-323	0	1 (42)	1-3	18	0	1		*	0	O	NC NC		
2-SRW-324	0	E-1	C-1	18	3				0	3	VC		
2-SRW-325		100	C-1	18	0			,	0	O	VC		
2-CV-1582	m	2-9-3	B-1	00	200	A	*	10	O	0	FO		
2-CV-1585	m	E-11	B-1	80	80	A	×	10	13	0	FQ		
2-CV-1590	100	9-H	B-1	80	200	40	×	10	S	0	FQ		
2-CV-1593	67	6-11	B-1	10	80	A	×	10	0	0	FO		
2-CV-1598	m	8-8	B-1	80	20	A	×	15	0	C	FQ		

SYSTEM NAME: Service Water Cooling System

UNIT NO. 2

REL.

VALVE	ASPE	P&1D COORD	VALVE	SIZE (in.)	VLV	ACT TYPE	NOS.	(sec.)	NORM POS.	POS.	TEST	NO.	TEST	REMARKS
2-CV-1597	3	0-0	B-1	8	200	A	×	10.5	0	0	FQ			
0091-00-	67	A-10		14	200	V	×	30	0	0	PC			
-CU-1637	61	B-10	8-1	14	m	4	X	30	0	U	FC			
20 AU. 16.38		A-11	8-1	14	90,	A	X	30	0	0	PC			
0007-40-7	00	B-11	8-1	14	66	A	×	30	0	1	24			

UNIT NO. 2

KEHARKS	CIV	CIV	VIC		
ALT. TEST					
ND.	A-4	A-4	A-4		
REQ.	LR	11.8	LR		
REQ.	0	U	0		
NORM POS.	2	0	U		
TIME (sec.)		*	×		
POS.	1	4			
ACT TYPE	1		E		
VLV	0	Ü	9		
SIZE (in.)	9	9	10		
VALVE	AC-2	AC-2	A-2		
PEID	C-8	6-3	8-3		
ASPE.	2	2	81		
VALVE	2-FP-145A	2-FP-145B	2-MOV-6200		

UNIT NO. Z SYSTEM NAME: Ventilation System P&ID NO. OM-65 SHEET 1

VALVE NUMBER	ASME CLASS	P&ID COORD	VALVE CATEGORY	SIZE (in.)	VLV TYPE	ACT TYPE	POS. IND.	TIME (sec.)	NORM POS.		REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
2-CV-1410	2	B-11	A-1	48	В	A	Х	7	С	С	LR,FQ	VS-1,A-4	RR	CIV
2-CV-1411	2	B-11	A-1	48	В	Α	Х	. 7	С	С	LR,FQ	VS-1,A-4	RR	CIV
2-CV-1412	2	C-11	A-1	48	В	A	Х	7	С	С	LR,FQ	VS-1,A-4	RR	CIV
2-CV-1413	2	C-11	A-1	48	В	A	X	7	С	С	LR,FQ	VS-1, A-4	RR	CIV

UNIT NO. 2 SYSTEM NAME: Ventilation System P&ID NO. OM-65 SHEET 2

VALVE NUMBER	ASME CLASS	P&ID COGRD	VALVE CATEGORY	SIZE (in.)	VLV TYPE	ACT TYPE	POS. IND.	TIME (sec.)				REU. NO.	ALT. TEST	REMARKS
2-HP-104	2	F-4	AC-2	4	S	-	-		C	С	LR	A-4		CIV
2-H2-6900	2	G-5	A-1	4	G	М	Х		L	С	FC, LR	A-4		CIV
2-нр-6901	2	G-5	A-1	4	G	М	X		С	С	FC, LR	A-4		CIV
2-HP-6903	2	G-5	A-2	4	G	M	Х	-	С	С	LR	A-4	1.	CIV

SYSTEM NAME: Reactor Coolant & Water Process Sample P&ID NO. OM-66

System Post Accident Sample System SHEET 1 UNIT NO. 2

VALVE NUMBER	ASME CLASS	P&ID COORD	VALVE	SIZE (in.)	VI.V TYPE	ACT TYPE	POS. IND.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
2-SV-105	1	A-10	B-1	3/4	G	S	X	3	C	0	FC	A-1	RR	
-SV-106	1	A-11	B-1	3/4	G	S	Х	3	r;	6	FC	A-1	RR	
-CV-5464	1	C-10	A 1	3/4	G	Α	Х	7	С	С	LR,FQ	A-4		CIV
-CV-5465	1	B-11	A-1	3/4	G	A	Х	7	С	С	LR,FQ	A-4		CIV
-CV-5466	1	B-11	A-1	3/4	G	A	Х	7	С	С	LR,FQ	£-4		CIV
2-CV-5467	1	B-11	A-1	3/4	Ğ	A	X	7	С	С	LR,FQ	A-4		CIV

SYSTEM NAME: Reactor Coolant & Water Process Sample P&ID NO. OM-66
System Post Accident Sample System SHEET 3 UNIT NO. 2

VALVE NUMBER	ASME CLASS	P&ID COORD	VALVE	SIZE (in.)	VLV TYPE	ACT TYPE	POS. IND.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REL. REQ. NO.	ALT. TEST	KOMARKS
														CIV
-SV-6529	1	E-11	A-2		GL	S	X	7	C	-	Tab.	***		

UNIT NO. 2 SYSTEM NAME: Plant Heating System P&ID NO. OM-71 SHEET 2

VALVE NUMBER	ASME CLASS	P&ID COORD	VALVE	SIZE (in.)	VLV TYPE	ACT TYPE	POS. IND.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REL. REQ. MO.	ALT. TEST	REMARKS
O-PH-387	2	C-12	AC-2	3	С	Н	-		С	С	LR	A-4		CIV
2-MOV-6579	2	E-11	A-2	3	G	М	X	13	С	С	LR	A-4		CIV

UNIT NO	2	SYSTEM	NAME: Wa	ste Pro	cess E	quipme	nt & A	rea Drai	ns	P&ID N	00	1-76	SHEET2	
VALVE NUMBER	ASME CLASS	P&ID COORD	VALVE	SIZE (in.)	VLV TYPE	ACT TYPE	POS. IND.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
2-MOV-5463			A-1									A-4		CIV

UNIT NO	2	SYSTEM	NAME: Wa	ste Pro	cess E	quipme	nt & A	rea Drai	ns	P&ID N	10. 0	1-76	ShEET _4	
VALVE NUMBER	ASME CLASS	P&ID COOCD	VALVE CATEGORY	SIZE (in.)	VLV TYPE	ACT TYPE	POS. IND.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
2-MOV-5462	2		A-1									A-4		CIV

UNIT NO.	2	SYSTEM	NAME: Re	actor C	colant	Waste	Proce	ssing Sy	stem	PSID N	io. <u>0</u> 8	1-77	SHEET _1	
VALVE NUMBER	ACME	P&ID COORD	VALVE	SIZE (in.)	VLV TYPE	ACT	POS. IND.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
MURBER	Separate Separate	Secretar									and the second second	2.7		CIV
2-CV-4260	2	15-7	A-1		CL	A	Х.	7	0/0	C	FQ, LR	A-4		

2-CV-4260 2 b-7

NIT NO.	2_	SYSTEM	NAME: Re	actor C	oolant	Waste	Proce	ssing Sy	stem	P&ID N	00	M-77	SHEET	
VALVE NUMBER	ASME CLASS	P&ID COORD	VALVE	SIZE (in.)	VLV TYPE	ACT TYPE	POS.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
FC-1/2	2	F-9	A-2	1	GL	Н		-	С	С	LR	A-4		CIV

C

E-9

E-9

3

3

2-ES-142

2-ES-144

A-2

4-2

GL

H

A-4

LR

C

CIV

UNIT NO. 2 SYSTEM NAME: Waste Gas & Misc Waste Processing P&ID NO. OM-78 SHEET 1
Systems

VALVE NUMBER	ASME CLASS	P&ID COORD	VALVE CATEGORY	SIZE (in.)	VI.V TYPE	ACT TYPE	POS.		NORM POS.			REL. REQ. NO.	ALT. TEST	REMARKS
2-CV-2180	2	D-2	A-1	2	GL	A	Х	7	0/0	С	LR,FQ	A-4		CIV
2-CV-2181	2	D-2	A-1	2	GL	A	Х	7	O/C	С	LR,FQ	A-4		CIV

UNIT NO. 2

SYSTEM NAME: Area & Process Radiation Monitoring

OM-98 P&ID NO.

SHEET

System

VALVE NUMBER	ASME CLASS	P&ID COORD	VALVE	SIZE (in.)	VLV TYPE	ACT TYPE	POS. IND.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
2-CV-5291								7				A-4		CIV
2-CV-5292	2			1	GL	A	X	7	0	С	FQ, LR	A-4		CIV

SHEET
0
OM-450
P&ID NO.
System
Water Cooling System
Salt
Circulating
NAME:
SYSTEM
2
UTT NO.

