Waterford-3

Steam Electric Station

Louisiana Power & Light

Pump and Valve

Inservice Test Plan

Revision 3

6/17/85

TABLE OF CONTENTS

1.0 INTRODUCTION

1.1 General

This document is written and presented in accordance with the requirements of the Code of Federal Regulations 10CFR 50.55a(g). The intent of Draft Regulatory Guide, Task MS 901-4 "Identification of Valves for Inclusion in Inservice Testing Programs", was used for guidance in the preparation of this plan. In addition, Regulatory Guide 1.26, Revision 3, was used for classification of pumps.

1.2 Scope

This document provides a description of the inservice testing plan for Waterford-3 Steam Electric Station for safety-related ASME Boiler and Pressure Vessel Code Class 1, 2, and 3 pumps and valves in accordance with the requirements of subsections IWP and IWV of the ASME Boiler and Pressure Vessel Code Section XI, 1980 Edition through the Winter 1981 Addenda. This plan is referenced by Waterford-3 plant Technical Specification 4.0.5.

1.3 Effective Period

This document shall go into effect beginning with baseline testing to establish reference data and shall then remain in effect through the first 120 month interval of commercial operation.

1.4 Plan Revisions

As a minimum, this plan will be reviewed and revised as necessary for compliance with the ASME Code in effect 12 months prior to the end of the first 120 months of commerical operation. Similarly, this plan will be reviewed and revised for each subsequent 120 month interval. Louisiana Power and Light Company reserves the right to submit plan revisions which may enhance or improve this pump and valve testing plan at any time within the effective period.

2.0 INSERVICE TESTING OF PUMPS

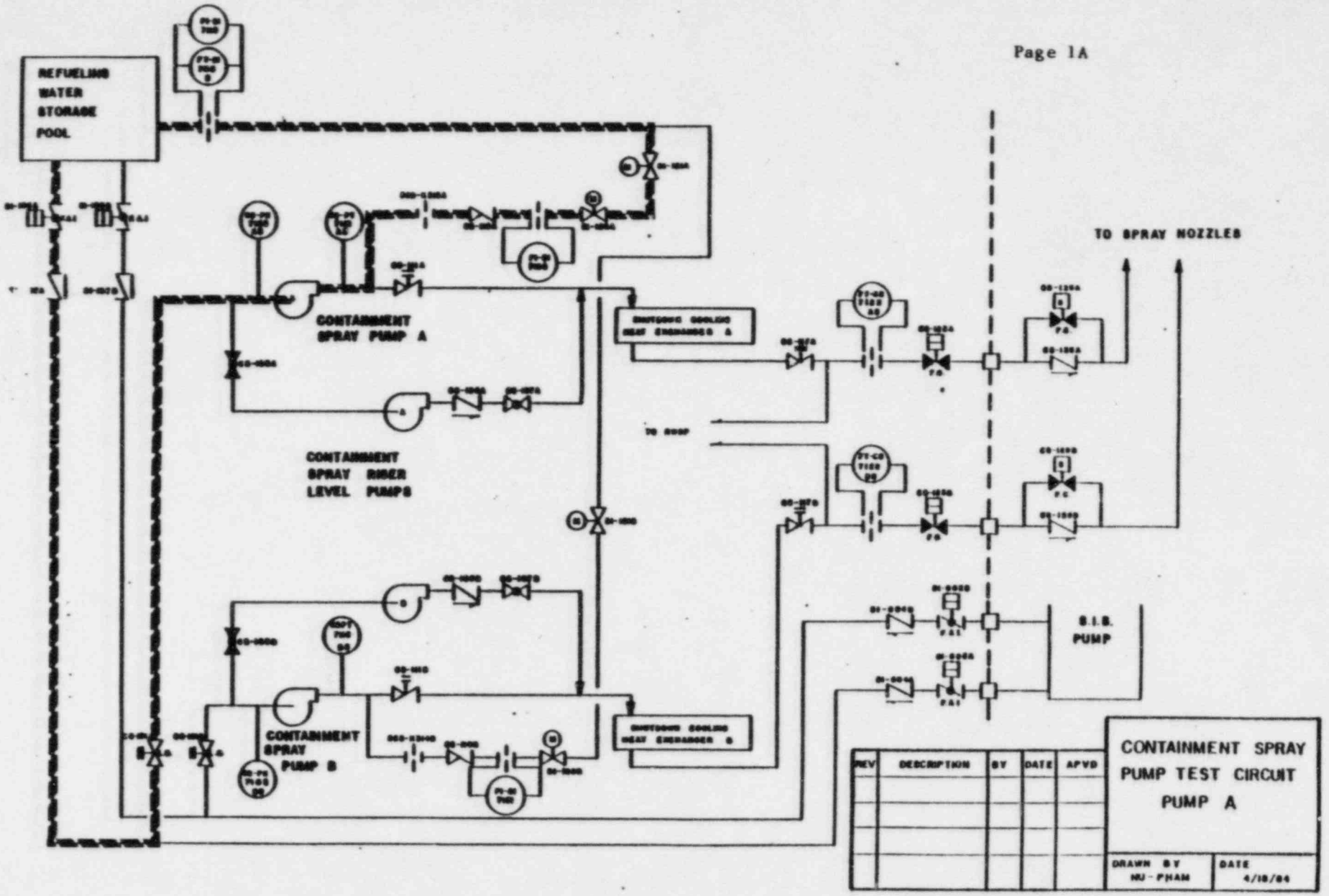
The table entitled "Pumps for Inservice Testing" describes the inservice testing plan for pumps subject to the requirements of subsection IWP of the ASME Boiler and Pressure Vessel Code Section XI, 1980 Edition through Winter 1981 Addenda. The table provides identification of the pumps to be tested, the ASME Section III Code classes, drawing references, parameters to be measured and test intervals. Relief from the testing requirements of Section XI is requested where full compliance with the requirement of the code is not practical. In such cases, specific information is provided in Section 2.1 which identifies the applicable code requirements, justification for the relief request, and the testing to be used as an alternate. In certain cases, relief is not requested, but the code-required testing is performed in an unusual or complicated manner. In such cases, clarifications are included in Section 2.2 in order to explain how the requirements of Section XI are fulfilled.

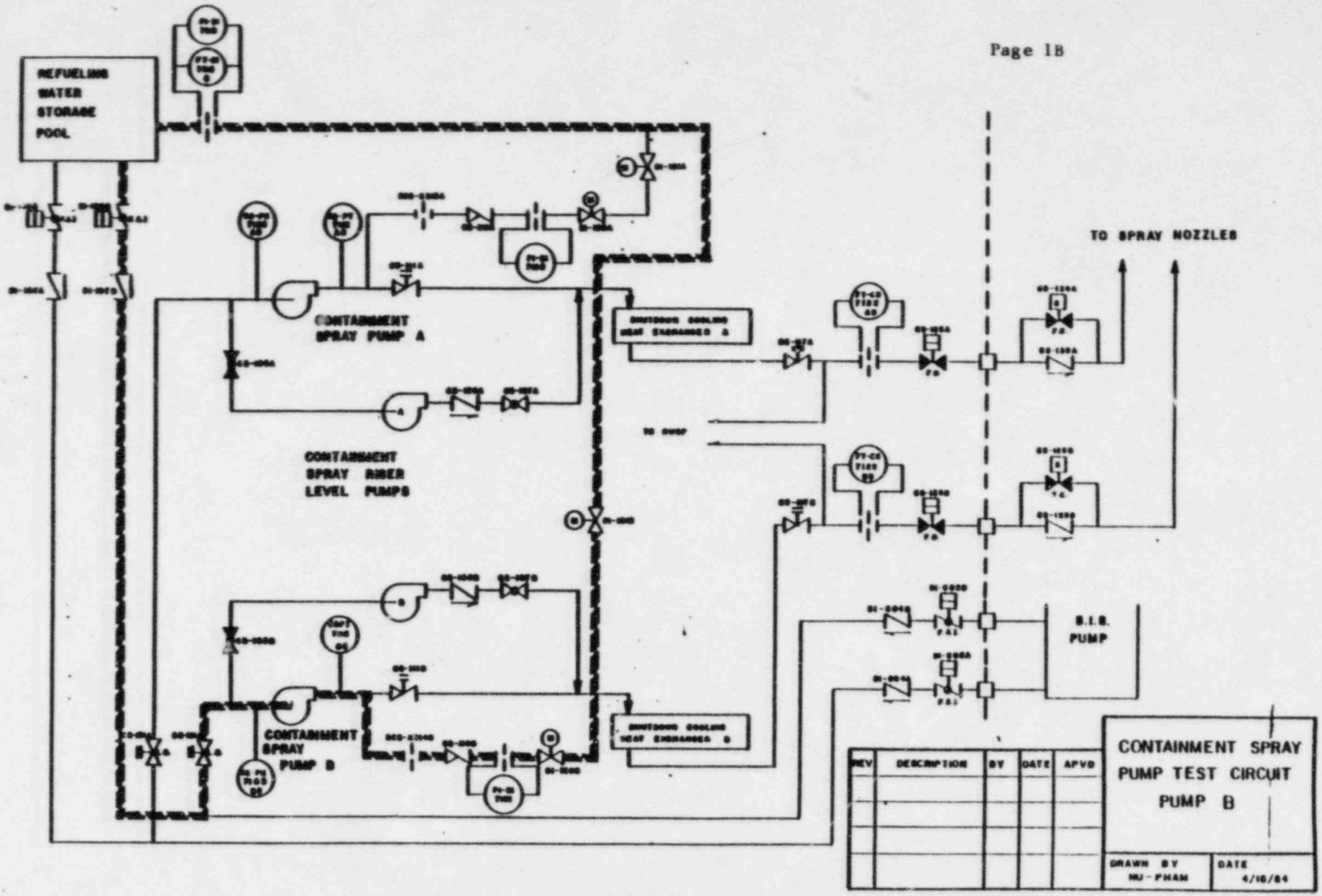
PUMPS FOR INSERVICE TESTING

WATERFORD 3 S.E.S.

REVISION NO. 3

PUMP IDENTIFICATION	ASME CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	LOCATION ON GENERAL ARRANGEMENT	MEASURED PARAMETERS	TEST INTERVAL	RELIEF REQUESTS/ CLARI-FICATIONS	REMARKS
Containment Spray A	2	LOU-1564-G-163	RAB,El-35.0' LOU-1564 G-137, E-10	1. Inlet Pressure (Pi)	Quarterly	2.1.3	
				2. Outlet Pressure (Po)	Quarterly	2.1.3	
Containment Spray B	2	G-163	RAB,El-35.0' LOU-1564 G-137, D-10	3. Differential Pressure ($\Delta P = Po - Pi$)	Quarterly	2.1.3	
				4. Flow Rate	Quarterly	2.1.3	
				5. Vibration Amplitude	Quarterly	-	
				6. Bearing Temperature	Annually	-	
				7. Lubricant Level or Pressure	Observe Quarterly	-	
				8. Speed	Not Applicable	-	


REFUELING WATER STORAGE POOL
CONTAINMENT SPRAY PUMP A
CONTAINMENT SPRAY RISER LEVEL PUMPS
CONTAINMENT SPRAY PUMP B
TO SPRAY NOZZLES
TO RHR
S.I.S. PUMP
REV
DESCRIPTION
BY
DATE
APVD
CONTAINMENT SPRAY PUMP TEST CIRCUIT PUMP A
DRAWN BY MU - PHAM
DATE 4/18/84

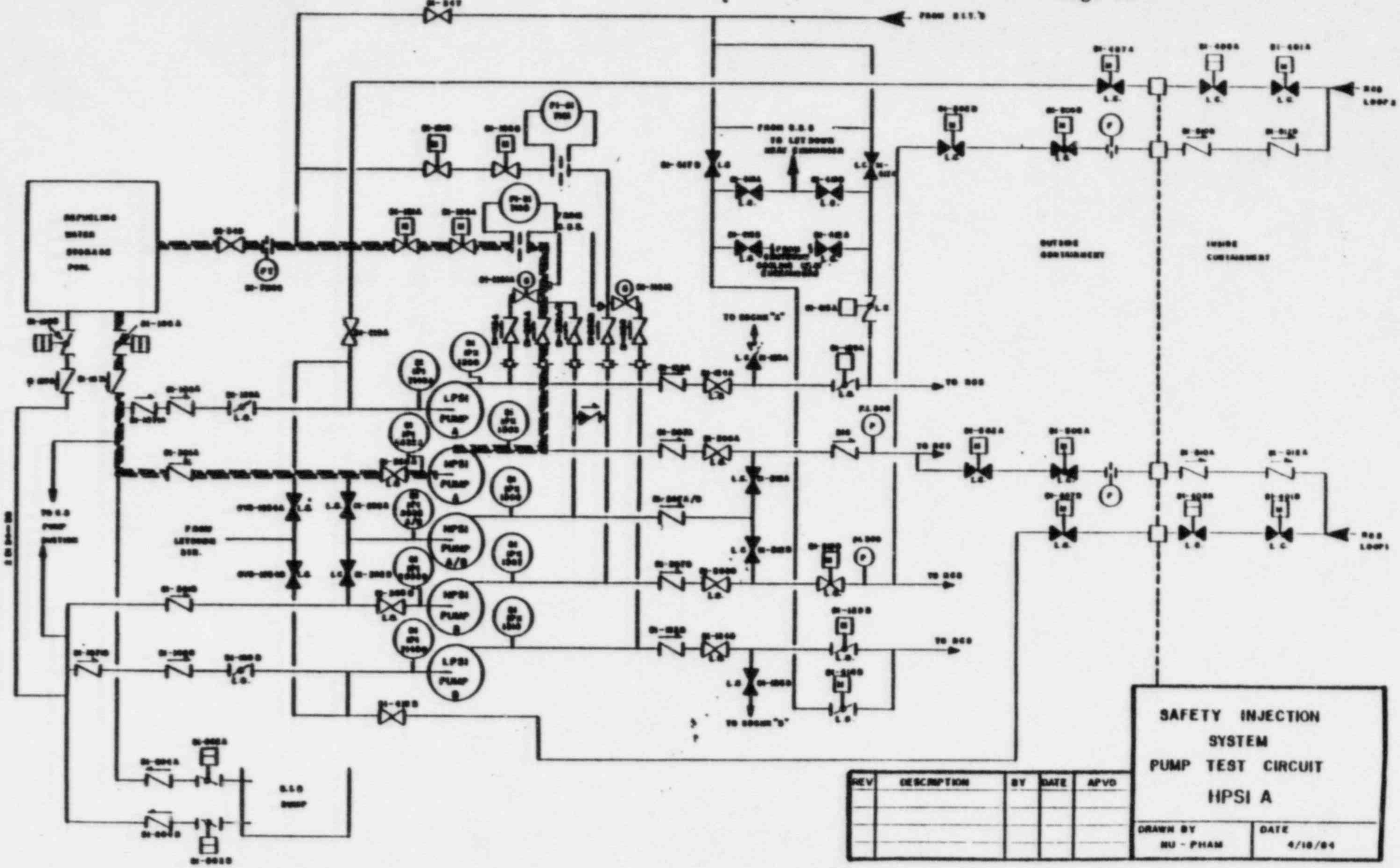

REFUELING WATER STORAGE POOL
CONTAINMENT SPRAY PUMP A
CONTAINMENT SPRAY SUMP LEVEL PUMPS
CONTAINMENT SPRAY PUMP B
TO SPRAY NOZZLES
S.I.S. PUMP
REV
DESCRIPTION
BY
DATE
APVD
CONTAINMENT SPRAY PUMP TEST CIRCUIT PUMP B
DRAWN BY
NU - PHAM
DATE
4/16/84

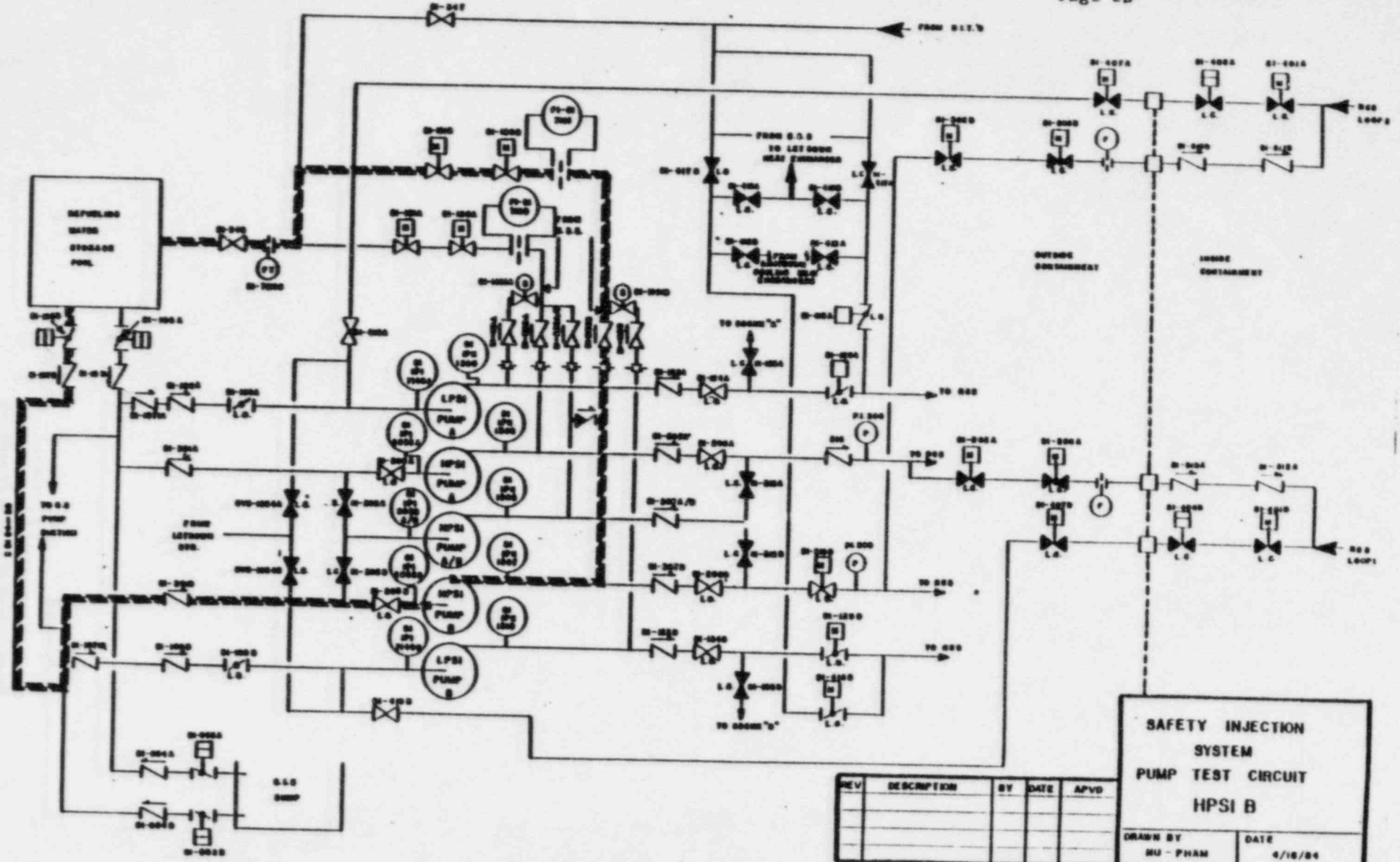
PUMPS FOR INSERVICE TESTING

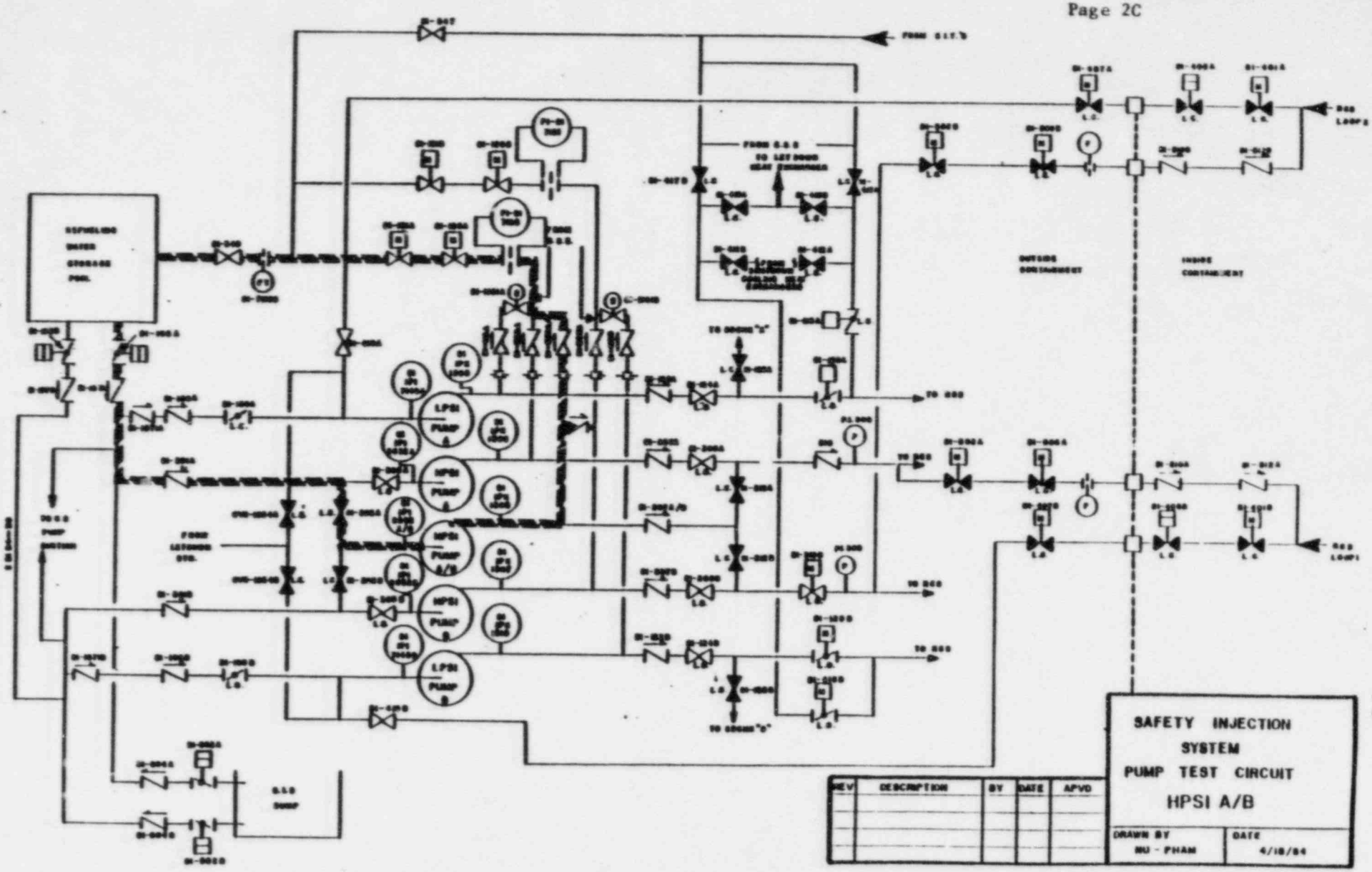
WATERFORD 3 S.E.S.

REVISION NO. 3

PUMP IDENTIFICATION	ASME CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	LOCATION ON GENERAL ARRANGEMENT	MEASURED PARAMETERS	TEST INTERVAL	RELIEF REQUESTS/ CLARI-FICATIONS	REMARKS
High-Pressure Safety Injection A	2	LOU-1564-G-167 Sheet 1	RAB,El-35.0' Lou-1564 G-137, E-10	1. Inlet Pressure (Pi)	Quarterly	2.1.3	
				2. Outlet Pressure (Po)	Quarterly	2.1.3	
High-Pressure Safety Injection B	2	G-167 Sheet 1	RAB,El-35.0' Lou-1564 G-137, D-10	3. Differential Pressure (ΔP = Po - Pi)	Quarterly	2.1.3	
				4. Flow Rate	Quarterly	2.1.3	
High-Pressure Safety Injection A/B	2	G-167 Sheet 1	RAB,El-35.0' Lou-1564 G-137, E-8	5. Vibration Amplitude	Quarterly	-	
				6. Bearing Temperature	Annually	-	
				7. Lubricant Level or Pressure	Observe Quarterly	-	
				8. Speed	Not Applicable	-	


REFUELING
WATER
STORAGE
POOL
LPSI PUMP A
HPSI PUMP A
HPSI PUMP A/B
HPSI PUMP B
LPSI PUMP B
OUTSIDE CONTAINMENT
INSIDE CONTAINMENT
SAFETY INJECTION
SYSTEM
PUMP TEST CIRCUIT
HPSI A
REV
DESCRIPTION
BY
DATE
APVD
DRAWN BY
NU - PHAM
DATE
4/10/84


SAFETY INJECTION
SYSTEM
PUMP TEST CIRCUIT
HPSI B
REV
DESCRIPTION
BY
DATE
APVD
DRAWN BY
NU - PHAM
DATE
4/16/84

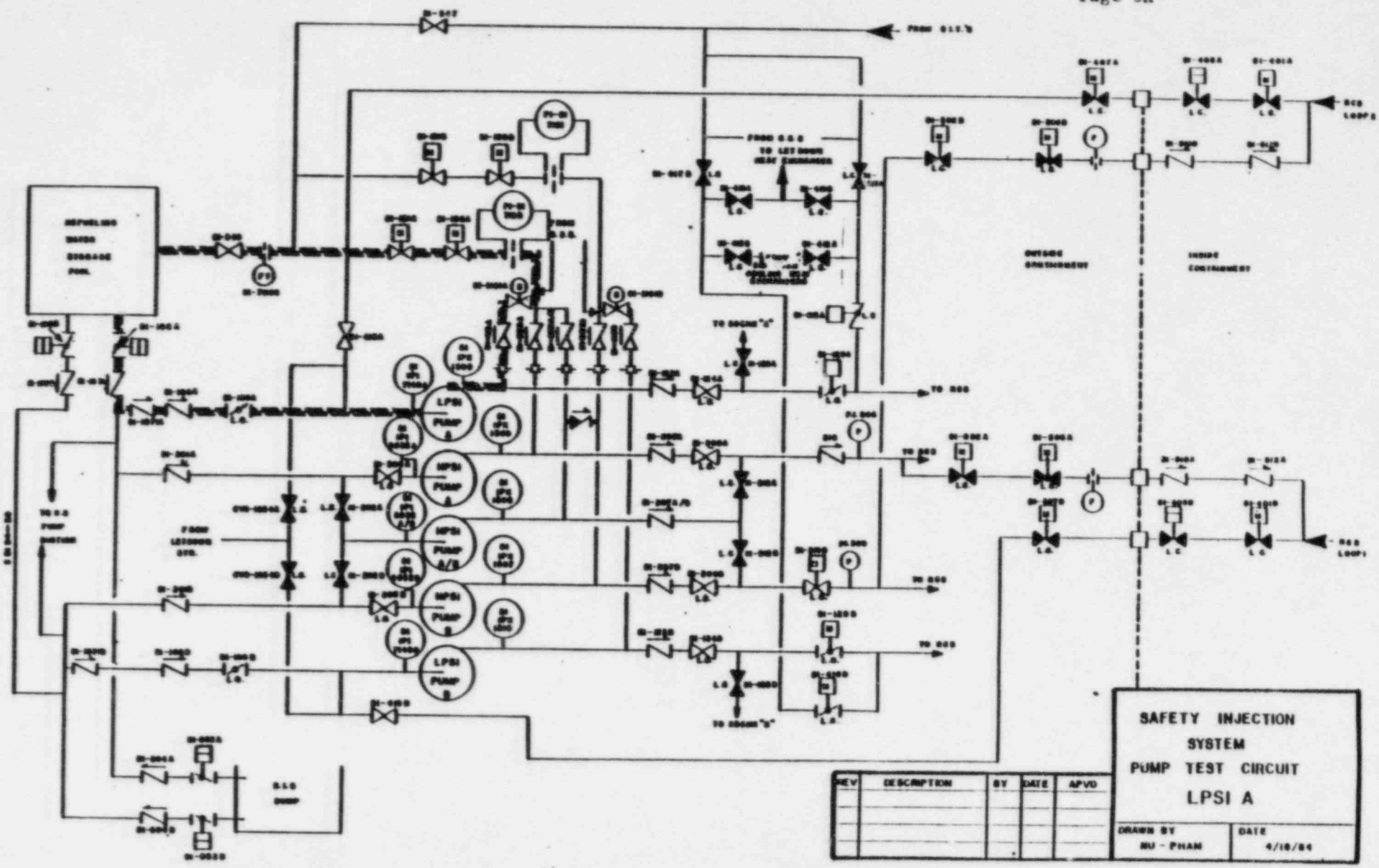

SAFETY INJECTION
SYSTEM
PUMP TEST CIRCUIT
HPSI A/B
REV
DESCRIPTION
BY
DATE
APVD
DRAWN BY
NU - PHAM
DATE
4/18/84

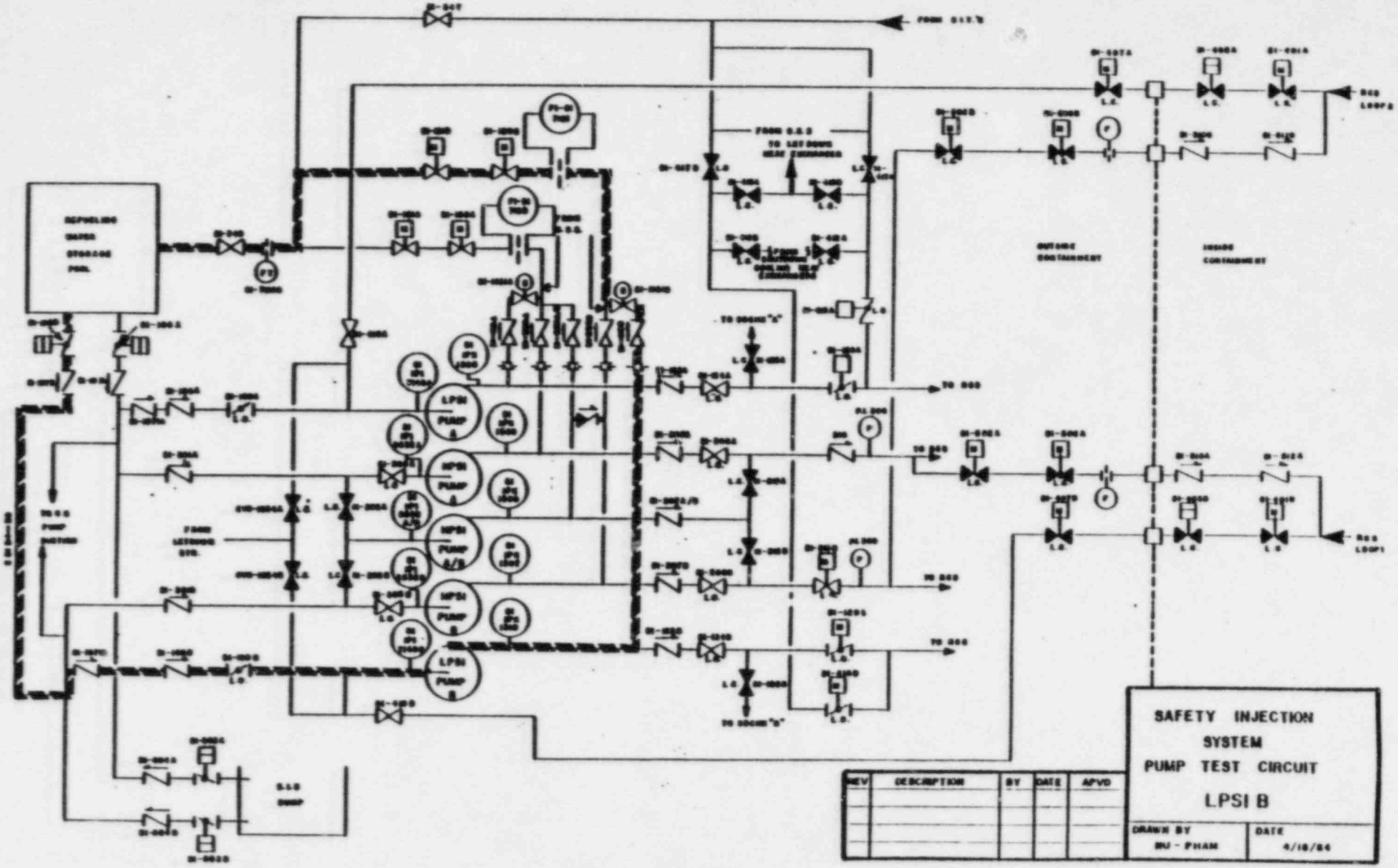
PUMPS FOR INSERVICE TESTING

WATERFORD 3 S.E.S.

