Docket No. 50-336

Attachment

Millstone Nuclear Power Station, Unit No. 2
Inservice Inspection and Testing Program

June, 1985

MILLSTONE NUCLEAR POWER STATION,

IN-SERVICE INSPECTION AND TESTING PROGRAM

INDEX

Section Number	Title
1	Establishment of In-Service Inspection Criteria
2	Boundary Diagrams
3	In-Service Inspection Program Class 1 Components
4	In-Service Inspection Program Class 2 Components
5	In-Service Inspection Program Class 3 Components
6	Category IWF Component Supports
7	Operational Readiness Testing for Pumps
8	Operational Readiness Testing for Valves
9	System Pressure Tests

Section 1

Establishment of In-Service Inspection Criteria

Millstone Nuclear Power Station

Unit 2

Establishment of In-Service Inspection Criteria

Revisions to 10CFR50.55a(g) set forth the inspection requirements for nuclear power plant components by referencing the ASME Boiler and Pressure Vessel Code, Section XI, "Rules for In-Service Inspection of Nuclear Power Plant Components." Applicability of Code Addenda depends on the facilities' commercial operation date and the effective amendment to paragraph (b) of 50.55a.

The commercial operation date for Millstone Unit 2 was December 26, 1975. The first ten-year interval based on the 1974 Edition of ASME Section XI, including the 1975 Summer Addenda, will end on December 26, 1985. Accordingly, the second ten-year interval will be based on the 1980 Edition of ASME Section XI with Addenda up to and including the Winter 1981 Addenda.

The in-service inspection and testing programs outlined in the attached tabulations have been developed as a result of a design review in accordance with this later Code Edition and Addenda. The extent of examination of Class 1 and 2 pipe welds will remain as is directed by 10CFR50.55a(b)2ii for Class 1 welds and 10CFR50.55a(b)2iv for Class 2 welds.

The methods, procedures, standards for evaluation, repairs, and replacements will initially be determined by the requirements of the 1980 Edition of Section XI of the ASME Boiler and Pressure Vessel Code up to and including the winter 1981 Addenda. Northeast Nuclear Energy Company (NNECO) may elect to update these methods, procedures, standards for evaluation, repairs, and replacements to the requirements of later editions and addenda of the ASME Section XI Code, as referenced in 10CFR50.

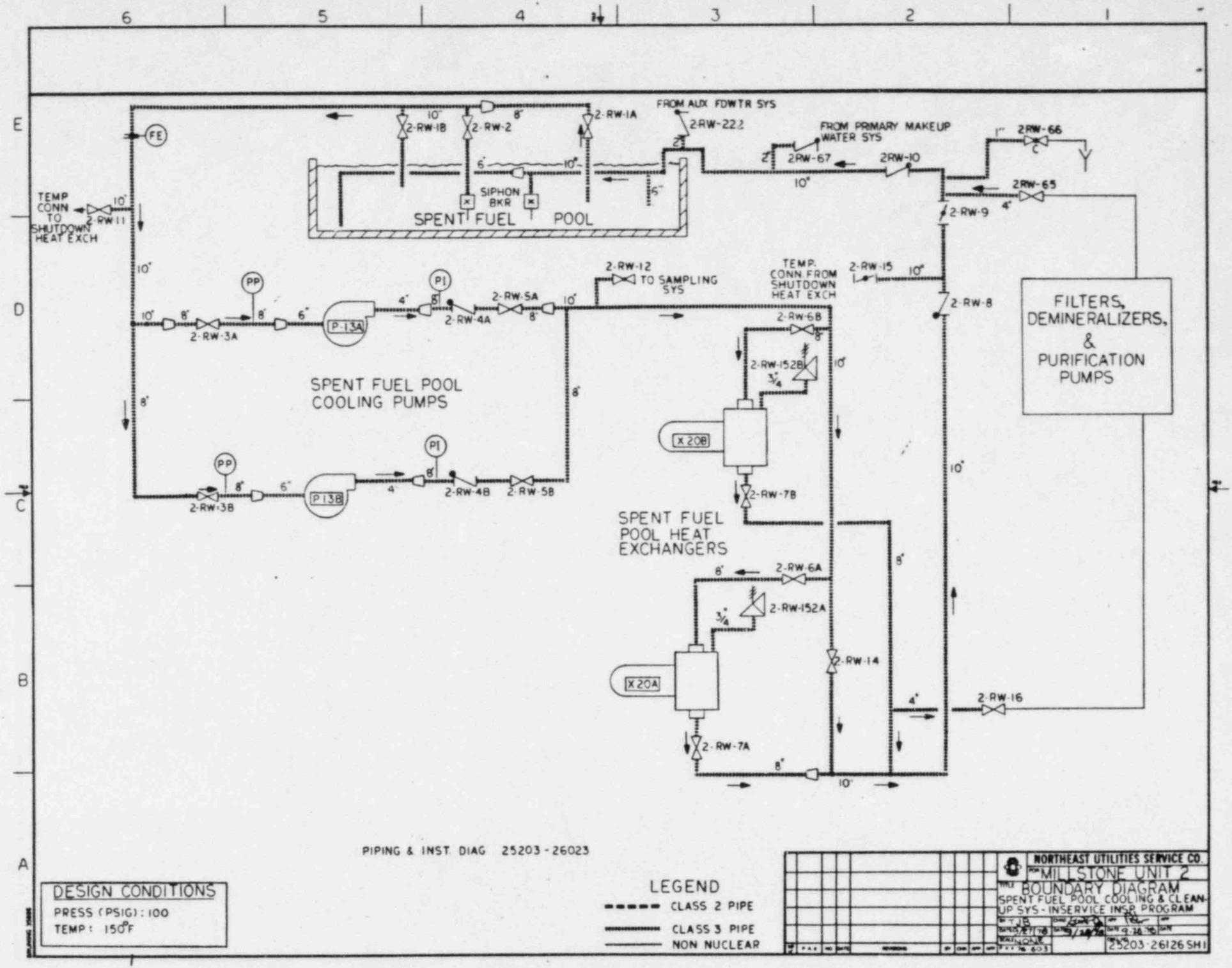
It should be noted that Millstone Unit 2 was designed and partially constructed prior to the adoption of the ASME Code. As a result, certain examinations stipulated by the Code cannot be performed completely, since plant design does not permit direct access to portions of some examination areas. Relief from the inspection requirements of Subsection IWB has been requested where those inspection requirements have been determined to be impractical. Where relief was requested, specific information has been provided which identifies the applicable Code requirement, justification for the relief request, and the inspection method to be used as an alternate.

Radiation levels in certain areas or of certain components may be found to prohibit the access for operators or inspectors to perform the inspections or tests described in this program. If source strengths cannot be reduced and access is still restricted by considerations of compliance with the requirements of Regulatory Guides 8.8 and 8.10, relief will be requested from the specific Section XI Code requirements, and alternative examination or test requirements will be proposed.

In the event that repairs or replacement of pressure-retaining components are required, IWA-4000 (Repair Procedures) and IWA-7000 (Replacements) shall be followed. 10CFR50 permits the use of the latest approved edition and addenda of Section XI, provided that all related requirements are met.

Section 2

Boundary Diagrams

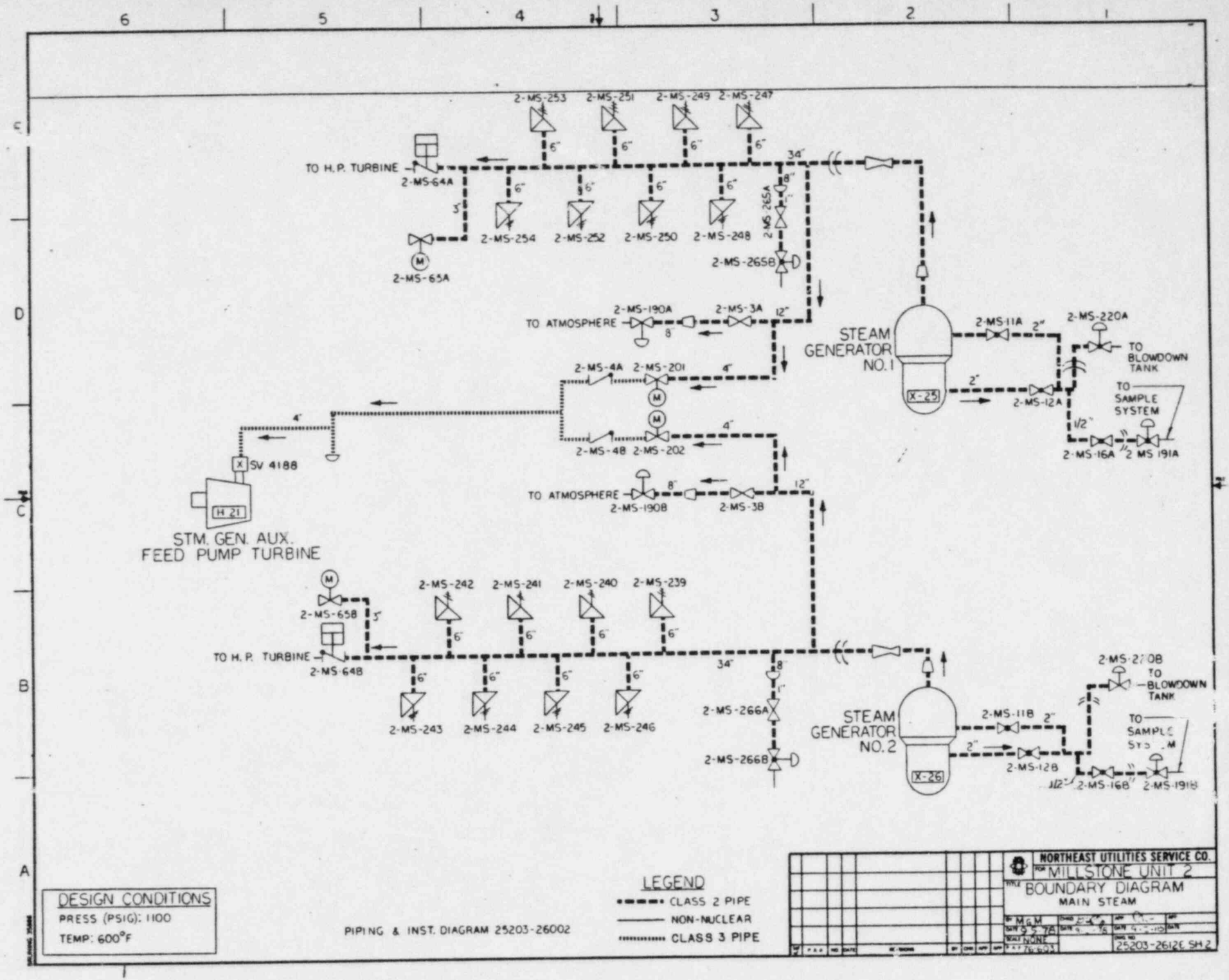


PIPING & INST. DIAG 25203-26023

DESIGN CONDITIONS
PRESS (PSIG): 100
TEMP: 150°F

LEGEND
CLASS 2 PIPE
CLASS 3 PIPE
NON NUCLEAR

NORTHEAST UTILITIES SERVICE CO.
MILLSTONE UNIT 2
BOUNDARY DIAGRAM
SPENT FUEL POOL COOLING & CLEAN-UP SYS - INSERVICE INSP. PROGRAM
25203-26126 SH1

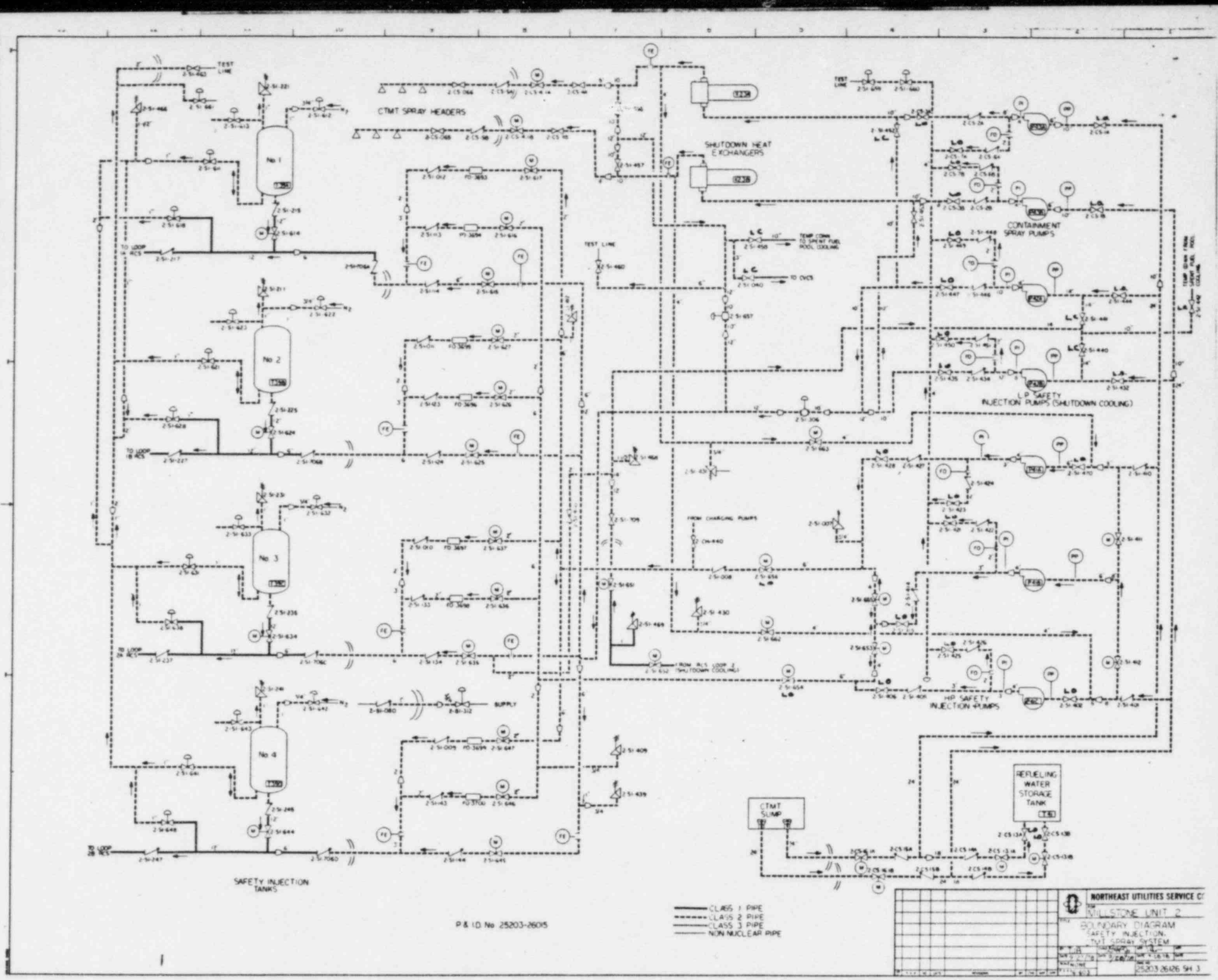


DESIGN CONDITIONS
PRESS (PSIG): 1100
TEMP: 600°F

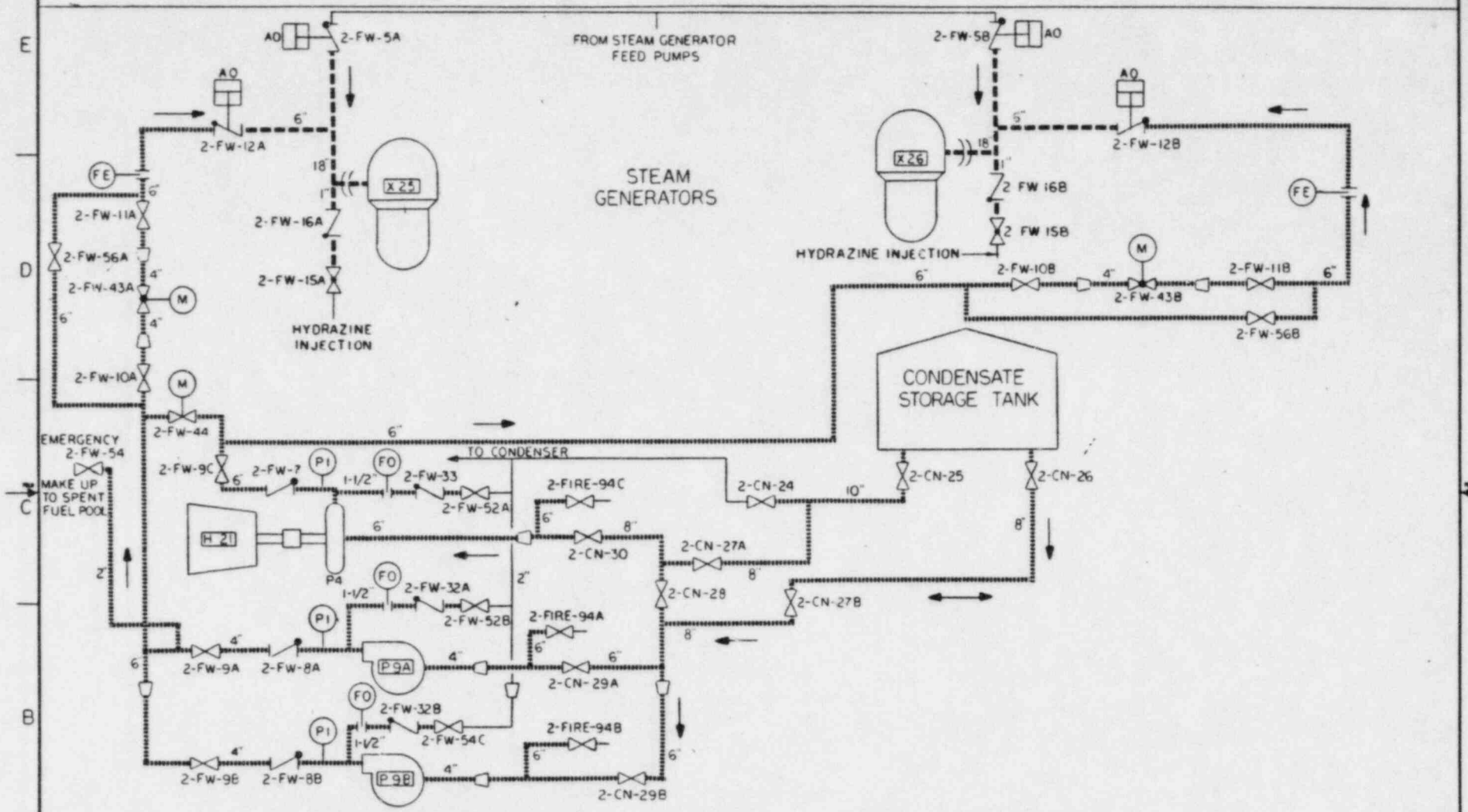
PIPING & INST. DIAGRAM 25203-26002

LEGEND
CLASS 2 PIPE
NON-NUCLEAR
CLASS 3 PIPE

NORTHEAST UTILITIES SERVICE CO.
FOR MILLSTONE UNIT 2
BOUNDARY DIAGRAM
MAIN STEAM
DRAWN M.G.M
SCALE NONE
DWG NO. 25203-26128 SH 2



