INSERVICE TESTING PROGRAM

SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 AND 3

Prepared For

SOUTHERN CALIFORNIA EDISON COMPANY

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8-27-80
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9-11-80
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8010080462

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INTRODUCTION

The Inservice Testing Programs for San Onofre Nuclear Generating Station, Units 2 and 3, were 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 1978 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 1978 Addenda. Where these requirements were determined to be impractical, specific requests for relief were written and included in Section 1.3.

Twelve months prior to San Onofre Unit 2 commercial operation date, a comparison will be made between the present Inservice Testing Program and the rules of the Code as specified in 10CFR50.55a (b). Where differences occur, changes will be made to reflect the latest approved Edition and Addenda of ASME Section XI. This amended Inservice Testing Program will then remain in effect throughout the first 10 year inservice inspection interval.

Section 1.2 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&IDs.

B. Pump Name describes the pump's functional identification as it is related to system operation.

C. Class is the ASME classification of the pump.

D. Test Parameters indicates the required test quantities measured per Table IWP-3100-1.

E. Relief Request references the relief request contained in Section 1.3 that applies to the particular pump. Also included are generic relief requests that are not specifically referenced in this column of the table, but apply to the pump program in general.

1.3 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 San Onofre Units 2 and 3 Inservice Testing Program.

Relief requests are shown in Appendix A.

INSERVICE TESTING PROGRAM - PUMPS

UNIT - 2

POOR ORIGINAL

Southern California Edison Company

INSERVICE T[illegible]NG PROGRAM

ASME-CLASS 1,2 & 3 PUMPS

SAN ONOFRE NUCLEAR GENERATING STATION

UNI[illegible]2

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PUMP NUMBER	PUMP NAME	CLASS	P & ID AND COORDINATES	TEST PARAMETERS						REMARKS
				SPEED	INLET PRES.	DIFF. PRES.	FLOW RATE	VIBRATION	BEARING TEMP.	
P012	Containment Spray Pump	2	40114-6 C-5	NA	Yes	Yes	No	Yes	Yes	PRR-2
P013	Containment Spray Pump	2	40114-6 E-5	NA	"	"	"	"	"	"
P015	Low Pressure Safety Injection Pump	2	40112-7 G-5	NA	"	"	"	"	"	"
P016	Low Pressure Safety Injection Pump	2	40112-7 F-5	NA	"	"	"	"	"	"
P017	High Pressure Safety Injection Pump	2	40112-7 E-5	NA	"	"	"	"	"	"
P018	High Pressure Safety Injection Pump	2	40112-7 D-5	NA	"	"	"	"	"	"
P019	High Pressure Safety Injection Pump	2	40112-7 B-5	NA	"	"	"	"	"	"
P020	Spray Chemical Addition Pump	2	40114-6 E-7	NA	"	"	Yes	"	"	
P021	Spray Chemical Addition Pump	2	40114-6 F-7	NA	"	"	"	"	"	
P024	Component Cooling Water Pump	3	40127-9 G-4	NA	"	"	"	"	"	
P025	Component Cooling Water Pump	3	40127-9 E-4	NA	"	"	"	"	"	
P026	Component Cooling Water Pump	3	40127-9 D-4	NA	"	"	"	"	"	
P093	Diesel Fuel Transfer Pump	3	40116-7 B-2	NA	"	"	"	"	No	PRR-3
P094	Diesel Fuel Transfer Pump	3	40116-7 B-3	NA	"	"	"	"	"	"
P095	Diesel Fuel Transfer Pump	3	40116-7 B-5	NA	"	"	"	"	"	"
P096	Diesel Fuel Transfer Pump	3	40116-7 B-6	NA	"	"	"	"	"	"
P112	Salt Water Cooling Pump	3	40126-7 G-7	NA	"	"	"	"	"	"
P113	Salt Water Cooling Pump	3	40126-7 F-7	NA	"	"	"	"	"	"

POOR ORIGINAL

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INSERVICE TI[illegible]G PROGRAM
ASME-CLASS 1,2&3 PUMPS
SAN ONOFRE NUCLEAR GENERATING STATION

UNIT [illegible]

PUMP NUMBER	PUMP NAME	CLASS	P&ID AND COORDINATES	TEST PARAMETERS						REMARKS
				SPEED	INLET PRES.	DIFF. PRES.	FLOW RATE	VIBRATION	BEARING TEMP.	
P114	Salt Water Cooling Pump	3	40126-7 F-7	NA	Yes	Yes	Yes	Yes	No	PRR-3
P307	Salt Water Cooling Pump	3	40126-7 E-7	NA	"	"	"	"	"	"
P140	Auxiliary Feedwater Pump (Steam)	3	40156-8 C-4	NA	"	"	"	"	Yes	
P141	Auxiliary Feedwater Pump (Motor)	3	40156-8 D-4	NA	"	"	"	"	"	
P504	Auxiliary Feedwater Pump (Motor)	3	40156	NA	"	"	"	"	"	
P160	Auxiliary Building Emergency Chilled Water Pump	3	40180-10 B-6	NA	"	"	"	"	"	
P162	Auxiliary Building Emergency Chilled Water Pump	3	40179-10 B-6	NA	"	"	"	"	"	
P174	Boric Acid Make Up Pump	3	40125-6 D-5	NA	"	"	"	"	"	
P175	Boric Acid Make Up Pump	3	40125-6 C-5	NA	"	"	"	"	"	
P190	Charging Pump	2	40124-6 G-2	NA	"	"	"	"	"	
P191	Charging Pump	2	40124-6 E-2	NA	"	"	"	"	"	
P192	Charging Pump	2	40124-6 D-2	NA	"	"	"	"	"	

INSERVICE TESTING PROGRAM - PUMPS

UNIT - 3

POOR ORIGINAL

Southern California Edison Company

INSERVICE T[illegible]NG PROGRAM

ASME-CLASS 1, 2 & 3 PUMPS

SAN ONOFRE NUCLEAR GENERATING STATION

UNI[illegible]3

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PUMP NUMBER	PUMP NAME	CLASS	P & ID AND COORDINATES	TEST PARAMETERS						REMARKS
				SPEED	INLET PRES.	DIFF. PRES.	FLOW RATE	VIBRATION	BEARING TEMP.	
P012	Containment Spray Pump	2	40114-6 C-5	NA	Yes	Yes	No	Yes	Yes	PRR-2
P013	Containment Spray Pump	2	40114-6 E-5	NA	"	"	"	"	"	"
P015	Low Pressure Safety Injection Pump	2	40112-7 G-5	NA	"	"	"	"	"	"
P016	Low Pressure Safety Injection Pump	2	40112-7 F-5	NA	"	"	"	"	"	"
P017	High Pressure Safety Injection Pump	2	40112-7 E-5	NA	"	"	"	"	"	"
P018	High Pressure Safety Injection Pump	2	40112-7 D-5	NA	"	"	"	"	"	"
P019	High Pressure Safety Injection Pump	2	40112-7 B-5	NA	"	"	"	"	"	"
P020	Spray Chemical Addition Pump	2	40114-6 E-7	NA	"	"	Yes	"	"	
P021	Spray Chemical Addition Pump	2	40114-6 F-7	NA	"	"	"	"	"	
P024	Component Cooling Water Pump	3	40127-9 G-4	NA	"	"	"	"	"	
P025	Component Cooling Water Pump	3	40127-9 E-4	NA	"	"	"	"	"	
P026	Component Cooling Water Pump	3	40127-9 D-4	NA	"	"	"	"	"	
P093	Diese' Fuel Transfer Pump	3	40116-7 B-2	NA	"	"	"	"	No	PRR-3
P09[illegible]	Diesel Fuel Transfer Pump	3	40116-7 B-3	NA	"	"	"	"	"	"
P095	Diesel Fuel Transfer Pump	3	40116-7 B-5	NA	"	"	"	"	"	"
P096	Diesel Fuel Transfer Pump	3	40116-7 B-6	NA	"	"	"	"	"	"
P112	Salt Water Cooling Pump	3	40126-7 G-7	NA	"	"	"	"	"	"
P113	Salt Water Cooling Pump	3	40126-7 F-7	NA	"	"	"	"	"	"

Southern California Edison Company

INSERVICE TI[illegible]NG PROGRAM
ASME-CLASS 1,2 & 3 PUMPS
SAN ONOFRE NUCLEAR GENERATING STATION

UNIT [illegible]3

PUMP NUMBER	PUMP NAME	CLASS	P & ID AND COORDINATES	TEST PARAMETERS						REMARKS
				SPEED	INLET PRES.	DIFF. PRES.	FLOW RATE	VIBRATION	BEARING TEMP.	
P114	Salt Water Cooling Pump	3	40126-7 F-7	NA	Yes	Yes	Yes	Yes	No	PRR-3
P307	Salt Water Cooling Pump	3	40126-7 E-7	NA	"	"	"	"	"	"
P140	Auxiliary Feedwater Pump (Steam)	3	40156-8 C-4	NA	"	"		"	Yes	
P141	Auxiliary Feedwater Pump (Motor)	3	40156-8 D-4	NA	"	"	"	"	"	
P504	Auxiliary Feedwater Pump (Motor)	3		NA	"	"	"	"	"	
P160	Auxiliary Building Emergency Chilled Water Pump	3	40180-10 B-6	NA	"	"	"	"	"	
P162	Auxiliary Building Emergency Chilled Water Pump	3	40179-10 B-6	NA	"	"	"	"	"	
P174	Boric Acid Make Up Pump	3	40125-6 D-5	NA	"	"		"	"	
P175	Boric Acid Make Up Pump	3	40125-6 C-5	NA	"	"	"	"	"	
P190	Charging Pump	2	40124-6 G-2	NA	"	"		"	"	
P191	Charging Pump	2	40124-6 E-2	NA	"	"	"	"	"	
P192	Charging Pump	2	40124-6 D-2	NA	"	"	"	"	"	

APPENDIX A

REQUEST FOR RELIEF

FOR PUMPS

PUMP RELIEF REQUEST NO. 1

SYSTEM: Safety Related Systems

COMPONENT: All pumps in the program.

CLASS: Class 2 and 3

FUNCTION: To provide flow to safety systems.

TEST REQUIREMENT: The requirements of IWP-3230(c), Corrective Action.

BASIS for RELIEF: Relief is requested from the requirements of IWP3230(c) regarding corrective action when pump parameters are found to be within the "Required Action Range" of Table IWP-3100-2. Some means should be allowed for conducting an analysis to demonstrate that the condition of a pump does not impair pump operability and that the pump can still perform its intended function. Later editions of the Code do address this concern by allowing such an analysis to serve as the corrective action.

ALTERNATE TESTING: When measured pump parameters fall into the "Required Action Range", pump operability and corrective action will be based on the limits specified in the Limiting Conditions for Operation of the plant Technical Specifications. A pump may remain operable if it meets all Technical Specification requirements and an analysis indicates that, even tnough a pump parameter is in the "Required Action Range", the pump can still fulfill its intended functions.

PUMP RELIEF REQUEST NO. 2

SYSTEM: Containment Spray; Low Pressure Safety Injection; High Pressure Safety Injection

COMPONENT: Pumps P012, P013; P015, P016; P017, P018, P019

CLASS: Class 2

FUNCTION: To provide flow for containment spray and emergency core cooling.

TEST REQUIREMENT: Measure pump flow rate per IWP-3100.

BASIS FOR RELIEF: Relief is requested from the requirement to measure test flow for these pumps. For the fixed resistance test circuits (respective minimum flow paths) of these constant speed pumps, flow is fixed for a given pump differential pressure. Hence measurement of pump differential pressure will be sufficient to gage pump performance against the reference test so that measurement of flow is not required. This position was recognized by the 1974 Edition of the Code and could be inferred from the 1977 Edition.

ALTERNATE TESTING: None.

PUMP RELIEF REQUEST NO. 3

SYSTEM:	Diesel Fuel Transfer; Salt Water Cooling
COMPONENT:	Pumps P093, P094, P095, P096; P112, P113, P114, P307
CLASS:	Class 3
FUNCTION:	To provide makeup fuel to diesel generator day tank; to provide cooling to CCW heat exchanger.
TEST REQUIREMENT:	Measure pump bearing temperature per IWP-3100.
BASIS FOR RELIEF:	Relief is requested from the requirement to measure pump bearing temperature for these submerged pumps. The pump bearings are submerged and not accessible.
ALTERNATE TESTING:	None.

INSERVICE TESTING

OF VALVES

UNITS 2 AND 3

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 1978 Addenda. Where these requirements were determined to be impractical, specific requests for relief were written and included in Section 2.4.

The Inservice Testing Program for valves will remain in effect through completion of the preservice requirements up to and including the start of facility commercial operation. Subsequent to the start of commercial operation, the Inservice Testing Program will be performed in accordance with ASME Section XI and applicable Addenda, as required by 10CFR50,55a(g) except where specific written relief has been granted by the Commission pursuant to 10CFR50.55a (g)(6)(i).

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.

The tables are organized by system in order of the assigned system number. A list of these systems and their respective P&ID numbers is given in Section 2.3.

2.2 Program Information

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

A. Valve Number lists the valve identification number as shown on the P&IDs.

B. P&ID and Coordinates references the P&ID on which the valve appears and its coordinates.

C. Class is the ASME classification of the valve.

D. Valve Category indicates the category assigned to the valve based on the definitions of IWV-2000. Where a valve is normally exempt from testing per IWV-1200, and is in the direct flow path of the system, this valve is categorized B passive.

E. Valve Size lists the nominal pipe size of the valve in inches.

F. Valve Type lists the valve design as indicated by the following abbreviations:

GATE	GA
GLOBE	GL
CHECK	CK
SAFETY	SV
RELIEF	RV
BUTTERFLY	BTF
STOP CHECK	SCK
BALL	BALL
RUPTURE DIAPHRAM	RPD
SPLIT DISC CHECK	SDCK

G. Actuator Type lists the type of valve actuator as indicated by the following abbreviations:

MOTOR OPERATOR	MO
AIR OPERATOR	AO
SOLENOID OPERATOR	SO
HYDRAULIC OPERATOR	HY
SELF ACTUATED	SA
MANUAL	M

H. Valve Position indicates the normal position of the valve during plant operation; either normally open (O) or normally closed (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. The following tests and abbreviations are used:

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 Exercise Test — BTP

Valve will be part-stroke exercised 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.

Check Valve Partial Exercise Test — CVP

Check valve will be part stroke exercised, (i.e. disc moves away from seat) when full stroke exercising is impractical.

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 Indication Check — PIT

All valves with remote position indicators will be checked to verify that remote valve indications accurately reflect valve operation.

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 will be tested more often than once every 90 days.

NOTE: It is expected that the required valve testing will normally be completed in 96 hours following cold shutdown. However, 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 OP

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 in seconds for valves requiring test.

M. Relief Request references the relief request contained in Section 2.4 that applies to the particular valve. Also included in Section 2.4 are generic relief requests that are not specifically referenced in this column of the tables, but apply to the valve program in general.

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:

SYSTEM	P&ID
Diesel Generator System	40110
Reactor Coolant System.	40111
Safety Injection System, Sheet 1.	40112
Safety Injection System, Sheet 2.	40113
Containment Spray System.	40114
Diesel Fuel Storage System.	40116
Fuel Pool Cooling System.	40122
Reactor Coolant Chemical & Volume Control, Sheet 1.	40123
Reactor Coolant Chemical & Volume Control, Sheet 2.	40124
Reactor Coolant Chemical & Volume Control, Sheet 3.	40125
Component Cooling Water System, Sheet 1	40126
Component Cooling Water System, Sheet 2	40127
Nuclear Plant Sampling System	40128
Waste Gas System.	40135
Main Steam System	40141
Condensate Pump System.	40150
High Pressure & Auxiliary Feedwater System.	40156
Containment Heat., Vent., & Air Cond. System (Normal) Sheet 1	40170
Containment Heat., Vent., & Air Cond. System (Normal) Sheet 2	40171
Containment Heat., Vent., & Air Cond. System (Emergency).	40172

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)

When relief from an ASME Code requirement is granted within the provisions of 10CFR50.55a (g)(6)(i), it will be incorporated into San Onofre Units 2 and 3 Inservice Testing Program.

INSERVICE TESTING PROGRAM -VALVES

UNIT - 2

Southern California Edison Company

INSERVICE TESTING PROGRAM

ASME-CLASS 1,2&3 VALVES

SAN ONOFRE NUCLEAR GENERATING STATION

UNIT - 2

SYSTEM	P & ID	REVISION - DATE	PAGE
EXPLANATION OF ABBREVIATIONS		0 9/80	1 of 4

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
					GA								GATE
					GL								GLOBE
					CK								CHECK
					SCK								STOP CHECK
					SDCK								SPLIT DISC CHECK
					SV								SAFETY
					RV								RELIEF
					BTF								BUTTERFLY
					BALL								BALL
						SO							SOLENOID

Southern California Edison Company

INSERVICE TESTING PROGRAM

ASME-CLASS 1,2&3 VALVES

SAN ONOFRE NUCLEAR GENERATING STATION

UNIT - 2

SYSTEM	P & ID	REVISION - DATE	PAGE
EXPLANATION OF ABBREVIATIONS USED (cont.)		0 9/80	2 of 4

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
						AO							AIR OPERATOR
						SA							SELF ACTUATED
						HY							HYDRAULIC
						MO							MOTOR OPERATOR
						M							MANUAL
									AT				SEAT LEAK TEST
									BT				FULL STROKE EXERCISE TEST
									BTP				PARTIAL STROKE EXERCISE TEST
									CVT				CHECK VALVE EXERCISE TEST

Southern California Edison Company

INSERVICE TESTING PROGRAM
ASME-CLASS 1,2&3 VALVES
SAN ONOFRE NUCLEAR GENERATING STATION

UNIT - 2

SYSTEM	P & ID	REVISION - DATE	PAGE
EXPLANATION OF ABBREVIATIONS (cont.)		0 9/80	3 of 4

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
									CVP				PARTIAL CHECK VALVE EXERCISE TEST
									RVT				SAFETY OR RELIEF VALVE TEST
									PIT				POSITION INDICATION CHECK
									FST				FAIL SAFE TEST
										CS			COLD SHUT DOWN
										RR			REACTOR REFUELING
										OP			NORMAL OPERATION
												VRR	VALVE RELIEF REQUEST

Southern California Edison Company

INSERVICE TESTING PROGRAM
ASME-CLASS 1,2&3 VALVES
SAN ONOFRE NUCLEAR GENERATING STATION

UNIT - 2

SYSTEM	P & ID	REVISION - DATE	PAGE
EXPLANATION OF NOTES		0 9/80	4 of 4

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS

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. This valve is exercised during normal operation and therefore does not require a separate test.
8. This valve is tested when the containment spray system 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.

