

Revision 5 Changes

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Record of Changes

Change Number	Date Entered	INITIALS		
		PORC	Pl Supt	MOO
1	6/25/79	<i>[Signature]</i> 6/25/79	<i>WPC</i> WPC	<i>[Signature]</i> 6/25/79
2	10/18/79	<i>[Signature]</i>	<i>WPC</i>	<i>[Signature]</i> 10/22/79
3	5/13/80	<i>[Signature]</i> 5/8/80	<i>WPC</i> 5/12/80	<i>WPC</i> 5/13/80
4	6/27/80	<i>[Signature]</i> 6/25/80	<i>WPC</i> 6-26-80	<i>WPC</i> 6/27/80
5	10/1/80	<i>[Signature]</i> 9/26/80	<i>WPC</i> 9/27/80	<i>WPC</i> 10/1/80

[illegible]

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INSPECTION SUMMARY

Item No.	Category	No. in Category	Number and % Required			Subsequent Intervals	Comments
			Periods 1 & 2 -each (Tech. Spec.)	1st Interval	Period 3 (ASME Sum. 75)		
B1.1	Reactor Vessel	9	0	0	0	0	See Relief Request No. B
B1.2	B-A	Top: 6-Meridian 1-Circum. 2-Longit. Bottom: 12 welds	3% of ea. weld 1.5% of weld 3% of ea. weld 0	3 1/3% of ea. weld 1 2/3% of weld 3 1/3% of ea. weld 0	10% of weld 5% of weld 10% of weld 0	10% of ea. weld	See Relief Request No. B
B1.3	B-B	1 Head 1 Vessel	25% of ea. weld	33 1/3% of ea. weld	100% of ea. weld	100% of ea. weld	See Relief Request No. B
B1.4	B-C	30	7 & 8	10	29	29	See Relief Request No. B-3
B1.5	B-D	89	B-E-1 (0) B-E-2 (9)	8	23	23	
B1.6	B-E	21	5 & 6	7	21	21	
B1.7 or B1.8	B-F	64 studs 64 nuts	16 studs 16 nuts	22 studs 22 nuts	64 studs 64 nuts	64 studs 64 nuts	
B1.9	B-G-1	64	16	22	64	64	
B1.10	B-G-1	64	16	22	64	64	

Item No.	Category	No. in Category	Number and % Required			Subsequent Intervals	Comments
			1st Interval	Period 3 (ASME Sum. 75)	Periods 1 & 2 -each (Tech. Spec.)		
Reactor Vessel							
B1.11	B-G-2	32	8	11		32	
B1.12	B-H	5	0	2		4	See Relief Request No. B-8
B1.13	B-I-1	6	2	2		6	
B1.14	B-I-1	6	2	2		6	
B1.15	B-N-1	N/A	1st Refuel	As accessible		Refuels every 3 years	
B1.16	B-N-2	N/A	0	As accessible		As accessible	
B1.17	B-N-3	--	--	--		--	
B1.18	B-O	20	0	1		2	
B1.19	B-P						See hydrostatic pressure test
Piping (See Relief Request No. G-1)							
* B4.1	B-F	8	2 & 3	3		8	See Relief Request No. B-7
B4.2	B-G-1	0	--	--		--	
B4.3							
B4.4							
* B4.5	B-J	459	51 & 52	39		115	Instrument lines previously excluded by ISI-121 are currently under Item B4.11 See Relief Request No. B-7
B4.6	B-J	8					
B4.7	B-J	16					

Item No.	Category	No. in Category	Number and % Required		Subsequent Intervals	Comments
			1st Interval Periods 1 & 2 -each (Tech. Spec.)	Period 3 (ASME Sum. 75)		
B4.9	B-K-1	37	5	3	10	See RRB B4
* B4.10	B-K-2	117	30 & 30	39	117	Snubber settings indicate remaining piston thermal travel required to prevent full extension or compression when hot.
B4.11	B-P	See Comment	22	As required	All	Consist of Instruments Lines or S.C-1 lines under 1.75 inch I.D. for water and under 3.5 inches for steam.
B4.12	B-G-2	164 bolts 180 nuts	41 bolts 45 nuts	55 bolts 60 nuts	164 bolts 180 nuts	
Pumps		32	8	11	32	Bolts are examined in place. Surface examinations shall be performed if and when pump bolts are removed.
B5.1	B-G-1					
B5.4	B-K-1	12	2	1	3	See RRB B4
B5.5	B-K-2	8	2	3	8	See comment B4.10

Number and % Required

Item No.	Category	No. in Category	Number and % Required			Subsequent Intervals	Comments
			Periods 1 & 2 -each (Tech. Spec.)	1st Interval	Period 3 (ASME Sum. 75)		
*B5.6	B-L-1	0	0		0	0	Pump casings are cast, there are no casing seam welds.
B5.7	B-L-2	1	0		0	0	2 pumps performing similar functions. See Relief Request No. B-6
B5.8	B-P	0	0		0	0	
B5.9	B-G-2	0	0		0	0	
Valves							
	B-G-1	0	0		0	0	
B6.4	B-K-1	0	0		0	0	
B6.5	B-K-2	0	0		0	0	
B6.6	B-M-1	0	0		0	0	
B6.7	B-M-2	17	0 & 2	17	end of 10 yrs.	17	See Relief Request No. B-5 Grouped by similar function.
B6.8	B-P	0	0		0	0	
B6.9	B-G-2	716	179 & 218	239		716	

ITEM NO: R1.4 CATEGORY: B-D 5920

Component: Nozzle Vessel Mat'l Nozzle Mat'l Cal. Drawing Required Methods

Nozzle to Vessel Welds

	Nozzle Size	Vessel Mat'l	Nozzle Mat'l	Cal. Standard	Drawing No.	Required Methods	INTERVAL 1			INTERVAL 2	
							1	2	3	1	2
N1A	36" x 28"	A-533-65 GRB	A-508 CLII	RV-1	238	Vol	X			X	
N1B	36" x 28"	"	"	"	"	"	X			X	
N2A	12"	"	"	"	656	"	X			X	
N2B	12"	"	"	"	"	"	X			X	
N2C	"	"	"	"	"	"		X			X
N2D	"	"	"	"	"	"		X			X
N2E	"	"	"	"	"	"			X		X
N2F	"	"	"	"	"	"			X		X
N2G	"	"	"	"	"	"		X		X	
* N2H	"	"	"	"	"	"			X		X
N2J	"	"	"	"	"	"			X		X
N2K	"	"	"	"	"	"			X		X
N3A	18"	A-533-65	"	"	239	"		X			X
N3B	"	"	"	"	"	"		X			X
N3C	"	"	"	"	"	"		X			X
N3D	"	"	"	"	"	"		X			X
N4A	10"	"	"	"	241	"	X			X	
N4B	10"	"	"	"	"	"	X			X	
N4C	"	"	"	"	"	"			X		X
N4D	10"	A-533-65	A-508 CLII	RV-1	241	Vol	X			X	

ITEM NO: B1.6 CATEGORY: Nozzle B-F

Nozzle Safe-end Mat'l

Safe-end Cal. Standard

Drawing No. Required Methods

INTERVAL 1 INTERVAL 2

Component:

Nozzle Size

Nozzle Mat'l

Safe-end Cal. Standard

Drawing No.

Required Methods

INTERVAL 1

INTERVAL 2

Nozzle to Safe-end Welds

		A-508 CLII	SA-240 TP 304		VY-35	5920- 483	Vol & Sur		1	2	3	1	2	3
N1A-SE	28"								X			X		
N1B-SE	"	"	"		"	"	"		X			X		
N2A-SE	12"	"	A-336 F8	RV-4	VY-30		"				X			X
N2B-SE	"	"	"	"	"		"				X			X
N2C-SE	"	"	"	"	"		"			X			X	
N2D-SE	"	"	"	"	"		"							
N2E-SE	"	"	"	"	"		"							
N2F-SE	"	"	"	"	"		"							
N2G-SE	"	"	"	"	"		"							
N2H-SE	"	"	"	"	"		"							
N2J-SE	"	"	"	"	"		"							
N2K-SE	"	"	"	"	"		"							
N5A-SE	10"	"	B-168		VY-14		"					X		
N5B-SE	"	"	"		"		"					X		
N6A-SE	6"	"	A-336 F8	Radiograph			"						X	
N6B-SE	"	"	"	Radiograph			"						X	
N7 -SE	4"	"	"	Radiograph			"						X	
N8A-SE	"	"					"		X					
N8B-SE	"	"					"							
* N9 -SE	3"	A-508 CLII	A-336 F8				"		X			X		

Nozzle capped. See next pg

ITEM NO: BL.12

CATEGORY: B-H

5920

Drawing
No.

Thickness

Material

Location

Component:

INTERVAL 1

INTERVAL 2

1 2 3

1 2

3

INTEGRALLY WELDED VESSEL SUPPORTS

Full
Perimeter

Vessel Support Skirt

548

Vol *

Vessel Stabilizer
Brackets

A

0°

3 1/2"

A-533-CL.I
GR.B

257

Vol *

X

X

B

90°

3 1/2"

A-533-CL.I
GR.B

257

Vol *

X

C

180°

3 1/2"

A-533-CL.I
GR.B

257

Vol *

X

X

D

270°

3 1/2"

A-533-CL.I
GR.B

257

Vol *

X

*

See Relief Request No. B-8

ITEM NO: B1.18 CATEGORY: B-O

Component: Thickness Material Stub Housing Material Cal. Standard Drawing No. Required Methods

CONTROL ROD DRIVE HOUSINGS

										INTERVAL 1			INTERVAL 2		
										1	2	3	1	2	3
02-19	.564"	SS TP304	A-376 T304												
02-23	.564	"	"												
02-27	.564	"	"												X
06-11	.564	"	"												
06-35	.564	"	"												
10-07	.564	"	"												
10-39	.564	"	"												
18-03	.564	"	"									X			
18-43	.564	"	"												
22-03	.564	"	"												
22-43	.564	"	"												
26-03	.564	"	"												
26-43	.564	"	"												
34-07	.564	"	"												
34-39	.564	"	"												X
38-11	.564	"	"												
38-35	.564	"	"												
42-19	.564	"	"												
42-23	.564	"	"												
* 42-27	.564	"	"												

[illegible]

[illegible]

ITEM NO: B4.5

CATEGORY: B-J

Component:

Size Sch. No.

Mat'l Standard

Drawing No.	Required Methods
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16
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78	78
79	79
80	80
81	81
82	82
83	83
84	84
85	85
86	86
87	87
88	88
89	89
90	90
91	91
92	92
93	93
94	94
95	95
96	96
97	97
98	98
99	99
100	100

INTERVAL 2

INTERVAL. I

Circ . Welds (cont'd)

HPCI
MS- 4A

FI

FLA

I-62
Rev. 5

ITEM NO: B4.9		CATEGORY: B-K-1		INTERVAL 1			INTERVAL 2			
Hanger Type	Hot Setting	Cold Setting	Drawing No.	Required Methods	1	2	3	1	2	3
Component:										
Integrally Welded Supports										
Recirc. Ring Header and Inlets										
RR-37	Spring	7,100	7,000	H-1	Vol.**					
RR-44	Spring	8,500	7,400	H-1	Vol.**			X		
RR-48	Rigid	N/A	N/A	H-1	Vol.**	X				
RR-49	Spring	11,500	11,250	H-1	Vol.**					
RR-52	Spring	8,500	7,406	H-1	Vol.**	X				
RR-59	Spring	8,100	7,006	H-1	Vol.**					
Recirc. Loop "A"										
RR-10	Spring	8	2	H-2	Vol.**					
RR-11	Spring	8	2	H-2	Vol.**				X	
* RR-24	Snubber	Required Piston Setting: - 1/4"		H-2	Vol.**	X				
RR-27	Rigid	N/A	N/A	H-2	Vol.**		X			
* RR-34	Snubber	Required Piston Setting: + 11/16"		H-2	Vol.**				X	
* RR-35	Snubber	Required Piston Setting: + 11/16"		H-2	Vol.**					
Recirc. Loop "B"										
* RR-62	Snubber	Required Piston Setting: - 11/16"		H-3	Vol.**					X
* RR-63	Snubber	Required Piston Setting: + 11/16"		H-3	Vol.**					
RR-70	Rigid	N/A	N/A	H-3	Vol.**			X		
* RR-73	Snubber	Required Piston Setting: - 1/4"		H-3	Vol.**	X				
RR-86	Spring	8	2	H-3	Vol.**					
RR-87	Spring	8	2	H-3	Vol.**				X	

