

INSERVICE TESTING PROGRAM

CALLAWAY PLANT

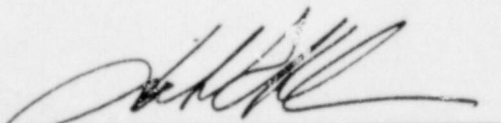
Prepared for

UNION ELECTRIC COMPANY

Prepared by

POWER PRODUCTION ENGINEERING

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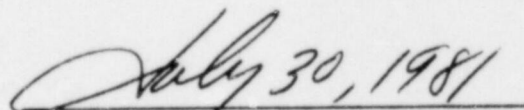
  
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## INTRODUCTION

The Inservice Testing Program for Callaway Plant was developed in compliance with the rules and regulations of 10CFR50.55a and Section XI of the ASME Boiler and Pressure Vessel Code, 1977 Edition through Summer 1979 Addenda. Where these rules were determined to be impractical, specific relief was written.

Section 1.0 discusses the Inservice Testing Program of applicable ASME Class 1, 2 and 3 pumps. Section 2.0 discusses the Inservice Testing Program of applicable ASME Class 1, 2 and 3 valves.

Both of these programs were developed to the guidelines suggested in an NRC letter dated January, 1978.

## 1.0 INSERVICE TESTING OF PUMPS

### 1.1 General Information

The Inservice Testing Program for ASME Class 1, 2 and 3 pumps was developed in accordance with, and meets the requirements of ASME Boiler and Pressure Vessel Code, Section XI, Subsection IWP, 1977 Edition through Summer 1979 Addenda.

The Inservice Testing Program for pumps will remain in effect through the next 10 year inservice inspection interval.

Section 3.1 lists all Class 1, 2 and 3 pumps which are to be tested, along with the applicable parameters to be measured.

### 1.2 Program Information

The following information is included in the Inservice Testing Program for pumps:

- A. Pump Number lists the pump identification number as shown on the P&ID's.
- B. Pump Name describes the pump's functional identification as it is related to system operation.
- C. ISI Class is the Owner's classification of the pump per ISI requirements.
- D. Test Parameters indicates the required test quantities measured per Table IWP-3100-1.
- E. Notes are general statements which can be referred to in the ISI Testing Program. Requests for Relief (see 1.4) are also denoted here as PRR(#).

### 1.3 Test Frequency

An inservice test shall be run on each pump nominally every three months during plant operation. If this frequency can reasonably be accomplished during shutdown periods it will be, however, this is not mandatory. Where a pump is not tested on a three month frequency during plant shutdown, it will be tested prior to declaring the system operable, per Technical Specifications.

#### 1.4 Request for Relief

Where ASME Section XI requirements were determined to be impractical, a request for relief was written. These requests were developed to the guidelines suggested in an NRC letter dated January 1978.

Where relief from an ASME Code requirement is granted within the provisions of 10CFR50.55a (g) (6) (i), it will be incorporated into the Callaway Inservice Testing Program.

Relief requests are shown in Appendix A.

Please note that Pump Relief Request #1 is generic. It is not referenced in the program, but applies to all pumps listed.

#### 1.5 Special Test

Where a pump is operated more frequently than every 3 months, it need not be stopped for a special test, provided the requirements of IWP-3400b are met.



## 2.0 INSERVICE TESTING OF VALVES

### 2.1 General Information

The Inservice Testing Program for ASME Class 1, 2 and 3 valves was developed in accordance with, and meets the requirements of ASME Boiler and Pressure Vessel Code, Section XI, Subsection IWV, 1977 Edition through Summer 1979 Addenda.

The Inservice Testing Program for valves will remain in effect throughout the next 10 year inservice inspection interval.

The Inservice Testing Program lists all ASME Class 1, 2 and 3 valves that have been assigned valve categories. Except for valves directly in the flow path (B passive), valves exempted per IWV-1200 are not listed. This listing is located in Section 2.2.

The tables are organized by system in order of the assigned P&ID's number and are listed in Section 2.3.

### 2.2 Program Information

The following information is included in the Inservice Testing Program for valves:

- A. Valve Number lists the valve identification number as shown on the P&ID's.
- B. P&ID and Coordinates references the P&ID on which the valve appears and its coordinates.
- C. ISI Class is the Owner's classification of the valve per ISI requirements.
- D. Valve Category indicates the category assigned to the valve based on the definitions of IWV-2200.
- E. Valve Size lists the nominal pipe size of the valve in inches.
- F. Valve Type lists the valve design.
- G. Actuator Type lists the type of valve actuator.
- H. Valve Position indicates the normal position of the valve during plant operation; either normally open (O), normally closed (C) or both (O/C).



- I. Stroke Direction indicates the direction which an active valve must stroke to perform its safety function. Also, the direction in which the valve will be stroked to satisfy the exercising requirements of IWV-3410 or IWV-3520. This may be specified as open (O), closed (C) or both (O/C).
- J. Test lists the test or tests that will be performed for each valve to fulfill the requirements of Subsection IWV.

Seat Leak Test AT  
Valve will be seat leak tested at the appropriate functional differential pressure.

Full Stroke Exercise Test BT  
Valve will be full stroke exercised for operability in the direction necessary to fulfill its safety function.

Partial Stroke Exercise Test BTP  
Valve will be partial stroke exercised when full stroke exercising is impractical.

Check Valve Partial Exercise Test CVP  
Check valve will be partial stroke exercised, (i.e. disc moves away from seat) when full stroke exercising is impractical.

Check Valve Exercise Test CVT  
Check valve will be exercised to the position required to fulfill its function. This functional test will be verified by the operation of the required system.

Fail-Safe Test FST  
All valves with fail-safe actuators will be tested to verify proper fail-safe operation upon loss of actuator power.

Position Indicating Test PIT  
Automatically actuated valves with remote indication will be verified in accordance with IWV-3300.

Relief Valve Set Point Check RVT  
Relief and safety valve set points will be verified in accordance with IWV-3510.

- K. Test Mode indicates the frequency at which the above mentioned tests will be performed. The following abbreviations are used:

Cold Shutdown

CS

Valve testing at cold shutdown is valve testing which commences not later than seventy-two (72) hours after cold shutdown and continues until required testing is completed or plant startup, whichever occurs first. Completion of all required valve testing is not a requisite to plant startup. Valve testing which is not completed during a cold shutdown will be performed during subsequent cold shutdowns to meet the Code specified testing requirements. No valve is required to be tested more often than once every 90 days.

Note: Completion of all valve testing during cold shutdown is not required if plant operating conditions will not permit the testing of specific valves.

Normal Operation

CP

Valve tests with this designation will be performed once every three months.

Reactor Refueling

RR

Valve tests with this designation will be conducted at reactor refueling outages only.

- L. Max Stroke Time lists the maximum allowed full stroke time measured in seconds from signal initiation until stroke completion is indicated. Testing is to be completed for all stroke times listed whenever the valve is full stroke tested (ref. IWV-3413).
- M. Relief Request references the relief request contained in Appendix B that applies to the particular valve.
- N. Remarks lists clarification remarks.

2.3 Piping & Instrumentation Drawings

The following P&ID's contain valves which are part of the Inservice Testing Program:

<u>SYSTEM</u>	<u>P&amp;ID</u>	<u>REVISION</u>
MAIN STEAM SYSTEM	M-02AB01	7
	M-02AB02	8
FEEDWATER SYSTEM	M-02AE02	9
AUXILIARY FEEDWATER SYSTEM	M-02AL01	8
REACTOR COOLANT SYSTEM	M-02BB01	8
	M-02BB02	10
	M-02BBC3	7
CHEMICAL & VOLUME CONTROL SYSTEM	M-02BG01	8
	M-02BG02	10
	M-02BG03	10
	M-02BG05	9
REACTOR MAKE-UP WATER SYSTEM	M-02BL01	7
STEAM GENERATOR BLOWDOWN SYSTEM	M-02BM01	7
BORATED REFUELING WATER STORAGE SYSTEM	M-02BN01	7
FUEL POOL COOLING AND CLEAN-UP SYSTEM	M-02EC01	8
	M-02EC02	7
ESSENTIAL SERVICE WATER SYSTEM	M-U2EF01	8
	M-02EF01	7
	M-02EF02	6
COMPONENT COOLING WATER SYSTEM	M-02EG01	7
	M-02EG02	9
	M-02EG03	10
RESIDUAL HEAT REMOVAL SYSTEM	M-02EJ01	8
HIGH PRESSURE COOLANT INJECTION SYSTEM	M-02EM01	5
	M-02EM02	5
CONTAINMENT SPRAY SYSTEM	M-02EN01	4
ACCUMULATOR SAFETY INJECTION SYSTEM	M-02EP01	9
AUXILIARY TURBINES-AUXILIARY FEEDWATER PUMP TURBINE	M-02FC02	7



CONTAINMENT HYDROGEN CONTROL SYSTEM	M-02GS01	6
CONTAINMENT PURGE SYSTEM	M-02GT01	9
LIQUID RADWASTE SYSTEM	M-02HB01	10
DECONTAMINATION SYSTEM	M-02HD01	4
EMERGENCY FUEL OIL SYSTEM	M-02JE01	6
COMPRESSED AIR SYSTEM	M-02KA01	10
	M-02KA02	8
FIRE PROTECTION SYSTEM	M-02KC02	8
STANDBY DIESEL GENERATOR	M-02KJ01	1
	M-02KJ03	1
	M-02KJ04	1
	M-02KJ06	0
REACTOR BUILDING AND HOT MACHINE SHOP FLOOR AND EQUIPMENT DRAIN SYSTEM	M-02LF09	7
NUCLEAR SAMPLING SYSTEM	M-02SJ01	6
	M-02SJ04	A



2.4 Request for Relief

Where ASME Section XI requirements were determined to be impractical, a request for relief was written. These requests were developed to the guidelines suggested in an NRC letter dated January 1978. (See Appendix B)

2.5 Explanation of Abbreviations and Notes

See the following pages.



Standardized  
Nuclear  
Unit  
Power  
Plant  
System

INSERVICE TESTING PROGRAM  
ISI CLASS 1, 2 & 3 VALVES  
CALLAWAY NUCLEAR PLANT

Power  
Production  
Engineering

SYSTEM										P & ID	REVISION - DATE	PAGE	
EXPLANATION OF ABBREVIATIONS											0 5/81	2 of 4	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
					BTF								BUTTERFLY
					DIA								DIAPHRAGM
						M							MANUAL
						AO							AIR OPERATOR
						MO							MOTOR OPERATOR
						SA							SELF ACTUATED
						SO							SOLENOID
									AT				SEAT LEAK TEST



Standardized  
Nuclear  
Unit  
Power  
Plant  
System

INSERVICE TESTING PROGRAM  
ISI CLASS 1, 2 & 3 VALVES  
CALLAWAY NUCLEAR PLANT

Power  
Production  
Engineering

SYSTEM										P & ID	REVISION - DATE	PAGE	
EXPLANATION OF ABBREVIATIONS											G 5/81	3 of 4	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
									BT				FULL STROKE EXERCISE TEST
									BTP				PARTIAL STROKE EXERCISE TEST
									CVP				PARTIAL CHECK VALVE EXERCISE TEST
									CVT				CHECK VALVE EXERCISE TEST
									FST				FAIL SAFE TEST
									PIT				POSITION INDICATING TEST
									RVT				SAFETY OR RELIEF VALVE TEST
										CS			COLD. SHUTDOWN



**INSERVICE TESTING PROGRAM**  
ISI CLASS 1, 2 & 3 VALVES  
**CALLAWAY NUCLEAR PLANT**

SYSTEM

EXPLANATION OF ABBREVIATIONS

P & ID

REVISION - DATE  
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VALVE NUMBER

COORDINATES

ISI CLASS

VALVE  
CATEGORY

VALVE SIZE

VALVE TYPE

ACTUATOR  
TYPE

NORMAL  
POSITION

STROKE  
DIRECTION

TEST

TEST MODE

MAX. STROKE  
TIME

RELIEF  
REQUEST

REMARKS

OP

NORMAL OPERATION

RR

REACTOR REFUELING

VRR

VALVE RELIEF  
REQUEST

## NOTES:

1. This valve is checked for locked closed or locked open position.
2. This valve is a pressure relief valve and will be tested at the frequency stated in IWV-3511.
3. This valve is a passive valve and does not require testing.
4. This valve cannot be full stroke exercised.
5. This valve cannot be partially stroke exercised during plant operation.
6. All motor operated valves fail-as-is and therefore do not require a fail safe test per IWV-3415.
7. An intersystem LOCA seat leakage test will be performed in accordance with Owner's requirements.
8. This valve is tested when the containment spray header is tested per Technical Specification.
9. This valve is A passive and will only receive a seat leakage test.
10. The seat leakage test for this valve will be performed in accordance with 10CFR50 Appendix J requirements.
11. This valve is within a non-safety related system, however, it is used for containment isolation and therefore will receive a seat leakage test in accordance with 10CFR50 Appendix J requirements.
12. Position of valve is determined to be non-safety related and therefore requires no testing.

3.0 INSERVICE TESTING PROGRAM



SECTION 3.1

INSERVICE TESTING PROGRAM - PUMPS

CALLAWAY PLANT



# INSERVICE TESTING PROGRAM

## ISI CLASS 1, 2 & 3 PUMPS

### CALLAWAY NUCLEAR PLANT

PUMP NUMBER	PUMP NAME	ISI CLASS	P & ID AND COORDINATES	TEST PARAMETERS						NOTES
				SPEED	INLET PRES.	DIFF. PRES.	FLOW RATE	VIBRATION	BEARING TEMP.	
PAL01 A	MOTOR DRIVEN AUXILIARY FEEDWATER PUMP A	3	M-02AL01 E-4	NA	YES	YES	YES	YES	NO	1 PRR-3
PAL01 B	MOTOR DRIVEN AUXILIARY FEEDWATER PUMP B	3	M-02AL01 G-4	NA	YES	YES	YES	YES	NO	1 PRR-3
PAL02	TURBINE DRIVEN AUXILIARY FEEDWATER PUMP	3	M-02AL01 B-4 & M-02FC02	YES	YES	YES	YES	YES	NO	1 PRR-3
PBG02 A	BORIC ACID TRANSFER PUMP	3	M-02BG05 B-6	NA	YES	YES	YES	YES	NO	1 PRR-3
PBG02 B	BORIC ACID TRANSFER PUMP	3	M-02BG05 A-6	NA	YES	YES	YES	YES	NO	1 PRR-3
PBG05 A	CENTRIFUGAL CHARGING PUMP	2	M-02BG03 C-5	NA	YES	YES	YES	YES	NO	1 PRR-3
PBG05 B	CENTRIFUGAL CHARGING PUMP	2	M-02BG03 B-5	NA	YES	YES	YES	YES	NO	1 PRR-3

INSERVICE TESTING PROGRAM  
ISI CLASS 1, 2 & 3 PUMPS  
CALLAWAY NUCLEAR PLANT

PUMP NUMBER	PUMP NAME	ISI CLASS	P & ID AND COORDINATES	TEST PARAMETERS						NOTES
				SPEED	INLET PRES.	DIFF. PRES.	FLOW RATE	VIBRATION	BEARING TEMP.	
PEF01 A	ESSENTIAL SERVICE WATER PUMP	3	M-U2EFG1 G-6	NA	YES	YES	YES	YES	NO	1, 2 PRR-3
PEF01 B	ESSENTIAL SERVICE WATER PUMP	3	M-U2EF01 C-6	NA	YES	YES	YES	YES	NO	1, 2 PRR-3
PEG01 A	COMPONENT COOLING WATER PUMP	3	M-02EG01 G-4	NA	YES	YES	YES	YES	NO	1 PRR-3
PEG01 B	COMPONENT COOLING WATER PUMP	3	M-02EG01 D-4	NA	YES	YES	YES	YES	NO	1 PRR-3
PEG01 C	COMPONENT COOLING WATER PUMP	3	M-02EG01 E-4	NA	YES	YES	YES	YES	NO	1 PRR-3
PEG01 D	COMPONENT COOLING WATER PUMP	3	M-02EG01 B-4	NA	YES	YES	YES	YES	NO	1 PRR-3
PEJ01 A	RESIDUAL HEAT REMOVAL PUMP	2	M-02EJ01 G-6	NA	YES	YES	YES	YES	NO	1 PRR-3
PEJ01 B	RESIDUAL HEAT REMOVAL PUMP	2	M-02EJ01 C-6	NA	YES	YES	YES	YES	NO	1 PRR-3





NOTE 1 - Pump discharge pressure is measured and compared with inlet pressure to determine differential pressure.

