

VALVE IN-SERVICE TESTING

1. Scope

This program describes the procedure for in-service testing of valves to meet the requirements of Section XI of the ASME Code, Subsection IW, "In-service Testing of Valves in Nuclear Power Plants." In-service testing is required for all Class 1, 2 and 3 valves which fall in the categories defined below regardless of type of actuation (manual, power, or self-actuated). Where distinguishing characteristics from more than one category are applicable, combinations or categories shall be used (e.g., AC) and those valves shall be tested such that all the requirements of each category are met.

Valves used for operating convenience only such as manual vent, drain, instrument and test valves, and valves used for maintenance only do not require in-service testing. The following categories of valves are subject to in-service testing.

- (a) Category A--Valves for which seat leakage is limited to a specific maximum amount in the closed position for fulfillment of their function.
- (b) Category B--Valves for which seat leakage in the closed position is inconsequential for fulfillment of their function.
- (c) Category C--Valves which are self-actuating in response to some system characteristic, such as pressure (relief valves) or flow direction (check valves).
- (d) Category D--Valves which are actuated by an energy source capable of only one operation, such as rupture disks or explosive actuated valves.
- (e) Category E--Valves which are normally locked (or sealed) open or locked (or sealed) closed to fulfill their function.

All test and examination procedures required by subsection IW, including schedules and the limiting values of observed parameters shall be defined and performed by NNECO for the Millstone Unit No. 1 plant.

Tables IW-1 and IW-2 specify the testing frequency and parameters measured or observed for each valve covered by this program. Where exceptions to the Code are necessary due to design or operating considerations, they are so noted.

Table IW-1 is a listing of all plant valves in the In-Service Testing (IST) Program and shows valve characteristics and test parameters. This table also notes where the requirements of the Code, Subsection IW, cannot be met and a testing alternative for those cases.

~~4022 422~~

-1- 1023 062 September, 1979

469
7909250

Table IWV-2 is a listing of safety/relief valve setpoints and setpoint tolerances.

2. Test Procedures

(a) Category A and Category B Valves

All Category A and B valves shall be exercised at least once every three months except as noted in Table IWV-1. Valves operating at a frequency of at least once every three months to support normal plant operations need not be tested provided required observations are made and analyzed. Where practical, valves with fail safe actuators shall be tested by observing the operation of these valves upon loss of actuator power.

If valves are in a system that is out of service, exercising is not required for such valves except immediately prior to the return of the system to service.

If a valve fails to change position upon testing, corrective action shall be initiated immediately. If the condition is not, or cannot be corrected within 24 hours, the valve shall be declared inoperative. A retest showing acceptable operation shall be run following any required corrective action before the valve is returned to service.

Category "A" valves are leak rate tested as containment isolation valves in conjunction with the containment leak rate test either individual leak rate tested or if no test connections are present, as part of the containment integrated leak test.

All valves with remote position indicators, which are inaccessible for direct observation during plant operation, shall be visually observed at the same (or greater) frequency as scheduled refueling outages, to verify that remote valve indications accurately reflect valve operation.

(b) Category C Valves

Safety valve and relief valve tests shall be conducted at the end of each time period as defined in ASME Section XI, Table IWV-3510-1. All testing shall be done in accordance with ASME PTC 25.2-1966. See Table IWV-2 for setpoints.

Check valves shall be exercised at least once every three months or as indicated. Exceptions are noted where system design or plant safety considerations prevail.

(c) Category D Valves

One of the two charges in explosively actuated valves shall be fired and replaced every operating cycle with charges from the same batch being tested, in compliance with Section 4.4 of the Millstone Tech Specs.

1023 063

~~1022 423~~

(d) Category E Valves

There are no regular testing requirements for Category E valves. Operational checks with appropriate record entries shall be made to verify that each valve is locked or sealed, as applicable.

3. Records

A system of documentation defining all test and examination procedures, including test schedules, limiting values for parameters, test results and corrective actions shall be maintained at the Millstone Unit No. 1 plant.

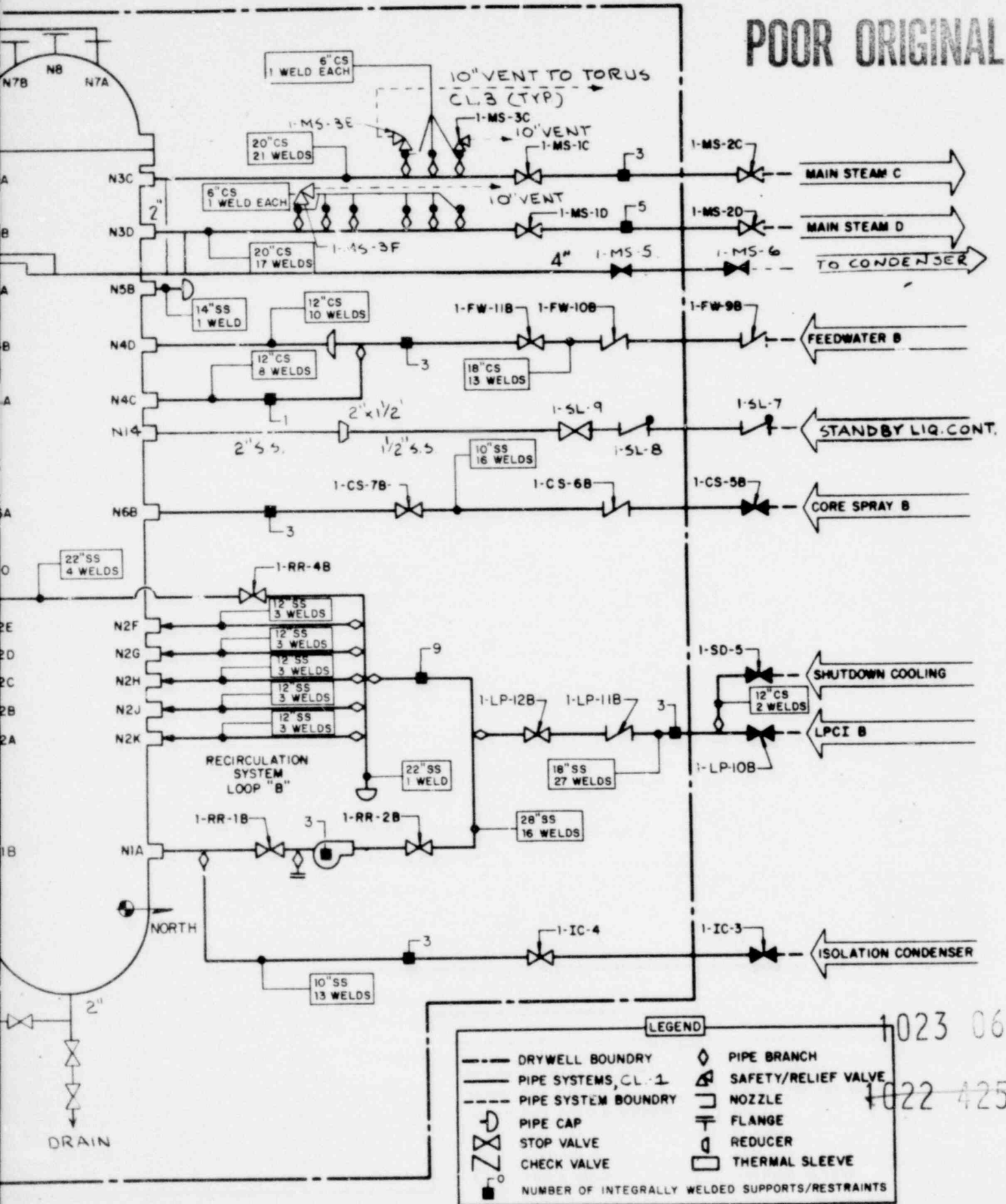
Preoperational tests, if any exist for the Millstone Unit No. 1 plant, and examination results and manufacturers functional test results shall be included in the documentation.

All in-service test documentation shall be made readily accessible to authorized persons for testing or auditing purposes. The manual section on Documentation and Reports discusses valve testing records.

1023 064

~~1022 424~~

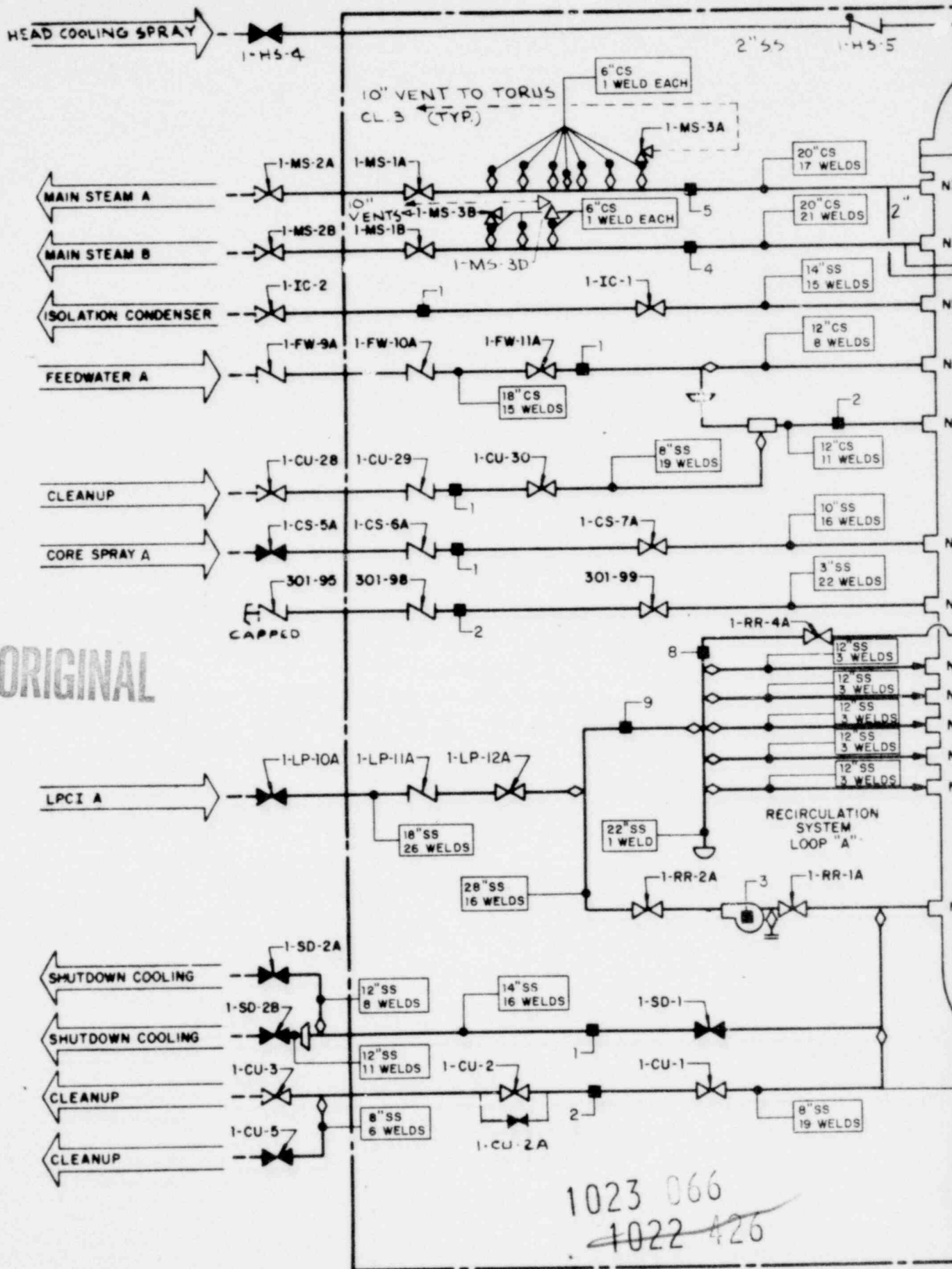
POOR ORIGINAL



ASME XI SUBSECTION-IWB EXAMINATION BOUNDARY DIAGRAM
 FOR MILLSTONE, UNIT NO. 1
 (ASME III CLASS 1 EXAMINATIONS)
 25202 26032 SH 1

FIG. -1

1023 065
 1022 425

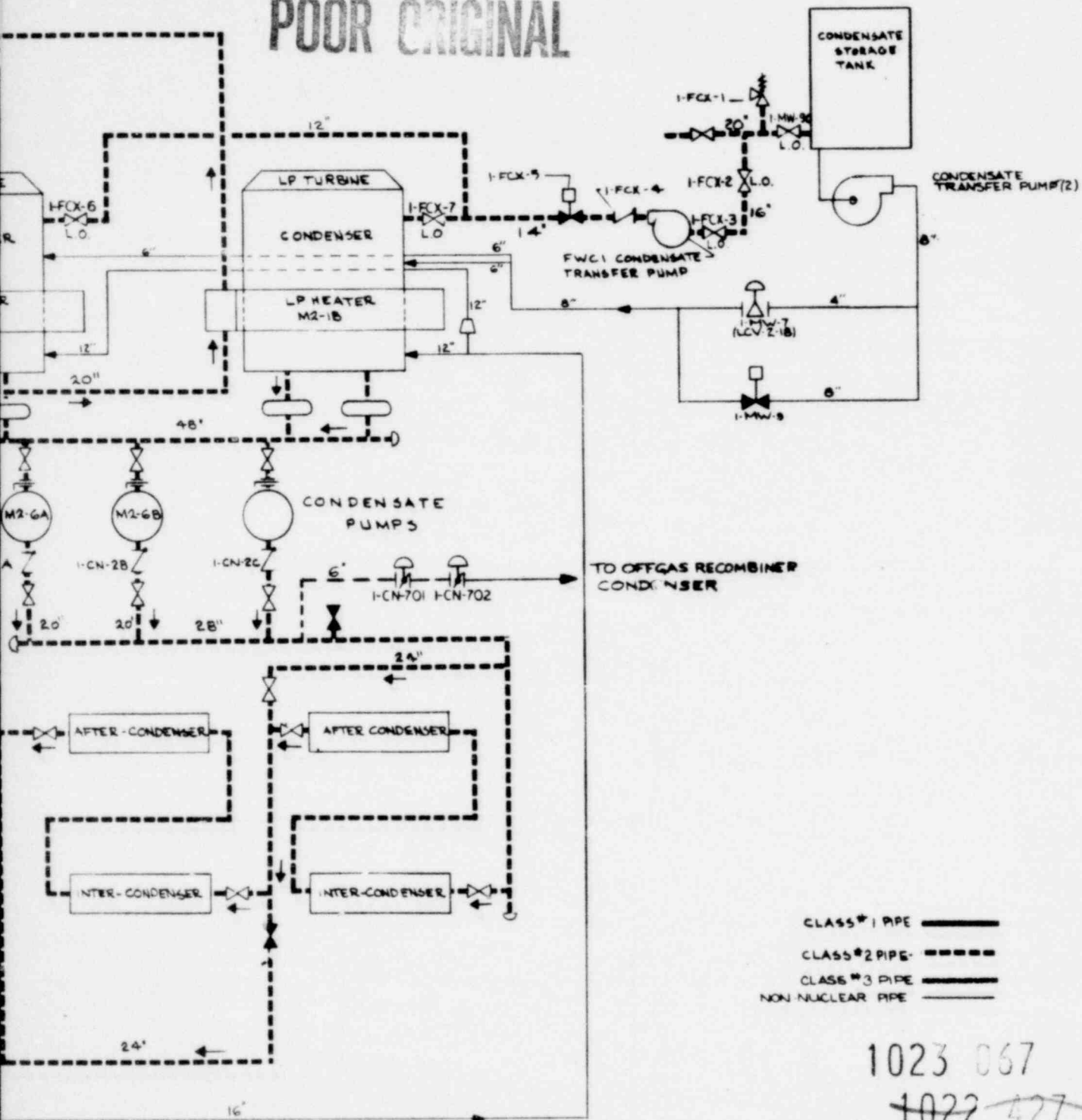


POOR ORIGINAL

1023 066
~~1022 426~~

1	76-602	3/1/79	INC. DCR MI-S-457-79	KB	16	12	
MF NO	PA NO	DATE	REVISION	BY	CK	APP	APP

POOR ORIGINAL

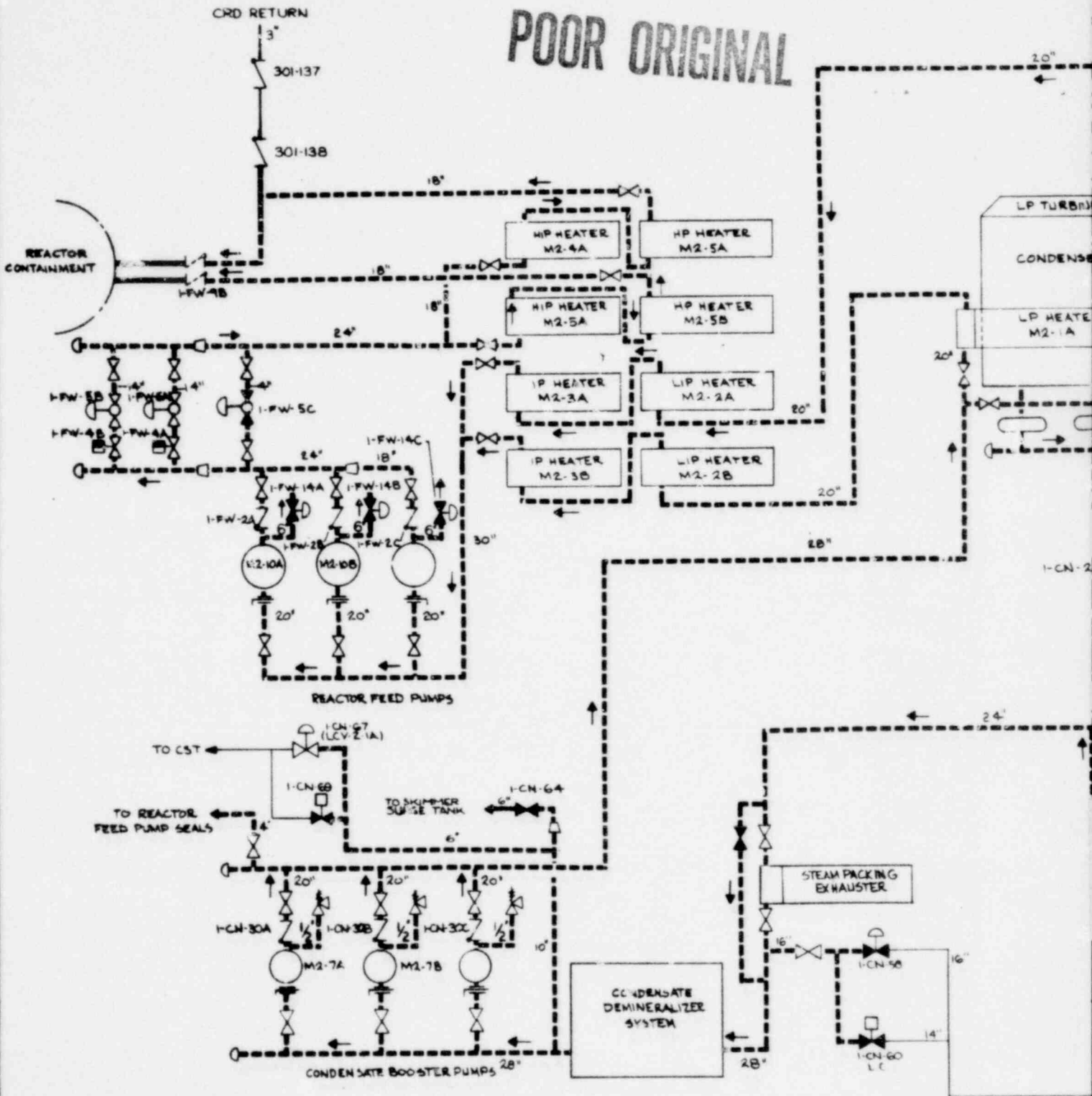


CLASS #1 PIPE —————
 CLASS #2 PIPE - - - - -
 CLASS #3 PIPE —————
 NON NUCLEAR PIPE —————

1023 067
~~1022 427~~

				NORTHEAST UTILITIES SERVICE CO.			
				FOR NORTHEAST NUCLEAR ENERGY COMPANY			
				TITLE MILLSTONE UNIT #1 BOUNDARY DIAGRAM CONDENSATE & FWCI			
76-602	3	INCORPORATE DCR-MI-5-457-79		DATE	2-77	CHKD	APP
	2	INCORPORATE DCR-MI-5-089-79		DATE		CHKD	APP
	1	INCORPORATE DCR-MI-5-172-78		DATE		CHKD	APP
REV	P.A.#	NO	DATE	REVISIONS	BY	CHKD	APP
				SCALE 25202-26032 SH 2			

