

INSERVICE TESTING PROGRAM

CALLAWAY PLANT


Prepared for

UNION ELECTRIC COMPANY

Prepared by

POWER PRODUCTION ENGINEERING

Prepared and issued by:


JOHN R. KNOKE, President

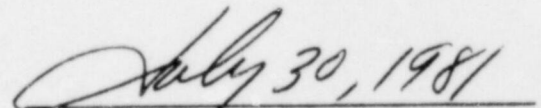

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INTRODUCTION

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&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-02EF01	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.

INSERVICE TESTING PROGRAM

ISI CLASS 1, 2 & 3 VALVES

CALLAWAY NUCLEAR PLANT

Power
Production
Engineering

SYSTEM

P & ID

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EXPLANATION OF ABBREVIATIONS

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

BA

BALL

CK

CHECK

GA

GATE

GL

GLOBE

RV

RELIEF

SV

SAFETY

TW

THREE WAY

AGL

ANGLE GLOBE

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ISI CLASS 1, 2 & 3 VALVES

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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

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ISI CLASS 1, 2 & 3 VALVES

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SYSTEM										P & ID	REVISION - DATE		PAGE	
EXPLANATION OF ABBREVIATIONS											0 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

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EXPLANATION OF ABBREVIATIONS

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 LANT

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

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ISI CLASS 1, 2 & 3 PUMPS

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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-U2EFC1 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

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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

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INSERVICE TESTING PROGRAM

ISI CLASS 1, 2 & 3 VALVES

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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

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MAIN STEAM SYSTEM														P & ID	REVISION - DATE	PAGE
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 2			
V048	H-5	2	C	6"	SV	SA	C	O	RVT				Note 2			
V049	H-5	2	C	6"	SV	SA	C	O	PVT				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

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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 DIRECTION	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

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SYSTEM MAIN STEAM SYSTEM										P & ID M-02AB02	REVISION - DATE O 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

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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

Power Production Engineering

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ISI CLASS 1, 2 & 3 VALVES
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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

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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		

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Unit
Power
Plant
System

Power
Production
Engineering[illegible]

Standardized
Nuclear
Unit
Power
Plant
System

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

Power
Production
Engineering

SYSTEM		AUXILIARY FEEDWATER 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	
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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SYSTEM										& ID		REVISION - DATE		PAGE	
AUXILIARY FEEDWATER SYSTEM										M L01		O 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										P & ID	REVISION - DATE		PAGE
AUXILIARY FEEDWATER SYSTEM										M-02AL01	0	5/81	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
V066	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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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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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

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SYSTEM REACTOR COOLANT SYSTEM										P & ID M-02BB02		REVISION - DATE 1 9/81		PAGE 23 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 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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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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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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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	KVT				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
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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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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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

CHEMICAL & VOLUME CONTROL 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		
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		

INSERVICE TESTING PROGRAM

ISI CLASS 1, 2 & 3 VALVES

CALLAWAY NUCLEAR PLANT

CHEMICAL & VOLUME CONTROL SYSTEM														P & ID	REVISION - DATE	PAGE
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	1½"	AGL	M	O	O	NA				Notes 1, 3			
V199	C-6	2	B	1½"	AGL	M	O	O	NA				Notes 1, 3			
V200	C-4	2	B	1½"	AGL	M	O	O	NA				Notes 1, 3			
V201	C-3	2	B	1½"	AGL	M	O	O	NA				Notes 1, 3			

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

SYSTEM CHEMICAL & VOLUME CONTROL SYSTEM										P & ID M-02BG01	REVISION - DATE 0 5/81		PAGE 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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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

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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

INSERVICE TESTING PROGRAM

ISI CLASS 1, 2 & 3 VALVES

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SYSTEM CHEMICAL & VOLUME CONTROL SYSTEM										P & ID M-02BG03	REVISION - DATE O 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

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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

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CHEMICAL & VOLUME CONTROL SYSTEM														P & ID	REVISION - DATE	PAGE
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VALVE NUMBER	COORDINATES			VALVE CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS	
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	

Standardized
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Unit
Power
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System