NOTE 2 - Pump inlet pressure is determined with level in ultimate heat sink.

SECTION 3.2

INSERVICE TESTING PROGRAM - VALVES

CALLAWAY PLANT

INSERVICE TESTING PROGRAM  
ISI CLASS 1, 2 & 3 VALVES  
CALLAWAY NUCLEAR PLANT

SYSTEM MAIN STEAM SYSTEM										P & ID M-02AB01	REVISION - DATE 0 5/81		PAGE 1 of 137
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V007	G-6	2	B	10"	GA	M	0	0	NA				Notes 1, 3
V018	G-3	2	B	10"	GA	M	0	0	NA				Notes 1, 3
V029	D-6	2	B	10"	GA	M	0	0	NA				Notes 1, 3
V040	D-3	2	B	10"	GA	M	0	0	NA				Notes 1, 3
PV1	G-3	2	B	10"	GL	A0	C	O/C	BT FST PIT	CS CS RR			Note 5
PV2	D-3	2	B	10"	GL	A0	C	O/C	BT FST PIT	CS CS RR			Note 5
PV3	D-6	2	B	10"	GL	A0	C	O/C	BT FST PIT	CS CS RR			Note 5
PV4	G-6	2	B	10"	GL	A0	C	O/C	BT FST PIT	CS CS RR			Note 5



INSERVICE TESTING PROGRAM  
ISI CLASS 1, 2 & 3 VALVES  
CALLAWAY NUCLEAR PLANT

SYSTEM										P & ID		REVISION - DATE		PAGE	
MAIN STEAM SYSTEM										M-02AB02		0 5/81		2 of 137	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS		
V045	H-7	2	C	6"	SV	SA	C	O	RVT				Note 2		
V046	H-7	2	C	6"	SV	SA	C	O	RVT				Note 2		
V047	H-6	2	C	6"	SV	SA	C	O	RVT				No ?		
V048	H-5	2	C	6"	SV	SA	C	J	RVT				Note 2		
V049	H-5	2	C	6"	SV	SA	C	O	RVT				Note 2		
V055	F-7	2	C	6"	SV	SA	C	O	RVT				Note 2		
V056	F-7	2	C	6"	SV	SA	C	O	RVT				Note 2		
V057	F-6	2	C	6"	SV	SA	C	O	RVT				Note 2.		

INSERVICE TESTING PROGRAM  
ISI CLASS 1, 2 & 3 VALVES  
CALLAWAY NUCLEAR PLANT

SYSTEM MAIN STEAM SYSTEM										P & ID M-02AB02	REVISION - DATE 0 5/81		PAGE 3 of 137
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE L/RECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V058	F-5	2	C	6"	SV	SA	C	O	RVT				Note 2
V059	F-5	2	C	6"	SV	SA	C	O	RVT				Note 2
V065	D-7	2	C	6"	SV	SA	C	O	RVT				Note 2
V066	D-7	2	C	6"	SV	SA	C	O	RVT				Note 2
V067	D-6	2	C	6"	SV	SA	C	O	RVT				Note 2
V068	D-5	2	C	6"	SV	SA	C	O	RVT				Note 2
V069	D-5	2	C	6"	SV	SA	C	O	RVT				Note 2
V075	C-7	2	C	6"	SV	SA	C	O	RVT				Note. 2

Standardized  
Nuclear  
Unit  
Power  
Plant  
System

INSERVICE TESTING PROGRAM  
ISI CLASS 1, 2 & 3 VALVES  
CALLAWAY NUCLEAR PLANT

Power  
Production  
Engineering

SYSTEM MAIN STEAM SYSTEM										P & ID M-02AB02		REVISION - DATE 0 5/81		PAGE 4 of 137	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS		
V076	C-7	2	C	6"	SV	SA	C	O	RVT				Note 2		
V077	C-6	2	C	6"	SV	SA	C	O	RVT				Note 2		
V078	C-5	2	C	6"	SV	SA	C	O	RVT				Note 2		
V079	C-5	2	C	6"	SV	SA	C	O	RVT				Note 2		
V085	D-4	2	B	4"	GA	M	O	O	NA				Notes 1, 3		
V087	C-4	2	B	4"	GA	M	O	O	NA				Notes 1, 3		
HV 5	D-4	2	B	4"	GL	AO	C	O	BT FST PIT	OP OP RR	10				
HV 6	C-4	2	B	4"	GL	AO	C	O	BT FST PIT	OP OP RR	10				



# INSERVICE TESTING PROGRAM

## ISI CLASS 1, 2 & 3 VALVES

### CALLAWAY NUCLEAR PLANT

SYSTEM MAIN STEAM SYSTEM										P & ID M-02AB02	REVISION - DATE 0 5/81	PAGE 5 of 137	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV 11	H-3	2	B	28"	GA	AO	O	C	BT BTP PIT	CS OP RR	5		
HV 12	G-3	2	B	2"	GL	AO	C	C	NA				Note 3
HV 14	F-3	2	B	28"	GA	AO	O	C	BT BTP PIT	CS OP RR	5		
HV 15	F-3	2	B	2"	GL	AO	C	C	NA				Note 3
HV 17	D-3	2	B	28"	GA	AO	O	C	BT BTP PIT	CS OP RR	5		
HV 18	D-3	2	B	2"	GL	AO	C	C	NA				Note 3
HV 20	C-3	2	B	28"	GA	AO	O	C	BT BTP PIT	CS OP RR	5		
HV 21	C-3	2	B	2"	GL	AO	C	C	NA				Note 3



**INSERVICE TESTING PROGRAM**  
ISI CLASS 1, 2 & 3 VALVES  
**CALLAWAY NUCLEAR PLANT**

SYSTEM FEEDWATER SYSTEM										P & ID M-02AE02	REVISION - DATE 0 5/81	PAGE 7 of 137	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V120	C-4	2	C	14"	CK	SA	O	O/C	CVT	CS			Note 5
V121	F-4	2	C	14"	CK	SA	O	O/C	CVT	CS			Note 5
V122	F-7	2	C	14"	CK	SA	O	O/C	CVT	CS			Note 5
V123	C-7	2	C	14"	CK	SA	O	O/C	CVT	CS			Note 5
V124	C-3	2	C	4"	CK	SA	C	O	CVT	CS			Note 5
V125	F-3	2	C	4"	CK	SA	C	O	CVT	CS			Note 5
V126	F-6	2	C	4"	CK	SA	C	O	CVT	CS			Note 5
V127	C-6	2	C	4"	CK	SA	C	O	CVT	CS			Note 5



# INSERVICE TESTING PROGRAM

## ISI CLASS 1, 2 & 3 VALVES

### CALLAWAY NUCLEAR PLANT

SYSTEM FEEDWATER SYSTEM										P & ID M-02AE02	REVISION - DATE 0 5/81		PAGE 8 of 137
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V329	F-4	2	B	3"	GA	M	C	C	NA				Note 3
V330	C-4	2	B	3"	GA	M	C	C	NA				Note 3
V331	C-7	2	B	3"	GA	M	C	C	NA				Note 3
V332	F-7	2	B	3"	GA	M	C	C	NA				Note 3
FV 39	G-3	2	B	14"	GA	AO	O	C	BT BTP FST PIT	CS OP CS RR	5		
FV 40	C-3	2	B	14"	GA	AO	O	C	BT BTP FST PIT	CS OP CS RR	5		
FV 41	C-6	2	B	14"	GA	AO	O	C	BT BTP FST PIT	CS OP CS RR	5		
FV 42	G-6	2	B	14"	GA	AO	O	C	BT BTP FST PIT	CS OP CS RR	5		



Standardized  
Nuclear  
Unit  
Power  
Plant  
System

**INSERVICE TESTING PROGRAM**  
ISI CLASS 1, 2 & 3 VALVES  
**CALLAWAY NUCLEAR PLANT**

Power  
Production  
Engineering

SYSTEM		P & ID	REVISION - DATE	PAGE									
AUXILIARY FEEDWATER SYSTEM		M-02AL01	0 5/81	10 of 137									
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V001	B-4	3	C	10"	CK	SA	O/C	O/C	CVT	OP			
V002	D-4	3	C	8"	CK	SA	O/C	O/C	CVT	OP			
V003	H-4	3	C	8"	CK	SA	O/C	O/C	CVT	OP			
V005	F-3	3	B	6"	GA	M	O	O	NA				Notes 1, 3
V006	F-4	3	C	6"	CK	SA	C	O	CVT	NA		VRR-1	Note 4
V008	E-3	3	B	6"	GA	M	O	O	NA				Notes 1, 3
V009	E-4	3	C	6"	CK	SA	C	O	CVT	NA		VRR-1	Note 4
V011	C-3	3	B	8"	GA	M	O	O	NA				Notes 1, 3



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SYSTEM AUXILIARY FEEDWATER SYSTEM										P & ID M-02AL01	REVISION - DATE 0 5/81	PAGE 11 of 137	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V012	C-4	3	C	8"	CK	SA	C	O	CVT	NA		VRR-1	Note 4
V014	B-3	3	B	8"	GA	M	O	O	NA				Notes 1, 3
V015	B-4	3	C	8"	CK	SA	C	O	CVT	NA		VRR-1	Note 4
V028	G-5	3	B	2"	GL	M	O	O	NA				Notes 1, 3
V029	G-5	3	C	2"	CK	SA	C	O	CVT	OP			
V030	H-5	3	C	6"	CK	SA	C	O	CVT	CS			Note 5
V031	H-5	3	B	6"	GA	M	O	O	NA				Notes 1, 3
V032	F-6	3	B	4"	GA	M	O	O	NA				Notes 1, 3

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SYSTEM AUXILIARY FEEDWATER SYSTEM										P & ID M-02AL01	REVISION - DATE 0 5/81	PAGE 12 of 137	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V033	F-7	2	C	4"	CK	SA	C	O	CVT	CS			Note 5
V034	F-7	2	B	4"	GL	M	O	O	NA				Notes 1, 3
V035	H-6	3	B	4"	GA	M	O	O	NA				Notes 1, 3
V036	H-7	2	C	4"	CK	SA	C	O	CVT	CS			Note 5
V037	H-7	2	B	4"	GL	M	O	O	NA				Notes 1, 3
V040	E-5	3	B	2"	GL	M	O	O	NA				Notes 1, 3
V041	F-5	3	C	2"	CK	SA	C	O	CVT	OP			
V042	D-5	3	C	6"	CK	SA	C	O	CVT	CS			Note 5

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ISI CLASS 1, 2 & 3 VALVES  
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SYSTEM										& ID	REVISION - DATE	PAGE	
AUXILIARY FEEDWATER SYSTEM										M L01	0 5/81	13 of 137	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V043	D-5	3	B	6"	GA	M	O	O	NA				Notes 1, 3
V044	C-6	3	B	4"	GA	M	O	O	NA				Notes 1, 3
V045	C-7	2	C	4"	CK	SA	C	O	CVT	CS			Note 5
V046	C-7	2	B	4"	GL	M	O	O	NA				Notes 1, 3
V047	D-6	3	B	4"	GA	M	O	O	NA				Notes 1, 3
V048	D-7	2	C	4"	CK	SA	C	O	CVT	CS			Note 5
V049	D-7	2	B	4"	GL	M	O	O	NA				Notes 1, 3
V052	B-5	3	B	3"	GL	M	O	O	NA				Notes 1, 3



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SYSTEM AUXILIARY FEEDWATER SYSTEM										P & ID M-02AL01	REVISION - DATE 0 5/81		PAGE 14 of 137
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX STROKE TIME	RELIEF REQUEST	REMARKS
V053	B-5	3	C	3"	CK	SA	C	O	CVT	OP			
V054	B-5	3	C	8"	CK	SA	C	O	CVT	CS			Note 5
V055	B-5	3	B	8"	GA	M	O	O	NA				Notes 1, 3
V056	E-6	3	B	4"	GA	M	O	O	NA				Notes 1, 3
V057	E-7	2	C	4"	CK	SA	C	O	CVT	CS			Note 5
V058	E-7	2	B	4"	GL	M	O	O	NA				Notes 1, 3
V061	G-6	3	B	4"	GA	M	O	O	NA				Notes 1, 3
V062	G-7	2	C	4"	CK	SA	C	O	CVT	CS			Note 5

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SYSTEM AUXILIARY FEEDWATER SYSTEM										P & ID M-02AL01		REVISION - DATE 0 5/81		PAGE 15 of 137
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MC JE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS	
V063	G-7	2	B	4"	GL	M	O	O	NA				Notes 1, 3	
V056	D-6	3	B	4"	GA	M	O	O	NA				Notes 1, 3	
V067	D-7	2	C	4"	CK	SA	C	O	CVT	CS			Note 5	
V068	D-7	2	B	4"	GL	M	O	O	NA				Notes 1, 3	
V071	B-6	3	B	4"	GA	M	O	O	NA				Notes 1, 3	
V072	B-7	2	C	4"	CK	SA	C	O	CVT	CS			Note 5	
V073	B-7	2	B	4"	GL	M	O	O	NA				Notes 1, 3	
V076	G-6	3	B	6"	GA	M	C	C	NA				Notes 1, 3	

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SYSTEM AUXILIARY FEEDWATER SYSTEM										P & ID M-02AL01	REVISION - DATE 0 5/81		PAGE 16 of 137
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAY TROKE TIME	RELIEF REQUEST	REMARKS
V077	E-6	3	B	6"	GA	M	C	C	NA				Notes 1, 3
HV 5	H-6	2	B	4"	GL	MO	O	C	BT PIT	OP RR			Note 6
HV 6	G-6	2	B	4"	GL	AO	O	O	NA				Note 3
HV 7	F-6	2	B	4"	GL	MO	O	C	BT PIT	OP RR			Note 6
HV 8	E-6	2	B	4"	GL	AO	O	O	NA				Note 3
HV 9	D-6	2	B	4"	GL	MO	O	C	BT PIT	OP RR			Note 6
HV 10	D-6	2	B	4"	GL	AO	O	O	NA				Note 3
HV 11	C-6	2	B	4"	GL	MO	O	C	BT PIT	OP RR			Note 6'



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VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV 12	B-6	2	B	4"	GL	AO	O	O	NA				Note 3
HV 30	F-3	3	B	6"	BTF	MO	C	O	BT PIT	OP RR	15 Sec.		Note 6
HV 31	E-3	3	B	6"	BTF	MO	C	O	BT PIT	OP RR	15 Sec.		Note 6
HV 32	C-3	3	B	8"	BTF	MO	C	O	BT PIT	OP RR	15 Sec.		Note 6
HV 33	B-3	3	B	8"	BTF	MO	C	O	BT PIT	OP RR	15 Sec.		Note 6
HV 34	H-3	3	B	8"	GA	MO	O	C	BT PIT	OP RR	15 Sec.		Note 6
HV 35	D-3	3	B	8"	GA	MO	O	C	BT PIT	OP RR	15 Sec.		Note 6
HV 36	B-3	3	B	10"	GA	MO	O	C	BT PIT	OP RR	15 Sec.		Note 6