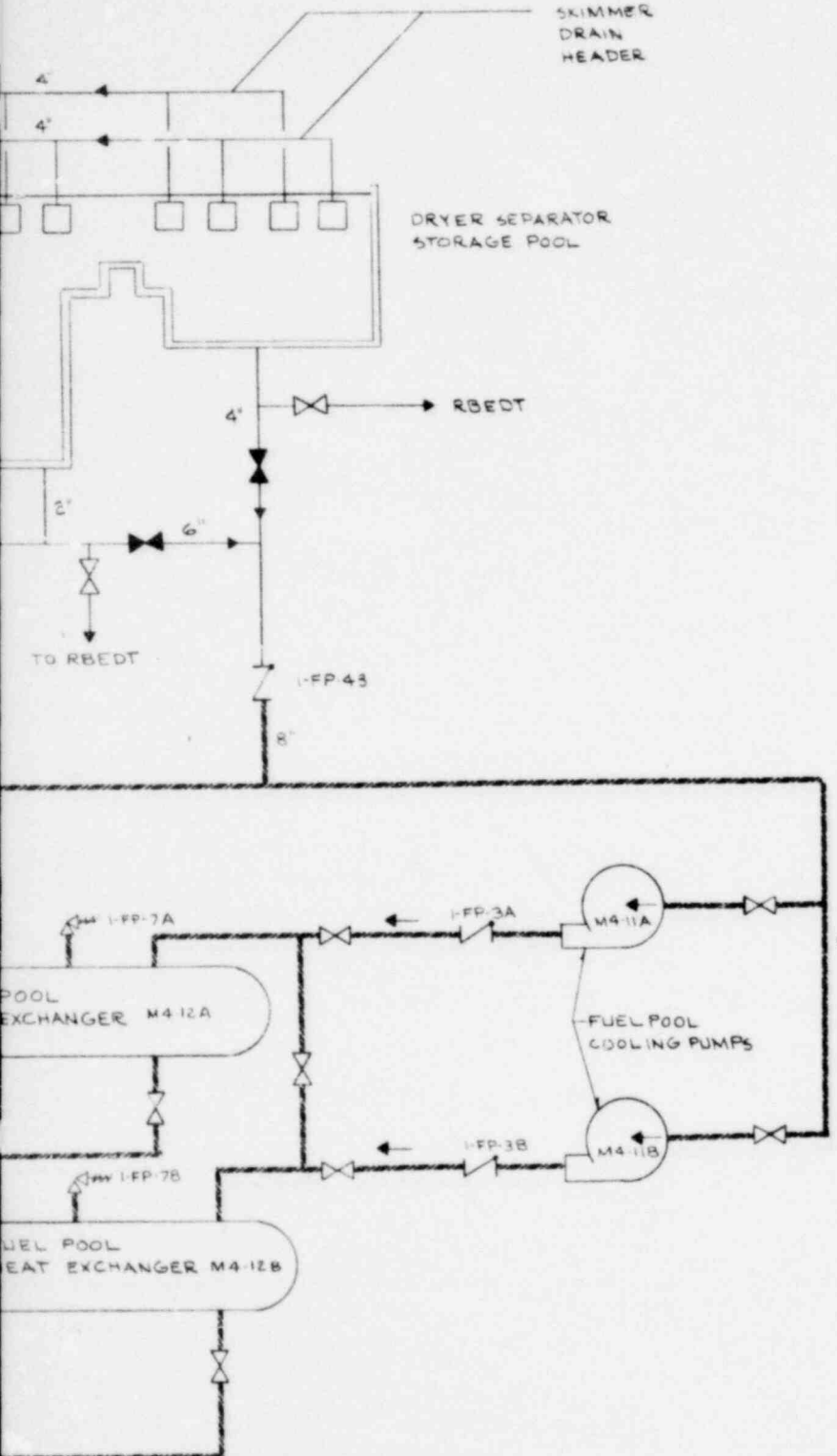
POOR ORIGINAL



1023 068


~~1022 428~~

POOR ORIGINAL

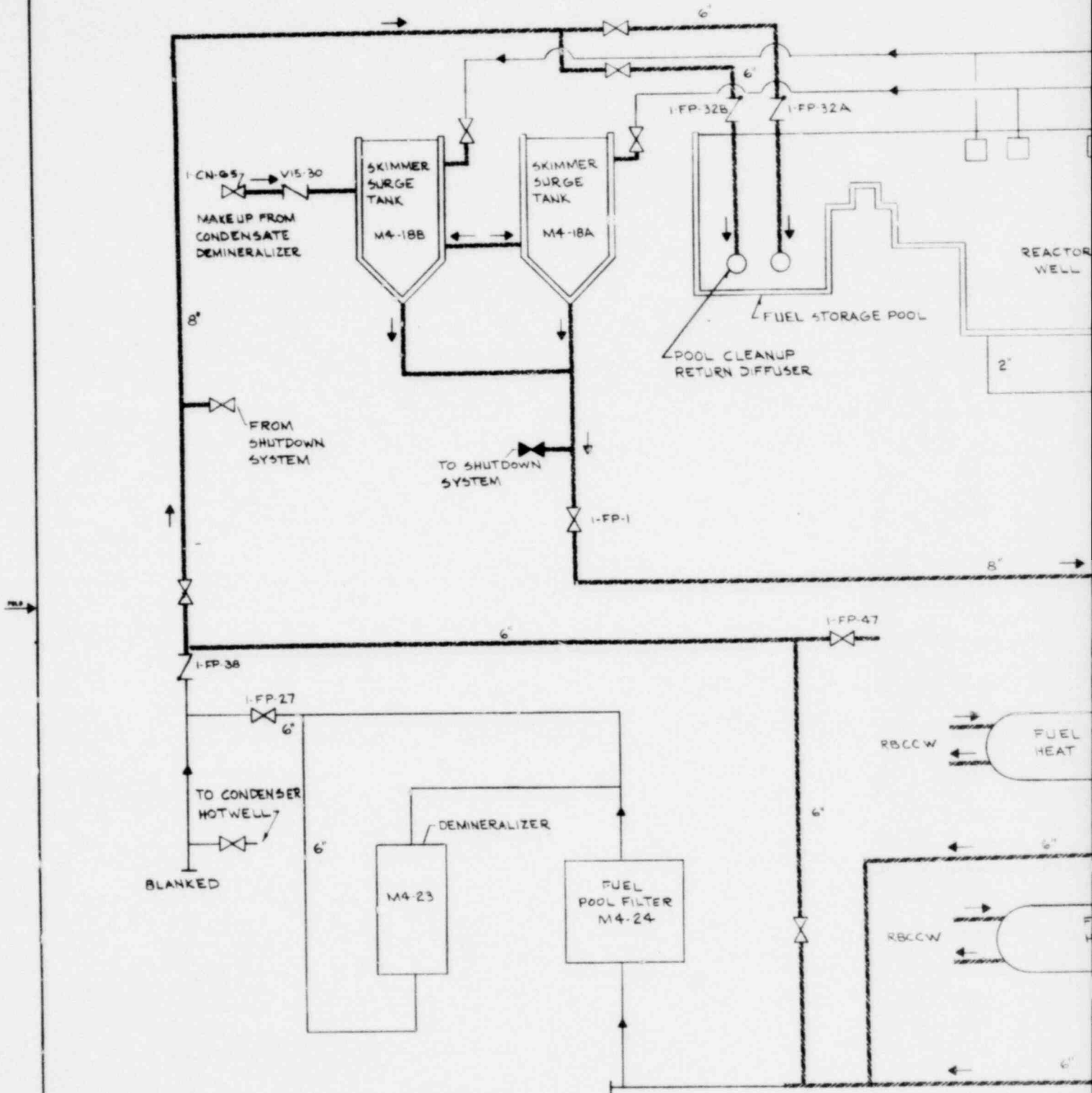


CLASS #3 PIPE ———
NON NUCLEAR PIPING ———

1023 069
~~1022 429~~

										 NORTHEAST UTILITIES SERVICE CO. FOR NORTHEAST NUCLEAR ENERGY COMPANY	
BY		DATE		APP		DATE		APP		DATE	
N/A		2-77									
SCALE		MICROFILM DATE		DWG NO		25202-26032 SH 3					
REV		DATE		REVISIONS		BY		CHK		APP	
1		10/27/78		INCORPORATE DCR MI 172 78		J.M.		J.M.		J.M.	

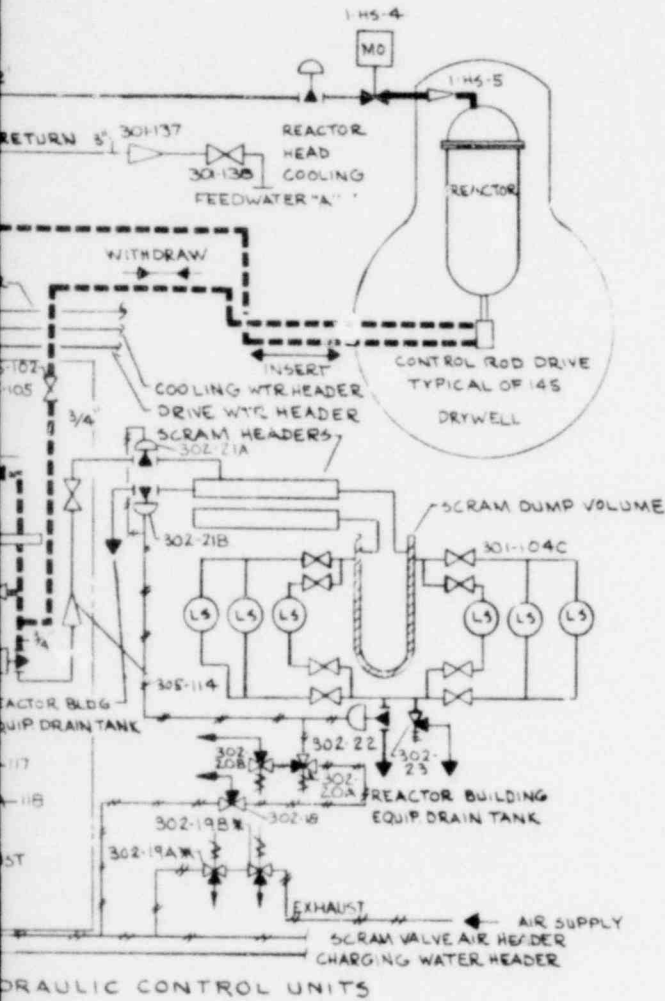
POOR ORIGINAL



1023 070


~~1022 430~~

POOR ORIGINAL



CLASS 1-PIPING —————
 CLASS 2-PIPING - - - - -
 * - DENOTES CLASS 2 VALVE IN AIR SYSTEM
 AIR SUPPLY ———> ———> ———> NON-NUCLEAR
 NON-NUCLEAR PIPING —————

1023 071
~~1022 431~~

						 NORTHEAST UTILITIES SERVICE CO. FOR NORTHEAST NUCLEAR ENERGY COMPANY			
						TITLE MILLSTONE UNIT #1 BOUNDARY DIAGRAM CRD HYDRAULIC & HEAD COOLING SYSTEMS			
76-602	3	7/1/79	INCORPORATE DCR-MI-S-457-79			BY	CHKD	APP	APP
N/A	2	2/23/79	INCORPORATE DCR-MI-S-097-79			DATE	DATE	DATE	DATE
N/A	1	10/24/78	INCORPORATE DCR-MI-S-172-78			SCALE	MICROFILM DATE	DWG. NO.	
REV	P. A. #	NO.	DATE	REVISIONS	BY	CHK	APP	APP	P. A. #
									25202-26032 SH 4

SERV. CR.
MECH. CR.

CONC. CR.
ELECT. CR.

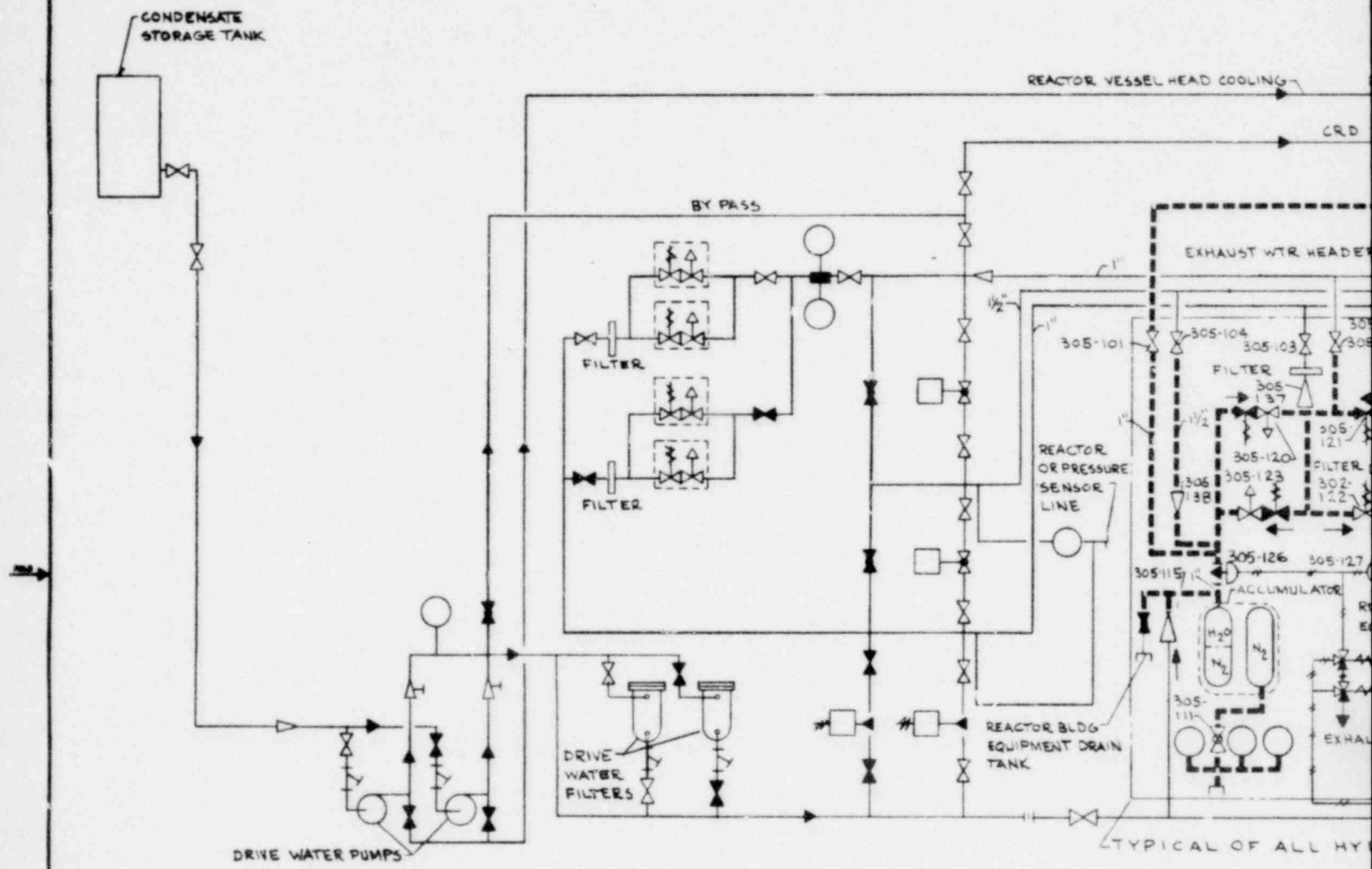
SERV. CR.
MECH. CR.

CONC. CR.
ELECT. CR.

SERV. CR.
MECH. CR.

CONC. CR.
ELECT. CR.