P & I D No 25203-26015



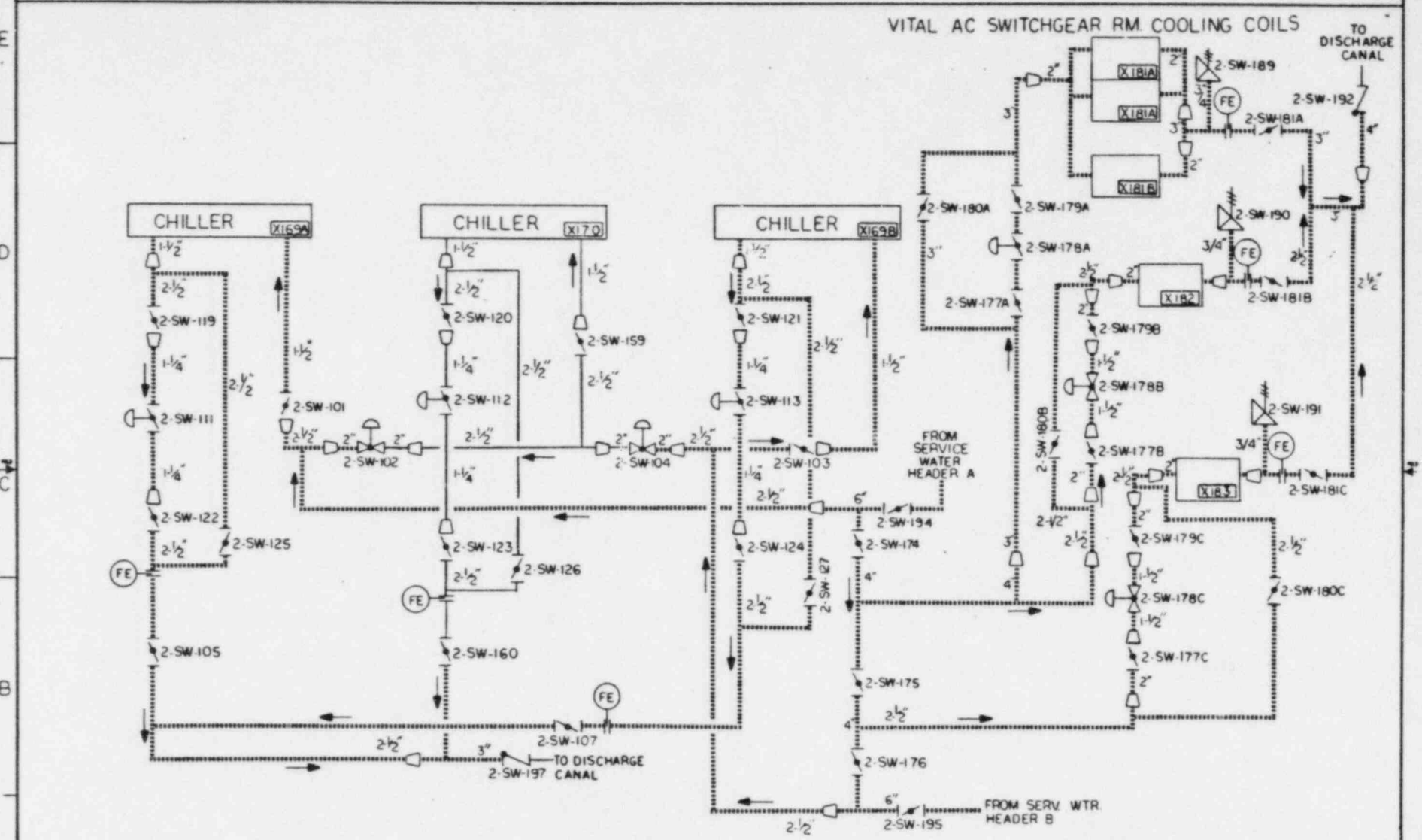
STM. GENERATOR AUXILIARY FEED PUMPS

DESIGN CONDITIONS		
LOCATION	PRESS PSIG	TEMP
FROM SGF PUMPS & REGULATING VALVES TO STEAM GEN.	1600	600
CST TO AUX FEED PUMP SUCTION	50	100
AUX FEED PUMPS DISCH TO REG. VALVES 2 FW 43A,B INCL BY PASS	1600	100

PIPING & INST. DIAG 25203-26005

LEGEND
- CLASS 2 PIPE
- CLASS 3 PIPE
- NON-NUCLEAR

NORTHEAST UTILITIES SERVICE CO.
FOR MILLSTONE UNIT 2
TITLE BOUNDARY DIAGRAM
CONDENSATE & FEEDWATER SYSTEM
INSERVICE INSP PROGRAM
BY M&M DATE 5-78
SCALE NONE
DWG NO 25203 26126 SH 4

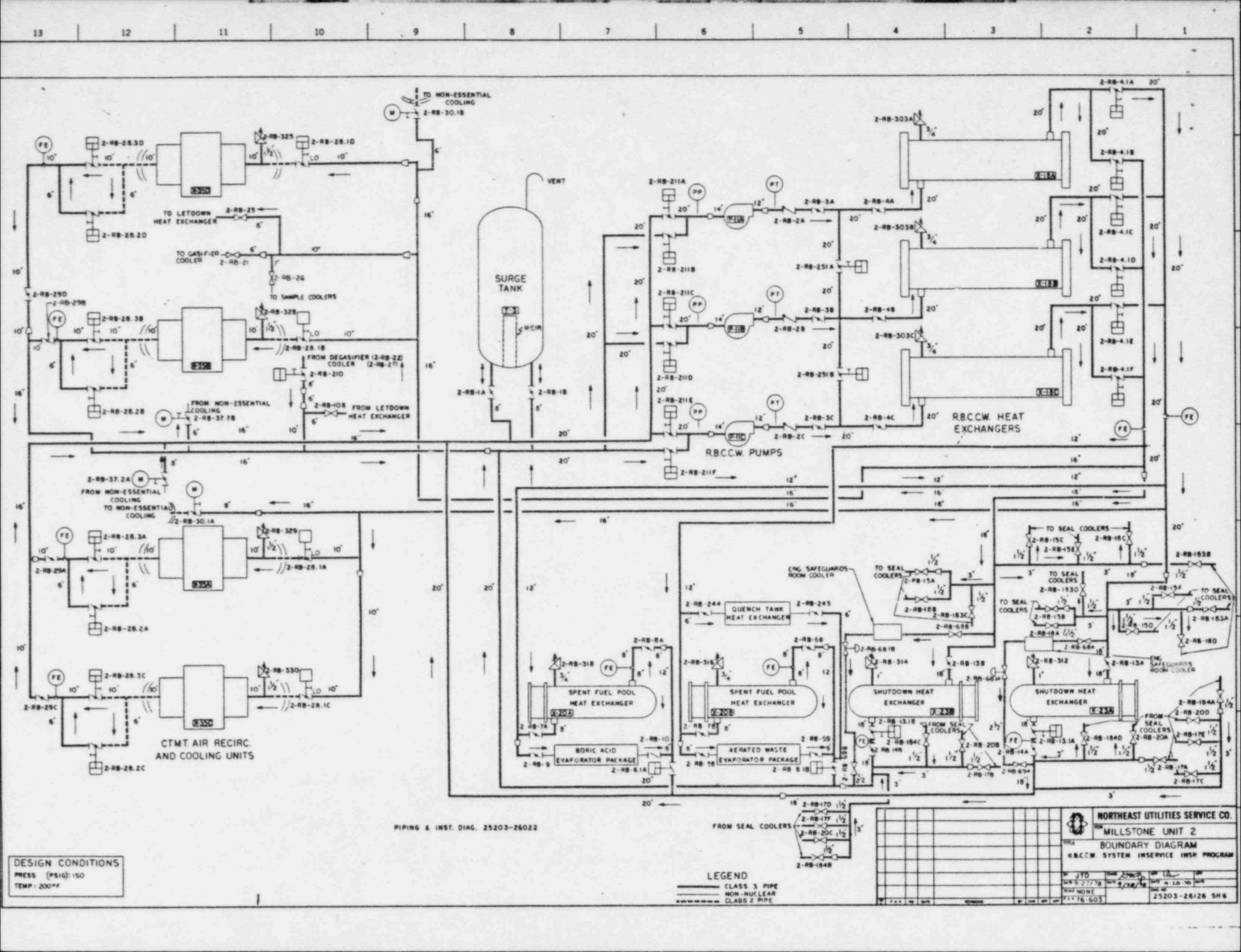


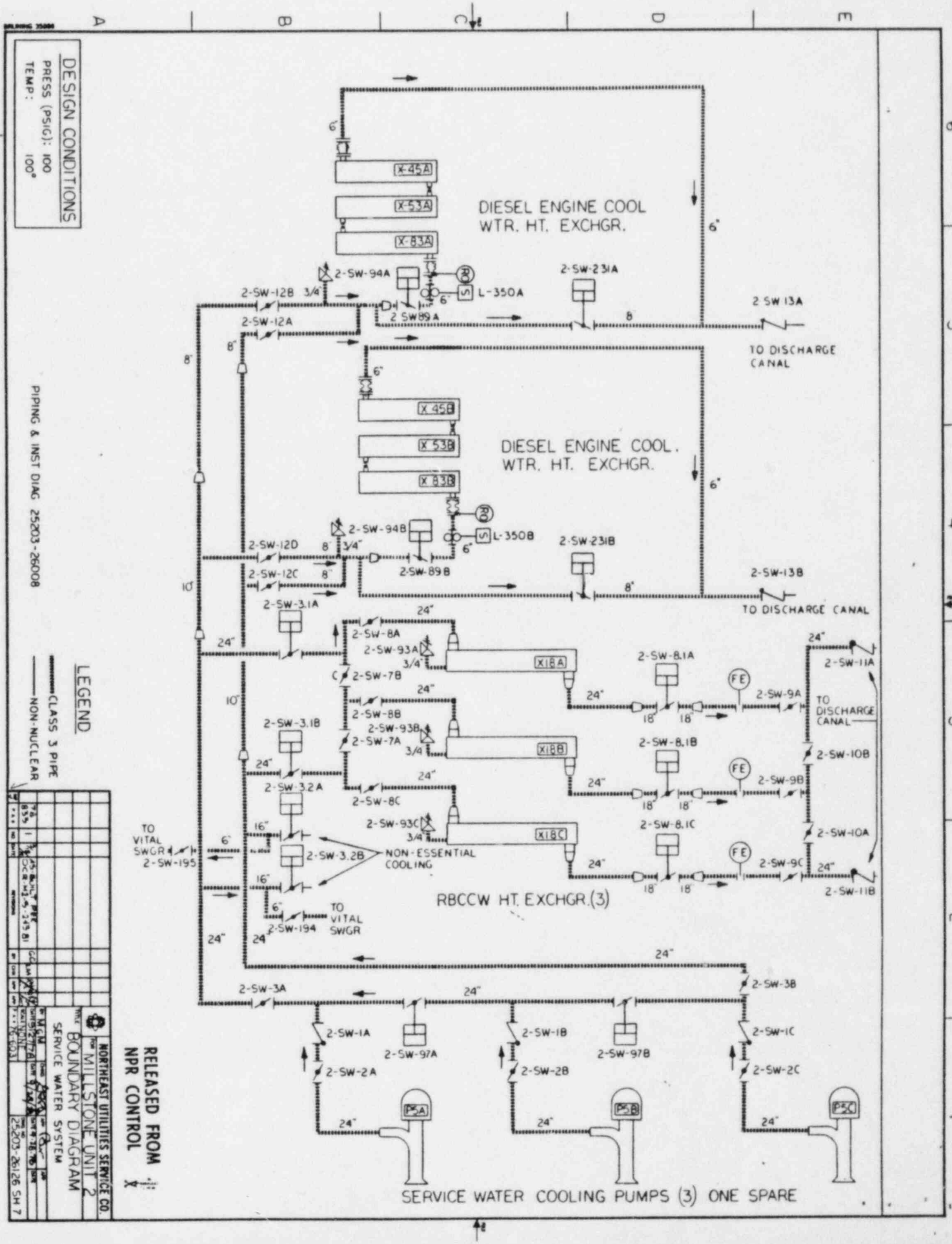
PIPING & INSTRUMENTATION DIAGRAM 25203-26027 SH2

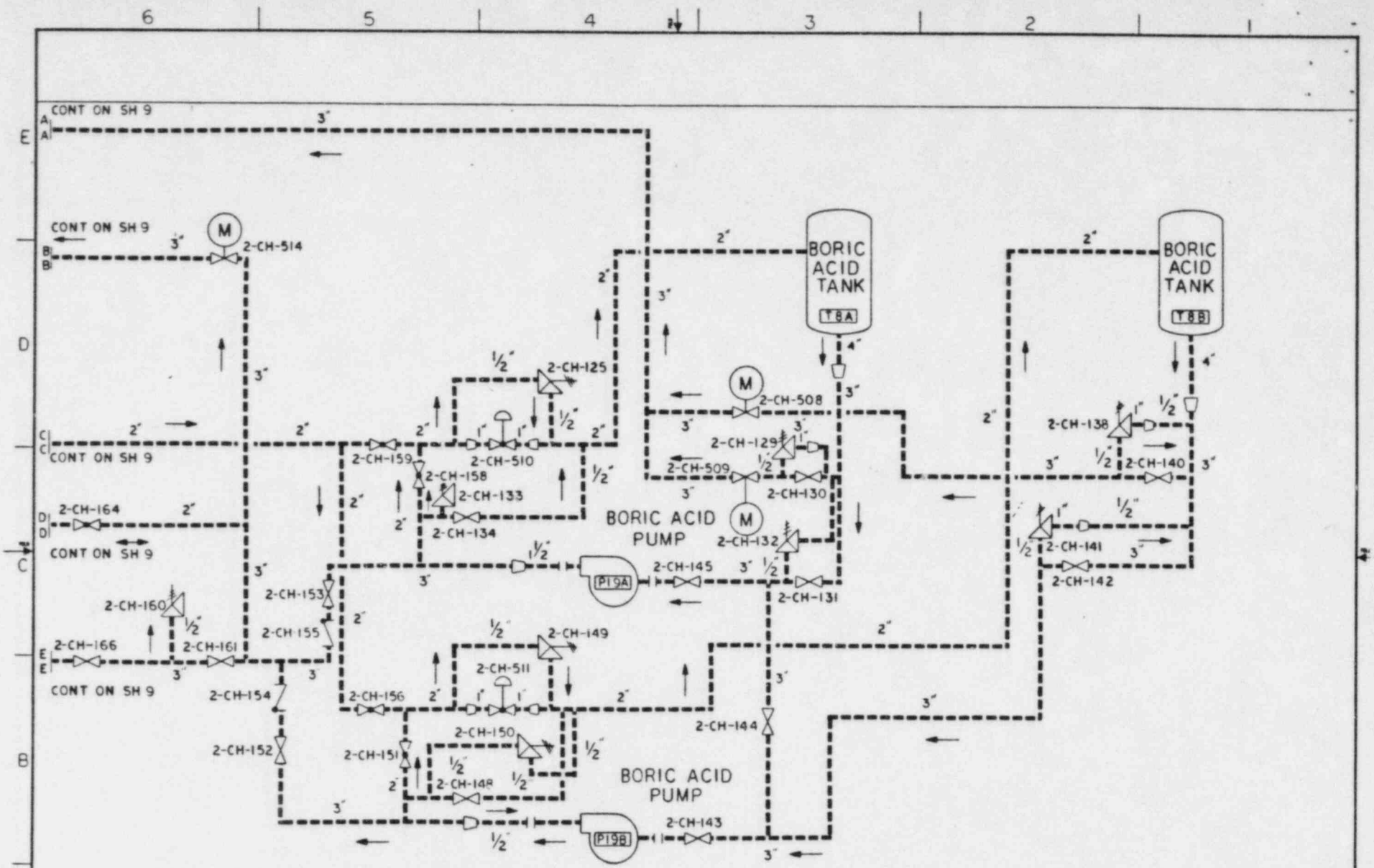
DESIGN CONDITIONS
PRESS.(PSIG): 100
TEMP: 100° F

LEGEND
CLASS 3 PIPE
NON NUCLEAR PIPE

NORTHEAST UTILITIES SERVICE CO.
MILLSTONE UNIT 2
BOUNDARY DIAGRAM
SERVICE WATER TO CHILLED WATER SYSTEM
25203-2626 SH.5


TO NON-ESSENTIAL COOLING
2-RB-30.1B
2-RB-28.3D
2-RB-325
2-RB-28.1D
E-35D
TO LETDOWN HEAT EXCHANGER
2-RB-25
2-RB-28.2D
TO GASIFIER COOLER
2-RB-21
2-RB-26
TO SAMPLE COOLERS
2-RB-29D
2-RB-29B
2-RB-28.3B
2-RB-328
E-35B
2-RB-28.1B
FROM DEGASIFIER (2-RB-22) COOLER (2-RB-27)
2-RB-210
2-RB-28.2B
FROM NON-ESSENTIAL COOLING
2-RB-37.2B
2-RB-108
FROM LETDOWN HEAT EXCHANGER
VENT
SURGE TANK
5' WEIR
2-RB-1A
2-RB-1B
2-RB-211A
2-RB-211B
2-RB-211C
2-RB-211D
2-RB-211E
2-RB-211F
P-11A
P-11B
P-11C
2-RB-2A
2-RB-2B
2-RB-2C
2-RB-3A
2-RB-3B
2-RB-3C
2-RB-4A
2-RB-4B
2-RB-4C
2-RB-251A
2-RB-251B
2-RB-303A
2-RB-303B
2-RB-303C
R.B.C.C.W. PUMPS
R.B.C.C.W. HEAT EXCHANGERS
2-RB-4.1A
2-RB-4.1B
2-RB-4.1C
2-RB-4.1D
2-RB-4.1E
2-RB-4.1F
X-81A
X-81B
X-81C
2-RB-37.2A
FROM NON-ESSENTIAL COOLING
TO NON-ESSENTIAL COOLING
2-RB-30.1A
2-RB-28.3A
2-RB-329
E-35A
2-RB-28.1A
2-RB-28.2A
2-RB-28.3C
2-RB-330
E-35C
2-RB-28.1C
2-RB-28.2C
CTMT. AIR RECIRC. AND COOLING UNITS
ENG. SAFEGUARDS ROOM COOLER
TO SEAL COOLERS
2-RB-15A
2-RB-15B
2-RB-15C
2-RB-16A
2-RB-16B
2-RB-16C
2-RB-15D
2-RB-15E
2-RB-15F
2-RB-158
2-RB-150
2-RB-183A
2-RB-183B
2-RB-180
2-RB-244
QUENCH TANK HEAT EXCHANGER
2-RB-245
2-RB-8A
2-RB-318
SPENT FUEL POOL HEAT EXCHANGER
E-20A
2-RB-7A
2-RB-10
BORIC ACID EVAPORATOR PACKAGE
2-RB-9
2-RB-8.1A
2-RB-58
2-RB-316
E-20B
2-RB-7B
2-RB-59
AERATED WASTE EVAPORATOR PACKAGE
2-RB-58
2-RB-8.1B
2-RB-314
2-RB-138
SHUTDOWN HEAT EXCHANGER
E-23B
2-RB-13.1B
2-RB-184C
2-RB-14B
2-RB-208
2-RB-312
2-RB-13A
E-23A
2-RB-13.1A
2-RB-184D
2-RB-14A
2-RB-20A
2-RB-184A
2-RB-200
2-RB-17E
2-RB-17A
2-RB-17C
2-RB-17D
2-RB-17F
2-RB-20C
2-RB-184B
FROM SEAL COOLERS
PIPING & INST. DIAG. 25203-26022
LEGEND
CLASS 3 PIPE
NON-NUCLEAR
CLASS 2 PIPE
DESIGN CONDITIONS
PRESS (PSIG): 150
TEMP: 200°F
NORTHEAST UTILITIES SERVICE CO.
MILLSTONE UNIT 2
BOUNDARY DIAGRAM
R.B.C.C.W. SYSTEM INSERVICE INSP. PROGRAM
25203-26126 SH 6