REMARKS		
ALT. TEST		
REQ. NO.		
REQ.	FQ	FQ
REQ. POS.	C	C
NORM POS.	0	0
TiME (sec.)	22	30
POS. IND.	×	×
ACT	Σ	N
VLV TYPE	m	20
SIZE (in.)	9	9
VALVE	B-1	B-1
P6.13 COORD	A-3	A-2
ASME	3	67
VALVE	2-MOV-5250	2-MOV-5251

			Circulating Salt Water Cooling System	P&ID NO.	OM-450	SHEET	
UNIT NO.	2	SYSTEM NAME:	Circulating Sait water				

VALVE NUMBER	ASME CLASS	P&ID COORD	VALVE CATEGORY	SIZE (in.)	VLV TYPE	ACT TYPE	POS.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
2-SW-103	3	C-6	C-1	30	С	-		-	0/C	0/C	VQ			
-SW-107	3	C-9	C-1	30	С	-	-	-	0/C	0/C	VQ			
2-SW-111	3	C-12	C-1	30	С	-	-	-	0/0	0/C	VQ			
2-CV-5160	3	E-4	B-1	24	В	Α	Х	24	0/C	0/0	FQ			
2-CV-5162	3	G-4	B-1	24	В	A	Х	27	0/C	0/0	FQ			
2-CV-5163	3	J-4	B-1	24	В	А	Х	26	0/0	0/C	FQ			
2-CV-5170	3	F-3	B-1	8	В	A	Х	15	0/0	0	FQ			
2-CV-5171	3	G-3	B-1	8	В	Α	X	15	0/0	0	FQ			
2-CV-5173	3	E-3	B-1	8	В	A	Х	22	0/0	0	FQ			
2-CV-5206	3	J-7	B-1	24	В	A	X	124	0/0	0	FQ			
2-CV-5208	3	J-6	3-1	24	В	Α	X	106	0/0	0/9	FQ			
2-CV-5210	3	D-10	B-1	30	В	A	х	140	0/0	0	FQ			
2-CV-5212	3	H-10	B-1	30	В	A	Х	278	0/0	0	FQ			

UNIT NO. 2 SYSTEM NAME: Component Cooling System P&ID NO. OM-452 SHEET 1

VALVE NUMBER	ASME CLASS	P&ID COORD	VALVE CATEGORY	SIZE (in.)	VLV TYPE	ACT TYPE	POS. IND.	TIME (sec.)	NORM POS.	REQ.	REQ. TEST	RET. REQ. NO.	ALT. TEST	REMARKS
2-CC-115	3	J-4	C-1	16	С		-	-	0/0	0/0	VQ			
2-CC-120	3	G-4	C-1	16	С	-			0/0	0/C	VQ			
2-CC-125	3	E-4	C-1	16	С	-			0/C	0/C	VQ			

2

UNIT NO.

				dere	OXO	ACM	DOG	TIME	MORM	REO.	REO.	REQ.	ALT.	
VALVE	CLASS	COOKD	CATEGORY	(in.)	TYPE	TYPE	IND.	(sec.)	POS.	POS.	TEST	NO.	TEST	REMARKS
2-CV-3824	3	B-6	B-1	16	Ø	A	×	25	0/0	0	FQ			
2-CV-3826	3	9-0	B-1	16	90	A	×	29	0/0	0	FQ			
2-CV-3828	3	6-9	8-1	16	250	A	×	45	O	0	FQ			
2-CV-3830	6	6-3	B-1	16	an	A	X	36	0	0	FQ			
2-CV-3832	2	A-2	A-1	10	8	A	×	18	0	0	FC, LR	A-4		N. S.
2-CV-3833	2	4-H	A-1	10	200	A	×	18	0	O	FC, LR	1		CIV
2-CV-3840	3	A-8	8-1	10	B	A	X	15	0	0	FQ			
2-CV-3842	6	A-9	B-1	10	gC	A	×	20	0	3	FQ			

UNIT NO. 2 SYSTEM NAME: Compressed Air System: Plant & P&ID NO. OM-454 SHEET 3
Instrument Air

VALVE NUMBER	ASME CLASS	P&ID COORD	VALVE CATEGORY	SIZE (in.)	VLV TYPE	ACT TYPE		TIME (sec.)				REL. REQ. NO.	ALT. TEST	REMARKS
2-IA-175	3	C-7	AC-1	2	С	-	-	-	0/0	С	VC, LR	A-4		CIV
2-MOV-2080	2	C-7	A-1	2	G	М	X	13	0	С	LR,FC	A-4		CIV

		OVOTEM NAME.	Reactor Coolant System	P&ID NO.	OM-460	SHEET	1
UNIT NO.	2	SYSTEM NAME:	Reactor Coorant Dystem				

The second secon	ASME CLASS	P&ID COORD	VALVE	SIZE (in.)	VLV TYPE	ACT TYPE	POS.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
2-SV-103	1	J-6	B-1	3/4	G	S	Х	3	С	0	FC	A-1		
2-SV-104	1	J-5	B-1	3/4	G	S	X	3	С	0	FC	A-1		
2-RV-200	1	B-4	C-1	2 1/2	RV	-	-		С	0	ST			
2-RV-201	1	B-7	C-1	2 1/2	RV	-		-	С	0	ST			
2-ERV-402	1	A-4	BC-1	2 1/2	RV	*			С	0	ST	RC-1	RR	*Electro- matic re- ief valve
2-MOV-403	1	B-4	B-1	4	G	М	Х	45	0	0	FQ			
2-ERV-404	1	A-7	BC-1	2 1/2	RV	*			С	0	ST	RC-1	RR	*Electro- matic re- lief valve
2-MOV-405	1	P-6	B-1	4	G	M	Х	+ +	0	0	FQ			
2-DW-5460-CV	1	A-10	A-1	2	GI	A	Х	7	0/0	С	FQ,LR	A-4	24.7	CIV

SYSTEM NAME: CVCS

2

UNIT NO.

VALVE	ASME	P&ID COORD	VALVE	SIZE (in.)	VLV TYPE	ACT	POS.	TIME (sec.)	NORM POS.	REQ.	REQ.	KEQ.	ALT. TRST	REMARKS
2-CVC-162	2	F-2	C-1	7	0		,	,	0	3	VC			
2-CVC-217	2	9-1	C-1	3	3		1		0/0	0/0	VQ			
2-CVC-222	2	6-9	C-1	3	O		1		0/0	0/0	VQ			
2-CVC-228	2	H-2	C-1	3	O	1			0	0	VC			
2-CVC-235	2	4-F	C-1	3	3	1			O	0	VC			
2-MOV-501	2	F-2	B-1	4	9	Σ	X	30	0	Ü	FC			
2-MOV-508	2	6-10	8-1	3	5	Σ	×	20	O	0	FQ			
2-MOV-509	2	F-6	B-1	3	9	Σ	X	20	O	0	FQ			
2-CV-510	2	E-7	B-1	1 1/2	CL	A	×	30	0	O	FQ			
2-CV-511	2	E-10	B-1	1 1/2	T9	A	×	30	0	O	FQ			
2-CV-512	2	C-3	B-1	3	9	A	×	30	0/0	S	FQ			
2-MOV-514	2	F-5	B-1	60	9	X.	X	20	O	0	FQ			

VALVE NUMBER	ASME CLASS	P&ID COORD	VALVE CATEGORY	SIZE (in.)	VLV TYPE	ACT TYPE	POS. IND.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
2-CVC-165	2	F-6	C-1	2	С	-	-		0/0	0/C	VQ			
2-040-103					C			-	0/C	0/C	VQ			
2-CVC-171	2	G-6	C-1	2	C					0.10	VQ			
2-CVC-177	2	J-6	C-1	2	C	-	•		0/C	0/0	VQ			CIV, Tested
2-CVC-184	1	E-5	AC-1	2	С				0	0/0	VC, LR	A-4		OPEN During Power Oper- ation. Tested SHUT During Cold Shutdown
				2	C		_	-	С	0/0	VC			
2-CVC-185	1	C-8	C-1	- 4			- 14	100		0/0	. VC			Tested OPEN
2-CVC-186	1	E-8	C-1	2	С				0	0/0				During Pow- Operation. Tested SHUT During Cold Shutdown
								37.5						Tested OPEN
2-CVC-187	1	E-11	C-1	2	С				0	0/0	c vc			During Pow- Operation. Tested SHUI During Cold Shutdown
			D 1	2	G	М	X	20	C	С	FQ			
2-MOV-269	2	G-4	B-1						C	0	ST			
2-RV-311	2	G-9	C-1	3/4	RV					The Pa				
2-RV-315	2	F-8	C-1	3/4	RV			-	C	0	ST			THE TYPE OF

VALVE	ASME	P&ID COORD	VALVE	SIZE (in.)	VLV TYPE	ACT	POS.	TIME (sec.)	NORM POS.	REQ.	REQ.	REQ.	ALT. TEST	REMARKS
2-RV-318	2	8-9	C-1	3/4	RV	1	,		67	0	ST			
2-RV-321	2	H-8	C-1	3/4	RV	,	,		0	0	ST			
2-RV-324	2	9-Н	C-1	3/4	RV	1	1		0	0	ST			
2-RV-325	2	9-9	C-1	3/4	RV	1		1	O	0	ST			
2-PU-326	2	F-6	C-1	3/4	RV	,	1		0	0	ST			
2-000-435	-	F-10	AC -1	2	O	,			0	0/0	LR, VC	A-4		CIV
505-V2-6	2	8-8	A-1	3/4	CL	A	×	7	0	0	LR, FC	A-4		CIV
2-CV-50A	2	8-6	A-1	3/4	T9	A	×	7	0	O	LR, FC	A-4		CIV

Rev. 1 9/26/88

UNIT NO. 2 SYSTEM NAME: CVCS P&ID NO. OM-461 SHEET 2

VALVE NUMBER	ASME CLASS	P&ID COORD	VALVE	SIZE (in.)	VLV TYPE	ACT TYPE	POS.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
2-CV-515	1	D-3	A-1	2	GI.	A	Х	13	0	С	LR,FC	A-4		CIV
2-CV-516	1	D-4	A-1	2	GL	A	X	13	0	С	LR,FC	A-4		CIV
2-CV-517	1	C-9	A-1	2	GL	A	Х	200	С	0/C	FC, LR	A-4		CIV
2-CV-518	1	E-9	A-1	2	GL	A	Х	24	0	0	LR,FQ	A-4		CIV
2-CV-519	1	E-10	A-1	2	GL	A	X	18	0	0	LR,FQ	A-4		CIV

			ange	P&ID NO.	OM-461	SHEET	
UNIT NO.	2	SYSTEM NAME:	CVCS				

VALVE	ASME CLASS	P&ID COORD	VALVE CATEGORY	SIZE (in.)	VLV TYPE	ACT TYPE	POS.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
NUMBER	CIADO		A-2	2	G	Н	-			C*	LR	A-4		CIV
2-CVC-103	2	B-3	H-2	-					0*	0*	LR	A-4		CIV
2-CVC-105	2	B-3	A-2	2	G	Н			0					

^{*} Normally if CVC-103 is OPEN, CVC-105 is SHUT, and vice versa.