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ITEM NO: B4.9

Hanger	Hot
Type	Setting

CATEGORY: B-K-1

Drawing No.	Required Methods
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16
17	17
18	18
19	19
20	20
21	21
22	22
23	23
24	24
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80	80
81	81
82	82
83	83
84	84
85	85
86	86
87	87
88	88
89	89
90	90
91	91
92	92
93	93
94	94
95	95
96	96
97	97
98	98
99	99
100	100

INTERVAL 1

INTERVAL 2

Component:

Integrally Welded Supports

RHR "C"

RHR-7

RHR-8

Head Spray

RHR-9

RHR-11

RHR-12

RHR-14

Reactor Clean-up

CU-3

*

★★ See Relief Request No. B-4

ITEM NO: B4.10CATEGORY: B-K-2

Component:

Hanger
Type

Hot

Setting

Cold
SettingDrawing
No.Required
Methods

INTERVAL 1

INTERVAL 2

1

2

3

1

2

3

Non-integrally Welded Support Components

Recirc. Ring Header
and Inlets

RR-60

Rigid

N/A

N/A

H-1

VIS

X

RR-61

Rigid

N/A

N/A

H-1

VIS

X

X

Recirc. Loop "A"

RR-1

Rigid

N/A

N/A

H-2

VIS

X

X

* RR-2

Snubber

Required Piston
Travel: + 1 1/8"

H-2

VIS

X

X

* RR-3

Snubber

Required Piston
Travel: + 1 1/8"

H-2

VIS

X

RR-4

Rigid

N/A

N/A

H-2

VIS

X

X

RR-5

Sway
Brace

N/A

N/A

H-2

VIS

X

X

RR-6

Sway
Brace

N/A

N/A

H-2

VIS

X

X

RR-7

Spring

12,400

10,450

H-2

VIS

X

X

RR-8

Spring

12,400

10,450

H-2

VIS

X

X

RR-9

Rigid

N/A

N/A

H-2

VIS

X

RR-22

Spring

7.5

2.5

H-2

VIS

X

X

RR-23

Spring

7.5

2.5

H-2

VIS

X

X

RR-25

Spring

7.5

2.5

H-2

VIS

X

RR-26

Spring

8

3

H-2

VIS

X

X

RR-28

Rigid

N/A

N/A

H-2

VIS

X

X

RR-29

Spring

13,300

11,305

H-2

VIS

X

X

ITEM NO: B-4.10 CATEGORY: B-K-2

Hanger Type Hot Setting Cold Setting

Component:

Drawing No. Required Methods

INTERVAL 1 INTERVAL 2

		INTERVAL 1			INTERVAL 2		
		1	2	3	1	2	3
Non-integrally Welded Support Components							
Recirc Loop "B"							
RR-92	Sway Brace	N/A	N/A				
RR-93	Rigid	N/A	N/A			X	
RR-94	Rigid	N/A	N/A				
Main Steam Line "A"							
MS-1	Spring	3.5	6.5		X		
MS-2	Spring	3.5	6.5				X
* MS-3	Snubber	Required Piston Travel: + 1 1/8"				X	
MS-4	Spring	9.140	9.640			X	
MS-5	Spring	4.0	6.0		X		
* MS-6	Snubber	Required Piston Travel: + 1 1/16"				X	
MS-7	Rigid	N/A	N/A				X
Main Steam Line "B"							
MS-12	Spring	3.5	6.0		X		
MS-13	Spring	3.5	6.0				X
MS-14	Spring	4.0	6.0				
* MS-15	Snubber	Required Piston Travel: + 1"				X	
MS-16	Rigid	N/A	N/A				X
Main Steam Line "C"							
MS-21	Spring w/ shr. blks	3.5	6.5		X		X

ITEM NO: B-4.10CATEGORY: B-K-2

Component:

Hanger
TypeHot
SettingCold
SettingDrawing
No.Required
Methods

INTERVAL 1

INTERVAL 2

1

2

3

1

2

3

Non-integrally Welded Support Components

Main Steam Line "C"

MS-22

Spring w/
Shr. Blks

3.5

6.5 ..

H-16

VIS

X

X

MS-23

Spring

* *

* *

H-16

VIS

X

X

* MS-24

Snubber

Required Piston
Travel: + 1"

H-16

VIS

X

MS-25

Rigid

N/A

N/A

H-16

VIS

X

X

Main Steam Line "D"

MS-30

Spring w/
Shr. Blks

3.5

6.5

H-17

VIS

X

X

MS-31

"

3.5

6.5

H-17

VIS

X

X

* MS-32

Snubber

Required Piston
Travel: + 1 1/8"

H-17

VIS

X

X

MS-33

Spring

9,140

9,640

H-17

VIS

X

X

MS-34

Spring

3.5

6.5

H-17

VIS

X

X

* MS-35

Snubber

Required Piston
Travel: 1 1/16"

H-17

VIS

X

MS-36

Shear
Blocks

N/A

N/A

H-17

VIS

X

X

Feedwater "A"

FW-1

Spring w/
Shr. Blks

2,485

2,876

H-7

VIS

X

X

FW-2

"

2,485

2,876

H-7

VIS

X

X

* FW-3

Snubber

Required Piston
Travel: + 1 5/8"

H-7

VIS

X

FW-5

Rigid w/
Shr. Blks

N/A

N/A

H-7

VIS

X

X

FW-6

Spring

2,902

3577

H-7

VIS

X

X

FW-7

Spring w/
Shr. Blks

2,457

2,832

H-7

VIS

X

X

** Obscured reading

		ITEM NO: B-4.10	CATEGORY: B-K-2		Drawing No.	Required Methods	INTERVAL 1			INTERVAL 2		
		Hanger Type	Hot Setting	Cold Setting			1	2	3	1	2	3
Component:												
Non-integrally Welded Support Components												
Feedwater "A"	FW-8	Spring w/ Shr. Blks.	2,457	2,832		H-7			X			X
	FW-9	Spring	4,877	5,957		H-7	X			X		
Feedwater "B"	FW-12	Spring w/ Shr. Blks.	2,457	2,851		H-8			X			X
	FW-13	Spring w/ Shr. Blks.	2,457	2,851		H-8	X			X		
	* FW-15	Snubber	Required Piston Travel: + 1 5/8"			H-8				X		
	FW-16	Spring w/ Shr. Blks.	N/A	N/A		H-8			X			X
	FW-17	Spring	2902	3577		H-8	X			X		
	FW-18	Spring w/ Shr. Blks.	2,457	2,832		H-8		X			X	
	FW-19	Spring w/ Shr. Blks.	2,457	2,832		H-8		X			X	
	FW-20	Spring	4,877	5,957		H-8			X			X
RHR "A"	* RHR-3	Snubber	Required Piston Travel: + 3/8"			H-4					X	
	* RHR-4	Snubber	Required Piston Travel: + 1/8"			H-4					X	
*RHR "B"	H-103	Rigid	N/A	N/A		H-5				X		
*RHR "C"	HD 189B	Rigid	N/A	N/A		H-6					X	
Head Spray												
	RHR-10	Rigid	N/A	N/A		H-10		X			X	
	RHR-13	Rigid	N/A	N/A		H-10	X			X		
Reactor Clean-up												
	* CU-1	Snubber	Required Piston Travel: - 1"			H-13				X		

CATEGORY: B-K-2

Hanger	Hot
Type	Setting

Cold
Set

Component:

Drawing No.	Required Methods
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16
17	17
18	18
19	19
20	20
21	21
22	22
23	23
24	24
25	25
26	26
27	27
28	28
29	29
30	30
31	31
32	32
33	33
34	34
35	35
36	36
37	37
38	38
39	39
40	40
41	41
42	42
43	43
44	44
45	45
46	46
47	47
48	48
49	49
50	50
51	51
52	52
53	53
54	54
55	55
56	56
57	57
58	58
59	59
60	60
61	61
62	62
63	63
64	64
65	65
66	66
67	67
68	68
69	69
70	70
71	71
72	72
73	73
74	74
75	75
76	76
77	77
78	78
79	79
80	80
81	81
82	82
83	83
84	84
85	85
86	86
87	87
88	88
89	89
90	90
91	91
92	92
93	93
94	94
95	95
96	96
97	97
98	98
99	99
100	100

Settings:

Setting

Non-integrally Welded Support components

Reactor Clean-up

*CU-2

CU-4

CU-5

CU-6

CU-7

CU-8

CUJ-9

HPCI

HPCI-1

HPCI-2

HPCI-3

HP CI-4

RCIC

RCIC-1

RCIC-2

* RCTC-H60

*

ITEM NO: B5.4 CATEGORY: B-K-1

Hanger Type Hot Setting Cold Setting

Drawing No. Required Methods

INTERVAL 1 INTERVAL 2

Component:

Integrally Welded Supports

Recirc. Loop "A"
P-18-1A

RR-12

RR-13

RR-14

RR-15

RR-16

RR-17

Recirc. Loop "B"
P-18-1B

RR-80

RR-81

RR-82

RR-83

RR-84

RR-85

*

* See Relief Request No. B-4

	Type	Hot Setting	Cold Setting	Drawing No.	Required Methods	INTERVAL 1			INTERVAL 2		
						1	2	3	1	2	3
Snubber	Required Piston Travel: + 9/16"			H-2	Vol.*	X					
Snubber	Required Piston Travel: + 3/4"			H-2	Vol.*	X					
Snubber	Required Piston Travel: + 9/16"			H-2	Vol.*						
Spring	7.7	2.4		H-2	Vol.*			X			
Spring	7.7	2.4		H-2	Vol.*						
Spring	7.7	2.4		H-2	Vol.*						
Snubber	Required Piston Travel: + 9/16"			H-3	Vol.*						
Snubber	Required Piston Travel: + 1/8"			H-3	Vol.*						
Snubber	Required Piston Travel: + 3/4"			H-3	Vol.*						
Spring	7.5	2.5		H-3	Vol.*				X		
Spring	7.5	2.5		H-3	Vol.*						
Spring	7.5	2.5		H-3	Vol.*						X
* See Relief Request No. B-4											

Drawing No.	Required Methods
----------------	---------------------

Non-integrally Welded Support Components

Rev. 5
I - 83

B5.7

Wall

Component:

Pump Casings

Recirc. Loop "A"

P-18-1A

Recirc. Loop "B"
P-18-1B perform
similar functions
per IWB - 2500

*

[illegible]

ITEM NO: B6.7

CATEGORY: B-M-2

Drawing Required
No. Methods

INTERVAL 1

Component:

Valve Bodies (cont'd)

		INTERVAL 1			INTERVAL 2		
		1	2	3	1	2	3
group 9	V2-80A						
	V2-80B						
	V2-80C						
	V2-80D						
	V2-86A						
	V2-86B						
	V2-86C						
	V2-86D						
group 10	SV2-70A						
	SV2-70B						
group 11	RV2-71A						
	RV2-71B						
	RV2-71C						
	RV2-71D						
group 12	V10-17						
group 13	V10-18						
group 14	V10-25A						
	V10-25B						
group 15	V10-46A						
	V10-46B						

ITEM NO: B6.9CATEGORY: B-G-2

Component:

No./Bolt
SizeBody
Type

Mat'l

Size
Rating/lbs.Drawing
No.Required
Methods

INTERVAL 1

INTERVAL 2

1

2

3

1

2

3

Pressure-Retaining
Bolting

V2-43A

24/<2"

Cast

SS

28"/

H-2

Vis

X

X

Recirc. Loop

"A"

V2-53A

24/<2"

Cast

SS

28"/

H-2

Vis

X

X

V2-54A

10/<2"

Cast

SS

4"/

H-2

Vis

X

X

Recirc. Loop

"B"

V2-43B

24/<2"

Cast

SS

28"/

H-3

Vis

X

X

V2-53B

24/<2"

Cast

SS

28"/

H-3

Vis

X

X

V2-54B

10/<2"