REVISION NO. 3

PUMP IDENTIFICATION	ASME CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	LOCATION ON GENERAL ARRANGEMENT	MEASURED PARAMETERS	TEST INTERVAL	RELIEF REQUESTS/ CLARI-FICATIONS	REMARKS
Low-Pressure Safety Injection A	2	LOU-1564-G-167 Sheet 1	RAB,El-35.0' Lou-1564 G-137, E-11	1. Inlet Pressure (Pi)	Quarterly	2.1.3	
				2. Outlet Pressure (Po)	Quarterly	2.1.3	
Low-Pressure Safety Injection B	2	G-167 Sheet 1	RAB,El-35.0' Lou-1564 G-137, D-11	3. Differential Pressure ($\Delta P = Po - Pi$)	Quarterly	2.1.3	
				4. Flow Rate	Quarterly	2.1.3	
				5. Vibration Amplitude	Quarterly	-	
				6. Bearing Temperature	Annually	-	
				7. Lubricant Level or Pressure	Observe Quarterly	-	
				8. Speed	Not Applicable	-	

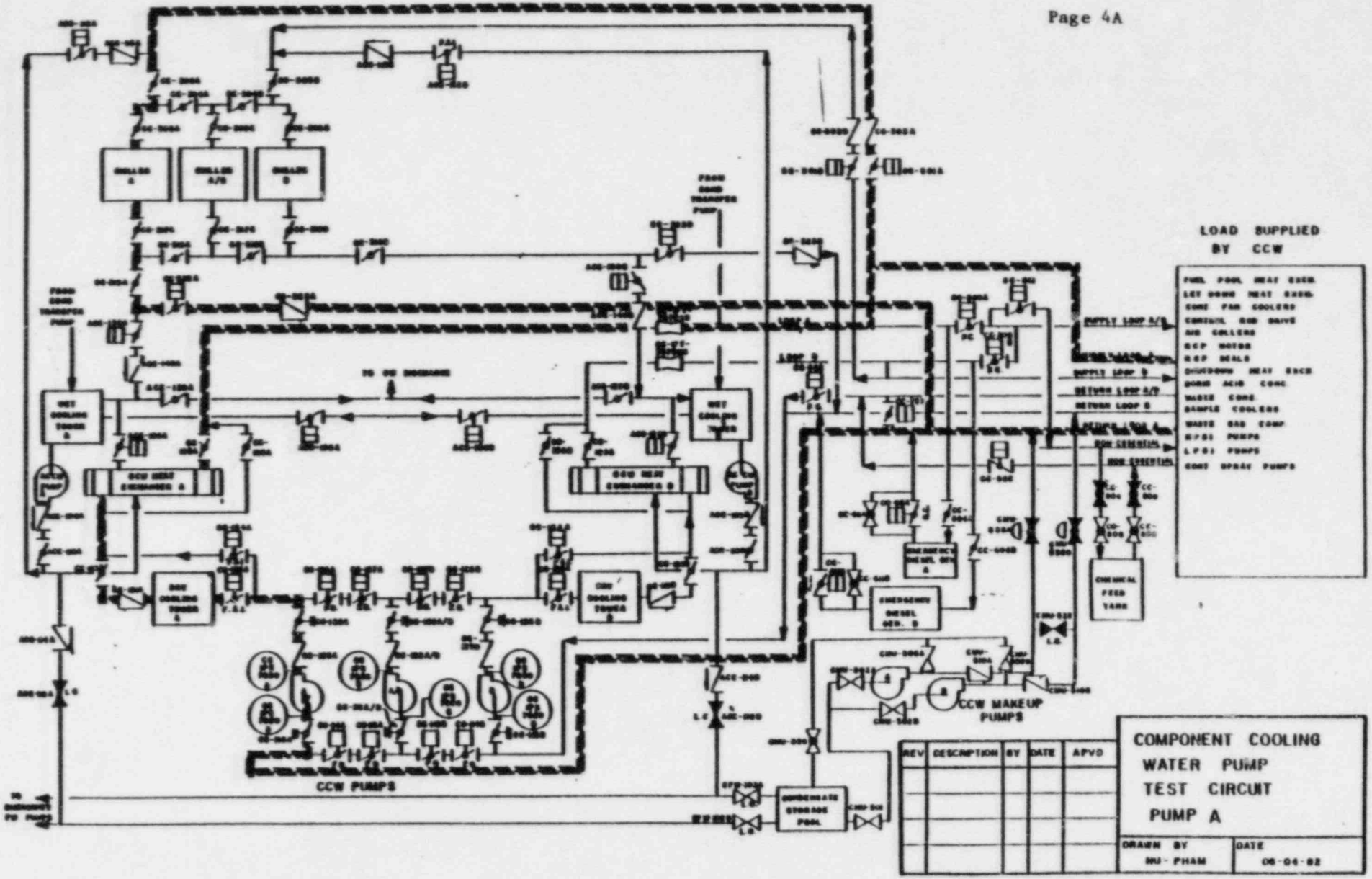

REFUELING WATER STORAGE POOL
LPSI PUMP A
HPSI PUMP A
HPSI PUMP A/B
HPSI PUMP B
LPSI PUMP B
OUTSIDE CONTAINMENT
INSIDE CONTAINMENT
TO RCS LOOP 4
TO RCS LOOP 1
SAFETY INJECTION SYSTEM
PUMP TEST CIRCUIT
LPSI A
REV
DESCRIPTION
BY
DATE
APVD
DRAWN BY
NU - PHAM
DATE
4/18/84

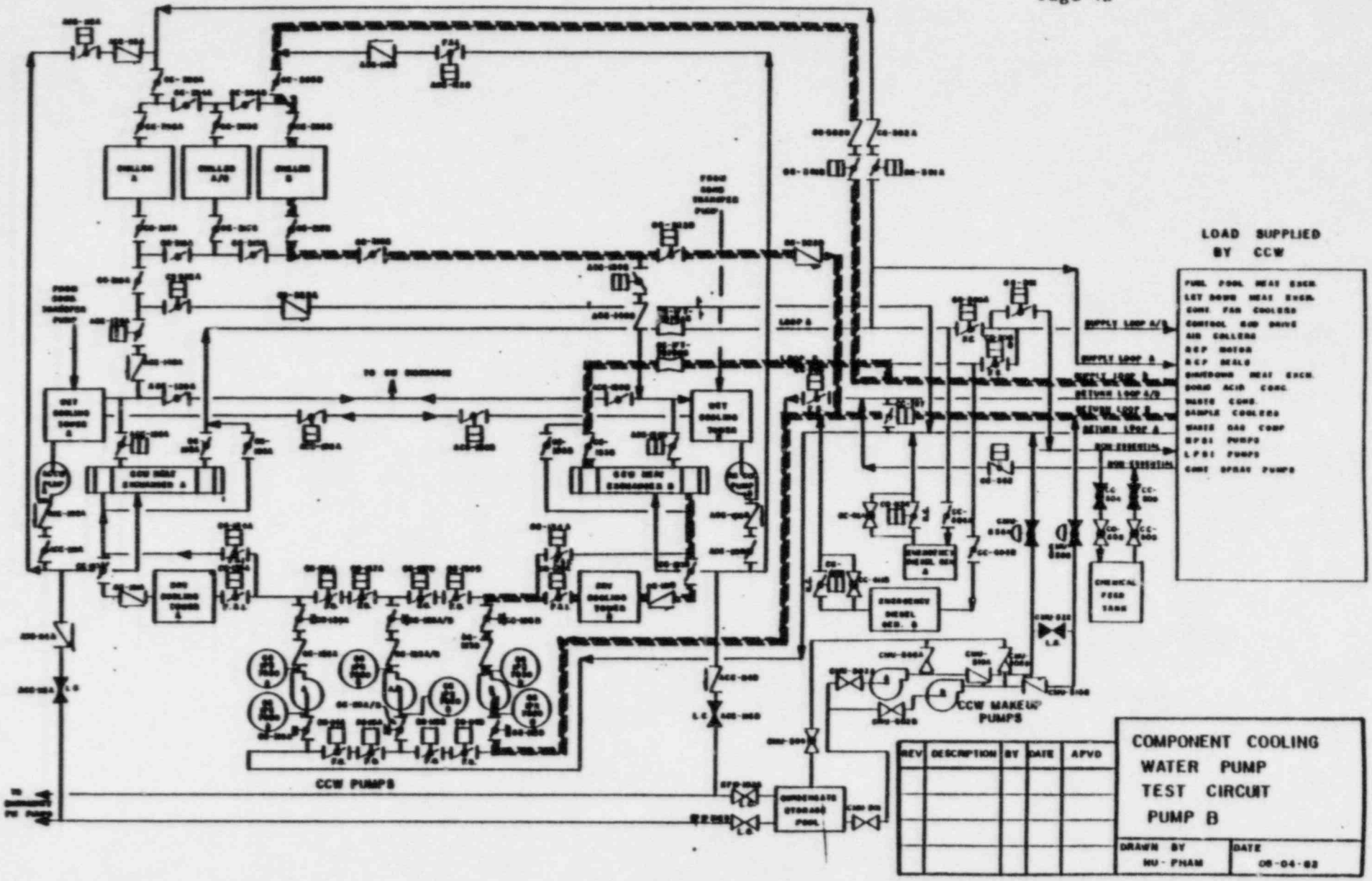

SAFETY INJECTION
SYSTEM
PUMP TEST CIRCUIT
LPSI B
REV
DESCRIPTION
BY
DATE
APVD
DRAWN BY
DATE
4/18/84

PUMPS FOR INSERVICE TESTING
WATERFORD 3 S.E.S.

REVISION NO. 3

PUMP IDENTIFICATION	ASME CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	LOCATION ON GENERAL ARRANGEMENT	MEASURED PARAMETERS	TEST INTERVAL	RELIEF REQUESTS/ CLARIFICATIONS	REMARKS
Component Cooling Water A	3	LOU-1564-G-160 Sheet 2	RAB,El+21.0' Lou-1564 G-135, C-6	1. Inlet Pressure (Pi)	Quarterly	-	
				2. Outlet Pressure (Po)	Quarterly	-	
Component Cooling Water B	3	G-160 Sheet 2	RAB,El+21.0' LOU-1564 G-135, C-9	3. Differential Pressure ($\Delta P = Po - Pi$)	Quarterly	-	
				4. Flow Rate	Quarterly	-	
Component Cooling Water A/B	3	G-160 Sheet 2	RAB,El+21.0' LOU-1564 G-135, C-8	5. Vibration Amplitude	Quarterly	-	
				6. Bearing Temperature	Annually	-	
				7. Lubricant Level or Pressure	Observe Quarterly	-	
				8. Speed	Not Applicable	-	


LOAD SUPPLIED BY CCW
CCW PUMPS
CCW MAKEUP PUMPS
COMPONENT COOLING WATER PUMP TEST CIRCUIT PUMP A
REV
DESCRIPTION
BY
DATE
APVD
DRAWN BY
MU - PHAM
DATE
06-04-82


LOAD SUPPLIED BY CCW
CCW PUMPS
CCW MAKEUP PUMPS
COMPONENT COOLING WATER PUMP TEST CIRCUIT PUMP B
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DESCRIPTION
BY
DATE
APVD
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NU - PHAM
DATE
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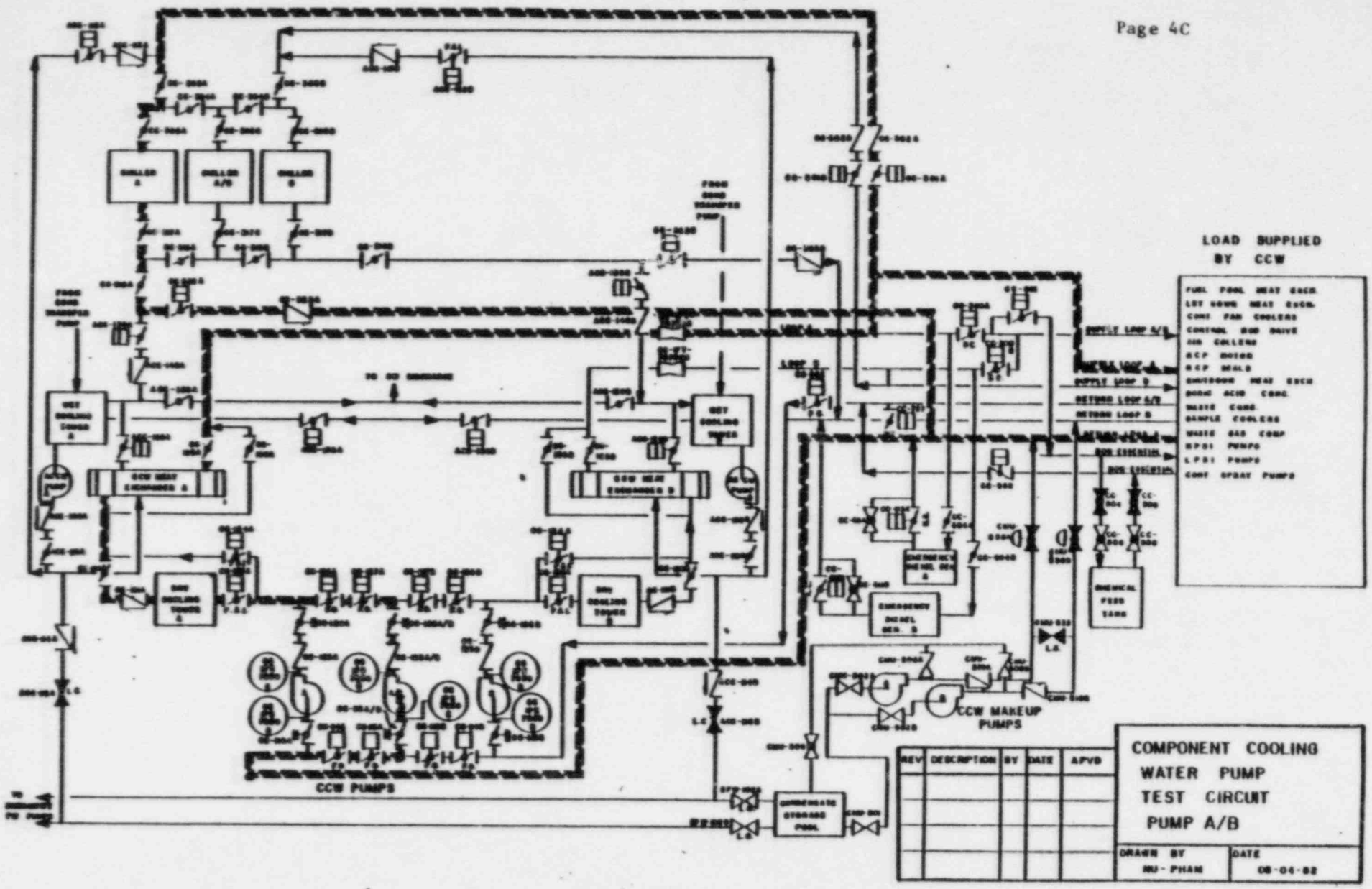
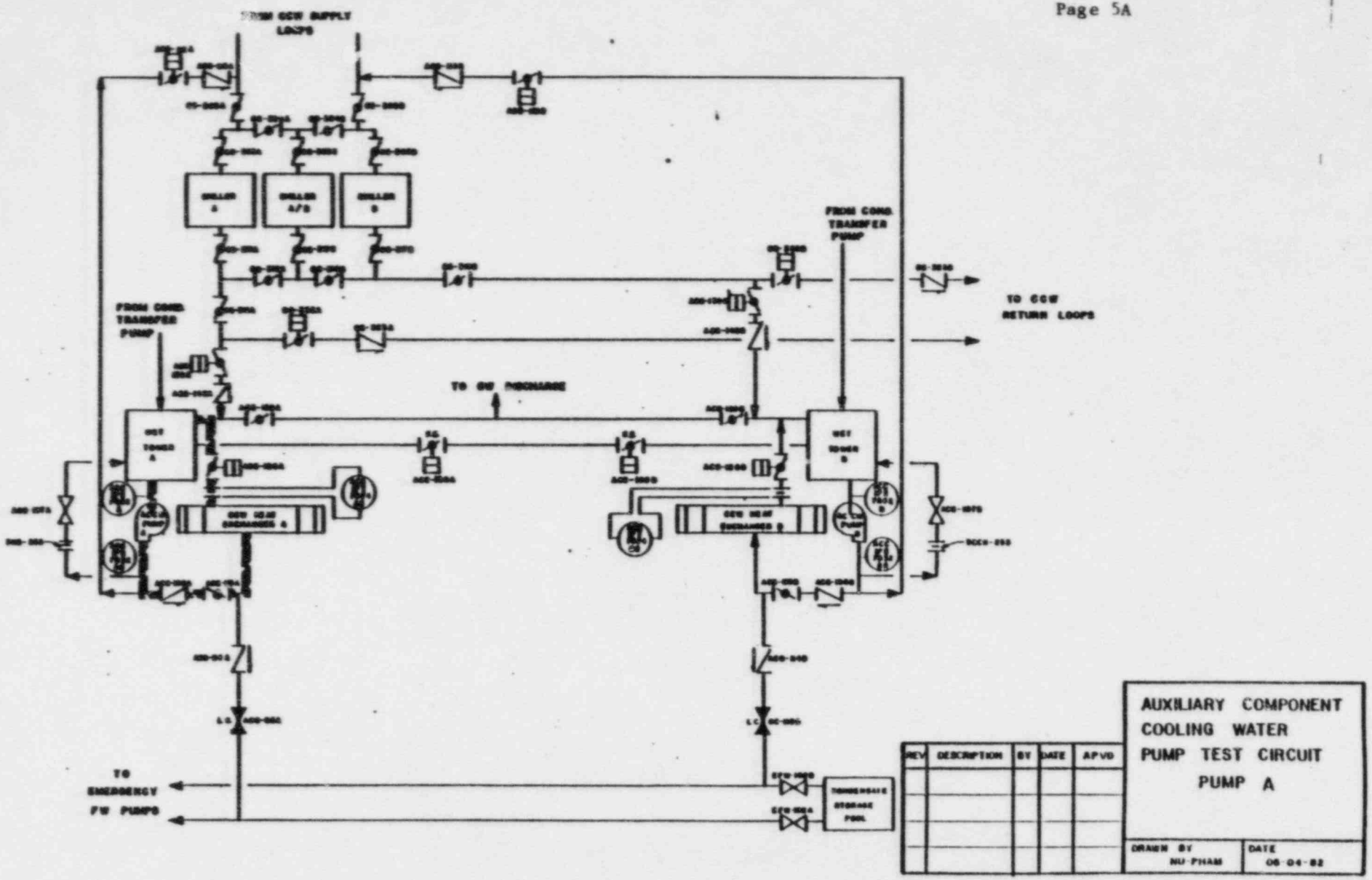

LOAD SUPPLIED BY CCW
CCW PUMPS
CCW MAKEUP PUMPS
REV
DESCRIPTION
BY
DATE
APVD
COMPONENT COOLING WATER PUMP TEST CIRCUIT PUMP A/B
DRAWN BY
NU - PHAM
DATE
08-04-92

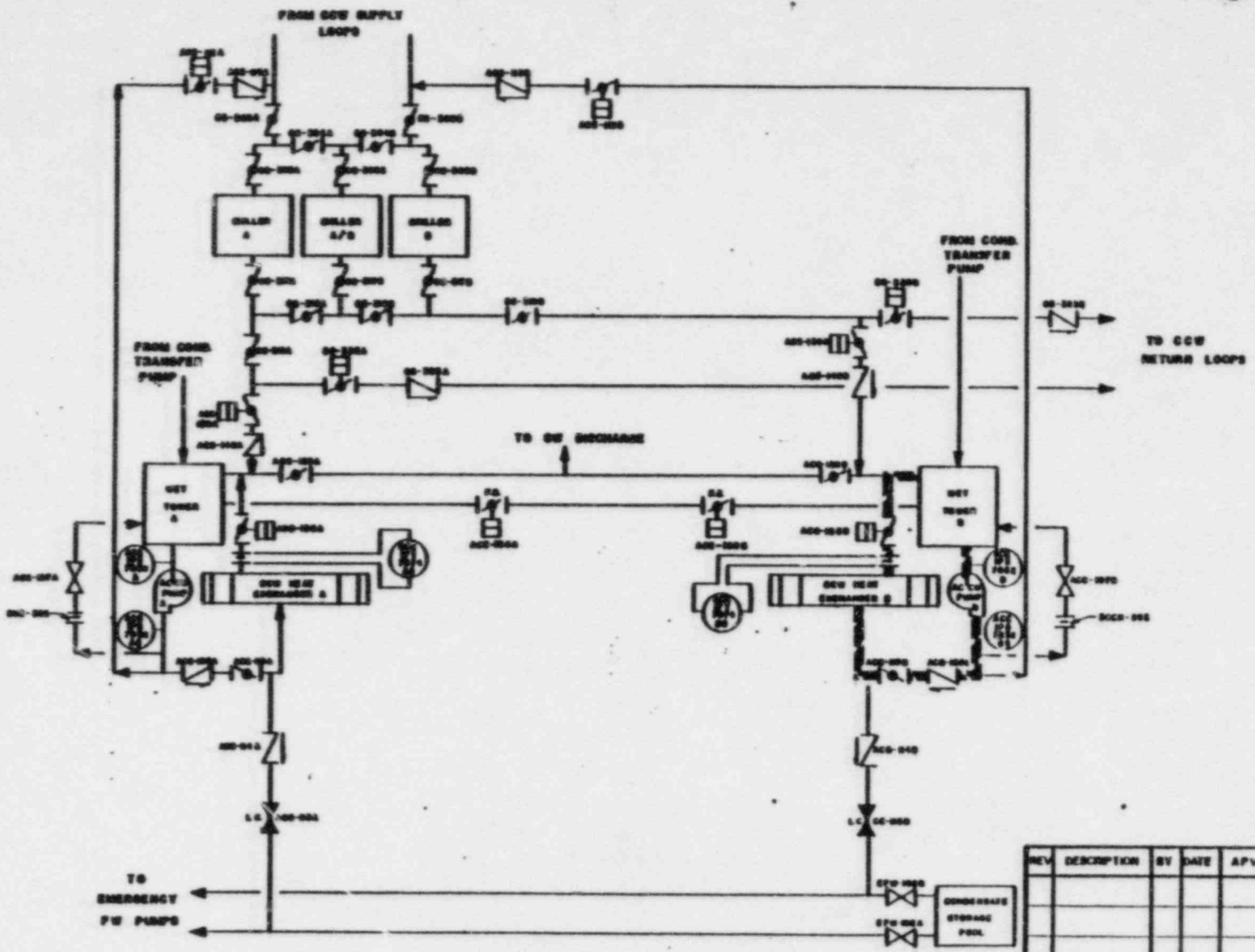
PUMPS FOR INSERVICE TESTING

WATERFORD 3 S.E.S.

REVISION NO. 3

PUMP IDENTIFICATION	ASME CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	LOCATION ON GENERAL ARRANGEMENT	MEASURED PARAMETERS	TEST INTERVAL	RELIEF REQUESTS/ CLARIFICATIONS	REMARKS
Auxiliary Component Cooling Water A	3	LOU-1564-G-160 Sheet 2	RAB,El-35.0' LOU-1564 G-145, H-3	1. Inlet Pressure (Pi)	Quarterly	-	
				2. Outlet Pressure (Po)	Quarterly	-	
Auxiliary Component Cooling Water B	3	G-160 Sheet 2	RAB,El-35.0' LOU-1564 G-145, H-15	3. Differential Pressure ($\Delta P = Po - Pi$)	Quarterly	-	
				4. Flow Rate	Quarterly	-	
				5. Vibration Amplitude	Quarterly	-	
				6. Bearing Temperature	Annually	-	
				7. Lubricant Level or Pressure	Observe Quarterly	-	
				8. Speed	Not Applicable	-	


FROM CCW SUPPLY LOOPS
FROM COND TRANSFER PUMP
FROM COND TRANSFER PUMP
TO CCW RETURN LOOPS
TO EMERGENCY FW PUMPS
AUXILIARY COMPONENT COOLING WATER PUMP TEST CIRCUIT PUMP A
REV
DESCRIPTION
BY
DATE
APVD
DRAWN BY NU-PHAM
DATE 06-04-82



REV	DESCRIPTION	BY	DATE	APVD

AUXILIARY COMPONENT COOLING WATER PUMP TEST CIRCUIT PUMP B

DRAWN BY MU-PHAM

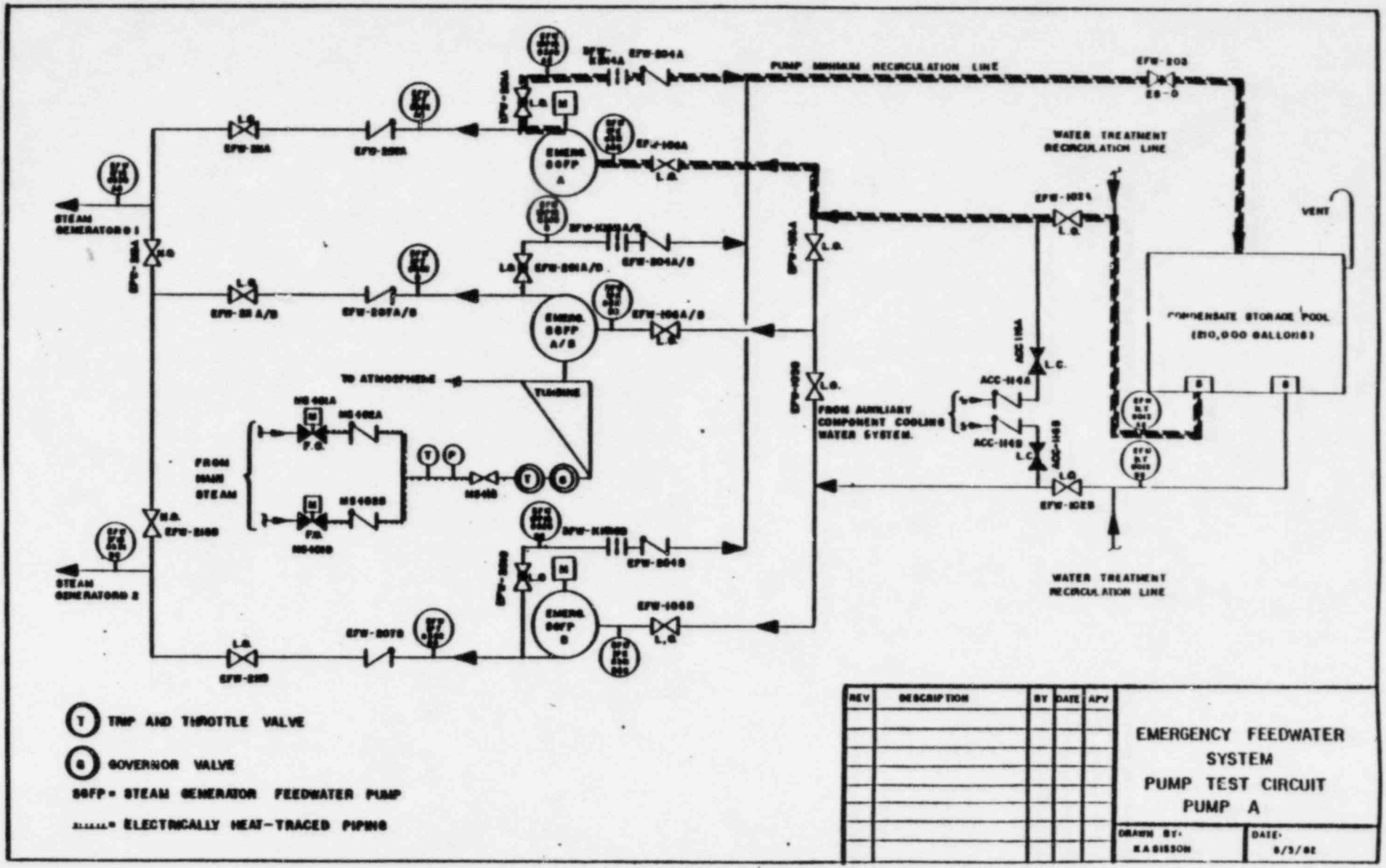
DATE 08-04-82

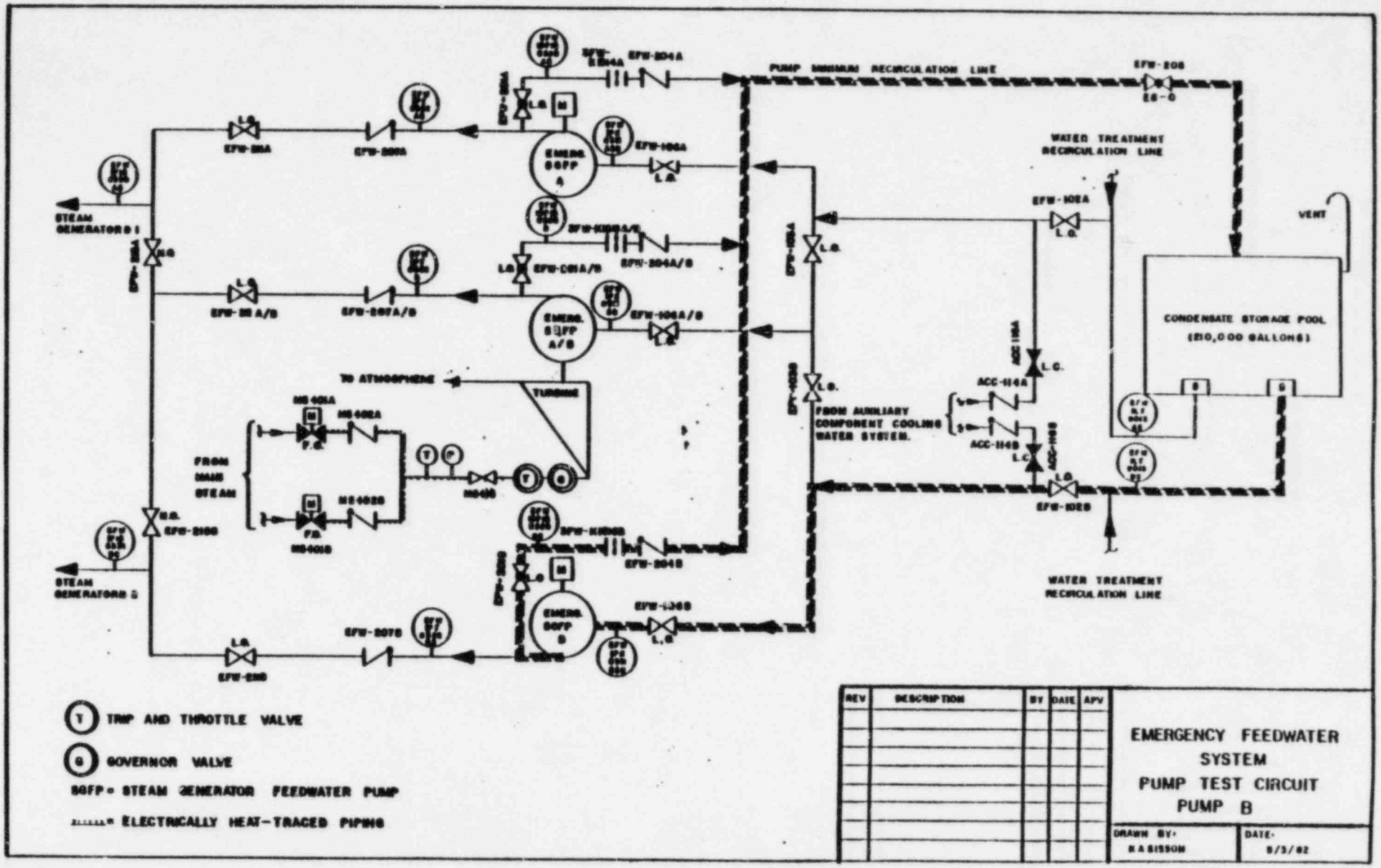
PUMPS FOR INSERVICE TESTING

WATERFORD 3 S.E.S.