UNIT NO. 2 SYSTEM NAME: Safety Injection & Containment Spray P&ID NO. 0M-462 SHEET 1

System

VALVE NUMBER	ASME CLASS	P&ID COORD	VALVE	SIZE (in.)	VLV TYPE	ACT TYPE	POS. IND.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
2-81-113	2	D-2	C-1	2	С				С	0/C	vc			Tested OPEN During Cold Shutdown. Tested SHUT During Pow- er Oper- ation.
2-81-123	2	E-2	C-1	2	С				С	0/0	VC			Tested OPEN During Cold Shutdown. Tested SHUT During Pow- er Oper- ation.
2-SI-133	2	F-2	C-1	2	С				С	0/0	VC			Tested OPEN During Cold Shutdown. Tested SHUT During Pow- er Oper- ation.
2-51-143	2	G-2	C-1	2	С				С	0/0	vc vc			Tested OPEN During Colo Shutdown. Tested SHU During Pow- er Oper- ation.

VALVE	ASME	P& ID COORD	V.LVE CA.EGORY	SIZE (in.)	VLV TYPE	ACT	PUS.	TIME (sec.)	NORM POS.	REQ.	TEST	KEQ.	ALT. TEST	REMARKS
2-SI-401	2	6-9	C-1	9	C				0	0	VC			
2-51-405	2	6-5	C-1	3	O				O	0/0	NC NC			
2-RV-409	2	4-7	C-1	3/4	RV		1		0	0	ST			
2-SI-410	2	E-9	C-1	80	O				O	0	VC			
2-SI-414	2	5-3	C-1	6	O				O	0/0	VC			
2-RV-417	2	7-Q	C-1	-	RV	1			C	0	ST			
2-81-422	64	60 42	C-1	2	O				O	0	VQ			
2-S1-424	2	8-5	C-1	2	U	1			υ	0	VQ			
2-81-426	21	80 - Sa.	1-0	74	O		,		0	0	VQ			
2-81-427	2	0-5	C-1	9	0	*			O	0/0	VC			
2-SI-434	2	4-H	C-1	10	C		*		O	0/0	NC NC			
2-SI-446	2	5-3	C-1	10	O	*	1		O	0/0	VC			
2-51-448	2	8-8	C-1	2	O	1	1		0	0	VQ			

SHEET 1 P&ID NO. 0M-462 UNIT NO. 2 SYSTEM NAME: Safety Injection & Containment Spray

System

														THE RESERVE OF THE PARTY OF THE
VALVE NUMBER	ASME CLASS	P&ID COORD	VALVE	SIZE (in.)	VLV TYPE	ACT TYPE	POS. IND.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
2-SI-451	2	G-8	C-1	2	С	-	-	-	С	0	VQ			
2-MOV-616	2	D-3	B-1	2	GL	М	Х	20	С	0	FQ	10.047		
2-MOV-617	2	C-3	B-1	2	GL	М	X	20	C	0	FQ			
2-MOV-626	2	E-3	B-1	2	GL	М	X	20	С	0	FQ			
2-MOV-627	. 2	E-3	B-1	2	GL	М	Х	20	2	0	FQ			
2-MOV-636	2	F-3	B-1	2	GL	М	Х	20	С	0	FQ			
2-MOV-637	2	F-3	3-1	2	GL	М	Х	20	С	0	FQ			
2-MOV-646	2	H+3	B-1	2	GL	М	X	20	С	0	FQ			
2-MOV-647	2	G-3	B-1	2	GL	М	X	20	С	0	FQ			
2-MOV-659	2	A-10	B-1	4	G	М	Х	70	0	0/0	FC			
2-MOV-660	2	B-10	B-1	4	G	M	X	70	0	0/0	FC			
2-MOV-4142	2	E-10	B-1	18	G	М	Х	106	0	0/0	FQ			Tested SHUT Only.
2-MOV-4143	2	D-10	B-1	18	G	M	Х	108	0	0/0	: FQ			Tested SHUT Only.
2 101 4245							. İtri				150	SI-6	PR	
2-81-4146	2	E-10	C-1	18	C	-			С				RR	
2-SI-4147	2	E-10	C-1	18	С		i		С	0	VQ	SI-6	KK	

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UNIT NO. 2 SYSTEM NAME: Safety Injection & Consinment Spray P&ID NO. OM-462 SHEET 2
System

VALVE NUMBER	ASME CLASS	P&ID COORD	VALVE CATEGORY	SIZE (in.)	VLV TYPE	ACT TYPE	POS.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
2-SI-235	1	C-9	AC-1	12	С	-	-		С	0/C	IR, VQ	SI-3	RR	PSIV
2-SI-237	1	D-7	AC-1	12	С	-	-		С	0/C	IR,VQ	\$1-4,5	RR	PSIV
2-RV-241	2	F-9	C-1	1	RV	-	-	-	С	0	ST			
2-81-245		G-9	AC-1	12	С	-	-		С	0/C	IR,VQ	SI-3	RR	PSIV
2-SI-247		G-7	AC-1	12	C		-		С	0/0	IR, VQ	SI-4,5	RR	PSIV

UNIT NO. 2

2

OM-462 P&ID NO.