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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 5/31		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

Power Production Engineering

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INSERVICE TESTING PROGRAM

ISI CLASS 1, 2 & 3 VALVES

CALLAWAY NUCLEAR PLANT

SYSTEM CHEMICAL & VOLUME CONTROL SYSTEM										P & ID M-02BG05	REVISION - DATE 1 9/81		PAGE 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

INSERVICE TESTING PROGRAM

ISI CLASS 1, 2 & 3 VALVES

CALI AWAY NUCLEAR PLANT

SYSTEM

CHEMICAL & VOLUME CONTROL 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
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
V115	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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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'

Power Production Engineering

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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

8046

B-3

2

A, C

3"

CK

SA

O

C

AT
CVT

RR
CS

Note 11

HV 8047

B-4

2

A

3"

LIA

AO

O

C

AT
BT
FST
PIT

RR
CS
CS
RR

10

Note 11

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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

Standardized
Nuclear
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STEAM GENERATOR BLOWDOWN 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				
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				

INSERVICE TESTING PROGRAM
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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

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ISI CLASS 1, 2 & 3 VALVES

CALLAWAY NUCLEAR PLANT

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	
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	

INSERVICE TESTING PROGRAM

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 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 STEAM GENERATOR BLOWDOWN SYS.										P & ID M-02BM01	REVISION - DATE 0 5/81		PAGE 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

Power Production Engineering

[illegible]

INSERVICE TESTING PROGRAM

ISI CLASS 1, 2 & 3 VALVES

CALLAWAY NUCLEAR PLANT

SYSTEM

BORATED REFUELING WATER STORAGE SYSTEM

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M-02BN01

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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

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

Standardized
Nuclear
Unit
Power
Plant
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INSERVICE TESTING PROGRAM

ISI CLASS 1, 2 & 3 VALVES

CALLAWAY NUCLEAR PLANT

Power
Production
Engineering

SYSTEM										P & ID	REVISION - DATE		PAGE
BORATED REFUELING WATER STORAGE SYSTEM										M-02BN01	1	9/81	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

Power Production Engineering

[illegible]

Power Production Engineering

[illegible]

INSERVICE TESTING PROGRAM

ISI CLASS 1, 2 & 3 VALVES

CALLAWAY NUCLEAR PLANT

SYSTEM										P & ID	REVISION	DATE	PAGE
ESSENTIAL SERVICE WATER SYSTEM										M-112EF01	0	5/81	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
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Unit
Power
Plant
System

Power
Production
Engineering[illegible]

Standardized
Nuclear
Unit
Power
Plant
System

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

Power
Production
Engineering

ESSENTIAL SERVICE WATER SYSTEM														P & ID	REVISION - DATE	PAGE
SYSTEM														M-02EF01	0 5/81	63 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			
V029	G-5	3	B	4"	GA	M	O	O	NA				Notes 1, 3			
V030	G-4	3	B	4"	GA	M	O	O	NA				Notes 1, 3			
V032	F-5	3	B	4"	GA	M	O	O	NA				Notes 1, 3			
V033	F-4	3	B	4"	GA	M	O	O	NA				Notes 1, 3			
V035	F-5	3	B	4"	GA	M	O	O	NA				Notes 1, 3			
V036	F-4	3	B	4"	GA	M	O	O	NA				Notes 1, 3			
V037	E-5	3	B	4"	GA	M	O	O	NA				Notes 1, 3			
V038	E-4	3	B	4"	GA	M	O	O	NA				Notes..1, 3			

Standardized
Nuclear
Unit
Power
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INSERVICE TESTING PROGRAM

ISI CLASS 1, 2 & 3 VALVES

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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

SYSTEM ESSENTIAL SERVICE WATER SYSTEM										P & ID M-02EF01	REVISION - DATE O 5/81		PAGE 65 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
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
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VALVE NUMBER

COORDINATES

ISI CLASS

VALVE
CATEGORY

VALVE SIZE

VALVE TYPE

ACTUATOR
TYPENORMAL
POSITIONSTROKE
DIRECTION

TEST

TEST MODE

MAX. STROKE
TIMERELIEF
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

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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...