Cast

SS

4"/

H-3

Vis

X

X

Recirc. Ring Header

V2-65A

24/<2"

Cast

SS

22"/

H-1

Vis

X

X

V2-65B

24/<2"

Cast

SS

22"/

H-1

Vis

X

X

Feedwater Line "A"

V2-27A

8/<2"

Cast

CS

16"/900

H-7

Vis

X

X

V2-28A

8/<2"

Cast

CS

16"/900

H-7

Vis

X

X

V2-29A

6/<2"

Cast

CS

16"/900

H-7

Vis

X

X

Feedwater Line "B"

V2-28B

8/<2"

Cast

CS

16"/900

H-8

Vis

X

X

V2-29B

6/<2"

Cast

CS

16"/900

H-8

Vis

X

X

V2-96A

8/<2"

Cast

CS

16"/900

H-8

Vis

X

X

*

*

Head Spray

V10-29

4/<2"

Cast

SS

4"/1500

H-10

Vis

X

X

V10-32

2/<2"

Cast

CS

4"/900

H-10

Vis

X

V10-33

2/<2"

Cast

CS

4"/900

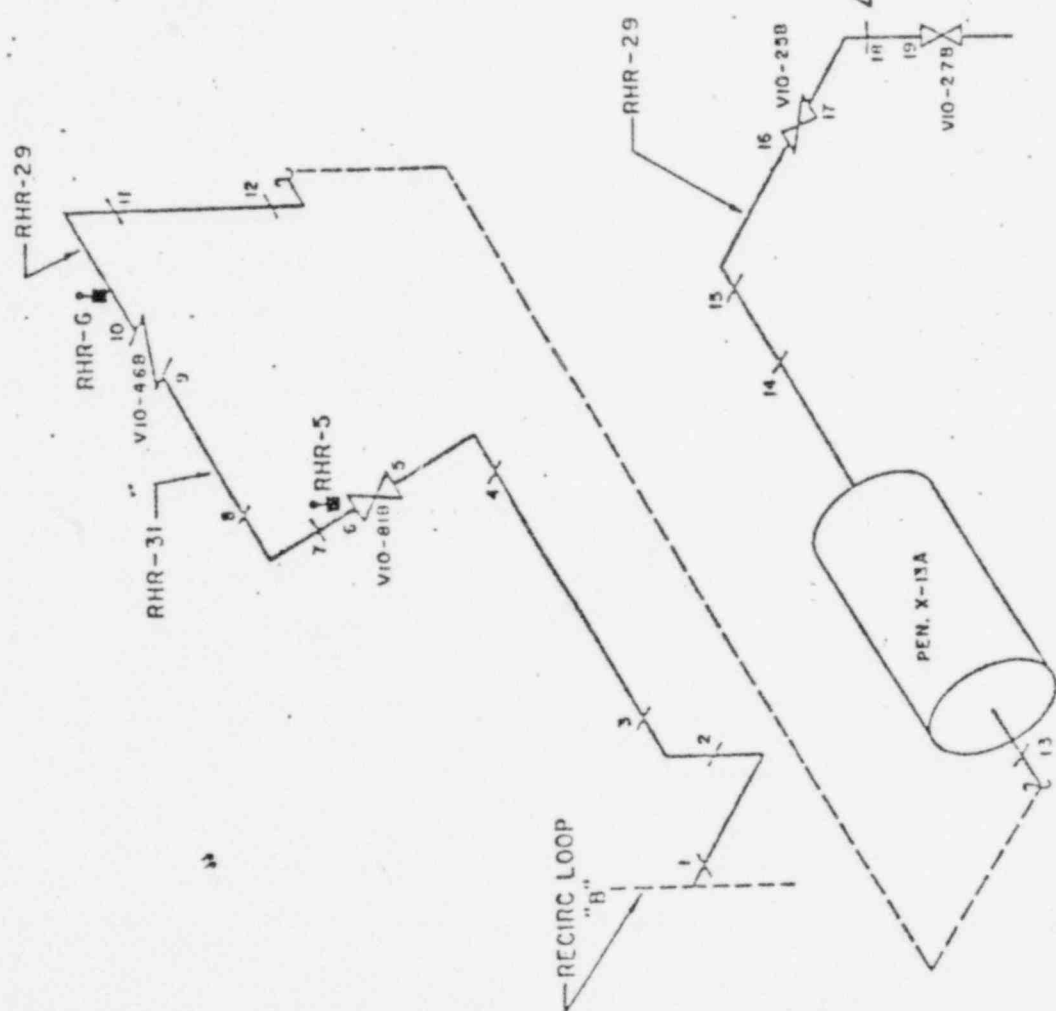
H-10

Vis

X

X

POOR ORIGINAL



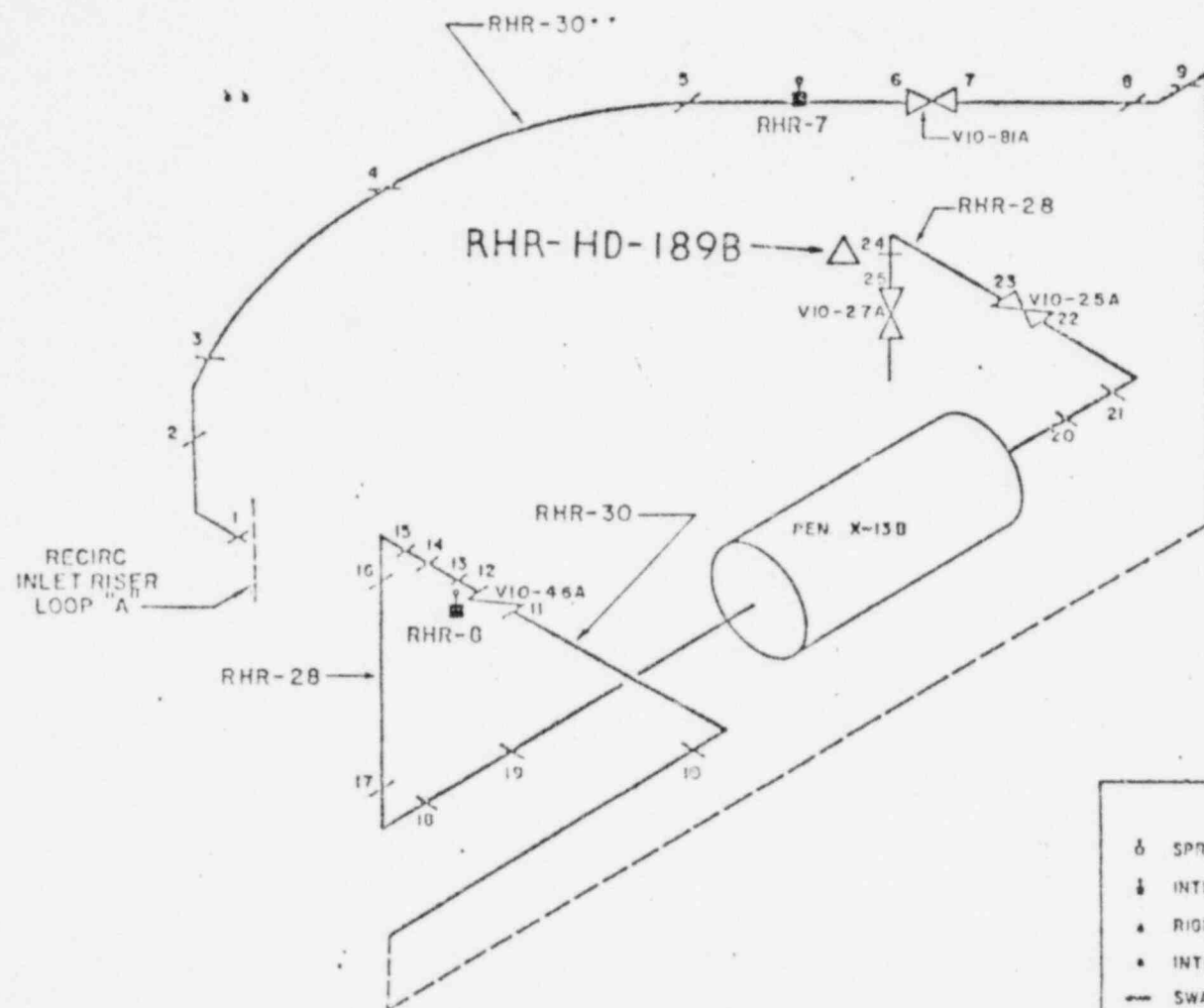
RHR-H103

LEGEND

- △ SPRING HANGAR OR SUPPORT
- ▲ INTEGRALLY WELDED SPRING HANGAR OR SUPPORT
- ▲ RIGID HANGAR, SUPPORT OR RESTRAINT
- ▲ INTEGRALLY WELDED RIGID HANGAR, SUPPORT OR RESTRAINT
- SWAY BRACE
- INTEGRALLY WELDED SWAY BRACE
- SHOCK SUPPRESSOR
- INTEGRALLY WELDED SHOCK SUPPRESSOR
- INTEGRALLY WELDED SHEAR BLOCKS

RHR PIPING LINE "B"

DRWG. H-5



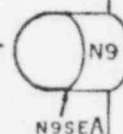
LEGEND	
○	SPRING HANGAR OR SUPPORT
⊥	INTEGRALLY WELDED SPRING HANGAR OR SUPPORT
•	RIGID HANGAR, SUPPORT OR RESTRAINT
•	INTEGRALLY WELDED RIGID HANGAR, SUPPORT OR RESTRAINT
—	SWAY BRACE
—	INTEGRALLY WELDED SWAY BRACE
⊥	SHOCK SUPPRESSOR
⊥	INTEGRALLY WELDED SHOCK SUPPRESSOR
I	INTEGRALLY WELDED SHEAR BLOCKS

RHR PIPING LINE "C"

DRWG. H-6

CRD RETURN PIPING
REMOVED AND REROUTED

WELD CAP



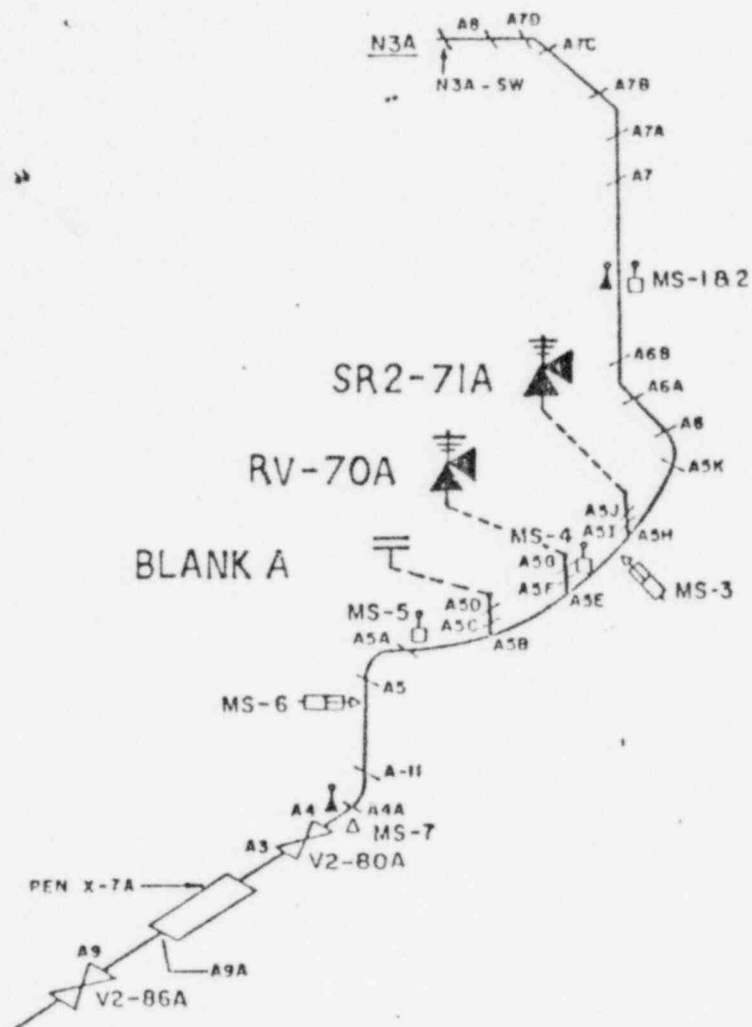
RPV

LEGEND

- SPRING HANGAR OR SUPPORT
- ⬇ INTEGRALLY WELDED SPRING HANGAR OR SUPPORT
- ▲ RIGID HANGAR, SUPPORT OR RESTRAINT
- ▲ INTEGRALLY WELDED RIGID HANGAR, SUPPORT OR RESTRAINT
- SWAY BRACE
- INTEGRALLY WELDED SWAY BRACE
- SHOCK SUPPRESSOR
- INTEGRALLY WELDED SHOCK SUPPRESSOR
- ⬇ INTEGRALLY WELDED SHEAR BLOCKS