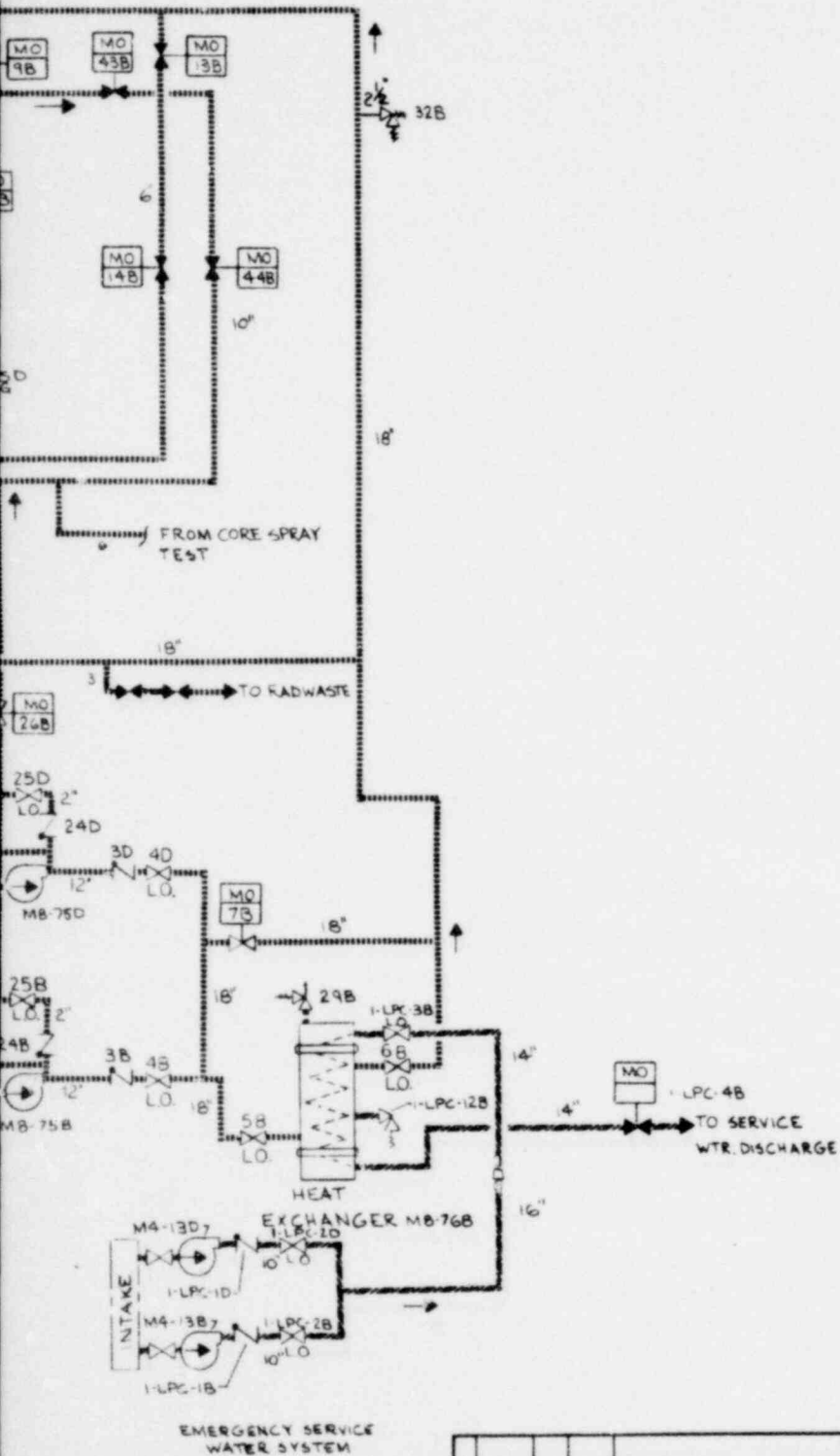
POOR ORIGINAL



1023 072

~~1022 432~~

POOR ORIGINAL



PIPING LEGEND

- CLASS #1 —————
- CLASS #2 —————
- CLASS #3 —————

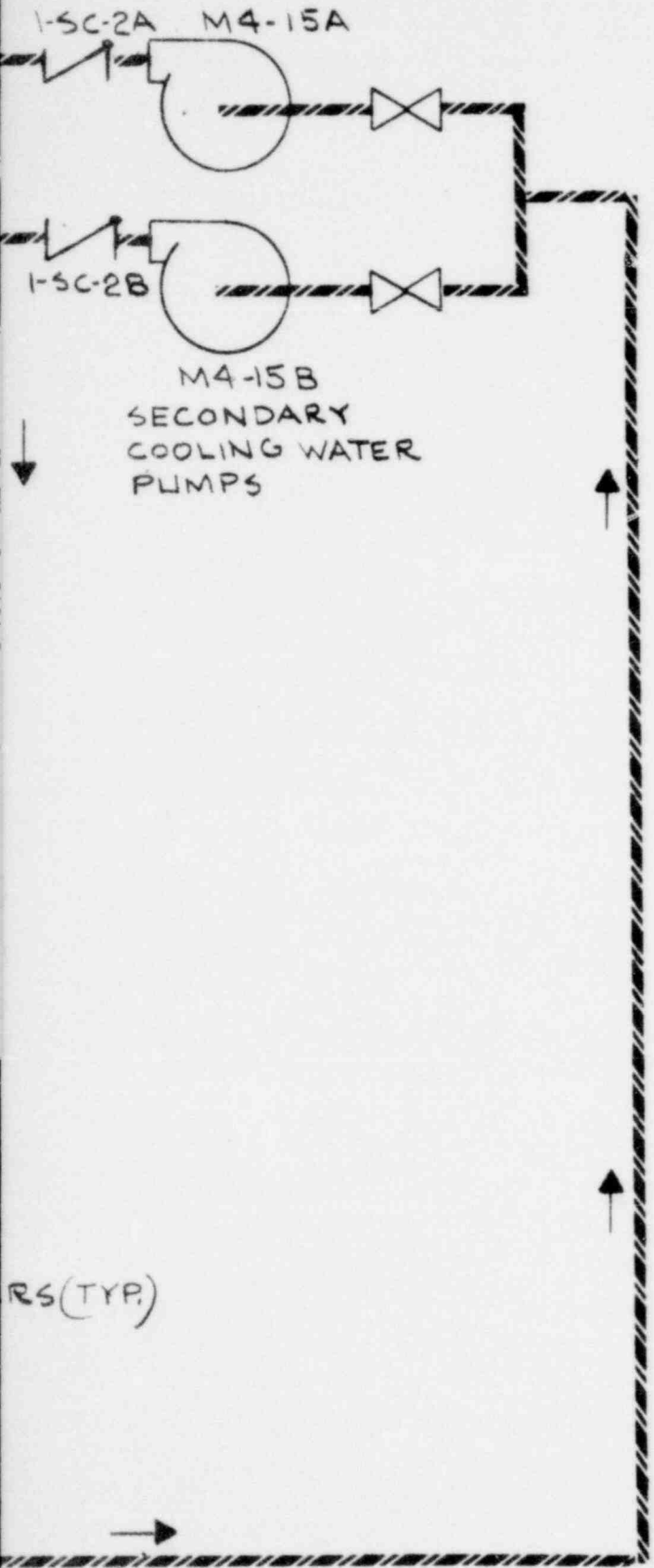
1023 073

NOTE:
ALL VALVE No's PRECEDED BY "I-LP"
EXCEPT AS OTHERWISE NOTED.

~~1022 433~~

				NORTHEAST UTILITIES SERVICE CO.			
				FOR NORTHEAST NUCLEAR ENERGY COMPANY			
				TITLE MILLSTONE UNIT #1 BOUNDARY DIAGRAM LPCI CONTAINMENT COOLING SYSTEM			
76-602	3	PHI	INCORPORATE DCR MI-5-457-79				
	2	4/4/79	INCORPORATE DCR MI-5-459-79				
	1	2/2/78	INCORPORATE DCR MI-5-172-78				
BY	CHK	APP	DATE	BY	CHK	APP	DATE
			2-77				
SCALE		MICROFILM DATE	DWG. NO.	P. A. #			
			25202-26032				SH 5

POOR ORIGINAL



M4-15B
SECONDARY
COOLING WATER
PUMPS

CLASS #3 ~~STEEL~~
NON-NUCLEAR PIPE

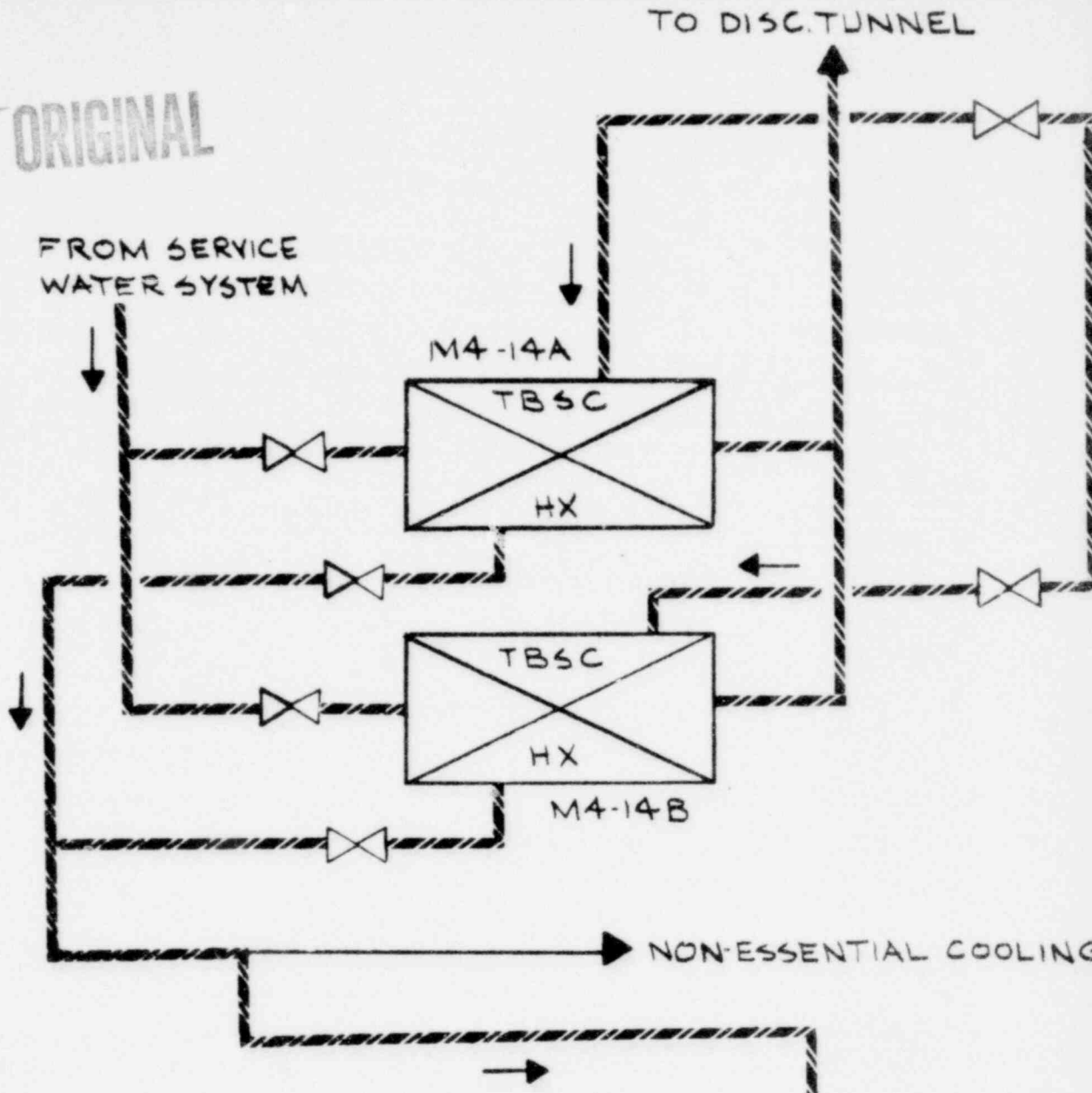
1023 075

~~1022 435~~ PAGE NO. 6

RAM
COOLING WATER SYSTEM

NORTHEAST UTILITIES SERVICE CO.		
REV. NO. <input checked="" type="checkbox"/>	DATE	DWG. NO.
	2-77	25202-26032SH6

POOR ORIGINAL



EQUIPMENT

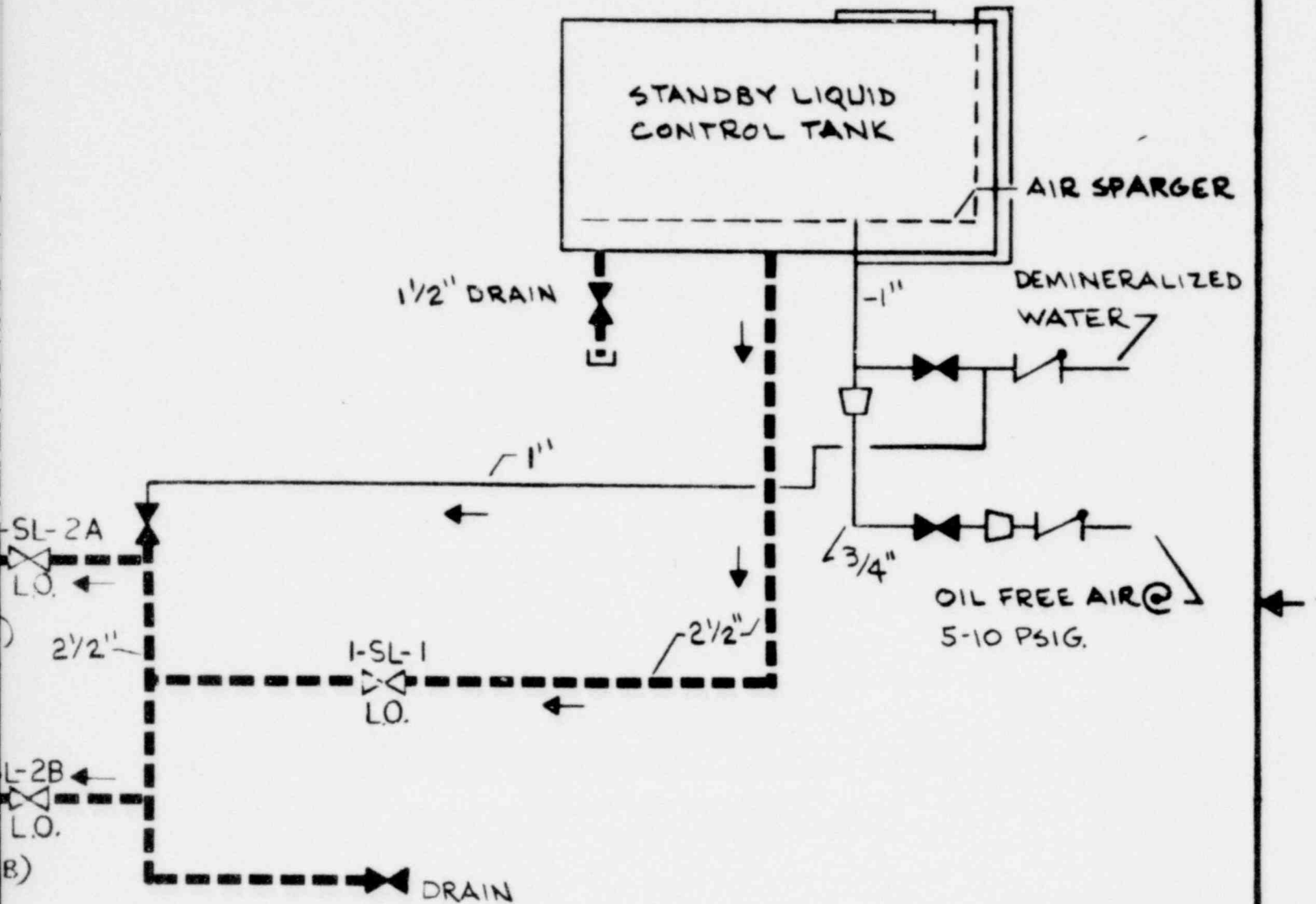
- 3 COND. PUMP MOTOR BEARING COOLERS
- 3 BOOSTER PUMP BEARING COOLERS
- 3 REACT. FEED PUMP OIL COOLERS

1023 076

~~1022 136~~

BOUNDARY DIAG
TURBINE BUILDING SECONDARY C

POOR ORIGINAL



CLASS # 1 PIPE **—————**
 CLASS # 2 PIPE **- - - - -**
 NON-NUCLEAR PIPE **—————**

GRAM
SYSTEM

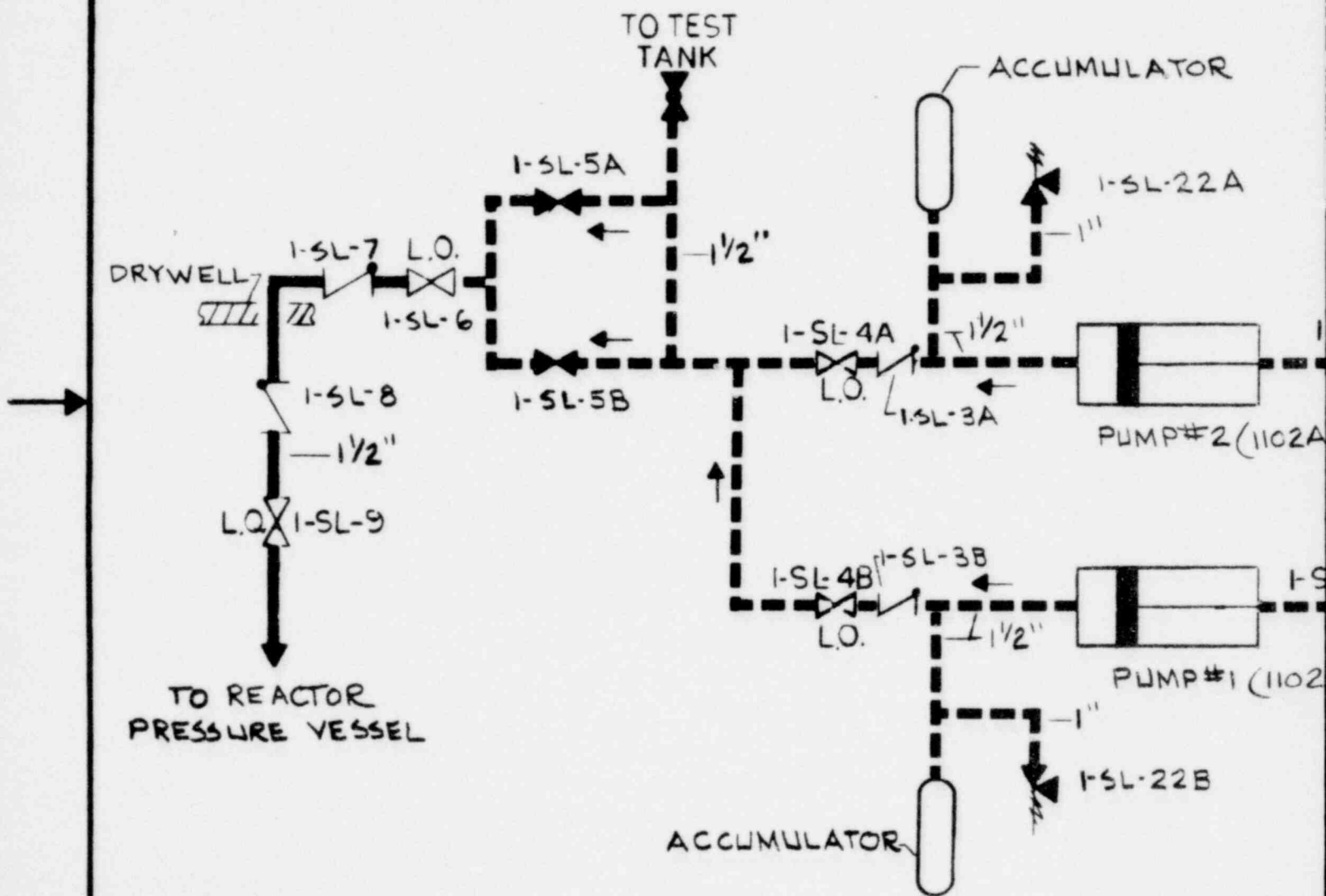
1023 077

~~1022 437~~

PAGE NO. 7

1	2-20-79	DCR-MI-S-089-79	<i>[Signature]</i>	<i>[Signature]</i>	NORTHEAST UTILITIES SERVICE CO.	
NO	DATE	DESCRIPTION	BY	CHK	DATE	DWG. NO.
					2-77	25202-26032 54.7