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System

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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

SYSTEM										P & ID		REVISION - DATE		PAGE	
ESSENTIAL SERVICE WATER SYSTEM										M-02EF02		O 5/81		70 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	
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	E-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

SYSTEM

ESSENTIAL SERVICE WATER 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

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									P & ID		REVISION - DATE		PAGE
ESSENTIAL SERVICE WATER SYSTEM									M-02EF02		1 9/81		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

SYSTEM

ESSENTIAL SERVICE WATER 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

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...

Power Production Engineering

[illegible]

Standardized
Nuclear
Unit
Power
Plant
System

INSERVICE TESTING PROGRAM

ISI CLASS 1, 2 & 3 VALVES

CALLAWAY NUCLEAR PLANT

Power
Production
Engineering

COMPONENT COOLING WATER SYSTEM														P & ID	REVISION - DATE	PAGE
SYSTEM														M-02EG01	O 5/81	75 of 137
VALVE NUMBER	COORDINATES			VALVE 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

SYSTEM

COMPONENT COOLING WATER 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
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	A	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

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CALLAWAY NUCLEAR PLANT

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COMPONENT COOLING WATER SYSTEM

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VALVE NUMBER

COORDINATES

ISI CLASS

VALVE
CATEGORY

VALVE SIZE

VALVE TYPE

ACTUATOR
TYPENORMAL
POSITIONSTROKE
DIRECTION

TEST

TEST MODE

MAX. STROKE
TIMERELIEF
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
PITOP
RR

Note 6

HV 12

C-8

3

B

1½"

GL

MO

C

O

BT
PITOP
RR

Note 6

HV 13

F-7

3

B

1½"

GL

MO

C

O

BT
PITOP
RR

Note 6

HV 14

C-7

3

B

1½"

GL

MO

C

O

BT
PITOP
RR

Note 6

Power
Production
Engineering[illegible]

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 80 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
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 O 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

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
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			

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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

COMPONENT COOLING WATER 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	
V096	C-3	3		B	4"	GA	M	O	O	NA					Note 3	
V097	D-3	3		B	1"	GA	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

COMPONENT COOLING WATER 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				
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				

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VALVE NUMBER

COORDINATES

ISI CLASS

VALVE
CATEGORY

VALVE SIZE

VALVE TYPE

ACTUATOR
TYPENORMAL
POSITIONSTROKE
DIRECTION

TEST

TEST MODE

MAX. STROKE
TIMERELIEF
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

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VALVE NUMBER

COORDINATES

ISI CLASS

VALVE
CATEGORY

VALVE SIZE

VALVE TYPE

ACTUATOR
TYPENORMAL
POSITIONSTROKE
DIRECTION

TEST

TEST MODE

MAX. STROKE
TIMERELIEF
REQUEST

REMARKS

V204

H-4

2

C

12"

CK

SA

O

C

AT
CVTRR
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
PITRR
OP
RR

30

Notes 6, 10

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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

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VALVE NUMBER

COORDINATES

ISI CLASS

VALVE
CATEGORY

VALVE SIZE

VALVE TYPE

ACTUATOR
TYPENORMAL
POSITIONSTROKE
DIRECTION

TEST

TEST MODE

MAX STROKE
TIMERELIEF
REQUEST

REMARKS

HV 71

H-5

3

B

12"

GA

MO

O

C

AT
BT
PITRR
OP
RR

30

Notes 6, 10

HV 126

G-5

3

B

12"

GA

MO

C

C

NA

Note 3

HV 127

G-5

2

A

12"

GA

MO

C

C

AT

RR

Notes 9, 10

HV 130

B-5

2

A

12"

GA

MO

C

C

AT

RR

Note 9, 10

HV 131

C-5

2

A

12"

GA

MO

C

C

AT

RR

Notes 9, 10

HV 132

B-4

2

A

4"

GA

MO

C

C

AT

RR

Note 9, 10

HV 133

C-5

2

A

4"

GA

MO

C

C

AT

RR

Notes 9, 10

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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