DESIGN CONDITIONS
PRESS (PSIG): 100
TEMP: 100°
PIPING & INST DIAG 25203-26008
LEGEND
CLASS 3 PIPE
NON-NUCLEAR
X-45A
X-53A
X-83A
DIESEL ENGINE COOL WTR. HT. EXCHGR.
2-SW-94A
L-350A
2-SW-89A
2-SW-231A
2-SW-13A
TO DISCHARGE CANAL
2-SW-12B
2-SW-12A
X-45B
X-53B
X-83B
DIESEL ENGINE COOL. WTR. HT. EXCHGR.
2-SW-94B
L-350B
2-SW-89B
2-SW-231B
2-SW-13B
TO DISCHARGE CANAL
2-SW-12D
2-SW-12C
2-SW-3.1A
2-SW-8A
2-SW-93A
2-SW-7B
X18A
2-SW-8.1A
2-SW-9A
2-SW-11A
TO DISCHARGE CANAL
2-SW-10B
2-SW-8B
2-SW-93B
2-SW-7A
X18B
2-SW-8.1B
2-SW-9B
2-SW-3.1B
2-SW-3.2A
2-SW-8C
2-SW-93C
X18C
2-SW-8.1C
2-SW-9C
2-SW-10A
2-SW-11B
TO VITAL SWGR 2-SW-195
2-SW-3.2B
NON-ESSENTIAL COOLING
RBCCW HT. EXCHGR.(3)
TO VITAL SWGR
2-SW-194
2-SW-3A
2-SW-3B
2-SW-1A
2-SW-97A
2-SW-1B
2-SW-97B
2-SW-1C
2-SW-2A
2-SW-2B
2-SW-2C
P52A
P52B
P52C
SERVICE WATER COOLING PUMPS (3) ONE SPARE
RELEASED FROM NPR CONTROL
NORTHEAST UTILITIES SERVICE CO.
MILLSTONE UNIT 2
BOUNDARY DIAGRAM
SERVICE WATER SYSTEM
25203-26126 SH 7



PIPING & INST. DIAG. 25203-26017

DESIGN CONDITIONS

PRESS (PSIG): 150

TEMP: 250°F

LEGEND

CLASS 2 PIPE

NORTHEAST UTILITIES SERVICE CO.

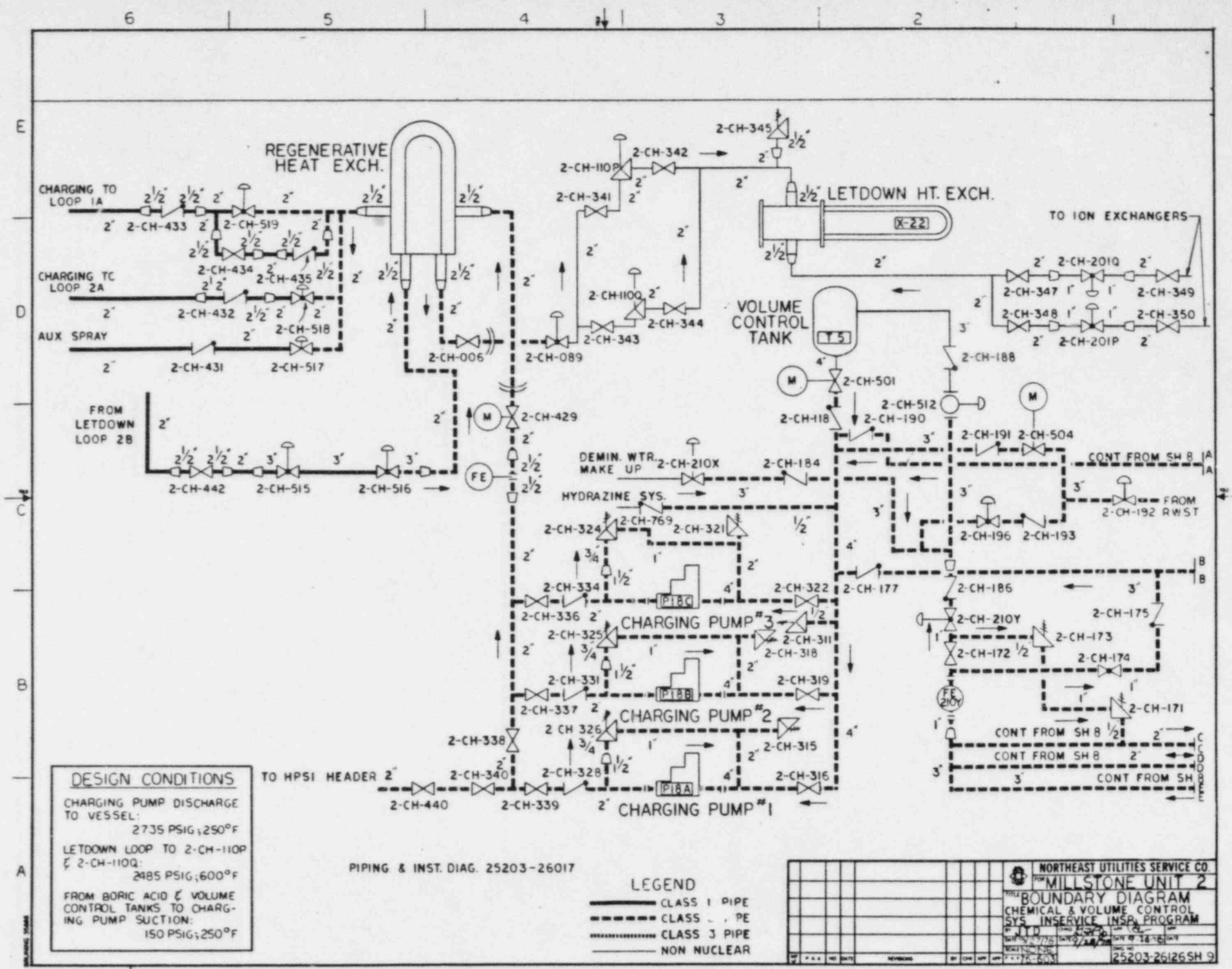
MILLSTONE UNIT 2

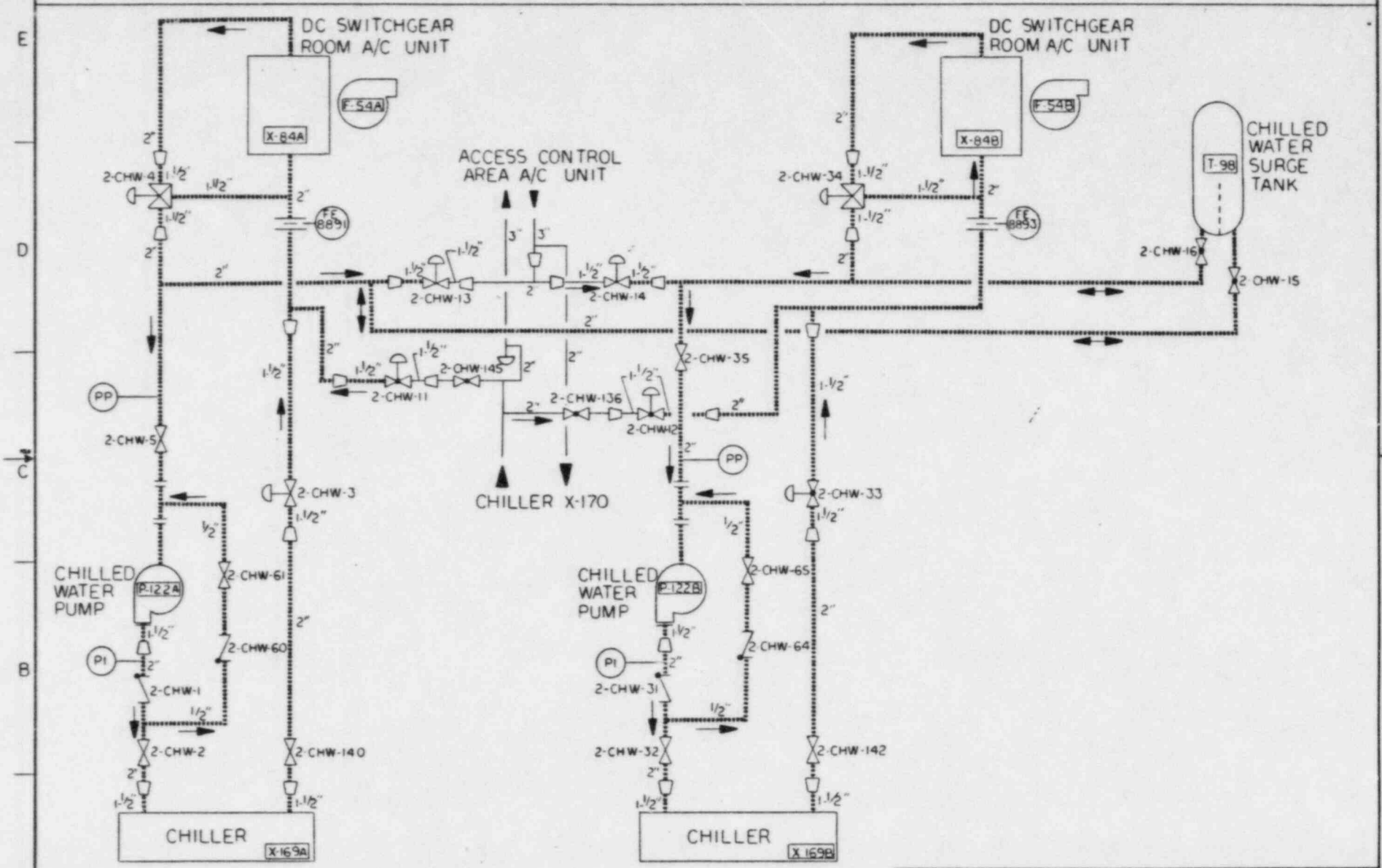
BOUNDARY DIAGRAM

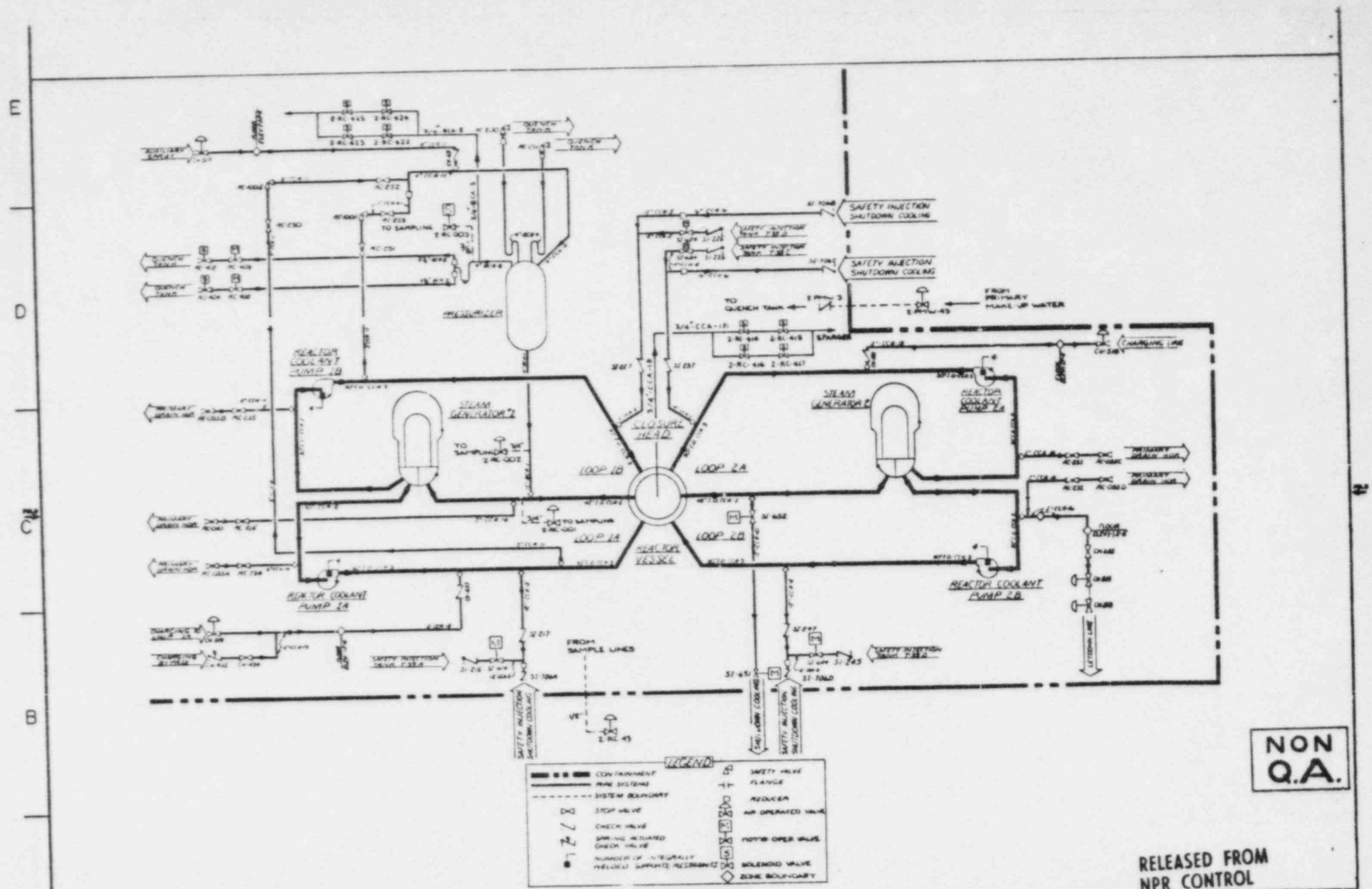
CHEMICAL & VOLUME CONTROL SYS. INSERVICE INSP PROGRAM

NTD

25203-26126 SH 8


REGENERATIVE HEAT EXCH.
CHARGING TO LOOP 1A
CHARGING TO LOOP 2A
AUX SPRAY
FROM LETDOWN LOOP 2B
2-CH-433
2-CH-434
2-CH-435
2-CH-432
2-CH-518
2-CH-431
2-CH-517
2-CH-006
2-CH-089
2-CH-429
2-CH-442
2-CH-515
2-CH-516
2-CH-345
2-CH-342
2-CH-110P
2-CH-341
2-CH-1100
2-CH-344
2-CH-343
LETDOWN HT. EXCH.
X-22
TO ION EXCHANGERS
2-CH-201Q
2-CH-347
2-CH-349
2-CH-348
2-CH-350
2-CH-201P
VOLUME CONTROL TANK
T5
2-CH-501
2-CH-188
2-CH-512
2-CH-118
2-CH-190
2-CH-191
2-CH-504
DEMIN. WTR. MAKE UP
2-CH-210X
2-CH-184
HYDRAZINE SYS.
CONT FROM SH 8
FROM 2-CH-192 RWST
2-CH-196
2-CH-193
2-CH-769
2-CH-321
2-CH-324
2-CH-334
2-CH-322
2-CH-177
2-CH-186
2-CH-336
CHARGING PUMP #3
2-CH-325
2-CH-311
2-CH-318
2-CH-210Y
2-CH-175
2-CH-173
2-CH-172
2-CH-174
2-CH-331
2-CH-319
2-CH-337
CHARGING PUMP #2
2-CH-326
2-CH-315
2-CH-171
FE 210Y
2-CH-338
2-CH-340
2-CH-328
2-CH-316
2-CH-440
2-CH-339
CHARGING PUMP #1
TO HPSI HEADER 2"
P18C
P18B
P18A
CONT FROM SH 8
CONT FROM SH
DESIGN CONDITIONS
CHARGING PUMP DISCHARGE TO VESSEL:
2735 PSIG; 250°F
LETDOWN LOOP TO 2-CH-110P & 2-CH-110Q:
2485 PSIG; 600°F
FROM BORIC ACID & VOLUME CONTROL TANKS TO CHARGING PUMP SUCTION:
150 PSIG; 250°F
PIPING & INST. DIAG. 25203-26017
LEGEND
CLASS 1 PIPE
CLASS 2 PIPE
CLASS 3 PIPE
NON NUCLEAR
NORTHEAST UTILITIES SERVICE CO.
MILLSTONE UNIT 2
BOUNDARY DIAGRAM
CHEMICAL & VOLUME CONTROL SYS INSERVICE INSP. PROGRAM
25203-26126 SH 9


DC SWITCHGEAR ROOM A/C UNIT
X-84A
F-54A
DC SWITCHGEAR ROOM A/C UNIT
X-84B
F-54B
CHILLED WATER SURGE TANK
T-98
ACCESS CONTROL AREA A/C UNIT
FE 8891
FE 8893
2-CHW-4
2-CHW-34
2-CHW-16
2-CHW-15
2-CHW-13
2-CHW-14
2-CHW-11
2-CHW-145
2-CHW-136
2-CHW-12
2-CHW-35
2-CHW-5
2-CHW-3
2-CHW-33
CHILLER X-170
PP
CHILLED WATER PUMP
P-122A
P-122B
P1
2-CHW-61
2-CHW-60
2-CHW-65
2-CHW-64
2-CHW-1
2-CHW-31
2-CHW-2
2-CHW-32
2-CHW-140
2-CHW-142
CHILLER
X-169A
X-169B
PIPING & INST. DIAGRAM 25203-26027 SH. 2
LEGEND
CLASS 3 PIPE
NON-NUCLEAR PIPE
NORTHEAST UTILITIES SERVICE CO.
MILLSTONE UNIT 2
BOUNDARY DIAGRAM
CHILLED WTR FOR SWITCHGEAR ROOM A/C UNITS
NONE
25203-26126SH10



NON Q.A.