POOR ORIGINAL

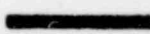
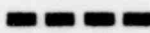
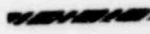


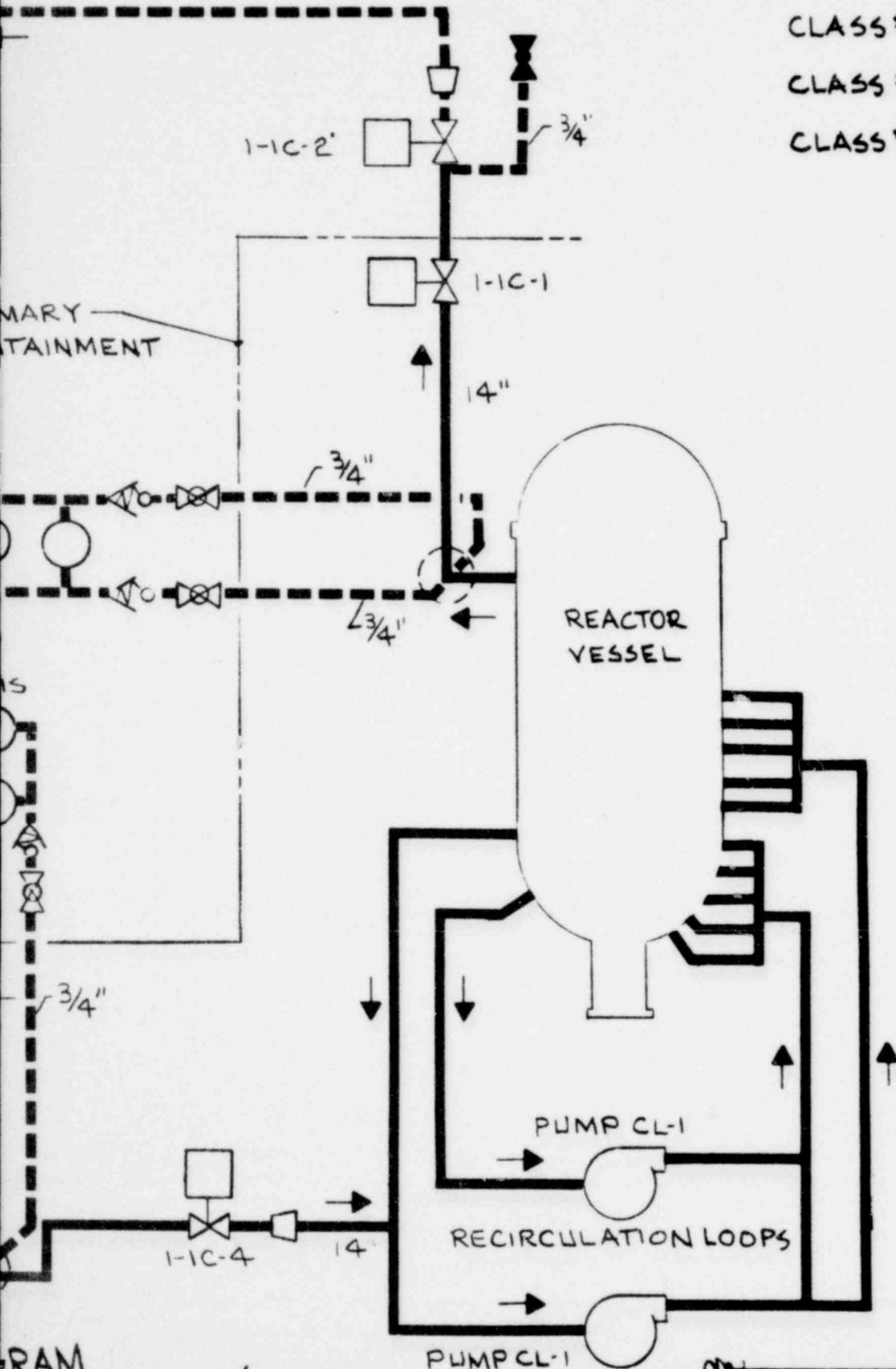
4022-438

BOUNDARY DIA
STANDBY LIQUID

1023 078

POOR ORIGINAL

CLASS #1 PIPE 
 CLASS #2 PIPE 
 CLASS #3 PIPE 



1022 439

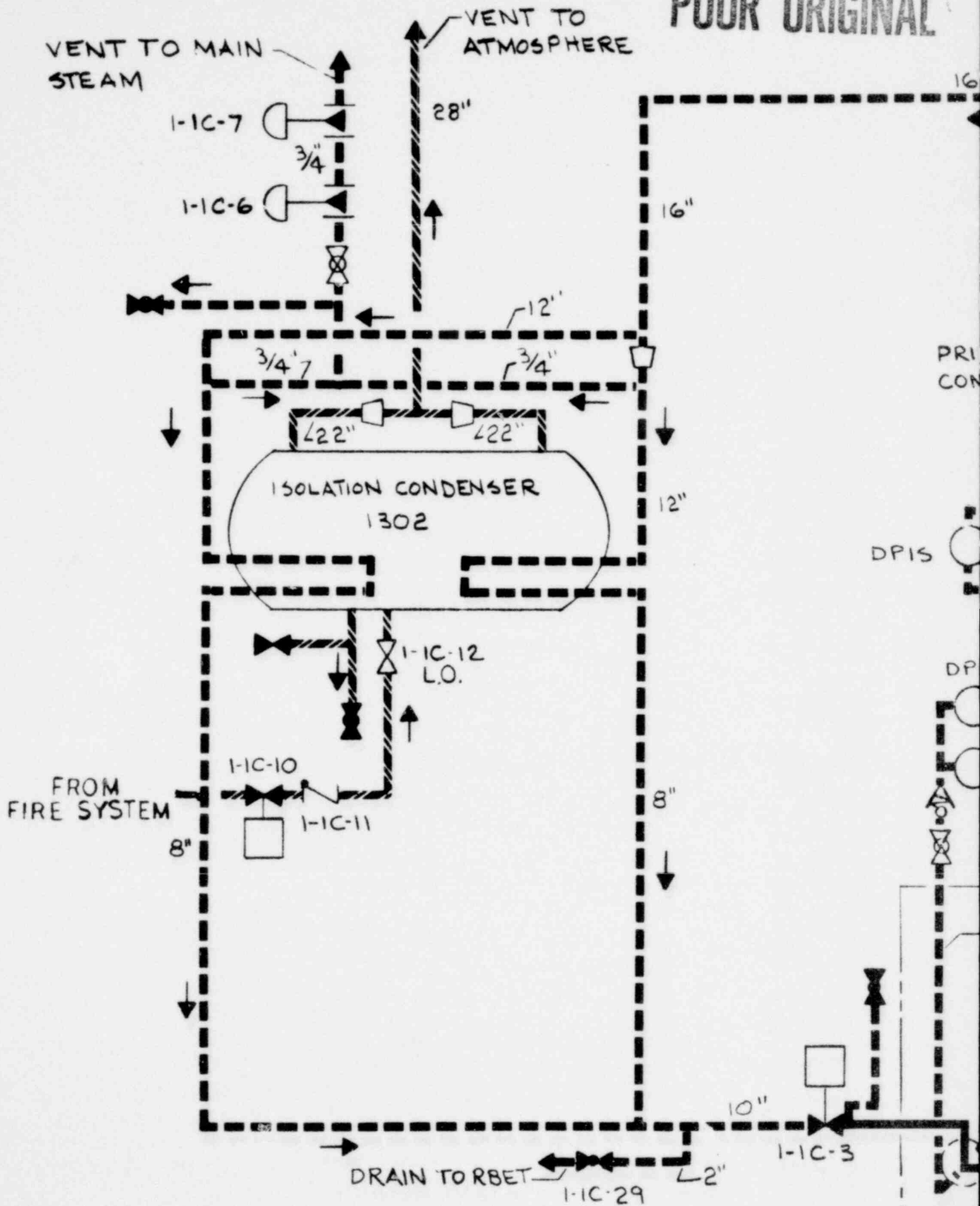
1023 079

PAGE NO. 8

GRAM
R SYSTEM

11/2-20-79	DCR-MI-S-089-79	<i>[Signature]</i>	NORTHEAST UTILITIES SERVICE CO.	
NO DATE	DESCRIPTION	DWN CK APP	REV. NO. 1	DATE 2-77
				DWG. NO. 25202-26032 SH. B

POOR ORIGINAL

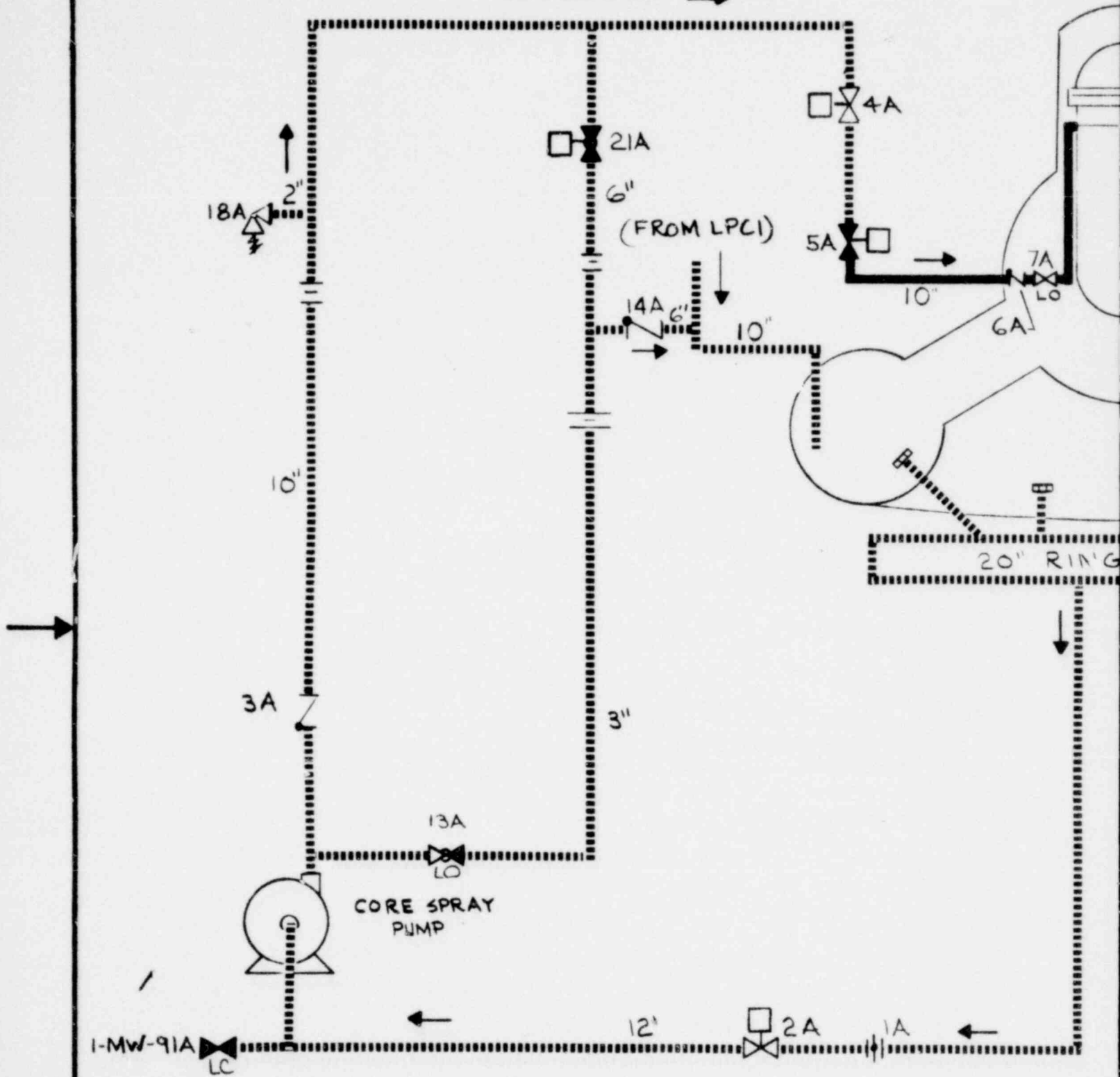


1023 080

~~4022 440~~

BOUNDARY DIAG
ISOLATION CONDENSER

POOR ORIGINAL



NOTE:

ALL NUMBERS PRECEDED
BY (I-CS-)