Safety Injection & Containment Spray System

2 B-6 A-2 2 G H X 20 C C LR A-4 2 B-8 A-2 2 G H C C LR A-4 2 B-8 A-2 2 G H C C LR A-4 2 J-8 C-1 11/2 RV C C LR A-4 2 J-5 C-1 3/4 RV C C O ST 2 D-3 B-1 1 GL A X 20 C C PQ 2 B-5 A-1 1 GL A X 30 O/C C PQ 2 B-11 A-1 1 GL A X 30 O/C C PQ 2 B-11 A-1 1 GL A X 30 O/C C PQ 2 B-11 A-1 1 GL A X 30 O/C C PQ 2 B-11 A-1 1 GL A X 30 O/C C PQ 3 B-11 A-1 1 GL A X 30 O/C C PQ 4 C PQ 6 C PQ 7 C	VALVE	ASME	PEID	VALVE	SIZE (in.)	VLV	ACT TYPE	POS.	TIME (sec.)	NORM POS.	REQ.	REQ.	REQ.	ALT.	REMARKS
2 B-8 A-2 2 G H C C LR A-4 C C 2 B-8 A-4 C C 2 B-8 A-2 2 G H C C LR A-4 C C C C LR A-4 C C C C LR A-4 C C C C C C C C C C C C C C C C C C C	Manager and	6	9-H		2	9	×	X	20	0	0	FQ			
2 B-6 A-2 Z G H C C LR A-4 C C 2 J-8 C-1 11/2 RV C C ST 2 B-5 A-1 1 GL A X 6 O/C C FQ, LR A-4 3 L C-5 B-1 1 GL A X 90 O/C C FQ, LR A-4 3 L C-5 B-1 1 GL A X 6 O/C C FQ, LR A-4 3 L C-7 B-1 1 GL A X 6 O/C C FQ, LR A-4 3 L C-7 B-1 1 GL A X 6 O/C C FQ, LR A-4 3 L C-7 B-1 1 GL A X 6 O/C C FQ, LR A-4 3 L C-7 B-1 1 GL A X 6 O/C C FQ, LR A-4 3 L C-7 B-1 1 GL A X 6 O/C C FQ, LR A-4 3 L C-7 B-1 1 GL A X 6 O/C C FQ, LR A-4 3 L C-7 B-1 1 GL A X 80 O/C C FQ, LR A-4 3 L C-7 B-1 1 GL A X 80 O/C C FQ, LR A-4 4 X 6 O/C C FQ, LR A-4 4 X 7 6 O/C C FQ, LR A-4	565-NO	4 (9	4.9	2	9	H			3	C	LR	A-4		CIV
2 J-8 C-1 11/2 RV C O ST 2 J-8 C-1 11/2 RV C O ST 2 J-8 C-1 11/2 RV C O ST 2 J-5 C-1 3/4 RV C O ST 2 B-5 A-1 1 GL A X 6 0/C C FQ,LR A-4 3 I C-5 B-1 1 GL A X 30 0/C C FQ 8 I G-5 B-1 1 GL A X 6 0/C C FQ,LR A-4 2 B-1 1 GL A X 30 0/C C FQ 8 I G-5 B-1 1 GL A X 6 0/C C FQ,LR A-4 2 B-1 A-1 1 GL A X 6 0/C C FQ 8 I G-5 B-1 I GL A X 6 0/C C FQ,LR A-4 2 B-1 A-1 I GL A X 6 0/C C FQ,LR A-4 2 C B-1 A X 30 0/C C FQ,LR A-4 3 C D-10 B-1 6 GL A X 6 0/C C FQ,LR A-4 8 I C-7 B-1 I GL A X 6 0/C C FQ,LR A-4 8 I C-7 B-1 I GL A X 6 0/C C FQ,LR A-4	11-455	7	0 0	A-3		9	H			0	O	LR	A-4		CIV
2 J-8 C-1 11/2 NV 2 J-5 C-1 3/4 RV C C O ST 2 B-5 A-1 1 GL A X 6 O/C C FQ, LR A-4 5 2 D-3 B-1 6 GL M X 20 C O FQ 5 2 D-3 B-1 1 GL A X 30 O/C C FQ, LR A-4 6 C L M X 20 C C FQ, LR A-4 7 C S B-1 1 GL A X 30 O/C C FQ, LR A-4 7 C S B-1 1 GL A X 30 O/C C FQ 8 1 G-5 B-1 1 GL A X 30 O/C C FQ, LR A-4 7 C B-1 1 GL A X 30 O/C C FQ 8 1 C-7 B-1 1 GL A X 50 C C FQ 8 1 C-7 B-1 1 GL A X 50 C C FQ 8 1 C-7 B-1 1 GL A X 50 O/C C FQ 8 1 C-7 B-1 1 GL A X 50 O/C C FQ 8 1 C-7 B-1 1 GL A X 50 O/C C FQ 8 1 C-7 B-1 1 GL A X 50 O/C C FQ 8 1 C-7 B-1 1 GL A X 50 O/C C FQ 8 1 C-7 B-1 1 GL A X 50 O/C C FQ 8 1 C-7 B-1 1 GL A X 50 O/C C FQ 8 1 C-7 B-1 1 GL A X 50 O/C C FQ 8 1 C-7 B-1 1 GL A X 6 O/C C FQ 8 1 C-7 B-1 1 GL A X 6 O/C C FQ 8 1 C-7 FQ 8 1 C-7 B-1 1 GL A X 6 O/C C FQ 9 C C C C FQ 9 C C C C FQ 9 C C C FQ 9 C C C C	1-463	7	0-0	4 0		and		1		0	0	ST			
2 J-5 C-1 3/4 RV C O S1 2 B-5 A-1 1 GL A X 6 O/C C FQ,1R A-4 5 2 D-3 B-1 6 GL M X 20 C PQ 1 C-5 B-1 1 GL A X 86 O/C C FQ,LR A-4 1 C-5 B-1 1 GL A X 80 O/C C FQ,LR A-4 2 Z B-11 A-1 1 GL A X 30 O/C C FQ 2 Z B-11 A-1 1 GL A X 6 O/C C FQ,LR A-4 2 Z B-11 B-1 GL A X 30 O/C C FQ,LR A-4 2 Z B-11 A-1 1 GL A X 80 O/C C FQ,LR A-4 2 Z B-11 A-1 1 GL A X 80 O/C C FQ,LR A-4 2 Z B-11 A-1 1 GL A X 80 O/C C FQ,LR A-4 35 Z D-10 B-1 6 GL M X 20 C PQ,LR A-4 6 J C-7 FQ,LR A-4 7 S S S S S S S S S S S S S S S S S S S	897-A8	13	3-8	C-1	1 1/2	NV					0	CT			
2 B-5 A-1 1 GL A X 6 0/C C FQ,LR A-4 5 2 D-3 B-1 6 GL M X 20 C PQ 1 C-5 B-1 1 GL A X 30 0/C C FQ 2 F-5 A-1 1 GL A X 30 0/C C FQ 1 G-5 B-1 1 GL A X 30 0/C C FQ 1 G-5 B-1 1 GL A X 30 0/C C FQ 2 B-1 A-1 1 GL A X 30 0/C C FQ 3 2 D-10 B-1 6 GL M X 20 C PQ 3 5 2 D-10 B-1 6 GL M X 20 C PQ 3 6 C PQ 4 7 6 O/C C FQ,LR A-4 5 7 8-1 1 GL A X 80 0/C C FQ,LR A-4 5 8 1 C-7 B-1 1 GL A X 80 0/C C FQ 5 8 1 C-7 B-1 1 GL A X 80 0/C C FQ,LR A-4	8V-469	2	1-5	C-1	3/4	RV	×.			د		10			OTO
S 2 D-3 B-1 6 GL M X 20 C 0 FQ 1 C-5 B-1 1 GL A X 30 0/C C FQ 2 F-5 A-1 1 GL A X 6 0/C C FQ,LR A-4 1 G-5 B-1 1 GL A X 20 C 0 FQ 1 I G-5 B-1 1 GL A X 30 0/C C FQ 2 B-11 A-1 1 GL A X 30 0/C C FQ 35 2 D-10 B-1 6 GL M X 20 C 0 FQ 8 1 C-7 B-1 1 GL A X 8 0 0/C C FQ 8 1 C-7 B-1 1 GL A X 80 0/C C FQ,LR A-4 8 1 C-7 B-1 1 GL A X 80 0/C C FQ 8 1 C-7 B-1 1 GL A X 80 0/C C FQ 8 1 C-7 B-1 1 GL A X 80 0/C C FQ 8 1 C-7 B-1 1 GL A X 80 0/C C FQ 8 1 C-7 B-1 1 GL A X 80 0/C C FQ 8 1 C-7 B-1 1 GL A X 80 0/C C FQ 8 1 C-7 B-1 1 GL A X 80 0/C C FQ 8 1 C-7 B-1 1 GL A X 80 0/C C FQ 8 1 C-7 B-1 1 GL A X 80 0/C C FQ 8 1 C-7 B-1 1 GL A X 80 0/C C FQ 8 1 C-7 C-7 GL 8 1 C-7 C FQ 8 1 C FQ	CW-612	2	B-5	A-1	1	TS	A	×	9	0/C	C	FQ, LR	A-4		173
1 C-5 B-1 1 GL A X 30 0/C C FQ,LR A-4 2 F-5 A-1 1 GL A X 6 0/C C FQ,LR A-4 2 H-3 E-1 6 GL M X 20 C 0 FQ 1 G-5 B-11 A-1 1 GL A X 30 0/C C FQ,LR A-4 5 2 D-10 B-1 6 GL M X 20 C FQ,LR A-4 5 2 D-10 B-1 6 GL M X 20 C FQ,LR A-4 7 C-7 B-1 1 GL A X 6 0/C C FQ,LR A-4 7 GL A X 30 0/C C FQ,LR A-4 7 GL A X 30 0/C C FQ,LR A-4	MOV-615	2	D-3	B-1	1	1	E	X	20	O	0	FQ			
2 F-5 A-1 1 GL A X 6 0/C C FQ,LR A-4 5 2 H-3 E-1 6 GL M X 20 C 0 FQ 1 G-5 B-1 1 GL A X 30 0/C C FQ 2 B-11 A-1 1 GL A X 6 0/C C FQ,LR A-4 15 2 D-10 B-1 6 GL M X 20 C 0 FQ 5 1 C-7 B-1 1 GL A X 30 0/C C FQ,LR A-4 5 1 C-7 B-1 1 GL A X 30 0/C C FQ 5 1 C-7 B-1 1 GL A X 30 0/C C FQ,LR A-4	MU-618	po	C-5	B-1	-	CI	A	×	30	0/0	U	FQ			
S 2 H-3 E-1 6 GL M X 20 C 0 FQ 1 G-5 B-1 1 GL A X 30 0/C C FQ 2 B-11 A-1 1 GL A X 6 0/C C FQ,LR A-4 IS 2 D-10 B-1 6 GL M X 20 C 0 FQ IS 1 C-7 B-1 1 GL A X 6 0/C C FQ IS 1 C-7 B-1 1 GL A X 30 0/C C FQ IS 1 C-7 B-1 1 GL A X 6 0/C C FQ IS 1 C-7 B-1 1 GL A X 6 0/C C FQ IS 1 C-7 B-1 1 GL A X 6 0/C C FQ IS 1 C-7 B-1 1 GL A X 6 0/C C FQ IS 1 C-7 B-1 1 GL A X 6 0/C C FQ IS 1 C-7 B-1 1 GL A X 6 0/C C FQ IS 1 C-7 B-1 1 GL A X 6 0/C C FQ IS 1 C-7 FQ IS 1 C-7 FQ IS 1 C-7 FQ IS 1 C-7 FQ IS 1 FQ IS	010-10		27.4	A-1	-	CL	A	×	9	0/0		FQ, LR	A-4		CIV
2 H-3 E-1 0 OL B 1 G-5 B-1 1 GL A X 30 O/C C FQ 2 B-11 A-1 1 GL A X 6 O/C C FQ,LR A-4 2 D-10 B-1 6 GL M X 20 C O FQ 1 C-7 B-1 1 GL A X 30 O/C C FQ 1 C-7 B-1 1 GL A X 50 O/C C FQ 1 C-7 B-1 1 GL A X 50 O/C C FQ 1 C-7 B-1 1 GL A X 50 O/C C FQ,LR A-4	CV-622	4	4			č	2	×	20	0	0	FQ			
1 G-5 B-1 1 GL A X 6 0/C C FQ,LR A-4 2 B-11 A-1 1 GL A X 6 0/C C FQ,LR A-4 5 2 D-10 B-1 6 GL M X 20 C 0 FQ 1 C-7 B-1 1 GL A X 30 0/C C FQ 1 C-7 B-1 1 GL A X 6 0/C C FQ,LR A-4	MOV-625	7	H-3	1	0	70	1		00	3/0		FO			
2 B-11 A-1 1 GL A X 6 0/C C FQ, A A 2 2 D-10 B-1 6 GL M X 20 C O FQ 1 C-7 B-1 1 GL A X 30 0/C C FQ 1 C-7 B-1 1 GL A X 6 0/C C FQ, LR A-4	CV-628	1	6-5		1	GL GL	B	4	3			91 04	A-4.		CIV
2 D-10 B-1 6 GL M X 20 C O FQ 1 C-7 B-1 1 GL A X 30 O/C C FQ	CV-632	2	B-11		1	TO	A	×	9	0/0		FQ, LK	N-4		
1 C-7 B-1 1 GL A X 30 0/C C FQ	-MOV-635	2	D-10		9	GL	×	×	20	O	0	FQ			
GI. A Y. 6 0/C C FQ, LR A-4	2002		C-3	1	1	CL	A	×	30	0/0		FQ			
A 100	059-A7-7				-	GL.	A	X	9	0/0		FQ, LR	A-4		CIV

UNIT NO. 2 SYSTEM NAME: Safety Injection & Containment Spray P&ID NO. OM-462 SHEET 2

System

VALVE NUMBER	ASME CLASS	P&ID COORD	DALVE	SIZE (in.)	VLV TYPE	ACT TYPE	POG. IND.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
2-MOV-645	2	H-10	B-1	6	GL	. ti	X	20	C	0	FQ			
2-CV-648	1	G-7	B-1	1	GL	A	Х	30	0/C	С	FQ			

OM-462	
P&ID NO.	
Safety Injection & Containment Spray	
NAME:	
SYSTEM	
2	
UNIT NO.	