RELEASED FROM NPR CONTROL

NORTHEAST UTILITIES SERVICE CO.
FOR MILLSTONE UNIT 2
TITLE BOUNDARY DIAGRAM
REACTOR COOLANT SYSTEM
INSERVICE INSP. PROGRAM

N/A 1 AS-BUILT PER NPGA-M2-S-84-85

25203 26126 SH 11

Section 3

In-Service Inspection Program

Class 1 Components

Millstone Unit 2

In-Service Inspection Program

Class 1 Components

The attached schedule and tabulation of inspections of components and systems of the reactor coolant and associated auxiliary systems of the Millstone Unit 2 Plant have been compiled to fulfill the second ten-year inspection requirements of the 1980 Edition of Section XI of the ASME Boiler and Pressure Vessel Code up to and including Winter 1981 Addenda.

Class 1 piping systems and components were designed and fabricated before the examination requirements of Section XI of the code were formalized. The arrangements and details of the piping systems and components are such that some examinations are limited due to geometric configuration or accessibility. Typically, these limitations exist at fitting-to-fitting welds, such as elbow-to-tee, elbow-to-valve, valve-to-reducer, etc., where geometry or surface conditions preclude ultrasonic coupling or access for the full required scan length. These limitations exist to a lesser degree at pipe-to-fitting welds where examination can sometimes only be fully performed from the pipe side. Welds having such restrictions will be examined to the extent practical. Where no meaningful examination can be performed, specific relief will be requested as these areas are identified.

In instances where the location of pipe supports or hangers restrict the access available for the examination of pipe welds, the support will be removed unless removal would overstress the piping system. The examination will be performed to the extent practical with the support in place. Where no meaningful examination can be performed, specific relief will be requested as these areas are identified.

Reactor coolant pump motor flywheels will be examined in accordance with the provisions of Regulatory Guide 1.14.

Inspections of the Millstone Unit 2 reactor pressure vessel will be conducted from the internal surfaces using automated tooling. The inspections will comply with Regulatory Guide 1.150.

Hydraulic and mechanical snubber inspections, including functional testing, will be conducted in accordance with the augmented surveillance requirements of technical specifications and are not included in this program.

Some welds in CRD housings (Category B-O) are recessed in the reactor vessel head and are inaccessible for examination. Accessible welds will be examined as required.

MILLSTONE POINT UNIT #2
IN-SERVICE INSPECTION PROGRAM (IWB-2412)

ASME CODE CLASS 1 COMPONENTS

Table IWB-2500-1 Item No.	Examination Category	Component or Area to be Examined	Method	ASME Section XI Compliance (Notes)
		REACTOR VESSEL		
B1.10	B-A	Shell welds		
B1.11	B-A	Circumferential welds	Volumetric	In Compliance (1, 2)
B1.12	B-A	Longitudinal welds	Volumetric	In Compliance
B1.20	B-A	Head welds		
B1.21	B-A	Circumferential welds	Volumetric	In Compliance
B1.22	B-A	Meridional welds	Volumetric	In Compliance
B1.30	B-A	Shell to flange weld	Volumetric	In Compliance
B1.40	B-A	Head to flange weld	Volumetric	In Compliance
B3.90	B-D	Nozzle to vessel welds	Volumetric	In Compliance (3)
B3.100	B-D	Nozzle inside radius section	Volumetric	In Compliance
B4.10	B-E	Partial penetration welds	Visual	In Compliance
B4.11	B-E	Vessel nozzles		
B4.12	B-E	Control rod drive nozzles	Visual	In Compliance
B4.13	B-E	Instrumentation nozzles	Visual	In Compliance
B5.10	B-F	Nozzle to safe end welds greater than 4 in.		(4)
B5.11	B-F	Nozzle to safe end welds 4 in. and less		(4)
B5.12	B-F	Nozzle to safe end socket welds		(4)
B6.10	B-G-1	Closure head nuts	Surface	In Compliance
B6.20	B-G-1	Closure studs, in place	Volumetric	In Compliance
B6.30	B-G-1	Closure studs, when removed	Volumetric and Surface	In Compliance
B6.40	B-G-1	Threads in flange	Volumetric	In Compliance
B6.50	B-G-1	Closure washers, bushings	Visual	In Compliance
B7.10	B-G-2	Bolts, studs, and nuts, 2 in. and less	Visual	In Compliance
B7.80	B-G-2	CRD housing bolts, studs, and nuts		(4)
B8.10	B-H	Integrally welded attachments		(5)
B13.10	B-N-1	Vessel interior	Visual	In Compliance
B13.20	B-N-2	Interior attachments (BWR)		Not Applicable
B13.21	B-N-2	Core support structure (BWR)		Not Applicable
B13.30	B-N-3	Core support structure	Visual	In Compliance
B14.10	B-O	Welds in CRD housings	Volumetric or Surface	In Compliance (9)
B15.10	B-P	System leakage test	Visual	In Compliance
B15.11	B-P	System hydro test	Visual	In Compliance

MILLSTONE POINT UNIT #2
IN-SERVICE INSPECTION PROGRAM (IWB-2412)

ASME CODE CLASS 1 COMPONENTS

Table IWB-2500-1 Item No.	Examination Category	Component or Area to be Examined	Method	ASME Section XI Compliance (Notes)
		PRESSURIZER		
B2.10	B-B	Shell to head welds		
B2.11	B-B	Circumferential welds	Volumetric	In Compliance
B2.12	B-B	Longitudinal welds	Volumetric	In Compliance
B2.20	B-B	Head welds		
B2.21	B-B	Circumferential welds		(4)
B2.22	B-B	Meridional welds		(4)
B3.110	B-D	Nozzle to vessel welds	Volumetric	In Compliance
B3.120	B-D	Nozzle inside radius section	Volumetric	In Compliance
B4.20	B-E	Heater penetration nozzles	Visual	In Compliance
B5.20	B-F	Nozzle to safe end welds over 4 in.	Volumetric and Surface	In Compliance
B5.21	B-F	Nozzle to safe end welds 4 in. and less		(4)
B5.22	B-F	Nozzle to safe end socket welds		(4)
B6.60	B-G-1	Bolts and studs over 2 in.		(4)
B6.70	B-G-1	Flange surface		(4)
B6.80	B-G-1	Nuts, bushings, and washers		(4)
B7.20	B-G-2	Bolts, studs, and nuts	Visual	In Compliance
B8.20	B-H	Integrally welded attachments	Volumetric or Surface	In Compliance
B15.20	B-P	System leakage test	Visual	In Compliance
B15.21	B-P	System hydrostatic test	Visual	In Compliance
		STEAM GENERATORS (Primary Side)		
B2.30	B-B	Head welds		
B2.31	B-B	Circumferential	Volumetric	In Compliance
B2.32	B-B	Meridional	Volumetric	In Compliance
B2.40	B-B	Tubesheet to head weld	Volumetric	In Compliance
B3.130	B-D	Nozzle to vessel welds	Volumetric	In Compliance
B3.140	B-D	Nozzle inside radius section	Volumetric	In Compliance
B4.13	B-E	Instrumentation nozzles	Visual	In Compliance

MILLSTONE POINT UNIT #2
IN-SERVICE INSPECTION PROGRAM (IWB-2412)

ASME CODE CLASS 1 COMPONENTS

Table IWB-2500-1 Item No.	Examination Category	Component or Area to be Examined	Method	ASME Section XI Compliance (Notes)
B5.30	B-F	Nozzle to safe end welds over 4 in.		(4)
B5.31	B-F	Nozzle to safe end welds 4 in. and less		(4)
B5.32	B-F	Nozzle to safe end socket welds		(4)
B6.90	B-G-1	Bolts and studs over 2 in.		(4)
B6.100	B-G-1	Flange surfaces		(4)
B6.110	B-G-1	Nuts, bushings, and washers		(4)
B7.30	B-G-2	Bolts, studs, and nuts 2 in. and less	Visual	In Compliance
B8.30	B-H	Integrally welded attachments	Surface	In Compliance
B15.30	B-P	System leakage test	Visual	In Compliance
B15.31	B-P	System hydrostatic test	Visual	In Compliance
B16.10	B-Q	Steam generators tubing (straight)		(4)
B16.20	B-Q	Steam generators tubing (U-tube)	(Examined per technical specifications)	In Compliance (6)
		PIPING PRESSURE BOUNDARY		(Note 8)
B5.50	B-F	Dissimilar metal welds - over 4 in.		In Compliance
B5.51	B-F	Dissimilar metal welds - 4 in. and less		In Compliance
B5.52	B-F	Dissimilar metal socket welds		(4)
B6.150	B-G-1	Bolts and studs - over 2 in.		(4)
B6.160	B-G-1	Flanges		(4)
B6.170	B-G-1	Nuts, bushings, and washers		(4)
B7.50	B-G-2	Bolts, studs, and nuts - 2 in. and less	Visual	In Compliance
B9.10	B-J	Piping 4 in. and greater		
B9.11	B-J	Circumferential butt welds	Volumetric and Surface	In Compliance
B9.12	B-J	Longitudinal welds	Volumetric and Surface	In Compliance
B9.20	B-J	Piping less than 4 in.		
B9.21	B-J	Circumferential butt welds	Surface	In Compliance
B9.22	B-J	Longitudinal welds		(4)
B9.30	B-J	Branch pipe connection welds		
B9.31	B-J	Branch piping 4 in. and greater	Volumetric and Surface	In Compliance
B9.32	B-J	Branch piping less than 4 in.	Surface	In Compliance
B9.40	B-J	Socket welds	Surface	In Compliance
B10.10	B-K-1	Integrally welded attachments		(4)
B15.50	B-P	System leakage test	Visual	In Compliance
B15.51	B-P	System hydrostatic test	Visual	In Compliance

MILLSTONE POINT UNIT #2
IN-SERVICE INSPECTION PROGRAM (IWB-2412)

ASME CODE CLASS 1 COMPONENTS

Table IWB-2500-1 Item No.	Examination Category	Component or Area to be Examined	Method	ASME Section XI Compliance (Notes)
		PUMPS		
B6.180	B-G-1	Bolts and studs - over 2 in.	Volumetric (Note 8)	In Compliance
B6.190	B-G-1	Flange surface, when removed	Visual	In Compliance
B6.200	B-G-1	Nuts, bushings, and washers	Visual	In Compliance
B7.60	B-G-2	Bolts, studs, and nuts	Visual	In Compliance
B10.20	B-K-1	Integrally welded supports	Surface	In Compliance
B12.10	B-L-1	Pump casing welds	Volumetric and Surface	In Compliance (7)
B12.20	B-L-2	Internal surface	Visual	(4)
B15.60	B-P	System leakage test	Visual	In Compliance
B15.61	B-P	System hydrostatic test	Visual	In Compliance
		VALVES		
B6.210	B-G-1	Bolts and studs - over 2 in.	Volumetric (Note 8)	(4)
B6.220	B-G-1	Flange surfaces	Visual	(4)
B6.230	B-G-1	Nuts, bushings, and washers	Visual	(4)
B7.70	B-G-2	Bolts, studs, and nuts - 2 in. and less	Visual	In Compliance
B10.30	B-K-1	Integrally welded attachments		(4)
B12.30	B-M-1	Valve body welds - less than 4 in.		(4)
B12.31	B-M-1	Valve body welds - 4 in. and greater		(4)
B12.40	B-H-2	Valve body internal surfaces - greater than 4 in.		(4)
B15.70	B-P	System leakage test	Visual	In Compliance
B15.71	B-P	System hydrostatic test	Visual	In Compliance

ASME CLASS 1 COMPONENT NOTES

1. There are limitations in access to Weld SC-2 as shown on Drawings 25203-29525 caused by the reactor vessel supports. This interference prevents volumetric examination of 19 percent of the weld. However, 81 percent of the weld is inspected using the volumetric examination technique.

2. Weld SC-1, shown on Drawings 25203-29525, is partially inaccessible because of reactor vessel supports. This interference prevents volumetric examination of 39 percent of the weld. However, 61 percent of the weld is inspected using the volumetric examination technique.

3. The lower 50 percent of Nozzles NS-2, NS-4, and NS-6 are inaccessible for volumetric examination of Category B-D nozzle-to-shell welds. These are the three nozzles that contain the integral Reactor Vessel support pads. Although some redesign of this area was accomplished during construction to provide for better inspectability, we must still request a waiver on the Code requirements for 100 percent examination of all nozzles during the inspection interval. As an alternate to volumetric examination, these areas will be monitored for leaks and inspected visually for signs of structural distress until an inspection method meeting Code requirements can be devised. Drawings 25203-29525 and Sketches SK-M97 and SK-M228 show the arrangements in the nozzle area. Nozzles NS-1, NS-3, and NS-5 are accessible and code examinations will be performed.

4. There are no items of this category at Millstone Unit 2.

5. The Reactor Vessel supports at Millstone Unit 2 are integral with three of the six nozzles and are excluded from this category by Table IWB-2500.

6. The steam generator tubing (U-tubes) is examined in accordance with the Millstone Unit No. 2 Plant Technical Specifications.

7. A Relief Request was granted from in-service volumetric examinations of the reactor coolant pump casing welds. By this relief, we are permitted to conduct alternative surface examinations (liquid penetrant) of the accessible RCP casing wleds, one pump per interval. Additionally, a visual examination of the accessible internal pressure boundary will be conducted when the pump is disassembled for maintenance.

8. As permitted by 10CFR50.55a(b)2(ii), the extent of Class I piping examinations will be determined by the requirements of Table IWB 2600, Category B-J, listed in the 1974 Edition, Summer 1975 Addenda of the ASME Code, Section XI.

9. Some of the CRD housing welds are inaccessible.

Section 4

In-Service Inspection Program

Class 2 Components

Millstone Unit 2

In-Service Inspection Program

Class 2 Components

The attached table provides a listing of Class 2 pressure-retaining components which are subject to the inspection requirements of Subsection IWC of Section XI of the ASME Boiler and Pressure Vessel Code.

These tabulations identify the components to be inspected, the applicable Code to which the component was built, and the method of examination. Relief from the inspection requirements of each subsection was requested in cases where these inspection requirements have been determined to be impractical. Where relief was requested, specific information is provided which identifies the applicable Code requirement, justification for the relief request, and the inspection method to be used as an alternative.

The extent of examinations of Class 2 pipe welds is determined by the requirements of Section XI in the 1974 Edition with Addenda through the Summer 1975 Addenda, as permitted by 10CFR50.55a(b)2iv.

MILLSTONE POINT UNIT #2
IN-SERVICE INSPECTION PROGRAM (IWB-2412)

ASME CODE CLASS 2 COMPONENTS

Table IWC-2500-1 Item No.	Examination Category	Component or Area to be Examined	Method	ASME Section XI Compliance (Notes)
		STEAM GENERATORS (Shell Side)		
C1.10	C-A	Shell circumferential welds	Volumetric	In Compliance
C1.20	C-A	Head circumferential welds	Volumetric	In Compliance
C1.30	C-A	Tubesheet-to-Shell weld	Volumetric	In Compliance
C2.10	C-B	Nozzle welds in vessels - 1/2 in. and less		(2)
C2.20	C-B	Nozzle welds in vessels - over 1/2 in.		(2)
C2.21	C-B	Nozzle to shell or head	Volumetric and Surface	In Compliance
C2.22	C-B	Nozzle inside radius section		
C3.10	C-C	Integrally welded attachments	Surface	In Compliance
C4.10	C-D	Bolts and studs over 2 in.		(2)
C7.10	C-H	System leakage test	Visual	In Compliance
C7.11	C-H	System hydrostatic test	Visual	In Compliance
		SHUTDOWN HEAT EXCHANGERS		
C1.10	C-A	Shell circumferential weld	Volumetric	In Compliance
C1.20	C-A	Head circumferential weld		(2)
C1.30	C-A	Tube sheet-to-shell weld	Volumetric	In Compliance
C2.10	C-B	Nozzle welds in vessels - 1/2 in. or less		(2)
C2.20	C-B	Nozzle welds in vessels - over 1/2 in.	Volumetric (Surface)	In Compliance
C2.21	C-B	Nozzle to shell or head welds		(2)
C2.22	C-B	Nozzle inside radius section		Not Applicable
C3.10	C-C	Integrally welded attachments	Surface	In Compliance
C4.10	C-D	Bolts and studs over 2 in.		(2)
C7.10	C-H	System leakage test	Visual	In Compliance
C7.11	C-H	System hydrostatic test	Visual	In Compliance

MILLSTONE POINT UNIT #2
IN-SERVICE INSPECTION PROGRAM (IWB-2412)

ASME CODE CLASS 2 COMPONENTS

Table IWC-2500-1 Item No.	Examination Category	Component or Area to be Examined	Method	ASME Section XI Compliance (Notes)
		PIPING		
C3.40	C-C	Integrally welded attachments		(2)
C4.20	C-D	Bolts and studs - over 2 in.		(2)
C5.10	C-F	Piping welds - 1/2 in. and less nominal thickness		
C5.11	C-F	Circumferential welds	Surface	In Compliance (1)
C5.12	C-F	Longitudinal welds	Surface	In Compliance (1)
C5.20	C-F	Piping welds - over 1/2 in. nominal thickness		
C5.21	C-F	Circumferential welds	Surface and Volumetric	In Compliance (1)
C5.22	C-F	Longitudinal welds	Surface and Volumetric	In Compliance (1)
C5.30	C-F	Pipe branch connections over 4 in. pipe size		
C5.31	C-F	Circumferential welds	Surface	In Compliance (1)
C5.32	C-F	Longitudinal welds		(2)
C7.20	C-H	System leakage tests	Visual	In Compliance
C7.21	C-H	System hydrostatic tests	Visual	In Compliance
		PUMPS		
C3.70	C-C	Integrally welded attachments		(2)
C4.30	C-D	Bolts and studs - over 2 in.		(2)
C6.10	C-G	Pump casing welds		(2)
C7.30	C-H	System leakage tests	Visual	In Compliance
C7.31	C-H	System hydrostatic tests	Visual	In Compliance
		VALVES		
C3.100	C-C	Integrally welded attachments		(2)
C4.40	C-D	Bolts and studs - over 2 in.		(2)
C6.20	C-G	Valve body welds		(2)
C7.40	C-H	System leakage tests	Visual	In Compliance
C7.41	C-H	System hydrostatic tests	Visual	In Compliance

ASME CLASS 2 COMPONENT NOTES

1. As permitted by 10CFR50.55a(b)2(iv), the extent of Class 2 piping examinations shall be determined by the requirements of paragraph IWC-1220, Table IWC-2520, Categories C-F and C-G, and paragraph IWC-2411 as listed in the 1974 Edition, Summer 1975 Addenda of the ASME Code, Section XI.