CRD RETURN
NOZZLE

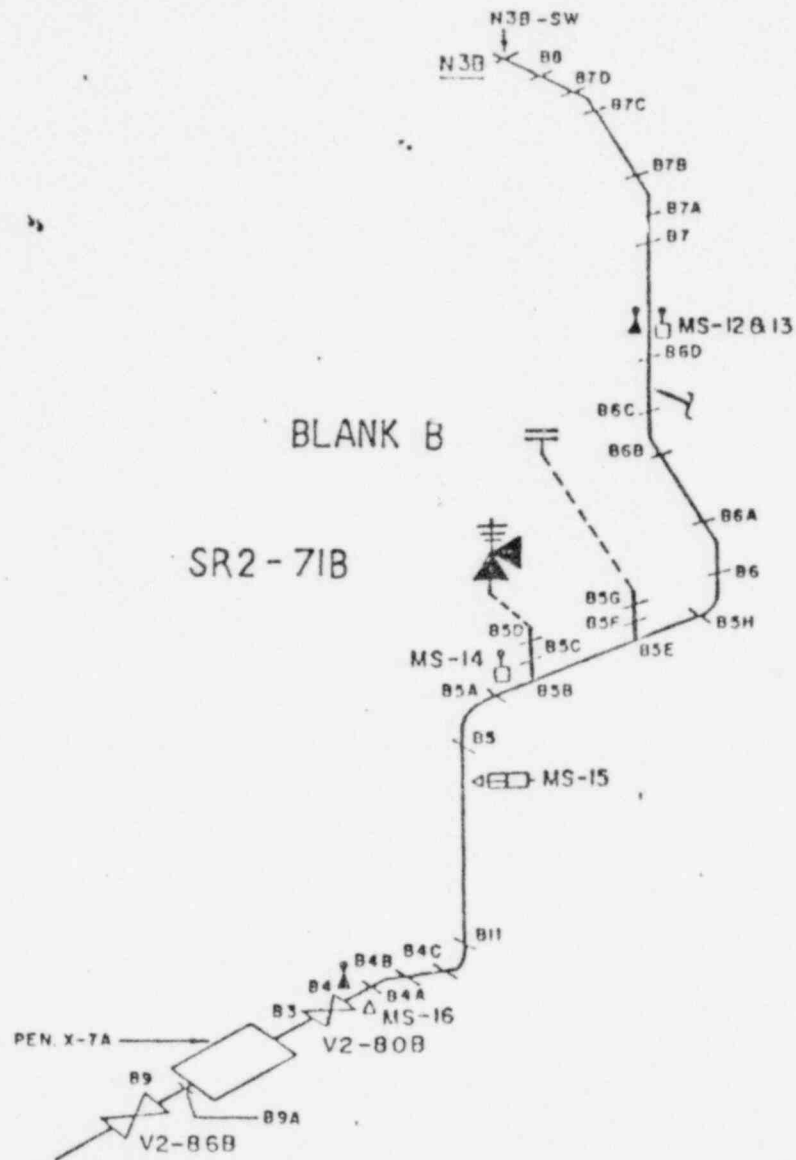
DRWG. H-9



LEGEND	
	SPRING HANGER OR SUPPORT
	INTEGRALLY WELDED SPRING HANGER OR SUPPORT
	RIGID HANGER, SUPPORT OR RESTRAINT
	INTEGRALLY WELDED RIGID HANGER, SUPPORT OR RESTRAINT
	SWAY BRACE
	INTEGRALLY WELDED SWAY BRACE
	SHOCK SUPPRESSOR
	INTEGRALLY WELDED SHOCK SUPPRESSOR
	INTEGRALLY WELDED SHEAR BLOCKS

MAIN STEAM LINE "A"
SEE FRISCO DWS 4920-ES-13

DRWG H-14



BLANK B

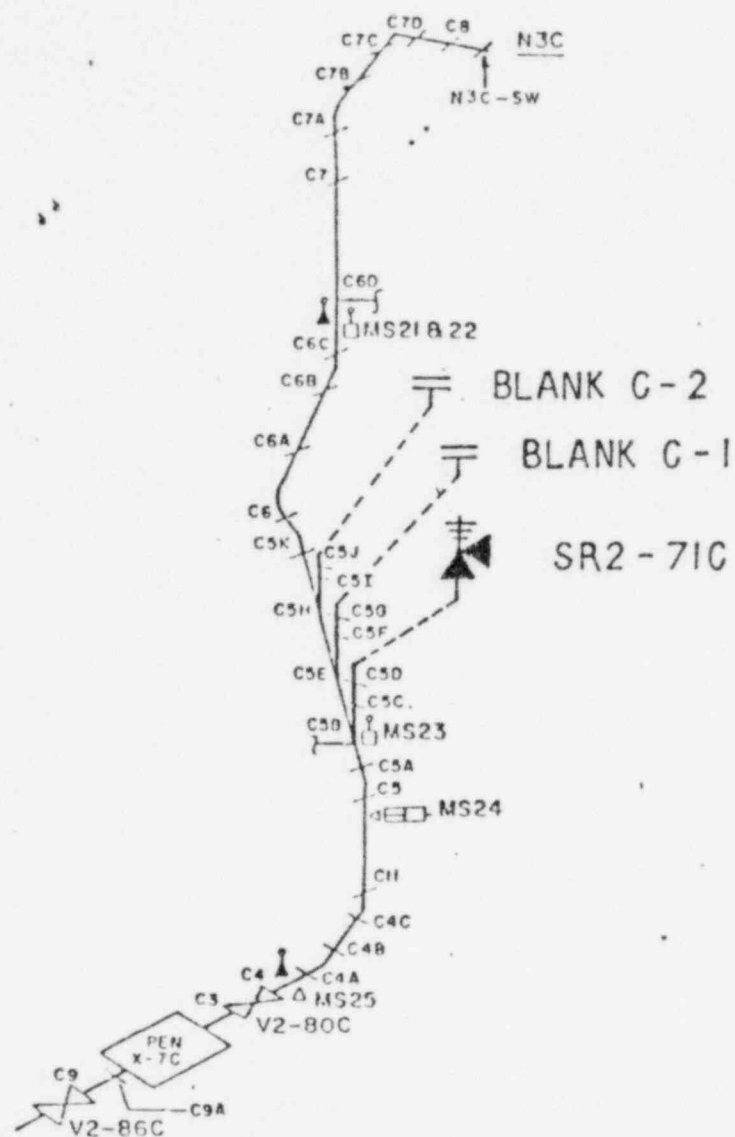
SR2-71B

LEGEND

- △ SPRING HANGAR OR SUPPORT
- ◻ INTEGRALLY WELDED SPRING HANGAR OR SUPPORT
- ▲ RIGID HANGAR, SUPPORT OR RESTRAINT
- ▲ INTEGRALLY WELDED RIGID HANGAR, SUPPORT OR RESTRAINT
- SWAY BRACE
- INTEGRALLY WELDED SWAY BRACE
- SHOCK SUPPRESSOR
- INTEGRALLY WELDED SHOCK SUPPRESSOR
- ⊥ INTEGRALLY WELDED SHEAR BLOCKS

MAIN STEAM LINE "B"

DDWG H-15



LEGEND	
	SPRING HANGER OR SUPPORT
	INTEGRALLY WELDED SPRING HANGER OR SUPPORT
	RIGID HANGER, SUPPORT OR RESTRAINT
	INTEGRALLY WELDED RIGID HANGER, SUPPORT OR RESTRAINT
	SWAY BRACE
	INTEGRALLY WELDED SWAY BRACE
	SHOCK SUPPRESSOR
	INTEGRALLY WELDED SHOCK SUPPRESSOR
	INTEGRALLY WELDED SHEAR BLOCKS

MAIN STEAM LINE "C"

Diagram illustrating a cable system layout, likely for a submarine cable, showing various components and connections.

Key components and labels include:

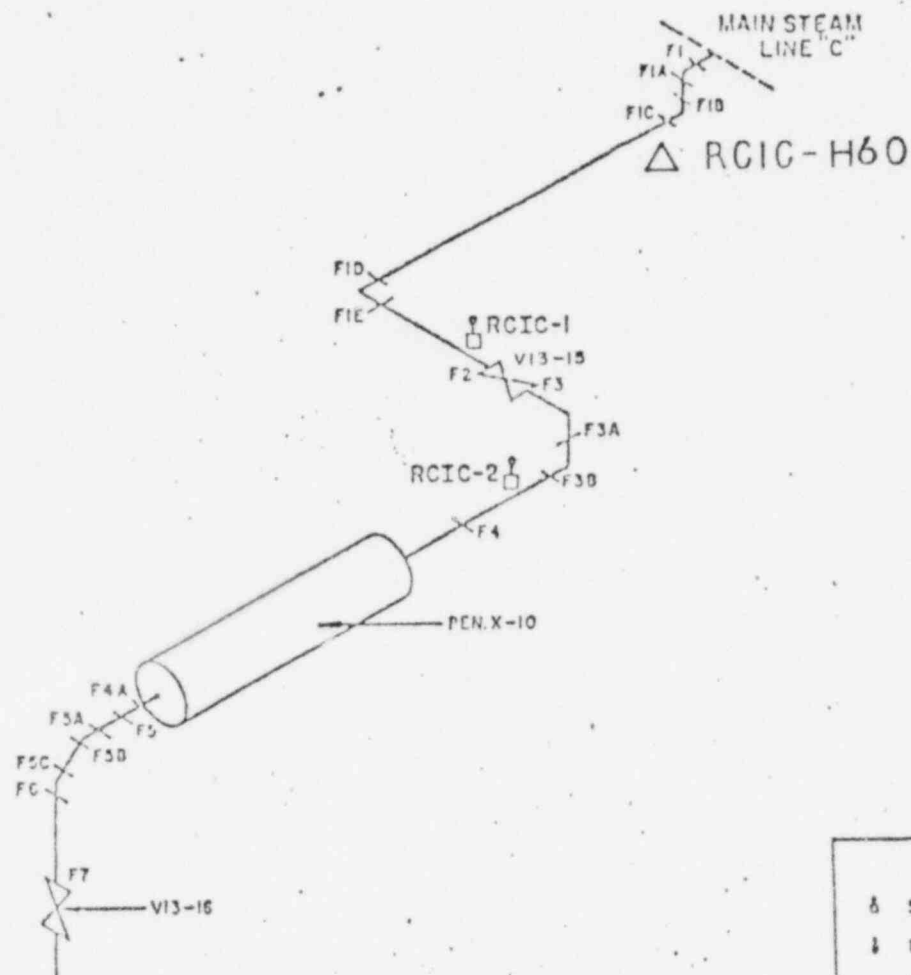
- SR2-71D** and **RV-70B**: Antenna or receiver structures.
- BLANK D**: A central label, possibly indicating a blank or specific section.
- MS30831**, **MS33**, **MS32**, **MS34**, **MS35**, **MS36**: Various modules or components along the cable line.
- V2-80D**, **V2-86D**: Components at the bottom right, possibly related to the cable's termination or connection.
- PEN X-70**: A component labeled within a diamond shape.
- D7C**, **D7B**, **D7A**, **D7**, **D6**, **D5K**, **D5I**, **D5J**, **D5H**, **D5E**, **D5F**, **D5G**, **D5C**, **D5A**, **D5B**, **D5**, **D4**, **D3**, **D2**, **D1**, **D0**: Points or segments along the cable line.
- N3D** and **N3D-5W**: Labels at the top left, possibly indicating a specific cable or connection point.