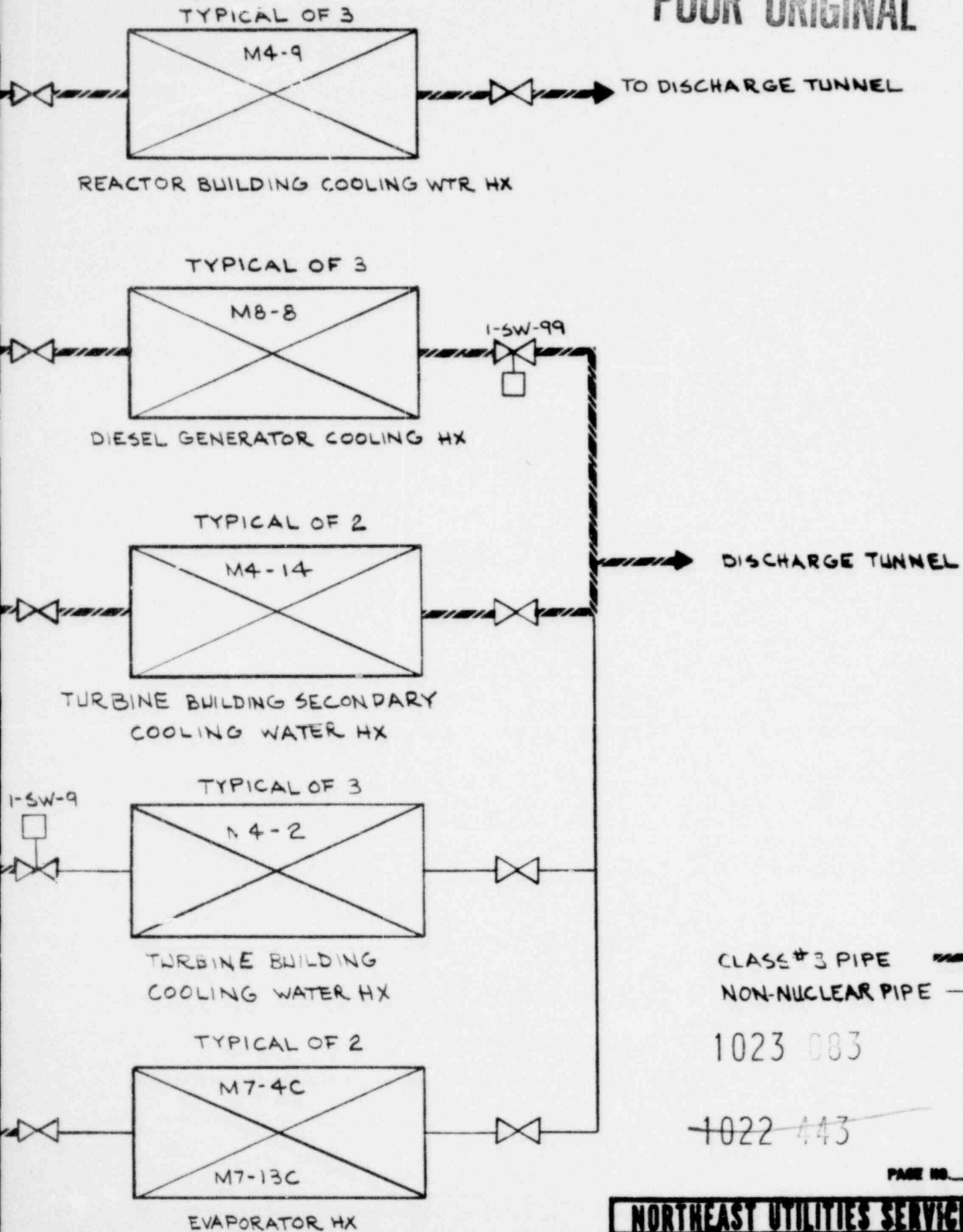
1023 082

~~1022 442~~

BOUNDAR
CORE SPRAY

2/2/2013	DCR MI S-089-79	DAW
NO DATE	REVISION	BY

POOR ORIGINAL

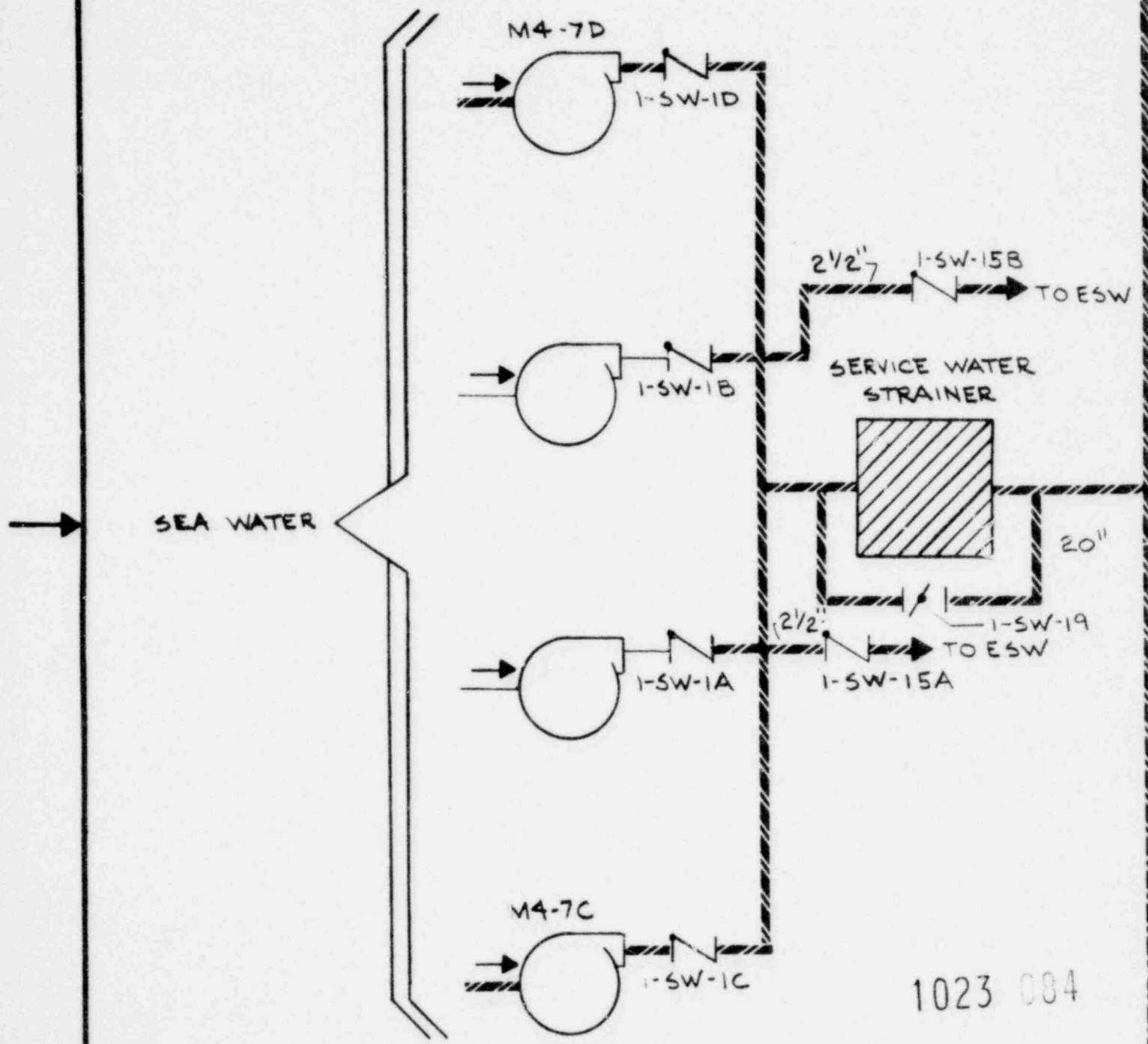


1023 083

~~1022 443~~

PAGE NO. 10

POOR ORIGINAL



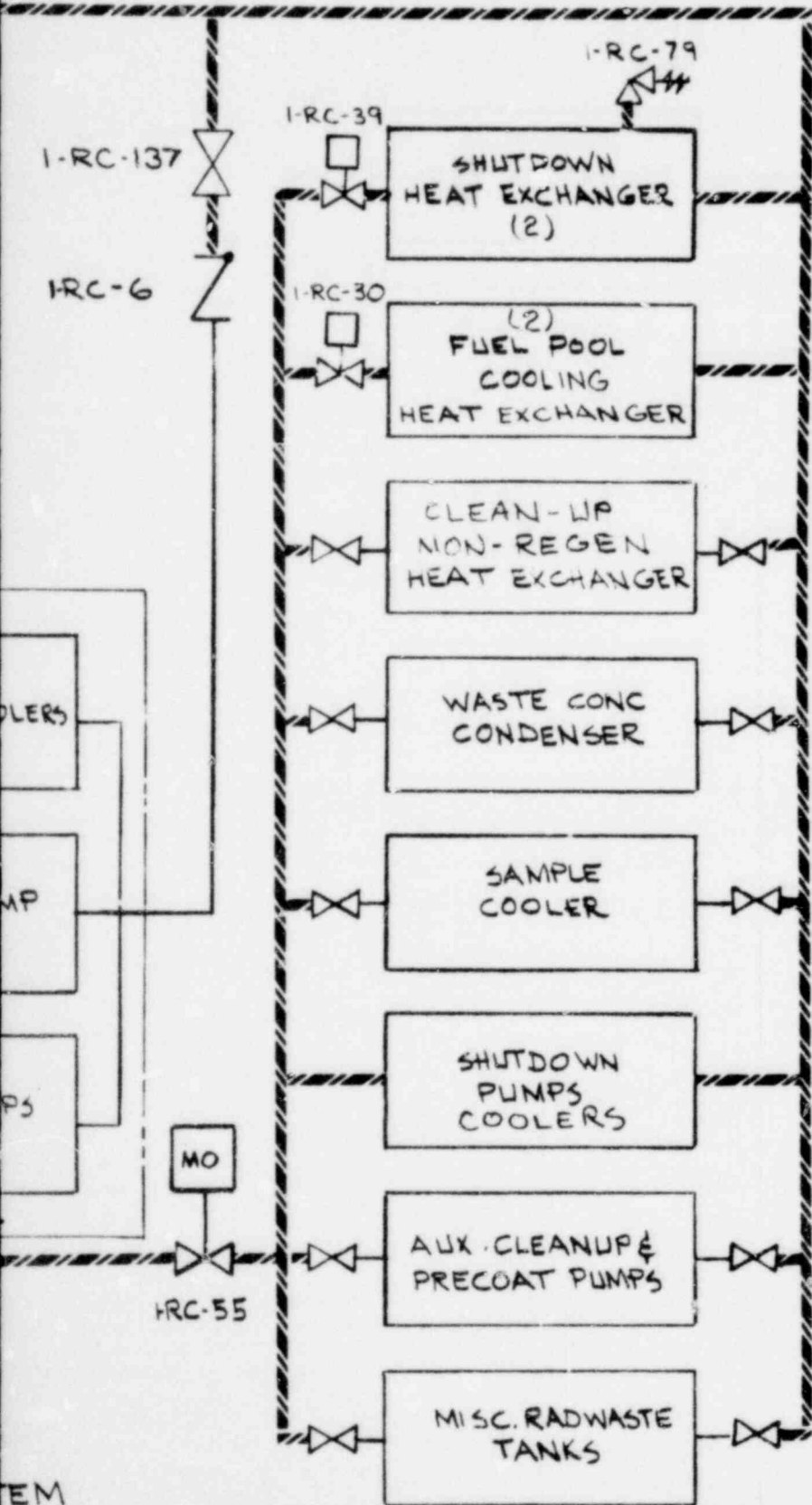
SERVICE WATER PUMPS

1023 084

~~1022 444~~

BOUNDARY DIAGRAM
SERVICE WATER SYSTEM FLOW DIAGRAM

POOR ORIGINAL



CLASS #3 PIPE
 NON-NUCLEAR
 PIPING

1023 085

~~1022 445~~

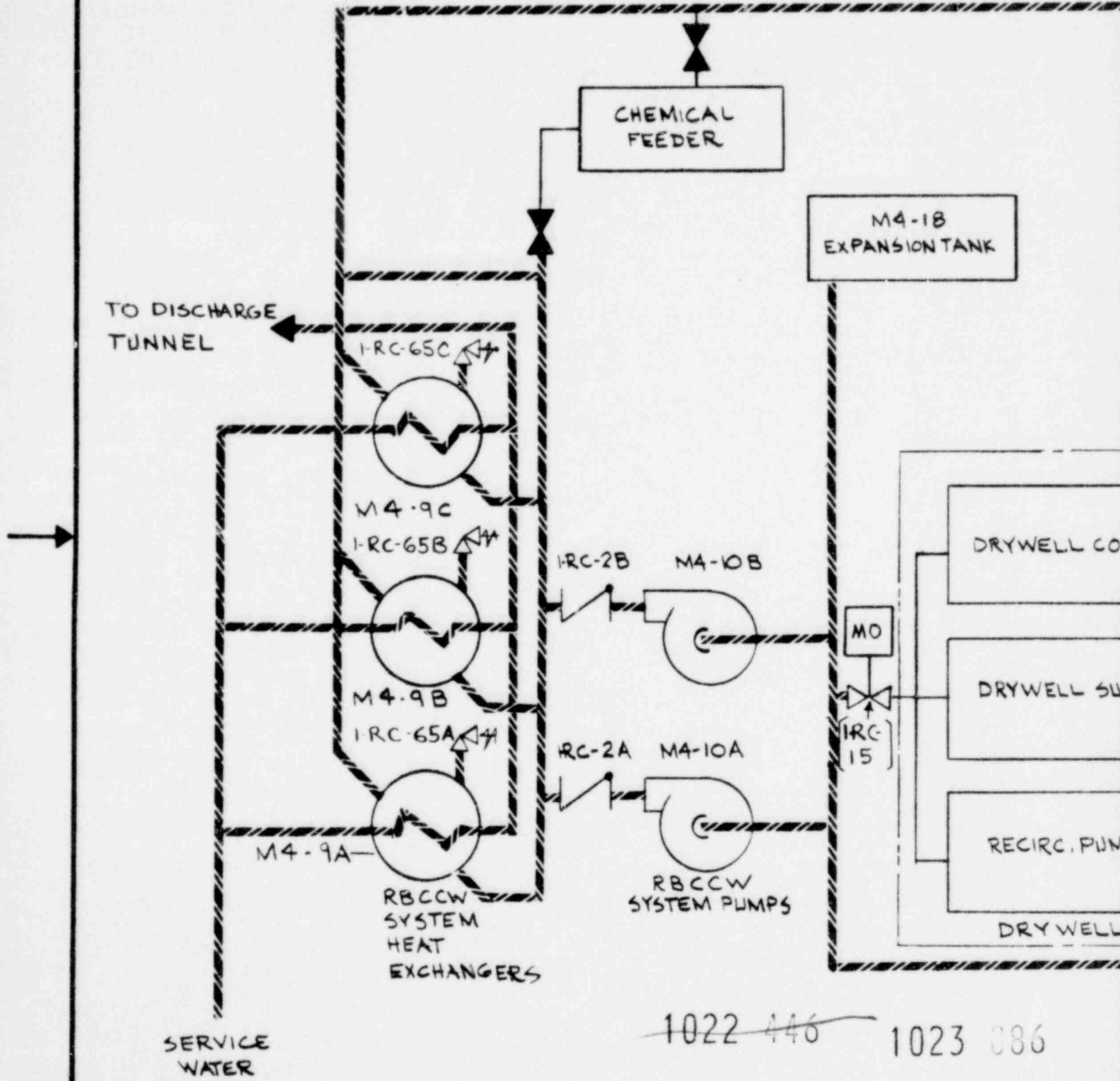
PAGE NO. 11

1	✓	10/4/78	INCORPORATE DCRM 517278	TJB	11/2	10/6/78
REV		DATE	REVISION	DRFT	CHK	APPV

NORTHEAST UTILITIES SERVICE CO.

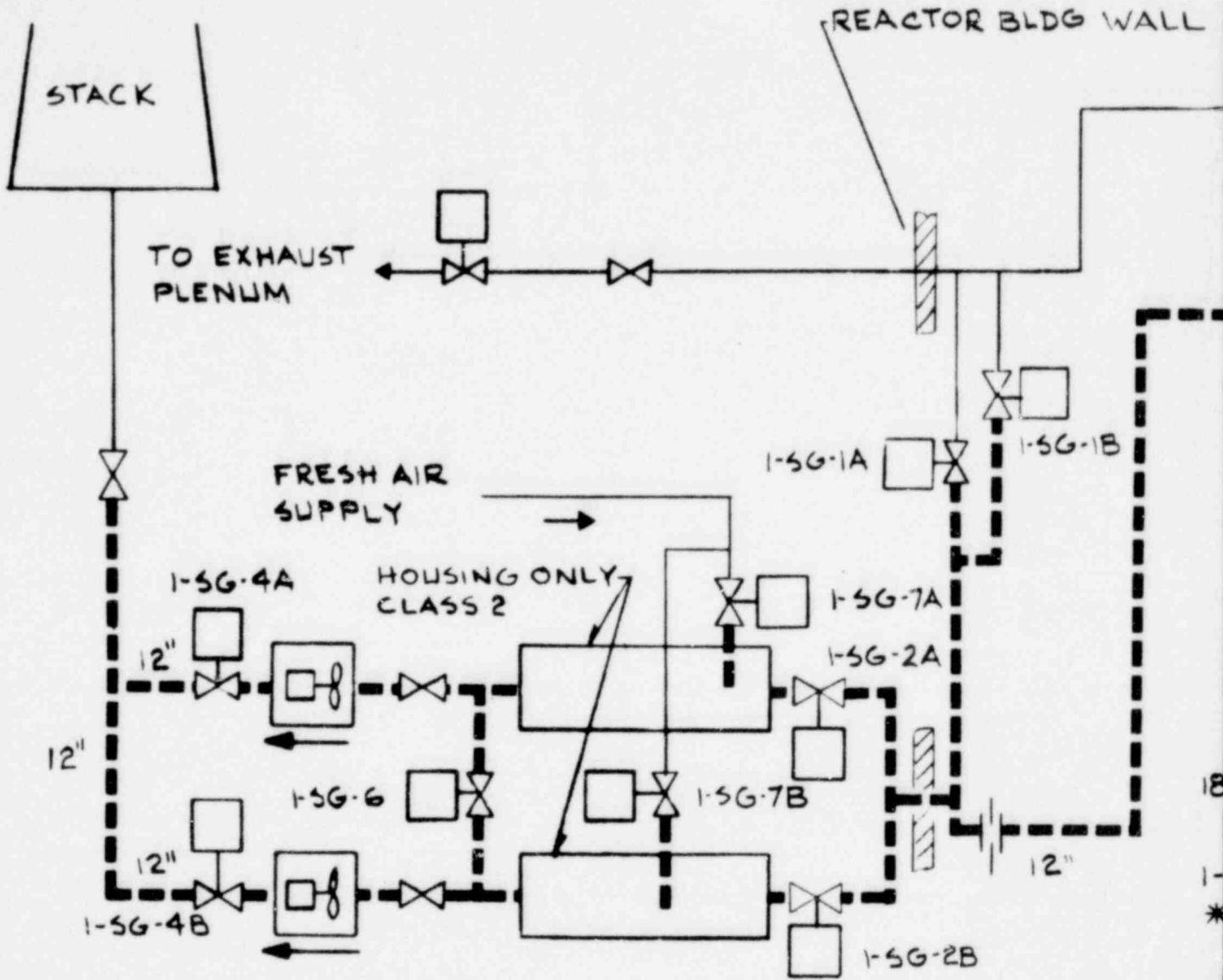
REV. NO. 1 DATE 2-77 Dwg. No. 25202-26032 SHI