Southern California Edison Company

INSERVICE TESTING PROGRAM

ASME-CLASS 1,2&3 VALVES

SAN ONOFRE NUCLEAR GENERATING STATION

UNIT - 2

SYSTEM	P & ID	REVISION - DATE	PAGE
DIESEL GENERATOR SYSTEM	40110-5	0 9/80	1 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
2-001-D-145	D-5	2	B	2"	GA	M	C		NA				NOTES 1, 3
2-003-D-145	D-5	2	B	2"	GA	M	O		NA				NOTES 1, 3
2-006-D-145	H-5	2	B	2"	GA	M	O		NA				NOTES 1, 3
2-011-D-145	G-4	2	B	2"	GA	M	C		NA				NOTES 1, 3

Southern California Edison Company

INSERVICE TESTING PROGRAM

ASME-CLASS 1,2&3 VALVES

SAN ONOFRE NUCLEAR GENERATING STATION

UNIT - 2

SYSTEM	P & ID	REVISION - DATE	PAGE
REACTOR COOLANT SYSTEM	40111-6	0 9/80	2 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
PSV-0200	H-6	1	C	6"	SV	SA	C	O	RVT				NOTE 2
PSV-0201	H-6	1	C	6"	SV	SA	C	O	RVT				NOTE 2
3-152-A-551	C-5	1	C	3"	CK	SA	C	O	CVT	RR		VRR-1	

Southern California Edison Company

INSERVICE TESTING PROGRAM
ASME-CLASS 1,2&3 VALVES
SAN ONOFRE NUCLEAR GENERATING STATION

UNIT - 2

SYSTEM	P & ID	REVISION - DATE	PAGE
SAFETY INJECTION SYSTEM	40112-7	0 9/80	3 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
FV-0306	F-2	2	B	12"	BALL	AO	C	O	FST BT	OP OP			
HV-9300	D-8	2	B	24"	GA	MO	O	O	NA				NOTES 3, 6
HV-9301	D-8	2	B	24"	GA	MO	O	O	NA				NOTES 3, 6
HV-9302	B-6	2	A	24"	BTF	MO	C	O	AT BT PIT	RR OP RR	30		NOTES 6, 10
HV-9303	B-6	2	A	24"	BTF	MO	C	O	AT BT PIT	RR OP RR	30		NOTES 6, 10
HV-9304	B-3	2	A	24"	BTF	MO	O	O	AT	RR			NOTES 6, 9, 10
HV-9305	B-3	2	A	24"	BTF	MO	O	O	AT	RR			NOTES 6, 9, 10
HV-9316	G-2	2	B	12"	BALL	AO	C	O	FST BT PIT	OP OP RR			
2-034-C-329	E-4	2	C	2"	SCK	SA	C	O	CVT	OP			NOTE 1

Southern California Edison Company

INSERVICE TESTING PROGRAM

ASME-CLASS 1, 2 & 3 VALVES

SAN ONOFRE NUCLEAR GENERATING STATION

UNIT - 2

SYSTEM	P & ID	REVISION - DATE	PAGE
SAFETY INJECTION SYSTEM (cont.)	40112-7	0 9/80	4 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
2-035-C-329	E-4	2	C	2"	SCK	SA	C	O	CVT	OP			NOTE 1
2-036-C-329	E-3	2	C	2"	SCK	SA	C	O	CVT	OP			NOTE 1
2-037-C-329	G-4	2	C	2"	SCK	SA	C	O	CVT	OP			NOTE 1
2-063-C-329	F-4	2	C	2"	SCK	SA	C	O	CVT	OP			NOTE 1
2-104-C-329	F-3	2	C	2"	SCK	SA	C	O	CVT	OP			NOTE 1
3-155-C-329	D-1	2	C	3"	CK	SA	C	O	CVT	RR		VRR-4	NOTE 5
4-012-C-358	E-3	2	C	4"	SCK	SA	C	O	CVP CVT	OP RR		VRR-7	NOTE 1
4-013-C-075	D-2	2	B	4"	GA	M	C		NA				NOTES 1, 3
4-014-C-075	D-2	2	B	4"	GA	M	C		NA				NOTES 1, 3
4-015-C-358	B-3	2	C	4"	SCK	SA	C	O	CVP CVT	OP OP		VKR-7	NOTE 1

Southern California Edison Company

INSERVICE TESTING PROGRAM

ASME-CLASS 1,2&3 VALVES

SAN ONOFRE NUCLEAR GENERATING STATION

UNIT - 2

SYSTEM	P & ID	REVISION - DATE	PAGE
SAFETY INJECTION SYSTEM (cont.)	40112-7	0 9/80	5 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
4-016-C-358	D-3	2	C	4"	SCK	SA	C	0	CVP CVT	OP RR		VRR-7	NOTE 1
4-017-C-553	B-2	2	C	4"	CK	SA	C	0	CVP CVT	OP RR		VRR-9	
8-007-C-212	E-5	2	B	8"	GA	M	0		NA				NOTES 1, 3
8-009-C-212	C-5	2	B	8"	GA	M	0		NA				NOTES 1, 3
8-010-C-212	D-5	2	B	8"	GA	M	0		NA				NOTES 1, 3
8-011-C-212	D-5	2	B	8"	GA	M	C		NA				NOTES 1, 3
10-006-C-675	E-6	2	C	10"	CK	SA	C	0	CVP CVT	OP RR		VRR-8	
10-008-C-675	B-7	2	C	10"	CK	SA	C	0	CVP CVT	OP RR		VRR-8	
10-024-C-406	G-3	2	C	10"	SCK	SA	C	0	CVT				NOTES 1, 5

Southern California Edison Company

INSERVICE TESTING PROGRAM
ASME-CLASS 1,2&3 VALVES
SAN ONOFRE NUCLEAR GENERATING STATION

UNIT - 2

SYSTEM	P & ID	REVISION - DATE	PAGE
SAFETY INJECTION SYSTEM (cont.)	40112-7	0 9/80	6 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
10-025-C-406	F-3	2	C	10"	SCK	SA	C	O	CVT	CS			NOTES 1, 5
12-038-C-173	F-3	2	B	12"	GA	M	C	O	BT	OP			NOTE 1
12-039-C-173	F-3	2	B	12"	GA	M	C	O	BT	OP			NOTE 1
14-015-C-173	G-6	2	B	14"	GA	M	C	O	BT	OP			NOTE 1
14-018-C-173	F-6	2	B	14"	GA	M	C	O	BT	OP			NOTE 1
14-078-C-173	G-2	2	B	14"	GA	M	O		NA				NOTE 3
14-079-C-173	G-2	2	B	14"	GA	M	C	O	BT	OP			NOTE 1
14-080-C-173	G-2	2	B	14"	GA	M	O		NA				NOTE 3
14-081-C-173	F-3	2	B	14"	GA	M	O		NA				NOTES 1, 3
14-082-C-173	F-3	2	B	14"	GA	M	O		NA				NOTES 1, 3

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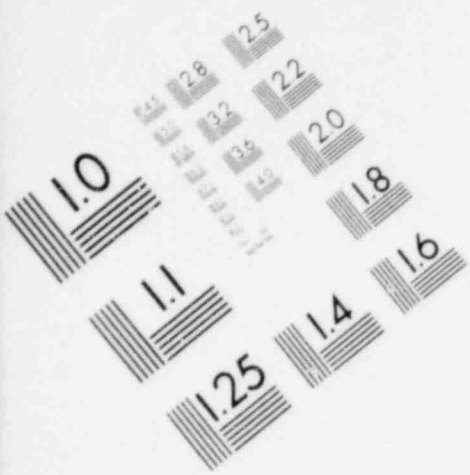
INSERVICE TESTING PROGRAM
ASME-CLASS 1,2&3 VALVES
SAN ONOFRE NUCLEAR GENERATING STATION

UNIT - 2

SYSTEM	P & ID	REVISION - DATE	PAGE
SAFETY INJECTION SYSTEM (cont.)	40112-7	0 9/80	7 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
14-153-C-173	F-2	2	B	14"	GA	M	O	C	BT	CS			NOTES 1, 5
16-005-C-212	F-7	2	B	16"	GA	M	O		NA				NOTES 1, 3
16-022-C-173	G-6	2	B	16"	GA	M	O	C	BT	OP			NOTE 1
16-023-C-173	F-6	2	B	16"	GA	M	O	C	BT	OP			NOTE 1
16-062-C-212	G-7	2	B	16"	GA	M	O		NA				NOTES 1, 3
16-077-C-645	F-7	2	C	16"	CK	SA	C	O	CVP	OP		VRR-12	NOTE 4
16-084-C-645	G-6	2	C	16"	CK	SA	C	O	CVP	OP		VRR-12	NOTE 4
24-001-C-724	D-8	2	C	24"	SDCK	SA	C	O	CVP	OP		VRR-2	NOTE 4
24-002-C-724	D-8	2	C	24"	SDCK	SA	C	O	CVP	OP		VRR-2	NOTE 4
24-003-C-724	B-7	2	C	24"	SDCK	SA	O&C	O&C	CVP	RR		VRR-3	NOTE 4
24-004-C-724	B-7	2	C	24"	SDCK	SA	O&C	O&C	CVP	RR		VRR-3	NOTE 4



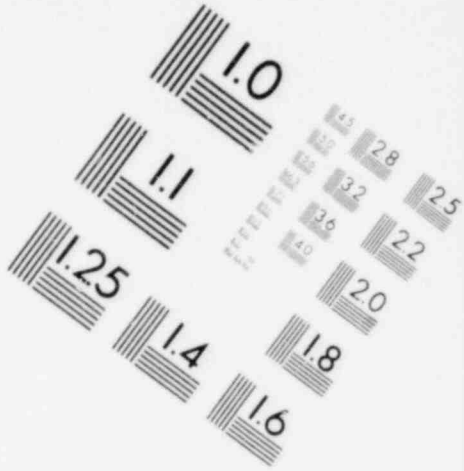
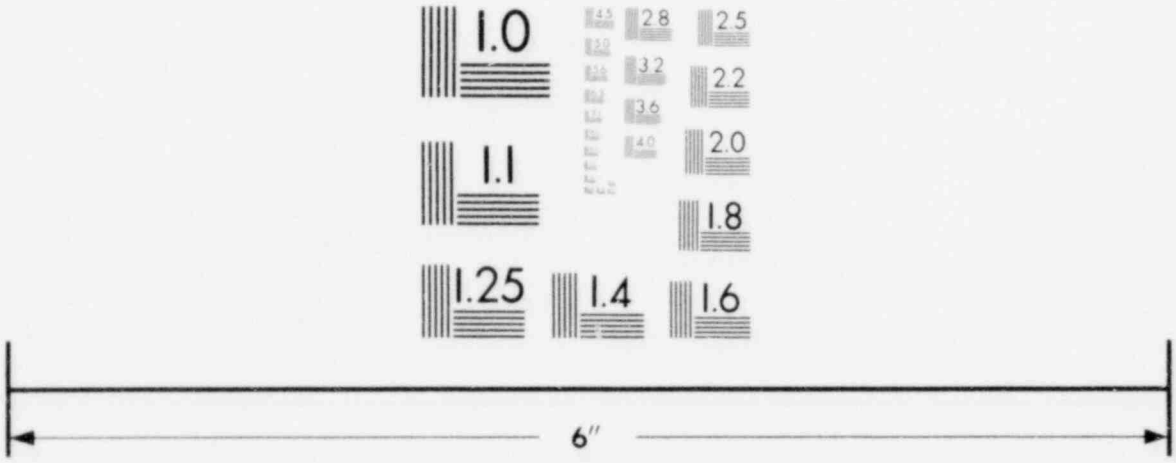
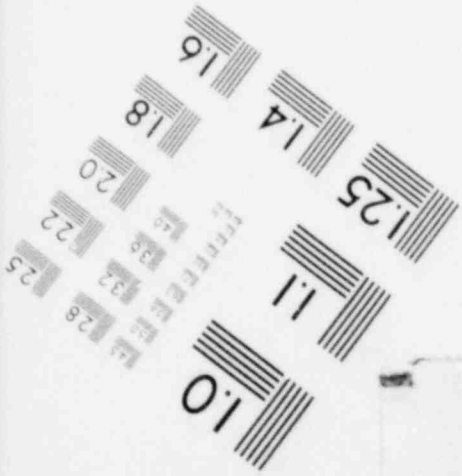
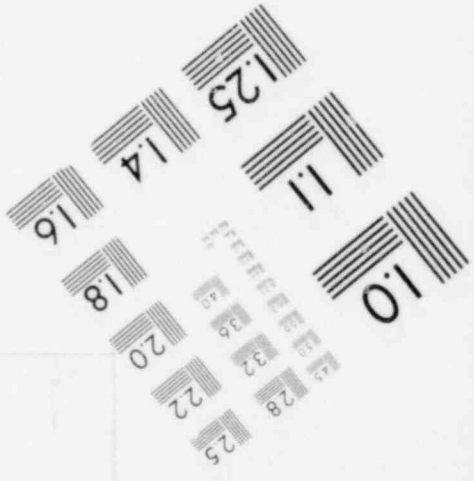


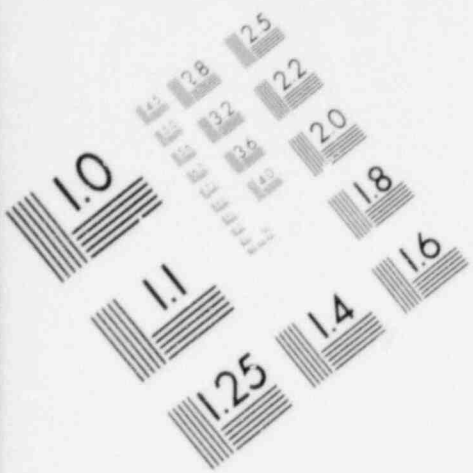
IMAGE EVALUATION
TEST TARGET (MT-3)



MICROCOPY RESOLUTION TEST CHART







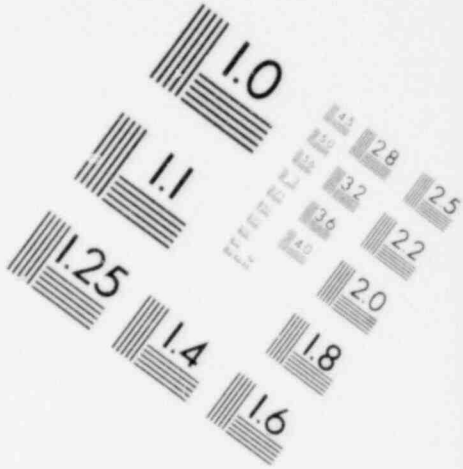
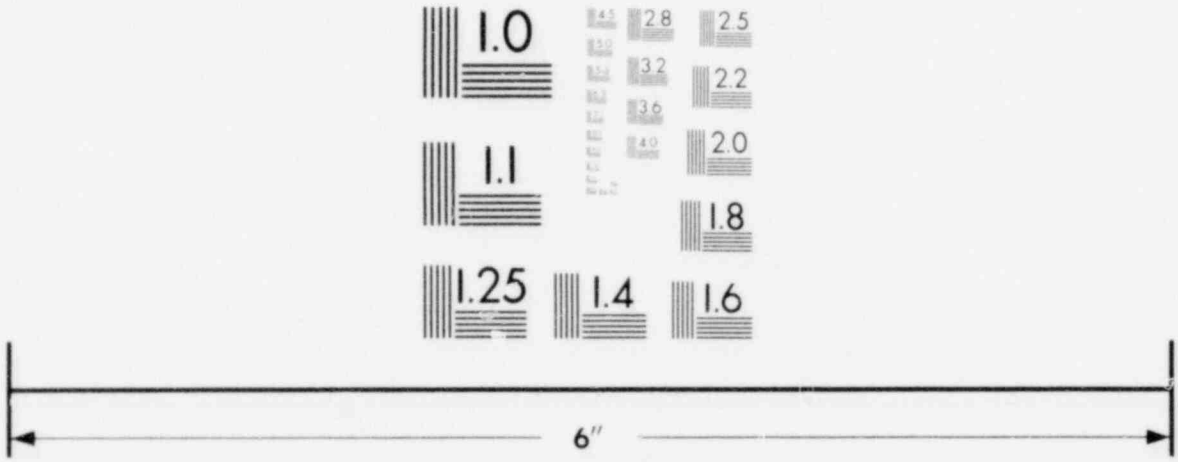
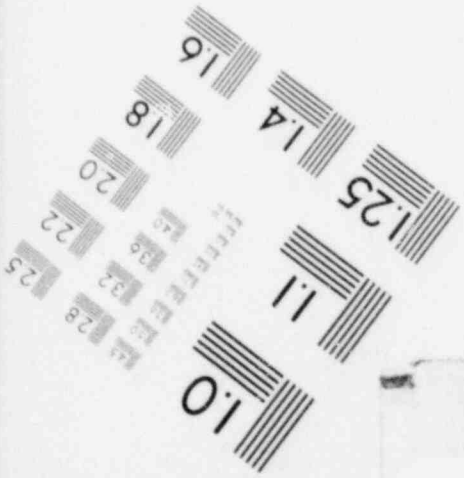
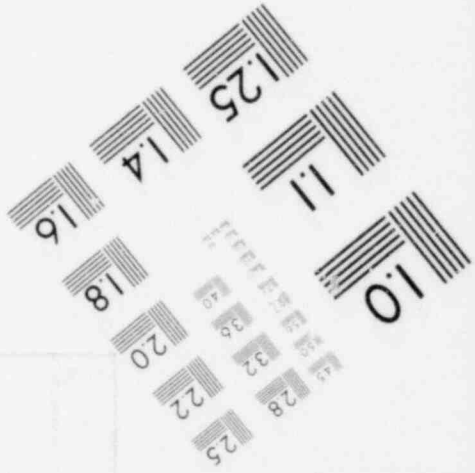


IMAGE EVALUATION
TEST TARGET (MT-3)



MICROCOPY RESOLUTION TEST CHART





Southern California Edison Company

INSERVICE TESTING PROGRAM
ASME-CLASS 1,2&3 VALVES
SAN ONOFRE NUCLEAR GENERATING STATION

UNIT - 2

SYSTEM	P & ID	REVISION - DATE	PAGE
SAFETY INJECTION SYSTEM	40113-6	0 9/80	8 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-9322	H-7	2	B	8"	GL	MO	C	O	BT PIT	OP RR			NOTE 6
HV-9323	G-7	2	B	2"	GL	MO	C	O	BT PIT	OP RR			NOTE 6
HV-9324	F-7	2	B	2"	GL	MO	C	O	BT PIT	OP RR			NOTE 6
HV-9325	F-7	2	B	8"	GL	MO	C	O	BT PIT	OP RR			NOTE 6
HV-9326	E-7	2	B	2"	GL	MO	C	O	BT PIT	OP RR			NOTE 6
HV-9327	E-7	2	B	2"	GL	MO	C	O	BT PIT	OP RR			NOTE 6
HV-9328	D-7	2	B	8"	GL	MO	C	O	BT PIT	OP RR			NOTE 6
HV-9329	C-7	2	B	2"	GL	MO	C	O	BT PIT	OP RR			NOTE 6

Southern California Edison Company

INSERVICE TESTING PROGRAM

ASME-CLASS 1,2&3 VALVES

SAN ONOFRE NUCLEAR GENERATING STATION

UNIT - 2

SYSTEM	P & ID	REVISION - DATE	PAGE
SAFETY INJECTION SYSTEM	40113-6	0 9/80	9 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-9330	C-7	2	B	2"	GL	MO	C	O	BT PIT	OP RR			NOTE 6
HV-9331	B-7	2	B	8"	GL	MO	C	O	BT PIT	OP RR			NOTE 6
HV-9332	B-7	2	B	2"	GL	MO	C	O	BT PIT	OP RR			NOTE 6
HV-9333	A-7	2	B	2"	GL	MO	C	O	BT PIT	OP RR			NOTE 6
HV-9334	E-6	2	A	2"	GL	M	C	C	AT	RR			NOTES 9, 10, 11
HV-9336	E-6	2	A	16"	GA	MO	O&C	O&C	AT BT PIT	RR OP RR			NOTES 1, 6, 10
HV-9337	E-4	1	A	16"	GA	MO	O&C	O&C	AT BT PIT	RR CS RR			NOTES 1, 5, 6, 10
HV-9339	E-3	1	B	10"	GA	MO	O&C	O&C	PI.	CS RR			NOTES 1, 5, 6

Southern California Edison Company

INSERVICE TESTING PROGRAM
ASME-CLASS 1,2&3 VALVES
SAN ONOFRE NUCLEAR GENERATING STATION

UNIT - 2

SYSTEM	P & ID	REVISION - DATE	PAGE
SAFETY INJECTION SYSTEM (cont.)	40113-6	0 9/80	10 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-9340	F-5	1	B	12"	GA	MO	O	C	BT PIT	CS RR			NOTES 1, 5, 6
HV-9341	E-4	1	B	1"	GL	M	C	C	NA				NOTE 3
HV-9345	G-5	2	B	1"	GL	SO	C	O	FST BT PIT	CS CS RR			NOTES 1, 5
HV-9350	F-2	1	B	12"	GA	MO	O	C	BT PIT	CS RR			NOTES 1, 5, 6
HV-9353	D-7	2	B	8"	GA	MO	C	C	BT PIT	OP RR			NOTES 1, 6
HV-9355	G-1	2	B	1"	GL	SO	C	O	FST BT PIT	CS CS RR			NOTES 1, 5
HV-9359	D-7	2	B	8"	GA	MO	C	C	BT PIT	OP RR			NOTES 1, 6
HV-9360	B-5	1	B	12"	GA	MO	O	C	BT PIT	CS RR			NOTES 1, 5, 6

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INSERVICE TESTING PROGRAM
ASME-CLASS 1,2&3 VALVES
SAN ONOFRE NUCLEAR GENERATING STATION

UNIT - 2

SYSTEM	P & ID	REVISION - DATE	PAGE
SAFETY INJECTION SYSTEM (cont.)	40113-6	0 9/80	11 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-9361	B-4	1	B	1"	GL	M	C	C	NA				NOTE 3
HV-9365	D-5	2	B	1"	GL	SO	C	O	FST BT PIT	CS CS RR			NOTES 1, 5
HV-9370	B-2	1	B	12"	GA	MO	O	C	BT PIT	CS RR			NOTES 1, 5, 6
HV-9375	C-1	1	B	1"	GL	SO	C	O	FST BT PIT	CS CS RR			NOTES 1, 5
HV-9377	D-4	1	A	10"	GA	MO	O&C	O&C	AT BT PIT	RR CS RR			NOTES 1, 5, 6, 10
HV-9378	D-3	1	B	10"	GA	MO	O&C	O&C	BT PIT	CS RR			NOTES 1, 5, 6
HV-9379	D-6	2	A	16"	GA	MO	O&C	O&C	AT BT PIT	RR OP RR			NOTES 1, 6, 10
PSV-9349	E-5	2	C	8"	RV	SA	C	O	RVT				NOTE 2