2. There are no items of this category at Millstone Unit 2.

Section 5

In-Service Inspection Program

Class 3 Components

Millstone Unit 2

In-Service Inspection Program

Class 3 Components

Class 3 components comprising the systems listed in Table 3 will be tested and examined in accordance with IWA-5000, IWD-5000, and IWD-2600, as modified in Table BCD-5000 "System Pressure Tests," by the expiration of each inspection interval.

The Class 3 components are in compliance with ASME Section XI with exceptions as noted in Table BCD-5000 (System Pressure Tests).

In addition, 100 percent of the components will be examined in accordance with IWA-5240 and IWD-2600 while in operation or during system in-service testing by the expiration of every one-third of each inspection interval.

Class 3 component pressure tests are listed under the section on pressure tests, Table BCD-5000.

MILLSTONE POINT UNIT #2
IN-SERVICE INSPECTION PROGRAM

ASME CODE CLASS 3 COMPONENTS

Table IWD-2500-1 Item No.	Examination Category	Component or Area to be Examined	Method	ASME Section XI Compliance (Notes)
		REACTOR BUILDING CLOSED COOLING WATER SYSTEM		
D1.10	D-A	System leakage test	Visual	In Compliance
D1.10	D-A	System hydrostatic test	Visual	In Compliance
D1.20	D-A	Integral attachments - supports		No Items
D1.30	D-A	Integral attachments - snubbers		No Items
D1.40	D-A	Integral attachments - spring type		No Items
D1.50	D-A	Integral attachments - constant load		No Items
D1.60	D-A	Integral attachments - shock absorbers		No Items
		AUXILIARY FEEDWATER		
D2.10	D-B	System leakage test	Visual	In Compliance
D2.10	D-B	System hydrostatic test	Visual	In Compliance
D2.20	D-B	Integral attachments - supports		No Items
D2.30	D-B	Integral attachments - snubbers		No Items
D2.40	D-B	Integral attachments - spring type		No Items
D2.50	D-B	Integral attachments - constant load		No Items
D2.60	D-B	Integral attachments - shock absorbers		No Items

MILLSTONE POINT UNIT #2
IN-SERVICE INSPECTION PROGRAM

ASME CODE CLASS 3 COMPONENTS

Table IWD-2500-1 Item No.	Examination Category	Component or Area to be Examined	Method	ASME Section XI Compliance (Notes)
		SERVICE WATER		
D2.10	D-B	System leakage test	Visual	In Compliance
D2.10	D-B	System hydrostatic test	Visual	In Compliance
D2.20	D-B	Integral attachments - supports		In Compliance
D2.30	D-B	Integral attachments - snubbers		In Compliance
D2.40	D-B	Integral attachments - spring type		In Compliance
D2.50	D-B	Integral attachments - constant load		In Compliance
D2.60	D-B	Integral attachments - shock absorbers		In Compliance
		SPENT FUEL POOL COOLING		
D3.10	D-C	System leakage test	Visual	In Compliance
D3.10	D-C	System hydrostatic test	Visual	In Compliance
D3.20	D-C	Integral attachments - supports		In Compliance
D3.30	D-C	Integral attachments - snubbers		In Compliance
D3.40	D-C	Integral attachments - spring type		In Compliance
D3.50	D-C	Integral attachments - constant load		In Compliance
D3.60	D-C	Integral attachments - shock absorbers		In Compliance

MILLSTONE POINT UNIT #2
IN-SERVICE INSPECTION PROGRAM

ASME CODE CLASS 3 COMPONENTS

Table IWD-2500-1 Item No.	Examination Category	Component or Area to Be Examined	Method	ASME Section XI Compliance (Notes)
		CHILLED WATER		
D3.10	D-C	System leakage test	Visual	In Compliance
D3.10	D-C	System hydrostatic test	Visual	In Compliance
D3.20	D-C	Integral attachments - supports		In Compliance
D3.30	D-C	Integral attachments - snubbers		In Compliance
D3.40	D-C	Integral attachments - spring type		In Compliance
D3.50	D-C	Integral attachments - constant load		In Compliance
D3.60	D-C	Integral attachments - shock absorbers		In Compliance
		MAIN STEAM (TO TURBINE-DRIVEN AUXILIARY FEEDWATER PUMPS)		
D3.10	D-C	System leakage test	Visual	In Compliance
D3.10	D-C	System hydrostatic test	Visual	In Compliance
D3.20	D-C	Integral attachments - supports		In Compliance
D3.30	D-C	Integral attachments - snubbers		In Compliance
D3.40	D-C	Integral attachments - spring type		In Compliance
D3.50	D-C	Integral attachments - constant load		In Compliance
D3.60	D-C	Integral attachments - shock absorbers		In Compliance

Section 6

Category IWF

Component Supports

Category IWF

Component Supports

Areas and Frequency of Examination

Class 1 and 2 - Twenty-five percent of total number of supports on piping that is required to be examined each interval. One hundred percent to be examined during service lifetime.

Class 3 - For multiple components within a system of similar design, functions, and surface, the supports of only one of the multiple components are required to be examined.

The required examinations shall be completed in accordance with the inspection schedule established for the components under IWB, IWC, and IWD.

Supports listed for examination in Category IWF have not been separated further by item number or examination category as the examination methods and acceptance criteria are the same. NNECO believes that this manner of listing is sufficient and that it satisfies the intent of the code.

Mechanical and hydraulic snubber inspections, including functional testing, are conducted according to the augmented surveillance requirements of technical specifications and are not included in this program.

New component supports installed in Class 1, 2, and 3 systems will be inspected after installation. These new supports will then be added to the ASME Section XI, ISI Program. Subsequent inspections will be in accordance with the ISI Program.

MILLSTONE POINT UNIT #2
IN-SERVICE INSPECTION PROGRAM

ASME CODE CLASS 1, 2, AND 3 COMPONENT SUPPORTS

Table IWF-2500-2 Item No.	Examination Category	Component or Area to be Examined	Method	ASME Section XI Compliance (Notes)
F-1	F-A	Mechanical attachments	Visual	In Compliance
F-1	F-B	Mechanical attachments	Visual	In Compliance
F-1	F-C	Mechanical attachments	Visual	In Compliance
F-2	F-A	Welded attachments	Visual	In Compliance
F-2	F-B	Welded attachments	Visual	In Compliance
F-2	F-C	Welded attachments	Visual	In Compliance
F-3	F-A	Component displacement	Visual	In Compliance
F-3	F-B	Component displacement	Visual	In Compliance
F-3	F-C	Component displacement	Visual	In Compliance
F-4	F-C	Spring type supports, constant load type supports, and shock absorbers	Visual	In Compliance
F-4	F-C	Hydraulic and mechanical snubbers		Note 1

Note 1: Mechanical and hydraulic snubber inspections are conducted according to the augmented in-service inspection program in technical specifications only.

SECTION 7

In-Service Testing Program

for IWP-Pumps

In-Service Testing Program for IWP-PUMPS

This program lists those pumps (26) that are required to perform a specific function in shutting down a reactor or in mitigating the consequences of an accident and are provided with an emergency power source.

Table IWP specifies the testing frequency and parameters measured or observed for each pump included in this program. When it is not possible or practical to perform a specified in-service test, a testing alternative is referenced as a Relief Request.

An in-service test will be performed on each pump at least every three months during operation. Test frequency will be maintained during shutdown periods if practicable. Pumps required to be operable during shutdown will be tested at least every three months during shutdown.

TABLE IWP

PUMP	FLOW RESISTANCE	SPEED CONTROL	INLET PRESSURE	DIFFERENTIAL PRESSURE	FLOW	VIBRATION	LUBRICATION	BEARING TEMPERATURE	FREQUENCY
Service Water A	Variable	Fixed	X	X	X	Note (1)	0	R	*
Service Water B	Variable	Fixed	X	X	X	(1)	0	R	*
Service Water C	Variable	Fixed	X	X	X	(1)	0	R	*
Auxiliary Feedwater A	Fixed	Fixed	X	X		(1)	0	R	*
Auxiliary Feedwater B	Fixed	Fixed	X	X		(1)	0	R	*
Turbine Driven Auxiliary Feedwater	Fixed	Variable	X	X		(1)	0	R	*
RBCCW A	Variable	Fixed	X	X	X	(1)	0	R	*
RBCCW B	Variable	Fixed	X	X	X	(1)	0	R	*
RBCCW C	Variable	Fixed	X	X	X	(1)	0	R	*
H.P. Safety Injection A	Fixed	Fixed	X	X		(1)	0	R	*
H.P. Safety Injection B	Fixed	Fixed	X	X		(1)	0	R	*
H.P. Safety Injection C	Fixed	Fixed	X	X		(1)	0	R	*
L.P. Safety Injection A	Fixed	Fixed	X	X		(1)	0	R	*
L.P. Safety Injection B	Fixed	Fixed	X	X		(1)	0	R	*
Containment Spray A	Fixed	Fixed	X	X		(1)	0	R	*
Containment Spray B	Fixed	Fixed	X	X		(1)	0	R	*
Charging A	Fixed	Fixed	X		X	(1)	0	R	*
Charging B	Fixed	Fixed	X		X	(1)	0	R	*
Charigng C	Fixed	Fixed	X		X	(1)	0	R	*
Spent Fuel A	Variable	Fixed	X	X	X	(1)	0	R	*
Spent Fuel B	Variable	Fixed	X	X	X	(1)	0	R	*
Chilled Water A	Variable	Fixed	X	X	X	(1)	0	R	*
Chilled Water B	Variable	Fixed	X	X	X	(1)	0	R	*
Boric Acid A	Fixed	Fixed	X	X		(1)	0	R	*
Boric Acid B	Fixed	Fixed	X	X		(1)	0	R	*

X = parameters to be measured and recorded.
0 = parameters to be observed.
* = in-service testing performed quarterly.
R = bearing temperature relief requested.

IWP - Table Notes:

Note 1: In lieu of measuring overall vibration amplitude (Mils), the following vibration monitoring program will be implemented. Vibration will be monitored at least quarterly using equipment which collects vibration signatures. Overall vibration amplitudes will be compaired to the following acceptance criteria:

Acceptable Range - 0 to 2.5 Times Reference Velocity.
Alert Range - > 2.5 to 5 Times Reference Velocity.
Required Action Range - > 5 Times Reference Velocity.

Reference velocity shall be the average overall velocity amplitude determined during an in-service test at reference conditions when the pump is known to be operating acceptably.

Vibration signatures will be reviewed at least quarterly by a knowledgeable person using appropriate equipment to identify potential bearing degradation or other potential faults. This signature indicates potential bearing degradation or other faults in the unit. Action as required for a pump in the alert range of vibration level will be initiated.

Bearing Temperature Relief Request

Components

All safety-related pumps.

Test Requirement

Measure annually the temperature of centrifugal pump bearings and main shaft bearings of reciprocating pumps at points selected to be responsive to changes in temperature of the bearing.

Basis for Relief

Bearing metal temperature monitoring can be effective in detecting bearing problems. However, the vibration monitoring program established for Millstone Unit 2 is significantly more effective in identifying bearing degradation than an annual measurement of bearing temperature.

Bearing degradation can be detected at a very early stage by vibration signature analysis. All safety related pumps are monitored using equipment which is sensitive to low amplitude vibration changes generated by bearing distress. These low amplitude signals are typically less than 1 percent of the overall vibration amplitude and cannot be detected by a simple amplitude monitoring program conforming to IWP minimum requirements.

However, these changes are routinely detected in the established Millstone Unit 2 vibration monitoring program.

In addition, many of the safety related pumps are constructed such that bearing metal temperature changes will be quickly dissipated throughout the relatively massive housings, oil reservoirs, and attached casings. As a result, locations at which bearing temperatures could be monitored will respond much less than actual bearing metal temperature, greatly reducing the sensivitiy of this method of identifying bearing distress. Further, bearing temperature changes are frequently very sudden, rise quickly until the bearing wipes, then return quickly to normal or below normal as the bearing oil flow increases in the wiped bearing.

Alternate Testing

Record and analyze pump vibration signature at least quarterly. Signature will be measured as a velocity spectrum. Signatures will be analyzed to detect bearing degration.

Section 8

IN-SERVICE TESTING PROGRAM

FOR IWV - VALVES

IN-SERVICE TESTING PROGRAM FOR IWV - VALVES

The attached program tables include all valves in the Millstone Unit 2 plant which are required to be identified under Subsection IWV of ASME Section XI, 1980 Edition up to and including the Winter 1981 Addenda.

The IWV tables listed herein specify the testing frequency and parameters measured or observed for each valve included in the program. When it is not possible or practical to perform a specified in-service test, a testing alternative is referenced as a relief request.

"When relief requests identify valves will be tested at Cold Shutdown," the following guidelines will apply:

Testing will commence within 48 hours of achieving cold shutdown conditions, proceed in an orderly manner (not to interfere with restoring the plant to operation) until complete. If not completed in a single cold shutdown, testing will continue on subsequent cold shutdowns without repeating a specific valve test until the entire list is completed. Valves which testing indicates are in the Alert Range will be tested during the next cold shutdown. A plant shutdown will not be initiated to meet the requirements of increased testing for these valves.

"When relief requests identify valves will be tested during refueling shutdowns," the following guidelines will apply:

Testing will be conducted between the time the plant is in the Cold Shutdown condition at the beginning of the refueling shutdown and be completed prior to leaving the Cold Shutdown condition at the end of the refueling outage. Valves which are in the Alert Range will be tested during the next refueling outage. A plant shutdown will not be initiated to meet the requirements of increased testing for these valves.

IWV-1

TABLES

Valve Number	Class/ Category	Spent Fuel Pool Cooling 25203-26126, Sh. 1	Size (Inches)	Valve Type	Actuation	Normal Position	Test Requirements	Relief Requests	Testing Alternative
2-RW-4A	3C	Pump A Discharge	8	CK	-	O	Q		
2-RW-4B	3C	Pump B Discharge	8	CK	-	O	Q		
2-RW-8	3C	Return Header Check	10	CK	-	O	Q		
2-RW-10	3C	Return Header Check	10	CK	-	O	Q		
2-RW-67	3C	PMW Return Check	2	CK	-	C	Q		
2-RW-222	3C	Aux. Feedwater Return Check	2	CK	-	C	Q		

Valve Number	Class/ Category	Main Steam 25203-26126, Sh. 2	Size (Inches)	Valve Type	Actuation	Normal Position	Test Requirements	Relief Requests	Testing Alternative
2-MS-4A	3C	Aux. FW Turbine Supply Check	4	CK	-	C	Q		
2-MS-4B	3C	Aux. FW Turbine Supply Check	4	CK	-	C	Q		
2-MS-64A	2B	No. 1 MSIV	34	STOP CK	AO	O	Q MT FT	X X	QCS QP FTCS
2-MS-64B	2B	No. 2 MSIV	34	STOP CK	AO	O	Q MT FT	X X	QCS QP FTCS
2-MS-65A	2B	No. 1 MSIV Bypass	3	GL	MO	C	Q MT	X	QCS
2-MS-65B	2B	No. 2 MSIV Bypass	3	GL	MO	C	Q MT	X	QCS
2-MS-190A	2B	No. 1 S.G. Atmospheric Dump	8	GL	AO	C	Q MT FT	X X	QCS FTCS
2-MS-190B	2B	No. 2 S.G. Atmospheric Dump	8	GL	AO	C	Q MT FT	X X	QCS FTCS
2-MS-201	2B	No. 1 S.G. Supply to Aux. FW Turbine	4	GA	MO	O	Q MT		
2-MS-202	2B	No. 2 S.G. Supply to Aux. FW Turbine	4	GA	MO	O	Q MT		
2-MS-239	2C	Main Steam Header B Safety	6	REL	-	C	SRV		
2-MS-240	2C	Main Steam Header B Safety	6	REL	-	C	SRV		
2-MS-241	2C	Main Steam Header B Safety	6	REL	-	C	SRV		
2-MS-242	2C	Main Steam Header B Safety	6	REL	-	C	SRV		
2-MS-243	2C	Main Steam Header B Safety	6	REL	-	C	SRV		
2-MS-244	2C	Main Steam Header B Safety	6	REL	-	C	SRV		
2-MS-245	2C	Main Steam Header B Safety	6	REL	-	C	SRV		

Valve Number	Class/ Category	Main Steam 25203-26126, Sh. 2	Size (Inches)	Valve Type	Actuation	Normal Position	Test Requirements	Relief Requests	Testing Alternative
2-MS-246	2C	Main Steam Header B Safety	6	REL	-	C	SRV		
2-MS-247	2C	Main Steam Header A Safety	6	REL	-	C	SRV		
2-MS-248	2C	Main Steam Header A Safety	6	REL	-	C	SRV		
2-MS-249	2C	Main Steam Header A Safety	6	REL	-	C	SRV		
2-MS-250	2C	Main Steam Header A Safety	6	REL	-	C	SRV		
2-MS-251	2C	Main Steam Header A Safety	6	REL	-	C	SRV		
2-MS-252	2C	Main Steam Header A Safety	6	REL	-	C	SRV		
2-MS-253	2C	Main Steam Header A Safety	6	REL	-	C	SRV		
2-MS-254	2C	Main Steam Header A Safety	6	REL	-	C	SRV		
SV-4188	3B	Steam to Aux. FW Turbine	4	GL	MO	C	Q MT		
2-MS-265B	3B	Steam Drain Isolation	1	GL	AO	O	Q MT FT		
2-MS-266B	3B	Steam Drain Isolation	1	GL	AO	O	Q MT FT		

RELIEF REQUEST BASIS

SYSTEM: MAIN STEAM

1.	Valve:	2-MS-64A
	Category:	B-C
	Class:	2
	Function:	Stop flow from steam generator No. 1 following steam line rupture downstream of valve.
	Test Requirement:	Exercise valve for operability and measure stroke time every three months.
	Basis for Relief:	Full stroke testing of this valve would require plant shutdown.
	Alternate Testing:	Part stroke exercise every three months and full stroke exercise and measure stroke during cold shutdown.

SYSTEM: MAIN STEAM (CONT.)

2. Valve: 2-MS-64B

Category: B-C

Class: 2

Function: Stop flow from steam generator No. 2 following steam line rupture downstream of valve.

Test Requirement: Exercise valve for operability and measure stroke time every three months.

Basis for Relief: Full stroke testing of this valve would require plant shutdown.