REVISION NO. 3

PUMP IDENTIFICATION	ASME CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	LOCATION ON GENERAL ARRANGEMENT	MEASURED PARAMETERS	TEST INTERVAL	RELIEF REQUESTS/ CLARIFICATIONS	REMARKS
Emergency Feedwater A (Motor-Driven)	3	LOU-1564-G-153 Sheet 2	RAB,El-35.0' LOU-1564 G-137, F-7	1. Inlet Pressure (Pi)	Quarterly	2.1.3	
				2. Outlet Pressure (Po)	Quarterly	2.1.3	
Emergency Feedwater B (Motor-Driven)	3	G-153 Sheet 2	RAB,El-35.0' LOU-1564 G-137, E-7	3. Differential Pressure ($\Delta P = Po - Pi$)	Quarterly	2.1.3	
				4. Flow Rate	Quarterly	2.1.3	
				5. Vibration Amplitude	Quarterly	-	
				6. Bearing Temperature	Annually	-	
				7. Lubricant Level or Pressure	Observe Quarterly	-	
				8. Speed	Not Applicable	-	


PUMP MINIMUM RECIRCULATION LINE
EFW-203
WATER TREATMENT RECIRCULATION LINE
EFW-1034
VENT
CONDENSATE STORAGE POOL (210,000 GALLONS)
STEAM GENERATOR 1
STEAM GENERATOR 2
EMERG. SGFP A
EMERG. SGFP A/B
EMERG. SGFP B
TO ATMOSPHERE
TURBINE
FROM MAIN STEAM
FROM AUXILIARY COMPONENT COOLING WATER SYSTEM.
ACC-114A
ACC-114B
EFW-1028
WATER TREATMENT RECIRCULATION LINE
T TRIP AND THROTTLE VALVE
G GOVERNOR VALVE
SGFP = STEAM GENERATOR FEEDWATER PUMP
= ELECTRICALLY HEAT-TRACED PIPING
REV
DESCRIPTION
BY
DATE
APV
EMERGENCY FEEDWATER SYSTEM
PUMP TEST CIRCUIT
PUMP A
DRAWN BY: K A GIBSON
DATE: 6/5/82

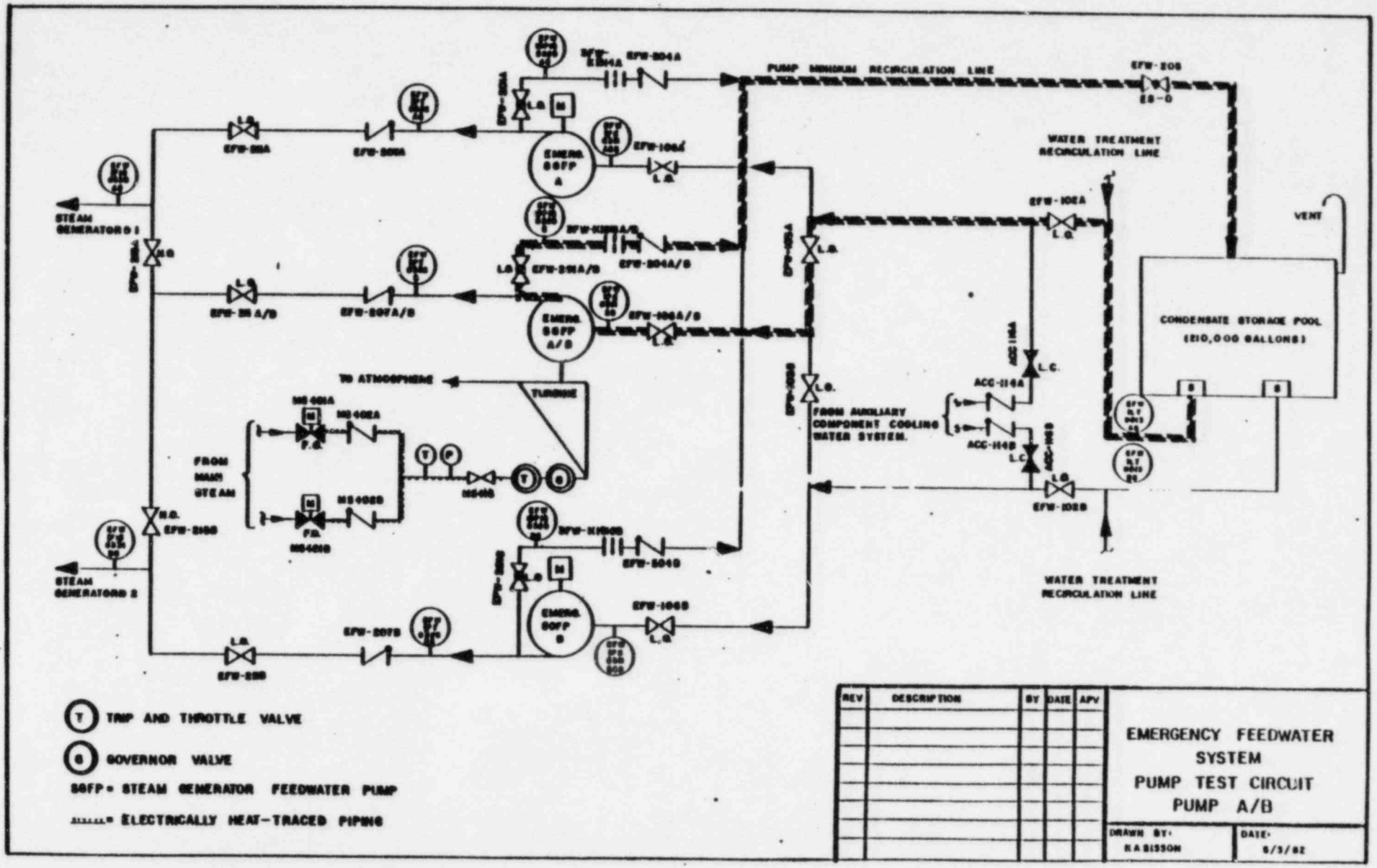

PUMP MINIMUM RECIRCULATION LINE
EFW-206
WATER TREATMENT RECIRCULATION LINE
EFW-108A
VENT
CONDENSATE STORAGE POOL (210,000 GALLONS)
STEAM GENERATOR 1
STEAM GENERATOR 2
EFW-204A
EFW-106A
EFW-204A/B
EFW-106A/B
EFW-207A/B
EFW-207B
EFW-108B
EMERG. SGFP A
EMERG. SGFP A/B
EMERG. SGFP B
TO ATMOSPHERE
TURBINE
FROM MAIN STEAM
MS-4014A
MS-4014B
MS-4015
FROM AUXILIARY COMPONENT COOLING WATER SYSTEM.
ACC-114A
ACC-114B
WATER TREATMENT RECIRCULATION LINE
T TRIP AND THROTTLE VALVE
G GOVERNOR VALVE
SGFP = STEAM GENERATOR FEEDWATER PUMP
ELECTRICALLY HEAT-TRACED PIPING
REV
DESCRIPTION
BY
DATE
APV
EMERGENCY FEEDWATER SYSTEM
PUMP TEST CIRCUIT
PUMP B
DRAWN BY: R A SISSON
DATE: 8/3/82

PUMPS FOR INSERVICE TESTING

WATERFORD 3 S.E.S.

REVISION NO. 3

PUMP IDENTIFICATION	ASME CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	LOCATION ON GENERAL ARRANGEMENT	MEASURED PARAMETERS	TEST INTERVAL	RELIEF REQUESTS/ CLARI-FICATIONS	REMARKS
Emergency Feedwater A/B (Turbine-Driven)	3	LOU-1564-G-153 Sheet 2	RAB,El-35.0' LOU-1564 G-137, C-5	1. Inlet Pressure (Pi)	Quarterly	2.1.3	
				2. Outlet Pressure (Po)	Quarterly	2.1.3	
				3. Differential Pressure (ΔP = Po - Pi)	Quarterly	2.1.3	
				4. Flow Rate	Quarterly	2.1.3	
				5. Vibration Amplitude	Quarterly	-	
				6. Bearing Temperature	Annually	-	
				7. Lubricant Level or Pressure	Observe Quarterly	-	
				8. Speed	Quarterly	-	



REV	DESCRIPTION	BY	DATE	APV

EMERGENCY FEEDWATER SYSTEM
PUMP TEST CIRCUIT
PUMP A/B

DRAWN BY: R A BISSON

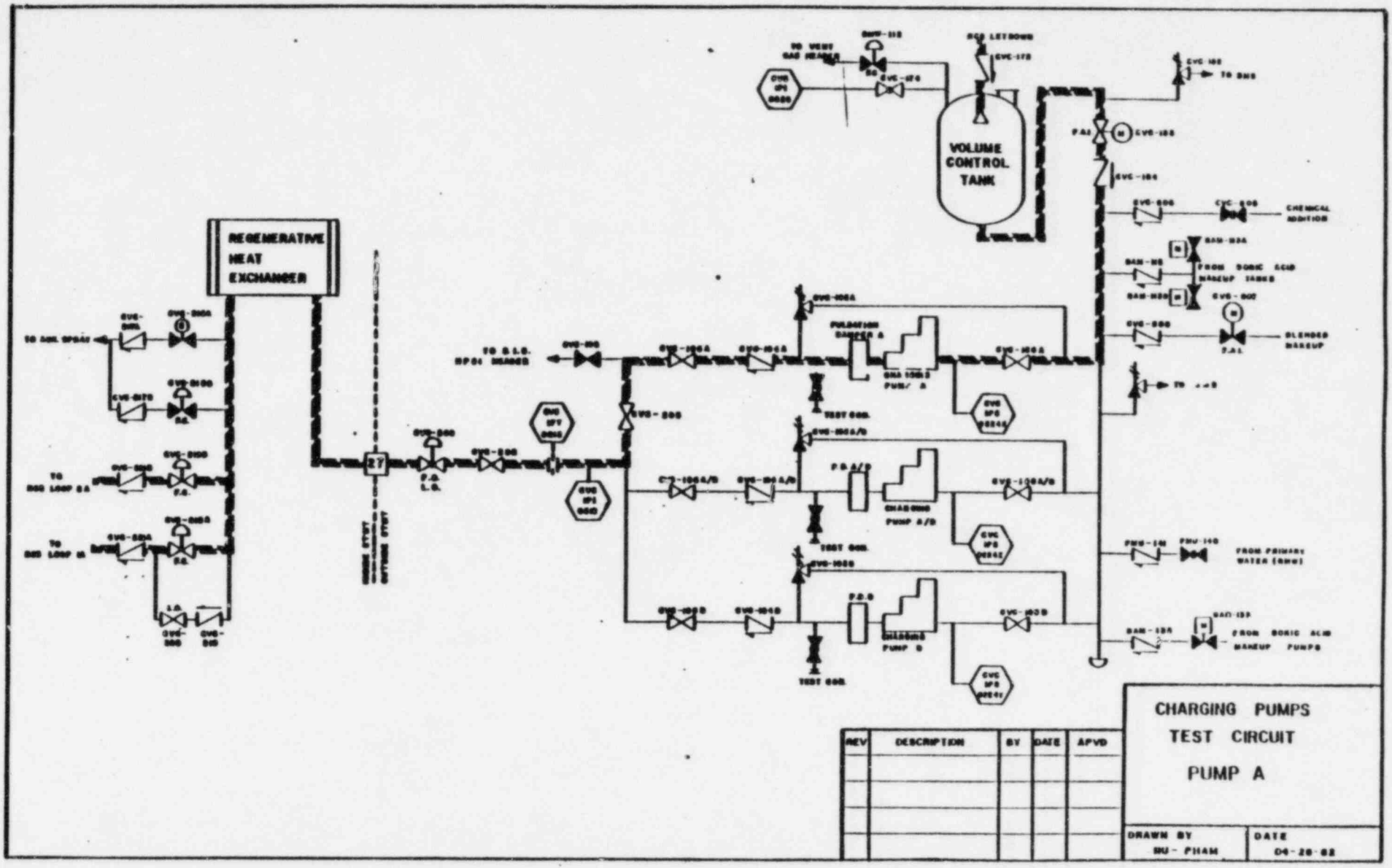
DATE: 6/5/82

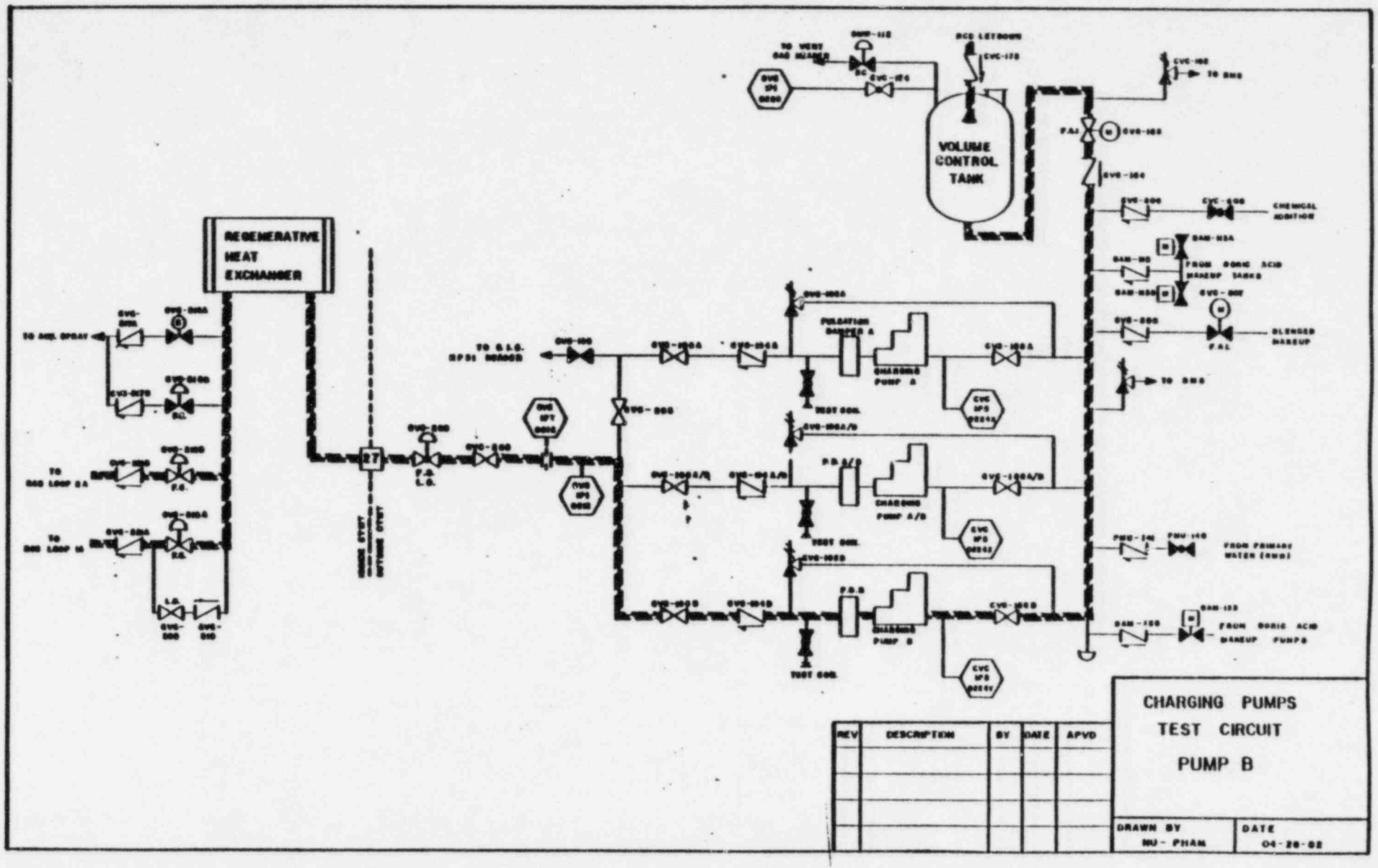
PUMPS FOR INSERVICE TESTING

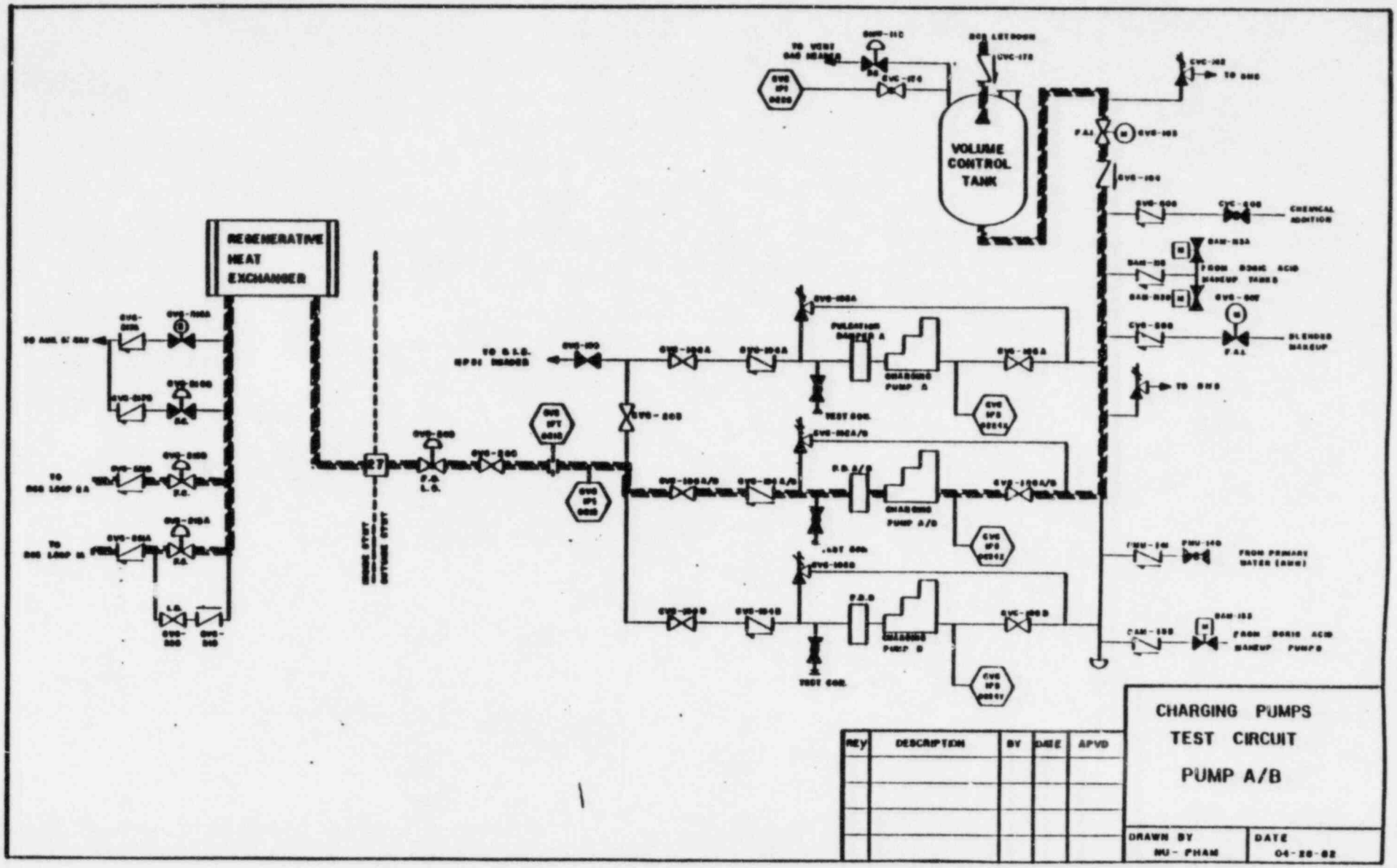
WATERFORD 3 S.E.S.

REVISION NO. 3

PUMP IDENTIFICATION	ASME CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	LOCATION ON GENERAL ARRANGEMENT	MEASURED PARAMETERS	TEST INTERVAL	RELIEF REQUESTS/ CLARI-FICATIONS	REMARKS
Charging A	2	LOU-1564-G-168 Sheet 2	RAB,E1-30.0' LOU-1564 G-137, F-1	1. Inlet Pressure (Pi)	Quarterly	2.1.1	
				2. Outlet Pressure (Po)	Quarterly	2.1.1	
Charging B	2	G-168 Sheet 2	RAB,E1-30.0' LOU-1564 G-137, F-4	3. Differential Pressure ($\Delta P = Po - Pi$)	Quarterly	2.1.1	
				4. Flow Rate	Quarterly	2.1.2, 2.1.1	
Charging A/B	2	G-168 Sheet 2	RAB,E1-30.0' LOU-1564 G-137, F-3	5. Vibration Amplitude	Quarterly	-	
				6. Bearing Temperature	Annually	-	
				7. Lubricant Level or Pressure	Observe Quarterly	-	
				8. Speed	Not Applicable	-	


REGENERATIVE HEAT EXCHANGER
VOLUME CONTROL TANK
TO VENT GAS HEADER
RCS LETDOWN
TO RHS
CHEMICAL ADDITION
FROM BORIC ACID MAKEUP TANKS
BLENDED MAKEUP
FROM PRIMARY WATER (RMW)
FROM BORIC ACID MAKEUP PUMPS
TO RCS LOOP 2A
TO RCS LOOP 1A
TO S.I.S. RPDI HEADER
PULSATION DAMPER A
PULSATION DAMPER B
PULSATION DAMPER C
TEST CONN.
P.A.
P.B.
P.C.
L.A.
L.B.
27
CHARGING PUMPS
TEST CIRCUIT
PUMP A
REV
DESCRIPTION
BY
DATE
APVD
DRAWN BY
MU - PHAM
DATE
04 - 28 - 82


REGENERATIVE HEAT EXCHANGER
VOLUME CONTROL TANK
TO VENT GAS HEADER
RCS LETDOWN
CHEMICAL ADDITION
FROM BORIC ACID MAKEUP TANKS
BLENDED MAKEUP
TO RMS
FROM PRIMARY WATER (PMW)
FROM BORIC ACID MAKEUP PUMPS
TO ACC. SPRAY
TO RHR LOOP 2A
TO RHR LOOP 1A
TO C.S.D. RPDI HEADER
CHARGING PUMP A
CHARGING PUMP A/B
CHARGING PUMP B
TEST CONN.
CHARGING PUMPS
TEST CIRCUIT
PUMP B
REV
DESCRIPTION
BY
DATE
APVD
DRAWN BY
NU - PHAM
DATE
04-28-82

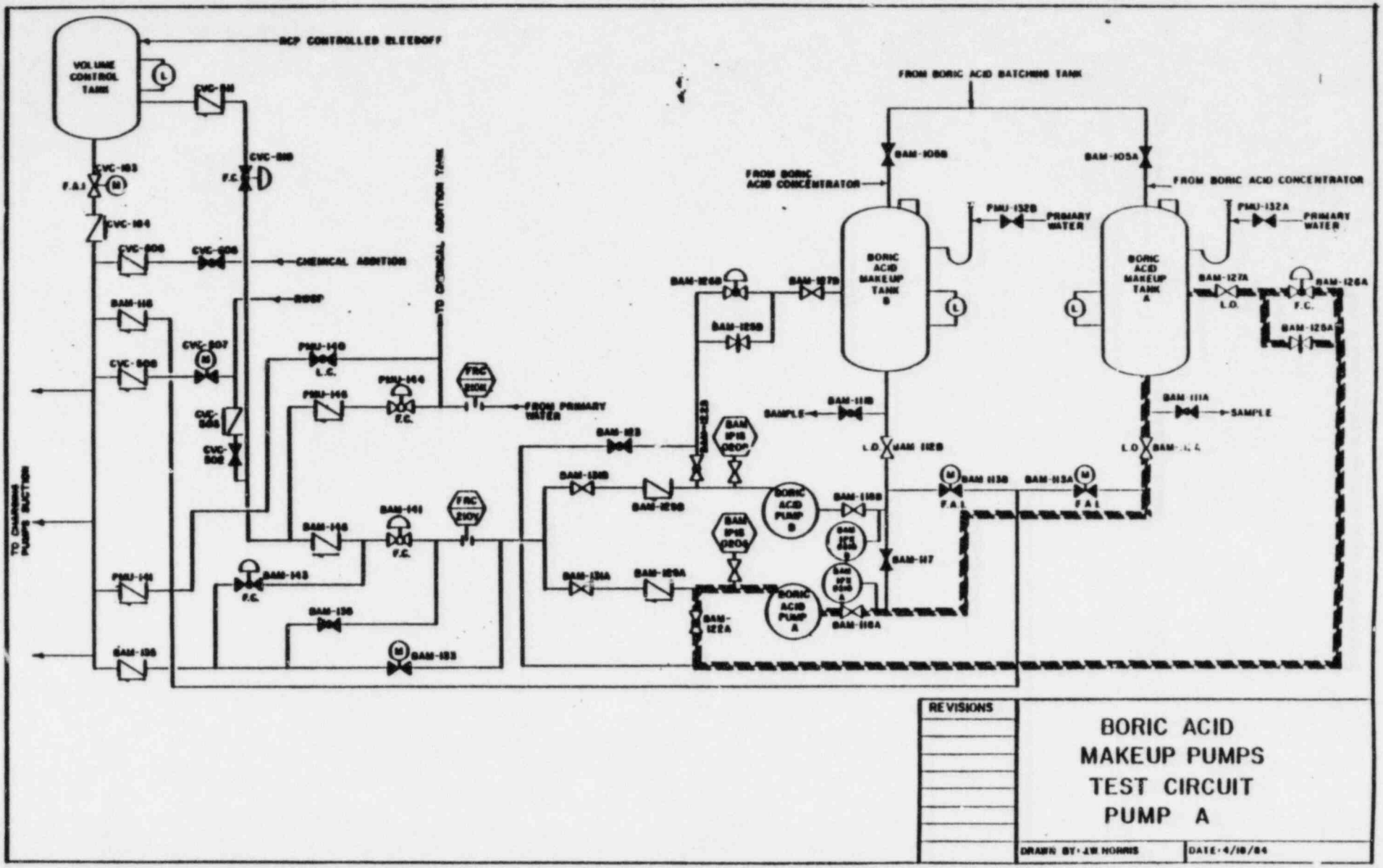

REGENERATIVE HEAT EXCHANGER
VOLUME CONTROL TANK
CHARGING PUMP A
CHARGING PUMP A/B
CHARGING PUMP B
TEST CONN.
TO RHR
CHEMICAL ADDITION
FROM BORIC ACID MAKEUP TANKS
BLENDED MAKEUP
FROM PRIMARY WATER (RMW)
FROM BORIC ACID MAKEUP PUMPS
TO RHR LOOP 2A
TO RHR LOOP 2B
TO A.M.S.G. RPDI HEADER
REV
DESCRIPTION
BY
CHKD
APVD
CHARGING PUMPS TEST CIRCUIT PUMP A/B
DRAWN BY MU - PHAM
DATE 04-28-82

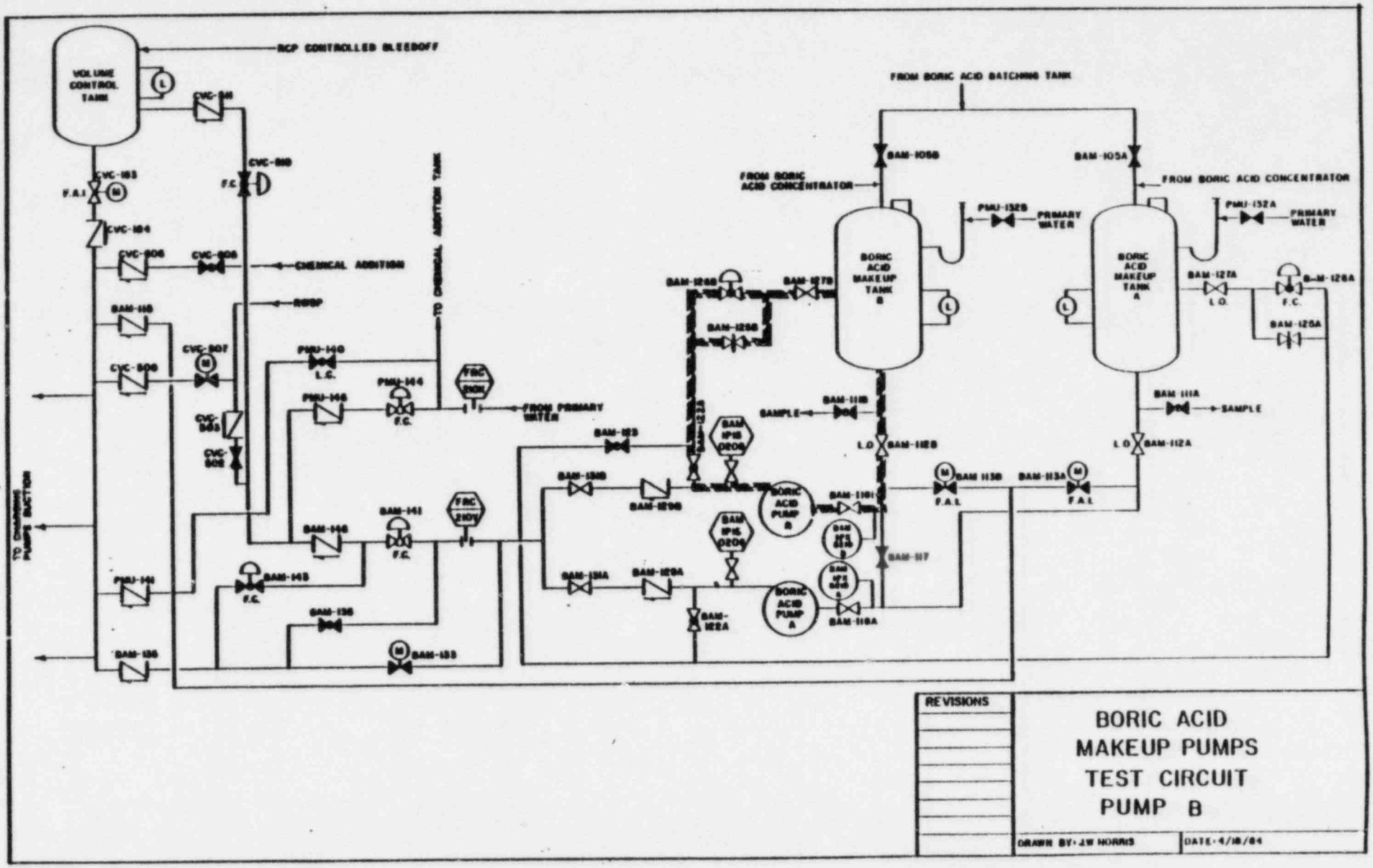
PUMPS FOR INSERVICE TESTING

WATERFORD 3 S.E.S.