Southern California Edison Company

INSERVICE TESTING PROGRAM
ASME-CLASS 1,2&3 VALVES
SAN ONOFRE NUCLEAR GENERATING STATION

UNIT - 2

SYSTEM	P & ID	REVISION - DATE	PAGE
SAFETY INJECTION SYSTEM (cont.)	40113-6	0 9/80	12 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
2-099-C-334	E-7	2	A	2"	GL	M	C	C	AT	RR			NOTES 9, 10, 11
3-018-A-551	G-6	1	C	3"	CK	SA	C	O	CVP CVT	OP RR		VRR-10	
3-019-A-551	E-6	1	C	3"	CK	SA	C	O	CVP CVT	OP RR		VRR-10	
3-020-A-551	C-6	1	C	3"	CK	SA	C	O	CVP CVT	OP RR		VRR-10	
3-021-A-551	A-6	1	C	3"	CK	SA	C	O	CVT CVP	OP RR		VRR-10	
3-156-A-551	D-3	1	C	3"	CK	SA	C	O	CVT	RR		VRR-5	NOTE 5
8-072-A-552	G-6	1	C	8"	CK	SA	C	O	CVT	CS			NOTE 5
8-073-A-552	F-6	1	C	8"	CK	SA	C	O	CVT	CS			NOTE 5
8-074-A-552	D-6	1	C	8"	CK	SA	C	O	CVT	CS			NOTE 5
8-075-A-552	B-6	1	C	8"	CK	SA	C	O	CVT	CS			NOTE 5

Southern California Edison Company

INSERVICE TESTING PROGRAM
ASME-CLASS 1,2&3 VALVES
SAN ONOFRE NUCLEAR GENERATING STATION

UNIT - 2

SYSTEM	P & ID	REVISION - DATE	PAGE
SAFETY INJECTION SYSTEM (cont.)	40113-6	0 9/80	13 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
12-027-A-551	F-4	1	C	12"	CK	SA	C	O	CVT	CS			NOTE 5
12-029-A-551	F-1	1	C	12"	CK	SA	C	O	CVT	CS			NOTE 5
12-031-4-551	A-4	1	C	12"	CK	SA	C	O	CVT	CS			NOTE 5
12-033-A-551	A-21	1	C	12"	CK	SA	C	O	CVT	CS			NOTE 5
12-040-A-551	F-5	1	C	12"	CK	SA	C	O	CVP	CS		VRR-11	NOTES 4, 5
12-041-A-551	F-2	1	C	12"	CK	SA	C	O	CVP	CS		VRR-11	NOTES 4, 5
12-042-A-551	B-5	1	C	12"	CK	SA	C	O	CVP	CS		VRR-11	NOTES 4, 5
12-043-A-551	B-2	1	C	12"	CK	SA	C	O	CVP	CS		VRR-11	NOTES 4, 5

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INSERVICE TESTING PROGRAM
ASME-CLASS 1,2&3 VALVES
SAN ONOFRE NUCLEAR GENERATING STATION

UNIT - 2

SYSTEM	P & ID	REVISION - DATE	PAGE
CONTAINMENT SPRAY	40114-6	0 9/80	14 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
FV-0318	E-6	2	B	2"	GL	E/H	C	O	BT PIT	OP RR			NOTES 1, 6
FV-0328	F-6	2	B	2"	GL	E/H	C	O	BT PIT	OP RR			NOTES 1, 6
HV-9306	F-4	2	B	4"	GA	MO	O	O&C	BT PIT	OP RR			NOTES 1, 6
HV-9307	E-4	2	B	4"	GA	MO	O	O&C	BT PIT	OP RR			NOTES 1, 6
HV-9347	F-5	2	B	4"	GA	MO	O	O	BT PIT	OP RR			NOTES 1, 6
HV-9348	E-5	2	B	4"	GA	MO	O	O	BT PIT	OP RR			NOTES 1, 6
HV-9367	C-2	2	A	8"	GA	MO	C	O	AT BT PIT	RR OP RR	10		NOTES 1, 6, 10

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INSERVICE TESTING PROGRAM
ASME-CLASS 1,2&3 VALVES
SAN ONOFRE NUCLEAR GENERATING STATION

UNIT - 2

SYSTEM	P & ID	REVISION - DATE	PAGE
CONTAINMENT SPRAY (cont.)	40114-6	0 9/80	15 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-9368	E-2	2	A	8"	GA	MO	C	O	AT BT PIT	RR OP RR	10		NOTES 1, 6, 10
HV-9398	F-6	2	B	2"	GL	SO	C	O	FST BT PIT	OP OP RR			NOTE 1
HV-9399	E-6	2	B	2"	GL	SO	C	O	FST BT PIT	OP OP RR			NOTE 1
HV-9420	B-7	2	A	3"	GL	MO	C	O	AT BT PIT	RR OP RR			NOTES 1, 6, 10
HV-9433	A-7	1	B	1"	GL	AO	C	C	NA				NOTE 3
HV-9434	C-7	2	A	3"	GL	MO	C	O	AT BT PIT	RR OP RR			NOTES 1, 6, 10
HV-9437	B-7	1	B	1"	GL	AO	C	C	NA				NOTE 3

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INSERVICE TESTING PROGRAM
ASME-CLASS 1,2&3 VALVES
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UNIT - 2

SYSTEM	P & ID	REVISION - DATE	PAGE
CONTAINMENT SPRAY (cont.)	40114-6	0 9/80	16 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
2-010-C-329	D-5	2	C	2"	SCK	SA	C	O	CVT	OP			NOTE 1
2-011-C-329	D-5	2	C	2"	SCK	SA	C	O	CVP	OP			NOTE 1
2-050-C-376	F-8	2	B	2"	GL	M	O		NA				NOTES 1, 3
2-051-C-376	F-7	2	C	2"	CK	SA	C	O	CVT	OP			
2-052-C-376	F-8	2	B	2"	GL	M	O		NA				NOTES 1, 3
2-053-C-611	E-7	2	C	2"	CK	SA	C	O	CVT				
2-054-C-611	F-7	2	C	2"	CK	SA	C	O	CVT	OP			
2-055-C-376	G-7	2	B	2"	GL	M	O		NA				NOTES 1, 3
2-069-C-611	G-7	2	C	2"	CK	SA	C	O	CVT	OP			
3-066-A-050	C-7	1	B	3"	GA	M	O		NA				NOTES 1, 3
3-067-A-050	B-7	1	B	3"	GA	M	O		NA				NOTES 1, 3

Southern California Edison Company

INSERVICE TESTING PROGRAM
ASME-CLASS 1,2&3 VALVES
SAN ONOFRE NUCLEAR GENERATING STATION

UNIT - 2

SYSTEM	P & ID	REVISION - DATE	PAGE
CONTAINMENT SPRAY (cont.)	40114-6	0 9/80	17 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
3-157-A-551	C-7	1	AC	3"	CK	SA	C	O	AT CVT	RR RR		VRR-6	NOTE 5, 10
3-158-A-551	B-7	1	AC	3"	CK	SA	C	O	AT CVT	RR RR		VRR-6	NOTE 5, 10
8-003-C-173	D-2	2	B	8"	GA	M	O		NA				NOTES 1,3
8-004-C-406	C-1	2	AC	8"	SCK	SA	C	O	AT CVT			VRR-13	NOTES 1, 8, 10
8-005-C-173	E-2	2	B	8"	GA	M	O		NA				NOTES 1, 3
8-006-C-406	E-1	2	AC	8"	SCK	SA	C	O	AT CVT			VRR-13	NOTES 1, 8, 10
8-012-C-406	C-5	2	C	8"	SCK	SA	C	O	CVT	OP			NOTE 1
8-014-C-406	E-5	2	C	8"	SCK	SA	C	O	(	OP			NOTE 1
12-001-C-173	D-2	2	B	12"	GA	M	C	O	BT	OP			NOTE 1

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SYSTEM	P & ID	REVISION - DATE	PAGE
CONTAINMENT SPRAY (cont.)	40114-6	0 9/80	18 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX STROKE TIME	RELIEF REQUEST	REMARKS
12-002-C-173	D-2	2	B	12"	GA	M	C	O	BT	OP			NOTE 1
16-087-C-675	E-7	2	C	16"	CK	SA	C	O	CVT	OP			
16-088-C-675	E-7	2	C	16"	CK	SA	C	O	CVT	OP			

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ASME-CLASS 1,2&3 VALVES
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SYSTEM	P & ID	REVISION - DATE	PAGE
DIESEL GENERATOR FUEL STORAGE SYSTEM	40116-7	0 9/80	19 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
2-039-D-627	C-6	3	C	2"	CK	SA	C	O	CVT	OP			
2-040-D-145	C-5	2	B	2"	GA	M	O		NA				NOTES 1, 3
2-041-D-145	F-5	2	B	2"	GA	M	O		NA				NOTES 1, 3
2-043 -D-145	F-5	2	B	2"	GA	M	O		NA				NOTES 1, 3
2-044-D-145	G-6	2	B	2"	GA	M	O		NA				NOTES 1, 3
2-045-D-145	F-6	2	B	2"	GA	M	O		NA				NOTES 1, 3
2-047-D-145	F-6	2	B	2"	GA	M	O		NA				NOTES 1, 3
2-048-D-627	C-6	3	C	2"	CK	SA	C	O	CVT	OP			
2-049-D-145	C-6	2	B	2"	GA	M	O		NA				NOTES 1, 3
2-054-D-145	C-3	3	C	2"	CK	SA	C	O	CVT	OP			

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UNIT - 2

SYSTEM	P & ID	REVISION - DATE	PAGE
DIESEL GENERATOR FUEL STORAGE SYSTEM (cont.)	40116-7	0 9/80	20 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
2-055-D-145	C-3	2	B	2"	GA	M	O		NA				NOTES 1, 3
2-056-D-145	F-3	2	B	2"	GA	M	O		NA				NOTES 1, 3
2-058-D-145	G-3	2	B	2"	GA	M	O		NA				NOTES 1, 3
2-059-D-145	G-3	2	B	2"	GA	M	O		NA				NOTES 1, 3
2-060-D-145	F-4	2	B	2"	GA	M	O		NA				NOTES 1, 3
2-062-D-145	G-4	2	B	2"	GA	M	C		NA				NOTES 1, 3
2-063-D-627	C-4	3	C	2"	CK	SA	C	O	CVT	OP			
2-064-D-145	C-4	2	B	2"	GA	M	O		NA				NOTES 1, 3
3-052-D-221	C-6	2	B	3"	GA	M	C		NA				NOTES 1, 3
3-065-D-221	D-4	2	B	3"	GA	M	C		NA				NOTES 1, 3

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SYSTEM	P & ID	REVISION - DATE	PAGE
DIESEL GENERATOR FUEL STORAGE SYSTEM (cont.)	40116-7	0 9/80	21 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
3-067-D-221	C-3	2	B	3"	GA	M	C		NA				NOTES 1. 3
3-075-D-221	D-6	2	B	3"	GA	M	O		NA				NOTES 1, 3
3-076-D-221	D-3	2	B	3"	GA	M	O		NA				NOTES 1, 3

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SYSTEM	P & ID	REVISION - DATE	PAGE
SUMPS & DRAINS SYSTEM	40117-12	0 9/80	22 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-5803	B-2	2	A	3"	GA	MO	O	C	AT BT PIT	RR OP RR			NOTES 6, 10, 11
HV-5804	B-2	2	A	3"	GA	AO	O	C	AT BT FST PT	RR OP OP RR			NOTES 10, 11

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SYSTEM	P & ID	REVISION - DATE	PAGE
FUEL POOL COOLING SYSTEM	40122-10	0 9/80	23 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HCV-7766	F-2	2	B	24"	BTF	M	O		NA				NOTES 1, 3
HCV-7767	F-2	2	B	24"	BTF	M	O		NA				NOTES 1, 3
1-028-D-611	G-3	3	C	1"	CK	A	C	C	NA				NOTE 3
6-067-C-212	F-3	2	B	6"	GA	M	O		NA				NOTES 1, 3
10-068-C-076	G-2	2	B	10"	GA	M	O		NA				NOTES 1, 3
10-100-C-212	E-3	2	A	10"	GA	M	C	C	AT	RR			NOTES 1, 9, 10, 11
10-101-C-212	E-4	2	A	10"	GA	M	C	C	AT	RR			NOTES 1, 9, 10, 11

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SYSTEM	P & ID	REVISION - DATE	PAGE
CHEMICAL & VOLUME CONTROL SYSTEM	40123-7	0 9/80	24 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYP.	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-9200	B-5	2	A	2"	GL	AO	O	O&C	AT BT FST PIT	RR CS RR RR			NOTES 1, 5, 10
HV-9201	C-7	1	B	2"	GA	MO	C	O	BT PIT	CS RR			NOTES 1, 5, 6
HV-9202	C-7	1	B	2"	GA	MO	O	O	NA				NOTES 3, 6
HV-9203	B-7	1	B	2"	GA	MO	O	O	NA				NOTES 3, 6
HV-9204	D-7	1	B	2"	GA	AO	O	C	FST BT PIT	CS CS RR			NOTE 5
HV-9205	E-6	2	A	2"	GL	AO	O	C	AT FST BT PIT	RR CS CS RR	5		NOTES 5, 10
TV-0221	D-7	1	B	2"	GL	AO	O	C	FST BT PIT	CS CS RR			NOTE 5

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CHEMICAL & VOLUME CONTROL SYSTEM (cont.)	40123-7	0 9/80	25 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
TV-9267	D-6	2	A	2"	GA	MO	O	O	AT BT PIT	RR CS RR	10		NOTES 5, 6, 10
2-019-A-554	C-7	1	C	2"	CK	SA	C	O	CVT	CS			NOTE 5
2-020-A-554	C-7	1	C	2"	CK	SA	C	O	CVT	OP			
2-021-A-554	B-7	1	C	2"	CK	SA	C	O	CVT	OP			
2-084-C-334	B-5	2	B	2"	GL	M	O		NA				NOTES 1, 3
2-091-C-334	B-4	2	B	2"	GL	M	O		NA				NOTES 1, 3
2-107-A-305	B-7	2	B	2"	GL	M	O		NA				NOTES 1, 3
2-122-C-554	B-6	2	B	2"	CK	SA	C	O	AT CVT	RR OP			NOTES 7, 10
3-092-C-105	E-7	2	B	3"	GA	M	O		NA				NOTE 3

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CHEMICAL & VOLUME CONTROL SYSTEM	40124-6	0 9/80	26 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-9217	G-5	2	A	3/4"	GL	MO	O	C	AT BT PIT	RR CS RR			NOTES 5, 6, 10
HV-9218	G-5	2	A	3/4"	GL	AO	O	C	AT FST BT PIT	RR CS CS RR			NOTES 5, 10
LV-0227B	D-7	2	B	4"	GA	MO	O	C	BT PIT	CS RR			NOTES 5, 6
LV-0227C	C-5	2	B	4"	GA	MO	C	O	BT PIT	CS RR			NOTE 6
1½-094-C-611	D-5	2	C	1½"	CK	SA	C	C	NA				NOTE 3
2-017-C-554	D-2	2	C	2"	CK	SA	C	O	CVT	OP			
2-018-C-334	D-2	2	B	2"	GL	M	O		NA				NOTES 1, 3
2-064-C-334	F-1	2	B	2"	GL	M	O		NA				NOTE 3

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CHEMICAL & VOLUME CONTROL SYSTEM (cont.)	40124-6	0	9/80	27 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
2-067-C-554	G-2	2	C	2"	CK	SA	C	O	CVT	OP			
2-068-C-334	G-2	2	B	2"	GL	M	O		NA				NOTES 1, 3
2-069-C-554	E-2	2	C	2"	CK	SA	C	O	CVT	OP			
2-070-C-334	E-2	2	B	2"	GL	M	O		NA				NOTES 1, 3
3-053-C-675	C-3	2	C	3"	CK	SA	C	C	NA				NOTE 3
3-082-C-675	G-3	2	C	3"	CK	SA	C	O	CVT	CS			NOTE 5
3-083-C-675	F-3	2	C	3"	CK	SA	C	O	CVT	CS			NOTE 5
4-015-C-675	D-6	2	C	4"	CK	SA	C	O	CVT	OP			
4-016-C-212	D-3	2	B	4"	GA	M	O		NA				NOTES 1, 3
4-062-C-212	G-3	2	B	4"	GA	M	O		NA				NOTES 1, 3

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CHEMICAL & VOLUME CONTROL SYSTEM (cont.)	40124-6	0 9/80	28 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
4-063-C-212	E-3	2	B	4"	GA	M	O		NA				NOTES 1, 3
6-052-C-675	D-3	2	C	6"	CK	SA	C	O	CVT	CS			NOTE 5
6-054-C-212	D-4	2	B	6"	GA	M	O		NA				NOTES 1, 3

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SYSTEM	P & ID	REVISION - DATE	PAGE
CHEMICAL & VOLUME CONTROL SYSTEM	40125-6	0 9/80	29 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
FV-0210Y	D-1	3	B	1"	GL	AO	C	C	NA				NOTE 3
HV-9231	E-8	3	B	2"	GL	AO	C	O	FST BT PIT	OP OP RR			
HV-9236	F-4	3	B	2"	GL	AO	O	C	FST BT PIT	OP OP RR			
HV-9235	D-6	3	B	3"	GA	MO	C	O	BT PIT	CS RR			NOTES 5, 6
HV-9240	D-5	3	B	3"	GA	MO	C	O	BT PIT	CS RR			NOTES 5, 6
HV-9247	E-3	3	B	3"	GA	MO	C	C	BT PIT	CS RR			NOTES 5, 6
'-9257	E-1	3	B	1"	GL	AO	C	C	NA				NOTE 3
½-043-D-885	B-5	2	B	½"	NEEDLE	M	O		NA				NOTE 3

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SYSTEM	P & ID	REVISION - DATE	PAGE
CHEMICAL & VOLUME CONTROL SYSTEM (cont.)	40125-6	0 9/80	30 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
½-045-C-611	G-1	2	C	½"	CK	SA	C	C	NA				NOTE 3
1-037-D-396	C-3	2	B	1"	GL	M	O		NA				NOTE 3
1-038-D-396	C-1	2	B	1"	GL	M	O		NA				NOTE 3
1-045-D-396	E-2	2	B	1"	GL	M	C		NA				NOTE 3
1-047-D-396	E-2	2	B	1"	GL	M	O		NA				NOTE 3
2-040-D-396	E-4	2	B	2"	GL	M	O		NA				NOTE 3
2-042-D-396	B-4	2	B	2"	GL	M	C		NA				NOTE 3
2-044-D-396	C-3	2	B	2"	GL	M	C		NA				NOTE 3
3-004-D-212	D-7	2	B	3"	GA	M	O		NA				NOTES 1, 3
3-005-D-212	C-5	2	B	3"	GA	M	O		NA				NOTES 1, 3

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SYSTEM	P & ID	REVISION - DATE	PAGE
CHEMICAL & VOLUME CONTROL SYSTEM (cont.)	40125-6	0 9/80	31 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
3-006-D-212	D-5	2	B	3"	GA	M	O		NA				NOTES 1, 3
3-007-D-212	D-5	2	B	3"	GA	M	O		NA				NOTES 1, 3
3-033-D-675	C-4	3	C	3"	CK	SA	C	O	CVP CVT	OP CS			
3-034-D-675	C-4	2	B	3"	GA	M	O		NA				NOTES 1, 3
3-035-D-675	D-4	3	C	3"	CK	SA	C	O	CVP CVT	OP CS			NOTES 1, 3
3-036-D-212	D-4	2	B	3"	GA	M	O		NA				NOTES 1, 3

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SYSTEM	P & ID	REVISION - DATE	PAGE
COMPONENT COOLING WATER SYSTEM	40126-10	0 9/80	32 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HCV-6215	D-3	2	B	28"	BTF	M	O		NA				NOTES 1, 3
HCV-6510	G-3	2	B	30"	BTF	M	O		NA				NOTES 1, 3
HCV-6511	G-2	2	B	28"	BTF	M	O		NA				NOTES 1, 3
HCV-6512	F-2	2	B	30"	BTF	M	O		NA				NOTES 1, 3
HCV-6513	D-2	2	B	1"	GL	M	C		NA				NOTES 1, 3
HCV-6514	C-2	2	B	28"	BTF	M	O		NA				NOTES 1, 3
HCV-6515	C-3	2	B	30"	BTF	M	O		NA				NOTES 1, 3
HCV-6547	B-3	3	B	18"	BTF	M	O	O	NA				NOTE 3
HCV-6548	G-3	3	B	18"	BTF	M	O	O	NA				NOTE 3
HV-6200	G-6	3	B	30"	BTF	AO	O&C	O&C	FST BT PIT	OP OP RR			