Alternate Testing: Part stroke exercise every three months and full stroke exercise and measure stroke time during cold shutdown.

3. Valve: 2-MS-65A

Category: B

Class: 2

Function: Start up bypass valve around main steam isolation valve for No. 1 steam generator.

Test Requirement: Exercise valve (full stroke) for operability and stroke time every three months.

Basis for Relief: Valve is normally closed and not required to change position during plant operation. Failure of this valve in the open position during exercise would jeopardize the ability to stop steam flow in the event of downstream rupture.

Alternate Testing: Full stroke exercise and measure stroke time during cold shutdown.

4.	Valve:	2-MS-65B
	Category:	B
	Class:	2
	Function:	Start up bypass valve around main steam isolation valve for No. 2 steam generator.
	Test Requirement:	Exercise valve (full stroke) for operability and stroke time every three months.
	Basis for Relief:	Valve is normally closed and not required to change position during plant operation. Failure of this valve in the open position during exercise would jeopardize the ability to stop steam flow in the event of a downstream rupture.
	Alternate Testing:	Full stroke exercise and measure stroke time during cold shutdown.

5. Valve: 2-MS-190A

Category: B

Class: 2

Function: Provide control of steam flow from No. 1 steam generator to atmosphere during cooldown.

Test Requirement: Exercise (full stroke) for operability and measure stroke time every three months.

Basis for Relief: Operation of valve during plant operation could result in steam flow transient. Isolation of this valve to allow exercising during operation could reduce plant ability to withstand a turbine trip transient.

Alternate Testing: Full stroke exercise and measure stroke time during cold shutdown.

6. Valve: 2-MS-190B

Category: B

Class: 2

Function: Provide control of steam flow from No. 2 steam generator to atmosphere during cooldown.

Test Requirement: Exercise (full stroke) for operability and measure stroke time every three months.

Basis for Relief: Operation of valve during plant operation could result in steam flow transient. Isolation of this valve to allow exercising during operation could reduce plant ability to withstand a turbine trip transient.

Alternate Testing: Full stroke exercise and measure stroke time during cold shutdown.

Valve Number	Class/ Category	Containment Spray 25203-26126, Sh. 3	Size (Inches)	Valve Type	Actuation	Normal Position	Test Requirements	Relief Requests	Testing Alternative
2-CS-2A	2C	CS Pump A Discharge	8	CK	-	C	Q		
2-CS-2B	2C	CS Pump B Discharge	8	CK	-	C	Q		
2-CS-5A	2C	CS Header A Check	8	CK	-	C	Q	X	QCS
2-CS-5B	2C	CS Header B Check	8	CK	-	C	Q	X	QCS
2-CS-6A	2C	CS Pump A Recirc.	2	CK	-	C	Q		
2-CS-6B	2C	CS Pump B Recirc.	2	CK	-	C	Q		
2-CS-13.1A	2B	RWST Header A Stop	18	GA	MO	O	Q MT	X	QCS
2-CS-13.1B	2B	RWST Header B Stop	18	GA	MO	O	Q MT	X	QCS
2-CS-14A	2C	RWST Header A Check	18	CK	-	C	Q	X	QP QR
2-CS-14B	2C	RWST Header B Check	18	CK	-	C	Q	X	QP QR
2-CS-15A	2C	CTMT Sump Outlet Header A Check	24	CK	-	C	Q	X	QP
2-CS-15B	2C	CTMT Sump Outlet Header B Check	24	CK	-	C	Q	X	QP
2-CS-16.1A	2B	CTMT Sump Outlet Header A	24	GA	MO	C	Q MT		
2-CS-16.1B	2B	CTMT Sump Outlet Header B	24	GA	MO	C	Q MT		

RELIEF REQUEST BASIS

SYSTEM: CONTAINMENT SPRAY

1. Valve: 2-CS-5A, 5B

   Category: C

   Class: 2

   Function: Inside containment check valves in Containment Spray headers.

   Test Requirement: Exercise valve (full stroke) quarterly.

   Basis for Relief: Valve operation cannot be verified during reactor operation since the valves are inaccessible during operation. To verify movement of these valves, air must be admitted upstream and valve motion monitored audibly. Water cannot be used for this test since containment wetting would result.

SYSTEM: CONTAINMENT SPRAY (CONT.)

	Alternate Testing:	Valve will be full stroke exercised during extended (greater than three weeks) cold shutdowns and refueling outages.
2.	Valve:	2-CS-13.1A, 13.1B
	Category:	B
	Class:	2
	Function:	Refueling Water Storage Tank Outlet Header "A-B" Isolation Valves.
	Test Requirement:	Exercise valve for operability every three months.
	Basis for Relief:	Failure of this valve in closed position would interrupt an emergency core cooling flow path.
	Alternate Testing:	This valve will be exercised for operability during cold shutdown.

SYSTEM: CONTAINMENT SPRAY (CONT.)

3. Valve: 2-CS-14A, 14B

Category: C

Class: 2

Function: Prevent backflow from Safety Injection Suction Header to the RWST.

Test Requirement: Exercise valve (full stroke) quarterly.

Basis for Relief: Valve cannot be full stroke exercised during reactor operation since the only full flow path is into the Reactor Coolant System. Valve cannot be full stroked during cold shutdown since overpressurization could result.

Alternate Testing: Valve will be part stroke exercised quarterly and full stroke exercised at each refueling.

SYSTEM: CONTAINMENT SPRAY (CONT.)

4. Valve: 2-CS-15A, 15B

Category: C

Class: 2

Function: Prevent backflow into containment sump.

Test Requirement: Exercise to open position quarterly.

Basis for Relief: Valve cannot be full stroke exercised without filling containment to design postaccident water depth.

Alternate Testing: Valve will be part stroke exercised quarterly. No full stroke exercising is proposed.

Valve Number	Class/ Category	Safety Injection 25203-26126, Sh. 3	Size (Inches)	Valve Type	Actuation	Normal Position	Test Requirements	Relief Requests	Testing Alternative
2-SI-007	2C	HPSI Header A Relief	.75	REL	-	C	SRV		
2-SI-008	2C	HPSI Header A Check	6	CK	-	C	Q	X	QP QR
2-SI-009	2C	HPSI-A to Loop 2B Check	2	CK	-	C	Q	X	QP QR
2-SI-010	2C	HPSI-A to Loop 2A Check	2	CK	-	C	Q	X	QP QR
2-SI-011	2C	HPSI-A to Loop B Check	2	CK	-	C	Q	X	QP QR
2-SI-012	2C	HPSI-A to Loop 1A Check	2	CK	-	C	Q	X	QP QR
2-SI-113	2C	HPSI-B to Loop 1A Check	2	CK	-	C	Q	X	QP QR
2-SI-114	2C	LPSI to Loop 1A Check	6	CK	-	C	Q	X	QCS
2-SI-123	2C	HPSI-B to Loop 1B Check	2	CK	-	C	Q	X	QP QR
2-SI-124	2C	LPSI to Loop 1B Check	6	CK	-	C	Q	X	QCS
2-SI-133	2C	HPSI-B to Loop 2A Check	2	CK	-	C	Q	X	QP QR
2-SI-134	2C	LPSI to Loop 2A Check	6	CK	-	C	Q	X	QCS
2-SI-143	2C	HPSI-B to Loop 2B Check	2	CK	-	C	Q	X	QP QR
2-SI-144	2C	LPSI to Loop 2B Check	6	CK	-	C	Q	X	QCS
2-SI-211	2C	SIT-2 Relief	1	REL	-	C	SRV		

Valve Number	Class/ Category	Safety Injection 25203-26126, Sh. 3	Size (Inches)	Valve Type	Actuation	Normal Position	Test Requirements	Relief Requests	Testing Alternative
2-SI-409	2C	HPSI Header B Relief	.75	REL	-	C	SRV		
2-SI-410	2C	HPSI Pump Suction	8	CK	-	C	Q	X	QP QR
2-SI-414	2C	HPSI Pump B Discharge	3	CK	-	C	Q	X	QP QR
2-SI-417	2C	HPSI Header A Relief	1	REL	-	C	SRV		
2-SI-422	2C	HPSI Pump B Recirc.	2	CK	-	C	Q		
2-SI-424	2C	HPSI Pump A Recirc.	2	CK	-	C	Q		
2-SI-426	2C	HPSI Pump C Recirc.	2	CK	-	C	Q		
2-SI-427	2C	HPSI Pump A Discharge	3	CK	-	C	Q	X	QP QR
2-SI-434	2C	LPSI Pump B Discharge	10	CK	-	C	Q	X	QCS
2-SI-439	2C	LPSI Header Relief	.75	REL	-	C	SRV		

Valve Number	Class/ Category	Safety Injection 25203-26126, Sh. 3	Size (Inches)	Valve Type	Actuation	Normal Position	Test Requirements	Relief Requests	Testing Alternative
2-SI-215	1C	SIT-1 Discharge Check	12	CK	-	C	Q	X	Q
2-SI-217	1C	HPSI, LPSI Disch. to Loop 1A	12	CK	-	C	Q	X	QCS
2-SI-221	2C	SIT-1 Relief	1	REL	-	C	SRV		
2-SI-225	1C	SIT-2 Discharge Check	12	CK	-	C	Q	X	Q
2-SI-227	1C	HPSI, LPSI Disch. to Loop 1B	12	CK	-	C	Q	X	QCS
2-SI-231	2C	SIT-3 Relief	1	REL	-	C	SRV		
2-SI-235	1C	SIT-3 Discharge Check	12	CK	-	C	Q	X	Q
2-SI-237	1C	HPSI, LPSI Disch. to Loop 2A	12	CK	-	C	Q	X	QCS
2-SI-241	2C	SIT-4 Relief	1	REL	-	C	SRV		
2-SI-245	1C	SIT-4 Discharge	12	CK	-	C	Q	X	Q
2-SI-247	1C	HPSI, LPSI Disch. to Loop 2B	12	CK	-	C	Q	X	QCS
2-SI-401	2C	HPSI Pump Suction	8	CK	-	C	Q	X	QP QR
2-SI-405	2C	HPSI Pump C Discharge	3	CK	-	C	Q	X	QP QR

Valve Number	Class/ Category	Safety Injection 25203-26126, Sh. 3	Size (Inches)	Valve Type	Actuation	Normal Position	Test Requirements	Relief Requests	Testing Alternative
2-SI-446	2C	LPSI Pump A Discharge	10	CK	-	C	Q	X	QCS
2-SI-448	2C	LPSI Pump A Recirc.	2	CK	-	C	Q		
2-SI-451	2C	LPSI Pump B Recirc.	2	CK	-	C	Q		
2-SI-466	2C	SIT Test Line Relief	1.5	REL	-	C	SRV		
2-SI-468	2C	Shutdown Cooling Suction Relief	1.5	REL	-	C	SRV		
2-SI-469	1C	Shutdown Cooling Suction Relief	1	REL	-	C	SRV		
2-SI-614	1E	SIT-1 Discharge Stop	12	GA	MO	LO	ET		
2-SI-615	2B	LPSI Header 1A Injection Stop	6	GL	MO	C	Q MT		
2-SI-616	2B	HPSI Header B to Loop 1A	2	GL	MO	O	Q MT		
2-SI-617	2B	HPSI Header A to Loop 1A	2	GL	MO	O	Q MT		
2-SI-618	1B	SIS Header 1A Check Valve Drain Stop	1	GL	AO	C	Q MT FT PI	X	FTCS
2-SI-624	1E	SIT-2 Discharge Stop	12	GA	MO	LO	ET		
2-SI-625	2B	LPSI Header 1B Injection Stop	6	GL	MO	C	Q MT		
2-SI-626	2B	HPSI Header B to Loop 1B	2	GL	MO	O	Q MT		
2-SI-627	2B	HPSI Header A to Loop 1B	2	GL	MO	O	Q MT		
2-SI-628	1B	SIS Header 1B Check Valve Drain Stop	1	GL	AO	C	Q MT FT PI	X	FTCS

Valve Number	Class/ Category	Safety Injection 25203-26126, Sh. 3	Size (Inches)	Valve Type	Actuation	Normal Position	Test Requirements	Relief Requests	Testing Alternative
2-SI-634	1E	SIT-3 Discharge Stop	12	GA	MO	LO	ET		
2-SI-635	2B	LPSI Header 2A Injection Stop	6	GL	MO	C	Q MT		
2-SI-636	2B	HPSI Header B to Loop 2A	2	GL	MO	O	Q MT		
2-SI-637	2B	HPSI Header A to Loop 2A	2	GL	MO	O	Q MT		
2-SI-638	1B	SIS Header 2A Check Valve Drain Stop	1	GL	AO	C	Q MT FT PI	X	FTCS
2-SI-644	1E	SIT-4 Discharge Stop	12	GA	MO	LO	ET		
2-SI-645	2B	LPSI Header 2B Injection Stop	6	GL	MO	C	Q MT		
2-SI-646	2B	HPSI Header B to Loop 2B	2	GL	MO	O	Q MT		
2-SI-647	2B	HPSI Header A to Loop 2B	2	GL	MO	O	Q MT		
2-SI-648	1B	SIS Header 2B Check Valve Drain Stop	1	GL	AO	C	Q MT FT PI	X	FTCS
2-SI-652	1B	SDS Isolation Valve	12	GA	MO	C	Q MT PI	X	QCS
2-SI-659	2B	CS/SI Pumps Minimum Flow Stop	4	GL	AO	O	Q MT FT	X X	QCS FTCS

Valve Number	Class/ Category	Safety Injection 25203-26126, Sh. 3	Size (Inches)	Valve Type	Actuation	Normal Position	Test Requirements	Relief Requests	Testing Alternative
2-SI-660	2B	CS/SI Pumps Minimum Flow Stop	4	GL	AO	O	Q MT FT	X X	QCS FTCS
2-SI-706A	1C	LPSI Header 1A Check	6	CK	-	C	Q	X	QP QCS
2-SI-706B	1C	LPSI Header 1B Check	6	CK	-	C	Q	X	QP QCS
2-SI-706C	1C	LPSI Header 2A Check	6	CK	-	C	Q	X	QP QCS
2-SI-706D	1C	LPSI Header 2B Check	6	CK	-	C	Q	X	QP QCS

RELIEF REQUEST BASIS

SYSTEM: SAFETY INJECTION

1. Valve: 2-SI-008, 009, 010, 011, 012, 113, 123, 133, 143, 401, 405, 410, 414, 427

   Category: B

   Class: 2

   Function: Check valves in HPSI flow paths to prevent backflow.

   Test Requirement: Exercise valves (full stroke) quarterly.

   Basis for Relief: Valves cannot be full stroke exercised during reactor operations since the only full flow path is into the reactor coolant system. HPSI pumps do not have sufficient discharge pressure (1,200 psi) to overcome reactor coolant pressure (2,250 psi). Valves cannot be full stroke exercised during cold shutdown since full HPSI flow into the reactor could result in reactor coolant system overpressurization.

Alternate Testing: Design flow tests will be conducted during reactor refueling with the reactor head removed. These tests are conducted while filling the reactor pool cavity and effectively demonstrate that these check valves do operate properly. Partial stroke exercising will be done quarterly.

2. Valve: 2-SI-114, 124, 134, 144, 434, 446

Category: C

Class: 2

Function: Check valves in the LPSI flow paths to prevent backflow.

Test Requirement: Exercise valve (full stroke) quarterly

Basis for Relief: Valves cannot be full or part stroke exercised during power operation because LPSI pumps cannot overcome SIT pressure downstream of the 2-SI-706 series valves. Pump discharge check valve exercising during operation would require extensive flow path realignment thus rendering the normal LPSI flow path inoperative.

Alternate Testing: These check valves are full stroke exercised at cold shutdown during the shutdown cooling mode.

3. Valve: 2-SI-215, 225, 235, 245

Category: C

Class: 1

Function: Prevent backflow into safety injection tank.

Test Requirement: Exercise (full stroke) quarterly.

Basis for Relief: Valves cannot be full stroke exercised during reactor operation or cold shutdown since no flow path exists which can accept full flow. Valves cannot be part stroke tested during reactor operation since failure of the test line isolation valve to shut would result in loss of safety injection tank level and consequent plant shutdown, further, if this valve fails to reseat, only single valve isolation would exist between the reactor coolant system and the low-pressure safety injection tank.

Alternate Testing: Valve will be full stroke tested during refueling outages.

4. Valve: 2-SI-217, 227, 237, 247

Category: C

Class: 1

Function: Prevent backflow from RCS to safety injection header.

Test Requirement: Exercise (full stroke) quarterly.

Basis for Relief: Valve cannot be full stroke or part stroke exercised during reactor operation since the large temperature difference between safety injection system water and the reactor coolant system (approximately 400°F) would cause undue thermal stress of the safety injection nozzles.

Alternate Testing: Valve will be full stroke exercised during cold shutdown.

5. Valve: 2-SI-652

Category: B

Class: 1

Function: Isolate shutdown cooling system piping from Reactor Coolant System.

Test Requirement: Exercise and measure stroke time every three months.

Basis for Relief: Valves are locked closed when Reactor Coolant System pressure exceeds 300 psig to protect the low-pressure shutdown cooling piping. Valve exercise would require violation of plant interlocks.

Alternate Testing: Exercise and measure stroke time during cold shutdown when Reactor Coolant System pressure is less than 300 psig.

6. Valve: S-SI-659

Category: B

Class: 2

Function: Isolate minimum flow recirculation piping from refueling water storage tank when Safety Injection System is operating in containment sump recirculation mode.

Test Requirement: Exercise (full stroke) and measure stroke time every three months.

Basis for Relief: Valve is required by plant technical specification to be open with valve operator power removed to provide a recirculation flow path during reactor operation.

Alternate Testing: Exercise (full stroke) and measure stroke time during cold shutdown.

7. Valve: 2-SI-660

Category: B

Class: 2

Function: Isolate minimum flow recirculation piping from refueling water storage tank when Safety Injection System is operating in containment sump recirculation mode.

Test Requirement: Exercise (full stroke) and measure stroke time every three months.

Basis for Relief: Valve is required by plant technical specification to be open with valve operator power removed to provide a recirculation flow path during reactor operation.

Alternate Testing: Exercise (full stroke) and measure stroke time during cold shutdown.

8. Valve: 2-SI-706A, 706B, 706C, 706D

Category: C

Class: 1

Function: Inside containment check valves in the HPSI/LPSI flow path.

Test Requirement: Exercise valve (full stroke) quarterly.

Basis for Relief: Valves cannot be full stroked during operation because the only full flow path is into the reactor coolant system.

Alternate Testing: Valves will be part stroked quarterly with the HPSI system and will be full stroked at cold shutdown during the shutdown cooling mode.