2

SHEET

				The second name of the second									
ASME	PS.10 COORD	VALVE	SIZE (in.)	VLV TYPE	ACT	POS.	TIME (sec.)	NORM POS.	REQ.	REQ.	REQ.	ALT. TEST	REMARKS
1	1-7	A-1	12	9	31	×	109	S	0/0	FC, LR	A-4		CIV
-	3-5	A-1	12	9	E	×	108	U	0/0	FC, LR	A-4		CIV

UNIT NO. 2 SYSTEM NAME: Safety Injection & Containment Spray P&ID NO. 0M-462 SHEET 3
System

REL. ALT. REQ. REQ. REQ. TIME NORM POS. VLV SIZE REMARKS VALVE P&ID ASME VALVE TEST NO. POS. POS. TEST (sec.) IND. TYPE CATEGORY (in.) TYPE CLASS COORD NUMBER RR VC SI-7 0 C C 8 C-1 2 B-8 2-51-313 CIV RE LR. VQ SI-1, A-4 O/C C -C 8 AC-1 D-4 2 2-SI-316 RR SI-7 VC C 0 8 C C-1 2-51-323 2 F-8 CIV RR O/C LR, VQ S1-1, A-4 C C 8 AC-1 G-4 2-81-326 2 CIV 0/C DI, VQ SI-1, A-4 RR C C AC-1 8 2 D-3 2-SI-330 C 0/0 VQ 2 C C-1 2 A-9 2-SI-334 CIV RR O/C LR. VQ SI-1, A-4 C C AC-1 8 G-3 2-SI-340 2 VQ O/C C 2 C C-1 E-9 2-SI-344 2 0/0 FQ C 79/86 X CI A 12 B-1 2 E-4 2-CV-657 0 FQ C X 92 G M B-1 12 E-7 2 2-MOV-658 C O/C FQ 70 X 24 G M J-5 B-1 2 2-MOV-4144 FQ 0/C C 70 X M G 24 H-5 B-1 2 2-MOV-4145 RR SI-2 VQ C O/C 24 C C-1 2 J - 72-SI-4148 RR SI-2 O/C VQ C C 24 H-7 C-1 2-81-4149 2 C 0 FQ X 60 GL A C-3 B-1 8 2 2-CV-4150 C 0 FQ X 60 8 GL. A F-3 B-1 2 2-CV-4151

VALVE	ASME CLASS	P&ID COORD	VALVE CATEGORY	SIZE (in.)	VLV TYPE	ACT TYPE	POS.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
NUMBER			A-2	1/4	GL	S	Х	3	С	С	LR	A-1,A-4	RR	CIV
-SV-6507A	3	8-3				S	X	3	C	С	LR	A-1,A-4	RR	CIV
-SV-6507B	3	B-11	A-2	1/4	GL					C	I.R	A-1,A-4	RR	CIV
-SV-6507C	9.	B-11	A-2	1/4	GL	S	Х	3	С			1 1 1 1 1 1 1 1 1	RR	CIV
-SV-6507D	3	B-12	A-2	1/4	GL	S	X	3	С	C	LR	A-1.A-4		
	3	B-4	A-2	1/4	GL	S	Х	3	С	С	LR	A-1,A-4	RR	CIV
2-SV-6507E					GL	S	X	3	C	C	LR	A-1,A-4	RR	CIV
2-SV-6507F	3	8-4	A-2	1/4				7	С	С	LR	A-1, A-4	RR	CIV
2-SV-6531	2	E-5	A-2	1/4	GL	S	Х						RR	CIV
2-SV-6540A	3	B-9	A-2	1/4	GL	S	X	3	С	С		A-1,A-4		CIV
2-SV-6540B	3	B-11	A-2	1/4	GL	S	Х	3	C	С	LR	A-1,A-4	RR	
			A-2	1/4	GL	8	X	3	C	C	LR	A-1,A-4	RR	CIV
2-SV-6540C	3	B-11					Х	3	С	С	LR	A-1,A-4	RR	CIV
2-SV-6540D	3	B-12	A-2	1/4	GL	S		1 11				A-1,A-4	RR	CIV
2-SV-6540E	3	B-4	A-2	1/4	GL	S	Х	3	С	С				CIV
2-SV-6540F	3	B-4	A-2	1/4	GL	S	X	3	C	С	LR	A-1,A-4	RR	011

UNIT NO. 2 SYSTEM NAME: Gas Analyzing System P&ID NO. OM-463 SHEET 2

VALVE NUMBER	ASME. CLASS	P&ID COORD	VALVE CATEGORY	SIZE (in.)	VLV TYPE	ACT TYPE	POS.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
2-SV-6507G													RR	CIV
2-34-03070												A-1,A-4	RR	CIV
2-SV-6540G	3	H-9	A-2	1/4	GL	S	Λ	3		~				

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SNI.
Sec.
221
9/1
[24]
20
201
2
401
200
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.521
po
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12.
- 0
part
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Part 1
// 1
Acres
200
542
44
65
100
- 85
- 02
25
- 23
- 26
3
- 61
- 9
- 100
- 60
- 23
- 94
140
. 161
Esc
10
- 2
ME
119
16
- 3
- 2
100
- 24
- 84
- 2
- 2
U

UNIT NO. 2

SHEET

P&ID NO. 0M-465

REMARKS		-						-
ALT. TEST		1						
REQ.								
KEQ.	FO		FO		FO		FO	
REQ.	3		3		2		3	
NORM POS.	1000	2/0	0/0		0/6		0/0	
TIME (sec.)	00	0.	30	3	30	2	30	200
POS.		×		q	2	<	>	٧
ACT		<		K	1	40		6
VLV		19	200	79	1	TO	-	CL
SIZE (in.)		64		74		73		24
VALVE		B-1		B-1		8-1		B-1
P&ID COOKD		0-2		E-2		B-2		C-2
ASSE		2		2		2		2
VALVE	-	2-CV-4010		2-CV-4011		2-CV-4012		S.00.4013

UNIT NO. 2 SYSTEM NAME: Plant Water & Air Service System P&ID NO. OM-479 SHEET 1

Stations

VALVE NUMBER	ASME CLASS	P&ID COORD	VALVE	SIZE (in.)	VLV TYPE	ACT TYPE	POS.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
2-PSW-1009			1.0	2	CI	н	-	-	С	С	LR	A-4	77-11-11-1	CIV

UNIT NO. 2 SYSTEM NAME: Plant Water & Air Service System P&ID NO. OM-479

Stations

VALVE NUMBER	ASME CLASS	P&ID COORD	VALVE CATEGORY	SIZE (in.)	VLV TYPE		POS.	TIME (sec.)		REQ. POS.		REL. REQ. NO.	ALT. TEST	REMARKS
-PA-137	2	D-12	A-2	2	G	Н	-	-	3	С	LR	A-4		CIV
2-PA-1044	2	J-4	A-2	2	G	Н			С	С	LR	A-4		CIV
-PSW-1020		D-9	A-2	3	G	Н	-	-	С	С	LR	A-4		CIV

SHEET 2

UNITY NO. 2

VALVE	ASME	P&ID COOPT	VALVE	SIZE (in.)	VLV	ACT TYPE	POS.	TIME (sec.)	NORM POS.	REQ.	REC.	REQ.	ALT. TEST	REMARKS
2-AFW-102	100	6-0	C-1	9	0				C	0/0	VC			
2-MS-103	3	80-80	C-1	9	0	*	1		U	0/0	NC NC			
2-MS-106	3	8-8	C-1	9	0				O	0/0	VC			
2-MS-108	20	6-3	C-1	9	O	,	,		0	0	VC			
2-MS-113	3	8-8	C-1	9	0				S	0	VC			
2-AFW-114	3	B-9	C-1	9	3				O	0	VQ			
2-AFW-116	60	6-A	C-1	9	0				0	0/0	JA			
2-AFW-128	6	6-3	C-1	9	0				O	0	0A			
2-AFW-129	2	B-1	C-1	4	0	,	1		U	0	VC			
2-AFW-130	2	6-1	C-1	4	0	1	1		0	0	VC			
2.AFW-183	3	H-8	C-1	7	0		1		3	0/0	VC			
2-AFW-190	60	H-7	C-1	9	0				3	0	AC			
2-AFW-193	3	B-4	C-1	4	0	1	1		0	0	VC			
2-AFW-194	3	H-3	C-1	7	3	1	,		0	0	VC			
2-AFW-199	2	C-2	C-1	7	0		1		U	0	AC			
2-AFW-200	2	9-2	C-1	4	U	1	1		0	0	NO			
2-AFW-201	m	H-10	C-1	2	0	1		,	3	0	VQ			

Rev. 1 9/26/88

SYSTEM NAME: Auxiliary Feedwater Lystem

UNIT NO. 2

VALVE	ASHE	P&ID	VALVE	SIZE	VLV	ACT TTPE	POS.	TIME (sec.)	NORM POS.	REQ.	REQ.	NO.	ALT. TEST	REMARKS
UMBEK	CLASS	COOR	Carpooni	1				1		4	00			
2-AFW-202	3	H-10	C-1	2	0				ن	0	7			
2-CV-4070	87	B-9	B-1	9	CL	A	X	110	0	0	FQ			
2-CV-4071	67	B-8	B-1	9	79	A	×	80	0	0	FQ			
2-PU-4501	13	8-11		1 1/2	RV				0	0	ST			
6037.00-6	67	D-11	C-1	C-1 1 1/2	RV		1		C	0	ST			

Rev. 1 9/25/88

UNIT NO. 2 SYSTEM NAME: Auxiliary Feedwater System P&ID NO. OM-801 SHEET 1

VALVE NUMBER	ASME CLASS	P&ID COORD	VALVE CATEGORY	SIZE (in.)	VLV	ACT TYPE	POS.	TIME (sec.)	NORM POS.	REQ. POS.	REQ. TEST	REL. REQ. NO.	ALT. TEST	REMARKS
2-CV-4520	3	B-6	B-1	6	GL	A	X	19	0	0/0	FQ			
2-CV-4521	3	B-4	B-1	6	GL	À	Х	19	0	0/0	FQ			
2-CV-4522	3	D-4	B-1	6	GL	A	X	19	0	0/0	FQ			
2-CV-4523	3	D-3	B-1	6	GL	A	Х	19	0	0/0	FQ			
2-CV-4530	3	Н-5	B-1	6	GL	A	Х	19	0	0/C	FQ			
2-CY-4531	3	H-4	B-1	6	GL	A	Х	19	0	0/0	FQ			
2-CV-4532	3	F-4	B-1	6	GL	A	Х	19	0	O/C	FQ			
2-CV-4533	3	F-2	B-1	6	GL	A	Х	19	0	0/C	FQ		4 Marie	
2-CV-4550	3	H-7	B-1	6	GL	A	Х	90	0	0/0	FQ			

System: Various

P&ID: Various

Valves: Various valves which have actual stroke times of 2 seconds or less

Category: A and B Active

Class: Various

Function: Various

Impractical Test Requirement: IWV-3413 to measure valve stroke time to the nearest second, and associated trending

requirements of IWV-3417.