- 6 SPRING HANGAR OR SUPPORT
- 4 INTEGRALLY WELDED SPRING HANGAR OR SUPPORT
- 4 RIGID HANGAR, SUPPORT OR RESTRAINT
- 4 INTEGRALLY WELDED RIGID HANGAR, SUPPORT OR RESTRAINT
- SWAY BRACE
- INTEGRALLY WELDED SWAY BRACE
- SHOCK SUPPRESSOR
- INTEGRALLY WELDED SHOCK SUPPRESSOR
- INTEGRALLY WELDED SHEAR BLOCKS

MAIN STEAM LINE "D"
OFF BRASS FWC 5020-55-34

DRWG H-17

POOR ORIGINAL



LEGEND	
	SPRING HANGER OR SUPPORT
	INTEGRALLY WELDED SPRING HANGER OR SUPPORT
	RIGID HANGER, SUPPORT OR RESTRAINT
	INTEGRALLY WELDED RIGID HANGER, SUPPORT OR RESTRAINT
	SWAY BRACE
	INTEGRALLY WELDED SWAY BRACE
	SHOCK SUPPRESSOR
	INTEGRALLY WELDED SHOCK SUPPRESSOR
	INTEGRALLY WELDED SHEAR BLOCKS

RCIC

MAIN STEAM ATTACHMENT

DRWG. H-19

Item	Category	No. in Category	Number and % Required			Comments
			1st Interval		Subsequent Intervals	
			Periods 1 & 2 -each (Tech. Spec.)	Period 3 (ASME Sum. 75)		
C1.1	C-A	5	0	1	2 in 1 int'l 1 in other 3	
C1.2	C-B	3	0	0	1	Surface examinations shall be performed. See Relief Request No. C-1
C1.3	C-C	4	0	1	1	
C1.4	C-D	136 bolts 272 nuts	0	Vis: 46 bolts 91 nuts NDE: 3 bolts from ea. joint	Vis: 136 bolts 272 nuts NDE: 7 bolts from ea. joint	Fushing, threads, and ligaments in base metal of flanges are examined only when the connection is disassembled. - Bolting may be examined under tension.
* C2.1	C-F C-G	114 300	0 0	10 13	29 38	See Relief Request No. B-7
C2.2	C-F C-G	0 0	0 0	0 0	0 0	
* C2.3	C-F C-G	0 0	0 0	0 0	0 0	
C2.4	C-D	120 bolts 172 nuts	0	Vis: 40 bolt sts. NDE: 4 bolts	Vis: 120 bolt sets NDE: 2 bolts per joint	See comment of Item C1.4
* * C2.5	C-E-1	96	0	32	96	
* * C2.6	C-E-2	170	0	57	170	See comment B4.10

Component:	I M NO:	C2.1 Schedule or Thickness	Material	CATEGORY: C-F	Drawing No.	Required Methods	INTERVAL 1			INTERVAL 2			
							1	2	3	1	2	3	
RHR - 2C (cont'd)													
* S2	20"	.375	A-106-B		I-8	Vol.				X			
S3	"	"	"		"	"							
F2	18"	.375	A-106-B		I-8	Vol.							
F1	20"	.375	A-106-B		I-9	Vol.							
S1	"	"	"		"	"							
S2	"	"	"		"	"					X		
S3	"	"	"		"	"							
F2	18"	.375	A-106-B		I-9	Vol.							
F1	16"	.375	A-106-B		I-10A	Vol.							
S1	16"	.375	A-106-B		I-10A	Vol.							
F2	"	"	"		"	"							
F4	"	"	"		"	"							
S2	"	"	"		"	"							
F5	"	"	"		"	"							
F6	"	"	"		"	"						X	
S3	"	"	"		"	"				X			
S4	"	"	"		"	"							
F6A	"	"	"		"	"							
F6B	"	"	"		"	"							
F7	16"	.375	A-106-B		I-10A	Vol.							

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Rev. 5

ITEM NO: C2.1 CATEGORY: C-G

INTERVAL 1

INTERVAL 2

Drawing Required
No. Methods

Size Schedule or
Thickness Material

Component:

*

*

Piping Circ. Welds
(grouped in sets
of multiple streams
if any)

HPCI

Steam Supply

MS-4B

F1

Rev. 5
II - 26

S3

S4

Vol.

I-2

A-106-B

80

10"

"

"

"

"

"

Vol.

I-2

A-106-B

80

10"

ITEM NO: C2.1 CATEGORY: C-G

INTERVAL 1

INTERVAL 2

Component:

Drawing Required Methods

Material

Schedule or Thickness

Size

Component:

C3 - 2B (cont'd)

		INTERVAL 1			INTERVAL 2		
		1	2	3	1	2	3
S13	10"	80	A-106-B	I-6B	Vol.		
S14	"	"	"	"	"		
F7	"	"	"	"	"		
F8	"	"	"	"	"		X
S15	"	"	"	"	"		
S16	"	"	"	"	"		
S17	"	"	"	"	"		
F9	"	"	"	"	"		
S18	"	"	"	"	"		
* S19	"	"	"	"	"		X
* F10	8"	80	A-106-B	I-6B	Vol.		
F1	8"	80	A-106-B	I-6A	Vol.		
S1	"	"	"	"	"	X	
S2	"	"	"	"	"		
S3	"	"	"	"	"		
S4	"	"	"	"	"		
F2	"	"	"	"	"		
F3	"	"	"	"	"		
Multiple Stream	8"	80	A-106-B	I-6B	Vol.		
CS - 3B	8"	80	A-106-B	I-6B	Vol.		

CS - 3A

ITEM NO: C2.1

CATEGORY: C-G

Component:

Size

Schedule or
Thickness

Material

Drawing Required
No. Methods

INTERVAL 1

INTERVAL 2

RHR - 41A (cont'd)

S4

CRD

CRD - 4
[Scram Discharge
Volume]

CRD-

CRD-2

CRD-5

5-1

5-2

5-3

5-4

Similar Line

CRD - 6

6-1

6-2

6-3

6-4

CRD-5A

5A-1

5A-2

5A-3

5A-4

5A-5

5A-6

5A-7

sch. 30 te
to STD red

A-106-B

A-106-B

A-106-B

A-106-B

"

"

"

A-106-B

"

"

"

A-106-B

"

"

"

"

"

A-106-B

20"

10"

10"

6"

"

"

"

6"

"

"

"

6"

"

"

"

"

"

6"

Vol.

Vol.

Vol.

Vol.

"

"

"

Vol.

"

"

"

"

"

"

"

"

"

Vol.

I-12

I-18

I-18

I-22

I-22

I-22

I-22

I-22

I-22

I-22

I-22

I-22

I-22

I-22

I-22

I-22

I-22

I-22

1

2

3

1

2

3

1

2

3

X

X

X

ITEM NO: C2.1 CATEGORY: C-G

INTERVAL 2

INTERVAL 1

Drawing
No.

Required
Methods

Size

Schedule or
Thickness

Material

Component:

CRD - 5A (cont'd)

5A-8

Similar Line

CRD - 6A

6A-1

6A-2

6A-3

6A-4

6A-5

6A-6

6A-7

6A-8

CRD-7

7-1

7-2

7-3

Similar Line

CRD - 8

8-1

8-2

8-3

1

2

3

1

2

3

1

2

3

1

2

3

1

2

3

1

2

3

1

2

3

Vol.

Vol.

"

"

"

"

"

"

"

"

Vol.

"

"

Vol.

"

Vol.

"

"

"

"

"

X

X

ITEM NO. C2.3 CATEGORY: C-G

INTERVAL 2

INTERVAL 1

Drawing Required
No. Methods

Schedule or
Thickness

Material

Type

Size

Component:

1

2

3

1

2

3

1

2

3

This page has been deleted.

ITEM NO: C2.5

CATEGORY: C-E-1

Component:

Type

Hot
SettingCold
SettingDrawing
No.Required
Methods

INTERVAL 1

INTERVAL 2

1

2

3

1

2

3

Integrally Welded Supports

HPCI

HPCI-2

W-24

Welded

-

-

I-5

Sur

X

X

HD-24

Welded

-

-

I-5

Sur

X

HD-26B

Spring

3580

3780

I-5

Sur

X

H-26

Welded

-

-

I-5

Sur

X

X

H-22

Dual
Welded

-

-

I-5

Sur

X

HD-22A

Spring

3521

3445

I-5

Sur

X

HD-26A

Spring

2035

2316

I-5

Sur

X

X

HPCI-3

HD-107C

Double
Spring

4951

4546

I-3

Sur

X

HD-107B

Double
Spring

2902

2752

I-3

Sur

X

HD-108A

Spring

549

563

I-3

Sur

X

X

HPCI-5

H-28

Welded

-

-

I-5

Sur

X

HD-28

Welded

-

-

I-5

Sur

X

HPCI-15B

H-32

Welded

-

-

I-4

Sur

X

X

HD-35D

Double
Spring

2717

2413

I-4

Sur

X

HD-35C

Double
Spring1850
each1722
each

I-4

Sur

X

HD-22D

Welded

-

-

I-4

Sur

X

X

HD-35B

Spring

4010

4210

I-4

Sur

X

ITEM NO: C2.6

CATEGORY: C-E-1

Component:

Type

Hot
SettingCold
SettingDrawing
No.Required
Methods

INTERVAL 1

INTERVAL 2

1

2

3

1

2

3

HPCI-15B (Cont'd)

HPCI Steam
MS-4B

HD-22E

Welded

-

-

I-4

Sur

X

HD-22B

Spring

5050

5320

I-2

Sur

X

X

HD-6

Spring

2811

2136

I-2

Sur

X

HD-8C

Spring

1511

1267

I-2

Sur

X

HD-13B

Spring

1671

1628

I-2

Sur

X

X

HD-13A

Double
Spring

535

507

I-2

Sur

X

HD-103A

Spring

3534

3734

I-2

Sur

X

HD-103B

Welded

-

-

I-2

Sur

X

X

H-A10

Welded

-

-

I-2

Sur

X

RHR

RHR-1A

HD-128

Welded

-

-

I-7A

Sur

X

H-128

Welded

-

-

I-7A

Sur

X

X

HD-185E

Welded

-

-

I-7A

Sur

X

HD-185D

Welded

-

-

I-7A

Sur

X

H-181

Welded

-

-

I-7A

Sur

X

X

RHR-1B

H-22

Welded

-

-

I-7B

Sur

X

H-127

Welded

-

-

I-7B

Sur

X

HD-127A

Welded

-

-

I-7B

Sur

X

X

HD-127B

Welded

-

-

I-7B

Sur

X

PHR-2A

HD-184

Welded

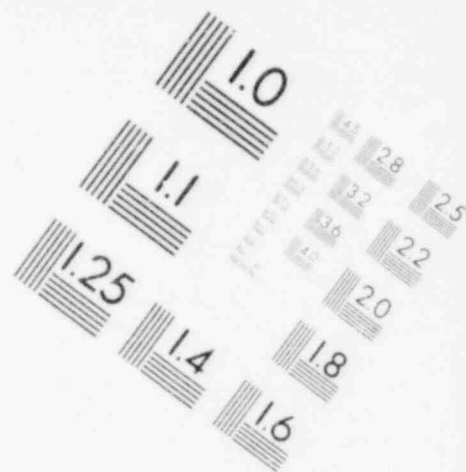
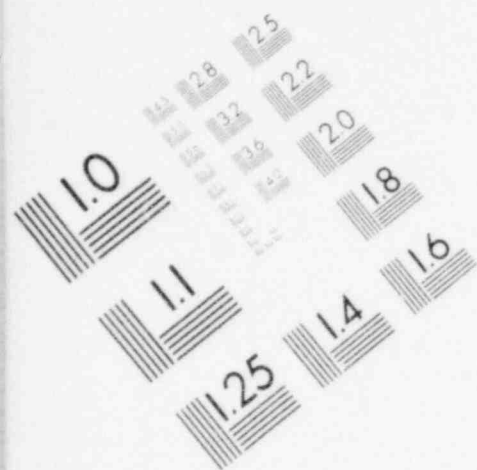
-