REVISION NO. 3

PUMP IDENTIFICATION	ASME CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	LOCATION ON GENERAL ARRANGEMENT	MEASURED PARAMETERS	TEST INTERVAL	RELIEF REQUESTS/ CLARI-FICATIONS	REMARKS
Boric Acid A	3	LOU-1564-G-168 Sheet 2	RAB,El-35.0' LOU-1564 G-137, H-6	1. Inlet Pressure (Pi)	Quarterly	2.1.3	
				2. Outlet Pressure (Po)	Quarterly	2.1.3	
Boric Acid B	3	G-168 Sheet 2	RAB,El-35.0' LOU-1564 G-137, H-6	3. Differential Pressure (ΔP = Po - Pi)	Quarterly	2.1.3	
				4. Flow Rate	Quarterly	2.1.3	
				5. Vibration Amplitude	Quarterly	-	
				6. Bearing Temperature	Annually	-	
				7. Lubricant Level or Pressure	Observe Quarterly	-	
				8. Speed	Not Applicable	-	


VOLUME CONTROL TANK
RCP CONTROLLED BLEEDOFF
CVC-504
CVC-503
CVC-505
CVC-504
CVC-506
CVC-508
CHEMICAL ADDITION
RHDF
TO CHEMICAL ADDITION TANK
BAM-116
CVC-507
CVC-509
PMU-140
PMU-144
PMU-145
FRC 210K
FROM PRIMARY WATER
CVC-510
CVC-502
TO CHARGING PUMPS SUCTION
BAM-141
BAM-146
PMU-141
BAM-143
BAM-136
BAM-133
BAM-135
FROM BORIC ACID BATCHING TANK
BAM-105B
BAM-105A
FROM BORIC ACID CONCENTRATOR
FROM BORIC ACID CONCENTRATOR
PMU-132B
PRIMARY WATER
PMU-132A
PRIMARY WATER
BORIC ACID MAKEUP TANK B
BORIC ACID MAKEUP TANK A
BAM-126B
BAM-127B
BAM-125B
BAM-127A
L.O.
F.C.
BAM-126A
BAM-125A
BAM-111B
SAMPLE
BAM-111A
SAMPLE
L.O.
BAM-112B
L.O.
BAM-112A
BAM-113
BAM-114B
BAM-114A
F.A.I.
F.A.I.
BAM-115B
BAM-117
BAM-116B
BAM-116A
BAM-134
BAM-135A
BAM-122A
BORIC ACID PUMP B
BORIC ACID PUMP A
REVISIONS
BORIC ACID MAKEUP PUMPS TEST CIRCUIT PUMP A
DRAWN BY: J.W. NORRIS
DATE: 4/18/84

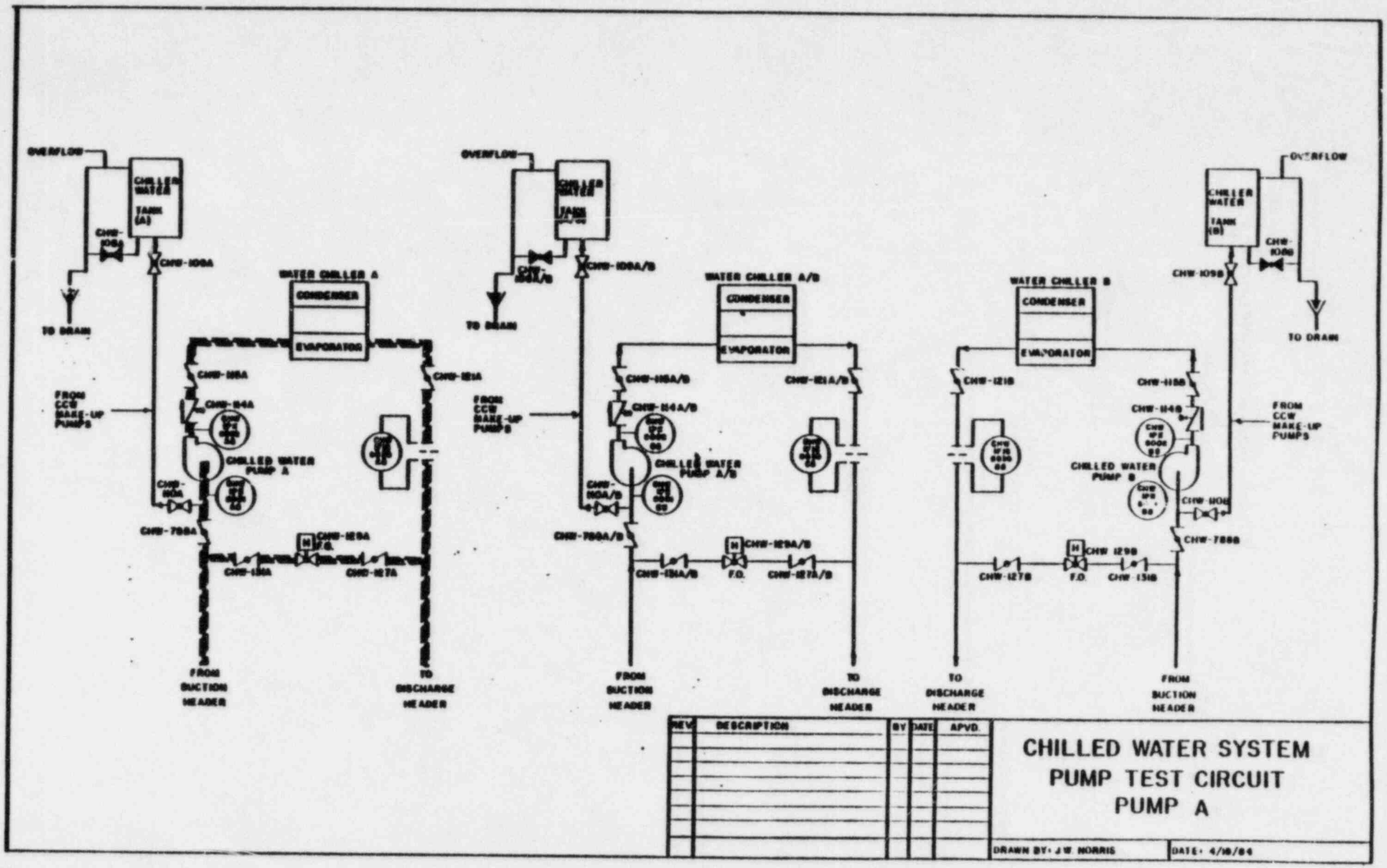

RCP CONTROLLED BLEEDOFF
VOLUME CONTROL TANK
CVC-801
CVC-803
F.A.I.
F.C.
CVC-804
CVC-806
CVC-808
CHEMICAL ADDITION
RHDP
BAM-118
CVC-807
CVC-809
PMU-140
L.C.
PMU-144
PMU-146
FRC 210K
FROM PRIMARY WATER
CVC-813
CVC-812
TO CHEMICAL ADDITION TANK
TO CHARGING PUMPS SUCTION
BAM-123
BAM-1208
BAM-1278
BAM-1258
BAM 1P1B 0204
BAM-1218
BAM-141
FRC 210Y
BAM-140
BAM-143
BAM-136
BAM-135
BAM-133
PMU-145
BAM-134
BAM-1228
BAM-122A
BORIC ACID PUMP A
BORIC ACID PUMP B
BAM-110A
BAM-110B
BAM-117
BAM-1101
BAM-1138
BAM-113A
F.A.I.
FROM BORIC ACID BATCHING TANK
BAM-105B
BAM-105A
FROM BORIC ACID CONCENTRATOR
PMU-132B
PRIMARY WATER
PMU-132A
PRIMARY WATER
BORIC ACID MAKEUP TANK B
BORIC ACID MAKEUP TANK A
BAM-127A
L.O.
F.C.
BAM-128A
BAM-125A
BAM-111A
SAMPLE
BAM-111B
SAMPLE
L.O.
BAM-112B
L.O.
BAM-112A
REVISIONS
BORIC ACID MAKEUP PUMPS TEST CIRCUIT PUMP B
DRAWN BY: J.W. HORRIS
DATE: 4/18/84

PUMPS FOR INSERVICE TESTING

WATERFORD 3 S.E.S.

REVISION NO. 3

PUMP IDENTIFICATION	ASME CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	LOCATION ON GENERAL ARRANGEMENT	MEASURED PARAMETERS	TEST INTERVAL	RELIEF REQUESTS/ CLARI-FICATIONS	REMARKS
Chilled Water A	3	LOU-1564-G-853 SO3	RAB,El+46.0' LOU-1564 G-134, E-3	1. Inlet Pressure (Pi)	Quarterly	-	
				2. Outlet Pressure (Po)	Quarterly	-	
Chilled Water B	3	G-853 SO3	RAB,El+46.0' LOU-1564 G-134, D-3	3. Differential Pressure ($\Delta P = Po - Pi$)	Quarterly	-	
				4. Flow Rate	Quarterly	-	
Chilled Water A/B	3	G-853 SO3	RAB,El+46.0' LOU-1564 G-134, E-2	5. Vibration Amplitude	Quarterly	-	
				6. Bearing Temperature	Annually	-	
				7. Lubricant Level or Pressure	Observe Quarterly	-	
				8. Speed	Not Applicable	-	

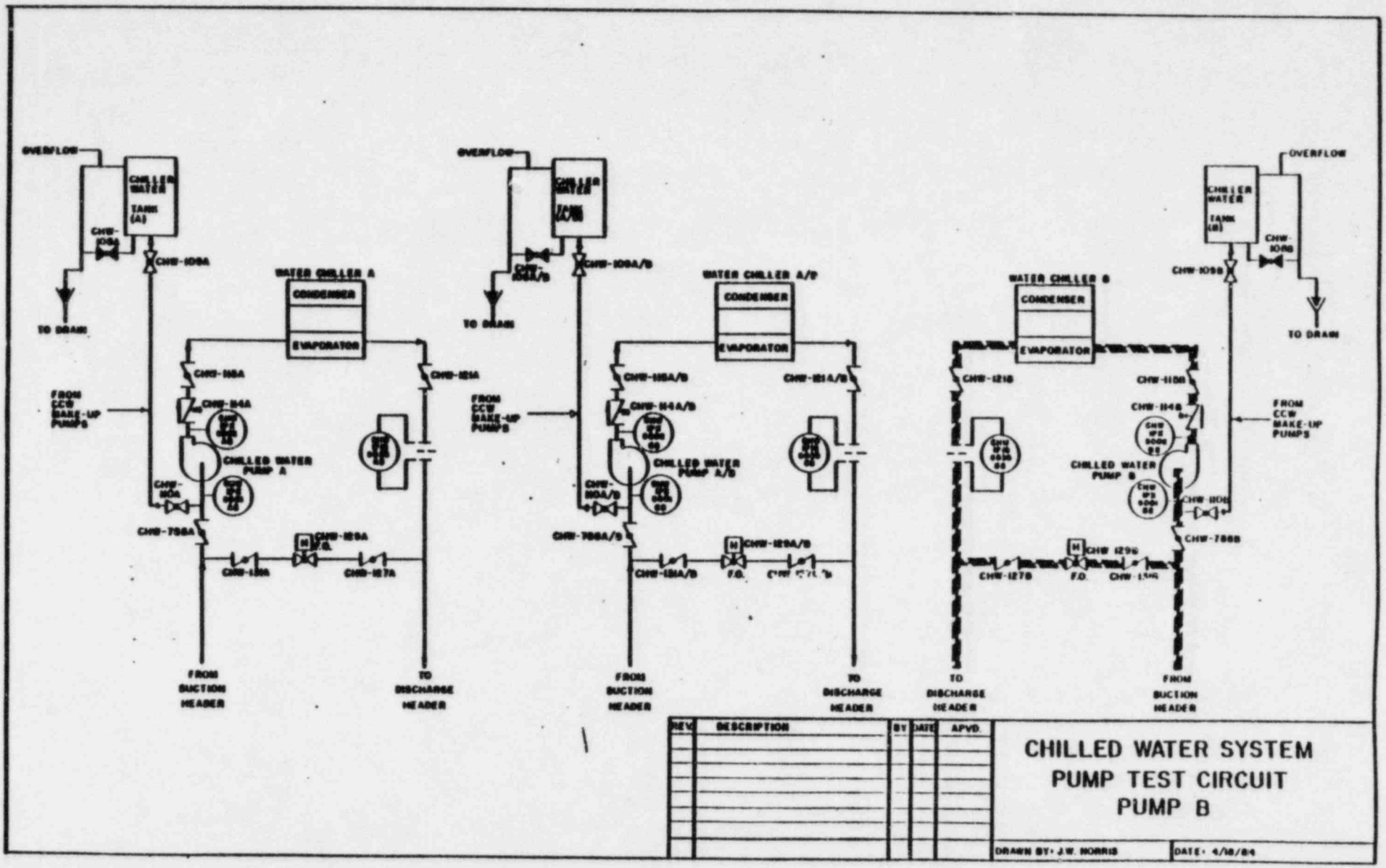


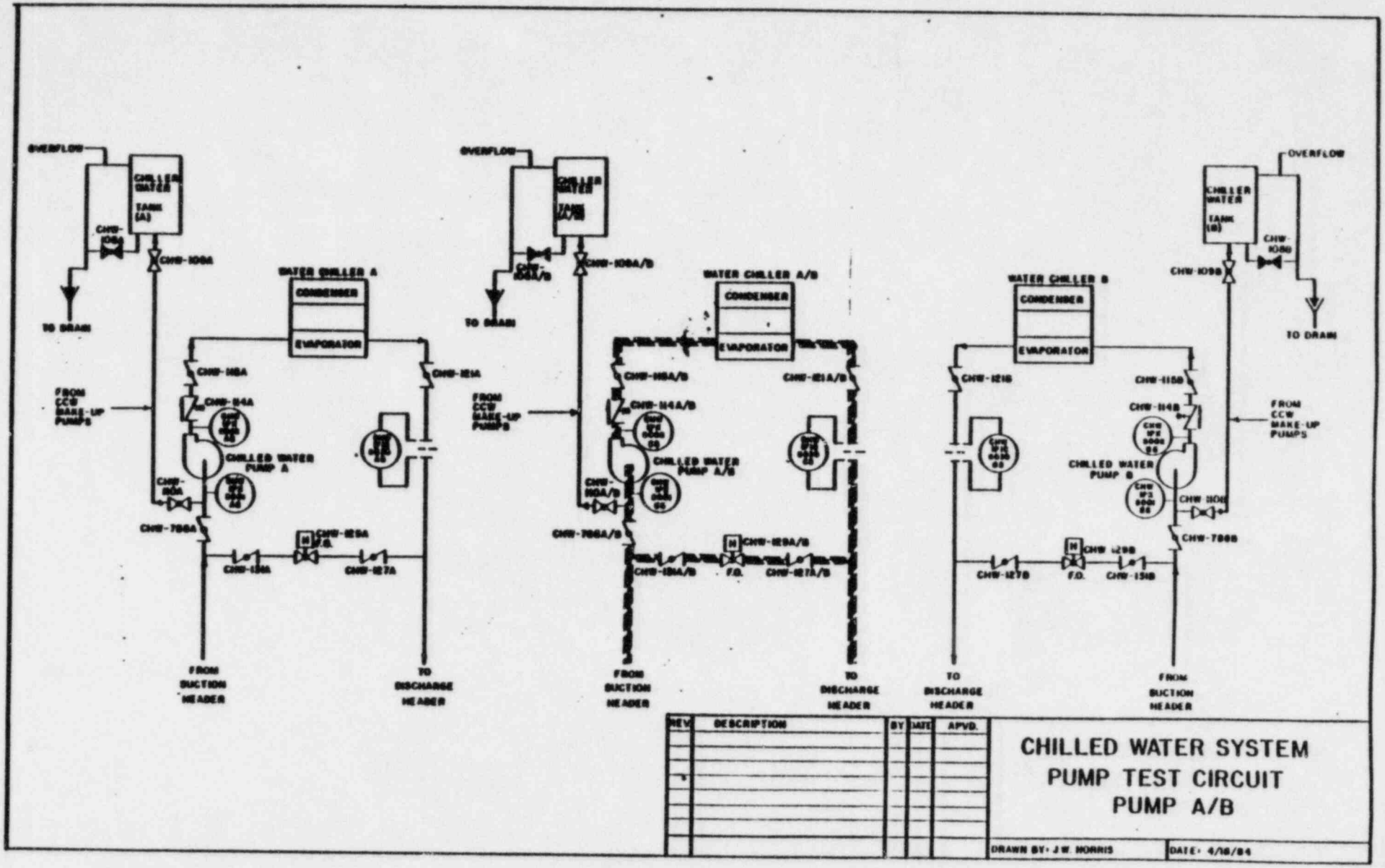
REV	DESCRIPTION	BY	DATE	APVD.

CHILLED WATER SYSTEM PUMP TEST CIRCUIT PUMP A

DRAWN BY: J.W. NORRIS

DATE: 4/18/84


OVERFLOW
CHILLER WATER TANK (A)
CHW-109A
TO DRAIN
WATER CHILLER A
CONDENSER
EVAPORATOR
CHW-118A
CHW-121A
FROM CCW MAKE-UP PUMPS
CHW-114A
CHILLED WATER PUMP A
CHW-108A
CHW-788A
CHW-129A
CHW-128A
CHW-127A
FROM SUCTION HEADER
TO DISCHARGE HEADER
OVERFLOW
CHILLER WATER TANK (A/B)
CHW-109A/B
TO DRAIN
WATER CHILLER A/B
CONDENSER
EVAPORATOR
CHW-118A/B
CHW-121A/B
FROM CCW MAKE-UP PUMPS
CHW-114A/B
CHILLED WATER PUMP A/B
CHW-108A/B
CHW-788A/B
CHW-129A/B
CHW-128A/B
F.O.
FROM SUCTION HEADER
TO DISCHARGE HEADER
WATER CHILLER B
CONDENSER
EVAPORATOR
CHW-121B
CHW-118B
CHW-114B
CHILLED WATER PUMP B
CHW-108B
CHW-788B
CHW-129B
CHW-127B
F.O.
TO DISCHARGE HEADER
OVERFLOW
CHILLER WATER TANK (B)
CHW-109B
TO DRAIN
FROM CCW MAKE-UP PUMPS
FROM SUCTION HEADER
REV.
DESCRIPTION
BY
DATE
APVD.
CHILLED WATER SYSTEM
PUMP TEST CIRCUIT
PUMP B
DRAWN BY: J.W. NORRIS
DATE: 4/18/84


OVERFLOW
CHILLER WATER TANK (A)
CHW-108A
TO DRAIN
WATER CHILLER A
CONDENSER
EVAPORATOR
CHW-116A
CHW-114A
CHW-121A
FROM CCW MAKE-UP PUMPS
CHILLED WATER PUMP A
CHW-106A
CHW-706A
CHW-129A
CHW-126A
CHW-127A
FROM SUCTION HEADER
TO DISCHARGE HEADER
OVERFLOW
CHW-108A/B
TO DRAIN
WATER CHILLER A/B
CONDENSER
EVAPORATOR
CHW-116A/B
CHW-121A/B
CHW-114A/B
FROM CCW MAKE-UP PUMPS
CHILLED WATER PUMP A/B
CHW-106A/B
CHW-706A/B
CHW-129A/B
CHW-126A/B
F.O.
CHW-127A/B
FROM SUCTION HEADER
TO DISCHARGE HEADER
WATER CHILLER B
CONDENSER
EVAPORATOR
CHW-121B
CHW-115B
CHW-114B
CHILLED WATER PUMP B
CHW-106B
CHW-706B
CHW-129B
CHW-127B
F.O.
CHW-126B
FROM SUCTION HEADER
TO DISCHARGE HEADER
OVERFLOW
CHILLER WATER TANK (B)
CHW-108B
CHW-109B
TO DRAIN
FROM CCW MAKE-UP PUMPS
REV
DESCRIPTION
BY
DATE
APVD.
CHILLED WATER SYSTEM
PUMP TEST CIRCUIT
PUMP A/B
DRAWN BY: J.W. HORRIS
DATE: 4/16/84

2.1 Requests for Relief from ASME Boiler and Pressure Vessel Code Section XI Requirements

2.1.1 Test Requirement

Measure inlet pressure before pump startup and during the inservice test.

Basis for Relief

The Charging Pumps are positive displacement type pumps and do not have a performance curve like centrifugal pumps. Variations in inlet and differential pressure do not effect pump flow as long as the Net Positive Suction Head (NPSH) requirements of the pumps are fulfilled. Each pump inlet has a pressure switch which will not allow the pump to start if NPSH requirements are not met.

Alternate Testing

Inlet pressure of the Charging Pumps will not be measured. Since inlet pressure is not measured, differential pressure cannot be measured. As an alternate test, discharge pressure will be used for determining pump operability. If the discharge pressure is greater than or equal to RCS pressure, and measured flow is greater than or equal to .90 times the reference flow, the pumps are operable.

2.1.2 Test Requirement

IWP-4120 requires that the full-scale range of each instrument shall be three times the reference value or less.

Basis for Relief

The Charging Pumps' discharge flow indicator does not comply with this requirement. Each of the three pumps produces a flow of 44 gpm. The flow gauge has a full-scale range of 150 gpm in order to accommodate three-pump flow, such as during safety injection operations. The full-scale range is 3.4 times the reference value. The small difference between the code requirement and the range of this flow gauge is minor.

Alternate Testing

The existing, installed flow indicator will be used for quarterly pump operability testing. The accuracy of the installed flow indicator is within Section XI requirements.

2.1.3 Test Requirement

IWP-3100 requires that the resistance of the system shall be varied until either the measured differential pressure or the measured flow rate equals the corresponding reference value.

Basis for Relief

These systems have recirculation flow paths that contain either a restricting orifice or, in the case of the Boric Acid Pumps, a fully-open globe valve. The pumps that have a restricting orifice are as follows: Containment Spray, High Pressure Safety Injection, Low Pressure Safety Injection, and Emergency Feedwater. The orifice limits flow through the recirculation line to a specific amount. The flow rate is therefore fixed and cannot be adjusted. The Boric Acid Pumps do not have a restricting orifice but do have a throttled and locked needle valve in parallel with a globe valve which can be positioned only in the fully-open or fully-closed position. The recirculation flow rate is therefore fixed. When these pumps are tested using these fixed-resistance flow paths, the flow rates will be approximately the same each time the tests are conducted.

Alternate Testing

Pump testing will be performed using fixed-resistance flow paths. The measured differential pressure will be compared to the allowable ranges given in Table IWP-3100-2 in order to determine pump operability.

2.2 Clarifications of Pump Testing Methods

2.2.1 This clarification deleted. Not necessary.

3.0 INSERVICE TESTING OF VALVES

The table entitled "Valves for Inservice Testing" describes the inservice testing plan for valves subject to the requirements of subsection IWV of the ASME Boiler and Pressure Vessel Code Section XI, 1980 Edition through Winter 1981 Addenda. The table provides the identification of the valves to be tested, valve code classes, drawing references, test categories, size, types, positions, stroke time limits, function, test requirements, and any alternate testing necessary. Relief from the testing requirements of Section XI is requested where full compliance with the requirements of the Code is not practical. In such cases, the table refers to a specific relief request number in Section 3.1 for the appropriate valves. The relief request provides specific information which identifies the applicable code requirements, justification for the relief request, and the testing to be used as an alternate. The design of Waterford 3 does not include any valves which would be classified as ASME Section XI Category D valves. In certain cases, relief is not requested, but the code-required testing is performed in an unusual or complicated manner. In such cases, clarifications are included in Section 3.2 in order to explain how the requirements of Section XI are fulfilled.

Some valves in this Test Plan have a fail-safe position. Both their normal and failure positions are tabulated. Valves with failure positions that are either closed or open are tested to those positions during the exercising tests.

NOTE

Most valve numbers have only three numerical digits with a few valves having four. Typically, the four digit valves were added after the valves in that system had been given Unique Identification (UNID) numbers by LP&L. Since valves are numbered according to their relative location in the flow path, a newly-added valve is given a fourth digit which maintains the unique numbering system and also reflects relative flow path position. As an example, RC-3183 is situated between RC-318 and RC-3184.

LEGEND OF SYMBOLS

Legend for Valve Type

B - Butterfly
CK - Check
D - Diaphragm
GA - Gate
GL - Globe
N - Needle
PR - Pressure Relief or Safety
ANG - Angle

Legend for Actuator Type

AO - Air Operated
M - Manual
MO - Motor Operated
SA - System Actuated
SO - Solenoid Operated
HO - Hydraulic Operated
HP - Hydraulic/Pneumatic Operated

Legend for Valve Testing Requirements

Q - Exercise valves (full stroke) for operability at least once every three (3) months except that when one train of a redundant system is inoperable, then nonredundant valves in the remaining train should not be cycled since their failure would cause a loss of total system function.

☆ - Remote valve position indicators are used to verify valve stem position.

CV - Exercise check valves to the position required to fulfill their function at least once every three (3) months.

MT - Stroke time measurements are taken and compared to the stroke time limiting value per Section XI Article IWV-3410. Trending of valve stroke times is performed per IWV-3417 for valves with stroke time limits greater than two (2) seconds.

SRV - Safety and relief valves are tested per Section XI Article IWV-3510.

LT - Valves are leak tested per Appendix J to 10CFR50 at each refueling outage.

LTP - Containment Purge valves are leak tested per plant Technical Specifications.

PIV - Reactor Coolant System Pressure Isolation valves are leak tested per plant Technical Specifications.

LTO - Per IWV-3421, operational observations are used to demonstrate satisfactory performance of valves.

Legend for Alternate Valve Testing

CS - Exercise valve (full stroke) for operability during each cold shutdown and at each refueling outage.

CSP - Exercise valve (partial stroke) for operability at least once every three (3) months and exercise valve (full stroke) at each cold shutdown.

CSR - Exercise check valve (partial stroke) at each cold shutdown and full stroke at each reactor refueling outage.

CSD - Exercise valve (full stroke) for operability during each cold shutdown if the system is depressurized.

NOTE PERTAINING TO ALL COLD SHUTDOWN TESTING:
Valve testing will commence not later than 48 hours after entering cold shutdown and continue until complete or until plant is ready to return to power. Completion of all valve testing is not a prerequisite to return to power. Any testing not completed at one cold shutdown will be performed during the subsequent cold shutdowns. In case of frequent cold shutdowns, valve testing will not be performed more often than once every three (3) months.

RR - Exercise valve for operability at each reactor refueling outage.

PRR - Exercise check valve (partial stroke) quarterly, and full stroke at each reactor refueling outage.

NT - No testing required.

NST - No stroke time measurements are taken.

Legend for Alternate Valve Testing (Cont.)

NPO - Seat leak tightness is demonstrated during normal plant operation.

TNT - Stroke times of these "rapid acting" valves are not trended due to very short stroke times (less than or equal to 2 seconds).

ME - Valves are manually exercised quarterly.

DRR - Valves are disassembled and stroked during reactor refueling outages on a sampling basis.

NOTE: Four valves in the Component Cooling Water System have been renumbered as follows:

OLD NUMBER	NEW NUMBER
CC-320A	ACC-139A
CC-320B	ACC-139B
CC-321A	ACC-140A
CC-321B	ACC-140B

NOTE: Air Conditioning includes the following systems:

ANP - Annulus Negative Pressure

CAP - Containment Atmospheric Purge

CAR - Containment Atmospheric Release

CVR - Containment Vacuum Relief

HVC - Control Room HVAC

HVR - Reactor Auxiliary Building HVAC

SBV - Shield Building Ventilation

NOTE: Demineralized Water includes the following systems:

CMU - Condensate Makeup and Storage

PMU - Primary Makeup

VALVES FOR INSERVICE TESTING

System: Reactor Coolant (RC)

WATERFORD S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
RC-1014 (2RC-2560B)	2	LOU-1564-G-172	E-7	B	1	GL	SO	C	C	Q* MT	CSD TNT	3.1.42 3.1.1	- 2	Reactor Pressure Vessel Head Vent	
RC-1015 (2RC-2559A)	2	G-172	F-7	B	1	GL	SO	C	C	Q* MT	CSD TNT	3.1.42 3.1.1	- 2	Reactor Pressure Vessel Head Vent	
RC-1017 (2RC-2562B)	2	G-172	E-8	B	1	GL	SO	C	C	Q* MT	CSD TNT	3.1.42 3.1.1	- 2	Pressurizer and Reactor Vessel Head Vent to Quench Tank	
RC-317A	1	G-172	H-6	C	6x8	PR	SA	C	-	SRV	-	-	-	Pressurizer Safety	
RC-317B	1	G-172	H-6	C	6x8	PR	SA	C	-	SRV	-	-	-	Pressurizer Safety	
RC-3183 (2RC-2558B)	2	G-172	H-7	B	1	GL	SO	C	C	Q* MT	CSD TNT	3.1.42 3.1.1	- 2	Pressurizer Head Vent	
RC-3184 (2RC-E2557A)	2	G-172	G-7	B	1	GL	SO	C	C	Q* MT	CSD TNT	3.1.42 3.1.1	- 2	Pressurizer Head Vent	

W330149E

VALVES FOR INSERVICE TESTING

System: Reactor Cooolant (RC)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
RC-3186 (2RC-2561A)	2	LOU-1564 G-172	F-8	B	1	GL	SO	C	C	Q* MT	CSD TNT	3.1.42 3.1.1	- 2	Pressurizer and Reactor Vessel Head Vent to Quench Tank	
RC-606	2	G-168 Sheet 2	H-6	A	2	GL	AO	O	C	Q* MT LT	CS - -	3.1.2, 3.1.3, 3.1.4 - -	- 10 -	Seal Water from RC Pumps to Volume Control Tank	CIMI Isolation CIAS closes, but has override

VALVES FOR INSERVICE TESTING

System: Chemical and Volume Control System (CVC)
Including Boric Acid Makeup (BAM)

WATERFORD 3 S.E.S.
REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
BAM-113A	3	LOU-1564-G-168 Sheet 2	B-7	B	3	GA	MO	C	AI	Q* MT	CS -	3.1.5, 3.1.3, 3.1.4 -	- 10	Gravity Feed Discharge from Boric Acid Makeup Tank B to Charging Pumps Suction	
BAM-113B	3	G-168 Sheet 2	B-6	B	3	GA	MO	C	AI	Q* MT	CS -	3.1.5, 3.1.3, 3.1.4 -	- 10	Gravity Feed Discharge from Boric Acid Makeup Tank B to Charging Pumps Suction	
BAM-115	2	G-168 Sheet 2	E-6	C	3	CK	SA	C	-	CV	CS	3.1.6 3.1.3	- -	Gravity Feed Discharge from Boric Acid Makeup Tanks to Charging Pumps Suction	
BAM-125A	3	G-168 Sheet 2	D-8	B	3/4	N	M	O	O	None	-	-	-	Boric Acid Pump A Minimum Flow Recirculation Line	Passive
BAM-125B	3	G-168 Sheet 2	D-5	B	3/4	N	M	O	O	None	-	-	-	Boric Acid Pump B Minimum Flow Recirculation Line	Passive

VALVES FOR INSERVICE TESTING

System: Chemical and Volume Control System (CVC)
Including Boric Acid Makeup (BAM)

WATERFORD 3 S.E.S.
REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
BAM-126A	3	LOU-1564-G-168 Sheet 2	D-8	B	1	GL	AO	O	C	Q* MT	- -	- -	- 5	Boric Acid Pump A Recirculation Line	Tested with BAM Pump A
BAM-126B	3	G-168 Sheet 2	D-5	B	1	GL	AO	O	C	Q* MT	- -	- -	- 5	Boric Acid Pump B Recirculation Line	Tested with BAM Pump B
BAM-129A	3	G-168 Sheet 2	B-5	C	3	CK	SA	C	-	CV	CS	3.1.40 3.1.3	-	Boric Acid Pump A Discharge Check Valve	
BAM-129B	3	G-168 Sheet 2	B-5	C	3	CK	SA	C	-	CV	CS	3.1.40 3.1.3	-	Boric Acid Pump B Discharge Check Valve	
BAM-133	3	G-168 Sheet 2	C-4	B	3	GA	MO	C	AI	Q* MT	CS -	3.1.5, 3.1.3, 3.1.4 -	- 10	Boric Acid Pumps Discharge to Charging Pumps Suction	
BAM-135	2	G-168 Sheet 2	E-4	C	3	CK	SA	C	-	CV	CS	3.1.6 3.1.3	- -	Boric Acid Pumps Discharge to Charging Pumps Suction	

VALVES FOR INSERVICE TESTING

System: Chemical and Volume Control System (CVC)
Including Boric Acid Makeup (BAM)

WATERFORD 3 S.E.S.
REVISION NO. 5

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
CVC-101	1	LOU-1564 G-168 Sheet 1	D-7	B	2	GA	AO	O	C	Q* MT	CS -	3.1.7, 3.1.3, 3.1.4 -	- 5	Letdown from RCS Loop 2B to Regenerative Heat Exchanger	SIAS closes, but has override
CVC-103	1	G-168 Sheet 1	D-7	A	2	GA	AO	O	C	Q* MT LT	CS - -	3.1.7, 3.1.3, 3.1.4 - -	- 10 -	Letdown from RCS Loop 2B to Regenerative Heat Exchanger	CIMT Isolation CIAS & SIAS close, but has override
CVC-109	2	G-168 Sheet 1	E-7	A	2	GA	AO	O	C	Q* MT LT	CS - -	3.1.7, 3.1.3, 3.1.4 - -	- 10 -	Letdown from Regenera-tive Heat Exchanger to Letdown Heat Exchanger	CIMT Isolation CIAS closes, but has override

VALVES FOR INSERVICE TESTING

System: Chemical and Volume Control System (CVC)
Including Boric Acid Makeup (BAM)

WATERFORD 3 S.E.S.
REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
CVC-183	2	LOU-1564-G-168 Sheet 2	F-7	B	4	GA	MO	O	AI	Q* MT	CS -	3.1.7, 3.1.3, 3.1.4 -	- 10	Discharge from Volume Control Tank to Charging Pumps Suction	SIAS closes
CVC-194A	2	G-168 Sheet 2	G-3	C	2	CK	SA	C	-	CV	-	3.2.2	-	Charging Pump A Discharge Check	
CVC-194B	2	G-168 Sheet 2	E-3	C	2	CK	SA	C	-	CV	-	3.2.2	-	Charging Pump B Discharge Check	
CVC-194A/B	2	G-168 Sheet 2	F-3	C	2	CK	SA	C	-	CV	-	3.2.2	-	Charging Pump A/B Discharge Check	
CVC-216A	1	G-168 Sheet 1	C-7	B	2	GL	SO	C	C	Q* MT	CS TNT	3.1.8, 3.1.3, 3.1.4 3.1.9	- 2	Auxiliary Pressurizer Spray Isolation	
CVC-216B (1CH-E2505B)	1	G-168 Sheet 1	C-7	B	2	GL	SO	C	C	Q* MT	CS TNT	3.1.8, 3.1.3, 3.1.4 3.1.9	- 2	Auxiliary Pressurizer Spray Isolation	