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VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
8085	C-8	1	B	3"	GA	M	O	O	NA				Notes 1, 3
8378 A	E-4	1	C	3"	CK	SA	O/C	O/C	CVT	OP			
8378 B	E-4	1	C	3"	CK	SA	O/C	O/C	CVT	OP			
8379 A	E-7	1	C	3"	CK	SA	O/C	O/C	CVT	OP			
8379 B	E-7	1	C	3"	CK	SA	O/C	O/C	CVT	OP			
8948 A	E-4	1	C	10"	CK	SA	C	O	AT CVT	CS CS		VRR-10	Notes 5, 7
8948 B	D-4	1	C	10"	CK	SA	C	O	AT CVT	CS CS		VRR-10	Notes 5, 7
8948 C	C-6	1	C	10"	CK	SA	C	O	AT CVT	CS CS		VRR-10	Notes 5, 7

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SYSTEM REACTOR COOLANT SYSTEM										P & ID M-02BB01	REVISION - DATE 1 9/81	PAGE 19 of 137	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
8948 D	E-6	1	C	10"	CK	SA	C	O	AT CVT	CS CS		VRR-10	Notes 5, 7
8949 A	E-5	1	C	6"	CK	SA	C	O	AT CVT	CS RR		VRR-3	Notes 5, 7
8949 B	C-5	1	C	6"	CK	SA	C	O	AT CVT	CS RR		VRR-3	Notes 5, 7
8949 C	C-6	1	C	6"	CK	SA	C	O	AT CVT	CS RR		VRR-3	Notes 5, 7
8949 D	G-6	1	C	6"	CK	SA	C	O	AT CVT	CS RR		VRR-3	Notes 5, 7
V001	D-5	1	C	1½"	CK	SA	C	O	CVT	RR		VRR-3	Note 5
V007	G-4	2	B	3/4"	GL	M	O	O	NA				Note 3
V022	D-4	1	C	1½"	CK	SA	C	O	CVT	RR		VRR-3	Note, 5



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SYSTEM REACTOR COOLANT SYSTEM										P & ID M-02BB01		REVISION - DATE 0 5/81		PAGE 20 of 137	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS		
V040	D-6	1	C	1½"	CK	SA	C	O	CVT	RR		VRR-3	Note 5		
V046	B-6	2	B	3/4"	GL	M	O	O	NA				Note 3		
V059	E-6	1	C	1½"	CK	SA	C	O	CVT	RR		VRR-3	Note 5		
V065	F-8	1	B	2"	GL	M	O	O	NA				Notes 1, 3		
HV 8001 A	B-5	2	B	1"	GL	SO	C	O/C	BT FST PIT	CS CS RR			Note 5		
HV 8001 B	B-4	2	B	1"	GL	SO	C	O/C	BT FST PIT	CS CS RR			Note 5		
HV 8002 A	A-6	2	B	1"	GL	SO	C	O/C	BT FST PIT	CS CS RR			Note 5		
HV 8002 B	A-5	2	B	1"	GL	SO	C	O/C	BT FST PIT	CS CS RR			Note 5		



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SYSTEM REACTOR COOLANT SYSTEM										P & ID M-02BB02	REVISION - DATE 0 5/81	PAGE 22 of 137	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
8010 A	H-7	1	C	6"	RV	SA	C	O	RVT				Note 2
8010 B	H-6	1	C	6"	RV	SA	C	O	RVT				Note 2
8010 C	H-5	1	C	6"	RV	SA	C	O	RVT				Note 2
V082	B-4	2	B	3/4"	AGL	M	O	O	NA				Note 3
V083	C-4	2	B	3/4"	AGL	M	O	O	NA				Note 3
V084	C-4	1	C	2"	CK	SA	C	C	NA				Note 3
HV 8000 A	E-7	1	B	3"	GA	MO	O	O/C	BT PIT	OP RR			Note 6
HV 8000 B	E-7	1	B	3"	GA	MO	O	O/C	BT PIT	OP RR			Note, 6



# INSERVICE TESTING PROGRAM

## ISI CLASS 1, 2 & 3 VALVES

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VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV 8026	E-3	2	A	1"	DIA	AO	C	C	AT	RR			Notes 9, 10
HV 8027	E-3	2	A	1"	DIA	AO	C	C	AT	RR			Notes 9, 10
HV 8157 A	E-1	3	B	1"	GL	SO	C	0	BT	OP			Note 3
HV 8157 B	E-1	3	B	1"	GL	SO	C	0	BT	OP			Note 3
PCV 455 A	E-7	1	B	3"	GL	SO	C	O/C	BT PIT	OP RR			
PCV 455 B	A-4	1	B	4"	BA	AO	O/C	N/A	N/A	N/A			Note 3
PCV 455 C	B-4	1	B	4"	BA	AO	O/C	N/A	N/A	N/A			Note 3
PCV 456 A	E-8	1	B	3"	GL	SO	C	O/C	BT PIT	OP RR			

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SYSTEM REACTOR COOLANT SYSTEM										P & ID M-02BB03	REVISION - DATE 0 5/81	PAGE 24 of 137	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V113	G-2	3	B	4"	GL	M	O	O	NA				Note 3
V114	G-2	3	B	4"	GL	M	O	O	NA				Note 3
V118	C-5	2	A,C	2"	CK	SA	O	O/C	AT CVT	RR CS			Notes 5, 10
V119	C-4	2	B	2"	GL	M	O	O	NA				Notes 1, 3
V120	C-4	1	C	2"	CK	SA	O	O/C	CVT	CS			Note 5
V121	C-4	1	C	2"	CK	SA	O	O/C	CVT	CS			Note 5
V122	C-4	3	C	2"	CK	SA	O	O	NA				Note 3
V124	B-3	3	C	3/4"	RV	SA	C	O	RVT				Note 2

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SYSTEM REACTOR COOLANT SYSTEM										P & ID M-02BB03	REVISION - DATE 0 5/81	PAGE 25 of 137	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V143	G-2	3	B	4"	GL	M	O	O	NA				Note 3
V144	G-2	3	B	4"	GL	M	O	C	NA				Note 3
V148	C-2	2	A,C	2"	CK	SA	O	O/C	AT CVT	RR CS			Notes 5, 10
V149	C-4	2	B	2"	GL	M	O	O	NA				Notes 1, 3
V150	C-4	1	C	2"	CK	SA	O	O/C	CVT	CS			Note 5
V151	C-4	1	C	2"	CK	SA	O	O/C	CVT	CS			Note 5
V152	C-4	3	C	2"	CK	SA	O	O	NA				Note 3
V154	B-3	3	C	3/4"	RV	SA	C	O	RVT				Note 2



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VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V173	G-2	3	B	4"	GL	M	O	O	NA				Note 3
V174	G-2	3	B	4"	GL	M	O	O	NA				Note 3
V178	C-5	2	A,C	2"	CK	SA	O	O/C	AT CVT	RR CS			Notes 5, 10
V179	C-4	2	B	2"	GL	M	O	O	NA				Notes 1, 3
V180	C-4	1	C	2"	CK	SA	O	O/C	CVT	CS			Note 5
V181	C-4	1	C	2"	CK	SA	O	O/C	CVT	CS			Note 5
V182	C-4	3	C	2"	CK	SA	O	O	NA				Note 3
V184	B-3	3	C	3/4"	RV	SA	C	O	RVT				Note 2

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ISI CLASS 1, 2 & 3 VALVES  
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SYSTEM										P & ID	REVISION - DATE	PAGE	
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VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V203	G-2	3	B	4"	GL	M	O	O	NA				Note 3
V204	G-2	3	B	4"	GL	M	O	O	NA				Note 3
V208	C-5	2	A,C	2"	CK	SA	O	O/C	AT CVT	RR CS			Notes 5, 10
V209	C-4	2	B	2"	GL	M	O	O	NA				Notes 1, 3
V210	C-4	1	C	2"	CK	SA	O	O/C	CVT	CS			Note 5
V211	C-4	1	C	2"	CK	SA	O	O/C	CVT	CS			Note 5
V212	C-4	3	C	2"	CK	SA	O	O	NA				Note 3
V214	B-3	3	C	3/4"	RV	SA	C	O	RVT				Note 2

**INSERVICE TESTING PROGRAM**  
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SYSTEM REACTOR COOLANT SYSTEM										P & ID M-02BB03		REVISION - DATE 0 5/81		PAGE 28 of 137	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS		
V235	F-2	3	B	4"	GL	M	O	O	NA				Note 3		
V236	F-2	3	B	1"	GL	M	O	O	NA				Note 3		
V237	F-2	3	B	4"	GL	M	O	O	NA				Note 3		
V238	F-2	3	B	1"	GL	M	O	O	NA				Note 3		
V239	F-2	3	B	4"	GL	M	O	O	NA				Note 3		
V240	F-2	3	B	1"	GL	M	O	O	NA				Note 3		
V241	F-2	3	B	4"	GL	M	O	O	NA				Note 3		
V242	F-2	3	B	1"	GL	M	O	O	NA				Note 3		



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SYSTEM REACTOR COOLANT SYSTEM										P & ID M-02BB03		REVISION - DATE 0 5/81		PAGE 29 of 137	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS		
V261	C-2	3	B	3"	GL	M	O	O	NA				Note 3		
V262	C-2	3	B	3"	GL	M	O	C	NA				Note 3		
V263	C-2	3	B	3"	GL	M	O	O	NA				Note 3		
V264	C-2	3	B	3"	GL	M	C	O	NA				Note 3		
HV 13	C-2	3	B	3"	GA	MO	O	O/C	BT PIT	CS RR			Notes 5, 6		
HV 14	C-2	3	B	3"	GA	MO	O	O/C	BT PIT	CS RR			Notes 5, 6		
HV 15	C-2	3	B	3"	GA	MO	O	O/C	BT PIT	CS RR			Notes 5, 6		
HV 16	C-2	3	B	3"	GA	MO	O	O/C	BT PIT	CS RR			Notes 5, 6		

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SYSTEM REACTOR COOLANT SYSTEM										P & ID M-02BB03	REVISION - DATE 1 9/81		PAGE 30 of 137
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV 8141 A	E-3	2	B	3/4"	GL	AO	O	O	NA				Note 3
HV 8141 B	E-3	2	B	3/4"	GL	AO	O	O	NA				Note 3
HV 8141 C	E-3	2	B	3/4"	GL	AO	O	O	NA				Note 3
HV 8141 D	E-3	2	B	3/4"	GL	AO	O	O	NA				Note 3
HV 8351 A	C-5	2	C	2"	GL	MO	O	O/C	AT BT PIT	RR OP RR	10		Note 10
HV 8351 B	C-5	2	C	2"	GL	MO	O	O/C	AT BT PIT	RR OP RR	10		Note 10
HV 8351 C	C-5	2	C	2"	GL	MO	O	O/C	AT BT PIT	RR OP RR	10		Note 10
HV 8351 D	C-5	2	C	2"	GL	MO	O	O/C	AT BT PIT	RR OP RR	10		Note 10

**INSERVICE TESTING PROGRAM**  
ISI CLASS 1, 2 & 3 VALVES  
**CALLAWAY NUCLEAR PLANT**

SYSTEM										P & ID	REVISION - DATE	PAGE	
CHEMICAL & VOLUME CONTROL SYSTEM										M-02BG01	0 5/81	32 of 137	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V202	D-3	2	B	1½"	AGL	M	O	O	NA				Notes 1, 3
V529	D-3	2	B	3/4"	GL	M	O	O	NA				Notes 1, 3
V530	D-3	2	B	2"	GL	M	O	O	NA				Notes 1, 3
HV 8100	D-2	2	A	2"	GL	MO	O	C	AT BT PIT	RR CS RR	10		Notes 6, 10
HV 8112	D-2	2	A	2"	GL	MO	O	C	AT BT PIT	RR CS RR	10		Notes 6, 10
HV 8143	E-3	2	B	1"	TW	AO	O	O	NA				Note 3
HV 8145	G-7	1	B	2"	GL	AO	C	C	NA				Note 3
HV 8146	F-7	2	B	3"	GL	AO	O	O	NA				Note 3



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SYSTEM										P & ID	REVISION - DATE	PAGE	
CHEMICAL & VOLUME CONTROL SYSTEM										M-02BG01	0 5/81	31 of 137	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
8381	F-4	2	A,C	3"	CK	SA	O	O/C	AT CVT	RR CS			Notes 5, 10
V018	E-7	2	B	3/4"	GL	M	O	O	NA				Notes 1, 3
V019	E-7	2	C	3/4"	CK	SA	O	C	CVT	CS			Note 5
V135	D-3	2	A,C	3/4"	CK	SA	C	C	AT	RR			Notes 9, 10
V198	C-7	2	B	1 1/2"	AGL	M	O	O	NA				Notes 1, 3
V199	C-6	2	B	1 1/2"	AGL	M	O	O	NA				Notes 1, 3
V200	C-4	2	B	1 1/2"	AGL	M	O	O	NA				Notes 1, 3
V201	C-3	2	B	1 1/2"	AGL	M	O	O	NA				Notes 1, 3

INSERVICE TESTING PROGRAM  
ISI CLASS 1, 2 & 3 VALVES  
CALLAWAY NUCLEAR PLANT

SYSTEM										P & ID	REVISION - DATE	PAGE	
CHEMICAL & VOLUME CONTROL SYSTEM										M-02BG01	0 5/81	33 of 137	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV 8147	F-7	2	B	3"	GL	AO	O	O	NA				Note 3
HV 8152	F-2	2	A	3"	GL	AO	O	C	AT BT FST PIT	RR CS CS RR	10		Note 10
HV 8153 A	D-7	1	B	1"	GL	SO	C	C	NA				Note 3
HV 8153 B	D-7	1	B	1"	GL	SO	C	C	NA				Note 3
HV 8154 A	D-8	1	B	1"	GL	SO	C	C	NA				Note 3
HV 8154 B	D-8	1	B	1"	GL	SO	C	C	NA				Note 3
HV 8160	F-3	2	A	3"	GL	AO	O	C	AT BT FST PIT	RR CS CS RR	10		Note 10
HCV 123	E-5	2	B	1"	GL	AO	C	C	NA				Note 3







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ISI CLASS 1, 2 & 3 VALVES  
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SYSTEM CHEMICAL & VOLUME CONTROL SYSTEM										P & ID M-02BG03	REVISION - DATE 0 5/81	PAGE 36 of 137	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
8118	E-4	2	C	1½"	RV	SA	C	O	RVT				Note 2
8123	H-3	2	C	2"	RV	SA	C	O	RVT				Note 2
8341	D-6	2	B	4"	DIA	M	O	O	NA				Notes 1, 3
8338	D-3	2	B	3"	GA	M	O	O	NA				Note 3
8394	E-6	2	B	4"	DIA	M	O	O	NA				Notes 1, 3
8398 A	G-4	2	B	3"	DIA	M	O	O	NA				Note 3
8398 B	F-4	2	B	3"	DIA	M	O	O	NA				Note 3
8402 A	D-3	2	B	3"	GA	M	O	O	NA				Note 3

**INSERVICE TESTING PROGRAM**  
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SYSTEM CHEMICAL & VOLUME CONTROL SYSTEM										P & ID M-02BG03	REVISION - DATE 0 5/81		PAGE 37 of 137
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
8402 B	D-3	2	B	3"	GA	M	O	O	NA				Note 3
8440	E-6	2	C	4"	CK	SA	O	O	NA				Note 3
8471 A	C-6	2	B	6"	GA	M	O	O	NA				Notes 1, 3
8471 B	B-6	2	B	6"	GA	M	O	O	NA				Notes 1, 3
8481 A	C-4	2	C	4"	CK	SA	C	O	CVT	OP			
8481 B	B-4	2	C	4"	CK	SA	C	O	CVT	OP			
8482	G-6	2	B	3"	DIA	M	C	C	NA				Notes 1, 3
8483 A	D-3	2	B	3"	GA	M	O	O	NA				Note, 3