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SYSTEM	P & ID	REVISION - DATE	PAGE
COMPONENT COOLING WATER SYSTEM (cont.)	40126-10	0 9/80	33 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STRCKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-6201	F-6	3	B	30"	BTF	AO	O&C	O&C	FST BT PIT	OP OP RR			
HV-6202	D-6	3	B	30"	BTF	AO	O&C	O&C	FST BT PIT	OP OP RR			
HV-6203	C-6	3	B	30"	BTF	AO	C	O	FST BT	OP OP			
HV-6211	E-4	2	A	10"	BTF	MO	O	O	AT BT PIT	RR CS RR	10		NOTES 5, 6, 10
HV-6212	E-3	3	B	28"	BTF	AO	O	C	FST BT PIT	CS OP RR			
HV-6213	E-3	3	B	28"	BTF	AO	O	C	FST BT PIT	CS OP RR			

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COMPONENT COOLING WATER SYSTEM (cont.)	40126-10	0 9/80	34 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-6293B	G-2	3	B	8"	BTF	AO	O	C	FST BT PIT	CS OP RR			
HV-6376	G-7	3	B	1"	GA	AO	O	O	NA				NOTE 3
HV-6377	F-7	3	B	1"	GA	AO	O	O	NA				NOTE 3
HV-6378	D-7	3	B	1"	GA	AO	O	O	NA				NOTE 3
HV-6379	C-7	3	B	1"	GA	AO	O	O	NA				NOTE 3
HV-6494	E-2	2	B	30"	BTF	M	O		NA				NOTES 1, 3, 6
HV-6495	D-2	3	B	30"	BTF	MO	C	O	BT PIT	OP RR			NOTE 6
HV-6496	E-2	2	B	30"	BTF	MO	O		NA				NOTES 1, 3, 6
HV-6497	F-2	3	B	30"	BTF	MO	C	O	BT PIT	OP RR			NOTE 6

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SYSTEM	P&ID	REVISION - DATE	PAGE
COMPONENT COOLING WATER SYSTEM (cont.)	40126-10	0 9/80	35 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-6522B	B-2	3	B	8"	BTF	AO	O	C	FST BT PIT	CS OP RR			
1-013-D-691	G-6	3	C	1"	CK	SA	C	O	CVT	OP			
1-014-D-805	G-6	2	B	1"	BALL	M	O		NA				NOTE 3
1-015-D-805	F-6	2	B	1"	BALL	M	O		NA				NOTE 3
1-016-D-691	F-6	3	C	1"	CK	SA	C	O	CVT	OP			
1-019-D-805	G-7	2	B	1"	BALL	M	O		NA				NOTE 3
1-020-D-805	F-7	2	B	1"	BALL	M	O		NA				NOTE 3
1-021-D-691	D-6	3	C	1"	CK	SA	C	O	CVT	OP			
1-022-D-805	D-6	2	B	1"	BALL	M	O		NA				NOTE 3
1-024-D-691	C-7	3	C	1"	CK	SA	C	O	CVT	OP			

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COMPONENT COOLING WATER SYSTEM (cont.)	40126-10	0 9/80	36 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
1-027-D-805	D-7	2	B	1"	BALL	M	O		NA				NOTE 3
1-028-D-805	D-7	2	B	1"	BALL	M	O		NA				NOTE 3
1-031-D-805	D-6	3	C	1"	BALL	M	O		NA				NOTE 3
1-032-D-805	F-8	2	B	1"	BALL	M	O		NA				NOTE 3
1-033-D-805	D-8	2	B	1"	BALL	M	O		NA				NOTE 3
1-034-D-805	C-8	2	B	1"	BALL	M	O		NA				NOTE 3
1½-029-D-691	C-5	3	C	1½"	CK	SA	C	C	NA				NOTE 3
1½-030-D-691	G-5	3	C	1½"	CK	SA	C	C	NA				NOTE 3
1½-226-D-387	B-4	3	B	1½"	GL	M	O	O	NA				NOTE 3
1½-227-D-387	B-4	3	B	1½"	GL	M	O	O	NA				NOTE 3

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COMPONENT COOLING WATER SYSTEM (cont.)	40126-10	0 9/80	37 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
1½-229-D-387	G-4	3	B	1½"	GL	M	O	O	NA				NOTE 3
1½-230-D-387	G-4	3	B	1½"	GL	M	O	O	NA				NOTE 3
2-228-D-387	G-4	3	B	2"	GL	M	O	O	NA				NOTE 3
2-236-D-387	B-3	3	B	2"	GL	M	O	O	NA				NOTE 3
2-258-D-387	G-4	3	B	2"	GL	M	O	O	NA				NOTE 3
2-259-D-387	B-3	3	B	2"	GL	M	O	O	NA				NOTE 3
3-014-D-221	B-2	3	B	3"	GA	M	O	O	NA				NOTE 3
3-015-D-221	G-2	3	B	3"	GA	M	O	O	NA				NOTE 3
12-002-D-221	D-4	2	B	14"	GA	M	O		NA				NOTES 1, 3
30-009-D-722	G-7	3	C	30"	SDCK	SA	O&C	O&C	CVT	OP			

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SYSTEM	P & ID	REVISION - DATE	PAGE
COMPONENT COOLING WATER SYSTEM (cont.)	40126-10	0 9/80	38 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
30-010-D-722	F-7	3	C	30"	SDCK	SA	O&C	O&C	CVT	OP			
30-011-D-722	D-7	3	C	30"	SDCK	SA	O&C	O&C	CVT	OP			
30-012-D-722	C-7	3	C	30"	SDCK	SA	O&C	O&C	CVT	OP			

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ASME-CLASS 1,2 & 3 VALVES

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SYSTEM	P & ID	REVISION - DATE	PAGE
COMPONENT COOLING WATER SYSTEM	40127-9	0 9/80	39 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HCV-6507	G-4	2	B	28"	BTF	M	O		NA				NOTES 1, 3
HCV-6520	G-3	2	B	28"	BTF	M	O		NA				NOTES 3, 6
HCV-6521	D-3	2	B	28"	BTF	M	O		NA				NOTES 1, 3
HCV-6537	F-6	3	B	10"	BTF	AO	O	C	FST BT	OP OP			
HCV-6538	D-6	3	B	10"	BTF	AO	O	C	FST BT	OP OP			
HCV-6539	C-6	3	B	10"	BTF	AO	O	C	FST BT	OP OP			
HV-6216	E-2	2	A	10"	BTF	MO	O	C	AT BT PIT	RR CS RR	10		NOTES 5, 6, 10
HV-6218	E-2	3	B	28"	BTF	AO	O	C	FST BT PIT	CS CS RR			NOTE 5

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SYSTEM	P & ID	REVISION - DATE	PAGE
COMPONENT COOLING WATER SYSTEM (cont.)	40127-9	0 9/80	40 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-6219	D-2	3	B	28"	BTF	AO	O	C	FST BT PIT	CS CS RR			NOTE 5
HV-6221	D-7	2	B	10"	BTF	MO	O		NA				NOTES 3, 6
HV-6222A	G-3	2	B	28"	BTF	MO	O		NA				NOTES 3, 6
HV-6222B	F-3	2	B	28"	BTF	MO	O		NA				NOTES 3, 6
HV-6224A	E-3	2	B	28"	BTF	MO	O		NA				NOTES 3, 6
HV-6224B	D-3	2	B	28"	BTF	M	O		NA				NOTES 3, 6
HV-6225	D-8	2	B	6"	GA	MO	O		NA				NOTES 3, 6
HV-6227	F-4	2	B	3"	GA	MO	C		NA				NOTES 3, 6
HV-6229	D-4	2	B	3"	GA	MO	O		NA				NOTES 3, 6

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SYSTEM	P & ID	REVISION - DATE	PAGE
COMPONENT COOLING WATER SYSTEM (cont.)	40127-9	0 9/80	41 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-6293A	G-6	3	B	8"	BTF	AO	O	C	FST BT PIT	OP OP RR			
HV-6500	B-6	3	B	18"	BTF	AO	C	O	FST BT PIT	OP OP RR			
HV-6501	G-6	3	B	18"	BTF	AO	C	O	FST BT PIT	OP OP RR			
HV-6505	C-8	2	B	6"	GA	MO	O		NA				NOTES 3, 6
HV-6522A	B-6	3	B	8"	BTF	AO	O	C	FST BT PIT	OP OP RR			
HV-6551	E-7	2	B	10"	BTF	MO	O		NA				NOTES 3, 6
HV-6552	D-7	2	B	10"	BTF	MO	O		NA				NOTES 3, 6
1-265-D-627	F-8	3	C	1"	CK	SA	C	C	NA				NOTE 3

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SYSTEM	P & ID	REVISION - DATE	PAGE
COMPONENT COOLING WATER SYSTEM (cont.)	40127-9	0 9/80	42 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
1-267-D-627	D-8	3	C	1"	CK	SA	C	C	NA				NOTE 3
2-108-D-387	D-8	2	B	2"	GL	M	C		NA				NOTES 1, 3
3-268-D-681	F-7	3	C	3"	CK	SA	C	C	NA				NOTE 3
3-269-D-681	C-7	3	C	3"	CK	SA	C	C	NA				NOTE 3
28-101-D-725	G-4	3	C	28"	SDCK	SA	O&C	O&C	CVT	OP			
28-102-D-725	D-4	3	C	28"	SDCK	SA	O&C	O&C	CVT	OP			
28-103-D-725	E-4	3	C	28"	SDCK	SA	O&C	O&C	CVT	OP			

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SYSTEM	P & ID	REVISION - DATE	PAGE
NUCLEAR SAMPLING SYSTEM	40128-7	0 9/80	43 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-0508	H-7	2	A	3/4"	GL	MO	C	C	AT	RR	10		NOTES 9, 10
HV-0509	H-7	2	A	3/4"	GL	MO	C	C	AT	RR	10		NOTES 9, 10
HV-0510	G-8	2	A	3/4"	GL	MO	C	C	AT	RR	10		NOTES 9, 10
HV-0511	G-7	2	A	3/4"	GL	AO	C	C	AT	RR	10		NOTES 9, 10
HV-0512	G-8	2	A	3/4"	GL	MO	C	C	AT	RR	10		NOTES 9, 10
HV-0513	G-7	2	A	3/4"	GL	AO	C	C	AT	RR	10		NOTES 9, 10
HV-0514	C-8	2	A	3/4"	GL	MO	O	C	AT BT PIT	RR OP RR			NOTES 6, 10, 11
HV-0515	C-7	2	A	3/4"	GL	AO	C	C	AT	RR			NOTES 9, 10, 11
HV-0516	C-8	2	A	3/4"	GL	MO	O	C	AT BT PIT	RR OP RR			NOTES 6, 10, 11

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NUCLEAR SAMPLING SYSTEM (cont.)	40128-7	0 9/80	44 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-0517	H-7	2	A	3/4"	GL	MO	C	C	AT	RR	10		NOTES 9, 10
½-003-C-335	H-4	2	B	1/2"	GL	M	C		NA				NOTE 3
½-010-C-335	H-4	2	B	1/2"	GL	M	C		NA				NOTE 3

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SYSTEM	P & ID	REVISION - DATE	PAGE
COOLANT RADWASTE SYSTEM	40131-9	0 9/80	45 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-7512	G-5	2	A	3"	GL	MO	C	C	AT	RR			NOTES 9, 10, 11
HV-7513	G-5	2	A	3"	GL	AO	C	C	AT	RR			NOTES 9, 10, 11

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SYSTEM	P & ID	REVISION - DATE	PAGE
COOLANT AND BORIC ACID RECYCLE SYSTEM	40133-8	0 9/80	46 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
2-321-C-376	B-7	2	A	2"	GL	M	C	C	AT	RR			NOTES 9, 10, 11
2-573-C-611	B-8	2	AC	2"	CK	SA	C	C	AT	RR			NOTES 9, 10, 11

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SYSTEM	P & ID	REVISION - DATE	PAGE
WASTE GAS SYSTEM	40135-8	0 9/80	47 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-7258	H-8	2	A	3"	GA	MO	O	C	AT ET PIT	RR OP RR			NOTES 6, 10
HV-7259	H-8	2	A	3"	GA	AO	O	C	AT FST BT PIT	RR OP OP RR			NOTE 10

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SYSTEM	P & ID	REVISION - DATE	PAGE
NUCLEAR SERVICE WATER SYSTEM	40140-12	0 9/80	48 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-7911	E-5	2	A	3"	GA	AO	O	C	AT BT FST PIT	RR OP OP RR			NOTES 10, 11
3-236-C-575	E-4	2	AC	3"	CK	SA	C	C	AT	RR			NOTES 9, 10, 11

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SYSTEM	P & ID	REVISION - DATE	PAGE
MAIN STEAM	40141-9	0 9/80	49 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-4053	C-6	2	B	6"	GL	AO	O	C	FST BT	OP OP			
HV-4054	E-6	2	B	6"	GL	AO	O	C	FST BT	OP OP			
HV-4057	B-6	2	B	3/4"	GL	AO	O	C	FST BT PIT	OP OP RR			
HV-4058	E-6	2	B	3/4"	GL	AO	O	C	FST BT PIT	OP OP RR			
HV-8200	E-2	2	B	4"	GL	AO	O	O	NA				NOTE 3
HV-8201	F-4	2	B	4"	GL	AO	O	O	NA				NOTE 3
HV-8202	D-2	2	B	4"	GL	AO	C	C	NA				NOTE 3
HV-8203	F-4	2	B	4"	GL	AO	C	C	NA				NOTE 3

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SYSTEM	F & ID	REVISION - DATE	PAGE
MAIN STEAM (cont.)	40141-9	0 9/80	50 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-8204	E-2	2	B	40"	GA	HY	O	C	FST BTP BT PIT	CS OP CS RR			
HV-8205	F-4	2	B	40"	GA	HY	O	C	FST BTP BT PIT	CS OP CS RR			
HV-8248	G-3	2	B	1"	GA	SO	O	C	BT PIT	OP RR			
HV-8249	F-2	2	B	1"	GA	SO	O	C	BT PIT	OP RR			
HV-8419	H-6	2	B	8"	RV	AO	C	O	BT PIT	CS RR			NOTE 5
HV-8421	F-5	2	B	8"	RV	AO	C	O	BT PIT	CS RR			NOTE 5
PSV-8401	G-5	2	C	6"	SV	SA	C	O	RVT				NOTE 2

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SYSTEM	P & ID	REVISION - DATE	PAGE
MAIN STEAM (cont.)	40141-9	0 9/80	51 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
PSV-8402	G-5	2	C	6"	SV	SA	C	O	RVT				NOTE 2
PSV-8403	G-4	2	C	6"	SV	SA	C	O	RVT				NOTE 2
PSV-8404	G-4	2	C	6"	SV	SA	C	O	RVT				NOTE 2
PSV-8405	G-4	2	C	6"	SV	SA	C	O	RVT				NOTE 2
PSV-8406	G-4	2	C	6"	SV	SA	C	O	RVT				NOTE 2
PSV-8407	G-4	2	C	6"	SV	SA	C	O	RVT				NOTE 2
PSV-8408	G-3	2	C	6"	SV	SA	C	O	RVT				NOTE 2
PSV-8409	G-3	2	C	6"	SV	SA	C	C	RVT				NOTE 2
PSV-8410	E-4	2	C	6"	SV	SA	C	O	RVT				NOTE 2
PSV-8411	E-4	2	C	6"	SV	SA	C	O	RVT				NOTE 2

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MAIN STEAM (cont.)	40141-9	0 9/80	52 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
PSV-8412	E-3	2	C	6"	SV	SA	C	O	RVT				NOTE 2
PSV-8413	E-3	2	C	6"	SV	SA	C	O	RVT				NOTE 2
PSV-8414	E-3	2	C	6"	SV	SA	C	O	RVT				NOTE 2
PSV-8415	E-3	2	C	6"	SV	SA	C	O	RVT				NOTE 2
PSV-8416	E-3	2	C	6"	SV	SA	C	O	RVT				NOTE 2
PSV-8417	E-2	2	C	6"	SV	SA	C	O	RVT				NOTE 2
PSV-8418	E-2	2	C	6"	SV	SA	C	O	RVT				NOTE 2
4-003-D-620	F-3	3	C	4"	CK	SA	C	O	CVT	OP			
4-005-D-620	F-2	3	C	4"	CK	SA	C	O	CVT	OP			
6-124-C-599	D-7	2	C	6"	CK	SA	C	O	CVT	CS			NOTE 5
6-448-C-599	F-7	2	C	6"	CK	SA	C	O	CVT	CS			NOTE 5

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MAIN STEAM (cont.)	40141-9	0 9/80	53 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
8-001-C-129	D-5	2	B	8"	GA	M	O		NA				NOTES 1, 3
8-231-C-129	H-6	2	B	8"	GA	M	O		NA				NOTES 1, 3
20-036-C-609	D-7	2	C	20"	CK	SA	O	O	NA				NOTE 7
20-129-C-609	F-7	2	C	20"	CK	SA	O	O	NA				NOTE 7

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CONDENSATE PUMPS SYSTEM	40150-12	0 9/80	54 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
8-471-D-212	G-8	3	B	8"	GA	M	O		NA				NOTES 1, 3
8-473-D-212	G-8	3	B	8"	GA	M	O		NA				NOTES 1, 3

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SYSTEM	P & ID	REVISION - DATE	PAGE
HIGH PRESSURE & AUXILIARY FEEDWATER SYSTEM	40156-8	0 9/80	55 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-4048	F-1	2	B	20"	GA	AO	O	C	FST BT PIT	CS CS RR			NOTE 5
HV-4052	C-1	2	B	20"	GA	AO	O	C	FST BT PIT	CS CS RR			NOTE 5
HV-4705	E-2	3	B	6"	GA	MO	C	O	BT PIT	OP RR			NOTE 6
HV-4706	B-2	3	B	6"	GA	MO	C	O	BT PIT	OP RR			NOTE 6
HV-4712	D-2	3	B	4"	GL	MO	C	O	BT PIT	OP RR			NOTE 6
HV-4713	B-2	3	B	4"	GL	MO	C	O	BT PIT	OP RR			NOTE 6
HV-4714	D-1	2	B	6"	GA	E/H	C	O	FST BT PIT	CS OP RR			

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HIGH PRESSURE & AUXILIARY FEEDWATER SYSTEM	40156-8	0 9/80	56 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-4715	B-1	2	B	6"	GA	MO	C	O	BT PIT	OP RR			NOTE 6
HV-4716	C-4	3	B	4"	GA	MO	C	O	BT PIT	OP RR			NOTE 6
HV-4730	D-1	2	B	6"	GA	MO	C	O	BT	OP			NOTE 6
HV-4731	A-1	2	B	6"	GA	E/H	C	O	FST BT PIT	CS OP RR			
½-496-D-617	B-4	3	C	½"	CK	SA	C	C	NA				NOTE 3
½-497-D-617	B-4	3	C	½"	CK	SA	C	C	NA				NOTE 3
½-498-D-617	C-3	3	C	½"	CK	SA	C	C	NA				NOTE 3
½-499-D-617	C-3	3	C	½"	CK	SA	C	C	NA				NOTE 3
6-121-D-598	C-3	3	C	6"	CK	SA	C	O	CVT	CS			

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HIGH PRESSURE & AUXILIARY FEEDWATER SYSTEM	40156-8	0 9/80	57 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
6-122-D-087	C-3	2	B	6"	GA	M	O		NA				NOTES 1, 3
6-123-D-087	A-2	2	B	6"	GA	M	O		NA				NOTES 1, 3
6-125-D-087	A-2	2	B	6"	GA	M	O		NA				NOTES 1, 3
6-126-D-598	E-3	3	C	6"	CK	SA	C	O	CVT	CS			NOTE 5
6-127-D-087	D-3	3	B	6"	GA	M	O		NA				NOTES 1, 3
6-128-D-087	E-2	2	B	6"	GA	M	O		NA				NOTES 1, 3
6-130-D-087	E-2	2	B	6"	GA	M	O		NA				NOTES 1, 3
6-131-D-087	B-2	2	B	6"	GA	M	O		NA				NOTES 1, 3
6-133-D-087	B-2	2	B	6"	GA	M	O		NA				NOTES 1, 3
6-134-D-087	E-2	2	B	6"	GA	M	O		NA				NOTES 1, 3