VALVES FOR INSERVICE TESTING

System: Chemical and Volume Control System (CVC)
Including Boric Acid Makeup (BAM)

WATERFORD 3 S.E.S.
REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
CVC-217A	1	LOU-1564-G-168 Sheet 1	C-8	C	2	CK	SA	C	-	CV	CS	3.1.10 3.1.3	-	Auxiliary Pressurizer Spray Check	
CVC-217B (1CH-V2502-4)	1	G-168 Sheet 1	C-8	C	2	CK	SA	C	-	CV	CS	3.1.10 3.1.3	-	Auxiliary Pressurizer Spray Check	
CVC-218A	1	G-168 Sheet 1	B-7	B	2	GL	SO	O	C	Q* MT	- -	- -	- 4	Normal Charging Isolation	
CVC-218B	1	G-168 Sheet 1	B-7	B	2	GL	SO	O	C	Q* MT	- -	- -	- 4	Normal Charging Isolation	
CVC-219	1	G-168 Sheet 1	A-7	C	2	CK	SA	C	-	CV	CS	3.1.41 3.1.3	-	Normal Charging Bypass Check	
CVC-221A	1	G-168 Sheet 1	B-8	C	2	CK	SA	O	-	CV	-	-	-	Normal Charging Check	
CVC-221B	1	G-168 Sheet 1	B-8	C	2	CK	SA	O	-	CV	-	-	-	Normal Charging Check	

VALVES FOR INSERVICE TESTING

System: Chemical and Volume Control System (CVC)
Including Boric Acid Makeup (BAM)

WATERFORD 3 S.E.S.
REVISION NO. 4

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
CVC-401	2	LOU-1564-G-168 Sheet 2	H-7	A	3/4	GL	AO	O	C	Q* MT LT	CS - -	3.1.2, 3.1.3, 3.1.4 - -	- 10 -	Reactor Coolant Pump Seal Leak-Off Return to Volume Control Tank	CIMT Isolation CIAS closes, but has override
CVC-507	3	G-168 Sheet 2	E-4	B	3	GA	MO	C	AI	Q* MT	CS -	3.1.5, 3.1.3, 3.1.4 -	- 10	RWSP to Charging Pump Suction	
CVC-508	2	G-168 Sheet 2	E-4	C	3	CK	SA	C	-	CV	CS	3.1.6 3.1.3	- -	RWSP to Charging Pump Suction	

VALVES FOR INSERVICE TESTING

System: Safety Injection (SI)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
SI-106A	2	LOU-1564-G-167 Sheet 1	H-7	B	24	B	AO	O	AI	Q* MT	- -	- -	- 20	RWSP Discharge Isolation	
SI-106B	2	G-167 Sheet 1	H-7	B	24	B	AO	O	AI	Q* MT	- -	- -	- 20	RWSP Discharge Isolation	
SI-107A	2	G-167 Sheet 1	G-7	C	24	CK	SA	O	-	CV	PRR	3.1.12	-	RWSP Discharge Check	
SI-107B	2	G-167 Sheet 1	G-7	C	24	CK	SA	O	-	CV	PRR	3.1.12	-	RWSP Discharge Check	
SI-1071A (2SI-V-354A)	2	G-167 Sheet 1	F-8	C	20	CK	SA	C	-	CV	PRR	3.1.12	-	LPSI Pump A Suction Check	
SI-1071B (2SI-V-355B)	2	G-167 Sheet 1	D-8	C	20	CK	SA	C	-	CV	PRR	3.1.12	-	LPSI Pump B Suction Check	
SI-108A	2	G-167 Sheet 1	F-7	C	20	CK	SA	C	-	CV	PRR	3.1.12	-	LPSI Pump A Suction Check	

VALVES FOR INSERVICE TESTING

System: Safety Injection (SI)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
SI-108B	2	LOU-1564-G-167 Sheet 1	D-7	C	20	CK	SA	C	-	CV	PRR	3.1.12	-	LPSI Pump B Suction Check	
SI-116A	2	G-167 Sheet 1	E-6	C	2	CK	SA	C	-	CV	-	3.2.3	-	LPSI Pump A Minimum Flow Check	
SI-116B	2	G-167 Sheet 1	E-5	C	2	CK	SA	C	-	CV	-	3.2.3	-	LPSI Pump B Minimum Flow Check	
SI-1161A (2SI-E1587A)	2	G-167 Sheet 1	E-6	B	2	GA	SO	O	O	Q* MT	- TNT	- 3.1.1	- 2	LPSI Pump A Minimum Flow Isolation	
SI-1161B (2SI-E1588B)	2	G-167 Sheet 1	F-5	B	2	GA	SO	O	O	Q* MT	- TNT	- 3.1.1	- 2	LPSI Pump B Minimum Flow Isolation	
SI-120A	2	G-167 Sheet 1	G-6	B	4	GA	MO	O	AI	Q* MT	- -	- -	- 30	LPSI Pump A, HPSI Pumps A and A/B and CSS Pump A Minimum Flow Isolation	
SI-120B	2	G-167 Sheet 1	G-5	B	4	GA	MO	O	AI	Q* MT	- -	- -	- 30	LPSI Pump B, HPSI Pump B and CCS Pump B Minimum Flow Isolation	

VALVES FOR INSERVICE TESTING

System: Safety Injection (SI)

WATERFORD 3 S.E.S.

REVISION NO. 5

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
SI-121A	2	LOU-1564-G-167 Sheet 1	H-6	B	4	GA	MO	O	AI	Q* MT	- -	- -	- 30	LPSI Pump A, HPSI Pumps A and A/B and CSS Pump A Minimum Flow Isolation	
SI-121B	2	G-167 Sheet 1	H-5	B	4	GA	MO	O	AI	Q* MT	- -	- -	- 30	LPSI Pump B, HPSI Pump B and CSS Pump B Minimum Flow Isolation	
SI-122A	2	G-167 Sheet 1	F-5	C	8	CK	SA	C	-	CV	PRR	3.1.24	-	LPSI Pump A Discharge Check	
SI-122B	2	G-167 Sheet 1	E-5	C	8	CK	SA	C	-	CV	PRR	3.1.24	-	LPSI Pump B Discharge Check	
SI-125A	2	G-167 Sheet 1	F-5	B	10	GA	MO	C	AI	Q* MT	- -	- -	- 60	LPSI Pump A Discharge to Shutdown Cooling Heat Exchanger A	
SI-125B	2	G-167 Sheet 1	E-5	B	10	GA	MO	C	AI	Q* MT	- -	- -	- 60	LPSI Pump B Discharge to Shutdown Cooling Heat Exchanger B	
SI-129A	2	G-167 Sheet 1	F-4	B	10	B	AO	O	O	Q* MT	- -	- -	- 15	Shutdown Cooling Heat Exchanger A Bypass	

VALVES FOR INSERVICE TESTING

System: Safety Injection (SI)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
SI-129B	2	LOU-1564-G-167 Sheet 1	F-4	B	10	B	AO	O	O	Q* MT	- -	- -	- 15	Shutdown Cooling Heat Exchanger B Bypass	
SI-135A	2	G-167 Sheet 2	E-6	B	8	GA	MO	C	AI	Q* MT	- -	- -	- 60	LPSI Pump A Recirculation	
SI-135B	2	G-167 Sheet 2	E-7	B	8	GA	MO	C	AI	Q* MT	- -	- -	- 60	LPSI Pump B Recirculation	
SI-138A	2	G-167 Sheet 2	B-7	B	6	GL	MO	C	AI	Q* MT	- -	- -	- 15	LPSI Header Discharge	SIAS Opens.
SI-138B	2	G-167 Sheet 2	F-7	B	6	GL	MO	C	AI	Q* MT	- -	- -	- 15	LPSI Header Discharge	SIAS Opens.
SI-139A	2	G-167 Sheet 2	D-7	B	6	GL	MO	C	AI	Q* MT	- -	- -	- 15	LPSI Header Discharge	SIAS Opens.
SI-139B	2	G-167 Sheet 2	H-7	B	6	GL	MO	C	AI	Q* MT	- -	- -	- 15	LPSI Header Discharge	SIAS Opens.

VALVES FOR INSERVICE TESTING

System: Safety Injection (SI)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
SI-142A	1	LOU-1564-G-167 Sheet 2	B-6	AC	8	CK	SA	C	-	CV PIV	CSR -	3.1.13 3.1.3 -	- -	LPSI Header Discharge	
SI-142B	1	G-167 Sheet 2	F-6	AC	8	CK	SA	C	-	CV PIV	CSR -	3.1.13 3.1.3 -	- -	LPSI Header Discharge	
SI-143A	1	G-167 Sheet 2	D-6	AC	8	CK	SA	C	-	CV PIV	CSR -	3.1.13 3.1.3 -	- -	LPSI Header Discharge	
SI-143B	1	G-167 Sheet 2	H-6	AC	8	CK	SA	C	-	CV PIV	CSR -	3.1.13 3.1.3 -	- -	LPSI Header Discharge	
SI-201A	2	G-167 Sheet 1	D-7	C	10	CK	SA	C	-	CV	PPR	3.1.12	-	HPSI Pump A Suction Check	
SI-201B	2	G-167 Sheet 1	B-8	C	10	CK	SA	C	-	CV	PPR	3.1.12	-	HPSI Pump B Suction Check	
SI-205A	2	G-167 Sheet 1	D-5	C	2	CK	SA	C	-	CV	-	3.2.3	-	HPSI Pump A Minimum Flow Check	

VALVES FOR INSERVICE TESTING

System: Safety Injection (SI)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
SI-205B	2	LOU-1564-G-167 Sheet 1	C-5	C	2	CK	SA	C	-	CV	-	3.2.3	-	HPSI Pump B Minimum Flow Check	
SI-205A/B	2	G-167 Sheet 1	D-5	C	2	CK	SA	C	-	CV	-	3.2.3	-	HPSI Pump A/B Minimum Flow Check	
SI-207A	2	G-167 Sheet 1	D-5	C	4	CK	SA	C	-	CV	RR	3.1.14	-	HPSI Pump A Discharge Check	
SI-207B	2	G-167 Sheet 1	B-5	C	4	CK	SA	C	-	CV	RR	3.1.14	-	HPSI Pump B Discharge Check	
SI-207A/B	2	G-167 Sheet 1	C-5	C	4	CK	SA	C	-	CV	RR	3.1.14	-	HPSI Pump A/B Discharge Check	
SI-216	2	G-167 Sheet 1	C-4	C	4	CK	SA	C	-	CV	RR	3.1.14	-	HPSI Pumps A and A/B Discharge Check	
SI-219A	2	G-167 Sheet 1	C-4	B	4	GA	MO	O	AI	Q* MT	- -	- -	- 30	HPSI Pumps A and A/B Discharge to HPSI Header A	

VALVES FOR INSERVICE TESTING

System: Safety Injection (SI)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
SI-219B	2	LOU-1564-G-167 Sheet 1	B-4	B	4	GA	MO	O	AI	Q* MT	- -	- -	- 30	HPSI Pumps B Discharge to HPSI Header B	
SI-225A	2	G-167 Sheet 2	G-7	B	2	GL	MO	C	AI	Q* MT	- -	- -	- 12	HPSI Header A Discharge	SIAS Opens
SI-225B	2	G-167 Sheet 2	G-7	B	2	GL	MO	C	AI	Q* MT	- -	-	- 12	HPSI Header B Discharge	SIAS Opens
SI-226A	2	G-167 Sheet 2	E-7	B	2	GL	MO	C	AI	Q* MT	- -	- -	- 12	HPSI Header A Discharge	SIAS Opens
SI-226B	2	G-167 Sheet 2	E-7	B	2	GL	MO	C	AI	Q* MT	- -	- -	- 12	HPSI Header B Discharge	SIAS Opens
SI-227A	2	G-167 Sheet 2	C-7	B	2	GL	MO	C	AI	Q* MT	- -	- -	- 12	HPSI Header A Discharge	SIAS Opens

VALVES FOR INSERVICE TESTING

System: Safety Injection (SI)

WATERFORD 3 S.E.S.

REVISION NO. 1

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
SI-227B	2	LOU-1564-G-167 Sheet 2	C-7	B	2	GL	MO	C	AI	Q* MT	- -	- -	- 12	HPSI Header B Discharge	SIAS Opens.
SI-228A	2	G-167 Sheet 2	A-7	B	2	GL	MO	C	AI	Q* MT	- -	- -	- 12	HPSI Header A Discharge	SIAS Opens.
SI-228B	2	G-167 Sheet 2	B-7	B	2	GL	MO	C	AI	Q* MT	- -	- -	- 12	HPSI Header B Discharge	SIAS Opens.
SI-241	1	G-167 Sheet 2	G-6	AC	3	CK	SA	C	-	CV PIV	RR -	3.1.14 -	- -	HPSI Header Discharge Check	
SI-242	1	G-167 Sheet 2	E-6	AC	3	CK	SA	C	-	CV PIV	RR -	3.1.14 -	- -	HPSI Header Discharge Check	
SI-243	1	G-167 Sheet 2	C-6	AC	3	CK	SA	C	-	CV PIV	RR -	3.1.14 -	- -	HPSI Header Discharge Check	
SI-244	1	G-167 Sheet 2	A-6	AC	3	CK	SA	C	-	CV PIV	RR -	3.1.14 -	- -	HPSI Header Discharge Check	

VALVES FOR INSERVICE TESTING

System: Safety Injection (SI)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF -REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
SI-245	2	LOU-1564-G-167 Sheet 1	D-5	C	2	CK	SA	C	-	CV	-	3.2.3	-	HPSI Pump A/B Minimum Flow Check	
SI-301	1	G-167 Sheet 2	H-5	B	2	GA	AO	C	C	None	-	-	-	Drain	Passive
SI-302	1	G-167 Sheet 2	A-6	B	2	GA	AO	C	C	None	-	-	-	Drain	Passive
SI-303A	1	G-167 Sheet 2	F-5	B	1	GL	AO	C	C	None	-	-	-	Drain	Passive
SI-303B	1	G-167 Sheet 2	F-3	B	1	GL	AO	C	C	None	-	-	-	Drain	Passive
SI-304A	1	G-167 Sheet 2	B-5	B	1	GL	AO	C	C	None	-	-	-	Drain	Passive
SI-304B	1	G-167 Sheet 2	B-3	B	1	GL	AO	C	C	None	-	-	-	Drain	Passive

VALVES FOR INSERVICE TESTING

System: Safety Injection (SI)

WATERFORD 3 S.E.S.

REVISION NO. 1

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
SI-323A	2	LOU-1564-G-167 Sheet 2	H-4	A	1	GL	SO	C	C	Q* MT LTO	CS TNT NPO	3.1.15, 3.1.3, 3.1.4 3.1.9 3.2.5	- 2 -	Safety Injection Tank 1-A Vent	
SI-323B	2	G-167 Sheet 2	H-2	A	1	GL	SO	C	C	Q* MT LTO	CS TNT NPO	3.1.15, 3.1.3, 3.1.4 3.1.9 3.2.5	- 2 -	Safety Injection Tank 1-B Vent	
SI-324A	2	G-167 Sheet 2	D-4	A	1	GL	SO	C	C	Q* MT LTO	CS TNT NPO	3.1.15, 3.1.3, 3.1.4 3.1.9 3.2.5	- 2 -	Safety Injection Tank 2-A Vent	
SI-324B	2	G-167 Sheet 2	D-2	A	1	GL	SO	C	C	Q* MT LTO	CS TNT NPO	3.1.15, 3.1.3, 3.1.4 3.1.9 3.2.5	- 2 -	Safety Injection Tank 2-B Vent	

VALVES FOR INSERVICE TESTING

System: Safety Injection (SI)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
SI-325A	2	LOU-1564-G-167 Sheet 2	H-4	A	1	GL	SO	C	C	Q* MT LTO	CS TNT NPO	3.1.15, 3.1.3, 3.1.4 3.1.9 3.2.5	- 2 -	Safety Injection Tank 1-A Vent	
SI-325B	2	G-167 Sheet 2	H-2	A	1	GL	SO	C	C	Q* MT LTO	CS TNT NPO	3.1.15, 3.1.3, 3.1.4 3.1.9 3.2.5	- 2 -	Safety Injection Tank 1B Vent	
SI-326A	2	G-167 Sheet 2	D-4	A	1	GL	SO	C	C	Q* MT LTO	CS TNT NPO	3.1.15, 3.1.3, 3.1.4 3.1.9 3.2.5	- 2 -	Safety Injection Tank 2A Vent	
SI-326B	2	G-167 Sheet 2	D-2	A	1	GL	SO	C	C	Q* MT LTO	CS TNT NPO	3.1.15, 3.1.3, 3.1.4 3.1.9 3.2.5	- 2 -	Safety Injection Tank 2B Vent	

VALVES FOR INSERVICE TESTING

System: Safety Injection (SI)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
SI-329A	1	LOU-1564-G-167 Sheet 2	F-5	AC	12	CK	SA	C	-	CV PIV	DRR -	3.1.16 -	- -	Safety Injection Tank 1A Discharge Check	
SI-329B	1	G-167 Sheet 2	F-2	AC	12	CK	SA	C	-	CV PIV	DRR -	3.1.16 -	- -	Safety Injection Tank 1B Discharge Check	
SI-330A	1	G-167 Sheet 2	B-5	AC	12	CK	SA	C	-	CV PIV	DRR -	3.1.16 -	- -	Safety Injection Tank 2A Discharge Check	
SI-330B	1	G-167 Sheet 2	B-2	AC	12	CK	SA	C	-	CV PIV	DRR -	3.1.16 -	- -	Safety Injection Tank 2B Discharge Check	

VALVES FOR INSERVICE TESTING

System: Safety Injection (SI)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
SI-335A	1	G-167 Sheet 2	F-4	AC	12	CK	SA	C	-	CV	DRR	3.1.18 3.1.3	-	LPSI, HPSI, and SIT Injection Check	
										PIV	-	-	-		
SI-335B	1	G-167 Sheet 2	E-2	AC	12	CK	SA	C	-	CV	DRR	3.1.18 3.1.3	-	LPSI, HPSI, and SIT Injection Check	
										PIV	-	-	-		
SI-336A	1	G-167 Sheet 2	B-4	AC	12	CK	SA	C	-	CV	DRR	3.1.18 3.1.3	-	LPSI, HPSI, and SIT Injection Check	
										PIV	-	-	-		
SI-336B	1	G-167 Sheet 2	B-2	AC	12	CK	SA	C	-	CV	DRR	3.1.18 3.1.3	-	LPSI, HPSI, and SIT Injection Check	
										PIV	-	-	-		

VALVES FOR INSERVICE TESTING

System: Safety Injection (SI)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
SI-343	2	LOU-1564-G-167 Sheet 2	E-6	A	2	GA	AO	C	C	Q* MT LT	- - -	- - -	- 10 -	SIT Drain to RWSP	CTMT Isolation
SI-344	2	G-167 Sheet 1	H-3	A	2	GL	M	LC	-	Q LT	MT -	3.1.34 -	- -	SIT Drain to RWSP	CTMT Isolation
SI-401A	1	G-167 Sheet 2	E-4	A	14	GA	MO	C	AI	Q* MT PIV	CS - -	3.1.19, 3.1.3, 3.1.4 - -	- 90 -	Shutdown Cooling Suction from RCS	
SI-401B	1	G-167 Sheet 2	D-4	A	14	GA	MO	C	AI	Q* MT PIV	CS - -	3.1.19, 3.1.3, 3.1.4 - -	- 90 -	Shutdown Cooling Suction from RCS	
SI-405A	1	G-167 Sheet 2	E-5	A	14	GA	HP	C	C	Q* MT PIV	CS - -	3.1.19, 3.1.3, 3.1.4 - -	- 5 to 10 -	Shutdown Cooling Suction from RCS	

VALVES FOR INSERVICE TESTING

System: Safety Injection (SI)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
SI-405B	1	LOU-1564-G-167 Sheet 2	D-5	A	14	GA	HP	C	C	Q* MT PIV	CS - -	3.1.19, 3.1.3, 3.1.4 - -	- 5 to 10 -	Shutdown Cooling Suction from RCS	
SI-406A	2	G-167 Sheet 2	D-5	C	6x8	PR	SA	C	-	SRV	-	-	-	Shutdown Cooling Suction Relief	
SI-406B	2	G-167 Sheet 2	D-5	C	6x8	PR	SA	C	-	SRV	-	-	-	Shutdown Cooling Suction Relief	
SI-407A	2	G-167 Sheet 2	D-6	B	14	GA	MO	C	AI	Q* MT	- -	- -	- 90	Shutdown Cooling Suction from RCS	
SI-407B	2	G-167 Sheet 2	D-6	B	14	GA	MO	C	AI	Q* MT	- -	- -	- 90	Shutdown Cooling Suction from RCS	
SI-412A	2	G-167 Sheet 1	G-3	B	10	GA	MO	C	AI	Q* MT	- -	- -	- 60	Shutdown Cooling Heat Exchanger A Discharge Isolation	

VALVES FOR INSERVICE TESTING

System: Safety Injection (SI)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
SI-412B	2	LOU-1564-G-167 Sheet 1	G-3	B	10	GA	MO	C	AI	Q* MT	- -	- -	- 60	Shutdown Cooling Heat Exchanger B Discharge Isolation	
SI-415A	2	G-167 Sheet 1	F-3	B	10	B	MO	C	AI	Q* MT	- -	- -	- 20	Shutdown Cooling Flow Control	
SI-415B	2	G-167 Sheet 1	D-3	B	10	B	MO	C	AI	Q* MT	- -	- -	- 20	Shutdown Cooling Flow Control	
SI-502A	2	G-167 Sheet 1	D-4	B	3	GA	MO	C	AI	Q* MT	- -	- -	- 35	HPSI Discharge to RCS Hot Leg Isolation	
SI-502B	2	G-167 Sheet 1	B-4	B	3	GA	MO	C	AI	Q* MT	- -	- -	- 35	HPSI Discharge to RCS Hot Leg Isolation	
SI-506A	2	G-167 Sheet 1	D-4	B	3	GL	MO	C	AI	Q* MT	- -	- -	- 60	HPSI Discharge to RCS Hot Leg Flow Control	
SI-506B	2	G-167 Sheet 1	B-4	B	3	GL	MO	C	AI	Q* MT	- -	- -	- 60	HPSI Discharge to RCS Hot Leg Flow Control	

VALVES FOR INSERVICE TESTING

System: Safety Injection (SI)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
SI-510A	1	LOU-1564-G-167 Sheet 2	H-6	AC	3	CK	SA	C	-	CV PIV	RR -	3.1.14 -	- -	HPSI Discharge to RCS Hot Leg Check	
SI-510B	1	G-167 Sheet 2	A-6	AC	3	CK	SA	C	-	CV PIV	RR -	3.1.14 -	- -	HPSI Discharge to RCS Hot Leg Check	
SI-512A	1	G-167 Sheet 2	H-5	AC	3	CK	SA	C	-	CV PIV	RR -	3.1.20 -	- -	HPSI Discharge to RCS Hot Leg Check	
SI-512B	1	G-167 Sheet 2	A-5	AC	3	CK	SA	C	-	CV PIV	RR -	3.1.20 -	- -	HPSI Discharge to RCS Hot Leg Check	
SI-6011	2	G-167 Sheet 1	A-7	B	1½	GL	SO	C	O	Q* MT	- TNT	- 3.1.1	- 2	SIS Recirc. Sump Sampling Isolation	
SI-6012	2	G-167 Sheet 1	A-7	B	1½	GL	SO	C	O	Q* MT	- TNT	- 3.1.1	- 2	SIS Recirc. Sump Sampling Isolation	
SI-602A	2	G-167 Sheet 1	B-7	B	24	B	AO	C	AI	Q* MT	- -	- -	- 15	SIS Sump Outlet Isolation	SIAS Closes RAS Opens

VALVES FOR INSERVICE TESTING

System: Safety Injection (SI)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
SI-602B	2	LOU-1564-G-167 Sheet 1	A-7	B	24	B	AO	C	AI	Q* MT	- -	- -	- 15	SIS Sump Outlet Isolation	SIAS Closes RAS Opens
SI-604A	2	G-167 Sheet 1	B-8	C	24	CK	SA	C	-	CV	DRR	3.1.21	-	SIS Sump Outlet Check	
SI-604B	2	G-167 Sheet 1	A-8	C	24	CK	SA	C	-	CV	DRR	3.1.21	-	SIS Sump Outlet Check	
SI-717A (3SI-V118A)	3	G-163	B-5	C	16	CK	SA	C	-	CV	ME	3.1.39	-	RWSP Vacuum Relief	
SI-717B (3SI-V117B)	3	G-163	C-5	C	16	CK	SA	C	-	CV	ME	3.1.39	-	RWSP Vacuum Relief	

VALVES FOR INSERVICE TESTING

System: Containment Spray (CS)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
CS-110A	2	LOU-1564 G-163	I-5	C	2	CK	SA	C	-	CV	-	-	-	CS Pump A Minimum Flow Recirculation to RWSP	
CS-110B	2	G-163	F-5	C	2	CK	SA	C	-	CV	-	-	-	CS Pump B Minimum Flow Recirculation to RWSP	
CS-111A	2	G-163	J-5	C	10	CK	SA	C	-	CV	-	-	-	CS Pump A Discharge Check	
CS-111B	2	G-163	F-5	C	10	CK	SA	C	-	CV	-	-	-	CS Pump B Discharge Check	
CS-117A	2	G-163	G-9	C	10	CK	SA	C	-	CV	-	-	-	Shutdown Cooling Heat Exchanger A Discharge Check	
CS-117B	2	G-163	G-9	C	10	CK	SA	C	-	CV	-	-	-	Shutdown Cooling Heat Exchanger B Discharge Check	
CS-125A	2	G-163	H-12	B	10	GA	AO	C	O	Q* MT	- -	- -	- 10	CS Pump A Discharge to Header Isolation	CSAS Opens

VALVES FOR INSERVICE TESTING

System: Containment Spray (CS)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
CS-125B	2	LOU-1564-G-163	G-12	B	10	GA	AO	C	O	Q* MT	- -	- -	- 10	CS Pump B Discharge to Header Isolation	CSAS Opens.
CS-128A	2	G-163	M-13	C	10	CK	SA	C	-	CV	DRR	3.1.30	-	CS Pump A Discharge to Header Check	
CS-128B	2	G-163	G-13	C	10	CK	SA	C	-	CV	DRR	3.1.30	-	CS Pump B Discharge to Header Check	

VALVES FOR INSERVICE TESTING

System: Feedwater (FW)
Including Emergency Feedwater (EFW)

WATERFORD 3 S.E.S.
REVISION NO. 1

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
EFW-204A	3	LOU-1564-G-153 Sheet 2	I-12	C	1	CK	SA	C	-	CV	-	-	-	EFW Pump A Recirculation to CSP	
EFW-204B	3	G-153 Sheet 2	I-17	C	1	CK	SA	C	-	CV	-	-	-	EFW Pump B Recirculation to CSP	
EFW-204A/B	3	G-153 Sheet 2	I-16	C	1½	CK	SA	C	-	CV	-	-	-	EFW Pump A/B Recirculation to CSP	
EFW-207A	3	G-153 Sheet 2	G-13	C	6	CK	SA	C	-	CV	CS	3.1.22 3.1.3	- -	EFW Pump A Discharge Check to Steam Generators	
EFW-207B	3	G-153 Sheet 2	G-16	C	6	CK	SA	C	-	CV	CS	3.1.22 3.1.3	- -	EFW Pump B Discharge Check to Steam Generators	
EFW-207A/B	3	G-153 Sheet 2	G-15	C	6	CK	SA	C	-	CV	CS	3.1.23 3.1.3	- -	EFW Pump A/B Discharge Check to Steam Generators	
EFW-2191A (3FW-V1541A)	3	G-153 Sheet 2	E-13	C	6	CK	SA	C	-	CV	CS	3.1.22 3.1.3	- -	EFW Pumps Discharge Check to Steam Generators	

VALVES FOR INSERVICE TESTING

System: Feedwater (FW)
Including Emergency Feedwater (EFW)

WATERFORD 3 S.E.S.
REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE (INCHES)	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF -RE/UESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
EFW-2191B (3FW-V1542B)	3	G-153 Sheet 2	E-16	C	6	CK	SA	C	-	CV	CS	3.1.22 3.1.3	- -	EFW Pumps Discharge Check to Steam Generators	
EFW-220A	3	G-153 Sheet 2	E-14	B	4	GA	MO	C	AI	Q MT	CS -	3.1.50, 3.1.3, 3.1.4 -	- 60	Blowdown Isolation	
EFW-220B	3	G-153 Sheet 2	E-16	B	4	GA	MO	C	AI	Q MT	CS -	3.1.50, 3.1.3, 3.1.4 -	- 60	Blowdown Isolation	
EFW-223A	2	G-153 Sheet 2	C-14	B	4	GL	AO	C	O	Q MT	- -	- -	- 25	EFW Flow Control	MSIS Closes
EFW-223B	2	G-153 Sheet 2	D-15	B	4	GL	AO	C	O	Q MT	- -	- -	- 25	EFW Flow Control	MSIS Closes
EFW-224A	2	G-153 Sheet 2	C-15	B	4	GL	AO	C	O	Q MT	- -	- -	- 25	EFW Flow Control	MSIS Closes
EFW-224B	2	G-153 Sheet 2	D-16	B	4	GL	AO	C	O	Q MT	- -	- -	- 25	EFW Flow Control	MSIS Closes

VALVES FOR INSERVICE TESTING

System: Feedwater (FW)
Including Emergency Feedwater (EFW)

WATERFORD 3 S.E.S.
REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
EFW-228A	2	LOU-1564-G-153 Sheet 2	B-15	B	4	GL	AO	C	O	Q* MT	- -	- -	- 25	EFW Flow Isolation	EFAS Opens. MSIS Closes.
EFW-228B	2	G-153 Sheet 2	D-16	B	4	GL	AO	C	O	Q* MT	- -	- -	- 25	EFW Flow Isolation	EFAS Opens. MSIS Closes.
EFW-229A	2	G-153 Sheet 2	B-14	B	4	GL	AO	C	O	Q* MT	- -	- -	- 25	EFW Flow Isolation	EFAS Opens. MSIS Closes.
EFW-229B	2	G-153 Sheet 2	D-15	B	4	GL	AO	C	O	Q* MT	- -	- -	- 25	EFW Flow Isolation	EFAS Opens. MSIS Closes.
FW-166A	S	G-153 Sheet 2	A-11	B	6	GA	AO	O	C	Q* MT	CS -	3.1.46, 3.1.3, 3.1.4 -	- 5	Main Feedwater Control Bypass	MSIS Closes. FSAR 10.4.7.2

VALVES FOR INSERVICE TESTING

System: Feedwater (FW)
Including Emergency Feedwater (EFW)

WATERFORD 3 S.E.S.
REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
FW-166B	5	LOU-1564-G-153 Sheet 2	C-11	B	6	GA	AO	O	C	Q* MT	CS -	3.1.46, 3.1.3, 3.1.4 -	- 5	Main Feedwater Control Bypass	MSIS Closes. FSAR 10.4.7.2
FW-173A	5	G-153 Sheet 2	B-11	B	16	ANG	AO	O	C	Q* MT	CS -	3.1.51, 3.1.3, 3.1.4 -	- 2.3 to 5	Main Feedwater Control	MSIS Closes. FSAR 10.4.7.2
FW-173B	5	G-153 Sheet 2	D-11	B	16	ANG	AO	O	C	Q* MT	CS -	3.1.51, 3.1.3, 3.1.4 -	- 2.3 to 5	Main Feedwater Control	MSIS Closes. FSAR 10.4.7.2
FW-179A	3	G-153 Sheet 2	B-13	B	4	GA	MO	C	AI	Q MT	CS -	3.1.50, 3.1.3, 3.1.4 -	- 30	Blowdown Isolation	
FW-179B	3	G-153 Sheet 2	D-14	B	4	GA	MO	C	AI	Q MT	CS -	3.1.50, 3.1.3, 3.1.4 -	- 30	Blowdown Isolation	

VALVES FOR INSERVICE TESTING

System: Feedwater (FW)
Including Emergency Feedwater (EFW)

WATERFORD 3 S.E.S.
REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
FW-184A	2	LOU-1564-G-153 Sheet 2	B-14	B	20	GA	HP	O	AI	Q* MT	CSP -	3.1.26, 3.1.3, 3.1.4 -	- 2.3 to 5	Feedwater Isolation	Hydraulic Opens. Pneumatic Closes. MSIS Closes.
FW-184B	2	G-153 Sheet 2	D-15	B	20	GA	HP	O	AI	Q* MT	CSP -	3.1.26, 3.1.3, 3.1.4 -	- 2.3 to 5	Feedwater Isolation	Hydraulic Opens. Pneumatic Closes. MSIS Closes.