-

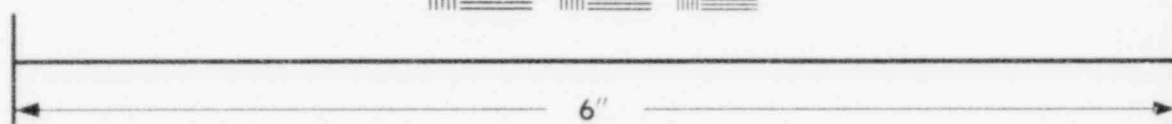
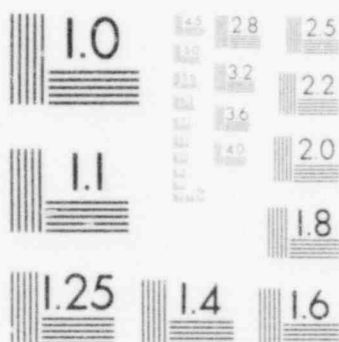
I-8

Sur

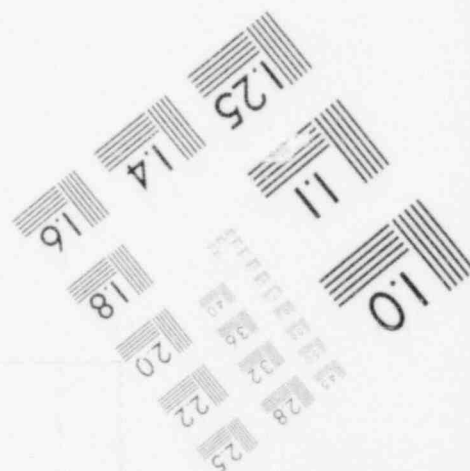
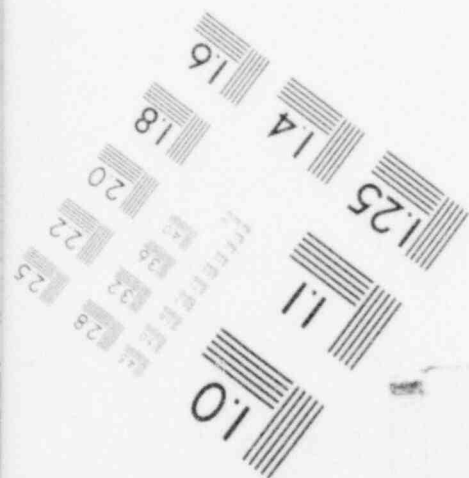
X



**IMAGE EVALUATION
TEST TARGET (MT-3)**



MICROCOPY RESOLUTION TEST CHART



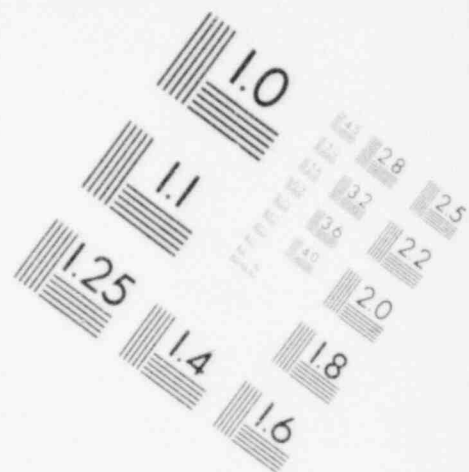
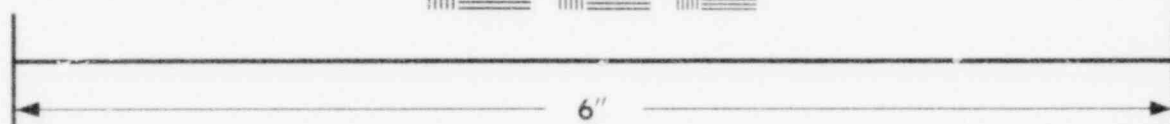
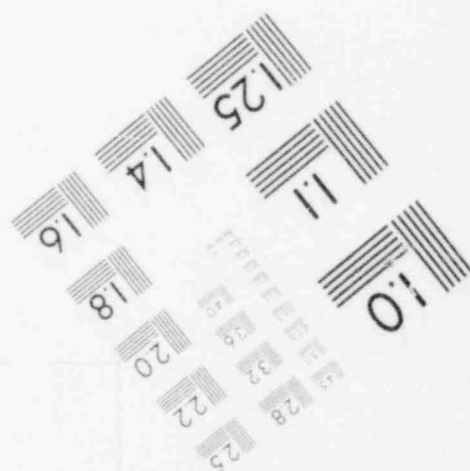
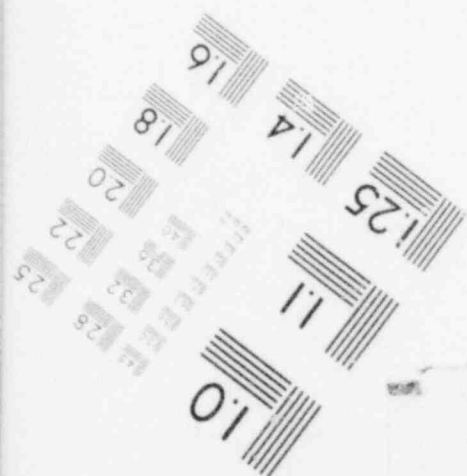


IMAGE EVALUATION TEST TARGET (MT-3)



MICROCOPY RESOLUTION TEST CHART



ITEM NO: C2.5 CATEGORY: C-E-1

Hot (lbs) Cold
Setting Setting

Component:

RHR - 2A (cont'd)

HD-183A

HD-183C

HD-183B

RHR - 2B HD-127J

HD-127C

HD-127E

HD-127D

RHR - 2C HD-185C

HD-185B

RHR - 2D HD-127H

HD-127G

HD-127F

RHR - 3A HD-130A

RHR - 3B HD-129D

RHR - 3C HD-197C

RHR - 3D HD-188C

RHR - 6 HD-200B

HD-200E

HD-189A

H-187

Rev. 5
II - 57Drawing Required
No. Methods

INTERVAL 1

INTERVAL 2

Type	Hot (lbs) Setting	Cold Setting	Drawing No.	Required Methods	INTERVAL 1			INTERVAL 2		
					1	2	3	1	2	3
Welded	-	-	I-8	Sur			X			X
Spring	7173	7548	I-8	Sur					X	
Welded	-	-	I-8	Sur				X		
Welded	-	-	I-9	Sur			X			X
Welded	-	-	I-9	Sur					X	
Spring	7173	7548	I-9	Sur				X		
Welded	-	-	I-9	Sur			X			X
Welded	-	-	I-8	Sur					X	
Welded	-	-	I-8	Sur				X		
Welded	-	-	I-9	Sur			X			X
Welded	-	-	I-9	Sur					X	
Welded	-	-	I-9	Sur				X		
Welded	-	-	I-10A	Sur			X			X
Welded	-	-	I-10B	Sur					X	
Spring	3000	3000	I-10A	Sur				X		
Spring	3000	3000	I-10B	Sur			X			X
Welded	-	-	I-12	Sur					X	
Welded	-	-	I-12	Sur				X		
Double Spring	3630	3330	I-12	Sur			X			X
Welded	-	-	I-12	Sur					X	

Component:	ITEM NO:	C2.5		CATEGORY:		C-E-1	Drawing No.	Required Methods	INTERVAL 1			INTERVAL 2			
		Type	Setting	Hot	Cold				Setting	1	2	3	1	2	3
RHR-40 (Cont-d)	HD-4	Welded	-	-	-	-	I-17	Sur				X			
	HL-5	Welded	-	-	-	-	I-17	Sur			X				X
	HD-6	Welded	-	-	-	-	I-17	Sur						X	
	HD-24	Welded	-	-	-	-	I-17	Sur				X			
	HD-23	Welded	-	-	-	-	I-17	Sur							X
	HD-22	Welded	-	-	-	-	I-17	Sur					X		
	HD-21	Welded	-	-	-	-	I-17	Sur				X			
	HD-201B	Welded Rigid	-	-	-	-	I-17	Sur				X			
Core Spray															
	CS-2A	Welded	-	-	-	-	I-6A	Sur				X			
	HD-61A	Spring	559	587			I-6A	Sur			X				X
	HD-52B	Spring	2006	2175			I-6A	Sur					X		
	H-52	Welded	-	-	-	-	I-6A	Sur				X			
	HD-89	Spring	2006	2287			I-6A	Sur			X				X
	H-54	Welded	-	-	-	-	I-6A	Sur					X		
	H-61	Welded	-	-	-	-	I-6A	Sur				X			
CS-2B	H-90	Welded	-	-	-	-	I-6A	Sur							X
	HD-85A	Welded	-	-	-	-	I-6B	Sur						X	
	HD-85B	Spring	559	587			I-6B	Sur				X			
	HD-85C	Welded	-	-	-	-	I-6B	Sur					X		
															X

[illegible]

CS-2B (Cont'd)

ITEM NO: C2.6
Hot
Setting

CATEGORY: C-E-2
Cold
Setting

Drawing
No. Required
Methods

INTERVAL 1

INTERVAL 2

Component:

Type

Setting

Setting

No.

Required
Methods

1

3

1

2

3

HPCI-15B (Cont'd)

HD-22C

Spring

I-4

Vis

X

X

H-3

Rigid

-

-

I-2

Vis

X

HD-3

Spring

2161

2048

I-2

Vis

X

H-6

Rigid

-

-

I-2

Vis

X

X

H-8

Rigid

-

-

I-2

Vis

X

HD-8B

Rigid

-

-

I-2

Vis

X

HD-8A

Rigid

-

-

I-2

Vis

X

X

HD-13D

Rigid

-

-

I-2

Vis

X

HD-13C

Rigid

-

-

I-2

Vis

X

H-13

Rigid

-

-

I-2

Vis

X

X

HD-102D

Spring

1688

2028

I-2

Vis

X

H-102A

Snubber

Required Piston
Travel: -3/32"

I-2

Vis

X

H-102B

Snubber

Required Piston
Travel: + 1 7/8"

I-2

Vis

X

X

H-102

Rigid

-

-

I-2

Vis

X

H-102C

Rigid

-

-

I-2

Vis

X

HD-102B

Spring

1528

1783

I-2

Vis

X

X

HD-102A

Spring

1025

1175

I-2

Vis

X

HD-103C

Spring

1528

1783

I-2

Vis

X

H-103A

Snubber

Required Piston
Travel: - 1/8"

I-2

Vis

X

X

H-103B

Snubber

Required Piston
Travel: - 1/32"

I-2

Vis

X

ITEM NO: C2.6
Hot
 Setting

CATEGORY: C-E-2
Cold
 Setting

Drawing
 No. Required
 Methods

INTERVAL 1

INTERVAL 2

Component:

Type

1 2 3 1 2 3

Bolster to
 Main Pump

H-200

Rigid

-

-

I-4

Vis

X

H-201

Rigid

-

-

I-4

Vis

X

X

CRD Hydraulic

CRD-5

H-21

Rigid

-

-

I-22

Vis

X

H-22

Rigid

-

-

I-22

Vis

X

H-23

Rigid

-

-

I-22

Vis

X

X

H-24

Rigid

-

-

I-22

Vis

X

H-25

Rigid

-

-

I-22

Vis

X

H-26

Rigid
 Sway

-

-

I-22

Vis

X

X

CRD-5A

H-18

Rigid

-

-

I-22

Vis

X

H-19

Rigid
 Sway

-

-

I-22

Vis

X

H-20

Rigid
 Sway

-

-

I-22

Vis

X

X

H-27

Rigid

-

-

I-22

Vis

X

H-28

Rigid

-

-

I-22

Vis

X

H-29

Rigid

-

-

I-22

Vis

X

X

H-30

Rigid
 Sway

-

-

I-22

Vis

X

CRD-6

H-9

Rigid

-

-

I-22

Vis

X

H-10

Rigid

-

-

I-22

Vis

X

X

H-11

Rigid

-

-

I-22

Vis

X

H-12

Rigid

-

-

I-22

Vis

X

ITEM NO: C2.6 CATEGORY: C-E-2

INTERVAL 2

INTERVAL 1

Drawing Required
No. Methods

Component:

Type Hot Setting

Cold Setting

CRD-6 (Cont'd)