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

3841 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

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
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
TYPENORMAL
POSITIONSTROKE
DIRECTION

TEST

TEST MODE

MAX. STROKE
TIMERELIEF
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
PITCS
RR

120

Notes 5, 6

HV 8701B

B-8

1

B

12"

GA

MO

C

O/C

BT
PITCS
RR

120

Notes 5, 6

HV 8716A

E-4

2

B

10"

GA

MO

O

O/C

BT
PITCS
RR

Note 6

HV 8716B

D-4

2

B

10"

GA

MO

O

O/C

BT
PITCS
RR

Note 6

HV 8804A

G-4

2

B

8"

GA

MO

C

O

BT
PITOP
RR

Note 6

HV 8804B

A-4

2

B

8"

GA

MO

C

O

BT
PITOP
RR

Note 6

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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

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VALVE NUMBER

COORDINATES

ISI CLASS

VALVE
CATEGORY

VALVE SIZE

VALVE TYPE

ACTUATOR
TYPENORMAL
POSITIONSTROKE
DIRECTION

TEST

TEST MODE

MAX. STROKE
TIMERELIEF
REQUEST

REMARKS

FCV 619

B-5

2

B

8"

BTF

AO

C

C

NA

Note 3

HCV 606

G-4

2

B

10"

BTF

AO

O

O

NA

Note 3

HCV 607

C-4

2

B

10"

BTF

AO

O

O

NA

Note 3

HCV 8825

E-2

2

B

3/4"

GL

AO

C

C

NA

Note 3

HCV 8890A

J-2

2

B

3/4"

GL

AO

C

C

NA

Note 3

HCV 8890B

C-2

2

B

3/4"

GL

AO

C

C

NA

Note 3

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VALVE NUMBER

COORDINATES

ISI CLASS

VALVE
CATEGORY

VALVE SIZE

VALVE TYPE

ACTUATOR
TYPENORMAL
POSITIONSTROKE
DIRECTION

TEST

TEST MODE

MAX. STROKE
TIMERELIEF
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
CVTCS
RR

VRR-5

Notes 5, 7

V002

E-3

1

C

2"

CK

SA

C

O/C

AT
CVTCS
RR

VRR-5

Notes 5, 7

INSERVICE TESTING PROGRAM
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HIGH PRESSURE COOLANT 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
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

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
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
V097	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

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 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

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 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

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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
TYPENORMAL
POSITIONSTROKE
DIRECTION

TEST

TEST MODE

MAX. STROKE
TIMERELIEF
REQUEST

REMARKS

HV 8889D

G-2

1

B

3/4"

GL

AO

C

C

NA

Note 3

HV 8923A

E-7

2

B

6"

GA

MO

O

O

NA

Note 3

HV 8923B

D-7

2

B

6"

GA

MO

O

O

NA

Note 3

HV 8924

G-8

2

B

6"

GA

MO

O

O

NA

Note 3

HV 8964

G-6

2

A

3/4"

GL

AO

C

C

AT

RR

Notes 9, 11

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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
TYPENORMAL
POSITIONSTROKE
DIRECTION

TEST

TEST MODE

MAX. STROKE
TIMERELIEF
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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ISI CLASS 1, 2 & 3 VALVES
CALLAWAY NUCLEAR PLANT

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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

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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
TYPENORMAL
POSITIONSTROKE
DIRECTION

TEST

TEST MODE

MAX. STROKE
TIMERELIEF
REQUEST

104

REMARKS

HV 8801B

D-4

2

B

4"

GA

MO

C

O/C

BT
PITCS
RR

10

Note 5, 6

HV 8803A

C-7

2

B

4"

GA

MO

C

O/C

BT
PITCS
RR

Notes 5, 6

HV 8803B

A-7

2

B

4"

GA

MO

C

O/C

BT
PITCS
RR

Notes 5, 6

HV 8837A

C-7

2

B

1"

GL

SO

C

O/C

BT
FST
PITCS
CS
RR

Note 5

HV 8837B

B-7

2

B

1"