POOR ORIGINAL



BOUNDARY DIAGRAM
REACTOR BUILDING CLOSED COOLING WATER SYSTEM

POOR ORIGINAL

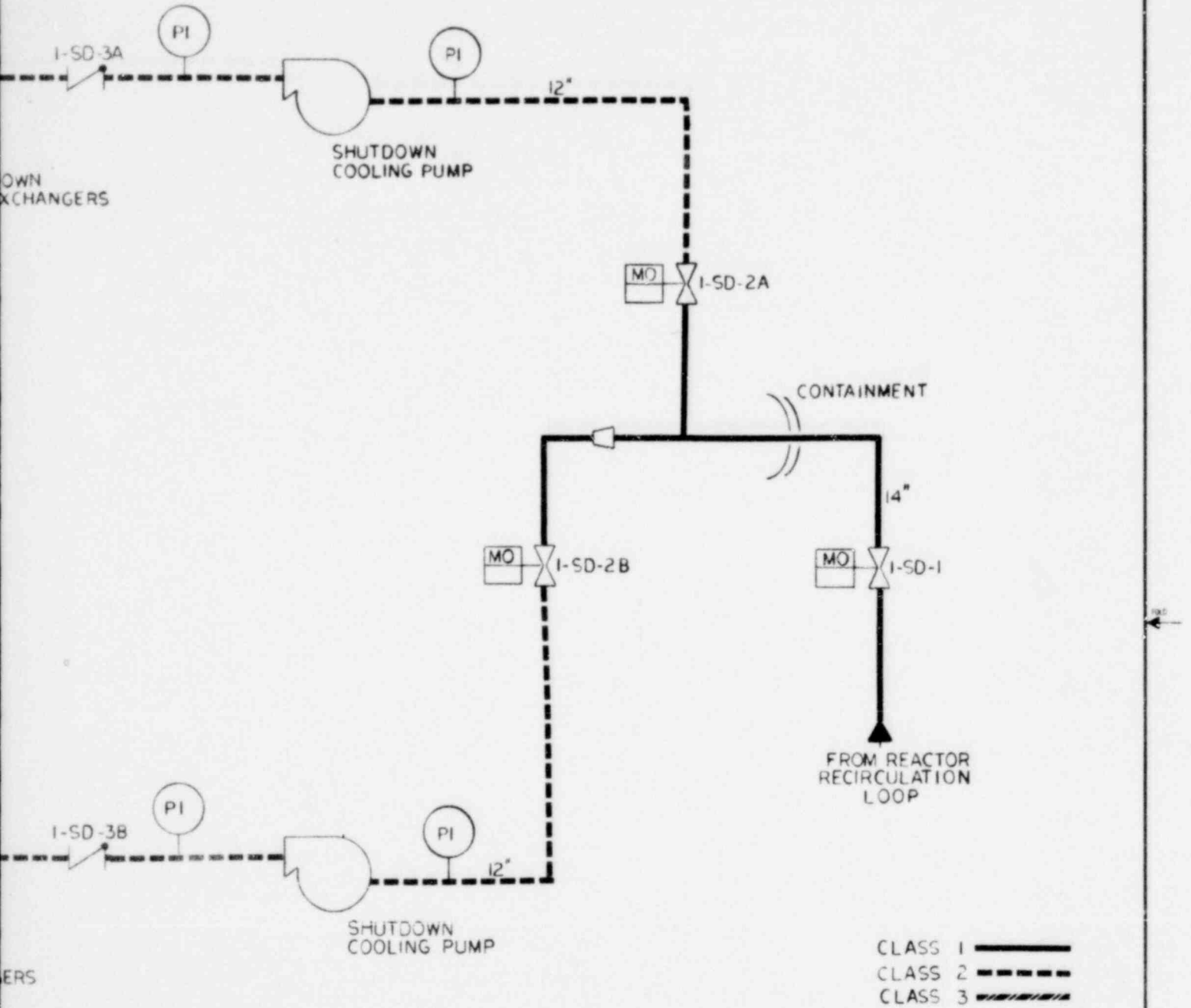


BOUNDARY DIAGRAM
STANDBY GAS AND ATMOSPHERE CON

1023 088

~~1022 443~~

POOR ORIGINAL

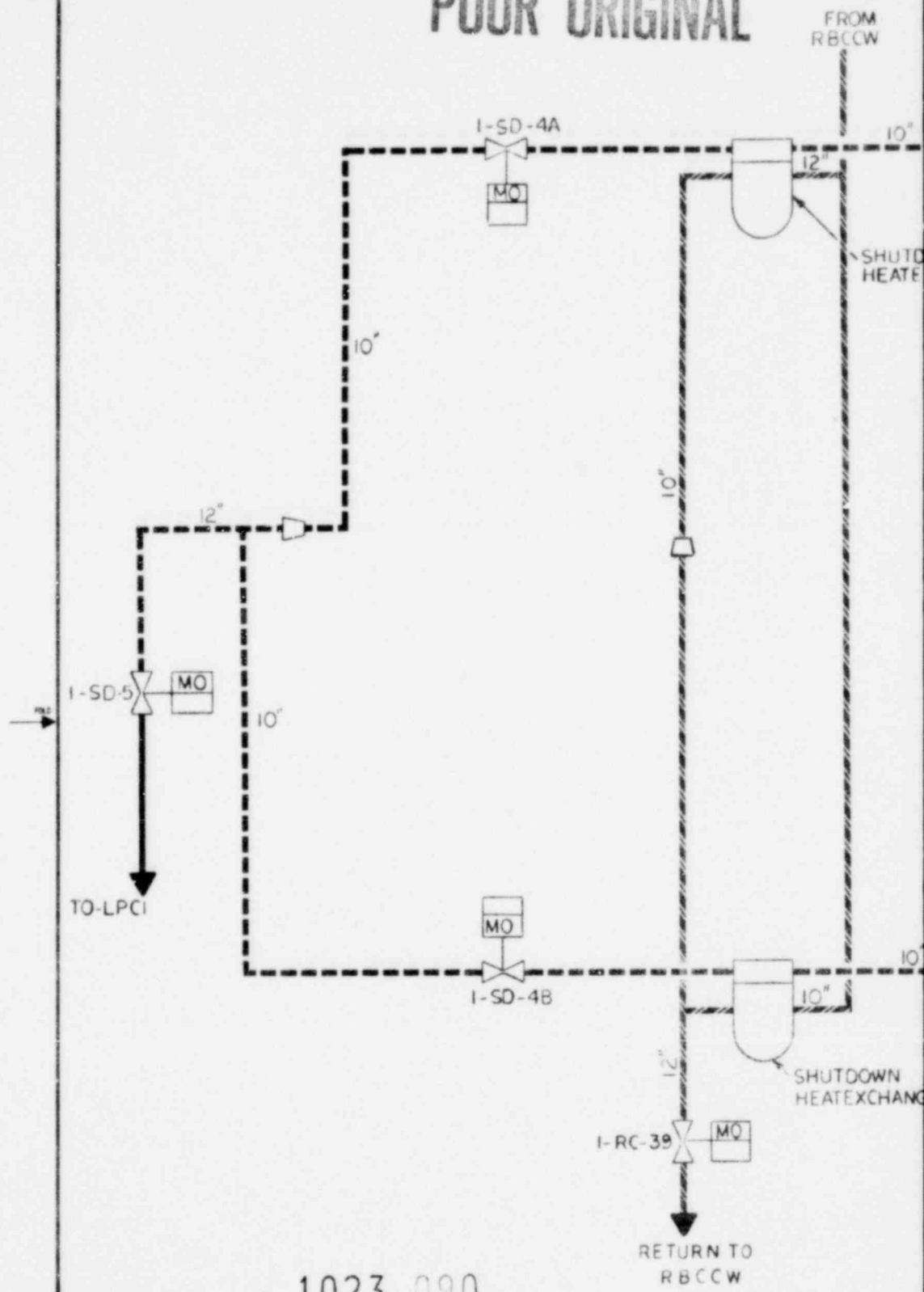


1023 089

4022 449

NORTHEAST UTILITIES SERVICE CO.									
FOR NORTHEAST NUCLEAR ENERGY CO.									
TITLE MILLSTONE UNIT #1 BOUNDARY DIAGRAM SHUT DOWN COOLING SYSTEM									
BY	CHKD	APP	APP						
DATE 2/20/79	DATE 2 20 79	DATE	DATE						
SCALE NONE									
DWG. NO. 25202-26032 SH1									
REV	P.A.#	NO.	DATE	REVISIONS	BY	CHK	APP	APP	P.A.#
		1		DSR-MI-S-111-79					

POOR ORIGINAL



1023 090

~~1022 450~~

BOUNDARY DIAGRAM
SHUTDOWN COOLING SYSTEM

TABLE IWV-1

September, 1979

1023 091

~~1022 451~~

VALVE NUMBER	CLASS/ CATEGORY		SIZE (INCHES)	VAJVF TYPE	ACTUATION	NORMAL POSITION	TEST REQUIREMENTS	RELIEF REQUESTS	TESTING ALTERNATIVE	REMARKS
Feedwater Coolant Injection 25202-26032 Sh. 2										
1-MW-90	2E	Suction from Cond. Storage Tank	20	GA	H	LO	ET			
1-FCX-1	2C	Relief Valve	3	REL			SRV			
1-FCX-2	2E	FWCI Suction From CST	16	GA	H	LO	ET			
1-FCX-3	2E	FWCI Pump Suction	16	GA	H	LO	ET			
1-FCX-4	2C	Pump Discharge Check	14	CK		C	CV			
1-FCX-5	2B	Pump Discharge Isolation Valve	14	GA	MO	C	Q MT PI			90 Sec. to Open
1-FCX-6	2E	Pump Discharge to Condenser "A"	12	GA	H	LO	ET			
1-FCX-7	2E	Pump Discharge to Condenser "B"	12	GA	H	LO	ET			
1-CN-2A	2C	Condensate Pump 1A Disch. Check	20	CK		O	CV	X	CS	
1-CN-2B	2C	Condensate Pump 1B Disch. Check	20	CK		O	CV	X	CS	
1-CN-2C	2C	Condensate Pump 1C Disch. Check	20	CK		O	CV	X	CS	
1-CN-58	2B	SJAE Minimum Flow FCV-2-4	16	GL	AO	C	Q MT FT	X X	CS CS	60 Sec. to Close

4022 452

1023 092

RELIEF REQUEST BASISSYSTEM: FEEDWATER COOLANT INJECTION SYSTEM

1. Valve: 1-CN-2A, 2B, 2C, 1-CN-30A, 30B, 30C
 Class/Category: 2C
 Function: Condensate and Condensate Booster Pump discharge check valves
 Test Requirement: Exercise for closing upon reversal or cessation of flow every three months.
 Basis for Relief: During reactor full power operation, all three condensate and condensate booster pumps are operating. It would not be possible to rotate pumps to test the reverse flow operability of these valves without introducing the potential for flow transients in the condensate and feed-water systems.
 Alternate Testing: In that the valves are in their accident position in the normal operating mode, NNECO proposes to exercise the valves, per Code requirements, during cold shutdowns.
2. Valve: 1-CN-58
 Class/Category: 2B
 Function: Steam jet air ejector minimum flow control
 Test Requirement: Exercise valve for operability every three months, and test fail position.
 Basis for Relief: To exercise this valve during operations would require disrupting condensate flow and bypassing it to the main condenser. This valve is closed by a FWCI signal, is a system isolation valve, and is not in the FWCI flow path.
 Alternate Testing: Exercise valve and test fail position during cold shutdowns, not to exceed once every three months.

1023 093

~~1022~~ 453

VALVE NUMBER	CLASS/ CATEGORY		SIZE (INCHES)	VALVE TYPE	ACTUATION	NORMAL POSITION	TEST REQUIREMENTS	RELIEF REQUESTS	TESTING ALTERNATIVE	REMARKS
Feedwater Coolant Injection 25202-26032 Sh. 2										
1-CN-60	2E	FCV-2-4 Bypass SJAE	14	GA	MO	LC	ET PI			Operator Power Available For Startup Only
1-CN-30A	2C	Cond. Booster Pump A Disch. Check	20	CK		0	CV	X	CS	
1-CN-30B	2C	Cond. Booster Pump B Disch. Check	20	CK		0	CV	X	CS	
1-CN-30C	2C	Cond. Booster Pump D Disch. Check	20	CK		0	CV	X	CS	
1-CN-701	2B	Supply to Recombiner Condenser	6	BFLY	AO	0	Q MT FT PI	X	CS	
1-FW-2A	2C	RFP 1A Discharge Check	18	CK		0	CV	X		Exerc. Ev. 6 Mos.
1-FW-2B	2C	RFP 1B Discharge Check	18	CK		0	CV	X		Exerc. Ev. 6 Mos.
1-FW-2C	2C	RFP 1C Discharge Check	18	CK		0	CV	X		Exerc. Ev. 6 Mos.
1-FW-4A	2B	FW Control Valve 5A Stop	14	GA	MO	0	Q MT PI	X	CS	56 Sec. to Open
1-FW-4B	2B	FW Control Valve 5B Stop	14	GA	MO	0	Q MT PI	X	CS	56 Sec. to Open

1023 094 4022 454

VALVE NUMBER	CLASS/ CATEGORY		SIZE (INCHES)	VALVE TYPE	ACTUATION	NORMAL POSITION	TEST REQUIREMENTS	RELIEF REQUESTS	TESTING ALTERNATIVE	REMARKS
Feedwater Coolant Injection 25202-26032 Sh. 2										
1-FW-5A	2B	FW Control Valve 5A	12	GL	AO	0	Q MT FT	X X	CS CS	4 Sec. to Open
1-FW-5B	2B	FW Control Valve 5B	12	GL	AO	0	Q MT FT	X X	CS CS	4 Sec. to Open
1-FW-5C	2B	FW Control Valve 5C	4	GL	AO	C	Q MT FT	X X	CS CS	4 Sec. to Open
1-FW-9A	1AC	Outside Containment Check	18	CK		0	CV LT	 X	 LLRT	Verify Open Only
1-FW-9B	1AC	Outside Containment Check	18	CK		0	CV LT	 X	 LLRT	Verify Open Only
1-FW-10A	1AC	Inside Containment Check	18	CK		0	CV LT	 X	 LLRT	Verify Open Only
1-FW-10B	1AC	Inside Containment Check	18	CK		0	CV LT	 X	 LLRT	Verify Open Only
1-FW-14A	2B	RFP 1A Recirc. Miniflow	6	GL	AO	C	Q MT FT PI	X X	CS CS	

1023 095

1022 455

RELIEF REQUEST BASIS

SYSTEM: FEEDWATER COOLANT INJECTION SYSTEM (Cont'd)

3. Valve: 1-CN-701
Class/Category: 2B
Function: Cooling water supply to off-gas condensers
Test Requirements: Exercise valve for operability (full stroke) every three months, test fail position and verify remote position indicator.
Basis for Relief: Exercising this valve during plant operation would cause a flow disruption to the off-gas condenser, which would lead to a vacuum decrease in the main condenser, in that the off-gas is drawn from the latter. Part stroke testing is not possible for this valve design.
Alternate Testing: Exercise valve during cold shutdowns.
4. Valve: 1-FW-2A, 2B, 2C
Class/Category: 2C
Function: Feed pump discharge check valves
Test Requirement: Exercise for closing upon reversal or cessation of flow every three months.
Basis for Relief: Two of these valves are in normal service and are exercised as pumps are routinely rotated. Each individual valve will not be exercised every three months. Collectively, all valves will be exercised within a six month period. Two of the three feed pumps are normally operating.
Alternate Testing: NNECO believes these valves are being properly demonstrated for occupational readiness and wishes to continue to exercise them as pumps are rotated in service.
5. Valve: 1-FW-4A, 4B, 5A, 5B, 5C
Class/Category: 2B
Function: These valves control and regulate feedwater flow to the reactor.
Test Requirement: Exercise for operability every three months.
Basis for Relief: Exercising these valves during operation would interrupt normal balanced flow to the reactor causing reactor water level fluctuations.
Alternate Testing: These valves will be exercised during cold shutdowns, not to exceed once every three months.

VALVE NUMBER	CLASS / CATEGORY		SIZE (INCHES)	VALVE TYPE	ACTUATION	NORMAL POSITION	TEST REQUIREMENTS	RELIEF REQUESTS	TESTING ALTERNATIVE	REMARKS
		Feedwater Coolant Injection 25202-26032 Sh. 2								
1-FW-14B	2B	RFP 1B Recirc. Miniflow	6	GL	A0	C	Q MT FT PI	X	CS	
1-FW-14C	2B	RFP 1C Recirc. Miniflow	6	GL	A0	C	Q MT FT PI	X	CS	

1023 097

1022 457

RELIEF REQUEST BASIS

SYSTEM: FEEDWATER COOLANT INJECTION SYSTEM (Cont'd)

6. Valve: 1-FW-14A, 14B, 14C
- Class/Category: 2B
- Function: Feed pump minimum flow control valves - recirculate to main condensers.
- Test Requirement: Exercise valves for operability (full stroke) every three months. Test fail position of valves every three months.
- Basis for Relief: These valves are normally closed and open only for periods of low flow into the reactor vessel, such as during startup and shutdown. They remain closed during FWCI. Opening these valves during power operation would require a load reduction because feedwater flow to the reactor would be diminished.
- Alternate Testing: Exercise valve for operability and test fail position during cold shutdowns.

1023 098

1022 458

VALVE NUMBER	CLASS/ CATEGORY		SIZE (INCHES)	VALVE TYPE	ACTUATION	NORMAL POSITION	TEST REQUIREMENTS	RELIEF REQUESTS	TESTING ALTERNATIVE	REMARKS
Control Rod Drive Hydraulic System 25202-26032 Sh. 4										
302-19A	2B	Air Valve-Reactor Protection System	1	GL	SOL	C	Q	X	RR	
302-19B	2B	Air Valve-Reactor Protection System	1	GL	SOL	C	Q	X	RR	
302-20A	2B	Air Valve-Reactor Protection System	1	GL	SOL	C	Q	X	RR	
302-20B	2B	Air Valve-Reactor Protection System	1	GL	SOL	C	Q	X	RR	
305-114*	2C	Scram Discharge Volume	.75	CK		O	CV	X	RR	
305-115*	2C	Charging Water Supply to Scram	.5	CK		O	CV	X	RR	
305-120*	2B	HCU Withdraw to Exhaust	.5	GA	SOL	C	Q			
305-123*	2B	HCU Insert From Drive Water	.5	GA	SOL	C	Q			
305-126*	2B	Scram Insert	1	GL	AO	C	Q	X	RR	
305-127*	2B	Scram Withdraw	.75	GL	AO	C	Q	X	RR	
305-138*	2C	Cooling Water to HCU	.5	CK		O	CV			
301-138	2B	CRD Return Isolation	3		H	O	Q			Passive Valve Verify Oper. Only

*Refers to one of 145 Units

~~1022-459~~
 1023 099

RELIEF REQUEST BASIS

SYSTEM: CONTROL ROD DRIVE HYDRAULIC SYSTEM

1. Valve: 302-19A, 19B, 302-20A, 20B
Class/Category: 2B
Function: Air valves from reactor protection system.
Test Requirement: Exercise for operability every three months.
Basis for Relief: These valves are solenoid operated thus cannot be part stroked. Full stroking could cause an unscheduled reactor trip. These valves are operated 145 times each refueling as part of control rod testing.
Alternate Testing: These valves will be exercised each refueling.
2. Valve: 305-114, 115, 126, 127
Class/Category: 2B, 2C
Function: Control valves for scram operation of control rods in each of 145 units.
Test Requirement: Exercise for operability every three months.
Basis for Relief: These valves cannot be part stroked because of their construction. They cannot be exercised at cold shutdown because of system interlocks. The cold shutdown mode switch prohibits the withdrawal of control rods.
Alternate Testing: Exercise for operability at reactor refueling.

1023 100

~~1022 460~~

VALVE NUMBER	CLASS/ CATEGORY		SIZE (INCHES)	VALVE TYPE	ACTUATION	NORMAL POSITION	TEST REQUIREMENTS	RELIEF REQUESTS	TESTING ALTERNATIVE	REMARKS
		Core Spray 25202-26032 Sh. 9								
1-CS-2A	2B	Core Spray Pump A Suction	12	GA	MO	O	Q MT PI			90 Sec. Open/ Close
1-CS-2B	2B	Core Spray Pump B Suction	12	GA	MO	O	Q MT PI			90 Sec. Open/ Close
1-CS-3A	2C	Pump A Discharge Check	10	CK		C	CV			
1-CS-3B	2C	Pump B Discharge Check	10	CK		C	CV			
1-CS-4A	2B	Admission Valve	10	GA	MO	O	Q MT PI			10 Sec. - Open 20 Sec. - Close
1-CS-4B	2B	Admission Valve	10	GA	MO	O	Q MT PI			10 Sec. - Open 20 Sec. - Close
1-CS-5A	1B	Admission Valve	10	GA	MO	C	Q MT PI			10 Sec. - Open 20 Sec. - Close
1-CS-5B	1B	Admission Valve	10	GA	MO	C	Q MT PI			10 Sec. - Open 20 Sec. - Close

1023 101

VALVE NUMBER	CLASS/ CATEGORY		SIZE (INCH.S)	VALVE TYPE	ACTUATION	NORMAL POSITION	TEST REQUIREMENTS	RELIEF REQUESTS	TESTING ALTERNATIVE	REMARKS
Core Spray 25202-26032 Sh. 9										
1-CS-6A	1C	Pump Discharge to Vessel	10	CK		C	CV	X	RR	
1-CS-6B	1C	Pump Discharge to Vessel	10	CK		C	CV	X	RR	
1-CS-7A	1E	System Discharge Shutoff	10	GA		LO	ET			
1-CS-7B	1E	System Discharge Shutoff	10	GA		LO	ET			
1-CS-13A	2E	Pump A Minimum Flow	3	GL		LO	ET			
1-CS-13B	2E	Pump B Minimum Flow	3	GL		LO	ET			
1-CS-14A	2C	CS Pump to Torus Test Valve	6	CK			CV			
1-CS-14B	2C	CS Pump to Torus Test Valve	6	CK			CV			
1-CS-18A	2C	Low Pressure Relief	2	REL			SRV			
1-CS-18B	2C	Low Pressure Relief	2	REL			SRV			
1-CS-21A	2B	Test Line to Torus	6	GA	MO	C	Q MT PI			35 Sec. to Close
1-CS-21b	2B	Test Line to Torus	6	GA	MO	C	Q MT PI			35 Sec. to Close
1-MW-91A	2E	Suction From CST	12	GA		LC	ET			
1-MW-91B	2E	Suction from CST	12	GA		LC	ET			

1023 102

RELIEF REQUEST BASIS

SYSTEM: CORE SPRAY SYSTEM

1. Valve: 1-CS-6A, 6B
- Class/Category: 1C
- Function: Inside containment check valves.
- Test Requirement: Exercise normally closed valves to open position every three months.
- Basis for Relief: There is no design provision for manually exercising these valves and stroking with system flow requires that water be pumped into the reactor vessel. This is not possible at power, because of pressure differences and thermal-hydraulic considerations.
- Alternate Testing: These valves will be exercised at reactor refueling after the RPV head has been removed and there is room to accommodate the flow volume required for full stroke exercising.