Valve Number	Class/ Category	Feedwater 25203-26126, Sh. 4	Size (Inches)	Valve Type	Actuation	Normal Position	Test Requirements	Relief Requests	Testing * Alternative
2-FW-5A	2BC	Feedwater to S.G. 1	18	STOP CK	AO	O	Q MT FT	X X	QCS FTCS
2-FW-5B	2BC	Feedwater to S.G. 2	18	STOP CK	AO	O	Q MT FT	X X	QCS FTCS
2-FW-7	3C	Steam Aux. pp. Discharge	6	CK	-	C	Q	X	QCS
2-FW-8A	3C	Aux. pp. A Discharge	4	CK	-	C	Q	X	QCS
2-FW-8B	3C	Aux. pp. B Discharge	4	CK	-	C	Q	X	QCS
2-FW-12A	2BC	Aux. Feedwater to S.G. 1	6	STOP CK	AO	C	Q MT FT	X X	QCS FTCS
2-FW-12B	2BC	Aux. Feedwater to S.G. 2	6	STOP CK	AO	C	Q MT FT	X X	QCS FTCS
2-FW-32A	3C	Aux. FW Pump A Recirc. Check	1.5	CK	-	C	Q		
2-FW-32B	3C	Aux. FW Pump B Recirc. Check	1.5	CK	-	C	Q		
2-FW-33	3C	Terry Aux. FW Pump Recirc. Check	1.5	CK	-	C	Q		
2-FW-43A	3B	Aux. FW Reg. Valve to No. 1 S.G.	4	GL	AO	C	Q MT		
2-FW-43B	3B	Aux. FW Reg. Valve to No. 2 S.G.	4	GL	AO	C	Q MT		
2-FW-44	3B	Aux. FW Pump Dis. Cross Tie	6	GA	MO	C	Q MT		
2-FW-56A	3B	Aux. FW Reg. Valve Bypass	6	GA	H	C	Q		
2-FW-56B	3B	Aux. FW Reg. Valve Bypass	6	GA	H	C	Q		

RELIEF REQUEST BASIS

SYSTEM: FEEDWATER

1.	Valve:	2-FW-5A, 5B
	Category:	BC
	Class:	2
	Function:	Prevent backflow in main feedline to No. 1 steam generator.
	Test Requirement:	Exercise (full stroke) for operability every three months. Take stroke time measurements per IWV-3410. Test for fail safe operation.
	Basis for Relief:	Valve exercise during plant operation would require stopping feed flow to the steam generator with consequent plant shutdown. Valve has no part stroke capability.
	Alternate Testing:	Exercise valve (full stroke), measure stroke time and fail-safe test during cold shutdown.

2. Valve: 2-FW-7

Category: C

Class: 3

Function: Prevent backflow through steam-driven auxiliary feed pump during operation of other auxiliary feed pumps.

Test Requirement: Exercise quarterly for operability.

Basis for Relief: Operation of this valve would require establishing flow through the auxiliary feedlines to the steam generator. Introduction of this cold water could result in steam generator level instability and/or undesirable thermal transients to the feed nozzles.

Alternate Testing: Exercise valve for operability during cold shutdown.

3. Valve: 2-FW-8A, 8B

Category: C

Class: 3

Function: Prevent backflow through motor-driven auxiliary feed pump during operation of other auxiliary feed pumps.

Test Requirement: Exercise quarterly for operability.

Basis for Relief: Operation of this valve would require establishing flow through the auxiliary feedlines to the steam generator. Introduction of this cold water could result in steam generator level instability and/or undesirable thermal transients to the feed nozzles.

Alternate Testing: Exercise valve for operability during cold shutdown.

SYSTEM: FEEDWATER (CONT.)

4. Valve: 2-FW-12A, 2B

Category: BC

Class: 2

Function: Prevent backflow in auxiliary feedwater line to No. 1 steam generator.

Test Requirement: Exercise (full stroke) for operability every three months. Take stroke time measurements per IWV-3410. Test for fail safe operation.

Basis for Relief: Valve operator exercise, without an auxiliary feed system, flow will not result in actual valve exercise. Initiating auxiliary feedwater flow during plant operation could result in steam generator level instability and/or undesirable thermal transients to the feed nozzles.

Alternate Testing: Exercise valve for operability, measure stroke time and fail-safe test during cold shutdown.

Valve Number	Class/ Category	Reactor Building Closed Cooling Water 25203-26126, Sh. 6	Size (Inches)	Valve Type	Actuation	Normal Position	Test Requirements	Relief Requests	Testing Alternative
2-RB-2A	3C	Pump A Discharge	20	CK	-	O	Q		
2-RB-2B	3C	Pump B Discharge	20	CK	-	O	Q		
2-RB-2C	3C	Pump C Discharge	20	CK	-	O	Q		
2-RB-8.1A	3B	SFPC HX and B. A. Evap. Outlet	12	BFLY	AO	O	Q MT FT		
2-RB-8.1B	3B	SFPC HX and A. W. Evap. Outlet	12	BFLY	AO	O	Q MT FT		
2-RB-13.1A	3B	SD Cooling HX A Outlet	18	BFLY	AO	C	Q MT FT		
2-RB-13.1B	3B	SD Cooling HX B Outlet	18	BFLY	AO	C	Q MT FT		
2-RB-14A	3E	SDHX A Outlet	18	BFLY	H	LO	ET		
2-RB-28.3A	2B	RBCCW From CAR Cooler A	10	BFLY	AO	C	Q MT FT		
2-RB-28.3B	2B	RBCCW From CAR Cooler B	10	BFLY	AO	C	Q MT FT		
2-RB-28.3C	2B	RBCCW From CAR Cooler C	10	BFLY	AO	C	Q MT FT		
2-RB-28.3D	2B	RBCCW From CAR Cooler D	10	BFLY	AO	C	Q MT FT		
2-RB-30.1A	2A	RBCCW to RC Pump Coolers et al.	8	GA	MO	O	Q MT	X	QCS

Valve Number	Class/ Category	Reactor Building Closed Cooling Water 25203-26126, Sh. 6	Size (Inches)	Valve Type	Actuation	Normal Position	Test Requirements	Relief Requests	Testing Alternative
2-RB-30.1B	2A	RBCCW to RC Pump Coolers et al.	6	GA	MO	O	Q MT	X	QCS
2-RB-37.2A	2A	RBCCW From RC Pump Coolers et al.	8	GA	MO	O	Q MT	X	QCS
2-RB-37.2B	2A	RBCCW From RC Pump Coolers et al.	6	GA	MO	O	Q MT	X	QCS
2-RB-68.1A	3B	Eng. Safeguards RM Cooler Outlet	2	GL	AO	C	Q MT FT		
2-RB-68.1B	3B	Eng. Safeguards RM Cooler Outlet	2	GL	AO	C	Q MT FT		
2-RB-210	3B	Degasifier Return Stop	8	BFLY	AO	C	Q MT FT		

RELIEF REQUEST BASIS

SYSTEM: REACTOR BUILDING CLOSED COOLING WATER

1. Valve: 2-RB-30.1A, B

   Category: B

   Class: 2

   Function: Isolate miscellaneous containment heat loads.

   Test Requirement: Exercise (full stroke) and measure stroke time quarterly.

   Basis for Relief: Exercising these valves would result in interrupting cooling water to the reactor coolant pump thermal barriers and oil coolers as well as other loads required during reactor operation. Valve design precludes part stroke exercising.

   Alternate Testing: Valve will be full stroke exercised on cold shutdown when reactor coolant pumps are not running.

2. Valve: 2-RB-37.2A, B

Category: B

Class: 2

Function: Isolate miscellaneous containment heat loads.

Test Requirement: Exercise (full stroke) and measure stroke time quarterly.

Basis for Relief: Exercising these valves would result in interrupting cooling water to the reactor coolant pump thermal barriers and oil coolers as well as other loads required during reactor operation. Valve design precludes part stroke exercising.

Alternate Testing: Valve will be full stroke exercised on cold shutdown when reactor coolant pumps are not running.

Valve Number	Class/ Category	Service Water 25203-26126, Sh. 7	Size (Inches)	Valve Type	Actuation	Normal Position	Test Requirements	Relief Requests	Testing Alternative
2-SW-1A	3C	SW Pump A Discharge Check	24	CK	-	O	Q		
2-SW-1B	3C	SW Pump B Discharge Check	24	CK	-	O	Q		
2-SW-1C	3C	SW Pump C Discharge Check	24	CK	-	O	Q		
2-SW-3.2A	3B	B SW Header to TBCCW HXs	16	BFLY	AO	O	Q MT FT		
2-SW-3.2B	3B	"A" SW Header to TBCCW HXs	16	BFLY	AO	O	Q MT FT		
2-SW-8.1A	3B	A RBCCW HX Temp. Control	24	BFLY	AO	O	Q MT FT		
2-SW-8.1B	3B	B RBCCW HX Temp. Control	24	BFLY	AO	O	Q MT FT		
2-SW-8.1C	3B	C RBCCW HX Temp. Control	24	BFLY	AO	O	Q MT FT		
2-SW-11A	3C	A Discharge Header Check	24	CK	-	O	Q		
2-SW-11B	3C	B Discharge Header Check	24	CK	-	O	Q		
2-SW-13A	3C	A Diesel Cooling Discharge	8	CK	-	C	Q		
2-SW-13B	3C	B Diesel Cooling Discharge	8	CK	-	C	Q		
2-SW-89A	3B	A Diesel Cooling Temp. Control	8	BFLY	AO	C	Q MT FT		

Valve Number	Class/ Category	Service Water 25203-26126, Sh. 7	Size (Inches)	Valve Type	Actuation	Normal Position	Test Requirements	Relief Requests	Testing Alternative
2-SW-89B	3B	B Diesel Cooling Temp. Control	8	BFLY	AO	C	Q MT FT		
2-SW-102	3B	A SW Header to Chiller X-170	2	CL	AO	O	Q MT FT		
2-SW-104	3B	B SW Header to Chiller X-170	2	GL	AO	O	Q MT FT		
2-SW-231A	3B	A Diesel Cooling Bypass	8	BFLY	AO	O	Q MT FT		
2-SW-231B	3B	B Diesel Cooling Bypass	8	BFLY	AO	O	Q MT FT		

Valve Number	Class/ Category	Chemical and Volume Control System 25203-26126, Sh. 8, 9	Size (Inches)	Valve Type	Actuation	Normal Position	Test Requirements	Relief Requests	Testing* Alternative
2-CH-154	2C	BA Pump B Discharge Check	3	CK	-	C	Q		
2-CH-155	2C	BA Pump A Discharge Check	3	CK	-	C	Q		
2-CH-177	2C	BA Pump Emerg. Sply. Chg. pp. Suct.	3	CK	-	C	Q	X	QCS
2-CH-190	2C	BA Tank Gravity Feed Check	3	CK	-	C	Q	X	QCS
2-CH-196	2B	PMW Isolation From BA Flow Path	3	GL	AO	C	Q MT FT		
2-CH-324	2C	Chg. pp. C Discharge Relief	.75	REL	-	C	SRV		
2-CH-325	2C	Chg. pp. B Discharge Relief	.75	REL	-	C	SRV		
2-CH-326	2C	Chg. pp. A Discharge Relief	.75	REL	-	C	SRV		
2-CH-328	2C	Chg. pp. A Discharge Check	2	CK	-	O	Q		
2-CH-331	2C	Chg. pp. B Discharge Check	2	CK	-	O	Q		
2-CH-334	2C	Chg. pp. C Discharge Check	2	CK	-	O	Q		
2-CH-432	1C	Chg. to Loop 2A	2.5	CK	-	O	Q		
2-CH-433	1C	Chg. to Loop 1A	2.5	CK	-	O	Q		
2-CH-501	2B	VC Tank Outlet	4	GA	MO	O	Q MT	X	QCS
2-CH-504	2B	RWST to Charge PP. Suction	3	GA	MO	C	Q MT		
2-CH-508	2B	BA Tk. B Gravity Feed Valve	3	GA	MO	C	Q MT		
2-CH-509	2B	BA Tk. A Gravity Feed Valve	3	GA	MO	C	Q MT		

Valve Number	Class/ Category	Chemical and Volume Control System 25203-26126, Sh. 8, 9	Size (Inches)	Valve Type	Actuation	Normal Position	Test Requirements	Relief Requests	Testing * Alternative
2-CH-510	2B	BA pp. A Recirculation	1	GL	AO	O	Q MT FT		
2-CH-511	2B	BA pp. B Recirculation	1	GL	AO	O	Q MT FT		
2-CH-512	2B	VCT Makeup Control	4	BALL	AO	C	Q MT FT		
2-CH-514	2B	BA pp. Emerg. Sply. Chg. pp. Suct.	3	GA	MO	C	Q MT		
2-CH-515	1B	Letdown SIAS Isolation	3	GL	AO	O	Q MT PI	X	QCS
							FT	X	FTCS
2-CH-517	1B	Aux. Spray Charging Header	2	GL	AO	C	Q MT	X	QCS
							FT PI	X	FTCS
2-CH-518	1B	Loop 2A Charging Header	2	GL	AO	O	Q MT	X	QCS
							FT PI	X	FTCS
2-CH-519	1B	Loop 1A Charging Header	2	GL	AO	O	Q MT	X	QCS
							FT PI	X	FTCS
2-CH-769	2C	Hydrazine Supply	.5	CK	-	C	Q		

RELIEF REQUEST BASIS

SYSTEM: CHEMICAL AND VOLUME CONTROL

1. Valve: 2-CH-177

   Category/Class: C-2

   Function: Boric acid pumps discharge to charging header suction nonreturn check valve.

   Test Requirement: Exercise the check valve to the full open position every three months.

   Basis for Relief: Operation of this valve during normal plant operation would allow concentrated boric acid to flow directly to the charging pump suction header resulting in a rapid reduction in reactor power.

   Alternative Testing: Exercise the check valve to the full open position every cold shutdown.

2. Valve: 2-CH-190

Category/Class: C-2

Function: Boric acid storage tanks gravity feedline to charging header suction nonreturn check valves.

Test Requirement: Exercise the check valve to the full open position every three months.

Basis for Relief: Operation of this valve during normal plant operation would allow concentrated boric acid to flow directly to the charging pump suction header resulting in a rapid reduction in reactor power or unwarranted plant transient.

Alternate Testing: Exercise the check valve to the full open position every cold shutdown.

SYSTEM: CHEMICAL AND VOLUME CONTROL (CONT.)

3. Valve: 2-CH-501

Category/Class: B-2

Function: Isolate volume control tank from charging pump suction upon Safety Injection Actuation Signal.

Test Requirement: Exercise full stroke and measure stroke time every three months.

Basis for Relief: Exercising this valve would require interruption of charging flow with the attendant, undesirable, thermal transient on the regenerative heat exchanger. If an alternate charging pump suction source were utilized, an undesirable Reactor Coolant System boron concentration transient could result.

Alternate Testing: Exercise full stroke and measure stroke time during cold shutdown.

4. Valve: 2-CH-515

Category/Class: B-2

Function: Isolate Reactor Coolant System letdown line on safety injection actuation signal.

Test Requirement: Exercise (full stroke) and measure stroke time every three months.

Basis for Relief: Operation of this valve during plant operation would cause undesirable thermal transients of approximately 400° on the regenerative heat exchanger. This component has a limited number of design thermal transients. Valve design precludes part stroke testing.

Alternate Testing: Exercise (full stroke) and measure stroke time during cold shutdown.

5. Valve: 2-CH-517

Category/Class: B-1

Function: Provide flow to pressurizer vapor space during depressurization.

Test Requirement: Exercise (full stroke) and measure stroke time quarterly.

Basis for Relief: Valve exercise during reactor operation could cause loss of reactor coolant system pressure control with consequent plant shutdown and/or excessive thermal transients on the pressurizer spray piping.

Alternate Testing: Exercise (full stroke) and measure stroke time during cold shutdown.

6. Valve: 2-CH-518

Category/Class: B-1

Function: Isolate charging to Loop 2A.

Test Requirement: Exercise (full stroke) and measure stroke time quarterly.

Basis for Relief: Valve is required by Tech. Spec to be open during reactor operation. Flow through valve is required for small break injection. Valves must be shut 20 to 30 hours after accident for boron precipitation control.

Alternate Testing: Exercise (full stroke) and measure stroke time during cold shutdown.

7. Valve: 2-CH-519

Category/Class: B-1

Function: Isolate charging to Loop 1A.

Test Requirement: Exercise (full stroke) and measure stroke time quarterly.

Basis for Relief: Valve is required by Technical Specification to be open during reactor operation. Flow through valve is required for small break injection. Valves must be shut 20 to 30 hours after accident for boron precipitation control.

Alternate Testing: Exercise (full stroke) and measure stroke time during cold shutdown.

Valve Number	Class/ Category	Chilled Water 25203-26126, Sh. 10	Size (Inches)	Valve Type	Actuation	Normal Position	Test Requirements	Relief Requests	Testing Alternative
2-CHW-1	3C	CHW Pump A Discharge Check	2	CK	-	C	Q		
2-CHW-31	3C	CHW Pump B Discharge Check	2	CK	-	C	Q		
2-CHW-3	3B	CHW Supply to A/C Unit X-84A	2	GL	AO	C	Q MT FT		
2-CHW-33	3B	CHW Supply to A/C Unit X-84B	2	GL	AO	C	Q MT FT		
2-CHW-11	3B	CHW Supply Header Cross Tie	1.5	GL	AO	O	Q MT FT		
2-CHW-12	3B	CHW Supply Header Cross Tie	1.5	GL	AO	O	Q MT FT		
2-CHW-13	3B	CHW Return Header Cross Tie	1.5	GL	AO	O	Q MT FT		
2-CHW-14	3B	CHW Return Header Cross Tie	1.5	GL	AO	O	Q MT FT		
2-CHW-4	3B	Temperature Control Valve X-84A	1.5	TCV	AO	C	Q MT FT		
2-CHW-34	3B	Temperature Control Valve X-84B	1.5	TCV	AO	C	Q MT FT		

Valve Number	Class/ Category	Reactor Coolant 25203-26126, Sh. 11	Size (Inches)	Valve Type	Actuation	Normal Position	Test Requirements	Relief Requests	Testing Alternative
2-RC-200	1C	Pressurizer Relief	2.5	REL	-	C	SRV		
2-RC-201	1C	Pressurizer Relief	2.5	REL	-	C	SRV		
2-RC-402	1C	Pressurizer PORV	2.5	REL	SOL	C	SRV		
2-RC-404	1C	Pressurizer PORV	2.5	REL	SOL	C	SRV		
2-RC-414	1B	Reactor Vessel Vent	.75	REL	SOL	C	Q	X	QR
2-RC-415	1B	Reactor Vessel Vent	.75	REL	SOL	C	Q	X	QR
2-RC-416	1B	Reactor Vessel Vent	.75	REL	SOL	C	Q	X	QR
2-RC-417	1B	Reactor Vessel Vent	.75	REL	SOL	C	Q	X	QR
2-RC-422	1B	Pressurizer Relief	.75	REL	SOL	C	Q	X	QR
2-RC-423	1B	Pressurizer Relief	.75	REL	SOL	C	Q	X	QR
2-RC-424	1B	Pressurizer Relief	.75	REL	SOL	C	Q	X	QR

RELIEF REQUEST BASIS

SYSTEM: REACTOR COOLANT SYSTEM VENTING

1. Valves: 2-RC-414; 2-RC-415
2-RC-416; 2-RC-417
2-RC-422; 2-RC-423
2-RC-424; 2-RC-425

Category: B

Class: 1

Function: Venting of reactor coolant system.