VALVES FOR INSERVICE TESTING

System: Main Steam (MS)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN CHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
MS-106A	2	LOU-1564-G-151 Sheet 1	B-3	C	8x10 x10	PR	SA	C	-	SRV	-	-	-	Main Steam Safety	
MS-106B	2	G-151 Sheet 1	H-3	C	8x10 x10	PR	SA	C	-	SRV	-	-	-	Main Steam Safety	
MS-108A	2	G-151 Sheet 1	B-4	C	8x10 x10	PR	SA	C	-	SRV	-	-	-	Main Steam Safety	
MS-108B	2	G-151 Sheet 1	H-4	C	8x10 x10	PR	SA	C	-	SRV	-	-	-	Main Steam Safety	
MS-110A	2	G-151 Sheet 1	B-5	C	8x10 x10	PR	SA	C	-	SRV	-	-	-	Main Steam Safety	
MS-110B	2	G-151 Sheet 1	H-5	C	8x10 x10	PR	SA	C	-	SRV	-	-	-	Main Steam Safety	
MS-112A	2	G-151 Sheet 1	B-5	C	8x10 x10	PR	SA	C	-	SRV	-	-	-	Main Steam Safety	
MS-112B	2	G-151 Sheet 1	H-5	C	8x10 x10	PR	SA	C	-	SRV	-	-	-	Main Steam Safety	

VALVES FOR INSERVICE TESTING

System: Main Steam (MS)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
MS-113A	2	LOU-1564-G-151 Sheet 1	B-6	C	8x10x10	PR	SA	C	-	SRV	-	-	-	Main Steam Safety	
MS-113B	2	G-151 Sheet 1	H-6	C	8x10x10	PR	SA	C	-	SRV	-	-	-	Main Steam Safety	
MS-114A	2	G-151 Sheet 1	B-7	C	8x10x10	PR	SA	C	-	SRV	-	-	-	Main Steam Safety	
MS-114B	2	G-151 Sheet 1	H-7	C	8x10x10	PR	SA	C	-	SRV	-	-	-	Main Steam Safety	
MS-116A	2	G-151 Sheet 1	B-8	B	8x12	ANG	AO	C	C	Q* MT	CS -	3.1.27, 3.1.3, 3.1.4 -	- 40	Main Steam Atmospheric Dump	Air Opens Spring Closes Pressure Seats Plug
MS-116B	2	G-151 Sheet 1	H-8	B	8x12	ANG	AO	C	C	Q* MT	CS -	3.1.27, 3.1.3, 3.1.4 -	- 40	Main Steam Atmospheric Dump	Air Opens Spring Closes Pressure Seats Plug

VALVES FOR INSERVICE TESTING

System: Main Steam (MS)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
MS-119A	2	LOU-1564-G-165 Sheet 3	C-17	B	2	GL	MO	C	AI	Q* MT	- -	- -	- 10	Drain	CTMT Isolation
MS-119B	2	G-165 Sheet 3	F-18	B	2	GL	MO	C	AI	Q* MT	- -	- -	- 10	Drain	CTMT Isolation
MS-120A	2	G-165 Sheet 3	B-17	B	2	GL	MO	O	AI	Q* MT	- -	- -	- 10	Drain	CTMT Isolation
MS-120B	2	G-165 Sheet 3	E-18	B	2	GL	MO	O	AI	Q* MT	- -	- -	- 10	Drain	CTMT Isolation
MS-124A	2	G-151 Sheet 1	C-8	B	40	GA	HP	O	AI	Q* MT	CSP -	3.1.29, 3.1.3, 3.1.4 -	- 3	Main Steam Isolation Valve (MSIV)	MSIS Closes
MS-124B	2	G-151 Sheet 1	H-8	B	40	GA	HP	O	AI	Q* MT	CSP -	3.1.29, 3.1.3, 3.1.4 -	- 3	Main Steam Isolation Valve (MSIV)	MSIS Closes

VALVES FOR INSERVICE TESTING

System: Main Steam (MS)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
MS-401A	2	LOU-1564-G-151 Sheet 1	F-7	B	6	GA	MO	C	AI	Q* MT	- -	- -	- 25	Main Steam to EFW Pump A/B Turbine	EFAS Opens.
MS-401B	2	G-151 Sheet 1	J-7	B	6	GA	MO	C	AI	Q* MT	- -	- -	- 25	Main Steam to EFW Pump A/B Turbine	EFAS Opens.
MS-402A	3	G-151 Sheet 1	F-6	C	6	CK	SA	C	-	CV CV	CSP CS	3.1.44 Open 3.1.53 Closed	-	Main Steam to EFW Pump A/B Turbine	
MS-402B	3	G-151 Sheet 1	J-7	C	6	CK	SA	C	-	CV CV	CSP CS	3.1.44 Open 3.1.53 Closed	-	Main Steam to EFW Pump A/B Turbine	

VALVES FOR INSERVICE TESTING

System: Emergency Generator Diesel Fuel (EGF)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
EGF-109A	3	LOU-1564-G-164 Sheet 1	J-4	C	2	CK	SA	C	-	CV	-	-	-	Diesel Oil Transfer Pump A Discharge Check	
EGF-109B	3	G-164 Sheet 1	M-4	C	2	CK	SA	C	-	CV	-	-	-	Diesel Oil Transfer Pump B Discharge Check	

VALVES FOR INSERVICE TESTING

System: Chilled Water (CHW)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN CHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
CHW-114A	3	LOU-1564-G-853 SO3	H-1	C	6	CK	SA	O	-	CV	-	-	-	Chilled Water Pump A Discharge Check	
CHW-114B	3	G-853 SO3	H-14	C	6	CK	SA	O	-	CV	-	-	-	Chilled Water Pump B Discharge Check	
CHW-114A/B	3	G-853 SO3	H-6	C	6	CK	SA	O	-	CV	-	-	-	Chilled Water Pump A/B Discharge Check	
CHW-129A	3	G-853 SO3	J-3	B	3	GL	HO	O	O	Q MT	- -	- -	- 15	Chilled Water Pump A Bypass	
CHW-129B	3	G-853 SO3	J-12	B	3	GL	HO	O	O	Q MT	- -	- -	- 15	Chilled Water Pump B Bypass	
CHW-129A/B	3	G-853 SO3	J-8	B	3	GL	HO	O	O	Q MT	- -	- -	- 15	Chilled Water Pump A/B Bypass	
CHW-135A	3	G-853 SO3	L-7	B	10	B	AO	O	C	Q* MT	- -	- -	- 15	Essential Chilled Water Train Separation	
CHW-135B	3	G-853 SO3	L-8	B	10	B	AO	O	C	Q* MT	- -	- -	- 15	Essential Chilled Water Train Separation	

VALVES FOR INSERVICE TESTING

System: Chilled Water (CHW)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
CHW-303	3	LOU-1564-G-853 S03	L-7	B	4	B	AO	O	C	Q* MT	- -	- -	- 15	Non-Essential Chilled Water Isolation	
CHW-304	3	G-853 S03	M-7	B	4	B	AO	O	C	Q* MT	- -	- -	- 15	Non-Essential Chilled Water Isolation	
CHW-780	3	G-853 S03	N-7	B	4	B	AO	O	C	Q* MT	- -	- -	- 15	Non-Essential Chilled Water Isolation	
CHW-781	3	G-853 S03	N-7	B	4	B	AO	O	C	Q* MT	- -	- -	- 15	Non-Essential Chilled Water Isolation	
CHW-783A	3	G-853 S03	M-6	B	10	B	AO	O	C	Q* MT	- -	- -	- 15	Essential Chilled Water Train Separation	
CHW-783B	3	G-853 S03	M-8	B	10	B	AO	O	C	Q* MT	- -	- -	- 15	Essential Chilled Water Train Separation	

VALVES FOR INSERVICE TESTING

System: Component Cooling Water (CC)
Including Auxiliary Component Cooling Water (ACC)

WATERFORD 3 S.E.S.
REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
CC-102	3	LOU-1564-G-160 Sheet 1	G-1	C	2	CK	SA	C	-	CV	-	-	-	CCW Surge Tank Overflow Check	
CC-114A	3	G-160 Sheet 2	I-9	B	20	B	AO	O	O	Q* MT	- -	- -	- 10	CCW Pumps Suction Header Isolation	
CC-114B	3	G-160 Sheet 2	I-10	B	20	B	AO	O	O	Q* MT	- -	- -	- 10	CCW Pumps Suction Header Isolation	
CC-115A	3	G-160 Sheet 2	I-9	B	20	B	AO	O	O	Q* MT	- -	- -	- 10	CCW Pumps Suction Header Isolation	
CC-115B	3	G-160 Sheet 2	I-10	B	20	B	AO	O	O	Q* MT	- -	- -	- 10	CCW Pumps Suction Header Isolation	
CC-123A	3	G-160 Sheet 2	D-9	C	20	CK	SA	O	-	CV	●	-	-	CCW Pump A Discharge Check	
CC-123B	3	G-160 Sheet 2	D-11	C	20	CK	SA	O	-	CV	-	-	-	CCW Pump B Discharge Check	

VALVES FOR INSERVICE TESTING

System: Component Cooling Water (CC)
Including Auxiliary Component Cooling Water (ACC)

WATERFORD 3 S.E.S.
REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
CC-123 A/B	3	LOU-1564-G-160 Sheet 2	D-10	C	20	CK	SA	O	-	CV	-	-	-	CCW Pump A/B Discharge Check	
CC-126A	3	G-160 Sheet 2	B-9	B	20	B	AO	O	O	Q* MT	- -	- -	- 10	CCW Pumps Discharge Header Isolation	
CC-126B	3	G-160 Sheet 2	B-10	B	20	B	AO	O	O	Q* MT	- -	- -	- 10	CCW Pumps Discharge Header Isolation	
CC-127A	3	G-160 Sheet 2	B-10	B	20	B	AO	O	O	Q* MT	- -	- -	- 10	CCW Pumps Discharge Header Isolation	
CC-127B	3	G-160 Sheet 2	B-10	B	20	B	AO	O	O	Q* MT	- -	- -	- 10	CCW Pumps Discharge Header Isolation	
CC-134A	3	G-160 Sheet 2	A-5	B	16	B	AO	C	AI	Q* MT	- -	3.2.7 -	- 5	Dry Cooling Tower A Bypass	

VALVES FOR INSERVICE TESTING

System: Component Cooling Water (CC)
Including Auxiliary Component Cooling Water (ACC)

WATERFORD 3 S.E.S.
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VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
CC-134B	3	LOU-1564-G-160 Sheet 2	A-13	B	16	B	AO	C	AI	Q* MT	- -	3.2.7 -	- 5	Dry Cooling Tower B Bypass	
CC-135A	3	G-160 Sheet 2	B-8	B	20	B	AO	O	AI	Q* MT	- -	3.2.7 -	- 6	Dry Cooling Tower A Inlet Isolation	
CC-135B	3	G-160 Sheet 2	B-11	B	20	B	AO	O	AI	Q* MT	- -	3.2.7 -	- 6	Dry Cooling Tower B Inlet Isolation	
CC-181A	3	G-160 Sheet 2	B-2	C	20	CK	SA	O	-	CV	-	-	-	Dry Cooling Tower A Outlet Check	
CC-181B	3	G-160 Sheet 2	B-18	C	20	CK	SA	O	-	CV	-	-	-	Dry Cooling Tower B Outlet Check	
CC-200A	3	G-160 Sheet 2	J-6	B	16	B	AO	O	C	Q* MT	- -	3.2.7 -	- 6	Non-Essential CCW Isolation and Essential CCW Train Separation	CSAS Closes
CC-200B	3	G-160 Sheet 2	J-7	B	16	B	AO	O	C	Q* MT	- -	3.2.7 -	- 6	Non-Essential CCW Isolation and Essential CCW Train Separation	CSAS Closes

VALVES FOR INSERVICE TESTING

System: Component Cooling Water (CC)
Including Auxiliary Component Cooling Water (ACC)

WATERFORD 3 S.E.S.
REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
CC-301A	3	LOU-1564-G-160 Sheet 3	I-3	B *	6	B	AO	O	AI	Q* MT	- -	- -	- 10	Chiller Inlet Isolation	
CC-301B	3	G-160 Sheet 3	I-5	B	6	B	AO	O	AI	Q* MT	- -	- -	- 10	Chiller Inlet Isolation	
CC-302A	3	G-160 Sheet 3	I-3	C	6	CK	SA	O	-	CV	-	-	-	Chiller Inlet Check	
CC-302B	3	G-160 Sheet 3	I-5	C	6	CK	SA	O	-	CV	-	-	-	Chiller Inlet Check	
ACC-139A	3	G-160 Sheet 3	L-1	B	6	B	AO	C	AI	Q* MT	- -	- -	- 10	Chiller Discharge to Wet Tower A Isolation	
ACC-139B	3	G-160 Sheet 3	M-1	B	6	B	AO	C	AI	Q* MT	- -	- -	- 10	Chiller Discharge to Wet Tower B Isolation	
ACC-140A	3	G-160 Sheet 3	K-1	C	6	CK	SA	C	-	CV	-	-	-	Chiller Discharge to Wet Tower A Check	

VALVES FOR INSERVICE TESTING

System: Component Cooling Water (CC)
Including Auxiliary Component Cooling Water (ACC)

WATERFORD 3 S.E.S.
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VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
ACC-140B	3	LOU-1564-G-160 Sheet 3	M-1	C	6	CK	SA	C	-	CV	-	-	-	Chiller Discharge to Wet Tower B Check	
CC-322A	3	G-160 Sheet 3	L-1	B	6	B	AO	O	AI	Q* MT	- -	- -	- 10	Chiller Discharge to CCW Pump Suction Header	
CC-322B	3	G-160 Sheet 3	K-7	B	6	B	AO	O	AI	Q* MT	- -	- -	- 10	Chiller Discharge to CCW Pump Suction Header	
CC-323A	3	G-160 Sheet 3	K-1	C	6	CK	SA	O	-	CV	-	-	-	Chiller Discharge to CCW Pump Suction Header	
CC-323B	3	G-160 Sheet 3	K-7	C	6	CK	SA	O	-	CV	-	-	-	Chiller Discharge to CCW Pump Suction Header	
CC-413A	3	G-160 Sheet 3	D-13	B	6	B	AO	C	O	Q MT	- -	- -	- 10	CCW from Diesel Generator to CCW Pump Suction Header	
CC-413B	3	G-160 Sheet 3	D-18	B	6	B	AO	C	O	Q MT	- -	- -	- 10	CCW from Diesel Generator to CCW Pump Suction Header	

VALVES FOR INSERVICE TESTING

System: Component Cooling Water (CC)
Including Auxiliary Component Cooling Water (ACC)

WATERFORD 3 S.E.S.
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VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
CC-501	3	LOU-1564-G-160 Sheet 2	L-6	B	12	B	AO	O	C	Q* MT	- -	- -	- 6	Non-Essential CCW Isolation	
CC-562	3	G-160 Sheet 2	J-10	B	12	B	AO	O	C	Q* MT	- -	- -	- 6	Non-Essential CCW Isolation	
CC-563	3	G-160 Sheet 2	J-9	B	16	B	AO	O	C	Q* MT	- -	3.2.7 -	- 6	Non-Essential CCW Isolation	SIAS Closes
CC-641	2	G-160 Sheet 1	E-4	A	10	B	AO	O	O	Q* MT LT	CS - -	3.1.31, 3.1.3, 3.1.4 - -	- 5 -	CCW to Reactor Coolant Pumps and CEDM's	CSAS Closes, but has over-ride
CC-710	2	G-160 Sheet 1	D-1	A	10	B	AO	O	O	Q* MT LT	CS - -	3.1.31, 3.1.3, 3.1.4 - -	- 5 -	CCW to Reactor Coolant Pumps and CEDM's	CSAS Closes, but has over-ride

VALVES FOR INSERVICE TESTING

System: Component Cooling Water (CC)
Including Auxiliary Component Cooling Water (ACC)

WATERFORD 3 S.E.S.
REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUEST/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
CC-713	2	LOU-1564-G-160 Sheet 1	D-1	A	10	B	AO	O	O	Q* MT LT	CS - -	3.1.31, 3.1.3, 3.1.4 - -	- 5 -	CCW to Reactor Coolant Pumps and CEDM's	CSAS Closes, but has over-ride
CC-727	3	G-160 Sheet 2	K-8	B	16	B	AO	O	C	Q* MT	- -	3.2.7 -	- 5	Essential CCW Train Separation	SIAS Closes
CC-807A	2	G-160 Sheet 1	E-8	B	8	B	AO	O	O	Q* MT	CS -	3.1.43, 3.1.3, 3.1.4 -	- 10	CCW to CTMT Fan Cooler 3C	SIAS Opens
CC-807B	2	G-160 Sheet 1	E-11	B	8	B	AO	O	O	Q* MT	CS -	3.1.43, 3.1.3, 3.1.4 -	- 10	CCW to CTMT Fan Cooler 3B	SIAS Opens
CC-808A	2	G-160 Sheet 1	E-9	B	8	B	AO	O	O	Q* MT	CS -	3.1.43, 3.1.3, 3.1.4 -	- 10	CCW to CTMT Fan Cooler 3A	SIAS Opens

VALVES FOR INSERVICE TESTING

System: Component Cooling Water (CC)
Including Auxiliary Component Cooling Water (ACC)

WATERFORD 3 S.E.S.
REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC)	FUNCTION	REMARKS
CC-808B	2	LOU-1564-G-160 Sheet 1	E-10	B	8	B	AO	O	O	Q* MT	CS -	3.1.43, 3.1.3, 3.1.4 -	- 10	CCW to CTMT Fan Cooler 3D	SIAS Opens.
CC-822A	2	G-160 Sheet 1	E-9	B	8	B	AO	O	O	Q* MT	CS -	3.1.43, 3.1.3, 3.1.4 -	- 10	CCW from CTMT Fan Cooler 3A	SIAS Opens.
CC-822B	2	G-160 Sheet 1	E-10	B	8	B	AO	O	O	Q* MT	CS -	3.1.43, 3.1.3, 3.1.4 -	- 10	CCW from CTMT Fan Cooler 3D	SIAS Opens.
CC-823A	2	G-160 Sheet 1	E-9	B	8	B	AO	O	O	Q* MT	CS -	3.1.43, 3.1.3, 3.1.4 -	- 10	CCW from CTMT Fan Cooler 3C	SIAS Opens.
CC-823B	2	G-160 Sheet 1	E-11	B	8	B	AO	O	O	Q* MT	CS -	3.1.43, 3.1.3, 3.1.4 -	- 10	CCW from CTMT Fan Cooler 3B	SIAS Opens.

VALVES FOR INSERVICE TESTING

System: Component Cooling Water (CC)
Including Auxiliary Component Cooling Water (ACC)

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REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
CC-835A	3	LOU-1564-G-160 Sheet 1	E-6	B	8	B	AO	O	O	Q* MT	CS -	3.1.43, 3.1.3, 3.1.4 -	- 20	CCW Flow Controller from CTMT Fan Coolers	
CC-835B	3	G-160 Sheet 1	F-9	B	8	B	AO	O	O	Q* MT	CS -	3.1.43, 3.1.3, 3.1.4 -	- 20	CCW Flow Controller from CTMT Fan Coolers	
CC-963A	3	G-160 Sheet 1	M-3	B	10	B	AO	C	O	Q* MT	- -	- -	- 30	CCW from Shutdown Heat Exchanger A	
CC-963B	3	G-160 Sheet 1	N-3	B	10	B	AO	C	O	Q* MT	- -	- -	- 30	CCW from Shutdown Heat Exchanger B	
ACC-108A	3	G-160 Sheet 2	G-2	C	16	CK	SA	C	-	CV	-	-	-	ACCW Pump A Discharge Check	
ACC-108B	3	G-160 Sheet 2	G-17	C	16	CK	SA	C	-	CV	-	-	-	ACCW Pump B Discharge Check	
ACC-112A	3	G-160 Sheet 1	I-2	B	6	B	AO	C	AI	Q* MT	- -	- -	- 10	ACCW Pump A Discharge to Chillers	

VALVES FOR INSERVICE TESTING

System: Component Cooling Water (CC)
Including Auxiliary Component Cooling Water (ACC)

WATERFORD 3 S.E.S.
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VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
ACC-112B	3	LOU-1564-G-160 Sheet 3	I-6	B	6	B	AO	C	AI	Q* MT	- -	- -	- 10	ACCW Pump B Discharge to Chillers	
ACC-113A	3	G-160 Sheet 3	I-2	C	6	CK	SA	C	-	CV	-	-	-	ACCW Pump A Discharge to Chillers	
ACC-113B	3	G-160 Sheet 3	I-6	C	6	CK	SA	C	-	CV	-	-	-	ACCW Pump B Discharge to Chillers	
ACC-126A	3	G-160 Sheet 2	H-5	B	12	B	AO	O	O	Q MT	- -	- -	- 45	ACCW Train A Temperature Controller	
ACC-126B	3	G-160 Sheet 2	H-14	B	12	B	AO	O	O	Q MT	- -	- -	- 45	ACCW Train B Temperature Controller	
CC-644	2	G-160 Sheet 1	E-3	AC	10	CK	SA	O	-	CV LT	- -	- -	- -	CCW to Reactor Coolant Pumps and CEDM's	

VALVES FOR INSERVICE TESTING

System: Annulus Negative Pressure (ANP)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
ANP-101	3	LOU-1564-G-853 S02	H-7	B	6	B	AO	O	C	Q MT	- -	- -	- 15	Annulus to ANP Fans Suction	
ANP-102	3	G-853 S02	H-7	B	6	B	AO	O	C	Q MT	- -	- -	- 15	Annulus to ANP Fans Suction	

VALVES FOR INSERVICE TESTING

System: Containment Atmospheric Purge (CAP)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
CAP-102	2	LOU-1564-G-853 S02	G-11	B	48	B	AO	C	C	Q* MT	- -	- -	- 5	Purge Supply to Containment	
CAP-103	2	G-853 S02	G-10	A	48	B	AO	C	C	Q* MT LTP	- - -	- - -	- 5 -	Purge Supply to Containment	CTMT Isolation
CAP-104	2	G-853 S02	G-10	A	48	B	AO	C	C	Q* MT LTP	- - -	- - -	- 5 -	Purge Supply to Containment	CTMT Isolation
CAP-203	2	G-853 S02	G-6	A	48	B	AO	C	C	Q* MT LTP	- - -	- - -	- 5 -	Purge Exhaust from Containment	CTMT Isolation
CAP-204	2	G-853 S02	G-6	A	48	B	AO	C	C	Q* MT LTP	- - -	- - -	- 5 -	Purge Exhaust from Containment	CTMT Isolation

VALVES FOR INSERVICE TESTING

System: Containment Atmospheric Purge (CAP)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN CHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
CAP-205	2	LOU-1564-G-853 SO2	H-6	B	48	B	AO	C	C	Q* MT	- -	- -	- 5	Purge Exhaust from Containment	

VALVES FOR INSERVICE TESTING

System: Containment Atmospheric Release (CAR)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
CAR-101A	2	LOU-1564-G-853 S02	H-9	A	4	B	M	C	-	Q LT	NT -	3.1.34 -	- -	CAR Supply Isolation	CTMT Isolation
CAR-101B	2	G-853 S02	H-9	A	4	B	M	C	-	Q LT	NT -	3.1.34 -	- -	CAR Supply Isolation	CTMT Isolation
CAR-102A	2	G-853 S02	G-9	AC	4	CK	SA	C	-	CV LT	CS -	3.1.48, 3.1.47, 3.1.3 -	- -	CAR Supply Check	CTMT Isolation
CAR-102B	2	G-853 S02	G-9	AC	4	CK	SA	C	-	CV LT	CS -	3.1.48, 3.1.47, 3.1.3 -	- -	CAR Supply Check	CTMT Isolation
CAR-201A	2	G-853 S02	E-4	A	4	B	MO	C	AI	Q* MT LT	- - -	- - -	- 30 -	CAR Exhaust Isolation	CTMT Isolation CIAS closes, but has override

VALVES FOR INSERVICE TESTING

System: Containment Atmospheric Release (CAR)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
CAR-201B	2	LOU-1564-G-853 SO2	E-4	A	4	B	MO	C	AI	Q* MT LT	- - -	- - -	- 10 -	CAR Exhaust Isolation	CTMT Isolation. CIAS closes, but has override.
CAR-202A	2	G-853 SO2	E-3	A	4	B	M	C	-	Q LT	MT -	3.1.34 -	- -	CAR Exhaust Isolation	CTMT Isolation.
CAR-202B	2	G-853 SO2	E-3	A	4	B	M	C	-	Q LT	MT -	3.1.34 -	- -	CAR Exhaust Isolation	CTMT Isolation.
CAR-204A	2	G-853 SO2	E-3	B	4	B	MO	C	AI	Q* MT	- -	- -	- 45	CAR Exhaust Isolation	
CAR-204B	2	G-853 SO2	E-3	B	4	B	MO	C	AI	Q* MT	- -	- -	- 45	CAR Exhaust Isolation	

VALVES FOR INSERVICE TESTING

System: Containment Vacuum Relief (CVR)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
CVR-101	2	LOU-1564-G-853 SO2	E-10	A	24	B	AO	C	C	Q* MT LT	- - -	- - -	- 5 -	Vacuum Relief Isolation	CTMT Isolation. Differential Pressure Opens.
CVR-102	2	G-853 SO2	E-10	AC	24	CK	SA	C	-	CV LT	CS -	3.1.49, 3.1.47, 3.1.3 -	- -	Vacuum Relief Check	CTMT Isolation
CVR-201	2	G-853 SO2	H-8	A	24	B	AO	C	C	Q* MT LT	- - -	- - -	- 5 -	Vacuum Relief Isolation	CTMT Isolation Differential Pressure Opens.
CVR-202	2	G-853 SO2	H-8	AC	24	CK	SA	C	-	CV LT	CS -	3.1.49, 3.1.47, 3.1.3 -	- -	Vacuum Relief Check	CTMT Isolation
CVR-401A (2HV-E634A)	2	B-431 Sheet 2B1S	-	B	½	GL	SA	O	C	Q* MT	- TNT	- 3.1.1	- 2	Non-essential Instrumentation Isolation	CIAS Closes

VALVES FOR INSERVICE TESTING

System: Containment Vacuum Relief (CVR)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
CVR-401B (2HV-E633B)	2	LOU-1564-B-431 Sheet 283S	-	B	½	GL	SO	O	C	Q* MT	- TNT	- 3.1.1	- 2	Non-essential Instrumentation Isolation	CIAS Closes

VALVES FOR INSERVICE TESTING

System: Control Room HVAC (HVC)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
HVC-101	3	LOU-1564-G-853 SO1	J-13	B	16	B	AO	O	C	Q MT	- -	- -	- 5	Normal AH-12 Supply Isolation	
HVC-102	3	G-853 SO1	J-13	B	16	B	AO	O	C	Q MT	- -	- -	- 5	Normal AH-12 Supply Isolation	
HVC-201A	3	G-853 SO1	J-11	B	8	B	MO	C	AI	Q* MT	- -	- -	- 5	Emergency AH-12 Supply Isolation	
HVC-201B	3	G-853 SO1	J-11	B	8	B	MO	C	AI	Q* MT	- -	- -	- 5	Emergency AH-12 Supply Isolation	
HVC-202A	3	G-853 SO1	J-11	B	8	B	MO	C	AI	Q* MT	- -	- -	- 5	Emergency AH-12 Supply Isolation	
HVC-202B	3	G-853 SO1	J-11	B	8	B	MO	C	AI	Q* MT	- -	- -	- 5	Emergency AH-12 Supply Isolation	

VALVES FOR INSERVICE TESTING

System: Control Room HVAC (HVC)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
HVC-203A	3	LOU-1564-G-853 SO1	J-11	B	8	B	MO	C	AI	Q* MT	- -	- -	- 5	Emergency S-8 Supply Isolation	
HVC-203B	3	G-853 SO1	K-11	B	8	B	MO	C	AI	Q* MT	- -	- -	- 5	Emergency S-8 Supply Isolation	
HVC-204A	3	G-853 SO1	J-11	B	8	B	MO	C	AI	Q* MT	- -	- -	- 5	Emergency S-8 Supply Isolation	
HVC-204B	3	G-853 SO1	K-11	B	8	B	MO	C	AI	Q* MT	- -	- -	- 5	Emergency S-8 Supply Isolation	
HVC-306	3	G-853 SO1	J-17	B	12	B	AO	O	C	Q* MT	- -	- -	- 5	E-34 (3A and 3B) Discharge Isolation	
HVC-307	3	G-853 SO1	J-17	B	12	B	AO	O	C	Q* MT	- -	- -	- 5	E-34 (3A and 3B) Discharge Isolation	

VALVES FOR INSERVICE TESTING

System: Control Room HVAC (HVC)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
HVC-313	3	LOU-1564-G-853 SO1	I-14	B	12	B	AO	O	C	Q* MT	- -	- -	- 5	E-42 Discharge Isolation	
HVC-314	3	G-853 SO1	I-14	B	12	B	AO	O	C	Q* MT	- -	- -	- 5	E-42 Discharge Isolation	

VALVES FOR INSERVICE TESTING

System: Reactor Auxiliary Building HVAC (LVR)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
HVR-104	3	LOU-1564-G-853 SO1	E-5	B	30	B	AO	O	C	Q MT	- -	- -	- 15	Pipe Penetration Area Isolation	
HVR-105	3	G-853 SO1	E-5	B	30	B	AO	O	C	Q MT	- -	- -	- 15	Pipe Penetration Area Isolation	
HVR-106	3	G-853 SO1	I-6	B	36	B	AO	O	C	Q MT	- -	- -	- 15	Controlled Ventilation Area Isolation	
HVR-107	3	G-853 SO1	I-6	B	36	B	AO	O	C	Q MT	- -	- -	- 15	Controlled Ventilation Area Isolation	
HVR-108	3	G-853 SO1	E-1	B	42	B	AO	O	C	Q MT	- -	- -	- 15	Controlled Ventilation Area Isolation	
HVR-109	3	G-853 SO1	D-1	B	42	B	AO	O	C	Q MT	- -	- -	- 15	Controlled Ventilation Area Isolation	

VALVES FOR INSERVICE TESTING

System: Reactor Auxiliary Building HVAC (HVR)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
HVR-110	3	LOU-1564-G-853 SO1	D-1	B	12	B	AO	O	C	Q MT	- -	- -	- 15	Pipe Chase Area Isolation	
HVR-111	3	G-853 SO1	D-1	B	12	B	AO	O	C	Q MT	- -	- -	- 15	Pipe Chase Area Isolation	
HVR-301	3	G-853 SO1	I-5	B	18	B	AO	C	O	Q MT	- -	- -	- 5	Controlled Ventilation Area Isolation	
HVR-302	3	G-853 SO1	E-1	B	14	B	AO	C	O	Q MT	- -	- -	- 5	Controlled Ventilation Area Isolation	
HVR-304A	3	G-853 SO1	B-1	B	18	B	MO	C	AI	Q MT	- -	- -	- 5	E-23(3A) Suction Isolation	
HVR-304B	3	G-853 SO1	A-1	B	18	B	MO	C	AI	Q MT	- -	- -	- 5	E-23(3B) Suction Isolation	

VALVES FOR INSERVICE TESTING

System: Reactor Auxiliary Building HVAC (HVR)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
HVR-313A	3	LOU-1564-G-853 S01	B-2	B	18	B	MO	C	AI	Q MT	- -	- -	- 5	E-23 (3A) Suction Isolation	
HVR-313B	3	G-853 S01	A-2	B	18	B	MO	C	AI	Q MT	- -	- -	- 5	E-23 (3B) Suction Isolation	