VALVE NUMBER	CLASS/ CATEGORY		SIZE (INCHES)	VALVE TYPE	ACTUATION	NORMAL POSITION	TEST REQUIREMENTS	RELIEF REQUESTS	TESTING ALTERNATIVE	REMARKS
		Turbine Building Secondary Closed Cooling Water, 25202-26032 Sh. 6								
1-SC-2A	3C	Pump A Discharge Check	10	CK		O/C	CV			
1-SC-2B	3C	Pump B Discharge Check	10	CK		O/C	CV			
		Low Pressure Coolant Injection 25202-26032 Sh. 5								
1-LP-1A	2E	System Suction Shutoff	20	BFLY	H	LO	ET			
1-LP-1B	2E	System Suction Shutoff	20	BFLY	H	LO	ET			
1-LP-2A	2B	Pump A Suction Valve	18	GA	MO	O	Q MT PI			120 Sec. to Open
1-LP-2B	2B	Pump B Suction Valve	18	GA	MO	O	Q MT PI			120 Sec. to Open
1-LP-2C	2B	Pump C Suction Valve	18	GA	MO	O	Q MT PI			120 Sec. to Open
1-LP-2D	2B	Pump D Suction Valve	18	GA	MO	O	Q MT PI			120 Sec. to Open

1023
104

VALVE NUMBER	CLASS/ CATEGORY		SIZE (INCHES)	VALVE TYPE	ACTUATION	NORMAL POSITION	TEST REQUIREMENTS	RELIEF REQUESTS	TESTING ALTERNATIVE	REMARKS
Low Pressure Coolant Injection 25202-26032 Sh. 5										
1-LP-3A	2C	Pump A Discharge Check	12	CK		C	CV			
1-LP-3B	2C	Pump B Discharge Check	12	CK		C	CV			
1-LP-3C	2C	Pump C Discharge Check	12	CK		C	CV			
1-LP-3D	2C	Pump D Discharge Check	12	CK		C	CV			
1-LP-4A	2E	Pump A Discharge Stop	12	GA	H	LO	ET			
1-LP-4B	2E	Pump B Discharge Stop	12	GA	H	LO	ET			
1-LP-4C	2E	Pump C Discharge Stop	12	GA	H	LO	ET			
1-LP-4D	2E	Pump D Discharge Stop	12	GA	H	LO	ET			
1-LP-5A	2E	Heat Exchanger A Inlet	12	GA	H	LO	ET			
1-LP-5B	2E	Heat Exchanger B Inlet	12	GA	H	LO	ET			
1-LP-6A	2E	Heat Exchanger A Outlet	12	GA	H	LO	ET			
1-LP-6B	2E	Heat Exchanger B Outlet	12	GA	H	LO	ET			
1-LP-7A	2B	Heat Exchanger Bypass	18	GA	MO	O	Q MT PI			40 Sec. to Close
1-LP-7B	2B	Heat Exchanger Bypass	18	GA	MO	O	Q MT PI			40 Sec. to Close

1023 105

VALVE NUMBER	CLASS/ CATEGORY		SIZE (INCHES)	VALVE TYPE	ACTUATION	NORMAL POSITION	TEST REQUIREMENTS	RELIEF REQUESTS	TESTING ALTERNATIVE	REMARKS
Low Pressure Coolant System										
25202-26032 Sh. 5										
1-LP-9A	2BC	Outboard Stop, LPCI to Recirc. Loop	18	GL STOP CK	MO	O	Q MT CV PI			40 Sec. to Open
1-LP-9B	2BC	Inboard Stop, LPCI to Recirc. Loop	18	GL STOP CK	MO	O	Q MT CV PI			40 Sec. to Open
1-LP-10A	1B	Inboard Stop, LPCI to Recirc. Loop	18	GL	MO	C	Q MT PI			18 Sec. - Open 40 Sec. - Close
1-LP-10B	1B	Inboard Stop, LPCI to Recirc. Loop	18	GT	MO	C	Q MT PI			18 Sec. - Open 40 Sec. - Close
1-LP-11A	1C	Inside Check	18	CK		C	CV	X	RR	
1-LP-11B	1C	Inside Check	18	CK		C	CV	X	CS	
1-LP-12A	2E	System Discharge Shutoff	18	GA	H	LO	ET			
1-LP-12B	2E	System Discharge Shutoff	18	GA	H	LO	ET			
1-LP-13A	2B	Outboard Stop to Torus Spray	6	GT	MO	C	Q MT PI			60 Sec. to Open

RELIEF REQUEST BASIS

SYSTEM: LOW PRESSURE COOLANT INJECTION

1. Valve: 1-LP-11A
Class/Category: 1C
Function: Inside Containment Check Valve
Test Requirement: Exercise normally closed valve to full open position every three months.
Basis for Relief: There is no design provision for manually exercising this valve. Stroking with system flow requires that water be pumped into the reactor vessel. This is not possible at power, because of pressure differences and thermal-hydraulic considerations.
Alternate Testing: This valve will be exercised at reactor refueling after the RPV head has been removed and there is room to accommodate the flow volume required for full stroke exercising.
2. Valve: 1-LP-11B
Class/Category: 1C
Function: Inside containment check valve in LPCI system to reactor recirculation loop.
Test Requirement: Exercise normally closed valve to open position every three months.
Basis for Relief: There is no provision for manual operation of this valve. Hydraulic stroking requires pumping water into the reactor vessel. Because of pressure differentials this cannot be done while vessel is pressurized.
Alternate Testing: NNECO will exercise this valve whenever the reactor is in the shutdown cooling phase of operations as this valve is in the shutdown flow path. Shutdown cooling occurs at cold shutdowns.

VALVE NUMBER	CLASS/ CATEGORY		SIZE (INCHES)	VALVE TYPE	ACTUATION	NORMAL POSITION	TEST REQUIREMENTS	RELIEF REQUESTS	TESTING ALTERNATIVE	REMARKS
		Low Pressure Coolant Injection 25202-26032 Sh. 5								
1-LP-13B	2B	Outboard Stop to Torus Spray	6	GT	MO	C	Q MT PI			60 Sec. to Open
1-LP-14A	2B	Inboard Stop to Torus Spray	6	GL	MO	C	Q MT PI			60 Sec. to Open
1-LP-14B	2B	Inboard Stop to Torus Spray	6	GL	MO	C	Q MT PI			60 Sec. to Open
1-LP-15A	2B	Outboard Stop to Containment Spray	10	GL	MO	C	Q MT PI			60 Sec. to Open
1-LP-15B	2B	Outboard Stop to Containment Spray	10	GL	MO	C	Q MT PI			60 Sec. to Open
1-LP-16A	2B	Inboard Stop to Containment Spray	10	GA	MO	C	Q MT PI			60 Sec. to Open
1-LP-16B	2B	Inboard Stop to Containment Spray	10	GA	MO	C	Q MT PI			60 Sec. to Open
1-LP-24A	2C	LPCI Pump A Miniflow Check	2	CK			CV			
1-LP-24B	2C	LPCI Pump B Miniflow Check	2	CK			CV			
1-LP-24C	2C	LPCI Pump C Miniflow Check	2	CK			CV			

1023 100

VALVE NUMBER	CLASS/ CATEGORY		SIZE (INCHES)	VALVE TYPE	ACTUATION	NORMAL POSITION	TEST REQUIREMENTS	RELIEF REQUESTS	TESTING ALTERNATIVE	REMARKS
Low Pressure Coolant Injection 25202-26032 Sh. 5										
1-LP-24D	2C	LPCI Pump D Miniflow Check	2	CK			CV			
1-LP-25A	2E	LPCI Pump A Miniflow Stop	2	GA		LO	ET			
1-LP-25B	2E	LPCI Pump B Miniflow Stop	2	GA		LO	ET			
1-LP-25C	2E	LPCI Pump C Miniflow Stop	2	GA		LO	ET			
1-LP-25D	2E	LPCI Pump D Miniflow Stop	1	GA		LO	ET			
1-LP-26A	2B	Minimum Flow Bypass to Torus	3	GT	MO	O	Q MT PI			40 Sec. to Close
1-LP-26B	2B	Minimum Flow Bypass to Torus	3	GT	MO	O	Q MT PI			40 Sec. to Close
1-LP-32A	2C	Main Line Relief	2.5	REL			SRV			
1-LP-32B	2C	Main Line Relief	2.5	REL			SRV			
1-LP-43A	2B	Outboard Stop Test Line to Torus	10	GT	MO	C	Q MT			40 Sec. to Close
1-LP-43B	2B	Outboard Stop Test Line to Torus	10	GT	MO	C	Q MT			40 Sec. to Close
1-LP-44A	2B	Inboard Stop Test Line to Torus	10	GL	MO	C	Q MT			40 Sec. to Close
1-LP-44B	2B	Inboard Stop Test Line to Torus	10	GL	MO	C	Q MT			40 Sec. to Close

1025 109

VALVE NUMBER	CLASS/ CATEGORY		SIZE (INCHES)	VALVE TYPE	ACTUATION	NORMAL POSITION	TEST REQUIREMENTS	RELIEF REQUESTS	TESTING ALTERNATIVE	REMARKS
Low Pressure Coolant Injection										
25202-26032 Sh. 5										
1-MW-92A	2E	Suction from CST	14	GA	H	LC	ET			
1-MW-92B	2E	Suction from CST	14	GA	H	LC	ET			
1-MW-92C	2E	Suction from CST	14	GA	H	LC	ET			
1-MW-92D	2E	Suction from CST	14	GA	H	LC	ET			

1023 110

VALVE NUMBER	CLASS/ CATEGORY		SIZE (INCHES)	VALVE TYPE	ACTUATION	NORMAL POSITION	TEST REQUIREMENTS	RELIEF REQUESTS	TESTING ALTERNATIVE	REMARKS
		Standby Liquid Control 25202-26032 Sh. 7								
1-SL-1	2E	Combined Pump Suction	2.5	GA	H	LO	ET			
1-SL-2A	2E	Pump A Suction	1.5	GA	H	LO	ET			
1-SL-2B	2E	Pump B Suction	1.5	GA	H	LO	ET			
1-SL-3A	2C	Pump A Discharge Check	1.5	CK			CV			
1-SL-3B	2C	Pump B Discharge Check	1.5	CK			CV			
1-SL-4A	2E	Pump A Discharge Stop	1.5	GA	H	LO	ET			
1-SL-4B	2E	Pump B Discharge Stop	1.5	GA	H	LO	ET			
1-SL-5A	2D	Squib Valve	1.5	Shear			RR			
1-SL-5B	2D	Squib Valve	1.5	Shear			RR			
1-SL-6	2E	Combined Discharge	1.5	GA	H	LO	ET			
1-SL-9	2E	Combined Discharge	1.5	GA	H	LO	ET			
1-SL-22A	2C	Discharge Relief	1.5	REL			SRV			
1-SL-22B	2C	Discharge Relief	1.5	REL			SRV			

1023 111

VALVE NUMBER	CLASS/ CATEGORY		SIZE (INCHES)	VALVE TYPE	ACTUATION	NORMAL POSITION	TEST REQUIREMENTS	RELIEF REQUESTS	TESTING ALTERNATIVE	REMARKS
		Main Steam 25202-26032 Sh. 1								
1-MS-1A	1A	Inside Containment Stop	20	GL	A0	0	Q MT LT FT PI	X X	LLRT RR	3-5 Sec. to Close
1-MS-1B	1A	Inside Containment Stop	20	GL	A0	0	Q MT LT FT PI	X X	LLRT RR	3-5 Sec. to Close
1-MS-1C	1A	Inside Containment Stop	20	GL	A0	0	Q MT LT FT PI	X X	LLRT RR	3-5 Sec. to Close
1-MS-1D	1A	Inside Containment Stop	20	GL	A0	0	Q MT LT FT PI	X X	LLRT RR	3-5 Sec. to Close

1023 112

VALVE NUMBER	CLASS / CATEGORY		SIZE (INCHES)	VALVE TYPE	ACTUATION	NORMAL POSITION	TEST REQUIREMENTS	RELIEF REQUESTS	TESTING ALTERNATIVE	REMARKS
		Main Steam 25202-26032 Sh. 1								
1-MS-2A	1A	Outside Containment Stop	20	GL	AO	C	Q MT LT FT PI	X X	LLRT RR	3-5 Sec. to Close
1-MS-2B	1A	Outside Containment Stop	20	GL	AO	O	Q MT LT FT PI	X X	LLRT RR	3-5 Sec. to Close
1-MS-2C	1A	Outside Containment Stop	20	GL	AO	O	Q MT LT FT PI	X X	LLRT RR	3-5 Sec. to Close
1-MS-2D	1A	Outside Containment Stop	20	GL	AO	O	Q MT LT FT PI	X X	LLRT RR	3-5 Sec. to Close
1-MS-3A	1C	Relief-Electro-Mechanical	6	REL			SRV			
1-MS-3B	1C	Relief-Electro-Mechanical	6	REL			SRV			

1023 113

VALVE NUMBER	CLASS/ CATEGORY		SIZE (INCHES)	VALVE TYPE	ACTUATION	NORMAL POSITION	TEST REQUIREMENTS	RELIEF REQUESTS	TESTING ALTERNATIVE	REMARKS
		Main Steam 25202-26032 Sh. 1								
1-MS-3C	1C	Relief-Electro-Mechanical	6	REL			SRV			
1-MS-3D	1C	Relief-Electro-Mechanical	6	REL			SRV			
1-MS-3E	1C	Relief-Electro-Mechanical	6	REL			SRV			
1-MS-3F	1C	Relief-Electro-Mechanical	6	REL			SRV			

1023 114

RELIEF REQUEST BASIS

SYSTEM: MAIN STEAM

1. Valve: 1-MS-1A, 1B, 1C, 1D
1-MS-2A, 2B, 2C, 2D
- Class/Category: 1A
- Function: Main steam line isolation valves inside and outside containment.
- Test Requirement: Perform seat leakage tests and check fail position. Perform position indication verification.
- Basis for Relief: NNECO proposes a continuation of the 25 psig test pressure currently being used to verify seat leakage, per Tech Specs, section 4.7 as this pressure is consistent with presently approved local leak rate test criteria. It is not possible to test the fail function or the position indication of these valves while at power.
- Alternate Testing: Perform seat leakage tests per Tech Specs. Perform fail testing and position indication testing at reactor refueling.

1023 115

VALVE NUMBER	CLASS/ CATEGORY		SIZE (INCHES)	VALVE TYPE	ACTUATION	NORMAL POSITION	TEST REQUIREMENTS	RELIEF REQUESTS	TESTING ALTERNATIVE	REMARKS
		Isolation Condenser 25202-26032 Sh. 8								
1-IC-1	1A	Steam Isolation Valve	14	GA	MO	0	Q MT LT PI	X	LLRT	24 Sec. to Close
1-IC-2	1A	Steam Isolation Valve	14	GA	MO	0	Q MT LT PI	X	LLRT	24 Sec. to Close
1-IC-3	1A	Condensate Return Valve	10	GA	MO	C	Q MT LT PI	X	LLRT	19 Sec. to Close
1-IC-4	1A	Condensate Return Valve	10	GA	MO	0	Q MT LT PI	X	LLRT	10 Sec. to Close
1-IC-6	2A	Steam Vent	.75	CON	AO	0	Q MT LT FT PI	X	ILRT	5 Sec. to Close
1-IC-7	2A	Steam Vent	.75	CON	AO	0	Q MT LT FT PI	X	ILRT	5 Sec. to Close

1023 116

27/0

VALVE NUMBER	CLASS/ CATEGORY		SIZE (INCHES)	VALVE TYPE	ACTUATION	NORMAL POSITION	TEST REQUIREMENTS	RELIEF REQUESTS	TESTING ALTERNATIVE	REMARKS
		Isolation Condenser 25202-26032 Sh. 8								
1-IC-10	3B	Makeup to Condenser Shell	3	GL	MO	C	Q MT PI			30 Sec. to Open
1-IC-11	3C	Makeup to Check	3	CK			CV	X	RR	
1-IC-12	3E	Makeup to Stop	3	GT		LO	ET			

1023 117

RELIEF REQUEST BASIS

SYSTEM: ISOLATION CONDENSER

1. Valve: 1-1C-1, 2, 3, 4
Class/Category: 1A
Function: To insure containment integrity in event of requirement to isolate.
Test Requirement: Determine leak tightness not less than once every two years.
Basis for Relief: The safety function of these valves is to provide containment isolation when required. These valves are and have been tested as containment isolation valves as specified in Tech Specs Section 4.7 - Local Leak Rate tests.
Alternate Testing: Perform seat leakage tests per Tech Specs.
2. Valve: 1-1C-11
Class/Category: 3C
Function: Reverse flow check in makeup line to isolation condenser.
Test Requirement: Exercise closed valve to open position every three months.
Basis for Relief: In order to exercise this valve, flow must be established into the shell side of the Isolation Condenser. In that the shell side water inventory must be in compliance with Tech Specs, Section 3.05, this cannot be done except during reactor refuelings when it is possible to drain the shell side to a low level and refill to the operating band. Because of the complexity of this test, NNLCO prefers not to attempt it during cold shutdowns. Makeup flow to the Isolation Condenser is not required until 40 minutes after the LOCA.
Alternate Testing: Exercise this valve at reactor refueling.
3. Valve: 1-1C-6, 7
Class/Category: 1A
Function: To insure containment integrity in event of requirement to operate.
Test Requirement: Test for leak tightness not less than once every two years.
Basis for Relief: These valves have no provision for local leak rate tests.
Alternate Testing: These valves are leak tested as a part of the Integrated Leak Rate Test when containment is leak tested at 43 psig.