Test Requirement: Exercise the valve to the full open position every three months.

Basis for Relief: These valves are designed for emergency use only; testing of these valves during operation could result in a loss-of-coolant accident.

Alternate Testing: Exercise full stroke during refueling outages.

Valve Number	Class/ Category	Containment Isolation	Size (inches)	Valve Type	Actuation	Normal Position	Test Requirements	Relief Requests	Testing Alternative
2-AC-47	2A	Containment Air Sample	1.5	BFLY	AO	O	Q MT FT LT	 X	 LLRT
2-AC-51	2AP	Postincident CTMT Sample	1	GL	H	LC	LT	X	ILRT
2-EB-88	2A	Containment Air Sample	1.5	BFLY	AO	O	Q MT FT PI LT	 X X	 FTCS LLRT
2-EB-89	2A	Containment Air Sample	1.5	BFLY	AO	O	Q MT FT PI LT	 X X	 FTCS LLRT
2-EB-91	2A	Hydrogen Purge	6	BFLY	AO	C	Q MT PI LT	 X	 LLRT
2-EB-92	2A	Hydrogen Purge	6	BFLY	AO	C	Q MT FT LT	 X	 LLRT
2-EB-99	2A	Hydrogen Purge	6	BFLY	AO	C	Q MT FT LT	 X	 LLRT
2-EB-100	2A	Hydrogen Purge	6	BFLY	AO	C	Q MT PI LT	 X	 LLRT
2-SA-19	2AP	Station Air	2	GA	H	LC	LT	X	LLRT
2-S1-651	1A	SIS Isolation Valve	12	GA	MO	C	Q MT LT PI	X X	QCS LLRT

Valve Number	Class/ Category	Containment Isolation	Size (Inches)	Valve Type	Actuation	Normal Position	Test Requirements	Relief Requests	Testing Alternative
2-RW-154	2AP	Refueling Water Purification	4	GA	H	LC	ET		
							LT	X	LLRT
2-RW-232	2AP	Refueling Water Purification	4	GA	H	LC	ET		
							LT	X	LLRT
2-SSP-16.1	2A	CTMT Sump to Aerated Drain Tk.	3	GL	AO	C	Q		
							MT		
							FT	X	FTCS
							PI		
							LT	X	LLRT
2-SSP-16.2	2A	CTMT Sump to Aerated Drain Tk.	3	GL	AO	C	Q		
							MT		
							FT		
							LT	X	LLRT
2-AC-4	2AP	CTMT Purge Supply CTMT	48	BFLY	AO	C	ET		
							LT	X	LLRT
2-AC-5	2AP	CTMT Purge Supply CTMT	48	BFLY	AO	C	ET		
							LT	X	LLRT
2-AC-6	2AP	CTMT Purge Exhaust CTMT	48	BFLY	AO	C	ET		
							LT	X	LLRT
2-AC-7	2AP	CTMT Purge Exhaust CTMT	48	BFLY	AO	C	ET		
							LT	X	LLRT
2-AC-12	2A	Containment Air Sample	1.5	BFLY	AO	O	Q		
							MT		
							FT		
							LT	X	LLRT
2-AC-15	2A	Containment Air Sample	1.5	BFLY	AO	O	Q		
							MT		
							FT		
							LT	X	LLRT
2-AC-20	2A	Containment Air Sample	1.5	BFLY	AO	O	Q		
							MT		
							FT		
							LT	X	LLRT

Valve Number	Class/ Category	Containment Isolation	Size (Inches)	Valve Type	Actuation	Normal Position	Test Requirements	Relief Requests	Testing Alternative
2-MS-220A	2A	Steam Gen. Bottom Blowdown	2	GL	AO	O	Q MT FT LT	 X	 LLRT
2-MS-220B	2A	Steam Gen. Bottom Blowdown	2	GL	AO	O	Q MT FT LT	 X	 LLRT
2-GR-11.1	2A	Waste Gas Header	3	GL	AO	O	Q MT FT PI LT	 X X	 FTCS LLRT
2-GR-11.2	2A	Waste Gas Header	3	GL	AO	O	Q MT FT LT PI	 X 	 LLRT
2-LRR-43.1	2A	Primary Tank Drain	3	GL	AO	C	Q MT FT PI LT	 X X	 FTCS LLRT
2-LRR-43.2	2A	Primary Tank Drain	3	GL	AO	C	Q MT FT LT PI	 X 	 LLRT
2-LLR-61.1	2A	Quench Tank Sample	.5	GL	AO	C	Q MT FT PI LT	 X X	 FTCS LLRT
2-RW-21	2AP	Refueling Water Purification	4	GA	H	LC	ET LT	 X	 LLRT
2-RW-63	2AP	Refueling Water Purification	4	GA	H	LC	ET LT	 X	 LLRT

Valve Number	Class/ Category	Containment Isolation	Size (Inches)	Valve Type	Actuation	Normal Position	Test Requirements	Relief Requests	Testing Alternative
2-CH-506	2A	RC Pump Seals Controlled Leakoff	.75	GL	AO	O	Q	X	QCS
							MT		
							FT	X	FTCS
							LT	X	LLRT
							PI		
2-CH-516	2A	Letdown to Purification Demin.	3	GL	AO	O	Q	X	QCS
							MT		
							FT	X	FTCS
							LT	X	LLRT
							PI		
2-CS-4.1A	2A	Containment Spray	8	GA	MO	C	Q		
							MT		
							LT	X	LLRT
2-CS-4.1B	2A	Containment Spray	8	GA	MO	C	Q		
							MT		
							LT	X	LLRT
2-SI-312	2A	Nitrogen Supply to SI Tanks	.75	GL	AO	O	Q		
							MT		
							FT		
							LT	X	LLRT
2-SI-463	2AP	SI Tank Test Line	2	GA	H	LC	LT	X	LLRT
2-SI-709	2AP	Shutdown Cooling Isolation	12	GA	H	LC	LT	X	LLRT
2-MS-191A	2A	Steam Gen. Blowdown Sample	.5	GL	AO	O	Q		
							MT		
							FT		
							LT	X	LLRT
2-MS-191B	2A	Steam Gen. Blowdown Sample	.5	GL	AO	O	Q		
							MT		
							FT		
							LT	X	LLRT

Valve Number	Class/ Category	Containment Isolation	Size (Inches)	Valve Type	Actuation	Normal Position	Test Requirements	Relief Requests	Testing Alternative
2-PMW-43	2A	Demineralized Water to Quench Tank	2	GL	AO	C	Q		
							MT		
							FT		
							LT	X	LLRT
2-RC-001	2A	Reactor Coolant Sample	.75	GL	AO	O	Q		
							MT		
							FT	X	FTCS
							PI		
							LT	X	LLRT
2-RC-002	2A	Reactor Coolant Sample	.75	GL	AO	C	Q		
							MT		
							FT	X	FTCS
							PI		
							LT	X	LLRT
2-RC-003	2A	Reactor Coolant Sample	.75	GL	AO	C	Q		
							MT		
							FT	X	FTCS
							PI		
							LT	X	LLRT
2-RC-45	2A	Reactor Coolant Sample	.5	GL	AO	O	Q		
							MT		
							FT		
							LT	X	LLRT
2-CH-089	2A	Letdown to Purification Demin.	2	GL	AO	O	Q	X	QCS
							MT		
							FT	X	FTCS
							LT	X	LLRT
2-CH-198	2A	RC Pump Seals Controlled Leakoff	.75	GL	AO	O	Q	X	QCS
							MT		
							FT	X	FTCS
							LT	X	LLRT
2-CH-505	2A	RC Pump Seals Controlled Leakoff	.75	GL	AO	O	Q	X	QCS
							MT		
							FT	X	FTCS
							LT	X	LLRT

RELIEF REQUEST BASIS

SYSTEM: CONTAINMENT ISOLATION

1. Valve: 2-CH-089

   Category: A

   Class: 2

   Function: Provide containment isolation for RCS letdown piping on containment isolation signal.

   Test Requirement: Exercise (full stroke) and measure stroke time every three months.

   Basis for Relief: Operation of this valve during plant operation would cause undesirable thermal transients on the regenerative heat exchanger. This component has a limited number of design thermal transients.

   Alternate Testing: Exercise (full stroke) and measure stroke time during cold shutdowns.

SYSTEM: CONTAINMENT ISOLATION (CONT.)

2. Valve: 2-CH-198, 505, 506

Category: A

Class: 2

Function: Isolate Reactor Coolant pump seal leakoff line at containment penetration.

Test Requirement: Exercise and measure stroke time every three months.

Basis for Relief: These valves are required to be open anytime the reactor coolant pumps are operating.

Alternate Testing: Exercise and measure stroke time during cold shutdown when reactor coolant pumps are secured.

SYSTEM: CONTAINMENT ISOLATION (CONT.)

3. Valve: 2-CH-516

Category: A

Class: 2

Function: Isolate Reactor Coolant System letdown line on containment isolation signal.

Test Requirement: Exercise (full stroke) and measure stroke time every three months.

Basis for Relief: Operation of this valve during plant operation would cause undesirable thermal transients on the regenerative heat exchanger. This component has a limited number of design thermal transients.

Alternate Testing: Exercise (full stroke) and measure stroke time during cold shutdown.

SYSTEM: CONTAINMENT ISOLATION (CONT.)

4.	Valve:	See List of Containment Isolation Valves.
	Category:	A, AP
	Class:	2
	Function:	To insure containment integrity in event of requirements to isolate.
	Test Requirement:	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. These valves are and have been leak tested under Technical Specification requirements using Appendix J to 10CFR50, Type C tests. See MP2 Technical Specification 3.6.1.2. Relief is requested from the requirements of paragraph IWV-3423 in that the intent is met by the Appendix J requirements.
	Alternate Testing:	Leak Test the containment isolation valves under technical specification requirements using Appendix J to 10CFR50 type tests. Stroke testing will be conducted as required by IWV-3410.

SYSTEM: CONTAINMENT ISOLATION (CONT.)

5.	Valve:	2-SI-651
	Category:	A
	Class:	1
	Function:	Isolate shutdown cooling system piping from Reactor Coolant System.
	Test Requirement:	Exercise and measure stroke time every three months.
	Basis for Relief:	Valves are locked closed when Reactor Coolant System pressure exceeds 300 psig to protect the low-pressure shutdown piping. Valve exercise would require violation of plant interlocks.
	Alternate Testing:	Exercise and measure stroke time during cold shutdown when Reactor Coolant System pressure is less than 300 psig.

TABLE IWV - 2

SAFETY/RELIEF VALVE SETPOINTS

Service	Valve No.	Type	Setpoint (Tol.)
Safety Injection Tanks	2-SI-007	1" Rel	2735
	2-SI-211	1" Rel	250
	2-SI-221	1" Rel	250
	2-SI-231	1" Rel	250
	2-SI-241	1" Rel	250
HPSI Header B Relief	2-SI-409	.75 Rel	1750
HPSI Header A Relief	2-SI-417	1 Rel	2735
LPSI Header Relief	2-SI-439	.75 Rel	500
SIT Test Line Relief	2-SI-466	1.5 Rel	560
Shutdown Cooling Suction Relief	2-SI-468	1.5 Rel	300
Shutdown Cooling Suction Relief	2-SI-469	1" Rel	300
Pressurizer Relief	2-RC-200	2.5 RV	2500 (±1%)
Pressurizer Relief	2-RC-201	2.5 RV	2500 (±1%)
Pressurizer POR Valves	2-RC-402	2.5" Gate (sol. op.)	450
Pressurizer PORC Valves	2-RC-404	2.5" Gate (sol. op.)	450
Charging Pump A Relief	2-CH-326	.75 Rel	2735
Charging Pump B Relief	2-CH-325	.75 Rel	2735
Charging Pump C Relief	2-CH-324	.75 Rel	1050 (+1%)
Main Steam Header B Relief	2-MS-239	6" Rel	1050 (+1%)
	2-MS-240	6" Rel	1045 (+1%)
	2-MS-241	6" Rel	1025 (+1%)
	2-MS-242	6" Rel	1005 (+1%)
	2-MS-243	6" Rel	1050 (+1%)
	2-MS-244	6" Rel	1035 (+1%)
	2-MS-245	6" Rel	1015 (+1%)
	2-MS-246	6" Rel	1000 (+1%)
Main Steam Header A Relief	2-MS-247	6" Rel	1000 (+1%)
	2-MS-248	6" Rel	1050 (+1%)
	2-MS-249	6" Rel	1015 (+1%)
	2-MS-250	6" Rel	1045 (+1%)
	2-MS-251	6" Rel	1035 (+1%)
	2-MS-252	6" Rel	1025 (+1%)
	2-MS-253	6" Rel	1050 (+1%)
	2-MS-254	6" Rel	1005 (+1%)

LEGEND FOR VALVE TESTING

Q - Exercise valve full stroke for operability every three (3) months.

QP - Exercise valve part stroke for operability every three (3) months.

QCS - Exercise valve full stroke for operability during cold shutdowns.

QPCS - Exercise valve part stroke for operability during cold shutdowns.

QR - Exercise valve full stroke for operability during refueling.

QPR - Exercise valve part stroke for operability during refueling.

MT - Take stroke time measurements and compare to the stroke time limiting value per Section XI, Article IWV-3410.

PI - Visually observe, at least once every two years, 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.

LT - Leak test valve per Section XI, Article IWV-3420, or applicable relief request.

LLRT - Leak test valve in conformance with the criteria specified in Appendix J of 10CFR50.

SRV - Test safety and relief valves per Section XI, Article IWV-3510.

FTCS - Remove actuator power from valves with fail-safe actuators to confirm that the valve travels to its fail-safe position during cold shutdowns.

Section 9

System Pressure Tests

System Pressure Tests

Table BCD-5000 presents the system pressure test requirements for the Millstone Unit 2 components and notes departures from Code where it was deemed necessary.

Test requirements for open-ended lines, such as suction lines from storage tanks, and which receive static tests are not addressed in the table, but will be met.

The location of check valves in several systems that penetrate the primary containment preclude the Class 1 pressure test boundary from extending outward beyond the first of such valves, usually located inside containment even though the class change boundary is outside containment. In these cases, the Class 1 leakage and pressure test boundary would be the inside check valve. Conversely, pressure tests of Class 2 systems, which are outside containment, would have to be bounded at a stop valve which may or may not be the Class 1/Class 2 boundary.

In systems which contain pumps, it will not be possible to utilize the pump casing as the boundary between high pressure and low pressure tests without overpressurizing suction piping during the high pressure test. In these cases, the discharge isolation valve will be considered the test boundary.

Millstone Unit 2

Table BCD-5000

System Pressure Tests

System	Test Pressure (psig)	Code Test Pressure (psig)	Remarks
Class 1 (IWB-5000)			
Reactor Coolant Pressure Boundary			
System Leakage Test	2250	2250	In Compliance With Code
System Hydrostatic Test	2430 @ 200F	2430 @ 200F	In Compliance With Code
Class 2 (IWC-5000)			
HPSI	2188	2188	In Compliance With Code
Containment Spray	625	625	In Compliance With Code
LPSI/Shutdown Cooling			
Pump Suction Piping From 2-SI-651 to 2-SI-432 and 2-SI-444	375	375	In Compliance With Code
Pump Discharge Piping	625	625	In Compliance With Code
Main Steam From SGs to 2-MS-64A/B 2-MS-65A/B, and 2-MS-201 and 2-MS-202	1250	1250	In Compliance With Code
Feedwater From 2-FW-5A/B and 2-FW-12A/B to SGs	1250	1250	In Compliance With Code
CVCS Boric Acid Subsystem	188	188	In Compliance With Code

Millstone Unit 2

Table BCD-5000

System Pressure Tests (Cont'd)

System	Test Pressure (psig)	Code Test Pressure (psig)	Remarks
Charging Pump Suction Header	188	188	In Compliance With Code
Charging Pump Discharge Header	3419	3419	In Compliance With Code
Letdown From RCS, Valve 2-CH-516 to RHX to 2-CH-89	3106	3106	In Compliance With Code
Class 3 (IWD-5000)			
Spent Fuel Pool Cooling			
Pump Suction Piping	55	55	In Compliance With Code
Pump Discharge Piping	110	110	In Compliance With Code
Auxiliary Feedwater			
Aux. Feedpump Suction Piping	55	55	In Compliance With Code
Aux. Feedpump Discharge Piping to 2-FW-43A/B	1760	1760	In Compliance With Code
Aux. Feedpump Discharge Piping From 2-FW-43A/B to 2-FW-12A/B	1210	1210	In Compliance With Code
RBCCW	165	165	In Compliance With Code
Service Water			
Cast Iron Underground	94	94	In Compliance With Code
Relief Valve Inlet Piping	94	188	See Relief Request
Remaining System Piping	94	110	See Relief Request

Millstone Unit 2

Table BCD-5000

System Pressure Tests (Cont'd)

System	Test Pressure (psig)	Code Test Pressure (psig)	Remarks
Chilled Water	55	55	In Compliance With Code
Main Steam From Valves 2-MS-201 and 2-MS-202 to SG Aux. Feedpump Turbine	1100	1100	In Compliance With Code

RELIEF REQUEST BASIS

System: Service Water

Category/Class: D-3

Function: The Service Water System supplies Millstone Unit 2 with Plant Service Water. The system consists of Code Class 3 and Nonnuclear Piping and components designed to three different operating pressures, depending upon service conditions and material selection.

Test Requirements: Hydrostatic Testing the three different portions of the system to the pressures listed below and are stipulated in IWD5223(a):

Cast Iron Underground	PD = 85 psig
Relief Valve Inlets	PD = 150 psig
Balance (majority) of System	PD = 100 psig

Basis for Relief: It is not possible to isolate the various portions of the above system to permit code pressure test. NNECO request relief from the requirements of IWD-5223(a) for the two higher pressure (PD = 100 psig and PD = 150 psig) portions of the Service Water System.

Alternative Testing: NNECO proposes to test the entire Service Water System to 94 psig, test pressure (1.1 times PD = 85 psig) based on the cast iron underground portion of the system. Although this pressure is lower than the design pressure for most of the Service Water System, it is approximately 1½ times the system operation pressure and would constitute a meaningful hydrostatic test.