GL

SO

C

O/C

BT
FST
PITCS
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
PITJP
JP
RR

Note 5

HV 8870B

E-5

2

B

1"

GL

AO

O

C

BT
FST
PITOP
OP
RR

Note 5

[illegible]

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

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
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VALVE NUMBER

COORDINATES

ISI CLASS

VALVE
CATEGORY

VALVE SIZE

VALVE TYPE

ACTUATOR
TYPENORMAL
POSITIONSTROKE
DIRECTION

TEST

TEST MODE

MAX. STROKE
TIMERELIEF
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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VALVE NUMBER

COORDINATES

ISI CLASS

VALVE
CATEGORY

VALVE SIZE

VALVE TYPE

ACTUATOR
TYPENORMAL
POSITIONSTROKE
DIRECTION

TEST

TEST MODE

MAX. STROKE
TIMERELIEF
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
PITOP
RR

Notes 6, 8

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
TYPENORMAL
POSITIONSTROKE
DIRECTION

TEST

TEST MODE

MAX. STROKE
TIMERELIEF
REQUEST

REMARKS

HV 6

G-4

2

B

10"

GA

MO

C

O/C

BT
PITOP
RR

15

Note 6

HV 7

B-7

2

B

12"

GA

MO

C

C/O

BT
PITOP
RR

Notes 6, 8

HV 12

B-4

2

B

10"

GA

MO

C

O/C

BT
PITOP
RR

15

Note 6

HV 15

E-6

2

B

3"

GA

MO

C

O

BT
PITCS
RR

Note 5

HV 16

D-6

2

B

3"

GA

MO

C

O

BT
PITCS
RR

Note 5

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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 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

CALLAWAY NUCLEAR PLANT

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

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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

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

2"

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

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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

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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

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VALVE NUMBER

COORDINATES

ISI CLASS

VALVE
CATEGORY

VALVE SIZE

VALVE TYPE

ACTUATOR
TYPENORMAL
POSITIONSTROKE
DIRECTION

TEST

TEST MODE

MAX. STROKE
TIMERELIEF
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
CALLAWAY NUCLEAR PLANT

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**

Power
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Engineering

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SYSTEM														F & ID		REVISION - DATE		PAGE	
AUXILIARY FEEDWATER PUMP TURBINE														M-02FC02		O 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

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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 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	B-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

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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 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

[illegible]

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

SYSTEM

CONTAINMENT PURGE SYSTEM

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VALVE NUMBER

COORDINATES

ISI CLASS

VALVE
CATEGORY

VALVE SIZE

VALVE TYPE

ACTUATOR
TYPENORMAL
POSITIONSTROKE
DIRECTION

TEST

TEST MODE

MAX. STROKE
TIMERELIEF
REQUEST

REMARKS

HZ 4

D-4

2

A

18"

B.F

AO

O

C

AT
BT
FST
PITRR
OP
OP
RR3
Sec.

Note 11

HZ 5

A-5

2

A

18"

BTF

AO

O

C

AT
BT
FST
PITRR
OP
OP
RR3
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
PITRR
OP
OP
RR3
Sec.

Note 11

HZ 12

A-7

2

A

18"

BTF

AO

O

C

AT
BT
FST
PITRR
OP
OP
RR3
Sec.

Note 11

Standardized
Nuclear
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System

Power
Production
Engineering[illegible]

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

SYSTEM 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
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INSERVICE TESTING PROGRAM

ISI CLASS 1, 2 & 3 VALVES

CALLAWAY NUCLEAR PLANT

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SYSTEM														P & ID		REVISION - DATE		PAGE	
EMERGENCY FUEL OIL SYSTEM														M-02JE01		O 5/81		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						

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EMERGENCY FUEL OIL SYSTEM

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System

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Nuclear
Unit
Power
Plant
System

Power
Production
Engineering[illegible]

Standardized
Nuclear
Unit
Power
Plant
System

Power
Production
Engineering[illegible]