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HIGH PRESSURE & AUXILIARY FEEDWATER SYSTEM	40156-8	0 9/80	58 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
6-136-D-087	E-2	2	B	6"	GA	M	O		NA				NOTES 1, 3
8-468-D-212	C-4	3	B	8"	GA	M	O		NA				NOTES 1, 3
8-469-D-212	D-4	3	B	8"	GA	M	O		NA				NOTES 1, 3

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AUXILIARY BOILER SYSTEM	40169-9	0 9/80	59 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
2-037-C-387	E-6	2	A	2"	GA	M	C	C	AT	RR			NOTES 9, 10, 11
2-038-C-387	E-6	2	A	2"	GA	M	C	C	AT	RR			NOTES 9, 10, 11

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HV & AC (NORMAL)	40170-8	0 9/80	60 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-7800	E-4	2	A	3/4"	GA	SO	O	C	AT BT FST PIT	RR OP OP RR	1		NOTE 10
HV-7801	E-4	2	A	3/4"	GA	SO	O	C	AT BT FST PIT	RR OP OP RR	1		NOTE 10
HV-7802	D-4	2	A	3/4"	GA	SO	O	C	AT BT FST PIT	RR OP OP RR	1		NOTE 10
HV-7803	D-3	2	A	3/4"	GA	SO	O	C	AT BT FST PIT	RR OP OP RR	1		NOTE 10
HV-7805	C-4	2	A	3/4"	GA	SO	O	C	AT BT FST PIT	RR OP OP RR	1		NOTE 10

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HV & AC (NORMAL) (cont.)	40170-8	0 9/80	61 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-7806	C-4	2	A	3/4"	GA	SO	O	C	AT BT FST PIT	RR OP OP RR	1		NOTE 10
HV-7810	D-3	2	A	3/4"	GA	SO	O	C	AT BT FST PIT	RR OP OP RR	1		NOTE 10
HV-7811	C-3	2	A	3/4"	GA	SO	O	C	AT BT FST PIT	RR OP OP RR	1		NOTE 10
HV-9900	F-4	2	A	8"	BTF	MO	O	C	AT BT PIT	RR OP RR	10		NOTES 6, 10, 11
HV-9920	F-3	2	A	8"	BTF	AO	O	C	AT BT FST PIT	RR OP OP RR	10		NOTES 10, 11

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HV & AC (NORMAL) (cont.)	40170-8	0 9/80	62 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-9921	E-3	2	A	8"	BTF	AO	O	C	AT BT FST PIT	RR OP OP RR	10		NOTES 10, 11
HV-9971	E-4	2	A	8"	BTF	MO	O	C	AT BT PIT	RR OP RR	10		NOTES 6, 10, 11

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HV & AC (NORMAL)	40171-10	0 9/80	63 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-9821	F-7	2	A	8"	BTF	AO	O	C	AT BT FST PIT	RR OP OP RR	5		NOTE 10
HV-9823	E-5	2	A	8"	BTF	AO	O	C	AT BT FST PIT	RR OP OP RR	5		NOTE 10
HV-9824	E-4	2	A	8"	BTF	AO	O	C	AT BT FST PIT	RR OP OP RR	5		NOTE 10
HV-9825	G-6	2	A	8"	BTF	AO	O	C	AT BT FST PIT	RR OP OP RR	5		NOTE 10
HV-9907AA	C-5	3	B	3"	GA	MO	O	O	NA				NOTE 3
HV-9907AC	C-2	3	B	3"	GA	MO	O	O	NA				NOTE 3

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HV & AC (NORMAL) (cont.)	40171-10	0 9/80	64 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-9907BA	C-2	3	B	3"	GA	MO	O	O	NA				NOTE 3
HV-9907BC	C-2	3	B	3"	GA	MO	O	O	NA				NOTE 3
HV-9948	E-6	2	A	42"	BTF	SO	C	C	AT	RR	10		NOTES 9, 10
HV-9949	E-5	2	A	42"	BTF	MO	C	C	AT	RR	10		NOTES 9, 10
HV-9950	E-4	2	A	42"	BTF	MO	C	C	AT	RR	10		NOTES 9, 10
HV-9951	G-6	2	A	42"	BTF	SO	C	C	AT	RR	10		NOTES 9, 10

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SYSTEM	P & ID	REVISION - DATE	PAGE
HV & AC (EMERGENCY)	40172-9	0 9/80	65 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-0500	F-4	2	A	1"	GA	SO	C	C	AT	RR			NOTES 9, 10, 11
HV-0501	G-2	2	A	1"	GA	SO	C	C	AT	RR			NOTES 9, 10, 11
HV-0502	F-3	2	A	1"	GA	SO	C	C	AT	RR			NOTES 9, 10, 11
HV-0503	G-3	2	A	1"	GA	SO	C	C	AT	RR			NOTES 9, 10, 11
HV-6366	B	2	A	10"	GA	MO	O	O&C	AT BT PIT	RR OP RR	10		NOTES 6, 10
HV-6367	B-7	2	A	10"	GA	MO	C	O&C	AT BT PIT	RR OP RR	10		NOTES 6, 10
HV-6368	C-7	2	A	10"	GA	MO	O	O&C	AT BT PIT	RR OP RR	10		NOTES 6, 10
HV-6369	C-7	2	A	10"	GA	MO	C	O&C	AT BT PIT	RR OP RR	10		NOTES 6, 10

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HV & AC (EMERGENCY) (cont.)	40172-9	0 9/1	66 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-6370	B-2	2	A	10"	GA	MO	O	O&C	AT BT PIT	RR OP RR	10		NOTES 6, 10
HV-6371	B-2	2	A	10"	GA	MO	C	O&C	AT BT PIT	RR OP RR	10		NOTES 6, 10
HV-6372	C-2	2	A	10"	GA	MO	O	O&C	AT BT PIT	RR OP RR	10		NOTES 6, 10
HV-6373	C-2	2	A	10"	GA	MO	C	O&C	AT BT PIT	RR OP RR	10		NOTES 6, 10
HV-9917	D-3	2	A	6"	BTF	MO	C	C	AT	RR			NOTES 1, 6, 10, 11
HV-9918	D-3	2	A	6"	BTF	M	C	C	AT	RR			NOTES 1, 10, 11
HV-9945	D-7	2	A	6"	BTF	M	C	C	AT	RR			NOTES 1, 10, 11
HV-9946	D-6	2	A	6"	BTF	M	C	C	AT	RR			NOTES 1, 6, 10, 11

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HV & AC (EMERGENCY) (cont.)	40172-9	0 9/80	67 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
10-203-C-221	E-6	2	B	10"	GA	M	O	O	NA				NOTE 3
10-204-C-221	E-6	2	B	10"	GA	M	O	O	NA				NOTE 3
10-205-C-221	E-6	2	B	10"	GA	M	O	O	NA				NOTE 3
10-206-C-221	E-6	2	B	10"	GA	M	O	O	NA				NOTE 3
10-207-C-221	E-4	2	B	10"	GA	M	O	O	NA				NOTE 3
10-208-C-221	E-4	2	B	10"	GA	M	O	O	NA				NOTE 3
10-209-C-221	E-4	2	B	10"	GA	M	O	O	NA				NOTE 3
10-210-C-221	E-4	2	B	10"	GA	M	O	O	NA				NOTE 3

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AUXILIARY BUILDING EMERGENCY CHILLED WATER SYSTEM	40179-10	0 9/80	68 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
½-396-D-387	C-4	3	B	½"	GL	M	O		NA				NOTES 1, 3
½-397-D-387	C-4	3	B	½"	GL	M	O		NA				NOTES 1, 3
1½-674-D-145	E-3	3	B	1½"	GA	M	O		NA				NOTES 1, 3
1½-675-D-195	E-4	3	B	1½"	GA	M	O		NA				NOTES 1, 3
4-672-D-221	D-3	3	B	4"	GA	M	O		NA				NOTES 1, 3
4-673-D-221	D-3	3	B	4"	GA	M	O		NA				NOTES 1, 3
8-001-D-801	A-3	3	B	8"	BALL	M	O		NA				NOTES 1, 3
8-003-D-801	B-3	3	B	8"	BALL	M	O		NA				NOTES 1, 3
8-185-D-801	A-3	3	B	8"	BALL	M	O		NA				NOTES 1, 3
8-186-D-801	B-3	3	B	8"	BALL	M	O		NA				NOTES 1, 3

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ASME-CLASS 1,2&3 VALVES
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AUXILIARY BUILDING EMERGENCY CHILLED WATER SYSTEM	40179-10	0 9/80	69 of 72

VALVE NUMBER	COORDINATES	CLASS	CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
8-385-D-801	B-6	3	B	8"	BALL	M	O		NA				NOTES 1, 3
8-389-D-801	B-5	3	B	8"	BALL	M	O		NA				NOTES 1, 3
8-391-D-801	C-3	3	B	8"	BALL	M	O		NA				NOTES 1, 3

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SYSTEM	P & ID	REVISION - DATE	PAGE
AUXILIARY BUILDING EMERGENCY CHILLED WATER SYSTEM	40180-10	0 9/80	70 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX STROKE TIME	RELIEF REQUEST	REMARKS
1½-224-D-387	C-4	3	B	1½"	GL	M	O		NA				NOTES 1, 3
1½-225-D-387	C-4	3	B	1½"	GL	M	O		NA				NOTES 1, 3
1½-678-D-145	E-3	3	B	1½"	GA	M	O		NA				NOTES 1, 3
1½-679-D-145	E-4	3	B	1½"	GA	M	O		NA				NOTES 1, 3
4-676-D-221	D-3	3	B	4"	GA	M	O		NA				NOTES 1, 3
4-677-D-221	D-3	3	B	4"	GA	M	O		NA				NOTES 1, 3
8-007-D-801	B-3	3	B	8"	BALL	M	O		NA				NOTES 1, 3
8-058-D-801	B-6	3	B	8"	BALL	M	O		NA				NOTES 1, 3
8-063-D-801	B-5	3	B	8"	BALL	M	O		NA				NOTES 1, 3
8-180-D-801	A-3	3	B	8"	BALL	M	O		NA				NOTES 1, 3

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SYSTEM	P & ID	REVISION - DATE	PAGE
AUXILIARY BUILDING EMERGENCY CHILLED WATER SYSTEM	40180-10	0 9/80	71 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
8-181-D-801	B-3	3	B	8"	BALL	M	O		NA				NOTES 1, 3
8-243-D-801	A-3	3	B	8"	BALL	M	O		NA				NOTES 1, 3

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SYSTEM	P & ID	REVISION - DATE	PAGE
FIRE PROTECTION SYSTEM	40134-9	0 9/80	72 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
nV-5686	F-3	2	A	4"	GA	MO	C	C	AT	RR			NOTES 9, 10, 11
4-061-C-681	F-4	2	AC	4"	CK	SA	C	C	AT	RR			NOTES 9, 10, 11

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ASME-CLASS 1,2&3 VALVES
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DIESEL GENERATOR SYSTEM	40110-5	0 9/80	1 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
2-001-D-145	D-5	2	B	2"	GA	M	C		NA				NOTES 1, 3
2-003-D-145	D-5	2	B	2"	GA	M	O		NA				NOTES 1, 3
2-006-D-145	H-5	2	B	2"	GA	M	O		NA				NOTES 1, 3
2-011-D-145	G-4	2	B	2"	GA	M	C		NA				NOTES 1, 3

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SYSTEM	P & ID	REVISION - DATE	PAGE
REACTOR COOLANT SYSTEM	40111-6	0 9/80	2 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
PSV-0200	H-6	1	C	6"	SV	SA	C	O	RVT				NOTE 2
PSV-0201	H-6	1	C	6"	SV	SA	C	O	RVT				NOTE 2
3-152-A-551	C-5	1	C	3"	CK	SA	C	O	CVT	RR		VRR-1	

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SAFETY INJECTION SYSTEM	40112-7	0 9/80	3 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
FV-0306	F-2	2	B	12"	BALL	AO	C	O	FST BT	OP OP			
HV-9300	D-8	2	B	24"	GA	MO	O	O	NA				NOTES 3, 6
HV-9301	D-8	2	B	24"	GA	MO	O	O	NA				NOTES 3, 6
HV-9302	B-6	2	A	24"	BTF	MO	C	O	AT BT PIT	RR OP RR	30		NOTES 6, 10
HV-9303	B-6	2	A	24"	BTF	MO	C	O	AT BT PIT	RR OP RR	30		NOTES 6, 10
HV-9304	B-3	2	A	24"	BTF	MO	O	O	AT	RR			NOTES 6, 9, 10
HV-9305	B-3	2	A	24"	BTF	MO	O	O	AT	RR			NOTES 6, 9, 10
HV-9316	G-2	2	B	12"	BALL	AO	C	O	FST BT PIT	OP OP RR			
2-034-C-329	E-4	2	C	2"	SCK	SA	C	O	CVT	OP			NOTE 1

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SAFETY INJECTION SYSTEM (cont.)	40112-7	0 9/80	4 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
2-035-C-329	E-4	2	C	2"	SCK	SA	C	O	CVT	OP			NOTE 1
2-036-C-329	E-3	2	C	2"	SCK	SA	C	O	CVT	OP			NOTE 1
2-037-C-329	G-4	2	C	2"	SCK	SA	C	O	CVT	OP			NOTE 1
2-063-C-329	F-4	2	C	2"	SCK	SA	C	O	CVT	OP			NOTE 1
2-104-C-329	F-3	2	C	2"	SCK	SA	C	O	CVT	OP			NOTE 1
3-155-C-329	D-1	2	C	3"	CK	SA	C	O	CVT	RR		VRR-4	NOTE 5
4-012-C-358	E-3	2	C	4"	SCK	SA	C	O	CVP CVT	OP RR		VRR-7	NOTE 1
4-013-C-075	D-2	2	B	4"	GA	M	C		NA				NOTES 1, 3
4-014-C-075	D-2	2	B	4"	GA	M	C		NA				NOTES 1, 3
4-015-C-358	B-3	2	C	4"	SCK	SA	C	O	CVP CVT	OP OP		VRR-7	NOTE 1

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SAFETY INJECTION SYSTEM (cont.)	40112-7	0 9/80	5 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
4-016-C-358	D-3	2	C	4"	SCK	SA	C	O	CVP CVT	OP RR		VRR-7	NOTE 1
4-017-C-553	B-2	2	C	4"	CK	SA	C	O	CVP CVT	OP RR		VRR-9	
8-007-C-212	E-5	2	B	8"	GA	M	O		NA				NOTES 1, 3
8-009-C-212	C-5	2	B	8"	GA	M	O		NA				NOTES 1, 3
8-010-C-212	D-5	2	B	8"	GA	M	O		NA				NOTES 1, 3
8-011-C-212	D-5	2	B	8"	GA	M	C		NA				NOTES 1, 3
10-006-C-675	E-6	2	C	10"	CK	SA	C	O	CVP CVT	OP RR		VRR-8	
10-008-C-675	B-7	2	C	10"	CK	SA	C	O	CVP CVT	OP RR		VRR-8	
10-024-C-406	G-3	2	C	10"	SCK	SA	C	O	CVT				NOTES 1, 5

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SAFETY INJECTION SYSTEM (cont.)	40112-7	0 9/80	6 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
10-025-C-406	F-3	2	C	10"	SCK	SA	C	O	CVT	CS			NOTES 1, 5
12-038-C-173	F-3	2	B	12"	GA	M	C	O	BT	OP			NOTE 1
12-039-C-173	F-3	2	B	12"	GA	M	C	O	BT	OP			NOTE 1
14-015-C-173	G-6	2	B	14"	GA	M	C	O	BT	OP			NOTE 1
14-018-C-173	F-6	2	B	14"	GA	M	C	O	BT	OP			NOTE 1
14-078-C-173	G-2	2	B	14"	GA	M	O		NA				NOTE 3
14-079-C-173	G-2	2	B	14"	GA	M	C	O	BT	OP			NOTE 1
14-080-C-173	G-2	2	B	14"	GA	M	O		NA				NOTE 3
14-081-C-173	F-3	2	B	14"	GA	M	O		NA				NOTES 1, 3
14-082-C-173	F-3	2	B	14"	GA	M	O		NA				NOTES 1, 3

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SAFETY INJECTION SYSTEM (cont.)	40112-7	0 9/80	7 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
14-153-C-173	F-2	2	B	14"	GA	M	O	C	BT	CS			NOTES 1, 5
16-005-C-212	F-7	2	B	16"	GA	M	O		NA				NOTES 1, 3
16-022-C-173	G-6	2	B	16"	GA	M	O	C	BT	OP			NOTE 1
16-023-C-173	F-6	2	B	16"	GA	M	O	C	BT	OP			NOTE 1
16-062-C-212	G-7	2	B	16"	GA	M	O		NA				NOTES 1, 3
16-077-C-645	F-7	2	C	16"	CK	SA	C	O	CVP	OP		VRR-12	NOTE 4
16-084-C-645	G-6	2	C	16"	CK	SA	C	O	CVP	OP		VRR-12	NOTE 4
24-001-C-724	D-8	2	C	24"	SDCK	SA	C	O	CVP	OP		VRR-2	NOTE 4
24-002-C-724	D-8	2	C	24"	SDCK	SA	C	O	CVP	OP		VRR-2	NOTE 4
24-003-C-724	B-7	2	C	24"	SDCK	SA	O&C	O&C	CVP	RR		VRR-3	NOTE 4
24-004-C-724	B-7	2	C	24"	SDCK	SA	O&C	O&C	CVP	RR		VRR-3	NOTE 4

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SAFETY INJECTION SYSTEM	40113-6	0 9/80	8 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-9322	H-7	2	B	8"	GL	MO	C	O	BT PIT	OP RR			NOTE 6
HV-9323	G-7	2	B	2"	GL	MO	C	O	BT PIT	OP RR			NOTE 6
HV-9324	F-7	2	B	2"	GL	MO	C	O	BT PIT	OP RR			NOTE 6
HV-9325	F-7	2	B	8"	GL	MO	C	O	BT PIT	OP RR			NOTE 6
HV-9326	E-7	2	B	2"	GL	MO	C	O	BT PIT	OP RR			NOTE 6
HV-9327	E-7	2	B	2"	GL	MO	C	O	BT PIT	OP RR			NOTE 6
HV-9328	D-7	2	B	8"	GL	MO	C	O	BT PIT	OP RR			NOTE 6
HV-9329	C-7	2	B	2"	GL	MO	C	O	BT PIT	OP RR			NOTE 6

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SAFETY INJECTION SYSTEM	40113-6	0 9/80	9 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-9330	C-7	2	B	2"	GL	MO	C	O	BT PIT	OP RR			NOTE 6
HV-9331	B-7	2	B	8"	GL	MO	C	O	BT PIT	OP RR			NOTE 6
HV-9332	B-7	2	B	2"	GL	MO	C	O	BT PIT	OP RR			NOTE 6
HV-9333	A-7	2	B	2"	GL	MO	C	O	BT PIT	OP RR			NOTE 6
HV-9334	E-6	2	A	2"	GL	M	C	C	AT	RR			NOTES 9, 10, 11
HV-9336	E-6	2	A	16"	GA	MO	O&C	O&C	AT BT PIT	RR OP RR			NOTES 1, 6, 10
HV-9337	E-4	1	A	16"	GA	MO	O&C	O&C	AT BT PIT	RR CS RR			NOTES 1, 5, 6, 10
HV-9339	E-3	1	B	10"	GA	MO	O&C	O&C	BT PIT	CS RR			NOTES 1, 5, 6

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SAFETY INJECTION SYSTEM (cont.)	40113-6	0 9/80	10 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-9340	F-5	1	B	12"	GA	MO	O	C	BT PIT	CS RR			NOTES 1, 5, 6
HV-9341	E-4	1	B	1"	GL	M	C	C	NA				NOTE 3
HV-9345	G-5	2	B	1"	GL	SO	C	O	FST BT PIT	CS CS RR			NOTES 1, 5
HV-9350	F-2	1	B	12"	GA	MO	O	C	BT PIT	CS RR			NOTES 1, 5, 6
HV-9353	D-7	2	B	8"	GA	MO	C	C	BT PIT	OP RR			NOTES 1, 6
HV-9355	G-1	2	B	1"	GL	SO	C	O	FST BT PIT	CS CS RR			NOTES 1, 5
HV-9359	D-7	2	B	8"	GA	MO	C	C	BT PIT	OP RR			NOTES 1, 6
HV-9360	B-5	1	B	12"	GA	MO	O	C	BT PIT	CS RR			NOTES 1, 5, 6