		INTERVAL 1			INTERVAL 2		
		1	2	3	1	2	3
H-13	Rigid Sway			X			X
H-1	Rigid Sway				X		
H-2	Rigid Sway					X	
H-14	Rigid			X			X
H-15	Rigid				X		
H-16	Rigid						
H-17	Rigid			X			X
H-31	Rigid				X		
H-32	Rigid					X	
H-33	Rigid			X			X
H-34	Rigid				X		
H-35	Rigid						
H-36	Rigid Sway			X			X
H-3	Rigid						
H-4	Rigid				X		
H-5	Rigid			X			X
H-6	Rigid				X		
H-7	Rigid						
H-8	Rigid Sway			X			X

CRD-6A

CRD-7

CRD-8

ITEM NO: C2.6
Hot
Setting

CATEGORY: C-E-2
Cold
Setting

Drawing
No. Required
Methods

INTERVAL 1

INTERVAL 2

Component:

Type

Setting

Setting

1

2

3

1

2

3

RHR

RHR-1	H-182	Dual Rigid Sway	-	-			I-7A	Vis						X	
RHR-1B	HD-181	Rigid	-	-			I-7B	Vis			X				X
	HD-127K	Rigid	-	-			I-7B	Vis				X			
RHR-2A	H-84	Spring	10,300	10,800			I-8	Vis						X	
	H-183	Snubber	Required Piston Travel: 0				I-8	Vis			X				X
	H-185	Snubber	Required Piston Travel: + 7/16"				I-8	Vis				X			
	HD-185A	Rigid	-	-			I-8	Vis						X	
RHR-2B	HD-127I	Spring	10,300	10,800			I-9	Vis			X				X
RHR-3A	HD-130B	Rigid	-	-			I-10A	Vis				X			
	H-130	Rigid	-	-			I-10A	Vis						X	
RHR-3B	HD-129C	Rigid	-	-			I-10B	Vis			X				X
RHR-3C	HD-130C	Spring	4566	4366			I-10A	Vis				X			
	HD-197A	Rigid	-	-			I-10A	Vis						X	
	HD-197B	Rigid	-	-			I-10A	Vis			X				X
	H-197A	Snubber	Required Piston Travel: + 5/16"				I-10A	Vis				X			
	H-197B	Snubber	Required Piston Travel: + 1/32"				I-10A	Vis						X	
RHR-3	H-129	Sway	-	-			I-10B	Vis			X				X
	HD-129B	Spring	4566	4366			I-10B	Vis				X			
	HD-188A	Rigid	-	-			I-10B	Vis						X	
	HD-188B	Rigid	-	-			I-10B	V			X				X

ITEM NO: C2.6
Hot
Setting

CATEGORY: C-E-2
Cold
Setting

Drawing
No. Required
Methods

INTERVAL 1

INTERVAL 2

Component:

Type

Setting

Setting

1

2

3

1

2

3

RHR-3D (Cont'd)

	H-188	Snubber	Required Piston Travel: - 1/32"				I-10B	Vis				X		
RHR-5A	HD-187B	Spring	4068	4368			I-11	Vis					X	
RHR-5B	HD-188D	Spring	4068	4368			I-11	Vis			X			X
RHR-6	HD-200C	Rigid	-	-			I-12	Vis				X		
	HD-187A	Spring	8500	9020			I-12	Vis					X	
	HD-200D	Rigid	-	-			I-12	Vis			X			X
	HD-200F	Spring	7191	6816			I-12	Vis				X		
	H-156	Rigid	-	-			I-12	Vis					X	
	HD-156A	Rigid	-	-			I-12	Vis			X			X
	HD-156B	Rigid	-	-			I-12	Vis				X		
RHR-7	HD-16C	Rigid	-	-			I-13	Vis					X	
	HD-16B	Spring	7291	7854			I-13	Vis			X			X
	HD-16A	Rigid	-	-			I-13	Vis				X		
	HD-186	Rigid	-	-			I-13	Vis					X	
	HD-129A	Rigid	-	-			I-13	Vis			X			X
	HD-16E	Rigid	-	-			I-14	Vis				X		
RHR-8	HD-16D	Rigid	-	-			I-14	Vis					X	
	HD-200J	Spring					I-14	Vis			X			X
	HD-200H	Rigid					I-14	Vis				X		
		Sway	-	-			I-14	Vis				X		

ITEM NO: C2.6

CATEGORY: C-E-2

Component:

Type

Hot
SettingCold
SettingDrawing
No.Required
Methods

INTERVAL 1

INTERVAL 2

1

2

3

1

2

3

RHR-8 (Cont'd)

RHR-9

HD-200G

Rigid

-

-

I-14

Vis

X

X

HD-194A

Spring

2795

3195

I-15

Vis

X

HD-194B

Rigid

-

-

I-15

Vis

X

HD-194C

Spring

2162

3112

I-15

Vis

X

X

HD-87

Spring

2910

3286

I-15

Vis

X

H-87

Rigid
Sway

-

-

I-15

Vis

X

H-191

Spring
/Stanchion

3079

3304

I-15

Vis

X

X

H-194

Rigid
Sway

-

-

I-15

Vis

X

RHR-10

HD-192

Spring

I-15

Vis

X

H-192

Rigid
Sway

-

-

I-15

Vis

X

X

H-193

Snubber

Required Piston
Travel: -1/8"

I-15

Vis

X

CS-HD-54D

Spring

4614

5019

I-15

Vis

X

CS-HD-54E

Rigid

-

-

I-15

Vis

X

X

RHR-12

CS-HD-86B

Spring

2438

2607

I-16

Vis

X

CS-HD-86A

Spring

2388

2275

I-16

Vis

X

RHR-14

CS-H-87

Rigid
Sway

-

-

I-16

Vis

X

X

HD-87C

Spring

2879

3179

I-16

Vis

X

HD-87D

Spring

2073

2186

I-16

Vis

X

HD-87B

Rigid

-

-

I-16

Vis

X

X

ITEM NO: C2.6 CATEGORY: C-E-2
 Hot Cold
 Setting Setting

Drawing No. Required Methods

INTERVAL 1

INTERVAL 2

Component:

Type

Setting

Setting

1

2

3

1

2

3

RHR-15	HD-134A	Spring	3243	3843			I-16	Vis				X		
	CS-H-86A	Snubber	Required Piston Travel: + 9/32"				I-16	Vis					X	
	CS-H-86B	Snubber	Required Piston Travel: + 11/32"				I-16	Vis			X			X
	HD-134B	Rigid	-	-			I-16	Vis				X		
RHR-17	CS-HD-54A	Spring	3253	3553			I-15	Vis					X	
	CS-HD-54B	Spring	4170	4570			I-15	Vis			X			X
RHR-20	CS-HD-86C	Spring	3783	4283			I-16	Vis				X		
RHR-23	CS-HD-54C	Rigid	-	-			I-15	Vis					X	
RHR-39	H-1	Rigid	-	-			I-7B	Vis			X			X
RHR-40	HD-201B	Rigid	-	-			I-17	Vis				X		
	HD-201A	Rigid	-	-			I-17	Vis					X	
	HD-34	Rigid	-	-			I-17	Vis			X			X
	HD-33	Rigid	-	-			I-17	Vis				X		
	HD-20	Rigid	-	-			I-17	Vis					X	
	H-160	Rigid	-	-			I-17	Vis			X			X
	HD-31	Rigid	-	-			I-17	Vis				X		
	HD-29	Rigid	-	-			I-17	Vis					X	
	HD-28	Rigid	-	-			I-17	Vis			X			X
	HD-27	Rigid	-	-			I-17	Vis				X		
	HD-26	Rigid	-	-			I-17	Vis					X	

ITEM NO: C2.6
 Hot
 Setting

CATEGORY: C-E-2
 Cold
 Setting

Drawing
 No. Required
 Methods

INTERVAL 1

INTERVAL 2

Component:

Type

Setting

Setting

1

2

3

1

2

3

RHR-40 (Cont'd)

HD-8

Rigid

-

-

I-17

Vis

X

X

RHR-41 HD-200A

Rigid

-

-

I-12

Vis

X

Core Spray

CS-2A HD-61C

Rigid

-

-

I-6A

Vis

X

HD-90A

Rigid

-

-

I-6A

Vis

X

X

HD-90B

Rigid

-

-

I-6A

Vis

X

H-48

Rigid

-

-

I-6A

Vis

X

H-49

Rigid
Sway

-

-

I-6A

Vis

X

X

HD-52A

Spring

2038

2544

I-6A

Vis

X

H-89

Rigid
Sway

-

-

I-6A

Vis

X

CS-2B HD-85D

Rigid

-

-

I-6B

Vis

X

X

HD-55A

Rigid

-

-

I-6B

Vis

X

H-55

Rigid

-

-

I-6B

Vis

X

HD-55B

Rigid

-

-

I-6B

Vis

X

X

H-46

Rigid

-

-

I-6B

Vis

X

HD-46

Rigid

-

-

I-6B

Vis

X

HD-84

Spring

4044

4444

I-6B

Vis

X

X

H-56

Rigid
Sway

-

-

I-6B

Vis

X

H-84

Rigid
Sway

-

-

I-6B

Vis

X

H-85

Snubber

Required Piston
Travel: +1/16"