VALVE NUMBER	CLASS/ CATEGORY		SIZE (INCHES)	VALVE TYPE	ACTUATION	NORMAL POSITION	TEST REQUIREMENTS	RELIEF REQUESTS	TESTING ALTERNATIVE	REMARKS
		Service Water 25202-26032 Sh. 10								
1-SW-1A	3C	Pump A Discharge Check	20	CK			CV			
1-SW-1B	3C	Pump B Discharge Check	20	CK			CV			
1-SW-1C	3C	Pump C Discharge Check	20	CK			CV			
1-SW-1D	2C	Pump D Discharge Check	20	CK			CV			
1-SW-9	3B	Isolation Valve to Turbine Building Cooling HX's	20	GA	MO	O	Q MT PI	X	RR	180 Sec. to Close
1-SW-99	3B	Emergency Diesel Cooling	6	GL	AO	C	Q MT FT			30 Sec. to Open

1023 119

RELIEF REQUEST BASIS

SYSTEM: SERVICE WATER

1. Valve: 1-SW-9
- Class/Category: 3B
- Function: Service Water stop to turbine building closed cooling water heat exchangers.
- Test Requirement: Exercise valve for operability every three months.
- Basis for Relief: This valve is in the flow path of service water to the Turbine Building closed cooling water heat exchangers. If this valve fails to reopen after exercising to close, the TBCCW heat exchangers would not provide essential cooling for many balance of plant components, such as generator stator windings, hydrogen coolers, off gas blowers, etc. The remote position indicating test is done when the valve is exercised.
- Alternate Testing: This valve goes closed upon loss of normal power and is exercised in conjunction with the LNP test each refueling.

VALVE NUMBER	CLASS/ CATEGORY		SIZE (INCHES)	VALVE TYPE	ACTUATION	NORMAL POSITION	TEST REQUIREMENTS	RELIEF REQUESTS	TESTING ALTERNATIVE	REMARKS
		Emergency Service Water 25202-26032 Sh. 5								
1-LPC-1A	3C	ESW Pump A Discharge Check	10	CK			CV			
1-LPC-1B	3C	ESW Pump B Discharge Check	10	CK			CV			
1-LPC-1C	3C	ESW Pump C Discharge Check	10	CK			CV			
1-LPC-1D	3C	ESW Pump D Discharge Check	10	CK			CV			
1-LPC-2A	3E	ESW Pump A Discharge Stop	10	GA		LO	ET			
1-LPC-2B	3E	ESW Pump B Discharge Stop	10	GA		LO	ET			
1-LPC-2C	3E	ESW Pump C Discharge Stop	10	GA		LO	ET			
1-LPC-2D	3E	ESW PUMP D Discharge Stop	10	GA		LO	ET			
1-LPC-3A	3E	ESW to HX Inlet Stop	14	GA		LO	ET			
1-LPC-3B	3E	ESW to HX Inlet Stop	14	GA		LO	ET			
1-LPC-4A	3B	Heat Exchanger Discharge Stop	12	GL	MO	C	Q MT PI			
1-LPC-4B	3B	Heat Exchanger Discharge Stop	12	GL	MO	C	Q MT PI			

1023 121

VALVE NUMBER	CLASS/CATEGORY		SIZE (INCHES)	VALVE TYPE	ACTUATION	NORMAL POSITION	TEST REQUIREMENTS	RELIEF REQUESTS	TESTING ALTERNATIVE	REMARKS
Reactor Building Closed Cooling Water, 25202-26032 Sh. 11										
1-RC-2A	3C	Pump Discharge Check	14	CK			CV			
1-RC-2B	3C	Pump Discharge Check	14	CK			CV			
1-RC-6	3C	Header Inlet Check	6	CK			CV	X	RR	
1-RC-15	3B	Header Outlet Stop	6	GA	MO	O	Q MT	X	RR	Passive Valve 60 Sec. to Close
1-RC-39	3B	Shutdown Heat Exchanger Cooling Discharge	12	GL	MO	C	Q MT	X	CS	
Fuel Pool Cooling 25202-26032 Sh. 3										
1-FP-3A	3C	FP Pump A Discharge Check	6	CK			CV			
1-FP-3B	3C	FP Pump B Discharge Check	6	CK			CV			
Shutdown Cooling 25202-26032 Sh. 13										
1-SD-3A	2C	Pump Discharge Check	10	CK			CV	X	CS	
1-SD-3B	2C	Pump Discharge Check	10	CK			CV	X	CS	

1023 122

RELIEF REQUEST BASIS

SYSTEM: REACTOR BUILDING CLOSED COOLING WATER

1. Valve: 1-RC-6, 15
Class/Category: 3C, 3B
Function: Inlet and outlet valves on drywell header.
Test Requirement: Exercise valves (full stroke) for operability every three months.
Basis for Relief: The RBCCW cooling requirements for equipment inside containment are nonessential during accident modes of operation and so the positions of 1-RC-6 and 15 are inconsequential, and left to the discretion of plant operators. Further, the valves are not considered containment isolation valves, per the present plant Technical Specifications, section 4.7.
Alternate Testing: Exercise (full stroke) during reactor refuelings.
2. Valve: 1-RC-39
Class/Category: 3B
Function: Stop valve in RBCCW system discharge from shutdown heat exchangers.
Test Requirement: Exercise for operability every three months.
Basis for Relief: The shutdown heat exchanger is "laid up" between operations and is operated as necessary to control temperature at specified conditions during cold shutdowns.
Alternate Testing: Exercise for operability at cold shutdowns, not to exceed once every three months.

RELIEF REQUEST BASIS

SYSTEM: SHUTDOWN COOLING SYSTEM

1. Valve: 1-SD-3A, 3B
Class/Category: 2C
Function: Pump discharge check valves.
Test Requirement: Exercise valves (full open) every three months.
Basis for Relief: System is in "wet layup" and does not operate except at cold shutdowns. System recirculates reactor coolant only and has limited make-up capabilities.
Alternate Testing: Exercise for operability at cold shutdowns, not to exceed once every three months.

1023 12⁴

VALVE NUMBER	CLASS/ CATEGORY		SIZE (INCHES)	VALVE TYPE	ACTUATION	NORMAL POSITION	TEST REQUIREMENTS	RELIEF REQUESTS	TESTING ALTERNATIVE	REMARKS
Containment Isolation Valves										
1-HS-4	1A	Head Spray Outer Isolation Valve	2	GA	MO	C	Q MT LT PI	X X	CS LLRT	45 Sec. to Close
1-HS-5	1AC	Head Spray Inner Isolation Valve	2	CK		C	CV LT	X	CS ILRT	
1-SL-7	1AC	Standby Liquid Disch. Check	1.5	CK		C	CV LI	X X	RR ILRT	
1-SL-8	1AC	Standby Liquid Disch. Check	1.5	CK		C	CV LT	X X	RR ILRT	
1-MS-5	1A	Steam Drain Header Stop	4	GT	MO	C	Q MT LT PI	X X	CS LLRT	35 Sec. to Close
1-MS-6	1A	Steam Drain Header Stop	4	GT	MO	C	Q MT LT PI	X X	CS LLRT	35 Sec. to Close
1-SD-1	1A	Shutdown Suction Isolation	14	GA	MO	C	Q MT LT PI	X X	CS LLRT	48 Sec. to Close
1-SD-2A	1A	Shutdown Pump A Suction	12	GA	MO	C	Q MT LT PI	X X	CS LLRT	48 Sec. to Close

1023 125

VALVE NUMBER	CLASS/ CATEGORY		SIZE (INCHES)	VALVE TYPE	ACTUATION	NORMAL POSITION	TEST REQUIREMENTS	RELIEF REQUESTS	TESTING ALTERNATIVE	REMARKS
Containment Isolation Valves										
1-SD-2B	1A	Shutdown Pump B Suction	12	GA	MO	C	Q MT LT PI	X X	CS LLRT	48 Sec. to Close
1-SD-4A	1A	SD Heat Exchanger Disch. Stop	10	GL	MO	C	Q MT LT PI	X X	CS LLRT	48 Sec. to Close
1-SD-4B	1A	SD Heat Exchanger Disch. Stop	10	GL	MO	C	Q MT LT PI	X X	CS LLRT	48 Sec. to Close
1-SD-5	1A	Shutdown Discharge Isolation	12	GA	MO	C	Q MT LT PI	X X	CS LLRT	48 Sec. to Close
1-SS-3	2A	Drywell Drain Valve	2	GA	AO	C	Q MT LT	 X	 ILRT	
1-SS-4	2A	Drywell Drain Valve	2	GA	AO	C	Q MT LT	 X	 ILRT	
1-SS-13	2A	Drywell Equip. Drain Valve	2	GA	AO	C	Q MT LT	 X	 ILRT	

VALVE NUMBER	CLASS/ CATEGORY		SIZE (INCHES)	VALVE TYPE	ACTUATION	NORMAL POSITION	TEST REQUIREMENTS	RELIEF REQUESTS	TESTING ALTERNATIVE	REMARKS
Containment Isolation Valves										
1-SS-14	2A	Drywell Equip. Drain Valve	2	GA	AO	C	Q MT LT	X	ILRT	
1-CU-2	1A	Supply to CU System Inside Drywell	8	GA	MO	O	Q MT LT PI	X	LLRT	18 Sec. to Close
1-CU-2A	1A	Bypass to 1-CU-2	.5	GA	AO	C	Q MT LT PI	X	LLRT	10 Sec. to Close
1-CU-3	1A	Auxiliary Pump Bypass	8	GA	MO	O	Q MT LT PI	X	LLRT	18 Sec. to Close
1-CU-5	1A	Auxiliary Pump Suction	8	GA	MO	C	Q MT LT PI	X	LLRT	18 Sec. to Close
1-CU-28	1A	Regen. Heat Exchanger Discharge	8	GA	MO	O	Q MT LT PI	X	LLRT	18 Sec. to Close
1-AC-2A	2AC	Vacuum Relief from Sec. Containment	20	CK			CV LT	X	LLRT	

1023 127

VALVE NUMBER	CLASS/ CATEGORY		SIZE (INCHES)	VALVE TYPE	ACTUATION	NORMAL POSITION	TEST REQUIREMENTS	RELIEF REQUESTS	TESTING ALTERNATIVE	REMARKS
Containment Isolation Valves										
1-AC-2B	2AC	Vacuum Relief from Sec. Containment	20	CK			CV LT	X	LLRT	
1-AC-3A	2AC	Vacuum Relief from Sec. Containment	20	BFLY	AO		Q MT LT PI	X	LLRT	10 Sec. to Close
1-AC-3B	2AC	Vacuum Relief from Sec. Containment	20	BFLY	AO		Q MT LT PI	X	LLRT	10 Sec. to Close
1-AC-4	2A	Purge Air Supply	18	BFLY	AO	C	Q MT LT PI	X	LLRT	10 Sec. to Close
1-AC-5	2A	Purge Air to Drywell	18	BFLY	AO	C	Q MT LT PI	X	LLRT	10 Sec. to Close
1-AC-6	2A	Purge Air to Drywell	10	BFLY	AO	C	Q MT LT PI	X	LLRT	10 Sec. to Close

1023 123

VALVE NUMBER	CLASS/ CATEGORY		SIZE (INCHES)	VALVE TYPE	ACTUATION	NORMAL POSITION	TEST REQUIREMENTS	RELIEF REQUESTS	TESTING ALTERNATIVE	REMARKS
Containment Isolation Valves										
1-AC-7	2A	Drywell Vent	18	BFLY	AO	C	Q MT LT PI	X	LLk1	10 Sec. to Close
1-AC-8	2A	Drywell Vent to Main Exhaust	18	BFLY	AO	C	Q MT LT PI	X	LLRT	10 Sec. to Close
1-AC-9	2A	Drywell Vent Bypass	2	BFLY	AO	C	Q MT LT PI	X	LLRT	15 Sec. to Close
1-AC-10	2A	Standby Gas Treatment Inlet	12	BFLY	AO		Q MT LT PI	X	LLRT	10 Sec. to Close
1-AC-11	2A	Torus Vent	18	BFLY	AO	C	Q MT LT PI	X	LLRT	10 Sec. to Close
1-AC-12	2A	Torus Vent Bypass	2	BFLY	AO	C	Q MT LT PI	X	LLRT	15 Sec. to Close
1-AC-17	2A	N ₂ Purge Isolation	6	BFLY	AO	C	Q MT LT PI	X	LLRT	15 Sec. to Close

RELIEF REQUEST BASIS

CONTAINMENT ISOLATION VALVES

SYSTEM: VARIOUS - CONTAINMENT ISOLATION

1. Valve: See list of Containment Isolation Valves.
- Class/Category: All Category A Valves.
- Function: To insure containment integrity in event of requirements to isolate.
- Test Requirement: Exercise all active valves every three months and determine leak tightness not less than once every two years.
- Basis for Relief: This list consists of valves whose only safety function is containment isolation. Present Tech Specs require both an individual and an integrated leakage rate test for containment isolation valves and penetrations. Tech Specs also require repair and retest of any valve exceeding the leakage criteria. NNECO feels that these tests insure the leak-tightness of all containment isolation valves, in that they are tested under the conditions for which they are designed.

Operability testing of these valves during normal plant operation could cause a loss of containment integrity and/or system function if a valve failed in a nonconservative position.

NNECO also requests relief from paragraph IWV-3420(f) "Analysis of Leakage Rates" in that present rules for local leak rate testing of containment isolation valves provide analytical data for determining acceptance criteria, based on combined leakage of several valves.

Based on seat leakage data recorded to date, in connection with the containment leak rate test program, NNECO requests relief from paragraph IWV-3420(g)(2) in that no meaningful trends have been established.

1023 130

RELIEF REQUEST BASIS

CONTAINMENT ISOLATION VALVES

SYSTEM: VARIOUS - CONTAINMENT ISOLATION (Cont'd)

Alternate Testing: NNECO proposes to use existing procedures for leak testing of valves used for containment isolation. Modifications to procedures as agreed upon by NNECO and NRC Staff concerning "App. J" tests and exemptions will be reflected in this program.

Exercise requirements shall be per plant technical specifications (i.e. normally open power operated valves shall be fully closed and reopened, at least once per quarter). Operating time shall be per Tech Specs, Table 3.7.1.

2. Valve: 1-HS-4, 1-HS-5

Class/Category: 1A, 1AC

Function: Inner and outer containment isolation valves for head spray.

Test Requirement: Exercise for operability every three months.

Basis for Relief: These normally closed valves have no safety related functions and are listed as containment isolation valves only. These valves are opened to admit water to cool the head and upper reactor internals before removal of the closure head.

Alternate Testing: Exercise for operability at cold shutdowns.

3. Valve: 1-SL-7, 8

Class/Category: 1/AC

Function: Combined discharge checks inside and outside drywell.

Test Requirement: Exercise normally closed valves to open position every three months.

Basis for Relief: There is no provision for manual operation of these valves. Hydraulic stroking requires pumping into the reactor vessel and the operation of a squib valve. There are no test connections at present by which an individual valve leak rate test could be performed.

1023 131

RELIEF REQUEST BASIS

CONTAINMENT ISOLATION VALVES

Alternate Testing: These check valves will be exercised each refueling as the standby liquid system is tested by pumping into the reactor. Leak tightness of these valves is checked during containment integrated leak rate tests.

4. Valve: 1-MS-5, 1-MS-6
Class/Category: 1A
Function: Main steam line drain stops.
Test Requirement: Exercise for operability every three months.
Basis for Relief: These normally closed valves are used at startups and shutdowns only and have no safety related function other than containment isolation valves.
Alternate Testing: Exercise for operability at cold shutdowns only.
5. Valve: 1-SD-1, 2A, 2B, 4A, 4B, 5
Class/Category: 1A
Function: These valves are used to isolate the Shutdown Cooling System from the Reactor Recirculation System during power operations.
Test Requirement: Exercise for operability every three months.
Basis for Relief: This system is held in "wet layup" until such time as it is desired to be operated. The system operates as necessary to control temperature at specified conditions during cold shutdown.
Alternate Testing: Exercise for operability at cold shutdowns not to exceed once every three months.

1023 132

TABLE IWV-2
SAFETY/RELIEF VALVE SETPOINTS

<u>Service</u>	<u>Sta. No.</u>	<u>Valve Type</u>	<u>Set Point (Tol.)</u>
Core Spray Low Pressure Relief	1-CS-18A	2" R-V	375 (+15, -5)
	1-CS-18B	2" R-V	375 (+15, -5)
LPCI Main Line Relief	1-LP-32A	2 1/2 R-V	400 (+10, -5)
	1-LP-32B	2 1/2 R-V	400 (+10, -5)
Standby Liquid Control Pump Disc. Relief	1-SL-22A	1 1/2 R-V	1400 (+25, -20)
	1-SL-22B	1 1/2 R-V	1400 (+25, -20)
Main Steam Electro-pneumatic Relief	1-MS-3A	6" SRV	1095 (+1%)
	1-MS-3B	6" SRV	1125 (+1%)
	1-MS-3C	6" SRV	1125 (+1%)
	1-MS-3D	6" SRV	1110 (+1%)
	1-MS-3E	6" SRV	1125 (+1%)
	1-MS-3F	6" SRV	1125 (+1%)
FWCI Condenser Transfer Relief	1-FCX-1 (V7-156)	3" R-V	275 (+10)

1023 133

LEGEND FOR VALVE TESTING

- Q - Exercise valve (full stroke) to verify satisfactory operation every three (3) months.
- LT - Valves are leak tested per Section XI Article IWV-3420.
- ILRT - Containment Isolation Valves are leak tested in conjunction with containment integrated leak test.
- MT - Stroke time measurements are taken per Section XI Article IWV-3410, for power operated valves.
- CV - Exercise check valves to the position required to fulfill their function every three (3) months.
- SRV - Safety and relief valves are tested per Section XI Article IWV-3510.
- ET - Verify and record valve position before operations are performed and after operations are completed, and verify that valve is locked or sealed.
- CS - Exercise valve (full stroke) to verify satisfactory operation at cold shutdown.
- RR - Exercise valve (full stroke) to verify satisfactory operation at reactor refueling.
- PI - Visually observe, every two years or less, actual valve position to confirm that remote valve position indications accurately reflect valve operation.
- FT - Remove actuator power from valves with fail-safe actuators to confirm that the valve travels to its fail-safe position every three (3) months.
- LLRT - Containment Isolation Valves individually tested at 43 psig.

1023 134