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ISI CLASS 1, 2 & 3 VALVES  
CALLAWAY NUCLEAR PLANT

SYSTEM CHEMICAL & VOLUME CONTROL SYSTEM										P & ID M-02BG03	REVISION - DATE 0 5/81		PAGE 38 of 137
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
8483 B	D-3	2	B	3"	GA	M	O	O	NA				Note 3
8484	F-6	2	B	3"	DIA	M	O	O	NA				Notes 1, 3
8485 A	C-4	2	B	4"	GA	M	O	O	NA				Notes 1, 3
8485 B	B-4	2	B	4"	GA	M	O	O	NA				Notes 1, 3
8497	E-4	2	C	3"	CK	SA	O	O	NA				Note 3
8546 A	C-7	2	C	8"	CK	SA	C	O	CVT	CS			Note 5
8546 B	B-7	2	C	8"	CK	SA	C	O	CVT	CS			Note 5
8629	F-5	2	B	3"	DIA	M	C	C	NA				Notes 1, 3

**INSERVICE TESTING PROGRAM**  
ISI CLASS 1, 2 & 3 VALVES  
**CALLAWAY NUCLEAR PLANT**

SYSTEM CHEMICAL & VOLUME CONTROL SYSTEM										P & ID M-02BG03	REVISION - DATE 0 5/'81	PAGE 39 of 137	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX STROKE TIME	RELIEF REQUEST	REMARKS
V091	C-4	2	C	2"	CK	SA	C	O	CVT	OP			
V092	D-4	2	B	2"	GL	M	O	O	NA				Notes 1, 3
V095	B-4	2	C	2"	CK	SA	C	O	CVT	OP			
V096	C-4	2	B	2"	GL	M	O	O	NA				Notes 1, 3
V100	D-3	2	B	2"	GL	M	O	O	NA				Note 3
V101	C-3	2	B	2"	GL	M	O	O	NA				Note 3
V102	D-2	2	B	2"	GL	M	O	O	NA				Note 3
V105	C-3	2	B	2"	GL	M	O	O	NA				Note 3

**INSERVICE TESTING PROGRAM**  
ISI CLASS 1, 2 & 3 VALVES  
**CALLAWAY NUCLEAR PLANT**

SYSTEM		CHEMICAL & VOLUME CONTROL SYSTEM											P & ID	REVISION - DATE	PAGE			
		COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS	M-02BG03	0	5/81	40 of 137
VALVE NUMBER																		
V106		C-2	2	B	2"	GL	M	O	O	NA				Note 3				
V137		G-2	2	B	2"	DIA	M	O	O	NA				Note 3				
V139		G-3	2	B	2"	DIA	M	O	O	NA				Note 3				
V206		G-4	3	B	4"	GL	M	O	O	NA				Note 3				
V251		D-5	3	B	3"	GL	M	O	O	NA				Notes 1, 3				
V259		C-5	3	B	2"	GL	M	O	O	NA				Notes 1, 3				
V268		A-5	3	B	2"	GL	M	O	O	NA				Notes 1, 3				
V278		H-3	2	B	3/4"	DIA	M	C	C	NA				Notes 1, 3				



INSERVICE TESTING PROGRAM  
ISI CLASS 1, 2 & 3 VALVES  
JALLAWAY NUCLEAR PLANT

SYSTEM CHEMICAL & VOLUME CONTROL SYSTEM									P & ID M-02BG03	REVISION - DATE 0 5/31		PAGE 41 of 137	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV 8105	E-2	2	A	3"	GA	MO	O	C	AT BT PIT	RR OP RR	10		Note 6
HV 8106	E-2	2	B	3"	GA	MO	O	C	BT PIT	OP RR			Note 6
HV 8109	E-5	2	B	2"	GL	MO	C	O	BT PIT	OP RR			Note 6
HV 8110	E-3	2	B	2"	GL	MO	O	O/C	BT PIT	OP RR			Note 6
HV 8111	E-4	2	B	2"	GL	MO	O	O/C	BT PIT	OP RR			Note 6
FCV 121	D-4	2	B	3"	GL	AO	O	O	NA				Note 3
HCV 182	E-3	2	B	3"	GL	AO	O	O	NA				Note 3
LCV 112B	F-6	2	B	4"	GA	MO	O	C	BT PIT	CS RR			Notes 5, 6



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ISI CLASS 1, 2 & 3 VALVES  
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SYSTEM										P & ID	REVISION - DATE		PAGE
CHEMICAL & VOLUME CONTROL SYSTEM										M-02BG05	1	9/81	43 of 137
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
8461 A	D-7	3	B	3"	DIA	M	O	O	NA				Notes 1, 3
8461 B	D-7	3	B	3"	DIA	M	O	O	NA				Notes 1, 3
8463	B-7	3	B	3"	DIA	M	O	O	NA				Note 1, 3
8465 A	B-7	3	B	3"	DIA	M	C	C	NA				Note 3
8465 B	A-7	3	B	3"	DIA	M	C	C	NA				Note 3
3475	A-7	3	B	3"	DIA	M	O	O	NA				Notes 1, 3
V147	B-6	3	C	3"		SA	C	O	CVT	OP			
V148	B-6	3	B	3"	DIA	M	O	O	NA				Notes 1, 3



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ISI CLASS 1, 2 & 3 VALVES  
CALI AWAY NUCLEAR PLANT

SYSTEM CHEMICAL & VOLUME CONTROL SYSTEM	P & ID M-02BG05	REVISION - DATE 0 5/81	PAGE 44 of 137
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VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V149	B-5	3	B	3"	DIA	M	O	O	NA				Notes 1, 3
V152	B-4	3	B	3"	DIA	M	O	O	NA				Notes 1, 3
V153	B-3	3	B	2"	DIA	M	O	O	NA				Note 3
V155	B-6	3	C	3/4"	CK	SA	C	NA	NA				Note 12
V156	C-6	3	B	3/4"	DIA	M	O	O	NA				Notes 1, 3
V157	G-4	3	B	2"	DIA	M	O	O	NA				Notes 1, 3
V159	G-4	3	B	2"	DIA	M	C	C	NA				Note 3
V160	G-4	3	B	2"	DIA	M	C	C	NA				Note, 3

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ISI CLASS 1, 2 & 3 VALVES  
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SYSTEM CHEMICAL & VOLUME CONTROL SYSTEM										P & ID M-02BG05	REVISION - DATE 0 5/81		PAGE 45 of 137
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V165	A-6	3	C	3"	CK	SA	C	O	CVT	OP			
V166	A-6	3	B	3"	DIA	M	O	O	NA				Notes 1, 3
V167	B-6	3	C	3/4"	CK	SA	C	NA	NA				Note 12
V168	C-6	3	B	3/4"	DIA	M	O	O	NA				Notes 1, 3
V169	G-4	3	B	2"	DIA	M	O	O	NA				Notes 1, 3
V172	B-4	3	B	2"	DIA	M	C	C	NA				Note 3
V173	B-5	3	B	2"	DIA	M	C	C	NA				Note 3
V174	A-4	2	C	3"	CK	SA	C	O	CVT	CS			Note 5

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ISI CLASS 1, 2 & 3 VALVES  
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SYSTEM CHEMICAL & VOLUME CONTROL SYSTEM										P & ID M-02BG05	REVISION - DATE 0 5/81		PAGE 10 of 137
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V177	B-2	2	B	2"	DIA	M	C	C	NA				Notes 1, 3
V183	A-4	2	B	2"	DIA	M	C	C	NA				Notes 1, 3
V184	A-4	2	C	2"	CK	SA	C	NA	NA				Note 12
V187	B-2	2	B	1"	DIA	M	C	C	NA				Note 3
V188	B-2	2	C	1"	CK	SA	C	NA	NA				Note 12
V209	B-6	3	B	3/4"	GL	M	O	O	NA				Notes 1, 3
V210	C-6	3	B	3/4"	GL	M	O	O	NA				Notes 1, 3
V320	G-4	3	B	1"	DIA	M	C	C	NA				Note '3'







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ISI CLASS 1, 2 & 3 VALVES  
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SYSTEM STEAM GENERATOR BLOWDOWN SYSTEM										P & ID M-02BM01	REVISION - DATE 0 5/81	PAGE 49 of 137	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V001	F-7	2	B	4"	GA	M	O	O	NA				Note 3
V002	F-6	2	B	4"	GA	M	O	O	NA				Note 3
V004	F-8	2	B	2"	GL	M	C	C	NA				Note 3
V007	G-7	2	B	3/4"	GL	M	O	O	NA				Note 3
V008	G-7	2	B	3/4"	GL	M	O	O	NA				Note 3
V009	G-6	2	B	3/4"	GL	M	O	O	NA				Note 3
V010	G-7	2	B	1"	GL	M	C	C	NA				Notes 1, 3
V012	D-7	2	B	4"	GA	M	O	O	NA				Note 3



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ISI CLASS 1, 2 & 3 VALVES  
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SYSTEM		P & ID		REVISION - DATE		PAGE							
STEAM GENERATOR BLOWDOWN SYSTEM		M-02BM01		0 5/81		50 of 137							
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V013	D-6	2	B	4"	GA	M	O	O	NA				Note 3
V015	D-8	2	B	2"	GL	M	C	C	NA				Note 3
V018	E-7	2	B	3/4"	GL	M	O	O	NA				Note 3
V019	E-7	2	B	3/4"	GL	M	O	O	NA				Note 3
V020	E-6	2	B	3/4"	GL	M	O	O	NA				Note 3
V021	E-7	2	B	1"	GL	M	C	C	NA				Notes 1, 3
V023	C-7	2	B	4"	GA	M	O	O	NA				Note 3
V024	C-6	2	B	4"	GA	M	O	O	NA				Note 3

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ISI CLASS 1, 2 & 3 VALVES  
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SYSTEM STEAM GENERATOR BLOWDOWN SYSTEM										P & ID M-02BM01	REVISION - DATE 0 5/81	PAGE 51 of 137	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V026	C-8	2	B	2"	GL	M	C	C	NA				Note 3
V029	C-7	2	B	3/4"	GL	M	O	O	NA				Note 3
V030	D-7	2	B	3/4"	GL	M	O	O	NA				Note 3
V031	D-6	2	B	3/4"	GL	M	O	O	NA				Note 3
V032	C-7	2	B	1"	GL	M	C	C	NA				Notes 1, 3
V034	A-7	2	B	4"	GA	M	O	O	NA				Note 3
V035	A-6	2	B	4"	GA	M	O	O	NA				Note 3
V037	A-8	2	B	2"	GL	M	C	C	NA				Note 3

**INSERVICE TESTING PROGRAM**  
ISI CLASS 1, 2 & 3 VALVES  
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SYSTEM										P & ID	REVISION - DATE	PAGE	
STEAM GENERATOR BLOWDOWN SYSTEM										M-02BM01	0 5/81	52 of 137	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V040	A-7	2	B	3/4"	GL	M	O	O	NA				Note 3
V041	B-7	2	B	3/4"	GL	M	O	O	NA				Note 3
V042	B-6	2	B	3/4"	GL	M	O	O	NA				Note 3
V043	A-7	2	B	1"	GL	M	C	C	NA				Notes 1, 3
V045	A-4	2	A	3"	GA	M	C	C	AT	RR			Notes 1, 9, 11
V046	A-3	2	A	3"	GA	M	C	C	AT	RR			Notes 1, 3, 1
V190	A-5	2	B	2"	GL	M	C	C	NA				Notes 1, 3
V191	C-5	2	B	2"	GL	M	C	C	NA				Notes 1, 3



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SYSTEM STEAM GENERATOR BLOWDOWN SYSTEM										P & ID M-02BM01	REVISION - DATE 0 5/81		PAGE 53 of 137
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V192	D-5	2	B	2"	GL	M	C	C	NA				Notes 1, 3
V193	F-5	2	B	2"	GL	M	C	C	NA				Notes 1, 3
V343	A-7	2	B	2"	GL	M	C	C	NA				Note 3
V344	C-7	2	B	2"	GL	M	C	C	NA				Note 3
V345	E-7	2	B	2"	GL	M	C	C	NA				Note 3
V346	G-7	2	B	2"	GL	M	C	C	NA				Note 3
HV 1	F-5	2	B	4"	GL	AO	O	C	BT FST PIT	CS CS RR	10		Note 5
HV 2	E-5	2	B	4"	GL	AO	O	C	BT FST PIT	CS CS RR	10		Note 5

INSERVICE TESTING PROGRAM  
ISI CLASS 1, 2 & 3 VALVES  
CALLAWAY NUCLEAR PLANT

SYSTEM										P & ID	REVISION - DATE		PAGE
STEAM GENERATOR BLOWDOWN SYS.										M-02BM01	0	5/81	54 of 137
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV 3	C-5	2	B	4"	GL	AO	O	C	BT FST PIT	CS CS RR	10		Note 5
HV 4	A-5	2	B	4"	GL	AO	O	C	BT FST PIT	CS CS RR	10		Note 5
HV 19	G-7	2	B	1"	GL	SO	C	C	NA				Note 3
HV 20	E-7	2	B	1"	GL	SO	C	C	NA				Note 3
HV 21	D-7	2	B	1"	GL	SO	C	C	NA				Note 3
HV 22	B-7	2	B	1"	GL	SO	C	C	NA				Note 3
HV 35	G-7	2	B	1"	GL	SO	C	C	NA				Note 3
HV 36	E-7	2	B	1"	GL	SO	C	C	NA				Note 3





**INSERVICE TESTING PROGRAM**  
ISI CLASS 1, 2 & 3 VALVES  
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SYSTEM BORATED REFUELING WATER STORAGE SYSTEM										P & ID M-02BN01		REVISION - DATE 0 5/81		PAGE 56 of 137	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS		
8717	B-5	2	B	8"	GA	M	C	C	NA				Notes 1, 3		
V011	F-4	2	B	24"	GA	M	O	O	NA				Notes 1, 3		
V013	C-3	2	B	2"	GL	M	C	C	NA				Notes 1, 3		
V014	A-3	2	B	2"	GL	M	C	C	NA				Notes 1, 3		
V017	F-3	2	B	6"	GA	M	C	C	NA				Notes 1, 3		
HV 3	C-3	2	B	12"	GA	MO	O	O/C	BT PIT	OP RR			Note 6		
HV 4	A-3	2	B	12"	GA	MO	O	O/C	BT PIT	OP RR			Note 6		
HV 8806A	B-5	2	B	8"	GA	MO	O	O/C	BT PIT	OP RR			Note 6		

INSERVICE TESTING PROGRAM  
ISI CLASS 1, 2 & 3 VALVES  
CALLAWAY NUCLEAR PLANT

SYSTEM BORATED REFUELING WATER STORAGE SYSTEM										P & ID M-02BN01	REVISION - DATE 1 9/81	PAGE 57 of 137	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV 8806B	E-3	2	B	8"	GA	MO	O	O/C	BT PIT	OP RR			Note 6
HV 8812A	B-3	2	B	14"	GA	MO	O	O/C	BT PIT	OP RR			Note 6
HV 8812B	D-3	2	B	14"	GA	MO	O	O/C	BT PIT	OP RR			Note 6
HV 8813	B-7	2	B	2"	GL	MO	O	C	BT PIT	CS RR			Note 6
HCV 8800A	E-5	2	B	3"	GL	AO	C	C	NA				Note 3
HCV 8800B	E-5	2	B	3"	GL	AO	C	C	NA				Note 3
LCV 112D	A-5	2	B	8"	GA	MO	C	O	BT PIT	CS RR			Note 6
LCV 112E	E-3	2	B	8"	GA	MO	C	O	BT PIT	CS RR			Note 6