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SAFETY INJECTION SYSTEM (cont.)	40113-6	0 9/80	11 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-9361	B-4	1	B	1"	GL	M	C	C	NA				NOTE 3
HV-9365	D-5	2	B	1"	GL	SO	C	O	FST BT PIT	CS CS RR			NOTES 1, 5
HV-9370	B-2	1	B	12"	GA	MO	O	C	BT PIT	CS RR			NOTES 1, 5, 6
HV-9375	C-1	1	B	1"	GL	SO	C	O	FST BT PIT	CS CS RR			NOTES 1, 5
HV-9377	D-4	1	A	10"	GA	MO	O&C	O&C	AT BT PIT	RR CS RR			NOTES 1, 5, 6, 10
HV-9378	D-3	1	B	10"	GA	MO	O&C	O&C	BT PIT	CS RR			NOTES 1, 5, 6
HV-9379	D-6	2	A	16"	GA	MO	O&C	O&C	AT BT PIT	RR OP RR			NOTES 1, 6, 10
PSV-9349	E-5	2	C	8"	RV	SA	C	O	RVT				NOTE 2

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SAFETY INJECTION SYSTEM (cont.)	40113-6	0 9/80	12 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
2-099-C-334	E-7	2	A	2"	GL	M	C	C	AT	RR			NOTES 9, 10, 11
3-018-A-551	G-6	1	C	3"	CK	SA	C	O	CVP CVT	OP RR		VRR-10	
3-019-A-551	E-6	1	C	3"	CK	SA	C	O	CVP CVT	OP RR		VRR-10	
3-020-A-551	C-6	1	C	3"	CK	SA	C	O	CVP CVT	OP RR		VRR-10	
3-021-A-551	A-6	1	C	3"	CK	SA	C	O	CVT CVP	OP RR		VRR-10	
3-156-A-551	D-3	1	C	3"	CK	SA	C	O	CVT	RR		VRR-5	NOTE 5
8-072-A-552	G-6	1	C	8"	CK	SA	C	O	CVT	CS			NOTE 5
8-073-A-552	F-6	1	C	8"	CK	SA	C	O	CVT	CS			NOTE 5
8-074-A-552	D-6	1	C	8"	CK	SA	C	O	CVT	CS			NOTE 5
8-075-A-552	B-6	1	C	8"	CK	SA	C	O	CVT	CS			NOTE 5

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SAFETY INJECTION SYSTEM (cont.)	40113-6	0 9/80	13 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
12-027-A-551	F-4	1	C	12"	CK	SA	C	O	CVT	CS			NOTE 5
12-029-A-551	F-1	1	C	12"	CK	SA	C	O	CVT	CS			NOTE 5
12-031-A-551	A-4	1	C	12"	CK	SA	C	O	CVT	CS			NOTE 5
12-033-A-551	A-21	1	C	12"	CK	SA	C	O	CVT	CS			NOTE 5
12-040-A-551	F-5	1	C	12"	CK	SA	C	O	CVP	CS		VRR-11	NOTES 4, 5
12-041-A-551	F-2	1	C	12"	CK	SA	C	O	CVP	CS		VRR-11	NOTES 4, 5
12-042-A-551	B-5	1	C	12"	CK	SA	C	O	CVP	CS		VRR-11	NOTES 4, 5
12-043-A-551	B-2	1	C	12"	CK	SA	C	O	CVP	CS		VRR-11	NOTES 4, 5

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CONTAINMENT SPRAY	40114-6	0 9/80	14 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
FV-0318	E-6	2	B	2"	GL	E/H	C	O	BT PIT	OP RR			NOTES 1, 6
FV-0328	F-6	2	B	2"	GL	E/H	C	O	BT PIT	OP RR			NOTES 1, 6
HV-9306	F-4	2	B	4"	GA	MO	O	O&C	BT PIT	OP RR			NOTES 1, 6
HV-9307	E-4	2	B	4"	GA	MO	O	O&C	BT PIT	OP RR			NOTES 1, 6
HV-9347	F-5	2	B	4"	GA	MO	O	O	BT PIT	OP RR			NOTES 1, 6
HV-9348	E-5	2	B	4"	GA	MO	O	O	BT PIT	OP RR			NOTES 1, 6
HV-9367	C-2	2	A	8"	GA	MO	C	O	AT BT PIT	RR OP RR	10		NOTES 1, 6, 10

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CONTAINMENT SPRAY (cont.)	40114-6	0 9/80	15 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-9368	E-2	2	A	8"	GA	MO	C	O	AT BT PIT	RR OP RR	10		NOTES 1, 6, 10
HV-9398	F-6	2	B	2"	GL	SO	C	O	FST BT PIT	OP OP RR			NOTE 1
HV-9399	E-6	2	B	2"	GL	SO	C	O	FST BT PIT	OP OP RR			NOTE 1
HV-9420	B-7	2	A	3"	GL	MO	C	O	AT BT PIT	RR OP RR			NOTES 1, 6, 10
HV-9433	A-7	1	B	1"	GL	AO	C	C	NA				NOTE 3
HV-9434	C-7	2	A	3"	GL	MO	C	O	AT BT PIT	RR OP RR			NOTES 1, 6, 10
HV-9437	B-7	1	B	1"	GL	AO	C	C	NA				NOTE 3

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CONTAINMENT SPRAY (cont.)	40114-6	0 9/80	16 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
2-010-C-329	D-5	2	C	2"	SCK	SA	C	O	CVT	OP			NOTE 1
2-011-C-329	D-5	2	C	2"	SCK	SA	C	O	CVP	OP			NOTE 1
2-050-C-376	F-8	2	B	2"	GL	H	O		NA				NOTES 1, 3
2-051-C-376	F-7	2	C	2"	CK	SA	C	O	CVT	OP			
2-052-C-376	F-8	2	B	2"	GL	M	O		NA				NOTES 1, 3
2-053-C-611	E-7	2	C	2"	CK	SA	C	O	CVT				
2-054-C-611	F-7	2	C	2"	CK	SA	C	O	CVT	OP			
2-055-C-376	G-7	2	B	2"	GL	M	O		NA				NOTES 1, 3
2-069-C-611	G-7	2	C	2"	CK	SA	C	O	CVT	OP			
3-066-A-050	C-7	1	B	3"	GA	M	O		NA				NOTES 1, 3
3-067-A-050	B-7	1	B	3"	GA	M	O		NA				NOTES 1, 3

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CONTAINMENT SPRAY (cont.)	40114-6	0 9/80	17 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
3-157-A-551	C-7	1	AC	3"	CK	SA	C	O	AT CVT	RR RR		VRR-6	NOTE 5, 10
3-158-A-551	B-7	1	AC	3"	CK	SA	C	O	AT CVT	RR RR		VRR-6	NOTE 5, 10
8-003-C-173	D-2	2	B	8"	GA	M	O		NA				NOTES 1,3
8-004-C-406	C-1	2	AC	8"	SCK	SA	C	O	AT CVT			VRR-13	NOTES 1, 8, 10
8-005-C-173	E-2	2	B	8"	GA	M	O		NA				NOTES 1, 3
8-006-C-406	E-1	2	AC	8"	SCK	SA	C	O	AT CVT			VRR-13	NOTES 1, 8, 10
8-012-C-406	C-5	2	C	8"	SCK	SA	C	O	CVT	OP			NOTE 1
8-014-C-406	E-5	2	C	8"	SCK	SA	C	O	CVT	OP			NOTE 1
12-001-C-173	D-2	2	B	12"	GA	M	C	O	BT	OP			NOTE 1

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CONTAINMENT SPRAY (cont.)	40114-6	0 9/80	18 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
12-002-C-173	D-2	2	B	12"	GA	M	C	O	BT	OP			NOTE 1
16-087-C-675	E-7	2	C	16"	CK	SA	C	O	CVT	OP			
16-088-C-675	E-7	2	C	16"	CK	SA	C	O	CVT	OP			

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DIESEL GENERATOR FUEL STORAGE SYSTEM	40116-7	0 9/80	19 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
2-039-D-627	C-6	3	C	2"	CK	SA	C	O	CVT	OP			
2-040-D-145	C-5	2	B	2"	GA	M	O		NA				NOTES 1, 3
2-041-D-145	F-5	2	B	2"	GA	M	O		NA				NOTES 1, 3
2-043-D-145	F-5	2	B	2"	GA	M	O		NA				NOTES 1, 3
2-044-D-145	G-6	2	B	2"	GA	M	O		NA				NOTES 1, 3
2-045-D-145	F-6	2	B	2"	GA	M	O		NA				NOTES 1, 3
2-047-D-145	F-6	2	B	2"	GA	M	O		NA				NOTES 1, 3
2-048-D-627	C-6	3	C	2"	CK	SA	C	O	CVT	OP			
2-049-D-145	C-6	2	B	2"	GA	M	O		NA				NOTES 1, 3
2-054-D-145	C-3	3	C	2"	CK	SA	C	O	CVT	OP			

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DIESEL GENERATOR FUEL STORAGE SYSTEM (cont.)	40116-7	0 9/80	20 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
2-055-D-145	C-3	2	B	2"	GA	M	O		NA				NOTES 1, 3
2-056-D-145	F-3	2	B	2"	GA	M	O		NA				NOTES 1, 3
2-058-D-145	G-3	2	B	2"	GA	M	O		NA				NOTES 1, 3
2-059-D-145	G-3	2	B	2"	GA	M	O		NA				NOTES 1, 3
2-060-D-145	F-4	2	B	2"	GA	M	O		NA				NOTES 1, 3
2-062-D-145	G-4	2	B	2"	GA	M	C		NA				NOTES 1, 3
2-063-D-627	C-4	3	C	2"	CK	SA	C	O	CVT	OP			
2-064-D-145	C-4	2	B	2"	GA	M	O		NA				NOTES 1, 3
3-052-D-221	C-6	2	B	3"	GA	M	C		NA				NOTES 1, 3
3-065-D-221	D-4	2	B	3"	GA	M	C		NA				NOTES 1, 3

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DIESEL GENERATOR FUEL STORAGE SYSTEM (cont.)	40116-7	0 9/80	21 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
3-067-D-221	C-3	2	B	3"	GA	M	C		NA				NOTES 1. 3
3-075-D-221	D-6	2	B	3"	GA	M	O		NA				NOTES 1, 3
3-076-D-221	D-3	2	B	3"	GA	M	O		NA				NCTES 1, 3

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SUMPS & DRAINS SYSTEM	40117-12	0 9/80	22 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-5803	B-2	2	A	3"	GA	MO	O	C	AT BT PIT	RR OP RR			NOTES 6, 10, 11
HV-5804	B-2	2	A	3"	GA	AO	O	C	AT BT FST PT	RR OP OP RR			NOTES 10, 11

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FUEL POOL COOLING SYSTEM	40122-10	0 9/80	23 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HCV-7766	F-2	2	B	24"	BTF	M	O		NA				NOTES 1, 3
HCV-7767	F-2	2	B	24"	BTF	M	O		NA				NOTES 1, 3
1-028-D-611	G-3	3	C	1"	CK	SA	C	C	NA				NOTE 3
6-067-C-212	F-3	2	B	6"	GA	M	O		NA				NOTES 1, 3
10-068-C-076	G-2	2	B	10"	GA	M	O		NA				NOTES 1, 3
10-100-C-212	E-3	2	A	10"	GA	M	C	C	AT	RR			NOTES 1, 9, 10, 11
10-101-C-212	E-4	2	A	10"	GA	M	C	C	AT	RR			NOTES 1, 9, 10, 11

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CHEMICAL & VOLUME CONTROL SYSTEM	40123-7	0 9/80	24 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-9200	B-5	2	A	2"	GL	AO	O	O&C	AT BT FST PIT	RR CS RR RR			NOTES 1, 5, 10
HV-9201	C-7	1	B	2"	GA	MO	C	O	BT PIT	CS RR			NOTES 1, 5, 6
HV-9202	C-7	1	B	2"	GA	MO	O	O	NA				NOTES 3, 6
HV-9203	B-7	1	B	2"	GA	MO	O	O	NA				NOTES 3, 6
HV-9204	D-7	1	B	2"	GA	AO	O	C	FST BT PIT	CS CS RR			NOTE 5
HV-9205	E-6	2	A	2"	GL	AO	O	C	AT FST BT PIT	RR CS CS RR	5		NOTES 5, 10
TV-0221	D-7	1	B	2"	GL	AO	O	C	FST BT PIT	CS CS RR			NOTE 5

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SYSTEM	P & ID	REVISION - DATE	PAGE
CHEMICAL & VOLUME CONTROL SYSTEM (cont.)	40123-7	0 9/80	25 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
TV-9267	D-6	2	A	2"	GA	MO	O	O	AT BT PIT	RR CS RR	10		NOTES 5, 6, 10
2-019-A-554	C-7	1	C	2"	CK	SA	C	O	CVT	CS			NOTE 5
2-020-A-554	C-7	1	C	2"	CK	SA	C	O	CVT	OP			
2-021-A-554	B-7	1	C	2"	CK	SA	C	O	CVT	OP			
2-084-C-334	B-5	2	B	2"	GL	M	O		NA				NOTES 1, 3
2-091-C-334	B-4	2	B	2"	GL	M	O		NA				NOTES 1, 3
2-107-A-305	B-7	2	B	2"	GL	M	O		NA				NOTES 1, 3
2-122-C-554	B-6	2	B	2"	CK	SA	C	O	AT CVT	RR OP			NOTES 7, 10
3-092-C-105	E-7	2	B	3"	GA	M	O		NA				NOTE 3

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SYSTEM	P & ID	REVISION - DATE	PAGE
CHEMICAL & VOLUME CONTROL SYSTEM	40124-6	0 9/80	26 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-9217	G-5	2	A	3/4"	GL	MO	O	C	AT BT PIT	RR CS RR			NOTES 5, 6, 10
HV-9218	G-5	2	A	3/4"	GL	AO	O	C	AT FST BT PIT	RR CS CS RR			NOTES 5, 10
LV-0227B	D-7	2	B	4"	GA	MO	O	C	BT PIT	CS RR			NOTES 5, 6
LV-0227C	C-5	2	B	4"	GA	MO	C	O	BT PIT	CS RR			NOTE 6
1½-094-C-611	D-5	2	C	1½"	CK	SA	C	C	NA				NOTE 3
2-017-C-554	D-2	2	C	2"	CK	SA	C	O	CVT	OP			
2-018-C-334	D-2	2	B	2"	GL	M	O		NA				NOTES 1, 3
2-064-C-334	F-1	2	B	2"	GL	M	O		NA				NOTE 3

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SYSTEM	P & ID	REVISION - DATE	PAGE
CHEMICAL & VOLUME CONTROL SYSTEM (cont.)	40124-6	0 9/80	27 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
2-067-C-554	G-2	2	C	2"	CK	SA	C	O	CVT	OP			
2-068-C-334	G-2	2	B	2"	GL	M	O		NA				NOTES 1, 3
2-069-C-554	E-2	2	C	2"	CK	SA	C	O	CVT	OP			
2-070-C-334	E-2	2	B	2"	GL	M	O		NA				NOTES 1, 3
3-053-C-675	C-3	2	C	3"	CK	SA	C	C	NA				NOTE 3
3-082-C-675	G-3	2	C	3"	CK	SA	C	O	CVT	CS			NOTE 5
3-083-C-675	F-3	2	C	3"	CK	SA	C	O	CVT	CS			NOTE 5
4-015-C-675	D-6	2	C	4"	CK	SA	C	O	CVT	OP			
4-016-C-212	D-3	2	B	4"	GA	M	O		NA				NOTES 1, 3
4-062-C-212	G-3	2	B	4"	GA	M	O		NA				NOTES 1, 3

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SYSTEM	P & ID	REVISION - DATE	PAGE
CHEMICAL & VOLUME CONTROL SYSTEM (cont.)	40124-6	0 9/80	28 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
4-063-C-212	E-3	2	B	4"	GA	M	O		NA				NOTES 1, 3
6-052-C-675	D-3	2	C	6"	CK	SA	C	O	CVT	CS			NOTE 5
6-054-C-212	D-4	2	B	6"	GA	M	O		NA				NOTES 1, 3

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CHEMICAL & VOLUME CONTROL SYSTEM	40125-6	0 9/80	29 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
FV-0210Y	D-1	3	B	1"	GL	AO	C	C	NA				NOTE 3
HV-9231	E-8	3	B	2"	GL	AO	C	O	FST BT PIT	OP OP RR			
HV-9236	F-4	3	B	2"	GL	AO	O	C	FST BT PIT	OP OP RR			
HV-9235	D-6	3	B	3"	GA	MO	C	O	BT PIT	CS RR			NOTES 5, 6
HV-9240	D-5	3	B	3"	GA	MO	C	O	BT PIT	CS RR			NOTES 5, 6
HV-9247	E-3	3	B	3"	GA	MO	C	C	BT PIT	CS RR			NOTES 5, 6
HV-9257	E-1	3	B	1"	GL	AO	C	C	NA				NOTE 3
½-043-D-885	B-5	2	B	½"	NEEDLE	M	O		NA				NOTE 3

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SYSTEM	P & ID	REVISION - DATE	PAGE
CHEMICAL & VOLUME CONTROL SYSTEM (cont.)	40125-6	0 9/80	30 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
½-045-C-611	G-1	2	C	½"	CK	SA	C	C	NA				NOTE 3
1-037-D-396	C-3	2	B	1"	GL	M	O		NA				NOTE 3
1-038-D-396	C-1	2	B	1"	GL	M	O		NA				NOTE 3
1-045-D-396	E-2	2	B	1"	GL	M	C		NA				NOTE 3
1-047-D-396	E-2	2	B	1"	GL	M	O		NA				NOTE 3
2-040-D-396	E-4	2	B	2"	GL	M	O		NA				NOTE 3
2-042-D-396	B-4	2	B	2"	GL	M	C		NA				NOTE 3
2-044-D-396	C-3	2	B	2"	GL	M	C		NA				NOTE 3
3-004-D-212	D-7	2	B	3"	GA	M	O		NA				NOTES 1, 3
3-005-D-212	C-5	2	B	3"	GA	M	O		NA				NOTES 1, 3

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SYSTEM	P & ID	REVISION - DATE	PAGE
CHEMICAL & VOLUME CONTROL SYSTEM (cont.)	40125-6	0 9/80	31 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
3-006-D-212	D-5	2	B	3"	GA	M	O		NA				NOTES 1, 3
3-007-D-212	D-5	2	B	3"	GA	M	O		NA				NOTES 1, 3
3-033-D-675	C-4	3	C	3"	CK	SA	C	O	CVP CVT	OP CS			
3-034-D-675	C-4	2	B	3"	GA	M	O		NA				NOTES 1, 3
3-035-D-675	D-4	3	C	3"	CK	SA	C	O	CVP CVT	OP CS			NOTES 1, 3
3-036-D-212	D-4	2	B	3"	GA	M	O		NA				NOTES 1, 3

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COMPONENT COOLING WATER SYSTEM	40126-10	0 9/80	32 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HCV-6215	D-3	2	B	28"	BTF	M	O		NA				NOTES 1, 3
HCV-6510	G-3	2	B	30"	BTF	M	O		NA				NOTES 1, 3
HCV-6511	G-2	2	B	28"	BTF	M	O		NA				NOTES 1, 3
HCV-6512	F-2	2	B	30"	BTF	M	O		NA				NOTES 1, 3
HCV-6513	D-2	2	B	1"	GL	M	C		NA				NOTES 1, 3
HCV-6514	C-2	2	B	28"	BTF	M	O		NA				NOTES 1, 3
HCV-6515	C-3	2	B	30"	BTF	M	O		NA				NOTES 1, 3
HCV-6547	B-3	3	B	18"	BTF	M	O	O	NA				NOTE 3
HCV-6548	G-3	3	B	18"	BTF	M	O	O	NA				NOTE 3
HV-6200	G-6	3	B	30"	BTF	AO	O&C	O&C	FST BT PIT	OP OP RR			

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COMPONENT COOLING WATER SYSTEM (cont.)	40126-10	0 9/80	33 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-6201	F-6	3	B	30"	BTF	AO	O&C	O&C	FST BT PIT	OP OP RR			
HV-6202	D-6	3	B	30"	BTF	AO	O&C	O&C	FST BT PIT	OP OP RR			
HV-6203	C-6	3	B	30"	BTF	AO	C	O	FST BT	OP OP			
HV-6211	E-4	2	A	10"	BTF	MO	O	O	AT BT PIT	RR CS RR	10		NOTES 5, 6, 10
HV-6212	E-3	3	B	28"	BTF	AO	O	C	FST BT PIT	CS OP RR			
HV-6213	E-3	3	B	28"	BTF	AO	O	C	FST BT PIT	CS OP RR			