Basis for Relief: Vi

Valves with extremely short stroke times (less than 2 seconds) have stroke times of such short duration that comparison of measurements with previous data for specified percentage increases is not indicative of degrading valve performance. With measurement of stroke times to the nearest second per IWV-3413(b), a very small increase in stroke time will result in an extremely large percentage change, which could result in an unnecessary increase in test frequency and challenges to valves. Verification that valves meet a specified maximum stroke time of short duration provides adequate assurance of operability.

Alternative Testing:

Only the maximum stroke time will be verified for those valves with nominal stroke times less than 2 seconds. The trending requirements of IWV-3417(a) will, therefore, not apply.

Various System:

P&ID: Various

Valves: Various solenoid actuated valves

Category: A and B Active

Class: Various

IWP-3300 requirement to locally verify Impractical Test Requirement:

remote position indication at least once avery 2 years.

Basis for Relief: Relief Request Withdrawn

Alternative Testing:

System: As Required, Unit 2

P&ID: Where Applicable

Valves: As Required

Category: C

Class: As Required

Function: Relief Protection on Various Systems

Impractical Test Requirement:

IWV-3512 requires compliance to ASME PTC 25.3-1976. Paragraph 3.02 of PTC 25.3, 1977 Addendum, requires, "A person who supervises the test shall have a formal education in thermodynamics and fluid mechanics. In addition, he shall have at least two years practical experience in fluid flow measurement and have had experience in test supervision."

Basis for Relief:

The requirement of ASME PTC 25.3-1976 for the qualifications of a relief valve test supervisor are burdensome to a utility. It would result in additional staff requirements that are not warranted in light of the alternate means of meeting the intent of this paragraph.

Alternative Requirements:

The Plant Operating Safety Review Committee reviews all test procedures and any unacceptable results of relief valve testing. There are typically several members of this committee that meet the educational and experience level requirements of the Code. All test results are reviewed by the System Engineer responsible for the components in the system the relief valve protects. The personnel who conduct the tests meet specific qualification requirements in accordance with ANSI/ASME N45.2.6 - 1978. All instruments used for testing are calibrated within the scope of the site Quality Assurance requirements.

System: Various

P&ID: Various

Valves: All those identified with "CIV" in the Remarks column of the

associated Valve Test Program.

Class: Various

Impractical Test Requirements: a. IWV-3421 through 3425 regarding leak

rate test methodology.

b. IWV-3427(b) regarding leak rate

trending requirements.

Basis for Relief:

a. In keeping with NRC Staff position, all CIV testing shall be performed under 10CFR50 Apprendix J in addition to IWV-3426 and IWV-3427(a). Testing per 10CFR50 Appendix J meets the intent of leak rate testing per Section XI, but will be controlled via the Local Leak Rate Testing Program.

b. The attached data shows that the variability of leak rates for valves 6 inches and larger is excessive. CCNPP feels that this excessive variability shows the relative independence of one leak rate test to another. The tendency towards random leak rate data would cause unnecessary testing per IWV-3427(b), with no identifiable increase in benefit to public health and safety. The worth of performing this additional trending is also called into question by the recent ASME approval of OM-10 ("Inservice Testing of Valves"), which is the planned replacement to Section XI testing rules. OM-10 does not require trending of valve leak rates.

Alternative Testing:

- a. CCNPP shall test all CIVs under the requirements of 10CFR50 Appendix J, in addition to IWV-3426 and IWV-3427(a).
- b. CCNPP shall perform no alternative testing in keeping with OM-10 guidance.

RELIEF RE. 33T NUMBER VS-1

System: Ventilation System

P&ID: 0M-65, SH 1

Valves: 2-CV-1410, 2-CV-1411, 2-CV-1412, 2-CV-1413

Category: A-1

Class: 2

Function: Containment Isolation

Impractical Test Requirement: IWV-3400 requirement to stroke the valves

quarterly

Basis for Relief: These valves are normally locked shut with power removed.

They are only required to stroke in Mode 6. It is not desirable to stroke test these valves during each cold shutcown since unnecessary stroking could cause degradation of the valve's leak-tight capability. This would result in an unnecessary increase in testing and

valve maintenance.

Alternative Testing: The valves will be full stroke tested on a refueling

frequency.

System: Reactor Coolant

P&ID: 0M-460

Valves: 2-ERV-402, 404

Category: C-1

Class: 1

Function: Relieve reactor coolant pressure.

Impractical Test Requirement: Setpoint test per IWV-3510.

Basis for Relief: These valves are categorized per Calvert Cliffs Technical Specifications as ASME Section XI Category C-Active (relief valve). However, due to the unique valve design,

these valves cannot be tested per IWV-3510, since the valves are actuated as the result of an electric signal

from a pressure measurement device.

Alternative Testing:

Valves are tested per Technical Specifications at refueling intervals. The test includes a channel calibration of the actuation channel. A channel functional test, excluding valve operation, is performed within 31 days prior to entering a condition when this valve is required to serve as an MPT relief, and every 31 days thereafter when the valves are required to be operable. In addition, these valves will be functionally tested each cold shutdown prior to placing them in service for Low Temperature Overpressurization Protection.

Safety Injection and Containment Spray System:

OM-462, Sh. 3 P&ID:

SI-316, SI-326, EI-330, SI-340 Valves:

Category: AC-1

Class: 2

Function: Containment Spray Header inlet checks, inside and outside

containment isolation valves.

Impractical Test Requirement: IWV-3520 requirement to exercise the valves once

every 3 months.

Basis for Relief:

Check valves SI-316, SI-326, SI-330, and SI-340 cannot be stroked during operation without spraying large quantities of contaminated water into the containment. contaminated refueling pool water is also borated to approximate'y 2300 ppm. Spraying the containment would result in a radioactive contamination cleanup problem and seriously damage components such as lagging reactor coolant pumps, and control rod element assembly coils.

Alternative Testing:

One valve will be disassembled at each refueling outage to inspect the valve's internal components. If degradation is found that would result in the valve being unable to pass full design flow, then all valves will be inspected in the same refueling outage.

Safety Injection and Containment Spray System:

OM-462, Sh. 3 P&ID:

SI-4148, SI-4149 Valves:

Category: C-1

2 Class:

Function: Containment Sump Outlet Check Valves

Impractical Test Requirement: IWV-3520 requirement to exercise valves once

every 3 months.

Basis for Relief:

These check valves cannot be full-stroke exercised without flooding the containment floor with contaminated refueling pool water that is borated to approximately 2300 ppm. This would result in serious damage to lagging and electrical systems control components in addition to the radioactive contamination cleanup problem of the containment sump and associated equipment.

Alternative Testing:

One valve will be disassembled at each refueling outage to inspect the valve internal components. degradation is found that would result in the valve being unable to pass full design flow, then all valves will be inspected in the same refueling outage.

Safety Injection System:

OM-452, Sh. 2 P&ID:

2-81-215, 2-81-225, 2-81-235, 2-81-245 Valves:

Category: AC-1

Class: 1

Function: Safety Injection Tank discharge check valves, pressure system

isolation valves

Impractical Test Requirement: IWV-3520 requirement to full-stroke exercise

valves.

It is not possible to measure the flowrate through these Basis for Relief:

valves nor to simulate rapid depressurization of the RCS. Additionally, achieving the design flowrate through these valves would require removal of the reactor vessel head and the flowrate required could cause damage to the core

internals.

Alternative Testing:

One valve will be disassembled at each refueling outage to inspect the valve's internal components. If degradation is found that would result in the valve being unable to pass full design flow, then all valves will be inspected in the same refueling

outage.

Safety Injection System:

OM-462, Sh. 2 P&ID:

2-S1-217, 2-S1-227, 2-S1-237, 2-S1-247 Valves:

Category: AC-1

1 Class:

Function: Safety Injection to RCS loop check valves, pressure isolation valves

Impractical Test Requirement: IWV-3400 requirement to test the valves'

pressure isolation function.

The pressure upstream of these valves is continuously Basis for Relief:

monitored, and an increase results in an alarm in the control room, which requires operator action in accordance with the Calvert Cliffs alarm manual. This manual would require the operator to determine the leakage rate through

these valves.

Alternative Testing:

Pressure upstream of these valves is continuously monitored and an increase will be alarmed in the control room. This continuous monitoring provides essurance that these valves are meeting their

pressure isolation safety function.

System: Safety Injection

P&ID: OM-462, Sh. 2

Valves: 2-SI-217, 2-SI-227, 2-SI-237, 2-SI-247

Category: AC-1

Class: 1

Function: Safety Injection to RCS loop check valves, pressure isolation valves

Impractical Test Requirement: IWV-3520 requirement to full-stroke exercise the valves.

Basis for Relief: It is no

It is not possible to measure the flowrate through these valves nor to simulate rapid depressurization of the RCS. Additionally, achieving the design flowrate through these valves would require a removal of the reactor vessel head and the flowrate required could cause damage to the core internals.

Alternative Testing:

The valves are part stroked whenever shutdown cooling is in operation. One valve will be disassembled at each refueling outage to inspect the valve's internal components. If degradation is found that would result in the valve being unable to pass full design flow, then all valves will be inspected in the same refueling outage.

Safety Injection System:

M-462 P&ID:

2-SI-4146, 2-SI-4147 Valves:

Category: C

Class:

Function: Refueling Water Tank Outlet Check Valves

Impractical Test Requirement: IWV-3520 requires a check valve to be tested to

its design flow position once a quarter.

Basis for Relief:

It is not possible to provide full design flow through these check valves during any period of plant operation. The full design flow would require the simultaneous operation of 1 LPSI pump, 1 CS pump, and 1 HPSI pump for each valve with the combined discharge path that duplicates the design basis LOCA. It is not possible to provide simultaneous full design flow from all three pumps due to core damage from excessive reactor vessel flow and deluging of containment interior components from the spray header.

Alternative Requirement:

These valves will be part stroke tested once per quarter. One valve will be disassembled at each refueling outage to inspect the valves internal components. If degradation is found that would result in the valve being unable to pass full design flow, then all valve will be inspected in the same refueling outage.

Containment Spray System:

M-462 P&ID:

Valves: 2-SI-313, 2-Si-323

Category: C

2 Class:

Function: Containment Spray Pump Discharge Check Valve

Impractical Test Requirement: IWV-3520 requires a check valve to be tested to

its design flow position once a quarter.