# INSERVICE TESTING PROGRAM

## ISI CLASS 1, 2 & 3 VALVES

### CALLAWAY NUCLEAR PLANT

SYSTEM ESSENTIAL SERVICE WATER SYSTEM										P & ID M-112EF01	REVISION DATE 0 5/81	PAGE 60 of 177	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V001	G-5	3	C	30"	CK	SA	C	O	CVT	OP			
V002	G-4	3	B	30"	BTF	M	O	O	NA				Notes 1, 3
V004	D-5	3	C	30"	CK	SA	C	O	CVT	OP			
V005	D-4	3	B	30"	BTF	M	O	O	NA				Notes 1, 3
V093	F-3	3	B	30"	BTF	M	C	C	NA				Notes 1, 3
V094	E-3	3	B	30"	BTF	M	C	C	NA				Notes 1, 3
V162	G-7	3	B	1"	GA	M	C	C	NA				Notes 1, 3
V163	E-7	3	B	1"	GA	M	C	C	NA				Notes 1, 3

**INSERVICE TESTING PROGRAM**  
ISI CLASS 1, 2 & 3 VALVES  
**CALLAWAY NUCLEAR PLANT**

SYSTEM ESSENTIAL SERVICE WATER SYSTEM										P & ID M-U2EF01	REVISION - DATE 0 5/81	PAGE 61 of 137	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V245	H-5	3	B	1"	GL	M	O	O	NA				Notes 1, 3
V246	E-5	3	B	1"	GL	M	O	O	NA				Notes 1, 3
V336	F-4	3	B	1½"	GA	M	C	C	NA				Notes 1, 3
V337	D-3	3	B	1½"	GA	M	C	C	NA				Notes 1, 3
HV 65	B-6	3	B	30"	BTF	MO	O	C	BT	OP			Note 6
HV 66	B-3	3	B	30"	BTF	MO	O	C	BT	OP			Note 6
HV 97	F-6	3	B	3"	GA	MO	O	C	BT	OP			Note 6
HV 98	D-6	3	B	3"	GA	MO	O	C	BT	OP			Note 6





Standardized  
Nuclear  
Unit  
Power  
Plant  
System

**INSERVICE TESTING PROGRAM**  
ISI CLASS 1, 2 & 3 VALVES  
**CALLAWAY NUCLEAR PLANT**

Power  
Production  
Engineering

SYSTEM		ESSENTIAL SERVICE WATER SYSTEM											P & ID	REVISION	DATE	PAGE
VALVE NUMBER		COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS		
V029	G-5	3	B	4"	GA	M	O	O	0	NA				Notes 1, 3		
V030	G-4	3	B	4"	GA	M	O	O	0	NA				Notes 1, 3		
V032	F-5	3	B	4"	GA	M	O	O	0	NA				Notes 1, 3		
V033	F-4	3	B	4"	GA	M	O	O	0	NA				Notes 1, 3		
V035	F-5	3	B	4"	GA	M	O	O	0	NA				Notes 1, 3		
V036	F-4	3	B	4"	GA	M	O	O	0	NA				Notes 1, 3		
V037	E-5	3	B	4"	GA	M	O	O	0	NA				Notes 1, 3		
V038	E-4	3	B	4"	GA	M	O	O	0	NA				Notes..1, 3		

INSERVICE TESTING PROGRAM  
ISI CLASS 1, 2 & 3 VALVES  
CALLAWAY NUCLEAR PLANT

SYSTEM ESSENTIAL SERVICE WATER SYSTEM										P & ID M-02EF01	REVISION - DATE 0 5/81	PAGE 64 of 137	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V052	G-7	3	B	8"	BTF	M	O	O	NA				Notes 1, 3
V053	G-6	3	B	8"	BTF	M	O	O	NA				Notes 1, 3
V054	G-7	3	B	4"	GA	M	O	O	NA				Notes 1, 3
V055	G-6	3	B	4"	GA	M	O	O	NA				Notes 1, 3
V061	D-5	3	B	4"	GA	M	O	O	NA				Notes 1, 3
V062	D-4	3	B	4"	GA	M	O	O	NA				Notes 1, 3
V063	D-5	3	B	4"	GA	M	O	O	NA				Notes 1, 3
V064	D-4	3	B	4"	GA	M	O	O	NA				Notes 1, 3



INSERVICE TESTING PROGRAM  
ISI CLASS 1, 2 & 3 VALVES  
CALLAWAY NUCLEAR PLANT

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VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V065	B-5	3	B	4"	GA	M	O	O	NA				Notes 1, 3
V066	B-4	3	B	4"	GA	M	O	O	NA				Notes 1, 3
V068	C-5	3	B	4"	GA	M	O	O	NA				Notes 1, 3
V069	C-5	3	B	4"	GA	M	O	O	NA				Notes 1, 3
V071	C-6	3	B	4"	GA	M	O	O	NA				Notes 1, 3
V072	C-6	3	B	4"	GA	M	O	O	NA				Notes 1, 3
V076	B-6	3	C	2½"	CK	SA	O	C	CVT	OP			
V077	B-7	3	B	4"	GA	M	O	O	NA				Notes 1, 3

INSERVICE TESTING PROGRAM  
ISI CLASS 1, 2 & 3 VALVES  
CALLAWAY NUCLEAR PLANT

SYSTEM ESSENTIAL SERVICE WATER SYSTEM	P & ID M-02EF01	REVISION - DATE C 5/81	PAGE 66 of 137
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VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V078	B-6	3	B	4"	GA	M	O	O	NA				Notes 1, 3
V079	D-7	3	B	8"	BTF	M	O	O	NA				Notes 1, 3
V080	D-6	3	B	8"	BTF	M	O	O	NA				Notes 1, 3
V081	D-7	3	B	4"	GA	M	O	O	NA				Notes 1, 3
V082	D-6	3	B	4"	GA	M	O	O	NA				Notes 1, 3
V104	H-8	3	B	30"	BTF	M	O	O	NA				Notes 1, 3
V107	H-8	3	B	30"	BTF	M	O	O	NA				Notes 1, 3
V113	E-8	3	B	30"	BTF	M	O	O	NA				Notes 1, 3

# INSERVICE TESTING PROGRAM

## ISI CLASS 1, 2 & 3 VALVES

### CALLAWAY NUCLEAR PLANT

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VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V116	E-8	3	B	30"	BTF	M	O	O	NA				Notes 1, 3
V272	G-7	3	B	8"	BTF	M	O	O	NA				Notes 1, 3
V273	G-6	3	B	8"	BTF	M	O	O	NA				Notes 1, 3
V274	D-7	3	B	8"	BTF	M	O	O	NA				Notes 1, 3
V275	D-6	3	B	8"	BTF	M	O	O	NA				Notes 1, 3
HV 23	F-7	3	B	30"	BTF	MO	O	C	BT PIT	CS RR			Note 6
HV 24	E-7	3	B	30"	BTF	MO	O	C	BT PIT	CS RR			Note 6
HV 25	F-7	3	B	30"	BTF	MO	O	C	BT PIT	CS RR			Note 6...





INSERVICE TESTING PROGRAM  
ISI CLASS 1, 2 & 3 VALVES  
CALLAWAY NUCLEAR PLANT

SYSTEM ESSENTIAL SERVICE WATER SYSTEM										P & ID M-02EF02	REVISION - DATE 0 5/81		PAGE 69 of 137
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V039	F-7	3	B	4"	GA	M	O	O	NA				Notes 1, 3
V040	F-6	3	B	4"	GA	M	O	O	NA				Notes 1, 3
V041	F-7	3	B	2½"	GA	M	O	O	NA				Notes 1, 3
V042	F-6	3	B	2½"	GA	M	O	O	NA				Notes 1, 3
V046	E-6	3	C	2½"	CK	SA	O	C	CVT	OP			
V047	D-7	3	B	4"	GA	M	O	O	NA				Notes 1, 3
V048	D-6	3	B	4"	GA	M	O	O	NA				Notes 1, 3
V056	F-4	3	B	4"	GA	M	O	O	NA				Notes 1, 3

**INSERVICE TESTING PROGRAM**  
ISI CLASS 1, 2 & 3 VALVES  
**CALLAWAY NUCLEAR PLANT**

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VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V057	F-3	3	B	4"	GA	M	O	O	NA				Notes 1, 3
V058	G-3	3	B	16"	BTF	M	O	O	NA				Notes 1, 3
V083	C-7	3	B	2½"	GA	M	O	O	NA				Notes 1, 3
V084	C-6	3	B	2½"	GA	M	O	O	NA				Notes 1, 3
V088	B-4	3	B	4"	GA	M	O	O	NA				Notes 1, 3
V089	B-3	3	B	4"	GA	M	O	O	NA				Notes 1, 3
V090	C-3	3	B	16"	BTF	M	O	O	NA				Notes 1, 3
V108	G-2	3	B	30"	BTF	M	O	O	NA				Notes 1, 3



INSERVICE TESTING PROGRAM  
ISI CLASS 1, 2 & 3 VALVES  
CALLAWAY NUCLEAR PLANT

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VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V117	C-2	3	B	30"	BTF	M	O	O	NA				Notes 1, 3
V146	F-7	3	B	2"	GA	M	O	O	NA				Notes 1, 3
V147	F-6	3	B	2"	GA	M	O	O	NA				Notes 1, 3
V148	C-7	3	B	2"	GA	M	O	O	NA				Notes 1, 3
V149	C-6	3	B	2"	GA	M	O	O	NA				Notes 1, 3
HV 31	G-7	2	A	14"	BTF	MO	O	O/C	AT BT PIT	RR OP RR	30		Notes 6, 10
HV 32	B-7	2	A	14"	BTF	MO	O	O/C	AT BT PIT	RR OP RR	30		Notes 6, 10
HV 33	G-7	2	B	14"	BTF	MO	O	O/C	AT BT PIT	RR OP RR	30		Note 6, 10

INSERVICE TESTING PROGRAM  
ISI CLASS 1, 2 & 3 VALVES  
CALLAWAY NUCLEAR PLANT

SYSTEM ESSENTIAL SERVICE WATER SYSTEM									P & ID M-02EF02	REVISION - DATE 1 9/81		PAGE 72 of 137	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV 34	B-7	2	B	14"	BTF	MO	O	O/C	AT BT PIT	RR OP RR	30		Notes 6, 10
HV 37	G-2	3	B	30"	BTF	MO	C	O	BT PIT	OP RR			Note 6
HV 38	C-2	3	B	30"	BTF	MO	C	O	BT PIT	OP RR			Note 6
HV 39	F-2	3	B	30"	BTF	MO	O	C	BT PIT	OP RR			Note 6
HV 40	D-2	3	B	30"	BTF	MO	O	C	BT PIT	OP RR			Note 6
HV 41	E-2	3	B	30"	BTF	MO	O	C	BT PIT	OP RR			Note 6
HV 42	D-2	3	B	30"	BTF	MO	O	C	BT PIT	OP RR			Note 6
HV 43	E-7	3	B	2"	GL	AO	O	C	BT FST PIT	OP OP RR			

INSERVICE TESTING PROGRAM  
ISI CLASS 1, 2 & 3 VALVES  
CALLAWAY NUCLEAR PLANT

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VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV 45	G-6	2	B	14"	BTF	MO	O	O/C	AT BT PIT	RR OP RR	30		Note 6, 10
HV 46	B-6	2	B	14"	BTF	MO	O	O/C	AT BT PIT	RR OP RR	30		Note 6, 10
HV 47	G-6	2	A	10"	BTF	MO	O	C	AT BT PIT	RR OP RR	30		Notes 6, 10
HV 48	C-6	2	A	10"	BTF	MO	O	C	AT BT PIT	RR OP RR	30		Notes 6, 10
HV 49	G-6	2	A	14"	BTF	MO	C	O/C	AT BT PIT	RR OP RR	30		Notes 6, 10
HV 50	B-6	2	A	14"	BTF	MO	C	O/C	AT BT PIT	RR OP RR	30		Notes 6, 10
HV 51	G-4	3	B	24"	BTF	MO	O/C	O	BT PIT	OP RR			Note 6
HV 52	C-4	3	B	24"	BTF	MO	O/C	O	BT PIT	OP RR			Note 6...





Standardized  
Nuclear  
Unit  
Power  
Plant  
System

# INSERVICE TESTING PROGRAM

## ISI CLASS 1, 2 & 3 VALVES

### CALLAWAY NUCLEAR PLANT

Power  
Production  
Engineering

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VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V003	G-3	3	C	20"	CK	SA	C	O/C	CVT	OP			
V004	G-3	3	B	20"	BTF	M	O	O	NA				Notes 1, 3
V007	E-3	3	C	20"	CK	SA	C	O/C	CVT	OP			
V008	E-3	3	B	20"	BTF	M	O	O	NA				Notes 1, 3
V009	E-2	3	B	2"	GL	M	C	C	NA				Notes 1, 3
V012	D-3	3	C	20"	CK	SA	C	O/C	CVT	OP			
V013	D-3	3	B	20"	BTF	M	O	O	NA				Notes 1, 3
V016	C-3	3	C	20"	CK	SA	C	O/C	CVT	OP			.....

INSERVICE TESTING PROGRAM  
ISI CLASS 1, 2 & 3 VALVES  
CALLAWAY NUCLEAR PLANT

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VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V017	C-3	3	B	20"	BTF	M	O	O	NA				Notes 1, 3
V018	D-2	3	B	2"	GL	M	C	C	NA				Notes 1, 3
V130	D-6	3	C	18"	CK	SA	O/C	O/C	CVT	CS			Note 5
V131	D-6	3	C	18"	CK	SA	O/C	O/C	CVT	CS			Note 5
V132	G-5	3	B	20"	BTF	M	O	O	NA				Notes 1, 3
V135	E-5	3	B	20"	BTF	M	O	O	NA				Notes 1, 3
V138	D-5	3	B	20"	BTF	M	O	O	NA				Notes 1, 3
V141	C-5	3	B	20"	BTF	M	O	O	NA				Notes 1, 3



# INSERVICE TESTING PROGRAM

## ISI CLASS 1, 2 & 3 VALVES

### CALLAWAY NUCLEAR PLANT

SYSTEM COMPONENT COOLING WATER SYSTEM										P & ID M-02EG01	REVISION - DATE 0 5/81	PAGE 77 of 137	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V146	G-7	3	B	3"	GA	M	O	O	NA				Note 3
V147	G-7	3	B	2"	GL	M	C	C	NA				Note 3
V149	C-7	3	B	3"	GA	M	O	O	NA				Note 3
V150	C-7	3	B	2"	GL	M	C	C	NA				Note 3
V158	D-7	3	B	2"	GL	M	C	C	NA				Notes 1, 3
V159	G-6	3	C	2"	RV	SA	C	O	RVT				Note 2
V169	D-7	3	B	2"	GL	M	C	C	NA				Notes 1, 3
V170	C-6	3	C	2"	RV	SA	C	O	RVT				Note 2

**INSERVICE TESTING PROGRAM**  
ISI CLASS 1, 2 & 3 VALVES  
**CALLAWAY NUCLEAR PLANT**

SYSTEM COMPONENT COOLING WATER SYSTEM										P & ID M-02EG01	REVISION - DATE 0 5/81	PAGE 78 of 137	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V182	F-7	3	B	3"	GA	M	O	O	NA				Notes 1, 3
V185	C-7	3	B	3"	GA	M	O	O	NA				Notes 1, 3
V305	G-6	3	C	1"	RV	SA	C	O	RVT				Note 2
V306	C-6	3	C	1"	RV	SA	C	O	RVT				Note 2
HV 11	F-8	3	B	1½"	CL	MO	C	O	PT PIT	OP RR			Note 6
HV 12	C-8	3	B	1½"	GL	MO	C	O	BT PIT	OP RR			Note 6
HV 13	F-7	3	B	1½"	GL	MO	C	O	BT PIT	OP RR			Note 6
HV 14	C-7	3	B	1½"	GL	MO	C	O	BT PIT	OP RR			Note 6