VALVES FOR INSERVICE TESTING

System: Shield Building Ventilation (SBV)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
SBV-101A	2	LOU-1564-G-853 S02	F-4	B	30	B	MO	C	AI	Q* MT	- -	- -	- 15	SBV Fan A Suction Isolation	
SBV-101B	2	G-853 S02	G-4	B	30	B	MO	C	AI	Q* MT	- -	- -	- 15	SBV Fan B Suction Isolation	
SBV-110A	2	G-853 S02	H-2	B	30	B	MO	C	AI	Q* MT	- -	- -	- 15	SBV Fan A Suction Isolation	
SBV-110B	2	G-853 S02	M-3	B	30	B	MO	C	AI	Q* MT	- -	- -	- 15	SBV Fan B Suction Isolation	
SBV-112A	2	G-853 S02	F-2	C	30	CK	SA	C	-	CV	-	-	-	SBV Fan A Discharge to Shield Building Check	
SBV-112B	2	G-853 S02	F-2	C	30	CK	SA	C	-	CV	-	-	-	SBV Fan B Discharge to Shield Building Check	
SBV-113A	2	G-853 S02	F-4	B	30	B	MO	C	AI	Q* MT	- -	- -	- 15	SBV Fan A Discharge to Shield Building Isolation	

VALVES FOR INSERVICE TESTING

System: Shield Building Ventilation (SBV)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN CHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
SBV-113B	2	LOU-1564-G-853 S02	F-4	B	30	B	MO	C	AI	Q* MT	- -	- -	- 15	SBV Fan B Discharge to Shield Building Isolation	
SBV-114A	2	G-853 S01	D-16	B	30	B	MO	C	AI	Q* MT	- -	- -	- 15	SBV Fan A Discharge to Stack Isolation	
SBV-114B	2	G-853 S01	D-18	B	30	B	MO	C	AI	Q* MT	- -	- -	- 15	SBV Fan B Discharge to Stack Isolation	

VALVES FOR INSERVICE TESTING

System: Instrument Air (IA)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
IA-909	2	LOU-1564-G-152 Sheet 4	B-11	A	2	GL	AO	O	C	Q* MT LT	CS - -	3.1.32, 3.1.3, 3.1.4 - -	- 10 -	Containment Instrument Air Supply Isolation	CTMT Isolation CIAS Closes, but has manual override
IA-910	2	G-152 Sheet 6	L-12	AC	2	CK	SA	O	-	CV LT	RR -	3.1.33 -	- -	Containment Instrument Air Supply Check	CTMT Isolation
IA-52222	3	G-166 Sheet 2	G-8	AC	1	CK	SA	O	-	CV	-	-	-	Instrument Air Supply to Nitrogen Header Check	
IA-52242	3	G-166 Sheet 2	G-8	AC	1	CK	SA	O	-	CV	-	-	-	Instrument Air Supply to Nitrogen Header Check	
IA-515162	3	G-166 Sheet 2	G-8	AC	1	CK	SA	O	-	CV	-	-	-	Instrument Air Supply to Nitrogen Header Check	
IA-515172	3	G-166 Sheet 2	G-8	AC	1	CK	SA	O	-	CV	-	-	-	Instrument Air Supply to Nitrogen Header Check	
IA-540312	3	G-166 Sheet 2	G-8	AC	1	CK	SA	O	-	CV	-	-	-	Instrument Air Supply to Nitrogen Header Check	

VALVES FOR INSERVICE TESTING

System: Instrument Air (IA)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
IA-540322	3	LOU-1564-G-166 Sheet 2	G-8	AC	1	CK	SA	O	-	CV	-	-	-	Instrument Air Supply to Nitrogen Header Check	
IA-901642	3	G-166 Sheet 2	G-8	AC	1	CK	SA	O	-	CV	-	-	-	Instrument Air Supply to Nitrogen Header Check	
IA-901652 (3IA-V612-1 thru 3IA-V612-8)	3	G-166 Sheet 2	G-8	AC	1	CK	SA	O	-	CV	-	-	-	Instrument Air Supply to Nitrogen Header Check	

VALVES FOR INSERVICE TESTING

System: Station Air (SA)
Including Leak Rate Testing (RT)

WATERFORD 3 S.E.S.
REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
SA-908	2	LOU-1564-G-157	E-12	A	2	GA	M	LC	-	Q LT	NT -	3.1.34 -	- -	Containment Station Air Supply Isolation	CTMT Isolation
SA-909	2	G-157	D-12	AC	2	CK	SA	C	-	CV LT	NT -	3.1.35 -	- -	Containment Station Air Supply Check	CTMT Isolation

VALVES FOR INSERVICE TESTING

System: Leak Rate Testing (LRT)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
LRT-109	2	LOU-1564-G-164 Sheet 1	N-12	A	10	GA	M	LC	-	Q LT	NT -	3.1.34 -	- -	Containment Leak Rate Test Valve	CTMT Isolation
LRT-201	2	G-164 Sheet 1	M-14	A	1	GL	M	LC	-	Q LT	NT -	3.1.34 -	- -	Integrated Leakage Rate Test (ILRT) Pressure Test Tap	CTMT Isolation
LRT-202	2	G-164 Sheet 1	M-14	A	1	GL	M	LC	-	Q LT	NT -	3.1.34 -	- -	Integrated Leakage Rate Test (ILRT) Pressure Test Tap	CTMT Isolation
LRT-203	2	G-164 Sheet 1	M-14	A	1	GL	M	LC	-	Q LT	NT -	3.1.34 -	- -	Controlled Leakage Rate Test Bleedoff	CTMT Isolation
LRT-204	2	G-164 Sheet 1	M-14	A	1	GL	M	LC	-	Q LT	NT -	3.1.34 -	- -	Controlled Leakage Rate Test Bleedoff	CTMT Isolation

VALVES FOR INSERVICE TESTING

System: Area Radiation Monitoring (ARM)
(Ebasco Designation - Containment Air (CA))

WATERFORD 3 S.E.S.
REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
ARM-103 (2CA-E606A)	2	LOU-1564-G-164 Sheet 2	J-15	A	3/4	GL	SO	O	C	Q* MT LT	CS TNT -	3.1.37, 3.1.3, 3.1.4 3.1.1 -	- 2 -	Containment Radiation Monitor Isolation	CTMT Isolation
ARM-104 (2CA-V607)	2	G-164 Sheet 2	J-15	AC	3/4	CK	SA	O	-	CV LT	RR -	3.1.33 -	- -	Containment Radiation Monitor Check	CTMT Isolation
ARM-109 (2CA-E604B)	2	G-164 Sheet 2	J-15	A	3/4	GL	SO	O	C	Q* MT LT	CS TNT -	3.1.37, 3.1.3, 3.1.4 3.1.1 -	- 2 -	Containment Radiation Monitor Isolation	CTMT Isolation
ARM-110 (2CA-E605A)	2	G-164 Sheet 2	J-15	A	3/4	GL	SO	O	C	Q* MT LT	CS TNT -	3.1.37, 3.1.3, 3.1.4 3.1.1 -	- 2 -	Containment Radiation Monitor Isolation	CTMT Isolation

VALVES FOR INSERVICE TESTING

System: Fuel Pool Cooling and Purification (FS)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
FS-405	2	LOU-1564-G-163	H-13	A	3	GA	M	LC	-	Q LT	NT -	3.1.34 -	- -	Refueling Cavity Inlet Isolation	CTMT Isolation
FS-406	2	G-163	H-14	A	3	GA	M	LC	-	Q LT	NT -	3.1.34 -	- -	Refueling Cavity Inlet Isolation	CTMT Isolation
FS-415	2	G-163	I-14	A	6	D	M	LC	-	Q LT	NT -	3.1.34 -	- -	Refueling Cavity Drain Pump Discharge Isolation	CTMT Isolation
FS-416	2	G-163	I-13	A	6	D	M	LC	-	Q LT	NT -	3.1.34 -	- -	Refueling Cavity Drain Pump Discharge Isolation	CTMT Isolation

VALVES FOR INSERVICE TESTING

System: Gaseous Waste Management (GWM)
Including Sump Pump (SP)

WATERFORD 3 S.E.S.
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VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
GWM-104	2	LOU-1564-G-170 Sheet 2	F-7	A	1	D	AO	O	C	Q* MT LT	- - -	- - -	- 7 -	Reactor Coolant Drain Tank Vent to Gas Surge Tank	CTMT Isolation
GWM-105	2	G-170 Sheet 2	F-7	A	1	D	AO	O	C	Q* MT LT	- - -	- - -	- 7 -	Reactor Coolant Drain Tank Vent to Gas Surge Tank	CTMT Isolation

VALVES FOR INSERVICE TESTING

System: Sump Pump (SP)

WATERFORD 3 S.E.S.

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VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
SP-105	2	LOU-1564-G-173	D-9	A	1½	D	AO	O	C	Q* MT LT	- - -	- - -	- 7 -	Containment Sump Pumps Discharge Isolation	CTMT Isolation CIAS Closes, but has override.
SP-106	2	G-173	D-10	A	1½	D	AO	O	C	Q* MT LT	- - -	- - -	- 7 -	Containment Sump Pumps Discharge Isolation	CTMT Isolation CIAS Closes, but has override.

VALVES FOR INSERVICE TESTING

System: Boron Management (BM)

WATERFORD 3 S E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
BM-109	2	LOU-1564-G-171 Sheet 1	E-6	A	3	D	AO	O	C	Q*	-	-	-	Reactor Drain Tank	CTMT
										MT	-	-	7	Discharge to Reactor	Isolation
														Drain Tank Pump Suction	
										LT	-	-	-		
BM-110	2	G-171 Sheet 1	E-6	A	3	D	AO	O	C	Q*	-	-	-	Reactor Drain Tank	CTMT
										MT	-	-	7	Discharge to Reactor	Isolation
														Drain Tank Pump Suction	
										LT	-	-	-		

VALVES FOR INSERVICE TESTING

System: Condensate Makeup & Storage (CMU)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
CMU-244	2	LOU-1564-G-161 Sheet 2	E-12	A	1½	GL	M	LC	-	Q* LT	NT -	3.1.34 -	- -	Condensate Supply to Containment	CTMT Isolation
CMU-245 (2DW-V643)	2	G-161 Sheet 2	E-12	AC	1½	CK	SA	C	-	CV LT	NT -	3.1.35 -	- -	Condensate Supply to Containment	CTMT Isolation

VALVES FOR INSERVICE TESTING

System: Primary Makeup (PMU)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
PMU-151	2	LOU-1564-G-161 Sheet 2	E-15	A	2	GL	M	LC	-	Q LT	NT -	3.1.34 -	- -	Primary Makeup Supply to Containment	CTMT Isolation
PMU-152	2	G-161 Sheet 2	E-15	AC	2	CK	SA	C	-	CV LT	NT -	3.1.35 -	- -	Primary Makeup Supply to Containment	CTMT Isolation

VALVES FOR INSERVICE TESTING

System: Nitrogen Gas (NG)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
NG-157	2	LOU-1564-G-166 Sheet 1	F-9	A	1	GL	AO	O	C	Q* MT LT	- - -	- - -	- 5 -	Nitrogen Supply to Containment	CTMT Isolation
NG-158	2	G-166 Sheet 1	F-10	AC	1	CK	SA	C	-	CV LT	RR -	3.1.35, 3.1.3 -	- -	Nitrogen Supply to Containment	CTMT Isolation

VALVES FOR INSERVICE TESTING

System: Nitrogen Gas (NG)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF -REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
NG-603	3	G-166 Sheet 2	E-5	AC	1	CK	SA	C	-	CV	-	-	-	Nitrogen Accumulator Inlet Check	Passive
NG-604	3	G-166 Sheet 2	E-5	AC	1	CK	SA	C	-	CV	-	-	-	Nitrogen Accumulator Inlet Check	Passive
NG-703	3	G-166 Sheet 2	E-5	AC	1	CK	SA	C	-	CV	-	-	-	Nitrogen Accumulator Inlet Check	Passive
NG-704	3	G-166 Sheet 2	E-5	AC	1	CK	SA	C	-	CV	-	-	-	Nitrogen Accumulator Inlet Check	Passive
NG-803	3	G-166 Sheet 2	E-5	AC	1	CK	SA	C	-	CV	-	-	-	Nitrogen Accumulator Inlet Check	Passive
NG-804	3	G-166 Sheet 2	E-5	AC	1	CK	SA	C	-	CV	-	-	-	Nitrogen Accumulator Inlet Check	Passive

VALVES FOR INSERVICE TESTING

System: Nitrogen Gas (NG)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
NG-903	3	LOU-1564-G-166 Sheet 2	E-5	AC	1	CK	SA	C	-	CV	-	-	-	Nitrogen Accumulator Inlet Check	Passive
NG-904 (3NG-V668-1 thru 3NG-V668-8)	3	G-166 Sheet 2	E-5	AC	1	CK	SA	C	-	CV	-	-	-	Nitrogen Accumulator Inlet Check	Passive
NG-609	3	G-166 Sheet 2	E-7	B	1	GL	SO	C	O	Q MT	- NST	- 3.1.52	- -	Nitrogen Supply to Header Isolation	
NG-610	3	G-166 Sheet 2	E-7	B	1	GL	SO	C	O	Q MT	- NST	- 3.1.52	- -	Nitrogen Supply to Header Isolation	
NG-709	3	G-166 Sheet 2	E-7	B	1	GL	SO	C	O	Q MT	- NST	- 3.1.52	- -	Nitrogen Supply to Header Isolation	

VALVES FOR INSERVICE TESTING

System: Nitrogen Gas (NG)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN CHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
NG-710 (3NG-V671-1 thru 3NG-V671-4)	3	LOU-1564-G-166 Sheet 2	E-7	B	1	GL	SO	C	O	Q MT	- NST	- 3.1.52	- -	Nitrogen Supply to Header Isolation	
NG-809	3	G-166 Sheet 2	E-7	B	1	GL	SO	C	O	Q MT	- NST	- 3.1.52	- -	Nitrogen Supply to Header Isolation	
NG-810	3	G-166 Sheet 2	E-7	B	1	GL	SO	C	O	Q MT	- NST	- 3.1.52	- -	Nitrogen Supply to Header Isolation	
NG-909	3	G-166 Sheet 2	E-7	B	1	GL	SO	C	O	Q MT	- NST	- 3.1.52	- -	Nitrogen Supply to Header Isolation	
NG-910 (3NG-V671-5 thru 3NG-V671-8)	3	G-166 Sheet 2	E-7	B	1	GL	SO	C	O	Q MT	- NST	- 3.1.52	- -	Nitrogen Supply to Header Isolation	

VALVES FOR INSERVICE TESTING

System: Nitrogen Gas (NG)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
NG-611	3	LOU-1564-G-166 Sheet 2	E-7	B	1	GL	AO	C	-	Q MT	- MST	- 3.1.54	- -	Nitrogen Pressure Regulator	
NG-612	3	G-166 Sheet 2	E-7	B	1	GL	AO	C	-	Q MT	- MST	- 3.1.54	- -	Nitrogen Pressure Regulator	
NG-711	3	G-166 Sheet 2	E-7	B	1	GL	AO	C	-	Q MT	- MST	- 3.1.54	- -	Nitrogen Pressure Regulator	
NG-712 (3NG-V670-1 thru 3NG-V670-4)	3	G-166 Sheet 2	E-7	B	1	GL	AO	C	-	Q MT	- MST	- 3.1.54	- -	Nitrogen Pressure Regulator	
NG-811	3	G-166 Sheet 2	E-7	B	1	GL	AO	C	-	Q MT	- MST	- 3.1.54	- -	Nitrogen Pressure Regulator	
NG-812	3	G-166 Sheet 2	E-7	B	1	GL	AO	C	-	Q MT	- MST	- 3.1.54	- -	Nitrogen Pressure Regulator	
NG-911	3	G-166 Sheet 2	E-7	B	1	GL	AO	C	-	Q MT	- MST	- 3.1.54	-	Nitrogen Pressure Regulator	

VALVES FOR INSERVICE TESTING

System: Nitrogen Gas (NG)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
NG-912 (3NG-V670-5 thru 3NG-V670-8)	3	108-1564-G-166 Sheet 2	E-7	B	1	GL	AO	C	-	Q MT	- NST	- 3.1.54	- -	Nitrogen Pressure Regulator	
NG-617	3	G-166 Sheet 2	E-8	C	1	CK	SA	C	-	CV	-	-	-	Nitrogen Supply to Header Check	
NG-618	3	G-166 Sheet 2	E-8	C	1	CK	SA	C	-	CV	-	-	-	Nitrogen Supply to Header Check	
NG-717	3	G-166 Sheet 2	E-8	C	1	CK	SA	C	-	CV	-	-	-	Nitrogen Supply to Header Check	
NG-718	3	G-166 Sheet 2	E-8	C	1	CK	SA	C	-	CV	-	-	-	Nitrogen Supply to Header Check	
NG-817	3	G-166 Sheet 2	E-8	C	1	CK	SA	C	-	CV	-	-	-	Nitrogen Supply to Header Check	
NG-818	3	G-166 Sheet 2	E-8	C	1	CK	SA	C	-	CV	-	-	-	Nitrogen Supply to Header Check	

VALVES FOR INSERVICE TESTING

System: Nitrogen Gas (NG)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
NG-917	3	LOU-1564-G-166 Sheet 2	E-8	C	1	CK	SA	C	-	CV	-	-	-	Nitrogen Supply to Header Check	
NG-918 (3NG-V673-1 thru 3NG-V673-8)	3	G-166 Sheet 2	E-8	C	1	CK	SA	C	-	CV	-	-	-	Nitrogen Supply to Header Check	

VALVES FOR INSERVICE TESTING

System: Hydrogen Recombiner & Analyzer (HRA)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
HRA-101A (2HA-E601A)	2	LOU-1564-B-430 SP-01	-	B	3/8	GL	SO	C	C	Q MT	- NST	3.2.8 3.1.38	- -	Containment Dome Sample A	
HRA-101B (2HA-E621B)	2	B-430 SP-01	-	B	3/8	GL	SO	C	C	Q MT	- NST	3.2.8 3.1.38	- -	Containment Dome Sample B	
HRA-102A (2HA-E607A)	2	B-430 SP-01	-	B	3/8	GL	SO	C	C	Q MT	- NST	3.2.8 3.1.38	- -	Below Missile Shield Sample A	
HRA-102B (2HA-E627B)	2	B-430 SP-01	-	B	3/8	GL	SO	C	C	Q MT	- NST	3.2.8 3.1.38	- -	Below Missile Shield Sample B	
HRA-103A (2HA-E606A)	2	B-430 SP-01	-	B	3/8	GL	SO	C	C	Q MT	- NST	3.2.8 3.1.38	- -	Above Regenerative Heat Exchanger Sample A	
HRA-103B (2HA-E626B)	2	B-430 SP-01	-	B	3/8	GL	SO	C	C	Q MT	- NST	3.2.8 3.1.38	- -	Above Regenerative Heat Exchanger Sample B	

VALVES FOR INSERVICE TESTING

System: Hydrogen Recombiner & Analyzer (HRA)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN CHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
HRA-104A (2HA-E605A)	2	LOU-1564-B-430 SP-01	-	B	3/8	GL	SO	C	C	Q MT	- NST	3.2.8 3.1.38	- -	Above Steam Generator #2 Compartment Sample A	
HRA-104B (2HA-E625B)	2	B-430 SP-01	-	B	3/8	GL	SO	C	C	Q MT	- NST	3.2.8 3.1.38	- -	Above Steam Generator #2 Compartment Sample B	
HRA-105A (2HA-E604A)	2	B-430 SP-01	-	B	3/8	GL	SO	C	C	Q MT	- NST	3.2.8 3.1.38	- -	Above Steam Generator #1 Compartment Sample A	
HRA-105B (2HA-E624B)	2	B-430 SP-01	-	B	3/8	GL	SO	C	C	Q MT	- NST	3.2.8 3.1.38	- -	Above Steam Generator #1 Compartment Sample B	
HRA-106A (2HA-E603A)	2	B-430 SP-01	-	B	3/8	GL	SO	C	C	Q MT	- NST	3.2.8 3.1.38	- -	Above Pressurizer Sample A	
HRA-106B (2HA-E623B)	2	B-430 SP-01	-	B	3/8	GL	SO	C	C	Q MT	- NST	3.2.8 3.1.38	- -	Above Pressurizer Sample B	

VALVES FOR INSERVICE TESTING

System: Hydrogen Recombiner & Analyzer (HRA)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN CHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
HRA-109A (2HA-E608A)	2	LOU-1564-B-430 SP-01	-	A	3/8	GL	SO	C	C	Q* MT LT	- TNT -	- 3.1.1 -	- 2 -	Inlet Header A Isolation (Upstream of Penetration)	CTMT Isolation CIAS closes, but has override
HRA-109B (2HA-E628B)	2	B-430 SP-01	-	A	3/8	GL	SO	C	C	Q* MT LT	- TNT -	- 3.1.1 -	- 2 -	Inlet Header B Isolation (Upstream of Penetration)	CTMT Isolation CIAS closes, but has override
HRA-110A (2HA-E609A)	2	B-430 SP-01	-	A	3/8	GL	SO	C	C	Q* MT LT	- TNT -	- 3.1.1 -	- 2 -	Inlet Header A Isolation (Downsteam of Penetration)	CTMT Isolation CIAS closes, but has override

VALVES FOR INSERVICE TESTING

System: Hydrogen Recombiner & Analyzer (HRA)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
HRA-110B (2HA-E629B)	2	LOU-1564-B-430 SP-01	-	A	3/8	GL	SO	C	C	Q* MT LT	- TNT -	- 3.1.1 -	- 2 -	Inlet Header B Isolation (Downsteam of Penetration)	CTMT Isolation CIAS closes, but has override
HRA-126A (2HA-E610A)	2	B-430 SP-01	-	A	3/8	GL	SO	C	C	Q* MT LT	- TNT -	- 3.1.1 -	- 2 -	Containment Sample Return Isolation	CTMT Isolation CIAS closes, but has override
HRA-126B (2HA-E630B)	2	B-430 SP-01	-	A	3/8	GL	SO	C	C	Q* MT LT	- TNT -	- 3.1.1 -	- 2 -	Containment Sample Return Isolation	CTMT Isolation CIAS closes, but has override
HRA-128A (2HA-V637A)	2	B-430 SP-01	-	AC	3/8	CK	SA	C	-	CV LT	- -	- -	- -	Containment Sample Return Check	CTMT Isolation

VALVES FOR INSERVICE TESTING

System: Hydrogen Recombiner & Analyzer (HRA)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
HRA-128B (2HA-V638B)	2	LOU-1564-B-430 SP-01	-	AC	3/8	CK	SA	C	-	CV LT	- -	- -	- -	Containment Sample Return Check	CTMT Isolation
HRA-201A (2HA-E602A)	2	B-430 SP-01	-	B	3/8	GL	SO	C	C	Q MT	- NST	3.2.8 3.1.38	- -	Annulus Sample A Inlet Isolation	
HRA-201B (2HA-E622B)	2	B-430 SP-01	-	B	3/8	GL	SO	C	C	Q MT	- NST	3.2.8 3.1.38	- -	Annulus Sample B Inlet Isolation	
HRA-202A (2HA-E633A)	2	B-430 SP-01	-	B	3/8	GL	SO	C	C	Q MT	- NST	3.2.8 3.1.38	- -	Annulus Sample A Return Isolation	
HRA-202B (2HA-E634B)	2	B-430 SP-01	-	B	3/8	GL	SO	C	C	Q MT	- NST	3.2.8 3.1.38	- -	Annulus Sample B Return Isolation	

VALVES FOR INSERVICE TESTING

System: Primary Sampling (PSL)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN CHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
PSL-105	2	LOU-1564-G-162 Sheet 2	B-5	A	½	GL	AO	O	C	Q* MT LT	- - -	- - -	- 10 -	RCS Loop 1 Hot Leg Sample	CTMT Isolation. CIAS closes, but has override
PSL-107	2	G-162 Sheet 2	B-6	A	½	GL	AO	O	C	Q* MT LT	- - -	- - -	- 10 -	RCS Loop 1 Hot Leg Sample	CTMT Isolation. CIAS closes, but has override
PSL-203	2	G-162 Sheet 2	B-5	A	½	GL	AO	O	C	Q* MT LT	- - -	- - -	- 10 -	Pressurizer Surge Line Sample	CTMT Isolation. CIAS closes, but has override

VALVES FOR INSERVICE TESTING

System: Primary Sampling (PSL)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
PSL-204	2	LOU-1564-G-162 Sheet 2	B-6	A	½	GL	AO	O	C	Q* MT LT	- - -	- - -	- 10 -	Pressurizer Surge Line Sample	CTMT Isolation CIAS closes, but has override
PSL-303	2	G-162 Sheet 2	A-5	A	½	GL	AO	O	C	Q* MT LT	- - -	- - -	- 10 -	Pressurizer Steam Sample	CTMT Isolation CIAS closes, but has override
PSL-304	2	G-162 Sheet 2	A-6	A	½	GL	AO	O	C	Q* MT LT	- - -	- - -	- 10 -	Pressurizer Steam Sample	CTMT Isolation CIAS closes, but has override

VALVES FOR INSERVICE TESTING

System: Primary Sampling (PSL)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
PSL-404A	2	LOU-1564-G-162 Sheet 2	E-1	B	½	GA	AO	O	C	Q* MT	- -	- -	- 10	Steam Generator No. 1 Blowdown Sample	CIAS Closes, but has override
PSL-404B	2	G-162 Sheet 2	E-4	B	½	GA	AO	O	C	Q* MT	- -	- -	- 10	Steam Generator No. 2 Blowdown Isolation	CIAS Closes, but has override
PSL-406A	2	G-162 Sheet 2	F-1	B	½	GA	AO	O	C	Q* MT	- -	- -	- 10	Steam Generator No. 1 Blowdown Isolation	CIAS Closes, but has override
PSL-406B	2	G-162 Sheet 2	F-4	B	½	GA	AO	O	C	Q* MT	- -	- -	- 10	Steam Generator No. 2 Blowdown Isolation	CIAS Closes, but has override

VALVES FOR INSERVICE TESTING

System: Secondary Sampling (SSL)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
SSL-301A	2	LOU-1564-G-151 Sheet 1	D-5	B	1	GL	AO	O	C	Q* MT	- -	- -	- 5	Main Steam Sample	MSIS Closes
SSL-301B	2	G-151 Sheet 1	I-5	B	1	GL	AO	O	C	Q* MT	- -	- -	- 5	Main Steam Sample	MSIS Closes

VALVES FOR INSERVICE TESTING

System: Blowdown (BD)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
BD-102A	2	LOU-1564-G-164 Sheet 1	D-1	B	4	GA	AO	O	C	Q* MT	- -	- -	- 10	Steam Generator No. 1 Secondary Blowdown	CIAS, EFAS Close.
BD-102B	2	G-164 Sheet 1	D-3	B	4	GA	AO	O	C	Q* MT	- -	- -	- 10	Steam Generator No. 2 Secondary Blowdown	CIAS, EFAS Close.
BD-103A	2	G-164 Sheet 1	E-1	B	4	GA	AO	O	C	Q* MT	- -	- -	- 10	Steam Generator No. 1 Secondary Blowdown	CIAS, EFAS Close.
BD-103B	2	G-164 Sheet 1	E-3	B	4	GA	AO	O	C	Q* MT	- -	- -	- 10	Steam Generator No. 2 Secondary Blowdown	CIAS, EFAS Close

VALVES FOR INSERVICE TESTING

System: Fire Protection (FP)

WATERFORD 3 S.E.S.

REVISION NO. 3

VALVE NUMBER	CODE CLASS	FLOW DIAGRAM/ SHEET NUMBER	COORD-INATES	SECTION XI VALVE CATEGORY	SIZE IN INCHES	VALVE TYPE	ACTUATOR TYPE	NORMAL POSITION	FAILURE POSITION	TEST REQUIREMENTS	TEST ALTERNATES	RELIEF REQUESTS/ CLARIFICATIONS	STROKE TIME LIMIT (SEC.)	FUNCTION	REMARKS
FP-601A	2	LOU-1564-G-161 Sheet 1	E-3	A	3	GL	AO	O	C	Q*	-	-	-	Fire Protection Water	CTMT
										MT	-	-	10	Supply to Containment	Isolation
										LT	-	-	-		
FP-601B	2	G-161 Sheet 1	E-6	A	3	GL	AO	O	C	Q*	-	-	-	Fire Protection Water	CTMT
										MT	-	-	10	Supply to Containment	Isolation
										LT	-	-	-		
FP-602A	2	G-161 Sheet 1	E-3	AC	3	CK	SA	O	-	CV	RR	3.1.35	-	Fire Protection Water	CTMT
										LT	-	-	-	Supply to Containment	Isolation
FP-602B	2	G-161 Sheet 1	E-6	AC	3	CK	SA	O	-	CV	RR	3.1.35	-	Fire Protection Water	CTMT
										LT	-	-	-	Supply to Containment	Isolation

3.1 Requests for Relief from ASME Boiler and Pressure Vessel Code Section XI Requirements

3.1.1 Test Requirement

IWV-3413(b) requires that the stroke time of all power-operated valves shall be measured to the nearest second for stroke times of 10 seconds or less. IWV-3417 requires that on any one test of power-operated valves, an increase in stroke time of 50% or more from the previous test for valves with stroke times of 10 seconds or less, the test frequency shall be increased to once each month until corrective action is taken.

Basis for Relief

These solenoid-actuated valves have extremely short stroke times. Accurate measurement of these stroke times is not practical. In addition, the stroke times may vary from one test to another due to temperature and/or pressure variations.

Alternate Testing

These valves will be full-stroke tested. The stroke times will be measured to the nearest second and compared to the stroke time limit. Acceptance of the test will be based only on the stroke time limit and not on the "50%" criteria in IWV-3417.

3.1.2 Test Requirement

Exercise the valves for operability at least once every three (3) months.

Basis for Relief

The operability testing (full stroke) of these valves during normal operation could cause a loss of system function. The failure of these valves in a nonconservative position during a cycling test would cause the loss of the RCP seal water cooling function. The design of the valve will not facilitate a partial-stroke test.

Alternate Testing

The valves will be full-stroke tested for operability at each cold shutdown.

3.1.3 Test Requirement

IWV-3417(b) and IWV-3523 state that when corrective action is required as a result of tests made during cold shutdown, the condition shall be corrected before startup. A retest showing acceptable operation shall be run following any required corrective action before the valve is returned to service.

Basis for Relief

The plant Technical Specifications provide the requirements and plant conditions necessary for plant startup, i.e., mode changes.

Alternate Testing

The test requirement will be satisfied before the valve is required for plant operability as defined in the plant Technical Specifications.

3.1.4 Test Requirement

IWV-3417(a) states that if an increase in stroke time of 25% or more from the previous test for valves with stroke times greater than ten seconds or 50% or more for valves with stroke times less than or equal to ten seconds is observed, test frequency shall be increased to once each month until corrective action is taken.

Basis for Relief

Valves that are normally tested during cold shutdown cannot be tested once each month. Stroking these valves during power operation may place the plant in an unsafe condition.

Alternate Testing

The test frequency shall be increased to once each cold shutdown, not to exceed once each month.

3.1.5 Test Requirement

Exercise valves for operability at least once every three (3) months.

Basis for Relief

Operability testing (full-stroke) of these normally closed valves during power operation would cause concentrated boric acid to be made available to the suction of the charging pumps. The charging pumps would inject the boric acid into the Reactor Coolant System causing overboration and possibly causing a plant shutdown. The design of the valves will not facilitate a partial-stroke test.

Alternate Testing

This valve will be full-stroke tested for operability at each cold shutdown.

3.1.6 Test Requirement

Exercise check valves for operability at least once every three (3) months.

Basis for Relief

Operability Testing (full or partial stroking) of this normally closed check valve per IWV-3520 requires flow verification utilizing the flow of concentrated boric acid to the suction of the Charging Pumps. During power operation, this flow verification would cause the injection of the boric acid into the Reactor Coolant System causing overboration and possibly causing a plant shutdown.

Alternate Testing

This valve will be full-stroke tested for operability at each cold shutdown with two Charging Pumps operating.

3.1.7 Test Requirement

Exercise the valves for operability at least once every three (3) months.

Basis for Relief

The operability testing (full stroke) of these valves during normal operation could jeopardize the charging function of the CVCS. Failure in a nonconservative (closed) position would eliminate the VCT as a source of RCS charging and possibly cause a plant shutdown. Pressurizer level control would be lost. In addition, the Regenerative Heat Exchanger would be subjected to unwanted thermal shock. The design of the valves will not facilitate a partial-stroke test.