Basis for Relief:

These valves cannot be full-flow stroke tested due to limitations on the bypass discharge flow paths. valves can be full flow tested only during refueling outages where plant conditions can be established to allow the use of both containment spray pumps as alternate LPSI pumps to provide Shutdown Cooling flow. The Core Decay Heat Load is minimal and the need for a boration flow path dependent only on one charging pump occurs during refueling outages only.

Alternative Requirement:

On a COLD SHUTDOWN basis, the valves will be part-stroke tested. The valves will be Full Stroked each refueling outage during the Large Flow testing of the respective containment spray pumps.

APPENDIX E

VALVES TESTED DURING COLD SHUTDOWN

APPENDIX E

VALVES TESTED DURING COLD SHUTDOWN

System	Unit	Valve Number	Justification
Main steam & Reheat	1/2	1-CV-4043 1-CV-4048 2-CV-4043 2-CV-4048	Valves cannot be full stroke tested during plant operation without causing major plant transients/plant shutdown. Valves are part-stroked per manufacturers recommendations only. Valves are full stroke tested it Cold Shutdown at 3 month intervals as allowed by Section XI.
Condensate & Feedwater	1/2	1-FW-130 1-FW-133 1-MOV-4516 1-MOV-4517 2-FW-130 2-FW-133 2-MOV-4516 2-MOV-4517	Exercising these for ally open valves would recuire a cessation of feedwater flow to the steam generator. This would cause transients leading to shutdown. Valve logic and system configuration prevent any part-stroke testing of MOVs. Therefore, the valves are full stroke tested at Cold Shutdown at 3 month intervals as allowed by Section XI.
Service Water Cooling System	1/2	1-SRW-323 1-SRW-324 1-SRW-325 1-CV-1500 1-CV-1637 1-CV-1638 1-CV-1639 2-SRW-323 2-SRW-324 2-SRW-325 2-CV-1600 2-CV-1637 2-CV-1639	Exercising these valves during operation would stop cooling water flow to the main turbine auxiliaries and other vital secondary plant equipment necessary for power operation, causing plant shutdown. System configuration prevents Air Operated Valvo part stroke testing during power operation. Valves are full stroke exercised at Cold Shutdown at 3 month intervals as allowed by Section XI.

System	Unit	Valve Number	Justification
Component Cooling	1/2	1-CV-3832 1-CV-3833 2-CV-3832 2-CV-3833	Exercising these valves during operation would stop cooling water flow to the reactor coolant pumps and other vital equipment necessary for power operation causing equipment damage or plant shutdown. Valve logic prevents part-stroke testing of Air Operated Valves during power operation. Valves are full stroke exercised at Cold Shutdown at 3 month intervals as allowed by Section XI
Compressed Air Plant & Instrument	1/2	1-IA-337 1-MOV-2080 2-IA-175 2-MOV-2080	Exercising these valves requires isolating instrument air to the containment thereby failing numerous air operated valves. Although control of these valves is not required during an accident it is required for normal reactor operation. System configuration and valve logic prevents part stroke testing these valves during power operation. Therefore, these valves are full stroke exercised at Cold Shutdown at 3 month intervals as allowed by Section XI.
Ventilation System	1/2	1-HP-6900 1-HP-6901 2-HP-6900 2-HP-6901	Valves are required by Tech. Spec. to be maintained closed during Power Operation. Valves are full stroke exercised at Cold Shutdown at 3 month intervals as allowed by Section XI.

System	Unit	Valve Number	Justification
Reactor Coolant System	1/2	1-SV-103 1-SV-104 1-SV-105 1-SV-106 2-SV-103 2-SV-104 2-SV-105 2-SV-106	Stroking valves during plant operation could cause failure to reseat properly thus reducing plant reliability. Failure to reseat could cause system/ equipment damage, therefore no full- or part-stroking of valves is possible. Valves are full stroke exercised at Cold Shutdown at 3 month intervals as allowed by Section XI.
cvcs	1/2	1-CVC-162 1-CVC-184 1-CVC-435 2-CVC-162 2-CVC-184 2-CVC-435	Valves cannot be stroked during operation without stopping all charging pumps. This would place excessive thermal cycles on system equipment due to starting and stopping charging and letdown. Therefore, valves are full stroke exercised at Cold Shutdown at 3 month intervals as allowed by Section XI.
cvcs	1/2	1-CVC-228 1-CVC-235 2-CVC-228 2-CVC-335	Exercising these valves requires injecting concentrated boric acid directly into the reactor coolant system. The resulting rapid power decrease and reactor water chemistry change would cause plant shutdown. Flow is verified by measuring tank level change or flow through the changing pumps which is not possible during power operation. Therefore, the valves are full stroke exercised at Cold Shutdown at 3 month intervals as allowed by Section XI.

System	Unit	Valve Number	Justification
cvcs	1/2	1-MOV-501 1-CV-515 1-CV-516 2-MOV-501 2-CV-515 2-CV-516	Valves cannot be stroked during operation without stopping all charging pumps. This would place excessive cycles on starting and stopping charging and letdown which are required to operate. This would also place unnecessary cycles on a limited cycle life Regen. Heat Exchanger, decreasing component available lifetime. Therefore, valves are full stroke exercised at Cold Shutdown at 3 month intervals as allowed by Section XI.
cvcs	1/2	1-CV-517 1-CVC-185 (open) 2-CV-517 2-CVC-185 (open)	Valves cannot be stroked during plant operation due to the resultant thermal stress to the spray line and spray nozzle. Valves will be full stroke exercised at Cold Shutdown at 3 month intervals as allowed by Section XI.
cvcs	1/2	1-CVC-185 (shut) 1-CVC-186 (shut) 1-CVC-187 (shut) 2-CVC-185 (shut) 2-CVC-18w (shut) 2-CVC-187 (shut)	Exercising these valves requires personnel access to high radiation areas within the containment during plant operation. Man rem exposure, if the valves were stroked during operation would be greater than 100 mrem gamma and 50 mrem neutron. Therefore, the valves are full stroke exercised at Cold Shutdown at 3 month intervals as allowed by Section XI.

System	Unit	Valve Number	Justification
cvcs	1/2	1-CVC-505 1-CVC-506 2-CVC-505 2-CVC-506	Valves cannot be stroked during plant operation without stopping RCP seal bleed off flow reducing RCP seal reliability, causing possible RCP failure. Valve logic prevents part stroking these valves during power operations. Valves are full stroke tested at Cold Shutdown at 3 month intervals as allowed by Section XI.
Safety Injection Containment Spray System	1/2	1-SI-434 1-SI-446 2-SI-434 2-SI-446	Valves cannot be full or part-stroked during operation because normal RCS pressure is above the shut-off head of the LPSI pumps. This would require depressurizing the reactor coolant system, causing plant shutdown. Valves will be full stroke exercised at Cold Shutdown at 3 month intervals as allowed by Section XI.
Safety Injection Containment Spray System	1/2	1-S1-401 1-S1-405 1-S1-410 1-S1-414 1-S1-427 2-S1-401 2-S1-405 2-S1-419 2-S1-414 2-S1-427	Valves cannot be full- stroked during power opera- tion because normal RCS pressure is above the shut- off head of the HPSI pumps. Depressurizing the reactor coolant system would be required, forcing plant shutdown. Valves would be part stroked whenever the associated HPSI pumps are run to fill Safety Injection Tanks. The valves are full stroke exercised at Cold Shutdown at 3 month intervals as allowed by Section XI.

System	Unit	Valve Number	Justification
Safety Injection Containment Spray System	1/2	1-SI-118 1-SI-128 1-SI-138 1-SI-148 2-SI-118 2-SI-128 2-SI-128 2-SI-148	Valves cannot be full stroked during operation because RCS pressure is above shutoff head of the HPSI pumps. Valves will be part-stroked whenever the SI tanks are filled and full-stroked at Cold Shutdown at 3 month intervals as allowed by Section XI. The test conditions are established to prevent Low Temperature Overpressurization.
Safety Injection Containment Spray System	1/2	1-SI-114 1-SI-124 1-SI-134 1-SI-144 2-SI-114 2-SI-124 2-SI-134 2-SI-144	Valves cannot be stroke tested during power operation due to the head of the LPSI pumps being less than the required pressure to overcome the effect of Safety Injection Tanks Pressure on these valves. Valves will be full stroke exercised at Cold Shutdown at 3 month intervals as allowed by Section XI.
Safety Injection Containment Spray System	1/2	1-81-313 1-81-323 2-81-313 2-81-323	Valves cannot be stroke tested during power operation as this may cause borated water to deluge the containment resulting in equipment damage and plant shutdown. See Relief Request SI-7.
Safety Injection Containment Spray System	1/2	1-MOV-651 1-MOV-652 2-MOV-651 2-MOV-652	Valves are interlocked on reactor coolant system pressure and cannot be tested at power. This is to provide overpressure protection of the downstream piping. The valves are full stroke exercised at Cold Shutdown at 3 month intervals as allowed by Section XI.

System	Unit	Valve Number	Justification
Safety Injection Containment Spray System	1/2	1-MOV-659 1-MOV-660 2-MOV-659 2-MOV-660	Failure of these valves in the closed position during operation would cause an entire safety system to become inoperable. Valve logic prevents a part-stroke of these valves. Therefore, these valves will be full-stroke exercised at Cold Shutdown as allowed by Section XI.
Auxiliary Feed- water System	1/2	1-AFW-102 1-AFW-116 1-AFW-129 1-AFW-130 1-AFW-183 1-AFW-190 1-AFW-193 1-AFW-194 1-AFW-199 1-AFW-200 2-AFW-102 2-AFW-102 2-AFW-116 2-AFW-129 2-AFW-130 2-AFW-130 2-AFW-130 2-AFW-193 2-AFW-194 2-AFW-194 2-AFW-199 2-AFW-200	Exercising these valves full or part-stroke during plant operation would require feeding hot steam generators with cold feedwater thereby thermally shocking the auxiliary feedwater ring within the steam generator. Therefore the valves are full stroke exercised at Cold Shutdown at 3 month intervals as allowed by Section XI.
Auxiliary Feed- water System	1/2	1-MS-103 (shut) 1-MS-106 (shut) 2-MS-103 (shut) 2-MS-106 (shut)	Testing these valves during power operation requires filling the downstream pipe with water. Pump damage could occur if the pumps were started in this configuration. Therefore, the valves are tested closed at Cold Shutdowns only, as allowed by Section XI.