**INSERVICE TESTING PROGRAM**  
ISI CLASS 1, 2 & 3 VALVES  
**CALLAWAY NUCLEAR PLANT**

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VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V019	G-7	3	B	20"	BTF	M	O	O	NA				Notes 1, 3
V035	G-6	3	B	20"	BTF	M	O	O	NA				Notes 1, 3
V036	G-5	3	C	18"	CK	SA	O	O	NA				Note 3
V038	F-4	3	B	3"	GA	M	O	O	NA				Notes 1, 3
V039	E-4	3	B	2½"	GA	M	O	O	NA				Notes 1, 3
V040	F-4	3	B	2"	GA	M	O	O	NA				Notes 1, 3
V042	E-4	3	B	1"	GA	M	O	O	NA				Notes 1, 3
V043	F-2	3	B	3"	GA	M	O	O	NA				Notes.1, 3

INSERVICE TESTING PROGRAM  
ISI CLASS 1, 2 & 3 VALVES  
CALLAWAY NUCLEAR PLANT

SYSTEM COMPONENT COOLING WATER SYSTEM										P & ID M-02EG02	REVISION - DATE 0 5/81		PAGE 81 of 137
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V044	C-7	3	B	20"	BTF	M	O	O	NA				Notes 1, 3
V060	C-6	3	B	20"	BTF	M	O	O	NA				Notes 1, 3
V061	F-5	3	C	18"	CK	M	O	O	NA				Note 3
V063	C-4	3	B	3"	GA	M	O	O	NA				Notes 1, 3
V064	B-4	3	B	2½"	GA	M	O	O	NA				Notes 1, 3
V065	B-4	3	B	2"	GA	M	O	O	NA				Notes 1, 3
V067	A-4	3	B	1"	GA	M	O	O	NA				Notes 1, 3
V068	C-2	3	B	3"	GA	M	O	O	NA				Notes 1, 3

**INSERVICE TESTING PROGRAM**  
ISI CLASS 1, 2 & 3 VALVES  
**CALLAWAY NUCLEAR PLANT**

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VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX STROKE TIME	RELIEF REQUEST	REMARKS
V200	H-4	3	B	12"	BTF	M	O	O	NA				Notes 1, 3
V201	D-4	3	B	12"	BTF	M	O	O	NA				Notes 1, 3
HV 53	G-5	3	B	18"	BTF	MO	O	O	NA				Note 3
HV 54	F-5	3	B	18"	BTF	MO	O	O	NA				Note 3
HV 101	G-4	3	B	18"	BTF	MO	C	O	BT PIT	CS RR			Note 6
HV 102	C-4	3	B	18"	BTF	MO	C	O	BT PIT	CS RR			Note 6
TV 29	G-6	3	B	20"	BTF	AO	O	C	BT FST	OP OP			
TV 30	C-6	3	B	20"	BTF	AO	O	C	BT FST	OP OP			



# INSERVICE TESTING PROGRAM

## ISI CLASS 1, 2 & 3 VALVES

### CALLAWAY NUCLEAR PLANT

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VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V071	G-7	3	B	6"	GA	M	O	O	NA				Note 3
V085	F-5	3	B	4"	GA	M	O	O	NA				Note 3
V087	E-5	3	B	3"	GA	M	C	O	NA				Note 3
V088	H-5	3	B	12"	GA	M	O	O	NA				Note 3
V092	H-4	3	B	12"	GA	M	O	O	NA				Note 3
V093	D-3	3	B	4"	GA	M	O	O	NA				Note 3
V094	C-3	3	B	4"	GA	M	O	O	NA				Note 3
V095	D-2	3	B	6"	GA	M	O	O	NA				Note 3

**INSERVICE TESTING PROGRAM**  
ISI CLASS 1, 2 & 3 VALVES  
**CALLAWAY NUCLEAR PLANT**

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VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V096	C-3	3	B	4"	GA	M	O	O	NA				Note 3
V097	D-3	3	B	1"	GF	M	O	O	NA				Note 3
V099	E-3	3	B	4"	GA	M	O	O	NA				Note 3
V100	E-3	3	B	4"	GA	M	O	O	NA				Note 3
V101	E-2	3	B	6"	GA	M	O	O	NA				Note 3
V102	E-3	3	B	4"	GA	M	O	O	NA				Note 3
V103	E-3	3	B	1"	GA	M	O	O	NA				Note 3
V105	A-3	3	B	4"	GA	M	O	O	NA				Note 3

**INSERVICE TESTING PROGRAM**  
ISI CLASS 1, 2 & 3 VALVES  
**CALLAWAY NUCLEAR PLANT**

SYSTEM		COMPONENT COOLING WATER SYSTEM										P & ID		REVISION - DATE		PAGE		
VALVE NUMBER		COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS	0	5/81	85	OF 137
V106	H-3	3	B	4"	GA	M	O	O	NA					Note 3				
V108	G-3	3	B	4"	GA	M	O	O	NA					Note 3				
V109	F-3	3	B	4"	GA	M	O	O	NA					Note 3				
V110	G-2	3	B	6"	GA	M	O	O	NA					Note 3				
V111	G-3	3	B	4"	GA	M	O	O	NA					Note 3				
V112	G-3	3	B	1"	GA	M	O	O	NA					Note 3				
V114	B-3	3	B	4"	GA	M	O	O	NA					Note 3				
V115	B-3	3	B	4"	GA	M	O	O	NA					Note 3				



# INSERVICE TESTING PROGRAM

## ISI CLASS 1, 2 & 3 VALVES

### CALLAWAY NUCLEAR PLANT

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VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V116	B-2	3	B	6"	GA	M	O	O	NA				Note 3
V117	B-3	3	B	4"	GA	M	O	O	NA				Note 3
V118	B-3	3	B	1"	GA	M	O	O	NA				Note 3
V123	D-4	3	B	4"	GA	M	O	O	NA				Note 3
V124	D-4	3	C	4"	CK	SA	O	O	NA				Note 3
V125	A-5	3	B	12"	GA	M	O	O	NA				Note 3
V128	D-5	3	B	12"	GA	M	O	O	NA				Note 3
V129	D-5	3	C	12"	CK	SA	O	O	NA				Note 3

# INSERVICE TESTING PROGRAM

## ISI CLASS 1, 2 & 3 VALVES

### CALLAWAY NUCLEAR PLANT

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VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V204	H-4	2	C	12"	CK	SA	O	C	AT CVT	RR CS			Note 5, 10
V309	G-6	3	B	6"	GA	M	O	O	NA				Note 3
V331	G-3	3	B	3"	GA	M	O	O	NA				Note 3
V332	F-3	3	B	3"	GA	M	O	O	NA				Note 3
V333	D-3	3	B	3"	GA	M	O	O	NA				Note 3
V334	C-3	3	B	3"	GA	M	O	O	NA				Note 3
V370	A-4	3	B	4"	GA	M	O	O	NA				Note 3
HV 58	H-5	2	A	12"	GA	MO	O	C	AT BT PIT	RR OP RR	30		Notes 6, 10

# INSERVICE TESTING PROGRAM

## ISI CLASS 1, 2 & 3 VALVES

### CALLAWAY NUCLEAR PLANT

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VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV 59	C-5	2	A	12"	GA	MO	O	C	AT BT PIT	RR OP RR	30		Notes 6, 10
HV 60	B-5	2	B	12"	GA	MO	O	C	AT BT PIT	RR OP RR	30		Notes 6, 10
HV 61	C-4	2	A	4"	GA	MO	O	C	AT BT PIT	RR CS RR	30		Notes 6, 10
HV 62	E-4	2	B	4"	GA	MO	O	C	AT BT PIT	RR OP RR	30		Notes 6, 10
HV 69A	F-8	3	B	14"	BTF	AO	O/C	C	BT FST PIT	CS CS RR			Note 5
HV 69B	F-6	3	B	14"	BTF	AO	O/C	C	BT FST PIT	CS CS RR			Note 5
HV 70A	F-8	3	B	14"	BTF	AO	O/C	C	BT FST PIT	CS CS RR			Note 5
HV 70B	F-6	3	B	14"	BTF	AO	O/C	C	BT FST PIT	CS CS RR			Note 5





INSERVICE TESTING PROGRAM  
ISI CLASS 1, 2 & 3 VALVES  
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SYSTEM RESIDUAL HEAT REMOVAL SYSTEM	P & ID M-02EJ01	REVISION - DATE 0 5/81	PAGE 90 of 137
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VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
8708 A	F-7	2	C	3"	RV	SA	C	O/C	RVT				Note 2
8708 B	C-7	2	C	3"	RV	SA	C	O/C	RVT				Note 2
8724 A	G-5	2	B	10"	GA	M	O	O	NA				Notes 1, 3
8724 B	C-5	2	B	10"	GA	M	O	O	NA				Notes 1, 3
8730 A	G-4	2	C	10"	CK	SA	C	O	CVT	OP			
8730 B	C-4	2	C	10"	CK	SA	C	O	CVT	OP			
8841 A	E-2	1	C	6"	CK	SA	C	C/O	AT CVT	CS CS			Notes 5, 7
8841 B	D-2	1	C	6"	CK	SA	C	C/O	AT CVT	CS CS			Notes 5, 7

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VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
8958 A	F-6	2	C	14"	CK	SA	C	O/C	CVT	CS			Note 5
8958 B	B-6	2	C	14"	CK	SA	C	O/C	CVT	CS			Note 5
8969 A	G-3	2	C	8"	CK	SA	C	O	CVT	OP			
8969 B	A-4	2	C	8"	CK	SA	C	O	CVT	OP			
V033	H-5	3	B	18"	BTF	M	O	O	NA				Note 3
V038	D-5	3	B	18"	BTF	M	O	O	NA				Note 3
V070	G-5	3	B	1"	GL	M	O	O	NA				Notes 1, 3
V071	D-5	3	B	1"	GL	M	O	O	NA				Notes 1, 3



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VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV 14	H-5	2	B	1"	GL	SO	C	C	NA				Note 3
HV 15	A-5	2	B	1"	GL	SO	C	C	NA				Note 3
HV 8701A	F-8	1	B	12"	GA	MO	C	O/C	BT PIT	CS RR	120		Notes 5, 6
HV 8701B	B-8	1	B	12"	GA	MO	C	O/C	BT PIT	CS RR	120		Notes 5, 6
HV 8716A	E-4	2	B	10"	GA	MO	O	O/C	BT PIT	CS RR			Note 6
HV 8716B	D-4	2	B	10"	GA	MO	O	O/C	BT PIT	CS RR			Note 6
HV 8804A	G-4	2	B	8"	GA	MO	C	O	BT PIT	OP RR			Note 6
HV 8804B	A-4	2	B	8"	GA	MO	C	O	BT PIT	OP RR			Note 6

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SYSTEM RESIDUAL HEAT REMOVAL SYSTEM										P & ID M-02EJ01	REVISION - DATE 0 5/81	PAGE 93 of 137	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORM. POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV 8809A	G-3	2	B	10"	GA	MO	O	O/C	BT PIT	OP RR	13		Note 6
HV 8809B	C-3	2	B	10"	GA	MO	O	O/C	BT PIT	OP RR	13		Note 6
HV 8811A	E-7	2	B	14"	GA	MO	C	O/C	BT PIT	OP RR	18		Note 6
HV 8811B	D-7	2	B	14"	GA	MO	C	O/C	BT PIT	OP RR	18		Note 6
HV 8840	E-3	2	B	10"	GA	MO	O	O/C	BT PIT	OP RR	13		Note 6
FCV 610	H-6	2	B	2"	GL	MO	O	C	BT PIT	CS RR			Notes 5, 6
FCV 611	A-5	2	B	2"	GA	MO	O	C	BT PIT	CS RR			Notes 5, 6
FCV 618	F-5	2	B	8"	BTF	AO	C	C	NA				Note 3





# INSERVICE TESTING PROGRAM

## ISI CLASS 1, 2 & 3 VALVES

### CALLAWAY NUCLEAR PLANT

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VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
8921 A	E-5	2	B	4"	GA	M	O	O	NA				Notes 1, 3
8921 B	D-5	2	B	4"	GA	M	O	O	NA				Notes 1, 3
8922 A	E-5	2	C	4"	CK	SA	C	O	CVT	RR		VRR-4	Note 5
8922 B	D-5	2	C	4"	CK	SA	C	O	CVT	RR		VRR-4	Note 5
8926 A	E-7	2	C	8"	CK	SA	C	O	CVT	OP			
8926 B	D-7	2	C	8"	CK	SA	C	O	CVT	OP			
V001	F-3	1	C	2"	CK	SA	C	O/C	AT CVT	CS RR		VRR-5	Notes 5, 7
V002	E-3	1	C	2"	CK	SA	C	O/C	AT CVT	CS RR		VRR-5	Notes 5, 7

INSERVICE TESTING PROGRAM  
ISI CLASS 1, 2 & 3 VALVES  
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VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX STROKE TIME	RELIEF REQUEST	REMARKS
V003	D-3	1	C	2"	CK	SA	C	O/C	AT CVT	CS RR		VRR-5	Notes 5, 7
V004	C-3	1	C	2"	CK	SA	C	O/C	AT CVT	CS RR		VRR-5	Notes 5, 7
V005	A-6	2	C	1½"	CK	SA	C	O	CVT	OP			
V006	F-6	2	A, C	1"	CK	SA	C	C	AT	RR			Notes 9, 10
V007	A-5	2	C	1½"	CK	SA	C	O	CVT	OP			
V089	F-3	2	B	2"	AGL	M	O	O	NA				Notes 1, 3
V090	E-3	2	B	2"	AGL	M	O	O	NA				Notes 1, 3
V091	D-3	2	B	2"	AGL	M	O	O	NA				Notes 1, 3

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ISI CLASS 1, 2 & 3 VALVES  
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VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V092	D-3	2	B	2"	AGL	M	O	O	NA				Notes 1, 3
V095	C-2	2	B	2"	AGL	M	O	O	NA				Notes 1, 3
V096	C-2	2	B	2"	AGL	M	O	O	NA				Notes 1, 3
VC97	B-2	2	B	2"	AGL	M	O	O	NA				Notes 1, 3
V098	B-2	2	B	2"	AGL	M	O	O	NA				Notes 1, 3
V099	F-6	3	B	2"	GL	M	O	O	NA				Notes 1, 3
V103	D-6	3	B	2"	GL	M	O	O	NA				Notes 1, 3
HV 8802A	E-4	2	B	4"	GA	MO	C	O/C	BT PIT	OP RR	10		Notes 5, 6



**INSERVICE TESTING PROGRAM**  
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VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV 8802B	D-4	2	B	4"	GA	MO	C	O/C	BT PIT	OP RR	10		Notes 5, 6
HV 8807A	G-7	2	B	6"	GA	MO	C	O	BT PIT	OP RR			Note 6
HV 8807B	F-7	2	B	6"	GA	MO	C	O	BT PIT	OP RR			Note 6
HV 8814A	B-6	2	B	1½"	GL	MO	O	C	BT PIT	OP RR			Note 6
HV 8814B	B-5	2	B	1½"	GL	MO	O	C	BT PIT	OP RR			Note 6
HV 8821A	E-4	2	B	4"	GA	MO	O	C	BT PIT	OP RR			Note 6
HV 8821B	D-4	2	B	4"	GA	MO	O	C	BT PIT	OP RR			Note 6
HV 8823	C-4	2	B	3/4"	GL	AO	C	C	NA				Note 8

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VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV 8824	D-3	2	B	3/4"	GL	AO	C	C	NA				Note 3
HV 8835	B-4	2	B	4"	GA	MO	O	O/C	BT PIT	OP RR			Note 6
HV 8871	G-5	2	A	3/4"	GL	AO	C	C	AT	RR			Notes 9, 11
HV 8881	G-4	2	B	3/4"	GL	AO	C	C	NA				Note 3
HV 8888	F-6	2	A	1"	GL	AO	C	C	AT	RR			Notes 9, 10
HV 8889A	G-2	1	B	3/4"	GL	AO	C	C	NA				Note 3
HV 8889B	G-3	1	B	3/4"	GL	AO	C	C	NA				Note 3
HV 8889C	G-2	1	B	3/4"	GL	AO	C	C	NA				Note 3