Power
Production
Engineering

Standardized
Nuclear
Unit
Power
Plant
System

SYSTEM

STAND-BY DIESEL GENERATOR "A" LUBE OIL SYSTEM

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COORDINATES

VALVE NUMBER

ISI CLASS

VALVE CATEGORY

VALVE SIZE

VALVE TYPE

ACTUATOR
TYPE

NORMAL POSITION

STROKE
DIRECTION

TEST

TEST MODE

MAX. STROKE
TIME

RELIEF
REQUIRE

REMARKS

HV 2

A-6

3

B

1"

GA

MO

○

9

BT

do

TEST

TEST MODE

MAX. STORAGE TIME

RELIEF
REQUIRE

REMARKS

Standardized
Nuclear
Unit
Power
Plant
System

Power
Production
Engineering

SYSTEM

STAND-BY DIESEL GENERATOR "B" LUBE OIL SYSTEM

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Unit
Power
Plant
System

SYSTEM REACTOR BUILDING & HOT MACHINE SHOP FLOOR & EQUIPMENT DRAIN SYSTEM

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Power Production Engineering

Standardized
Nuclear
Unit
Power
Plant
System

[illegible]

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

SYSTEM

NUCLEAR SAMPLING SYSTEM

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VALVE NUMBER

COORDINATES

ISI CLASS

VALVE
CATEGORY

VALVE SIZE

VALVE TYPE

ACTUATOR
TYPENORMAL
POSITIONSTROKE
DIRECTION

TEST

TEST MODE

MAX. STROKE
TIMERELIEF
REQUEST

REMARKS

HV 20

G-7

2

B

1"

GL

SO

C

C

NA

Note 3

HV 127

F-6

2

A

1"

GL

SO

C

AT

RR

Notes 9, 10

HV 128

H-6

2

A

1"

GL

SO

O

C

AT
BT
FST
PITRR
OP
OP
RR5
Sec.

Note 10

HV 129

H-5

2

A

1"

GL

SO

O

C

AT
BT
FST
PITRR
OP
OP
RR5
Sec.

Note 10

HV 130

G-5

2

A

1"

GL

SO

C

C

AT

RR

Notes 9, 10

HV 131

B-6

2

A

1"

GL

SO

C

C

AT

RR

Notes 9, 10

HV 132

A-6

2

A

1"

GL

SO

C

C

AT

RR

Notes 9, 10

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

SYSTEM

NUCLEAR SAMPLING SYSTEM

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VALVE NUMBER

COORDINATES

ISI CLASS

VALVE
CATEGORY

VALVE SIZE

VALVE TYPE

ACTUATOR
TYPENORMAL
POSITIONSTROKE
DIRECTION

TEST

TEST MODE

MAX. STROKE
TIMERELIEF
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
PITRR
OP
OP
RR5
Sec.

Note 10

HV 6

F-6

2

A

1"

GL

SO

O

C

AT
BT
FST
PITRR
OP
OP
RR5
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: 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: TEST
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 shutdown increases the probability of a cold overpressurization 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: Exercise valves once every three months.

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

ALTERNATE
TESTING: None

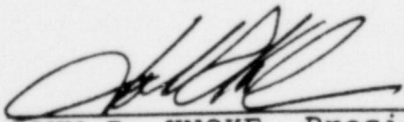
VALVE RELIEF REQUEST NO. 10

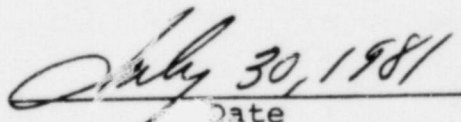
<u>SYSTEM:</u>	Reactor Coolant
<u>COMPONENT:</u>	8948A through 8948D
<u>CATEGORY:</u>	C
<u>CLASS:</u>	1
<u>FUNCTION:</u>	Valves open with differential pressure to provide flowpaths from the Accumulator Injection System, Safety Injection Pumps, and Residual Heat Removal Pumps to the Reactor Coolant System cold legs and reactor vessel. Normally closed.
<u>T-1 REQUIREMENT:</u>	Exercise the valves every three months.
<u>BASIS FOR RELIEF:</u>	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.
<u>ALTERNATE TESTING:</u>	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.