System	Unit	Valve Number	Justification
Auxiliary Feed- water System	1/2	1-MS-103 (open) 1-MS-106 (open) 1-MS-108 1-MS-110 2-MS-103 (open) 2-MS-106 (open) 2-MS-108 2-MS-110	Full stroking these valves during power operation would require feeding hot steam generators with cold feedwater thereby thermally shocking the AFW ring within the S/G. Therefore, the valves will be part-stroked quarterly during power operation and full stroked at Cold Shutdown as allowed by Section XI.

APPENDIX F

DRAWINGS USED IN PREPARATION

APPENDIX F
DRAWINGS USED IN PREPARATION

Drawing No.	Revision/ Date	Title SI	heet No.	Vait
OM+35	18/2-20-85	Main Steam & Reheat	1	1
OM-36	20/6-5-85	Main Steam & Reheat	1	2
OM-39	5/7-1-86	Condensate & Feedwater	4	. 1
OM-40	5/8-20-86	Condensate & Feedwater	4	2
OM-46	12/8-8-86	Service Water Cooling	1	1
OM-46	14/8-8-86	Service Water Cooling	2	. 1
OM-47	10/3-13-86	Service Water Cooling	1	2
OM-47	12/8-8-86	Service Water Cooling	2	2
OM-49	17/7-1-86	Circulating Salt Water Cooling	1	1
OM-49	9/12-17-86	Circulating Salt Water Cooling	2	1
OM-51	16/7-30-86	Component Cooling System	1	1
OM-31	5/7-2-86	Component Cooling System	2	1
OM+51	8/6-16-86	Component Cooling System	3	1
OM-52	7/10-16-84	Containment Charcoal Filt Spray	er 1	1
ON-53	14/8-19-86	Compressed Air: Instrume	er 1	1
OM-53	3/3-7-85	Compressed Air: Instrume	enc 2	1
OM-53	10/8-19-86	Compressed Air: Instrum	ent 3	1
OM-53	1/3-26-85	Compressed Air: Instrum	ent 4	1
OM-56	5/11-15-85	Plant Fire Protection	. 2	182

Drawing No.	Revision/ Date	Title	Sheet No.	Unit
OM-58	16/10-28-86	Spent Fuel Pool Cooling & Pool Fill and Drain	1	162
OM-59	19/11-6-86	Well Water, Pretreated Water, Demineralized Water, and Condensate Storage	1	162
OM-65	12/1-4-85	Ventilation	1	162
OM-65	12/12-11-85	Ventilation	2	182
ON-65	5/10-4-84	Ventilation	3	162
OM-65	7/9-3-86	Ventilation	4	182
OM-66	20/7-7-86	Reactor Coolant and Waste Process Sample	1	162
OM-66	6/2-21-86	Reactor Coolant and Wast Process Sample	e 3	162
OM-68	10/1-21-86	Nitrogen Gamerating & Blanketing	1	1&2
OM-71	4/10-23-84	Plant Heating	2	182
OM-72	23/4-11-86	Reactor Coolant	1	1
OM-72	OA/7-31-86	Reactor Conlant	2	1
OM-73	31/11-21-86	Chemical & Volume Contro	1 1	1
OM-73	13/8-25-86	Chemical & Volume Contro	1 2	1
OM-73	13/4-14-86	Chemical & Volume Contro	1 3	1
OM-74	26/5-9-86	Safety Injection & Containment Spray	1	1
OM-74	7/5-20-85	Safety Injection & Containment Spray	2	
OM-74	4/5-1-85	Safety Injection & Containment Spray	3	1
OM-76	9/6-19-85	Waste Process Equipment & Area Drains	1	1
OM-76	12/4-17-86	Waste Process Equipment & Area Drains	2	1

Drawing No.	Revision/ Date	<u>Title</u> <u>S</u>	heet No.	Unit
OM-76	13/5-20-6	Waste Process Equipment & Area Drains	3	1
OM-76	1/4	Waste Process Equipment & Area Drains	4	1
OM-77	13/	Reactor Coolant Waste Processing	1	1&2
OM-77	8/5-12-86	Reactor Coolant Waste Processing	3	1&2
OM-78	20/8-8-86	Waste Gas & Misc. Waste Processing	1	162
OM-78	8/8-8-86	Waste Gas & Misc. Waste Processing	2	1&2
OM-98	16/7-7-86	Area & Process Radiation Monitoring	1	1&2
OM-115	10/4-28-86	Chemical Addition & Condenser Tube Bulleting	1	1&2
OM-115	4/1-6-86	Chemical Addition & Condenser Tube Bulleting	2	162
OM-115	3/7-7-86	Chemical Addition & Condenser Tube Bulleting	3	1&2
OM-450	13/10-31-86	Circulating Water Cooling	1	2
OM-450	16/12-20-85	Circulating Water Cooling	2	2
OM-452	16/1-23-86	Component Cooling	1	2
OM-452	1/10-8-84	Component Cooling	2	2
OM-452	8/6-16-86	Component Cooling	3	2
OM-453	7/4-28-86	Containment Charcosl Filter Water Spray		2
OM-454	12/1-8-86	Compressed Air: Instrum	ent 1	2
OM-454	4/10-10-86	Compressed Air: Instrum	ent 2	2
OM-454	16/10-30-86	Compressed Air: Instrum	ment 3	2

Drawing No.	Revision/ Date	Title	Sheet No.	Unit
OM-454	2/3-5-86	Compressed Air: Instrument and Plant	4	2
OM-460	18/1-30-86	Reactor Coolant	1	2
OM-460	OA/10-9-86	Reactor Coolant	2	2
OM-451	25/7-2-86	Chemical & Volume Control	1	2
OM-461	3/12-17-84	Chemical & Volume Control	2	2
OM-461	8/5-12-86	Chemical & Volume Control	1 3	2
OM-462	26/8-13-86	Safety Injection & Containment Spray	1	2
0:1-462	6/3-11-86	Safety Injection & Containment Spray	2	2
OM-462	3/12-10-84	Safety Injection & Containment Spray	3	2
OM-463	8/3-10-86	Gas Analyzing	1	182
OM-463	5/8-5-86	Gas Analyzing	2	¥2
OM-464	12/7-7-86	Steam Generator Blowdown Recovery	1	1
OM-465	12/4-21-86	Steam Generator Blowdown Recovery	1	2
OM-479	15/10-9-86	Plant Water & Air Service	ce 1	182
OM-479	7/3-28-86	Plant Water & Air Service	ce 2	182
OM-800	10/10-16-86	Auxiliary Feedwater	1	1
OM-801	10/9-29-86	Auxiliary Feedwater	1	2

APPENDIX G

FIRST TEN YEAR PUMP AND VALVE INSERVICE
INSPECTION PLANS WITH INCORPORATED PAGES
FROM JANUARY 30, 1981 REVISED PROGRAM

APPENDIX H CHRONOLOGY OF SUBMITTALS AND SELECTED DOCUMENTATION CHRONOLOGY OF SUBMITTALS

- Calvert Cliffs Nuclear Power Plant Unit 2; Pump and Valve Inservice Inspection Program - May 1, 1980 - Mr. A. E. Lundvall, Jr. to Mr. R. W. Reid (see Appendix G)
- Calvert Cliffs Nuclear Power Plant Unit 1; Pump and Valve Inservice Inspection Program - May 9, 1980 - Mr. A. E. Lundvall, Jr. to Mr. R. W. Reid (see Appendix G)
- 3. BG&E Co. Inservice Valve Testing Program Relief Request December 24,
- 4. Pump and Valve Testing (revised pages) January 30, 1981 L. B. Russell to Mr. A. E. Lundvall, Jr.
- 5. Calvert Cliffs Nuclear Power Plant Units 1 & 2; Inservice Inspection and Pump and Valve Programs Request for Relief from ASME Code Section XI Requirements Determined to be Impractical November 6, 1981 Mr. A. E. Lundvall to Mr. Robert A. Clark
- US NRC Safety Evaluation Granting Relief from ASME Code Section XI Inservice Testing Requirements - February 8, 1982 - Mr. Robert A. Clark to Mr. A. E. Lundvall
- Calvert Cliffs Nuclear Power Plant Units 1 & 2; Inservice Inspection Program - July 22, 1982 - Mr. A. E. Lundvall to Mr. Robert A. Clark
- 8. Calvert Cliffs Nuclear Power Plant Units 1 & 2; Inservice Inspection and Pump and Valve Programs Request for Relief from ASME Code Section XI Requirements Determined to be Impractical August 30, 1982 Mr. A. E. Lundvall to Mr. Robert A. Clark
- 9. US NRC Safety Evaluation and Federal Register Notice December 22, 1982 Mr. Robert A. Clark to Mr. A. Lundvall
- 10. Calvert Cliffs Nuclear Power Plant Units 1 and 2; Inservice Test Program July 11, 1985 Request for relief from ASME codes, Section XI requirements, determined to be impractical Mr. A. E. Lundvall to Mr. James R. Miller
- 11. U.S. NRC Request for Additional Information Proposed Pump and Valve Inservice Testing Program - November 13, 1987
- U.S. NRC Request for Additional Information Proposed Pump and Valve Inservice Test Program - April 19, 1988 - Mr. S. McNeil to Mr. J. A. Tiernan
- Calvert Cliffs Nuclear Power Plant Units 1 and 2 Relief Request for Section XI of ASME Code - March 30, 1988 - Mr. J. A. Tiernan to U.S. NRC Document Control Desk
- Calvert Cliffs Nuclear Power Plant Units 1 and 2 Proposed Pump and Valve Inservice Test Program - July 5, 1988 - Mr. J. A. Tiernan to U.S. NRC Document Control Desk
- U.S. NRC Request for additional Information Proposed Pump and Valve Inservice Testing Program - August 9, 1988 - Mr. S. McNeil to Mr. J. A. Tiernan