**INSERVICE TESTING PROGRAM**  
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VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
8815	D-3	1	C	3"	CK	SA	C	O/C	CVT	CS			Note 5
V014	E-6	2	C	1"	CK	SA	O	C	CVT	OP			
V015	E-6	2	B	1"	GL	M	O	O	NA				Note 3
V017	D-6	2	C	1"	CK	SA	O	C	CVT	OP			
V018	D-6	2	B	1"	GL	M	O	O	NA				Note 3
V019	D-6	3	B	1"	GL	M	C	C	NA				Notes 1, 3
V107	E-3	1	B	1½"	AGL	M	O	O	NA				Notes 1, 3
V108	G-3	1	B	1½"	AGL	M	O	O	NA				Notes 1, 3

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VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V109	F-3	1	B	1½"	AGL	M	O	O	NA				Notes 1, 3
V110	D-3	1	B	1½"	AGL	M	O	O	NA				Notes 1, 3
V151	B-5	2	B	1"	GL	M	C	C	NA				Notes 1, 3
V240	C-7	2	C	1"	CK	SA	C	O	CVT	CS			Note 5
V241	B-7	2	C	1"	CK	SA	C	G	CVT	CS			Note 5
V246	A-6	2	B	1"	GL	M	C	C	NA				Notes 1, 3
V247	A-7	2	B	1"	GL	M	C	C	NA				Notes 1, 3
HV 8801A	D-4	2	B	4"	GA	MO	C	O/C	BT PIT	CS RR	10		Note 5, 6

**INSERVICE TESTING PROGRAM**  
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VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV 8801B	D-4	2	B	4"	GA	MO	C	O/C	BT PIT	CS RR	10		Note 5, 6
HV 8803A	C-7	2	B	4"	GA	MO	C	O/C	BT PIT	CS RR			Notes 5, 6
HV 8803B	A-7	2	B	4"	GA	MO	C	O/C	BT PIT	CS RR			Notes 5, 6
HV 8837A	C-7	2	B	1"	GL	SO	C	O/C	BT FST PIT	CS CS RR			Note 5
HV 8837B	B-7	2	B	1"	GL	SO	C	O/C	BT FST PIT	CS CS RR			Note 5
HV 8843	C-4	2	B	3/4"	GL	AO	C	C	NA				Note 3
HV 8870A	E-5	2	B	1"	GL	AO	O	C	BT FST PIT	JP JP RR			Note 5
HV 8870B	E-5	2	B	1"	GL	AO	O	C	BT FST PIT	OP OP RR			Note 5





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VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V002	G-7	2	C	12"	CK	SA	C	O	NA			VRR-7	Note 4
V003	G-7	2	C	12"	CK	SA	C	O/C	CVP	OP		VRR-8	
V004	G-5	2	C	10"	CK	SA	C	O	CVP	OP		VRR-8	
V005	F-6	2	B	3"	GA	M	O	O	NA				Notes 1, 3
V008	B-7	2	C	12"	CK	SA	C	O	NA			VRR-7	Note 4
V009	B-7	2	C	12"	CK	SA	C	O/C	CVP	OP		VRR-8	
V010	B-5	2	C	10"	CK	SA	C	O	CVP	OP		VRR-8	
V011	B-6	2	B	3"	GA	M	O	O	NA				Notes 1, 3

INSERVICE TESTING PROGRAM  
ISI CLASS 1, 2 & 3 VALVES  
CALLAWAY NUCLEAR PLANT

SYSTEM CONTAINMENT SPRAY SYSTEM										P & ID M-02EN01	REVISION - DATE 0 5/81	PAGE 106 of 137	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V013	G-4	2	C	10"	CK	SA	C	O/C	CVP	NA		VRR-9	Notes 4, 8
V014	G-3	2	B	10"	GA	M	O	O	NA				Notes 1, 3
V017	B-4	2	C	10"	CK	SA	C	O/C	CVP	NA		VRR-9	Notes 4, 8
V018	B-3	2	B	10"	GA	M	O	O	NA				Notes 1, 3
V024	F-4	2	B	4"	GA	M	C	C	NA				Notes 1, 3
V025	C-4	2	B	4"	GA	M	C	C	NA				Notes 1, 3
V026	F-4	2	B	3/4"	GL	M	C	C	NA				Notes 1, 3
V057	F-5	2	C	3/4"	RV	SA	C	C	NA				



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ISI CLASS 1, 2 & 3 VALVES  
CALLAWAY NUCLEAR PLANT

SYSTEM CONTAINMENT SPRAY SYSTEM	P & ID M-02EN01	REVISION - DATE 0 5/81	PAGE 107 of 137
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VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V058	F-5	2	C	1"	RV	SA	C	O	RVT				Note 2
V097	D-5	2	B	3"	GA	M	O	O	NA				Notes 1, 3
V098	F-6	2	B	3"	GA	M	O	O	NA				Notes 1, 3
V099	F-6	2	C	3"	CK	SA	C	O	CVT	OP			
V100	C-6	2	C	3"	GA	M	O	O	NA				Notes 1, 3
V101	C-6	2	C	3"	CK	SA	C	O	CVT	OP			
V106	F-5	2	C	1"	RV	SA	C	O	RVT				Note 2
HV 1	G-7	2	B	12"	GA	MO	C	C/O	BT PIT	OP RR			Notes 6, 8



INSERVICE TESTING PROGRAM  
ISI CLASS 1, 2 & 3 VALVES  
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SYSTEM ACCUMULATOR SAFETY INJECTION SYSTEM										P & ID M-02EP01	REVISION - DATE 0 5/81	PAGE 109 of 137	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
8818 A	G-3	1	C	6"	CK	SA	C	O/C	AT CVT	CS CS			Notes 5, 7
8818 B	F-3	1	C	6"	CK	SA	C	O/C	AT CVT	CS CS			Notes 5, 7
8818 C	D-3	1	C	6"	CK	SA	C	O/C	AT CVT	CS CS			Notes 5, 7
8818 D	C-3	1	C	6"	CK	SA	C	O/C	AT CVT	CS CS			Notes 5, 7
8855 A	H-7	2	C	1"	RV	SA	C	O	RVT				Note 2
8855 B	F-7	2	C	1"	RV	SA	C	O	RVT				Note 2
8855 C	D-7	2	C	1"	RV	SA	C	O	RVT				Note 2
8855 D	C-7	2	C	1"	RV	SA	C	O	RVT				Note 2



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ISI CLASS 1, 2 & 3 VALVES  
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SYSTEM ACCUMULATOR SAFETY INJECTION SYSTEM										P & ID M-02EP01	REVISION - DATE 0 5/81	PAGE 110 of 137	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
8956 A	G-4	1	C	10"	CK	SA	C	O	CVP	RR		VRR-6	Notes 5
8956 B	E-4	1	C	10"	CK	SA	C	O	CVP	RR		VRR-6	Notes 5
8956 C	C-4	1	C	10"	CK	SA	C	O	CVP	RR		VRR-6	Notes 5
8956 D	B-4	1	C	10"	CK	SA	C	O	CVP	RR		VRR-6	Notes 5
V001	G-7	2	B	2"	GL	M	C	C	NA				Notes 1, 3
V002	G-7	2	B	3/4"	GL	M	O	O	NA				Note 3
V009	G-6	2	B	1"	GL	M	O	O	NA				Note 3
V010	G-3	1	C	2"	CK	SA	C	O/C	AT CVT	CS RR		VRR-2	Notes 5, 7

**INSERVICE TESTING PROGRAM**  
ISI CLASS 1, 2 & 3 VALVES  
**CALLAWAY NUCLEAR PLANT**

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VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V011	C-7	2	B	2"	GL	M	C	C	NA				Notes 1, 3
V012	C-7	2	B	3/4"	GL	M	O	O	NA				Note 3
V019	E-6	2	B	1"	GL	M	O	O	NA				Note 3
V020	F-3	1	C	2"	CK	SA	C	O/C	AT CVT	CS RR		VRR-2	Notes 5, 7
V021	C-7	2	B	1"	GL	M	C	C	NA				Notes 1, 3
V022	D-7	2	B	3/4"	GL	M	O	O	NA				Note 3
V029	D-6	2	B	1"	GL	M	O	O	NA				Note 3
V030	D-3	1	C	2"	CK	SA	C	O/C	AT CVT	CS RR		VRR-2	Notes 5, 7

INSERVICE TESTING PROGRAM  
ISI CLASS 1, 2 & 3 VALVES  
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SYSTEM

ACCUMULATOR SAFETY INJECTION SYSTEM

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VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX STROKE TIME	RELIEF REQUEST	REMARKS
V031	B-7	2	B	2"	GL	M	C	C	NA				Notes 1, 3
V032	B-7	2	B	3/4"	GL	M	O	O	NA				Note 3
V039	B-6	2	B	1"	GL	M	O	O	NA				Note 3
V040	C-3	1	C	2"	CK	SA	C	O/C	AT CVT	CS RR		VRR- 2	Notes 5, 7
V046	A-5	2	A,C	1"	CK	SA	C	C	AT	RR			Notes 9, 11
HV 8808A	G-5	2	B	10"	GA	MO	O	O/C	BT PIT	CS RR			Notes 1, 5, 6
HV 8808B	E-5	2	B	10"	GA	MO	O	O/C	BT PIT	CS RR			Notes 1, 5, 6
HV 8808C	C-5	2	B	10"	GA	MO	O	O/C	BT PIT	CS RR			Notes 1, 5, 6



INSERVICE TESTING PROGRAM  
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VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV 8808D	B-5	2	B	10"	GA	MO	O	O/C	BT PIT	CS RR			Notes 1, 5, 6
HV 8875A	H-6	2	B	1"	GL	AO	C	C	NA				Note 3
HV 8875B	F-6	2	B	1"	GL	AO	C	C	NA				Note 3
HV 8875C	D-6	2	B	1"	GL	AO	C	C	NA				Note 3
HV 8875D	C-6	2	B	1"	GL	AO	C	C	NA				Note 3
HV 8877A	F-4	2	B	3/4"	GL	AO	C	C	NA				Note 3
HV 8877B	E-4	2	B	3/4"	GL	AO	C	C	NA				Note 3
HV 8877C	C-4	2	B	3/4"	GL	AO	C	C	NA				Note 3

INSERVICE TESTING PROGRAM  
ISI CLASS 1, 2 & 3 VALVES  
CALLAWAY NUCLEAR PLANT

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VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV 8877D	A-4	2	B	3/4"	GL	AO	C	C	NA				Note 3
HV 8878A	G-5	2	B	1"	GL	AO	C	C	NA				Note 3
HV 8878B	E-5	2	B	1"	GL	AO	C	C	NA				Note 3
HV 8878C	D-5	2	B	1"	GL	AO	C	C	NA				Note 3
HV 8878D	B-5	2	B	1"	GL	AO	C	C	NA				Note 3
HV 8879A	G-4	2	B	3/4"	GL	AO	C	C	NA				Note 3
HV 8879B	E-4	2	B	3/4"	GL	AO	C	C	NA				Note 3
HV 8879C	D-4	2	B	3/4"	GL	AO	C	C	NA				Note 3

INSERVICE TESTING PROGRAM  
ISI CLASS 1, 2 & 3 VALVES  
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SYSTEM ACCUMULATOR SAFETY INJECTION SYSTEM										P & ID M-02EP01	REVISION - DATE 0 5/81	PAGE 115 of 137	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV 8879D	C-2	2	B	3/4"	GL	AO	C	C	NA				Note 3
HV 8880	A-4	2	A	2"	GL	AO	C	C	AT	RR			Notes 9, 11
HV 8950A	H-7	2	B	1"	GL	SO	C	O	BT PIT	CS RR			Note 5
HV 8950B	F-8	2	B	1"	GL	SO	C	C	BT PIT	CS RR			Note 5
HV 8950C	F-7	2	B	1"	GL	SO	C	O	BT PIT	CS RR			Note 5
HV 8950D	D-8	2	B	1"	GL	SO	C	O	BT PIT	CS RR			Note 5
HV 8950E	D-7	2	B	1"	GL	SO	C	O	BT PIT	CS RR			Note 5
HV 8950F	C-8	2	B	1"	GL	SO	C	O	BT PIT	CS RR			Note 5



**INSERVICE TESTING PROGRAM**  
ISI CLASS 1, 2 & 3 VALVES  
**CALLAWAY NUCLEAR PLANT**

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AUXILIARY FEEDWATER PUMP TURBINE		M-02FC02		0 5/81		116 OF 137							
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V001	G-6	2	C	4"	CK	SA	C	O	CVT	OP			
V002	G-6	2	C	4"	CK	SA	C	O	CVT	OP			
V003	G-6	3	C	4"	CK	SA	C	C	NA				Note 3
V004	G-7	3	B	4"	GA	M	C	C	NA				Notes 1, 3
V008	E-6	3	B	1"	GA	M	O	O	NA				Notes 1, 3
V024	G-6	2	C	4"	CK	SA	C	O	CVT	OP			
V025	G-6	2	C	4"	CK	SA	C	O	CVT	OP			
V051	D-7	3	B	1"	GA	M	O	O	NA				Notes 1, 3



**INSERVICE TESTING PROGRAM**  
ISI CLASS 1, 2 & 3 VALVES  
**CALLAWAY NUCLEAR PLANT**

SYSTEM CONTAINMENT HYDROGEN CONTROL SYSTEM									P & ID M-02GS01	REVISION - DATE 0 5/81		PAGE 118 of 137	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV 3	E-6	2	A	1"	GA	SO	C	O/C	AT BT FST PIT	RR OP OP RR			Note 10
HV 4	E-6	2	A	1"	GA	SO	C	O/C	AT BT FST PIT	RR OP OP RR			Note 10
HV 5	D-5	2	A	1"	GA	SO	C	O/C	AT BT FST PIT	RR OP OP RR			Note 10
HV 8	R-6	2	A	1"	GA	SO	C	O/C	AT BT FST PIT	RR OP OP RR			Note 10
HV 9	B-6	2	A	1"	GA	SO	C	O/C	AT BT FST PIT	RR OP OP RR			Note 10
HV 12	E-4	2	A	1"	GA	SO	C	O/C	AT BT FST PIT	RR OP OP RR			Note 10
HV 13	E-5	2	A	1"	GA	SO	C	O/C	AT BT FST PIT	RR OP OP RR			Note 10
HV 14	D-5	2	A	1"	GA	SO	C	O/C	AT BT FST PIT	RR OP OP RR			Note 10



**INSERVICE TESTING PROGRAM**  
ISI CLASS 1, 2 & 3 VALVES  
**CALLAWAY NUCLEAR PLANT**

S.STEM CONTAINMENT HYDROGEN CONTROL SYSTEM									P & ID M-02GS01	REVISION - DATE 1 9/81	PAGE 119 of 137		
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX STROKE TIME	RELIEF REQUEST	REMARKS
HV 17	B-4	2	A	1"	GA	SO	C	O/C	AT BT FST PIT	RR OP OP RR			Note 10
HV 18	B-5	2	A	1"	GA	SO	C	O/C	AT BT FST PIT	RR OP OP RR			Note 10
HV 20	F-5	2	A	6"	BTF	MO	C	O/C	AT BT PIT	RR OP RR			Notes 6, 10
HV 21	F-4	2	A	6"	BTF	MO	C	O/C	AT BT PIT	RR OP RR			Notes 6, 10
HV 31	D-4	2	A	1"	GA	SO	O	C	AT BT FST PIT	RR OP OP RR	5 Sec.		Note 10
HV 32	D-3	2	A	1"	GA	SO	O	C	AT BT FST PIT	RR OP OP RR	5 Sec.		Note 10
HV 33	C-4	2	A	1"	GA	SO	O	C	AT BT FST PIT	RR OP OP RR	5 Sec.		Note 10
HV 34	C-4	2	A	1"	GA	SO	O	C	AT BT FST PIT	RR OP OP RR	5 Sec.		Note 10