Alternate Testing

The valves will be full-stroke tested for operability at each cold shutdown.

3.1.8 Test Requirement

Exercise valves for operability at least once every three (3) months.

Basis for Relief

The auxiliary pressurizer spray water temperature is approximately 140 degrees F. cooler than normal pressurizer spray. Operability testing (full stroke) of these normally closed valves during power operation would result in initiation of auxiliary pressurizer spray which would induce unnecessary thermal shock in the pressurizer and associated piping and nozzles. In addition, the introduction of this cooler water into the pressurizer will result in undesired primary pressure transients. The design of the valves will not facilitate a partial-stroke test.

Alternate Testing

The valves will be full-stroke tested for operability either during cold shutdown or during normal plant cooldown approaching cold shutdown.

3.1.9 Test Requirement

IWV-3413(b) requires that the stroke time of all power-operated valves shall be measured to the nearest second for stroke times of 10 seconds or less. IWV-3417 requires that on any one test of power-operated valves, an increase in stroke time of 50% or more from the previous test for valves with stroke times of 10 seconds or less, the test frequency shall be increased to once each month until corrective action is taken.

Basis for Relief

These solenoid-actuated valves have extremely short stroke times. Accurate measurement of these stroke times is not practical. In addition, the stroke times may vary from one test to another due to temperature and/or pressure variations.

Alternate Testing

These valves will be full-stroke exercised either during cold shutdown or during normal plant cooldown approaching cold shutdown. The stroke times will be measured to the nearest second and compared to the stroke time limit. Acceptance of the test will be based only on the stroke time limit and not on the "50%" criteria in IWV-3417.

3.1.10 Test Requirement

Exercise check valves for operability at least once every three (3) months.

Basis for Relief

Operability testing (full or partial stroking) of these normally closed check valves per IWV-3520 requires flow verification utilizing the auxiliary pressurizer spray flow path. The auxiliary pressurizer spray water temperature is approximately 140 degrees F cooler that normal pressurizer spray. Operability testing of these check valves during power operation would induce unnecessary thermal shock in the pressurizer and associated piping and nozzles. In addition, the introduction of this cooler water into the pressurizer will result in undesired primary pressure transients.

Alternate Testing

The valves will be full-stroke tested for operability either during cold shutdown or during normal plant cooldown approaching cold shutdown with at least two Charging Pumps operating.

3.1.11 This relief request was deleted at NRC meeting, October 24, 1984.

3.1.12 Test Requirement

Exercise check valves for operability at least once every three (3) months.

Basis for Relief

The operability testing (full-stroke) of these normally closed check valves per IWV-3520 requires flow verification into the RCS. These valves cannot be full-stroke exercised during power operation because the pumps cannot overcome RCS pressure. During cold shutdown, these valves cannot be full-stroke exercised because design flow cannot be verified through the valves unless all LOCA test conditions can be met (i.e., suction from the RWSP through the pumps to the RCS with the RCS at atmospheric pressure).

Alternate Testing

These valves will be partial-stroke exercised quarterly (coincident with pump testing) and full-stroke exercised during each refueling outage.

3.1.13 Test Requirement

Exercise check valves for operability at least once every three (3) months.

Basis for Relief

The operability testing (full-stroke) of these normally closed check valves per IWV-3520 requires flow verification under LPSI into the RCS. These valves cannot be full-stroke exercised during power operation because the LPSI pumps cannot overcome RCS pressure. Partial-stroking these valves, using flow into containment, then back to the RWSP through a drain valve, would defeat the safety function of RCS Pressure Isolation Valves. During cold shutdown, these valves cannot be full-stroke exercised because design flow cannot be verified through the valves unless all LOCA test conditions can be met (i.e., suction from the RWSP through both pumps to the RCS with the RCS at atmospheric pressure).

Alternate Testing

These valves will be partial-stroke tested during each cold shutdown and full-stroked using LPSI design flow during each refueling outage.

3.1.14 Test Requirement

Exercise check valves for operability at least once every three (3) months.

Basis for Relief

The operability testing (full-stroke) of these normally-closed check valves per IWV-3520 requires flow verification into the RCS. These valves cannot be full-stroke exercised during power operation because the HPSI pumps cannot overcome RCS pressure. During power operation, partial stroking these valves, using HPSI flow into containment then back to the RWSP through a drain valve, would defeat the safety function of RCS Pressure Isolation Valves (PIV's). During cold shutdown, these valves cannot be full-stroke exercised because design flow cannot be verified through the valves unless all LOCA test conditions can be met (i.e., suction from the RWSP through two HPSI pumps to the RCS with the RCS at atmospheric pressure). Also, during cold shutdown, these valves cannot be partial-stroke exercised because such testing would induce unwanted thermal shock to the safety injection nozzles and piping. Partial-stroke exercising at cold shutdowns also increases the possibility of overpressurizing the RCS at low temperature.

Alternate Testing

These valves will be full-stroke exercised during each refueling outage.

3.1.15 Test Requirement

Exercise valves for operability at least once every three (3) months.

Basis for Relief

The operability testing of these valves during normal operation would cause a loss of system function. Stroking the valves would cause a decrease in safety injection tank (SIT) nitrogen pressure. The failure of one of these valves in a nonconservative (open) position would cause the associated SIT to become inoperable. Valve design does not facilitate partial-stroke testing.

Alternate Testing

These valves will be full-stroke tested for operability during each cold shutdown.

3.1.16 Test Requirement

Exercise check valves for operability at least once every three (3) months.

Basis for Relief

The operability testing of these normally closed check valves per IWV-3520 during normal operation or cold shutdown is not practical. During normal operation, these valves cannot be full-stroke exercised because the safety injection tanks (SIT's) cannot overcome RCS pressure. The valves cannot be partial-stroke exercised during normal operation without making the SIT's inoperable, thus placing the plant in an unsafe condition. During cold shutdown, these valves cannot be fully or partially stroked without overpressurizing the RCS. During refueling outages, these valves cannot be full-stroke exercised at SIT operating pressure without possibly causing internal core damage due to excessive flow rates.

Alternate Testing

The SIT's have four discharge check valves. Three are spring-loaded and will be treated as one group. The other one is non-spring-loaded and will be treated as another group. One check valve from each group will be disassembled and manually exercised to its full-open position during each refueling outage on a staggered sampling basis. The two groups of check valves are as follows:

Group 1 (Spring-Loaded)	Group 2 (Non-Spring-Loaded)
SI-329A	SI-330A
SI-329B	
SI-330B	

If the inspection at the first refueling outage demonstrates that the condition of the Group 2 check valve has not degraded to an undesirable level, then LP&L will apply to the USNRC for a change in this relief request to extend the frequency of disassembly to some longer interval.

3.1.17 This relief request was deleted at NRC meeting, October 24, 1984. Valves SI-331 A & B and SI-332 A & B were also deleted from this Test Plan.

3.1.18 Test Requirement

Exercise check valves for operability at least once every three (3) months.

Basis for Relief

The operability testing (full or partial stroke) of these normally closed check valves per IWV-3520 during normal operation is not practical. During normal operation, these valves cannot be full-stroke exercised because neither the LPSI pumps, HPSI pumps nor safety injection tanks (SIT's) can overcome RCS pressure. Partial-stroking these valves during power operation using charging flow would induce unwanted thermal shock to safety injection nozzles and piping. During cold shutdown, these valves cannot be full-stroke tested unless all LOCA test conditions can be met. Fulfilling LOCA test conditions would require removing the Reactor Pressure Vessel (RPV) head. However, these valves are partial-stroke tested during each cold shutdown using normal shutdown cooling flow.

Alternate Testing

One check valve from the following group will be disassembled and manually exercised to its full-open position during each refueling outage on a staggered sampling basis:

SI-335A
SI-335B
SI-336A
SI-336B

3.1.19 Test Requirement

Exercise valves for operability at least once every three (3) months.

Basis for Relief

The operability testing (full or partial stroke) of these valves during power operation cannot be accomplished because the valves are interlocked with an RCS pressure signal which prohibits the valves from opening at an RCS pressure greater than 400 psig.

Alternate Testing

The valves will be full-stroke tested for operability at each cold shutdown.

3.1.20 Test Requirement

Exercise check valves for operability at least once every three (3) months.

Basis for Relief

The operability testing (full or partial stroke) of these normally closed check valves per IWV-3520 during power operation is not practical. Exercising these valves requires flow verification into the RCS. During power operation the HPSI pumps cannot overcome RCS pressure and therefore cannot deliver any flow. Partial-stroking these valves during power operation using charging flow would induce unwanted thermal shock to Safety Injection nozzles and piping. During cold shutdown, these valves cannot be full-stroke exercised because design flow cannot be verified through the valves unless all LOCA test conditions can be met (i.e., suction from the RWSP through two pumps to the RCS with the RCS at atmospheric pressure). Also, during cold shutdown, these valves cannot be partial-stroke exercised because such testing would induce unwanted thermal shock to the safety injection nozzles and piping. Partial-stroke exercising at cold shutdowns also increases the possibility of overpressurizing the RCS at low temperature.

Alternate Testing

These valves will be full-stroke exercised during each refueling outage.

3.1.21 Test Requirement

Exercise check valves for operability at least once every three (3) months.

Basis for Relief

The operability testing (full-stroke) of these normally closed check valves per IWV-3520 during power operation is not practical. Full stroke exercising requires flow verification from the SIS Sump through a HPSI pump into the RCS with the RCS at atmospheric conditions. During power operation and cold shutdowns, these test conditions cannot be met. During any mode of operation (including power operation, cold shutdown and refueling outages), the pumping of unknown-quality water into the RCS defeats the purpose of primary water chemistry controls and could cause violation of plant Technical Specifications. The only possible means of providing flow through these valves is through the check valve test connection. However, flow through the 3/4 inch test line only verifies a partial-stroke test. The small amount of water that could be pumped through the test connection would not prove operability nor increase plant safety.

Alternate Testing

One of these two check valves will be disassembled and manually exercised by hand to its full-open position at each refueling outage on a staggered sampling basis.

3.1.22 Test Requirement

Exercise check valves for operability at least once every three (3) months.

Basis for Relief

The only positive means of exercising (full-stroke) this normally closed check valve is by directing Emergency Feedwater (EFW) flow into the Steam Generators. The initiation of EFW during power operation would result in unwanted thermal shock to the secondary portions of the Steam Generators, including feedwater nozzles and associated piping up to and including the EFW-to-FW connection. An introduction of cold water into the secondary system will also cause power transients. Partial-stroke testing at power could be performed by providing EFW flow through the valve then through the drain/recirculation line back to the Condensate Storage Pool. However, such testing would cause the diversion of EFW flow from the intended flow path to a non-safety, non-seismic line assuming that EFW flow were then required due to a plant condition change.

Alternate Testing

After leaving cold shutdown and prior to entering Mode 2 (Startup), EFW flow will be directed through the valve at the design flow rate of the EFW system. Verification of this flow through the valve will provide assurance that the valve has opened sufficiently to perform its function (full-stroke).

3.1.23 Test Requirement

Exercise check valves for operability at least once every three (3) months.

Basis for Relief

The only positive means of exercising (full or partial stroke) this normally closed check valve is by directing Emergency Feedwater (EFW) flow into the Steam Generators. The initiation of EFW during power operation would result in unwanted thermal shock to the secondary portions of the Steam Generators, including feedwater nozzles and associated piping up to and including the EFW-to-FW connection. An introduction of cold water into the secondary system will also cause power transients. The operation of the Turbine-driven EFW pump during cold shutdowns is not possible because steam for the turbine is not available. Partial-stroke testing at power could be performed by providing EFW flow through the valve then through the drain/recirculation line back to the Condensate Storage Pool. However, such testing would cause the diversion of EFW flow from the intended flow path to a non-safety, non-seismic line assuming that EFW flow were then required due to a plant condition change.

Alternate Testing

EFW flow will be directed through the valve at the design flow rate of the EFW system during a mode of operation after leaving cold shutdown and prior to entering Mode 2 (Startup) in which steam is available. Verification of this flow through the valve will provide assurance that the valve has opened sufficiently to perform its function (full-stroke).

3.1.24 Test Requirement

Exercise check valves for operability at least once every three (3) months.

Basis for Relief

The operability testing (full-stroke) of these normally closed check valves per IWV-3520 requires flow verification into the RCS. These valves cannot be full-stroke exercised during power operation because the pumps cannot overcome RCS pressure. During cold shutdown, these valves cannot be full-stroke exercised because design flow cannot be verified through the valves unless all LOCA test conditions can be met (i.e., suction from the RWSP through the pumps to the RCS with the RCS at atmospheric pressure).

Alternate Testing

These valves will be partial-stroke exercised quarterly and at cold shutdown by operating the LPSI Pumps in the Shutdown Cooling Warm-up Loop and full-stroke exercised during each refueling outage.

3.1.25 This relief request was deleted during NRC conference call, November 20, 1984.

3.1.26 Test Requirement

Exercise valves for operability at least once every three (3) months.

Basis for Relief

The safety function of these valves is to prevent the loss of EFW by closing. The operability testing (full stroke) of these valves during normal operation is not practical. Full-stroke exercising requires an interruption of feedwater to the Steam Generators which would result in a plant shutdown.

Alternate Testing

These valves will be partial-stroke tested (10% stroke) for operability quarterly and full-stroked tested during each cold shutdown.

3.1.27 Test Requirement

Exercise valves for operability at least once every three (3) months.

Basis for Relief

The operability testing (full or partial stroke) of these normally closed valves during power operation is not practical. Stroking the valves would induce unwanted secondary and primary transients. Failure of the valves in a nonconservative (open) position would force a plant shutdown.

Alternate Testing

These valves will be full-stroke tested for operability during each cold shutdown.

3.1.28 This relief request was deleted at NRC meeting, October 24, 1984.

3.1.29 Test Requirement

Exercise valves for operability at least once every three (3) months.

Basis for Relief

The operability testing (full-stroke) of these normally open valves during power operation is not practical. Full stroking the valve will cause a plant shutdown.

Alternate Testing

These valves will be partial-stroke tested (10% stroke) for operability quarterly and full-stroke tested during each cold shutdown.

3.1.30 Test Requirement

Exercise check valves for operability at least once every three (3) months.

Basis for Relief

The operability testing (full or partial stroke) of these normally closed check valves per IWV-3520 during power operation or cold shutdown is not practical. Stroking these valves with flow would require the spraying of containment resulting in unnecessary equipment damage. Valve disassembly (manual full-stroke) during power operation is not practical because the valves are inside containment. During cold shutdown, valve disassembly would require draining a portion of the system which is beyond the scope of cold shutdown testing. An air test for flow verification would require either draining a portion of the system or risking the possibility of wetting equipment inside containment. Therefore, the air test is impractical. In general, performing any test during power operation which lowers the water level in the spray header below +149.5 feet MSL elevation places the plant under a Limiting Condition for Operation (LCO) and may result in a plant shutdown.

Alternate Testing

Out of these two check valves will be disassembled and manually exercised by hand to its full-open position at each refueling outage on a staggered sampling basis.

3.1.31 Test Requirement

Exercise valves for operability at least once every three (3) months.

Basis for Relief

The operability testing (full stroke) of these valves during normal operation would jeopardize the RCP cooling function. Cycling of the valves would interrupt the CCW supply to the reactor coolant pumps. Also, the failure of the valves in a nonconservative position during the cycling test would result in a loss of the system function. The design of the valves does not facilitate a partial-stroke test.

Alternate Testing

The valves will be full-stroke tested for operability during each cold shutdown.

3.1.32 Test Requirement

Exercise valves for operability at least once every three (3) months.

Basis for Relief

The operability testing (full stroke) of this valve during normal operation would cause an interruption of instrument air supply to instruments and equipment within containment. Also, a failure in a nonconservative position during a cycling test would cause a complete loss of instrument air supply to the containment. The loss of Instrument Air to Containment would cause the Letdown Isolation Valves, CVC-101 and CVC-103, to fail closed. These CVC valves are not stroked closed during power operation, as explained in relief request 3.1.7. Therefore, this Instrument Air Isolation valve cannot be stroked closed at power. The design of the valve will not facilitate a partial-stroke test.

Alternate Testing

The valves will be full-stroke tested for operability during each cold shutdown.

3.1.33 Test Requirement

Exercise check valves for operability at least once every three (3) months.

Basis for Relief

Due to plant design, it is not practical to verify by any positive means, neither directly nor indirectly, the operability of these normally open check valves per the requirements of IWV-3522(a).

Alternate Testing

Valve closure will be verified during the performance of the leak-rate tests at each refueling outage.

3.1.34 Test Requirement

Exercise the valves for operability at least once every three (3) months.

Basis for Relief

The operability testing (full or partial stroke) during normal operation or cold shutdown of these valves provides no assurance of an increase in safety. The valves are containment isolation valves which are normally closed and passive.

Alternate Testing

The valves' closed position will be verified during the performance of the leak-rate tests at each refueling outage.

3.1.35 Test Requirement

Exercise check valves for operability at least once every three (3) months.

Basis for Relief

The operability testing (full or partial stroke) during normal operation or cold shutdown of these valves provides no assurance of an increase in safety. The valves are containment isolation valves which are normally closed and passive.

Alternate Testing

The valves' closed position will be verified during the performance of the leak-rate tests at each refueling outage.

3.1.36 This relief request was deleted at NRC meeting, October 24, 1984. Valves NG-161 A & B and NG-162 A & B were also deleted from this Test Plan.

3.1.37 Test Requirement

Exercise valves for operability at least once every three (3) months.

Basis for Relief

The operability testing (full stroke) of these valves during normal operation could cause a loss of system function. A failure while cycling in a nonconservative (closed) position would cause a loss of the containment atmosphere radiation monitoring system. The valve design does not facilitate a partial-stroke test.

Alternate Testing

The valves will be full-stroke tested for operability at each cold shutdown.

3.1.38 Test Requirement

The stroke time of all power-operated valves shall be measured.

Basis for Relief

No physical means exists to measure the stroke times of these solenoid-operated valves. These valves do not have position indicators. In addition, the stems are not visible from the exterior of the valves. Also, there is no critical limit on the stroke time. Valve design does not facilitate partial-stroke testing.

Alternate Testing

Verification of normal sample flow through the appropriate Hydrogen Analyzer demonstrates that the valves move from a closed to an open position.

3.1.39 Test Requirement

IWV-3522(b) requires that for normally-closed check valves that are stroked without flow, a mechanical exerciser shall be used and the torque values must be within certain limits.

Basis for Relief

Due to valve design, a mechanical exerciser cannot be used.

Alternate Testing

These valves will be manually exercised by hand to their full-open position quarterly.

3.1.40 Test Requirement

Exercise check valves for operability at least once every three (3) months.

Basis for Relief

Operability testing (full stroke) of these normally-closed check valves per IWV-3520 requires flow verification utilizing the emergency boration flow path to the suction of the Charging Pumps with at least two Charging Pumps in operation. During power operation, this flow verification would cause the injection of concentrated boric acid into the Reactor Coolant System causing overboration and possible causing a plant shutdown. Partial-stroke testing would require flow verification from the BAM Tanks to the RWSP. Putting highly-concentrated boric acid into lines that are not heat traced could result in clogging of the lines thereby causing a loss of one of the three emergency boration flow paths. Although the line (3CH3-27A/B) to the RWSP could be flushed with Primary Make-up Water, it would be very unwise to routinely do so. The plant would be placed in a position of having to rely on a non-safety system (PMU) to protect a safety system (RWSP suction). In addition, line 3CH3-26A/B could not be flushed without injecting a slug of highly-borated water and some quantity of unborated PMU water into the RCS via at least one Charging Pump, thereby, causing Primary reactivity changes.

Alternate Testing

Full-stroke operability testing of these valves will be accomplished during each cold shutdown by providing flow individually from each Boric Acid Pump to the suction of the Charging Pumps with at least two charging Pumps in operation.

3.1.41 Test Requirement

Exercise check valves for operability at least once every three (3) months.

Basis for Relief

The operability testing (full or partial stroking) of this check valve during normal operation requires that all charging flow be diverted from the normal flow path through this valve. Failure of this valve in a nonconservative (closed) position causes charging to be secured, thereby putting the plant in an undesirable and potentially unsafe condition. In addition, the securing of charging flow will cause a rapid temperature increase in the Regenerative and Letdown heat exchangers and associated piping, possibly inducing thermal shock. Also, securing of charging flow with charging pump(s) running will cause the lifting of the safety valves on the discharge of the charging pump(s), thereby increasing the possibility of gas binding the pump(s).

Alternate Testing

This check valve will be full-stroke tested for operability at each cold shutdown with at least two Charging Pumps operating.

3.1.42 Test Requirement

Exercise valves for operability at least once every three (3) months.

Basis for Relief

Operability testing (full-stroke) of these normally-closed valves during power operation would cause a loss of reactor coolant which would produce unwanted pressure and level changes in the Reactor Coolant System. These pilot-operated solenoid valves, which are installed with RCS pressure under the pilot disc, have historically have a "burping" problem at other nuclear plants. With the RCS pressurized, opening either valve produces a pressure surge in the line which causes the other valve to pop open, thereby opening a line from the RCS to the Quench Tank. The valves can generally be closed after flow stabilizes in the vent line.

Operability testing (full-stroke) during cold shutdown with the RCS pressurized produces the same effects as testing at power except that the amount of water lost would be less. Plant Technical Specification 4.4.10, which is based on NUREG-0737 and Generic Letter No. 83-37, requires that these valves be stroked and flow be verified at least once per 18 months during cold shutdown or refueling. Testing these valves more frequently, such as during each cold shutdown with the RCS pressurized, produces some undesirable effects. For example, the water and gases vented from the RCS to the Quench Tank are contaminated with radioactive material. Routinely venting the RCS would cause an increase in radiation and contamination levels inside containment, particularly if the Quench Tank rupture disc pressure is exceeded. In addition, due to valve design, routinely opening these valves greatly increases the probability of them sticking open which will overfill the Quench Tank and dump contaminated water on the containment floor. However, these valves can be safely exercised during cold shutdown if the RCS is depressurized. Valve design does not facilitate partial-stroke testing.

3.1.42 Alternate Testing

The valves will be full-stroke tested for operability during each cold shutdown if the Reactor Coolant System is depressurized below 200 psia. Otherwise, these valves will be full stroked at cold shutdown or refueling at least once per 18 months per plant Technical Specification 4.4.10.

3.1.43 Test Requirement

Exercise valves for operability at least once every three (3) months.

Basis for Relief

The operability testing (full stroke) of these valves during normal operation could cause a loss of system function. The failure of one of these valves in a nonconservative (closed) position during a cycling test would cause the loss of one of the Containment coolers. Per plant technical specifications, all Containment coolers must be operable. The design of the valves will not facilitate a partial-stroke test.

Alternate Testing

The valves will be full-stroke tested for operability at each cold shutdown.

3.1.44 Test Requirement

Exercise check valves for operability at least once every three (3) months.

Basis for Relief

The operability testing (full-stroke) of these normally-closed check valves per IWV-3520 during power operation is not practical. Full-stroke exercising requires verification of full-design steam flow from the Main Steam line to the EFW Pump A/B Turbine. Full flow of steam through these lines and valves cannot be obtained unless the EFW Pump A/B is delivering full design flow of water to the Steam Generators. During power operation, the EFW Pump A/B can be operated only in the minimum recirculation mode.

Alternate Testing

During power operation, steam for the EFW Pump A/B quarterly test will be supplied through one of these valves. Then the other valve will be used to supply steam. Acceptable pump tests verify that each check valve partially strokes. These check valves will be full-stroke tested for operability while the EFW Pump A/B provides design flow to the Steam Generators after leaving cold shutdown and prior to entering Mode 2 (Startup).

3.1.45 This relief request was deleted during NRC conference call, November 20, 1984.

3.1.46 Test Requirement

Exercise valves for operability at least once every three (3) months.

Basis for Relief

The operability testing (full stroke) of these normally-open valves during power operation could cause a loss of system function. The design of the Feedwater System is such that in the event of a Reactor Trip Override (RTO) the Main Feedwater Control valves close and these Main Feedwater Control Bypass valves go to a position that allows a flow equal to 5% of normal Main Feedwater. This reduced flow rate causes a gradual cool-down of the primary systems. Failure of one of these Bypass valves in a nonconservative (closed) position coincident with an RTO would require initiation of Emergency Feedwater flow to the Steam Generators which is undesirable because of thermal shock and power transients.

Partial stroking of these valves at power also possibly produces undesired power transients.

Alternate Testing

These valves will be full-stroke tested during each cold shutdown.

3.1.47 Test Requirement

IWV-3522(b) requires that for normally-closed check valves that are stroked without flow, a mechanical exerciser shall be used and the torque values must be within certain limits.

Basis for Relief

Due to valve design, a mechanical exerciser cannot be used.

Alternate Testing

These valves will be manually exercised by hand to their full-open position during each cold shutdown.

3.1.48 Test Requirement

Exercise check valves for operability at least once every three (3) months.

Basis for Relief

The CAR system is designed for post-accident containment-dilution and, as such, is not designed for operation while the unit is at power. (This system is a back-up system to the Hydrogen Recombiners.) In addition, operability testing (full or partial stroke) of these normally-closed check valves per IWV-3520 requires flow verification utilizing the CAR make-up fans with the manual butterfly valves open. Since the isolation valves in line with these check valves do not receive a CIAS, there exists a possible unmonitored radiation release path should a Containment Isolation occur while the testing was in progress. Manual stroking of the check valves at power could place the plant in an unsafe condition. Failure of one of these check valves in a nonconservative (open) position would negate the double Containment Isolation valve principle.

Alternate Testing

These check valves will be manually full-stroked for operability during each cold shutdown.

3.1.49 Test Requirement

Exercise check valves for operability at least once every three (3) months.

Basis for Relief

Operability testing (full or partial stroke) of these normally-closed check valves per IWV-3520 requires flow verification from the Annulus into the Containment. The Annulus would have to be pressurized to accomplish any flow test. The Annulus is required by plant Technical Specifications to be maintained at a vacuum. Therefore, flow testing requires that the plant routinely exceed Technical Specification limits. Manual stroking of the check valves at power could place the plant in an unsafe condition. Failure of one of these check valves in a nonconservative (open) position would negate the double Containment Isolation valve principle.

Alternate Testing

These check valves will be manually full-stroked for operability during each cold shutdown.

3.1.50 Test Requirement

Exercise valves for operability at least once every three (3) months.

Basis for Relief

The operability testing of these valves during normal operation could cause a loss or deterioration of system function. The failure of either EFW-220A or EFW-220B in a nonconservative (open) position would cause the diversion of Emergency Feedwater flow from the intended flow path to a non-safety, non-seismic system assuming that EFW flow were then required due to a plant condition change. Valve design does not facilitate partial-stroke testing. Since FW-179A is electrically interlocked with EFW-220A and FW-179B is interlocked with EFW-220B, these valves must be exercised for operability at the same frequency.

Alternate Testing

These valves will be full-stroke tested for operability during each cold shutdown.

3.1.51 Test Requirement

Exercise valves for operability at least once every three (3) months.

Basis for Relief

The safety function of these valves is to prevent the loss of EFW by closing. The operability testing (full stroke) of these valves during normal operation is not practical. Full-stroke exercising requires an interruption of feedwater to the Steam Generators which would result in a plant shutdown.

Alternate Testing

These valves will be partial-stroke tested for operability during the course of normal plant operations, although the frequency cannot be specified as stated in IWV-3414. They will be full-stroked tested during each cold shutdown.

3.1.52 Test Requirement

The stroke time of all power-operated valves shall be measured.

Basis for Relief

No physical means exists to measure the stroke times of these soleniod-operated valves. These valves do not have position indicators. In addition, the stems are not visible from the exterior of the valves. Also, there is no critical limit on the stroke time. Valve design does not facilitate partial-stroke testing.

Alternate Testing

Verification of flow from the appropriate Nitrogen Accumulator demonstrates that the valve moves from a closed to an open position.

3.1.53 Test Requirement

Exercise check valves to the position required to fulfill their safety function at lease once every three (3) months.

Basis for Relief

One of the Safety functions of these check valves, MS-402A and MS-402B, is to close in the event of a Main Steam Line Break (MSLB) with valves MS-401A and MS-401B open. If a MSLB occurs, both MS-401A and MS-401B go fully open and remain there. The check valve closest to the broken line must hold Main Steam pressure from the unaffected Steam Generator and prevent the diversion of Main Steam flow away from the EFW Pump A/B Turbine. Testing of these check valves to verify that they are closed and capable of holding pressure requires that the downstream side of the checks be pressurized and the upstream side be vented to atmosphere with MS-401A and MS-401B open. This cannot be performed during normal power operation since the upstream side is pressurized with Main Steam.

Alternate Testing

These check valves will be pressure tested with air to verify they are closed and capable of holding pressure with the upstream side vented to atmosphere. This testing will be performed during each cold shutdown.

3.1.54 Test Requirement

The stroke time of all power-operated valves shall be measured.

Basis for Relief

The safety function of these pressure-regulating valves is to control downstream pressure rather than to stroke fully. Consequently, there is no critical limit on the stroke time. Also, no physical means exists to measure the stroke time. In addition, the stems are not visible from the exterior of the valves.

Alternate Testing

Verification of flow from the appropriate Nitrogen Accumulator demonstrates that the valve moves from a closed to an open position.

3.2 Clarification of Valve Testing Methods

3.2.1 Deleted.

3.2.2 Code Requirement

IWV-3522(b) requires that confirmation that the disk moves away from the seat shall be by visual observation, by electrical signal, by appropriate pressure indications, or by other positive means.

Test Method

Due to plant design, the operability of this normally closed check valve cannot be determined by any of the specific methods allowed in IWV-3522(b). The only positive means of demonstrating operability is by verification of flow such that the valve moves to perform its function. This valve will be tested quarterly coincident with the charging pump test provided the pump is operable. A successful pump test which demonstrates that the pump is operable also demonstrates that the discharge check valve is operable.

3.2.3 Code Requirement

IWV-3522(b) requires that confirmation that the disk moves away from the seat shall be by visual observation, by electrical signal, by pressure indications or by other positive means.

Test Method

Due to plant design, the operability of these normally closed check valves cannot be determined by any of the specific methods allowed in IWV-3522(b). The only positive means of demonstrating operability is by verification of flow such that the valves move to perform their function. During power operation, the pumps will be operated to provide design flow in the recirculation path back to the RWSP, thereby full stroking these valves.

3.2.4 This clarification deleted. Replaced with Relief Request 3.1.24.

3.2.5 Code Requirement

IWV-3421 requires that Category A valves shall be leak-tested, except that valves which function in the course of plant operation in a manner that demonstrates functionally adequate seat tightness need not be leak-tested.

Testing Method

The seat tightness of these valves is demonstrated to be functionally adequate during normal plant operation. The safety injection tanks (SIT's) are monitored for pressure per Technical Specification 4.5.1.1. Ability to maintain pressure in the SIT's indicates adequate seat tightness of these valves.

3.2.6 This clarification deleted. Replaced with Relief Request 3.1.44.

3.2.7 Code Requirement

Exercise valves for operability at least once every three (3) months.

Test Method

Operability testing of these valves will be accomplished quarterly. However, prior to performing the tests, the operators will verify that at least two CCW pumps are operating and that valve alignments provide CCW flow through at least one dry cooling tower and through line 3CC18-11A/B. This line provides CCW flow to the Fuel Pool Heat Exchanger, Letdown Heat Exchanger, CEDM Cooling Coils and all Reactor Coolant Pump seal coolers.

3.2.8 Code Requirement

Exercise valves for operability at least once every three (3) months.

Test Method

Operability testing of these valves will be accomplished quarterly. However, these valves do not have position indicators to provide direct evidence of stem movement. Instead, the disk movement shall be demonstrated by verifying normal sample flow through the appropriate Hydrogen Analyzer. Establishment of normal sample flow demonstrates that the valves move to perform their function. The reclosure of each valve will be demonstrated by verification of the "low flow" alarm on the appropriate Hydrogen Analyzer.

LP&L PUMP AND VALVE INSERVICE TEST PLAN

DWG.	SH.
B-430	SP-01
B-431	283S
G-151	1
G-152	4 & 6
G-153	2
G-157	-
G-160	1, 2, & 3
G-161	1 & 2
G-162	2
G-163	-
G-164	1 & 2
G-165	3
G-166	1 & 2
G-167	1 & 2
G-168	1 & 2
G-170	2
G-171	1
G-172	-
G-173	-
G-853	1 thru 6