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SYSTEM	P & ID	REVISION - DATE	PAGE
COMPONENT COOLING WATER SYSTEM (cont.)	40126-10	0 9/80	34 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-6293B	G-2	3	B	8"	BTF	AO	O	C	FST BT PIT	CS OP RR			
HV-6376	G-7	3	B	1"	GA	AO	O	O	NA				NOTE 3
HV-6377	F-7	3	B	1"	GA	AO	O	O	NA				NOTE 3
HV-6378	D-7	3	B	1"	GA	AO	O	O	NA				NOTE 3
HV-6379	C-7	3	B	1"	GA	AO	O	O	NA				NOTE 3
HV-6494	E-2	2	B	30"	BTF	M	O		NA				NOTES 1, 3, 6
HV-6495	D-2	3	B	30"	BTF	MO	C	O	BT PIT	OP RR			NOTE 6
HV-6496	E-2	2	B	30"	BTF	MO	O		NA				NOTES 1, 3, 6
HV-6497	F-2	3	B	30"	BTF	MO	C	O	BT PIT	OP RR			NOTE 6

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COMPONENT COOLING WATER SYSTEM (cont.)	40126-10	0 9/80	35 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-6522B	B-2	3	B	8"	BTF	AO	O	C	FST BT PIT	CS OP RR			
1-013-D-691	G-6	3	C	1"	CK	SA	C	O	CVT	OP			
1-014-D-805	G-6	2	B	1"	BALL	M	O		NA				NOTE 3
1-015-D-805	F-6	2	B	1"	BALL	M	O		NA				NOTE 3
1-016-D-691	F-6	3	C	1"	CK	SA	C	O	CVT	OP			
1-019-D-805	G-7	2	B	1"	BALL	M	O		NA				NOTE 3
1-020-D-805	F-7	2	B	1"	BALL	M	O		NA				NOTE 3
1-021-D-691	D-6	3	C	1"	CK	SA	C	O	CVT	OP			
1-022-D-805	D-6	2	B	1"	BALL	M	O		NA				NOTE 3
1-024-D-691	C-7	3	C	1"	CK	SA	C	O	CVT	OP			

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SYSTEM	P & ID	REVISION - DATE	PAGE
COMPONENT COOLING WATER SYSTEM (cont.)	40126-10	0 9/80	36 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
1-027-D-805	D-7	2	B	1"	BALL	M	O		NA				NOTE 3
1-028-D-805	D-7	2	B	1"	BALL	M	O		NA				NOTE 3
1-031-D-805	D-6	3	C	1"	BALL	M	O		NA				NOTE 3
1-032-D-805	F-8	2	B	1"	BALL	M	O		Na				NOTE 3
1-033-D-805	D-8	2	B	1"	BALL	M	O		NA				NOTE 3
1-034-D-805	C-8	2	B	1"	BALL	M	O		NA				NOTE 3
1½-029-D-691	C-5	3	C	1½"	CK	SA	C	C	NA				NOTE 3
1½-030-D-691	G-5	3	C	1½"	CK	SA	C	C	NA				NOTE 3
1½-226-D-387	B-4	3	B	1½"	GL	M	O	O	NA				NOTE 3
1½-227-D-387	B-4	3	B	1½"	GL	M	O	O	NA				NOTE 3

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SYSTEM	P & ID	REVISION - DATE	PAGE
COMPONENT COOLING WATER SYSTEM (cont.)	40126-10	0 9/80	37 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
1½-229-D-387	G-4	3	B	1½"	GL	M	O	O	NA				NOTE 3
1½-230-D-387	G-4	3	B	1½"	GL	M	O	O	NA				NOTE 3
2-228-D-387	G-4	3	B	2"	GL	M	O	O	NA				NOTE 3
2-236-D-387	B-3	3	B	2"	GL	M	O	O	NA				NOTE 3
2-258-D-387	G-4	3	B	2"	GL	M	O	O	NA				NOTE 3
2-259-D-387	B-3	3	B	2"	GL	M	O	O	NA				NOTE 3
3-014-D-221	B-2	3	B	3"	GA	M	O	O	NA				NOTE 3
3-015-D-221	G-2	3	B	3"	GA	M	O	O	NA				NOTE 3
12-002-D-221	D-4	2	B	12"	GA	M	O		NA				NOTES 1, 3
30-009-D-722	G-7	3	C	30"	SDCK	SA	O&C	O&C	CVT	OP			

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COMPONENT COOLING WATER SYSTEM (cont.)	40126-10	0 9/80	38 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
30-010-D-722	F-7	3	C	30"	SDCK	SA	O&C	O&C	CVT	OP			
30-011-D-722	D-7	3	C	30"	SDCK	SA	O&C	O&C	CVT	OP			
30-012-D-722	C-7	3	C	30"	SDCK	SA	O&C	O&C	CVT	OP			

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COMPONENT COOLING WATER SYSTEM	40127-9	0 9/80	39 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HCV-6507	G-4	2	B	28"	BTF	M	O		NA				NOTES 1, 3
HCV-6520	G-3	2	B	28"	BTF	M	O		NA				NOTES 3, 6
HCV-6521	D-3	2	B	28"	BTF	M	O		NA				NOTES 1, 3
HCV-6537	F-6	3	B	10"	BTF	AO	O	C	FST BT	OP OP			
HCV-6538	D-6	3	B	10"	BTF	AO	O	C	FST BT	OP OP			
HCV-6539	C-6	3	B	10"	BTF	AO	O	C	FST BT	OP OP			
HV-6216	E-2	2	A	10"	BTF	MO	O	C	AT BT PIT	RR CS RR	10		NOTES 5, 6, 10
HV-6218	E-2	3	B	28"	BTF	AO	O	C	FST BT PIT	CS CS RR			NOTE 5

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COMPONENT COOLING WATER SYSTEM (cont.)	40127-9	0 9/80	40 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-6219	D-2	3	B	28"	BTF	AO	O	C	FST BT P1T	CS CS RR			NOTE 5
HV-6221	D-7	2	B	10"	BTF	MO	O		NA				NOTES 3, 6
HV-6222A	G-3	2	B	28"	BTF	MO	O		NA				NOTES 3, 6
HV-6222B	F-3	2	B	28"	BTF	MO	O		NA				NOTES 3, 6
HV-6224A	E-3	2	B	28"	BTF	MO	O		NA				NOTES 3, 6
HV-6224B	D-3	2	B	28"	BTF	M	O		NA				NOTES 3, 6
HV-6225	D-8	2	B	6"	GA	MO	O		NA				NOTES 3, 6
HV-6227	F-4	2	B	3"	GA	MO	C		NA				NOTES 3, 6
HV-6229	D-4	2	B	3"	GA	MO	O		NA				NOTES 3, 6

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COMPONENT COOLING WATER SYSTEM (cont.)	40127-9	0 9/80	41 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-6293A	G-6	3	B	8"	BTF	AO	O	C	FST BT PIT	OP OP RR			
HV-6500	B-6	3	B	18"	BTF	AO	C	O	FST BT PIT	OP OP RR			
HV-6501	G-6	3	B	18"	BTF	AO	C	O	FST BT PIT	OP OP RR			
HV-6505	C-8	2	B	6"	GA	MO	O		NA				NOTES 3, 6
HV-6522A	B-6	3	B	8"	BTF	AO	O	C	FST BT PIT	OP OP RR			
HV-6551	E-7	2	B	10"	BTF	MO	O		NA				NOTES 3, 6
HV-6552	D-7	2	B	10"	BTF	MO	O		NA				NOTES 3, 6
1-265-D-627	F-8	3	C	1"	CK	SA	C	C	NA				NOTE 3

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SYSTEM	P&ID	REVISION - DATE	PAGE
COMPONENT COOLING WATER SYSTEM (cont.)	40127-9	0 9/80	42 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
1-267-D-627	D-8	3	C	1"	CK	SA	C	C	NA				NOTE 3
2-108-D-387	D-8	2	B	2"	GL	M	C		NA				NOTES 1, 3
3-268-D-681	F-7	3	C	3"	CK	SA	C	C	NA				NOTE 3
3-269-D-681	C-7	3	C	3"	CK	SA	C	C	NA				NOTE 3
28-101-D-725	G-4	3	C	28"	SDCK	SA	O&C	O&C	CVT	OP			
28-102-D-725	D-4	3	C	28"	SDCK	SA	O&C	O&C	CVT	OP			
28-103-D-725	E-4	3	C	28"	SDCK	SA	O&C	O&C	CVT	OP			

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NUCLEAR SAMPLING SYSTEM	40128-7	0 9/80	43 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-0508	H-7	2	A	3/4"	GL	MO	C	C	AT	RR	10		NOTES 9, 10
HV-0509	H-7	2	A	3/4"	GL	MO	C	C	AT	RR	10		NOTES 9, 10
HV-0510	G-8	2	A	3/4"	GL	MO	C	C	AT	RR	10		NOTES 9, 10
HV-0511	G-7	2	A	3/4"	GL	AO	C	C	AT	RR	10		NOTES 9, 10
HV-0512	G-8	2	A	3/4"	GL	MO	C	C	AT	RR	10		NOTES 9, 10
HV-0513	G-7	2	A	3/4"	GL	AO	C	C	AT	RR	10		NOTES 9, 10
HV-0514	C-8	2	A	3/4"	GL	MO	O	C	AT BT PIT	RR OP RR			NOTES 6, 10, 11
HV-0515	C-7	2	A	3/4"	GL	AO	C	C	AT	RR			NOTES 9, 10, 11
HV-0516	C-8	2	A	3/4"	GL	MO	O	C	AT BT PIT	RR OP RR			NOTES 6, 10, 11

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SYSTEM	P & ID	REVISION - DATE	PAGE
NUCLEAR SAMPLING SYSTEM (cont.)	40128-7	0 9/80	44 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-0517	H-7	2	A	3/4"	GL	MO	C	C	AT	RR	10		NOTES 9, 10
½-003-C-335	H-4	2	B	1/2"	GL	M	C		NA				NOTE 3
½-010-C-335	H-4	2	B	1/2"	GL	M	C		NA				NOTE 3

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SYSTEM	P & ID	REVISION - DATE	PAGE
COOLANT RADWASTE SYSTEM	40131-9	0 9/80	45 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-7512	G-5	2	A	3"	GL	MO	C	C	AT	RR			NOTES 9, 10, 11
HV-7513	G-5	2	A	3"	GL	AO	C	C	AT	RR			NOTES 9, 10, 11

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SYSTEM	P & ID	REVISION - DATE	PAGE
COOLANT AND BORIC ACID RECYCLE SYSTEM	40133-8	0 9/80	46 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
2-321-C-376	B-7	2	A	2"	GL	M	C	C	AT	RR			NOTES 9, 10, 11
2-573-C-611	B-8	2	AC	2"	CK	SA	C	C	AT	RR			NOTES 9, 10, 11

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SYSTEM	P & ID	REVISION - DATE	PAGE
WASTE GAS SYSTEM	40135-8	0 9/80	47 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-7258	H-8	2	A	3"	GA	MO	O	C	AT BT PIT	RR OP RR			NOTES 6, 10
HV-7259	H-8	2	A	3"	GA	AO	O	C	AT FST BT PIT	RR OP OP RR			NOTE 10

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SYSTEM	P&ID	REVISION - DATE	PAGE
NUCLEAR SERVICE WATER SYSTEM	40140-12	0 9/80	48 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-7911	E-5	2	A	3"	GA	AO	O	C	AT BT FST PIT	RR OP OP RR			NOTES 10, 11
3-236-C-675	E-4	2	AC	3"	CK	SA	C	C	AT	RR			NOTES 9, 10, 11

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SYSTEM	P&ID	REVISION - DATE	PAGE
MAIN STEAM	40141-9	0 9/80	49 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-4053	C-6	2	B	6"	GL	AO	O	C	FST BT	OP OP			
HV-4054	E-6	2	B	6"	GL	AO	O	C	FST BT	OP OP			
HV-4057	B-6	2	B	3/4"	GL	AO	O	C	FST BT PIT	OP OP RR			
HV-4058	E-6	2	B	3/4"	GL	AO	O	C	FST BT PIT	OP OP RR			
HV-8200	E-2	2	B	4"	GL	AO	O	O	NA				NOTE 3
HV-8201	F-4	2	B	4"	GL	AO	O	O	NA				NOTE 3
HV-8202	D-2	2	B	4"	GL	AO	C	C	NA				NOTE 3
HV-8203	F-4	2	B	4"	GL	AO	C	C	NA				NOTE 3

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SYSTEM	P & ID	REVISION - DATE	PAGE
MAIN STEAM (cont.)	40141-9	0 9/80	50 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-8204	E-2	2	B	40"	GA	HY	O	C	FST BTP BT PIT	CS OP CS RR			
HV-8205	F-4	2	B	40"	GA	HY	O	C	FST BTP BT PIT	CS OP CS RR			
HV-8248	G-3	2	B	1"	GA	SO	O	C	BT PIT	OP RR			
HV-8249	F-2	2	B	1"	GA	SO	O	C	BT PIT	OP RR			
HV-8419	H-6	2	B	8"	RV	AO	C	O	BT PIT	CS RR			NOTE 5
HV-8421	F-5	2	B	8"	RV	AO	C	O	BT PIT	CS RR			NOTE 5
PSV-8401	G-5	2	C	6"	SV	SA	C	O	RVT				NOTE 2

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SYSTEM	P & ID	REVISION - DATE	PAGE
MAIN STEAM (cont.)	40141-9	0 9/80	51 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
PSV-8402	G-5	2	C	6"	SV	SA	C	O	RVT				NOTE 2
PSV-8403	G-4	2	C	6"	SV	SA	C	O	RVT				NOTE 2
PSV-8404	G-4	2	C	6"	SV	SA	C	O	RVT				NOTE 2
PSV-8405	G-4	2	C	6"	SV	SA	C	O	RVT				NOTE 2
PSV-8406	G-4	2	C	6"	SV	SA	C	O	RVT				NOTE 2
PSV-8407	G-4	2	C	6"	SV	SA	C	O	RVT				NOTE 2
PSV-8408	G-3	2	C	6"	SV	SA	C	O	RVT				NOTE 2
PSV-8409	G-3	2	C	6"	SV	SA	C	C	RVT				NOTE 2
PSV-8410	E-4	2	C	6"	SV	SA	C	O	RVT				NOTE 2
PSV-8411	E-4	2	C	6"	SV	SA	C	O	RVT				NOTE 2

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SYSTEM	P & ID	REVISION - DATE	PAGE
MAIN STEAM (cont.)	40141-9	0 9/80	52 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
PSV-8412	E-3	2	C	6"	SV	SA	C	O	RVT				NOTE 2
PSV-8413	E-3	2	C	6"	SV	SA	C	O	RVT				NOTE 2
PSV-8414	E-3	2	C	6"	SV	SA	C	O	RVT				NOTE 2
PSV-8415	E-3	2	C	6"	SV	SA	C	O	RVT				NOTE 2
PSV-8416	E-3	2	C	6"	SV	SA	C	O	RVT				NOTE 2
PSV-8417	E-2	2	C	6"	SV	SA	C	O	RVT				NOTE 2
PSV-8418	E-2	2	C	6"	SV	SA	C	O	RVT				NOTE 2
4-003-D-620	F-3	3	C	4"	CK	SA	C	O	CVT	OP			
4-005-D-620	F-2	3	C	4"	CK	SA	C	O	CVT	OP			
6-124-C-599	D-7	2	C	6"	CK	SA	C	O	CVT	CS			NOTE 5
6-148-C-599	F-7	2	C	6"	CK	SA	C	O	CVT	CS			NOTE 5

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SYSTEM	P & ID	REVISION - DATE	PAGE
MAIN STEAM (cont.)	40141-9	0 9/80	53 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
8-001-C-129	D-5	2	B	8"	GA	M	O		NA				NOTES 1, 3
8-231-C-129	H-6	2	B	8"	GA	M	O		NA				NOTES 1, 3
20-036-C-609	D-7	2	C	20"	CK	SA	O	O	NA				NOTE 7
20-129-C-609	F-7	2	C	20"	CK	SA	O	O	NA				NOTE 7

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SYSTEM	P & ID	REVISION - DATE	PAGE
CONDENSATE PUMPS SYSTEM	40150-12	0 9/80	54 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
8-471-D-212	G-8	3	B	8"	GA	M	O		NA				NOTES 1, 3
8-473-D-212	G-8	3	B	8"	GA	M	O		NA				NOTES 1, 3

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SYSTEM	P & ID	REVISION - DATE	PAGE
HIGH PRESSURE & AUXILIARY FEEDWATER SYSTEM	40156-8	0 9/80	55 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-4048	F-1	2	B	20"	GA	AO	O	C	FST BT PIT	CS CS RR			NOTE 5
HV-4052	C-1	2	B	20"	GA	AO	O	C	FST BT PIT	CS CS RR			NOTE 5
HV-4705	E-2	3	B	6"	GA	MO	C	O	BT PIT	OP RR			NOTE 6
HV-4706	B-2	3	B	6"	GA	MO	C	O	BT PIT	OP RR			NOTE 6
HV-4712	D-2	3	B	4"	GL	MO	C	O	BT PIT	OP RR			NOTE 6
HV-4713	B-2	3	B	4"	GL	MO	C	O	BT PIT	OP RR			NOTE 6
HV-4714	D-1	2	B	6"	GA	E/H	C	O	FST BT PIT	CS OP RR			

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HIGH PRESSURE & AUXILIARY FEEDWATER SYSTEM	40156-8	0 9/80	56 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-4715	B-1	2	B	6"	GA	MO	C	O	BT PIT	OP RR			NOTE 6
HV-4716	C-4	3	B	4"	GA	MO	C	O	BT PIT	OP RR			NOTE 6
HV-4730	D-1	2	B	6"	GA	MO	C	O	BT	OP			NOTE 6
HV-4731	A-1	2	B	6"	GA	E/H	C	O	FST BT PIT	CS OP RR			
½-496-D-617	B-4	3	C	½"	CK	SA	C	C	NA				NOTE 3
½-497-D-617	B-4	3	C	½"	CK	SA	C	C	NA				NOTE 3
½-498-D-617	C-3	3	C	½"	CK	SA	C	C	NA				NOTE 3
½-499-D-617	C-3	3	C	½"	CK	SA	C	C	NA				NOTE 3
6-121-D-598	C-3	3	C	6"	CK	SA	C	O	CVT	CS			

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HIGH PRESSURE & AUXILIARY FEEDWATER SYSTEM	40156-8	0 9/80	57 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
6-122-D-087	C-3	2	B	6"	GA	M	O		NA				NOTES 1, 3
6-123-D-087	A-2	2	B	6"	GA	M	O		NA				NOTES 1, 3
6-125-D-087	A-2	2	B	6"	GA	M	O		NA				NOTES 1, 3
6-126-D-598	E-3	3	C	6"	CK	SA	C	O	CVT	CS			NOTE 5
6-127-D-087	D-3	3	B	6"	GA	M	O		NA				NOTES 1, 3
6-128-D-087	E-2	2	B	6"	GA	M	O		NA				NOTES 1, 3
6-130-D-087	E-2	2	B	6"	GA	M	O		NA				NOTES 1, 3
6-131-D-087	B-2	2	B	6"	GA	M	O		NA				NOTES 1, 3
6-133-D-087	B-2	2	B	6"	GA	M	O		NA				NOTES 1, 3
6-134-D-087	E-2	2	B	6"	GA	M	O		NA				NOTES 1, 3

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HIGH PRESSURE & AUXILIARY FEEDWATER SYSTEM	40156-8	0 9/80	58 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
6-136-D-187	E-2	2	B	6"	GA	M	O		NA				NOTES 1, 3
8-468-D-212	C-4	3	B	8"	GA	M	O		NA				NOTES 1, 3
8-469-D-212	D-4	3	B	8"	GA	M	O		NA				NOTES 1, 3

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SYSTEM	P & ID	REVISION - DATE	PAGE
AUXILIARY BOILER SYSTEM	40169-9	0 9/80	59 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
2-037-C-387	E-6	2	A	2"	GA	M	C	C	AT	RR			NOTES 9, 10, 11
2-038-C-387	E-6	2	A	2"	GA	M	C	C	AT	RR			NOTES 9, 10, 11