**INSERVICE TESTING PROGRAM**  
ISI CLASS 1, 2 & 3 VALVES  
**CALLAWAY NUCLEAR PLANT**

SYSTEM CONTAINMENT PURGE SYSTEM										P & ID M-02GT01	REVISION - DATE 1 9/81	PAGE 121 of 137	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HZ 4	D-4	2	A	18"	B.F	AO	O	C	AT BT FST PIT	RR OP OP RR	3 Sec.		Note 11
HZ 5	A-5	2	A	18"	BTF	AO	O	C	AT BT FST PIT	RR OP OP RR	3 Sec.		Note 11
HZ 6	C-4	2	A	36"	BTF	AO	C	C	AT	RR			Notes 9, 11
HZ 7	C-5	2	A	36"	BTF	AO	C	C	AT	RR			Notes 9, 11
HZ 8	C-6	2	A	36"	BTF	AO	C	C	AT	RR			Notes 9, 11
HZ 9	C-7	2	A	36"	BTF	AO	C	C	AT	RR			Notes 9, 11
HZ 11	A-6	2	A	18"	BTF	AO	O	C	AT BT FST PIT	RR OP OP RR	3 Sec.		Note 11
HZ 12	A-7	2	A	18"	BTF	AO	O	C	AT BT FST PIT	RR OP OP RR	3 Sec.		Note 11







**INSERVICE TESTING PROGRAM**  
ISI CLASS 1, 2 & 3 VALVES  
**CALLAWAY NUCLEAR PLANT**

EMERGENCY FUEL OIL SYSTEM										P & ID M-02JE01	REVISION - DATE 0 5/81	PAGE 124 of 137	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V001	G-6	3	B	2"	GA	M	C	C	NA				Notes 1, 3
V002	C-6	3	B	2"	GA	M	C	C	NA				Notes 1, 3
V007	H-6	3	B	2"	GA	M	C	C	NA				Notes 1, 3
V008	D-6	3	B	2"	GA	M	C	C	NA				Notes 1, 3
V011	H-6	3	B	2"	GA	M	O	O	NA				Notes 1, 3
V012	D-6	3	B	2"	GA	M	O	O	NA				Notes 1, 3
V015	H-5	3	B	2"	GA	M	O	O	NA				Notes 1, 3
V016	D-5	3	B	2"	GA	M	O	O	NA				Notes 1, 3



Standardized  
Nuclear  
Unit  
Power  
Plant  
System

**INSERVICE TESTING PROGRAM**  
ISI CLASS 1, 2 & 3 VALVES  
**CALLAWAY NUCLEAR PLANT**

Power  
Production  
Engineering

EMERGENCY FUEL OIL SYSTEM										P & ID M-02JE01	REVISION - DATE 0 5/81	PAGE 125 of 137	
VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V033	F-5	3	B	2"	GA	M	C	C	NA				Notes 1, 3
V034	C-5	3	B	2"	GA	M	C	C	NA				Notes 1, 3
V059	H-6	3	B	2"	GA	M	C	C	NA				Notes: 1, 3
V060	D-6	3	B	2	GA	M	C	C	NA				Notes 1, 3
V061	H-5	3	B	2"	GA	M	C	C	NA				Notes 1, 3
V062	D-5	3	B	2"	GA	M	C	C	NA				Notes 1, 3
V069	F-4	3	B	2"	GA	M	O	O	NA				Notes 1, 3
V070	C-4	3	B	2"	GA	M	O	O	NA				Notes 1, 3































**INSERVICE TESTING PROGRAM**  
ISI CLASS 1, 2 & 3 VALVES  
**CALLAWAY NUCLEAR PLANT**

SYSTEM NUCLEAR SAMPLING SYSTEM	P & ID M-02SJ04	REVISION - DATE 1 9/81	PAGE 136 of 137
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VALVE NUMBER	COORDINATES	ISI CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTJATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
V053	F-7	2	B	1"	GL	M	O	O	NA				Note 3
V101	G-7		C	1"	CK	SA	C	C	NA				Note 3
V102	H-7	2	B	1"	GL	M	O	O	NA				Note 3
V111	A-7	2	A,C	1"	CK	SA	C	C	AT	RR			Notes 9, 11
HV 3	F-7	2	B	1"	GL	SO	C	C	NA				Note 3
HV 4	H-7	2	B	1"	GL	SO	C	C	NA				Note 3
HV 5	F-7	2	A	1"	GL	SO	O	C	AT BT FST PIT	RR OP OP RR	5 Sec.		Note 10
HV 6	F-6	2	A	1"	GL	SO	O	C	AT BT FST PIT	RR OP OP RR	5 Sec.		Note 10

APPENDIX A

REQUEST FOR RELIEF

FOR PUMPS

PUMP RELIEF REQUEST NO. 1

SYSTEM: Safety Related

COMPONENT: All pumps listed in the program

CLASS: 2 & 3

FUNCTION: To provide flow to safety related systems

TEST REQUIREMENT: To test the pump nominally each month (IWP - 3400a)

BASIS FOR RELIEF: Industry data has shown that testing of pumps on a frequency of once each month not only decreases plant reliability but also decreases pump life. It has been shown that pump testing every three months actually increases plant reliability and safety.

ALTERNATE TESTING: Test pumps every three months (as required in the 1980 edition of ASME Section XI B&PV Code).



PUMP RELIEF REQUEST NO. 2

SYSTEM: Emergency Fuel Oil System

COMPONENT: PJE01A & PJE01B

CLASS: 3

FUNCTION: To provide fuel oil to the standby diesel generators.

TEST REQUIREMENT: TEST  
Measure bearing temperature and vibration and observe lubricant level.

BASIS FOR RELIEF: These pumps are immersable centrifugal sump pumps located in the emergency fuel oil storage tanks.

ALTERNATE TESTING: None

PUMP RELIEF REQUEST NO. 3

SYSTEM: Saftey Related

COMPONENT: All pumps listed in the program

CLASS: 2 & 3

FUNCTION: To provide to safety related systems

TEST REQUIREMENT: To measure bearing temperature.

BASIS FOR RELIEF: Industry data has shown that bearing temperature changes due to degrading bearings only occurs after major degradation has occurred at the pump. Prior to this, the vibration measurement would provide the necessary information to warn the operator of an impending malfunction. Therefore, this parameter will not be measured since its information is after the fact.

ALTERNATE TESTING: None

APPENDIX B

REQUEST FOR RELIEF

FOR VALVES



VALVE RELIEF REQUEST NO. 1

SYSTEM: Auxiliary Feedwater

P&ID No: M-02AL01

COMPONENT: V006  
V009  
V012  
V015

CATEGORY: C

CLASS: 3

FUNCTION: Valves open with differential pressure to provide flow paths from Essential Service Water System to Auxiliary Feedwater Pumps during a DBA. Normally closed.

TEST REQUIREMENT: Exercise the valves every three months.

BASIS FOR RELIEF: The testing of these valves would result in supplying chemically contaminated water to the steam generators and/or the condensate storage tank.

ALTERNATE TESTING: None

VALVE RELIEF REQUEST NO. 2

SYSTEM: Accumulator Safety Injection

P&ID NO: M-02EP01

COMPONENT: V010  
V020  
V030  
V040

CATEGORY: C

CLASS: 1

FUNCTION: Opens on differential pressure to provide flowpaths from the safety injection pump to the reactor coolant system cold legs and the reactor vessel. Normally closed.

TEST  
REQUIREMENT: Exercise valves once every three months.

BASIS FOR  
RELIEF: During normal operation, the safety injection system has insufficient head to overcome reactor coolant system pressure. Testing during shut-down increases the probability of a cold over-pressurization event to occur and is therefore in conflict with plant safety.

ALTERNATE  
TESTING: Full stroke exercise valves at refueling with the reactor head removed.

VALVE RELIEF REQUEST NO. 3

SYSTEM: Reactor Coolant

P&ID NO: M-02BB01

COMPONENT: 8949A through 8949D  
V001  
V022  
V040  
V059

CATEGORY: C

CLASS: 1

FUNCTION: Valves open with differential pressure to provide flowpaths from the safety injection pumps to the reactor coolant system hot legs and the reactor vessel. Normally closed.

TEST REQUIREMENT: Exercise the valves every three months.

BASIS FOR RELIEF: During normal operation, the safety injection system has insufficient head to overcome reactor coolant system pressure. Testing during shut-down increases the probability of a cold over-pressurization event to occur and is therefore in conflict with plant safety.

ALTERNATE TESTING: These valves will be full stroke exercised at refueling when the reactor head is removed.



VALVE RELIEF REQUEST NO. 4

SYSTEM: High Pressure Coolant Injection

P&ID NO: M-02EM01

COMPONENT: 8922A  
8922B

CATEGORY: C

CLASS: 2

FUNCTION: Valves open with differential pressure to provide flowpaths from safety injection pumps to reactor coolant system cold legs and reactor vessel. Normally closed.

TEST REQUIREMENT: Exercise valves every three months.

BASIS FOR RELIEF: During normal operation, the safety injection system has insufficient head to overcome reactor coolant system pressure. Testing during shut-down increases the probability of a cold over-pressurization event to occur and is therefore in conflict with plant safety.

ALTERNATE TESTING: Exercise valves at refueling when reactor head is removed.

VALVE RELIEF REQUEST NO. 5

SYSTEM: High Pressure Coolant Injection

P&ID NO: M-02EM01

COMPONENT: V001  
V002  
V003  
V004

CATEGORY: C

CLASS: 1

FUNCTION: Valves open with differential pressure to provide flowpaths from safety injection pumps to reactor coolant system hot legs and reactor vessel. Normally closed.

TEST REQUIREMENT: Exercise valves once every three months.

BASIS FOR RELIEF: During normal operation, the safety injection system has insufficient head to overcome reactor coolant system pressure. Testing during shut-down increases the probability of a cold over-pressurization event to occur and is therefore in conflict with plant safety.

ALTERNATE TESTING: Exercise valves at refueling when reactor head is removed.

VALVE RELIEF REQUEST NO. 6

SYSTEM: Accumulator Safety Injection

P&ID NO: M-02EF01

COMPONENT: 8956A through 8956D

CATEGORY: C

CLASS: 1

FUNCTION: Opens with differential pressure to provide flow paths from the accumulators to the reactor coolant system cold legs and the reactor vessel. Normally closed.

TEST REQUIREMENT: Exercise valves once every thre. months.

BASIS FOR RELIEF: During normal operation, the safety injection system has insufficient head to overcome reactor coolant system pressure. Testing during shut-down increases the probability of a cold over-pressurization event to occur and is therefore in conflict with plant safety.

ALTERNATE TESTING: A partial stroke exercise on the valves during refueling when the reactor head is removed will be made.



VALVE RELIEF REQUEST NO. 7

SYSTEM: Containment Spray System

P&ID NO: M-02EN01

COMPONENT: V002  
V008

CATEGORY: C

CLASS: 2

FUNCTION: Opens on differential pressure to supply  
containment spray water to the discharge  
nozzles in the recirculation mode.

TEST  
REQUIREMENT: Exercise valves once every three months.

BASIS FOR  
RELIEF: Valves can not be stroke exercised without  
violating the integrity of penetration numbers  
P-13 and P-16.

ALTERNATE  
TESTING: None

VALVE RELIEF REQUEST NO. 8

SYSTEM: Containment Spray System

P&ID NO: M-02EN01

COMPONENT: V003  
V004  
V009  
V010

CATEGORY: C

CLASS: 2

FUNCTION: Opens with differential pressure to provide flow paths for the containment spray system. normally closed.

TEST REQUIREMENT: Exercise valves once every three months.

BASIS FOR RELIEF: Pumps can only be tested at partial flow (per FSAR section 6.2.2.1.4). Therefore, valves in flowpath can only be tested at partial flow.

ALTERNATE TESTING: Partial flow test the check valves when the spray pumps are tested.

VALVE RELIEF REQUEST NO. 9

SYSTEM: Containment Spray System

P&ID NO: M-02EN01

COMPONENT: V013  
V017

CATEGORY: C

CLASS: 2

FUNCTION: Opens with differential pressure to provide flowpaths for the containment spray header. Normally closed.

TEST REQUIREMENT: TEST  
Exercise valves once every three months.

BASIS FOR RELIEF: BASIS FOR  
Normal flowpath cannot be used without discharging containment spray water from the nozzles.

ALTERNATE TESTING: ALTERNATE  
None



VALVE RELIEF REQUEST NO. 10

SYSTEM: Reactor Coolant

COMPONENT: 8948A through 8948D

CATEGORY: C

CLASS: 1

FUNCTION: Valves open with differential pressure to provide flowpaths from the Accumulator Injection System, Safety Injection Pumps, and Residual Heat Removal Pumps to the Reactor Coolant System cold legs and reactor vessel. Normally closed.

T-1  
REQUIREMENT: Exercise the valves every three months.

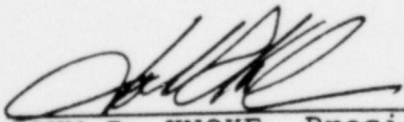
BASIS FOR RELIEF: During normal operation, the residual heat removal pump cannot overcome the reactor coolant system pressure. Testing during shutdown increases the probability of a cold overpressurization event to occur and is therefore in conflict with plant safety.

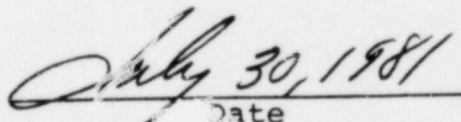
ALTERNATE TESTING: These valves will be exercised during cool down for refueling by the residual heat removal pump flow.

SUPPLEMENTAL REPORT  
to the  
INSERVICE TESTING PROGRAM  
(Task 2)  
CALLAWAY PLANT

Prepared for  
UNION ELECTRIC COMPANY  
Prepared by  
POWER PRODUCTION ENGINEERING

Prepared and issued by:

  
\_\_\_\_\_  
JOHN R. KNOKE, President

  
\_\_\_\_\_  
Date

## Task 2-1

The ISI Testing Program was prepared in accordance with the ASME B&PV Code, Section XI, Subsections IWP and IWV (1977 Edition through Summer 78 Addenda). The differences between the 1977 and 1980 Editions are minor, but should be noted.

The most significant difference is Article IWP-3400, titled "Frequency of Inservice Tests." The 1977 Edition states that an inservice test shall be run on each pump every month. The 1980 Edition revises this to once every three months. PPE has included a Pump Relief Request (PRR-1, Appendix A of ISI Testing Program) so that testing will only need to be performed once every three months.

Article IWP-4320, which concerns the temperature measurements of the pumped liquid has been deleted in the 1980 Edition. Since this data has usually be considered irrelevant, no relief request is necessary.

Various other Articles in the 1977 Edition were deleted. These Articles were either redundant or obvious. Some Articles were added for clarification. There are no differences in the Inservice Testing Program due to these minor changes. For your reference, PPE has prepared the following list defining the changes in the 1980 Edition:

### 1. Subsection IWP

- IWP-1200(b) Added an exclusion for pumps used for operating convenience.
- IWP-1600 This Article was deleted because all hydraulic parameters must be tested, and obviously, a change in parameters may warrent corrective action. (See table IWP-3100-1).
- IWP-1700 Same reason as IWP-1600 except this refers to mechanical parameters.
- Table IWP-2100-1 "Symbols, Quantities, and Units" This table was deleted because it refered to IWP-1600 and IWP-1700.



● IWP-6260

Deleted the obvious, keep records current and make available for audits.

2. Subsection IWV

● IWP 3413(a)

Added a statement that defines stroke time.

● IWP 3413(c)

Moved to Article IWV 3417(a).

● IWV 6240

Same reason as IWP-6260.