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SYSTEM	P & ID	REVISION - DATE	PAGE
HV & AC (NORMAL)	40170-8	0 9/80	60 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-7800	E-4	2	A	3/4"	GA	SO	O	C	AT BT FST PIT	RR OP OP RR	1		NOTE 10
HV-7801	E-4	2	A	3/4"	GA	SO	O	C	AT BT FST PIT	RR OP OP RR	1		NOTE 10
HV-7802	D-4	2	A	3/4"	GA	SO	O	C	AT BT FST PIT	RR OP OP RR	1		NOTE 10
HV-7803	D-3	2	A	3/4"	GA	SO	O	C	AT BT FST PIT	RR OP OP RR	1		NOTE 10
HV-7805	C-4	2	A	3/4"	GA	SO	O	C	AT BT FST PIT	RR OP OP RR	1		NOTE 10

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HV & AC (NORMAL) (cont.)	40170-P	0 9/80	61 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-7806	C-4	2	A	3/4"	GA	SO	O	C	AT BT FST PIT	RR OP OP RR	1		NOTE 10
HV-7810	D-3	2	A	3/4"	GA	SO	O	C	AT BT FST PIT	RR OP OP RR	1		NOTE 10
HV-7811	C-3	2	A	3/4"	GA	SO	O	C	AT BT FST PIT	RR OP OP RR	1		NOTE 10
HV-9900	F-4	2	A	8"	BTF	MO	O	C	AT BT PIT	RR OP RR	10		NOTES 6, 10, 11
HV-9920	F-3	2	A	8"	BTF	AO	O	C	AT BT FST PIT	RR OP OP RR	10		NOTES 10, 11

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SYSTEM	P & ID	REVISION - DATE	PAGE
HV & AC (NORMAL) (cont.)	40170-8	0 9/80	62 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-9921	E-3	2	A	8"	BTF	AO	O	C	AT BT FST PIT	RR OP OP RR	10		NOTES 10, 11
HV-9971	E-4	2	A	8"	BTF	MO	O	C	AT BT PIT	RR OP RR	10		NOTES 6, 10, 11

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SYSTEM	P & ID	REVISION - DATE	PAGE
HV & AC (NORMAL)	40171-10	0 9/80	63 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-9821	F-7	2	A	8"	BTF	AO	O	C	AT BT FST PIT	RR OP OP RR	5		NOTE 10
HV-9823	E-5	2	A	8"	BTF	AO	O	C	AT BT FST PIT	RR OP OP RR	5		NOTE 10
HV-9824	E-4	2	A	8"	BTF	AO	O	C	AT BT FST PIT	RR OP OP RR	5		NOTE 10
HV-9825	G-6	2	A	8"	BTF	AO	O	C	AT BT FST PIT	RR OP OP RR	5		NOTE 10
HV-9907AA	C-5	3	B	3"	GA	MO	O	O	NA				NOTE 3
HV-9907AC	C-2	3	B	3"	GA	MO	O	O	NA				NOTE 3

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SYSTEM	P & ID	REVISION - DATE	PAGE
HV & AC (NORMAL) (cont.)	40171-10	0 9/80	64 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-9907BA	C-2	3	B	3"	GA	MO	O	O	NA				NOTE 3
HV-9907BC	C-2	3	B	3"	GA	MO	O	O	NA				NOTE 3
HV-9948	E-6	2	A	42"	BTF	SO	C	C	AT	RR	10		NOTES 9, 10
HV-9949	E-5	2	A	42"	BTF	MO	C	C	AT	RR	10		NOTES 9, 10
HV-9950	E-4	2	A	42"	BTF	MO	C	C	AT	RR	10		NOTES 9, 10
HV-9951	G-6	2	A	42"	BTF	SO	C	C	AT	RR	10		NOTES 9, 10

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SYSTEM	P & ID	REVISION - DATE	PAGE
HV & AC (EMERGENCY)	40172-9	0 9/80	65 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-0500	F-4	2	A	1"	GA	SO	C	C	AT	RR			NOTES 9, 10, 11
HV-0501	G-2	2	A	1"	GA	SO	C	C	AT	RR			NOTES 9, 10, 11
HV-0502	F-3	2	A	1"	GA	SO	C	C	AT	RR			NOTES 9, 10, 11
HV-0503	G-3	2	A	1"	GA	SO	C	C	AT	RR			NOTES 9, 10, 11
HV-6366	B	2	A	10"	GA	MO	O	O&C	AT BT PIT	RR OP RR	10		NOTES 6, 10
HV-6367	B-7	2	A	10"	GA	MO	C	O&C	AT BT PIT	RR OP RR	10		NOTES 6, 10
HV-6368	C-7	2	A	10"	GA	MO	O	O&C	AT BT PIT	RR OP RR	10		NOTES 6, 10
HV-6369	C-7	2	A	10"	GA	MO	C	O&C	AT BT PIT	RR OP RR	10		NOTES 6, 10

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ASME-CLASS 1,2&3 VALVES
SAN ONOFRE NUCLEAR GENERATING STATION

UNIT - 3

SYSTEM	P & ID	REVISION - DATE	PAGE
HV & AC (EMERGENCY) (cont.)	40172-9	0 9/1	66 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-6370	B-2	2	A	10"	GA	MO	O	O&C	AT BT PIT	RR OP RR	10		NOTES 6, 10
HV-6371	B-2	2	A	10"	GA	MO	C	O&C	AT BT PIT	RR OP RR	10		NOTES 6,
HV-6372	C-2	2	A	10"	GA	MO	O	O&C	AT BT PIT	RR OP RR	10		NOTES 6, 10
HV-6373	C-2	2	A	10"	GA	MO	C	O&C	AT BT PIT	RR OP RR	10		NOTES 6, 10
HV-9917	D-3	2	A	6"	BTF	MO	C	C	AT	RR			NOTES 1, 6, 10, 11
HV-9918	D-3	2	A	6"	BTF	M	C	C	AT	RR			NOTES 1, 10, 11
HV-9945	D-7	2	A	6"	BTF	M	C	C	AT	RR			NOTES 1, 10, 11
HV-9946	D-6	2	A	6"	BTF	M	C	C	AT	RR			NOTES 1, 6, 10, 11

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UNIT - 3

SYSTEM	P & ID	REVISION - DATE	PAGE
HV & AC (EMERGENCY) (cont.)	40172-9	0 9/80	67 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
10-203-C-221	E-6	2	B	10"	GA	M	O	O	NA				NOTE 3
10-204-C-221	E-6	2	B	10"	GA	M	O	O	NA				NOTE 3
10-205-C-221	E-6	2	B	10"	GA	M	O	O	NA				NOTE 3
10-206-C-221	E-6	2	B	10"	GA	M	O	O	NA				NOTE 3
10-207-C-221	E-4	2	B	10"	GA	M	O	O	NA				NOTE 3
10-208-C-221	E-4	2	B	10"	GA	M	O	O	NA				NOTE 3
10-209-C-221	E-4	2	B	10"	GA	M	O	O	NA				NOTE 3
10-210-C-221	E-4	2	B	10"	GA	M	O	O	NA				NOTE 3

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SYSTEM	P & ID	REVISION - DATE	PAGE
AUXILIARY BUILDING EMERGENCY CHILLED WATER SYSTEM	40179-10	0 9/80	68 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
½-396-D-387	C-4	3	B	½"	GL	M	O		NA				NOTES 1, 3
½-397-D-387	C-4	3	B	½"	GL	M	O		NA				NOTES 1, 3
1½-674-D-145	E-3	3	B	1½"	GA	M	O		NA				NOTES 1, 3
1½-675-D-195	E-4	3	B	1½"	GA	M	O		NA				NOTES 1, 3
4-672-D-221	D-3	3	B	4"	GA	M	O		NA				NOTES 1, 3
4-673-D-221	D-3	3	B	4"	GA	M	O		NA				NOTES 1, 3
8-001-D-801	A-3	3	B	8"	BALL	M	O		NA				NOTES 1, 3
8-003-D-801	B-3	3	B	8"	BALL	M	O		NA				NOTES 1, 3
8-185-D-801	A-3	3	B	8"	BALL	M	O		NA				NOTES 1, 3
8-186-D-801	B-3	3	B	8"	BALL	M	O		NA				NOTES 1, 3

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ASME-CLASS 1,2&3 VALVES
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UNIT - 3

SYSTEM	P & ID	REVISION - DATE	PAGE
AUXILIARY BUILDING EMERGENCY CHILLED WATER SYSTEM	40179-10	0 9/80	69 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
8-385-D-801	B-6	3	B	8"	BALL	M	O		NA				NOTES 1, 3
8-389-D-801	B-5	3	B	8"	BALL	M	O		NA				NOTES 1, 3
8-391-D-801	C-3	3	B	8"	BALL	M	O		NA				NOTES 1, 3

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UNIT - 3

SYSTEM	P & ID	REVISION - DATE	PAGE
AUXILIARY BUILDING EMERGENCY CHILLED WATER SYSTEM	40180-10	0 9/80	70 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
1½-224-D-387	C-4	3	B	1½"	GL	M	O		NA				NOTES 1, 3
1½-225-D-387	C-4	3	B	1½"	GL	M	O		NA				NOTES 1, 3
1½-678-D-145	E-3	3	B	1½"	GA	M	O		NA				NOTES 1, 3
1½-679-D-145	E-4	3	B	1½"	GA	M	O		NA				NOTES 1, 3
4-676-D-221	D-3	3	B	4"	GA	M	O		NA				NOTES 1, 3
4-677-D-221	D-3	3	B	4"	GA	M	O		NA				NOTES 1, 3
8-007-D-801	B-3	3	B	8"	BALL	M	O		NA				NOTES 1, 3
8-058-D-801	B-6	3	B	8"	BALL	M	O		NA				NOTES 1, 3
8-063-D-801	B-5	3	B	8"	BALL	M	O		NA				NOTES 1, 3
8-180-D-801	A-3	3	B	8"	BALL	M	O		NA				NOTES 1, 3

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INSERVICE TESTING PROGRAM
ASME-CLASS 1,2&3 VALVES
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UNIT - 3

SYSTEM	P & ID	REVISION - DATE	PAGE
AUXILIARY BUILDING EMERGENCY CHILLED WATER SYSTEM	40180-10	0 9/80	71 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
8-181-D-801	B-3	3	B	8"	BALL	M	O		NA				NOTES 1, 3
8-243-D-801	A-3	3	B	8"	BALL	M	O		NA				NOTES 1, 3

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UNIT - 3

SYSTEM	P & ID	REVISION - DATE	PAGE
FIRE PROTECTION SYSTEM	40189-8	0 9/80	72 of 72

VALVE NUMBER	COORDINATES	CLASS	VALVE CATEGORY	VALVE SIZE	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	STROKE DIRECTION	TEST	TEST MODE	MAX. STROKE TIME	RELIEF REQUEST	REMARKS
HV-5686	E-7	2	A	4"	GA	MO	C	C	AT	RR			NOTES 9, 10, 11
4-095-C-681	G-6	2	AC	4"	CK	SA	C	C	AT	RR			NOTES 9, 10, 11

APPENDIX B

REQUEST FOR RELIEF

FOR VALVES

VALVE RELIEF REQUEST NO. 1

SYSTEM: Reactor Coolant

COMPONENT: 3-152-A-551 (check valve)

CATEGORY: C

CLASS: 1

FUNCTION: Upon initiation of safety injection, this valve opens to provide water to the hot leg of the primary loop.

TEST REQUIREMENT: Exercise the valve every three months.

BASIS FOR RELIEF: This check valve cannot be exercised without aligning the high pressure safety injection system for hot leg injection. The system design requires that the emergency core cooling system be lined up for cold leg injection thereby assuring adequate core cooling. Alignment for hot leg injection would therefore result in an unsafe system lineup during modes *1, 2, 3 and 4. Partial stroke of this valve in mode 5 is also impossible since this would cause a solid plant pressure transient. Full stroke of this valve can only be performed under LOCA conditions or when the vessel head is removed (mode 6).

ALTERNATE TESTING: This valve will be full stroke exercised at each refueling.

*Modes are found in Section 16.0 of the FSAR.

VALVE RELIEF REQUEST NO. 2

SYSTEM: Safety Injection

COMPONENT: 24-001-C-724 (Split Disc Check Valve)
24-002-C-724 (Split Disc Check Valve)

CATEGORY: C

CLASS: 2

FUNCTION: These valves open to allow a flow of water from the refueling water tank to the suction piping of the HPSI, LPSI and containment spray pumps.

TEST REQUIREMENT: Exercise the valves every three months.

BASIS FOR RELIEF: These valves cannot be full stroke exercised except under actual loss of coolant accident conditions, that is, with the HPSI, LPSI and CS pumps operating.

ALTERNATE TESTING: These valves will undergo a partial stroke exercise test when the ECCS pumps are on a mini flow test circuit.

VALVE RELIEF REQUEST NO. 3

SYSTEM: Safety Injection

COMPONENT: 24-003-C-724 (Split Disc Check Valve)
24-004-C-724 (Split Disc Check Valve)

CATEGORY: C

CLASS: 2

FUNCTION: These valves open to provide recirculation flow from the containment sump to the suction piping of the HPSI, LPSI and containment spray pumps.

TEST REQUIREMENT: Exercise the valves every three months.

BASIS FOR RELIEF: These valves cannot be full stroke exercised except under actual loss of coolant accident conditions, that is, with the HPSI, LPSI and CS pumps all operating.

ALTERNATE TESTING: These valves will undergo a partial stroke exercise test by providing flow with a test pump through valve test connections.

VALVE RELIEF REQUEST NO. 4

SYSTEM: Safety Injection

COMPONENT: 3-155-C-551 (Check Valve)

CATEGORY: C

CLASS: 2

FUNCTION: Upon initiation of safety injection, this valve opens to provide water from the HPSI header #1 to the hot leg of the primary loop.

TEST REQUIREMENT: Exercise the valve every three months.

BASIS FOR RELIEF: This check valve cannot be exercised without aligning the high pressure safety injection system for hot leg injection. The system design requires that the emergency core cooling system be lined up for cold leg injection thereby assuring adequate core cooling. Alignment for hot leg injection would therefore result in an unsafe system lineup during modes *1, 2, 3 and 4. Partial stroke of this valve in mode 5 is also impossible since this would cause a solid plant pressure transient. Full stroke of this valve can only be performed under LOCA conditions or when the vessel head is removed (mode 6).

ALTERNATE TESTING: This valve will be full stroke exercised at each refueling.

*Modes are found in Section 16.0 of the FSAR.

VALVE RELIEF REQUEST NO. 5

SYSTEM: Safety Injection

COMPONENT: 3-156-A-551 (Check Valve)

CATEGORY: C

CLASS: 1

FUNCTION: Upon initiation of safety injection, this valve opens to provide water from the HPSI header #1 to the hot leg of the primary loop.

TEST REQUIREMENT: Exercise the valve every three months.

BASIS FOR RELIEF: This check valve cannot be exercised without aligning the high pressure safety injection system for hot leg injection. The system design requires that the emergency core cooling system be lined up for cold leg injection thereby assuring adequate core cooling. Alignment for hot leg injection would therefore result in an unsafe systen lineup during modes *1, 2, 3 and 4. Partial stroke of this valve in mode 5 is also impossible since this would cause a solid plant pressure transient. Full stroke of this valve can only be performed under LOCA conditions or when the vessel head is removed (mode 6).

ALTERNATE TESTING: This valve will be full stroke exercised at each refueling.

*Modes are found in Section 16.0 of the FSAR.

VALVE RELIEF REQUEST NO. 6

SYSTEM: Containment Spray

COMPONENT: 3-157-A-551 (Check Valve)
3-158-A-551 (Check Valve)

CATEGORY: AC

CLASS: 1

FUNCTION: Upon initiation of safety injection, these valves open to provide water from the HPSI header to the hot leg of the primary loop.

TEST REQUIREMENT: Exercise the valves every three months.

BASIS FOR RELIEF: This check valve cannot be exercised without aligning the high pressure safety injection system for hot leg injection. The system design requires that the emergency core cooling system be lined up for cold leg injection thereby assuring adequate core cooling. Alignment for hot leg injection would therefore result in an unsafe system lineup during modes *1, 2, 3 and 4. Partial stroke of this valve in mode 5 is also impossible since this would cause a solid plant pressure transient. Full stroke of this valve can only be performed under LOCA conditions or when the vessel head is removed (mode 6).

ALTERNATE TESTING: This valve will be full stroke exercised at each refueling.

*Modes are found in Section 16.0 of the FSAR.

VALVE RELIEF REQUEST NO. 7

SYSTEM: Safety Injection

COMPONENT:
4-012-C-358 (Stop Check Valves)
4-015-C-358 (Stop Check Valves)
4-016-C-358 (Stop Check Valves)

CATEGORY: C

CLASS: 2

FUNCTION: Upon start of the high pressure safety injection pumps, these discharge check valves go open to allow flow downstream.

TEST REQUIREMENT: Exercise the valves every three months.

BASIS FOR RELIEF: These check valves cannot be full stroke exercised except under actual loss of coolant accident conditions or when the reactor vessel head is removed.

ALTERNATE TESTING: These valves will be full stroke exercised at each refueling.

VALVE RELIEF REQUEST NO. 8

SYSTEM: Safety Injection

COMPONENT: 10-006-C-675 (Check Valve)
10-008-C-675 (Check Valve)

CATEGORY: C

CLASS: 2

FUNCTION: These valves open to allow a flow of water into the suction piping of the high pressure safety injection pumps.

TEST REQUIREMENT: Exercise the valves every three months.

BASIS FOR RELIEF: These check valves cannot be full stroke exercised except under actual loss of coolant accident conditions or when the reactor vessel head is removed.

ALTERNATE TESTING: These valves will be full stroke exercised at each refueling.

VALVE RELIEF REQUEST NO. 9

SYSTEM: Safety Injection

COMPONENT: 4-017-C-553 (Check Valve)

CATEGORY: C

CLASS: 2

FUNCTION:! This valve opens to allow a flow of water from the discharge of the HPSI pump into the main HPSI header.

TEST REQUIREMENT: Exercise the valve every three months.

BASIS FOR RELIEF: This check valve cannot be full stroke exercised except under actual loss of coolant accident conditions or when the reactor vessel head is removed (mode 6).

ALTERNATE TESTING: This valve will be full stroke exercised at each refueling.

VALVE RELIEF REQUEST NO. 10

SYSTEM: Safety Injection

COMPONENT:
3-018-A-551 (Check Valves)
3-019-A-551 (Check Valves)
3-020-A-551 (Check Valves)
3-021-A-551 (Check Valves)

CATEGORY: C

CLASS: 1

FUNCTION: These valves open to allow a flow of water from the high pressure safety injection header into the main safety injection header of each primary loop.

TEST REQUIREMENT: Exercise the valves every three months.

BASIS FOR RELIEF: These check valves cannot be full stroke exercised except under actual loss of coolant accident conditions or where the reactor vessel head is removed (mode 6).

ALTERNATE TESTING: These valves will be full stroke exercised at each refueling.

VALVE RELIEF REQUEST NO. 11

SYSTEM: Safety Injection

COMPONENT:
12-040-A-551 (Check Valves)
12-041-A-551 (Check Valves)
12-042-A-551 (Check Valves)
12-043-A-551 (Check Valves)

CATEGORY: C

CLASS: 1

FUNCTION: These valves open to allow a flow of water from the safety injection tanks into the main safety injection header of each primary loop.

TEST REQUIREMENT: Exercise the valves every three months.

BASIS FOR RELIEF: These check valves cannot be stroked during normal operation without violating the Technical Specification requirements for safety injection tank pressure and level bands. In addition, these valves cannot be full stroked except under actual loss of coolant accident conditions.

ALTERNATE TESTING: These valves will be partial stroke exercised during each cold shutdown.

VALVE RELIEF REQUEST NO. 12

SYSTEM: Safety Injection

COMPONENT: 16-077-C-645 (Check Valve)
16-084-C-645 (Check Valve)

CATEGORY: C

CLASS: 2

FUNCTION: These valves open to allow a flow of water into the suction piping of the low pressure safety injection pumps.

TEST REQUIREMENT: Exercise the valves every three months.

BASIS FOR RELIEF: These check valves cannot be full stroke exercised except under actual loss of coolant accident conditions.

ALTERNATE TESTING: These valves will be partial stroke exercised during normal operation.

VALVE RELIEF REQUEST NO. 13

SYSTEM: Containment Spray

COMPONENT: 8-004-C-406 (Stop Check Valve)
8-006-C-406 (Stop Check Valve)

CATEGORY: AC

CLASS: 2

FUNCTION: These valves open to allow a flow of water from the containment spray pump discharge into the containment spray ring headers.

TEST REQUIREMENT: Exercise the valves every three months.

BASIS FOR RELIEF: These check valves cannot be tested in any plant mode without resulting in a spray down of the containment.

ALTERNATE TESTING: This valve will be full stroke exercised during the containment spray system test required in the Technical Specification.