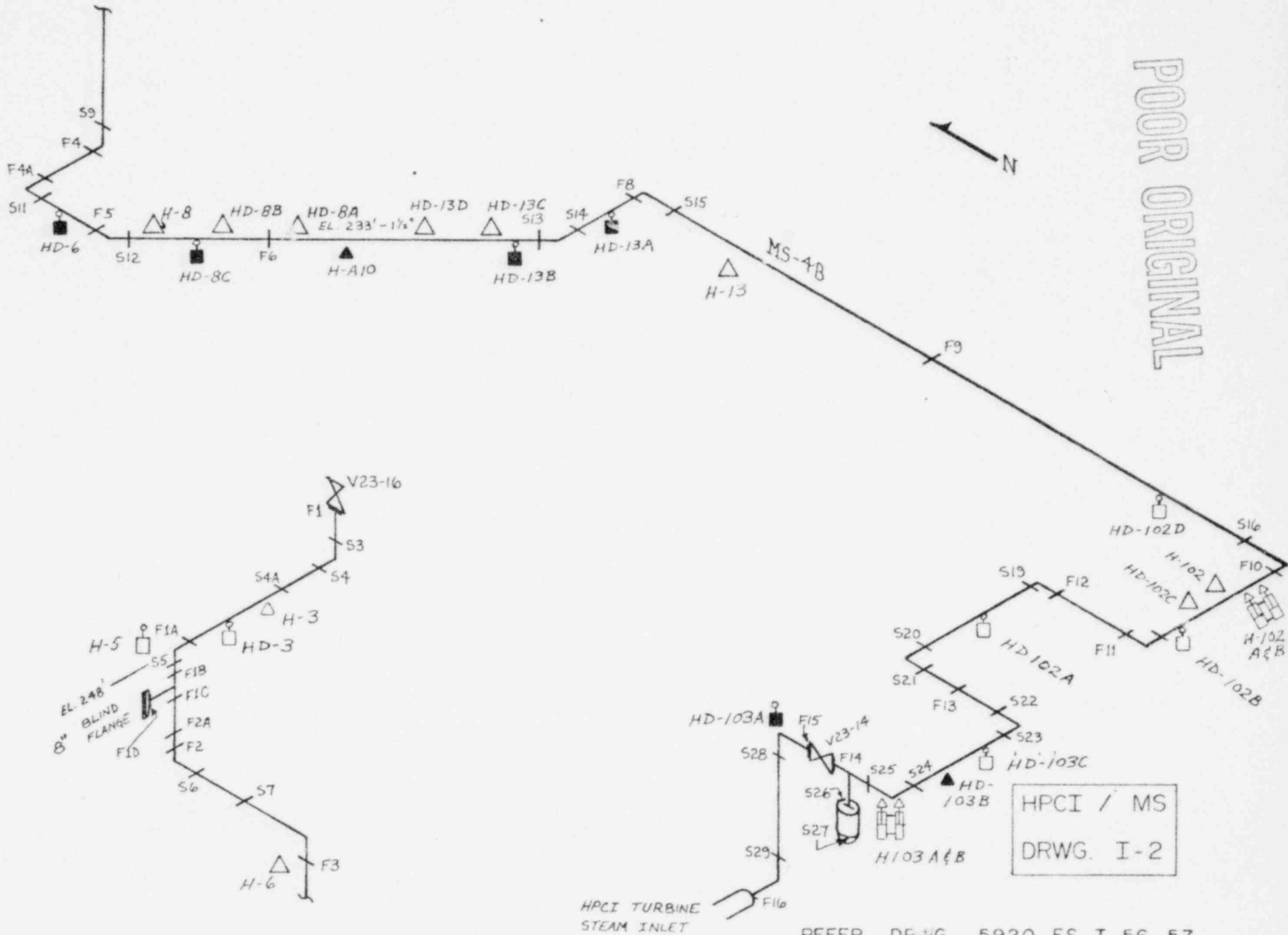
I-6B

Vis

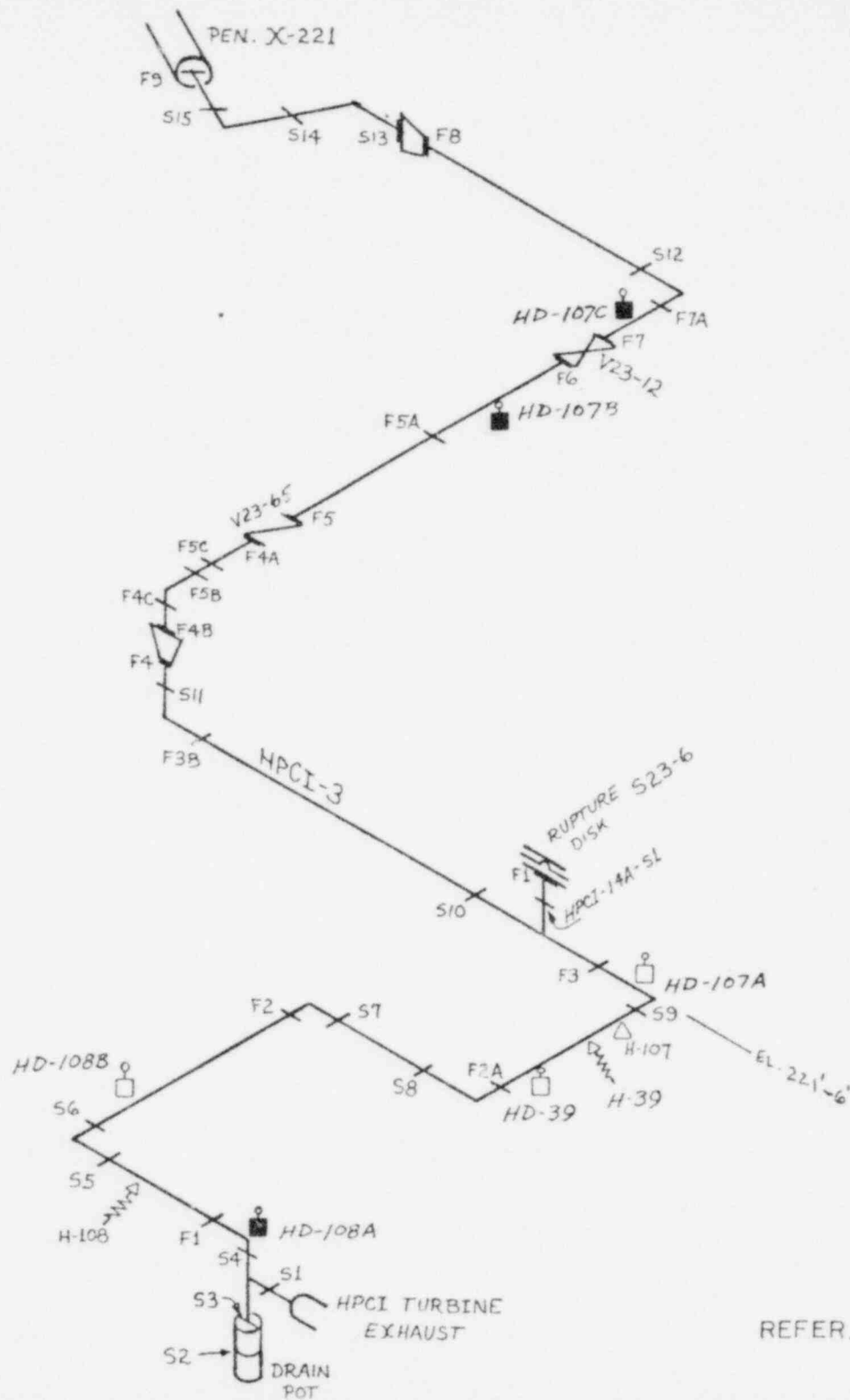
X

X

POOR ORIGINAL



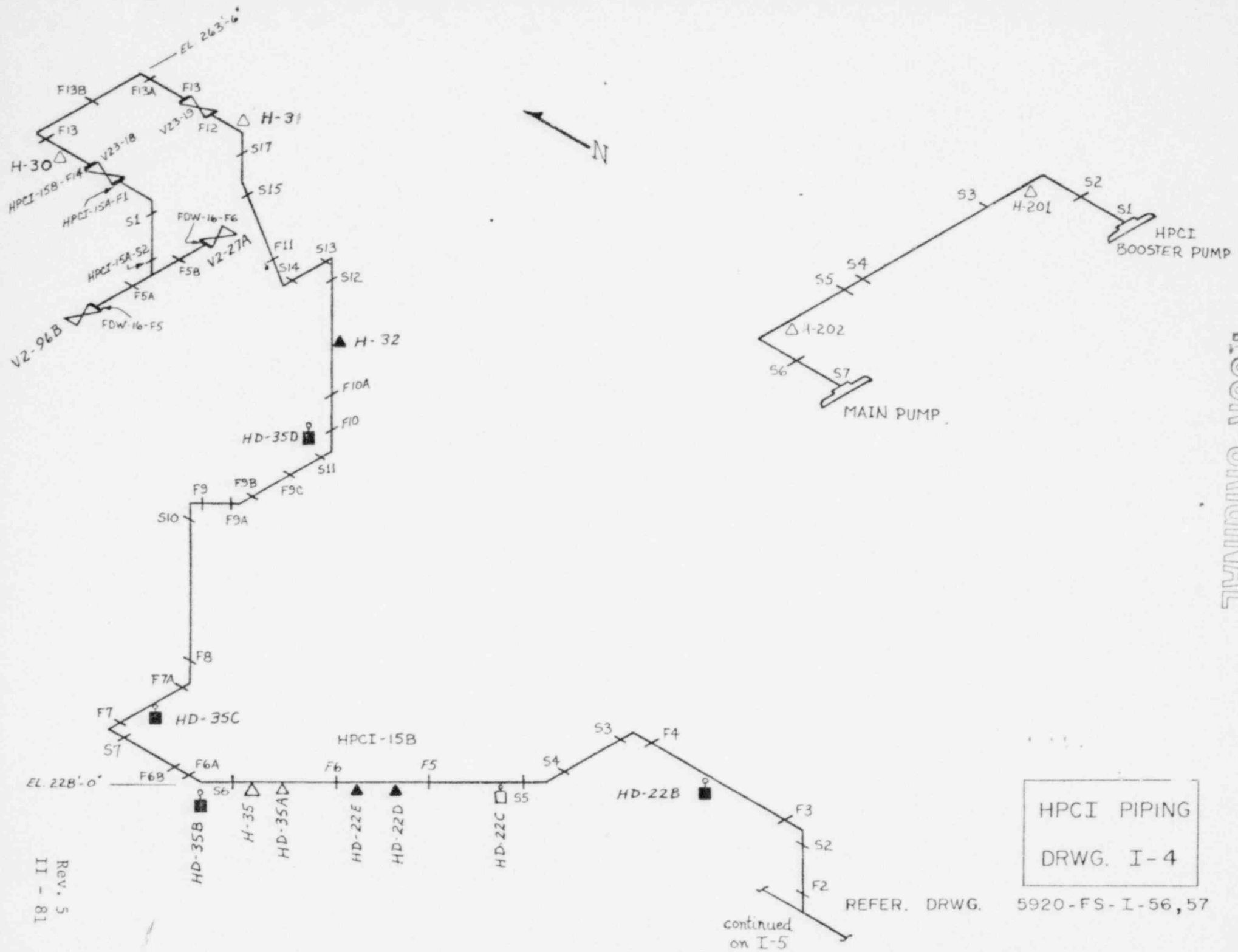
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HPCI PIPING
DRWG. I-3

REFER. DRWG. 5920-FS-I-56, 57

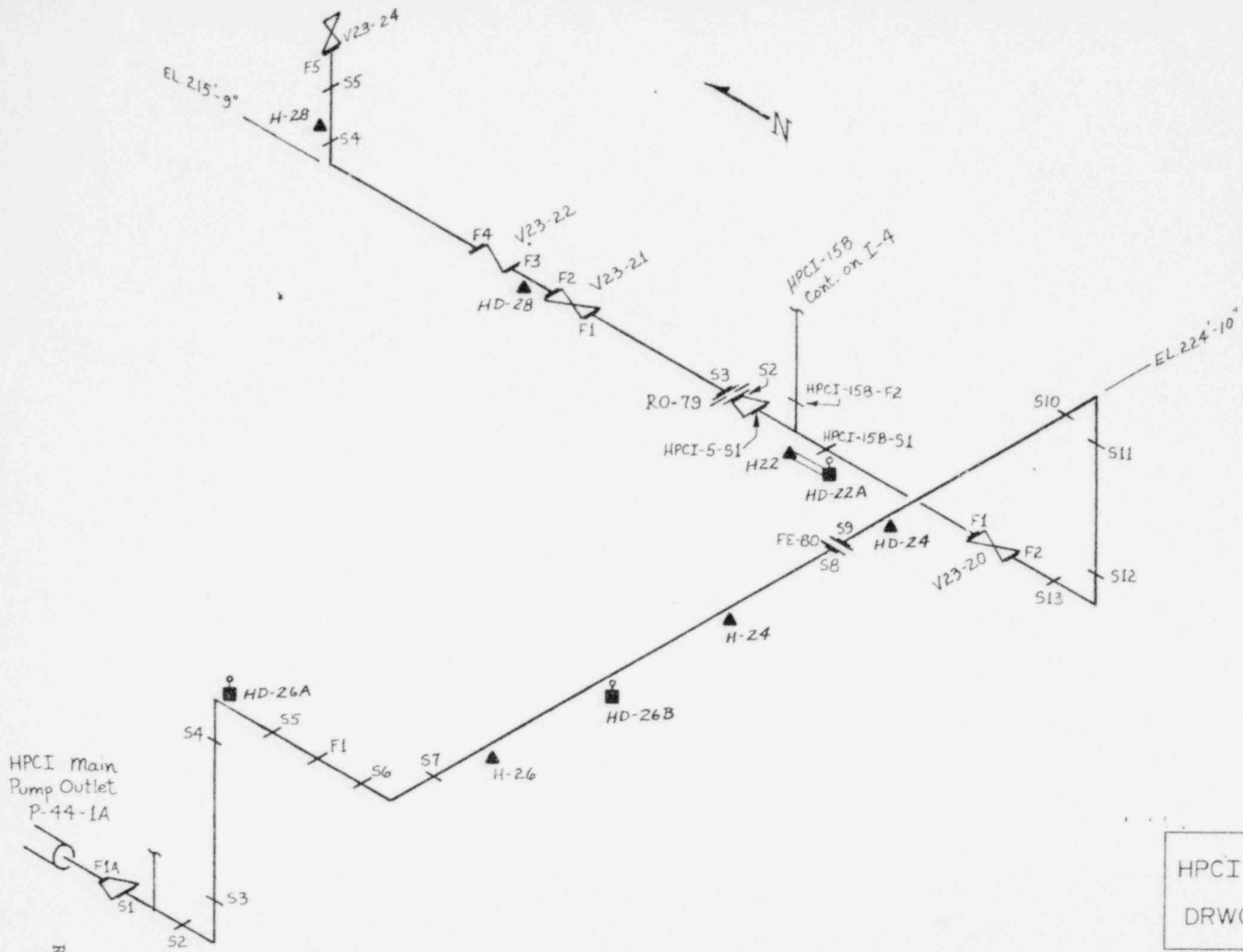
POOR ORIGINAL



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HPCI PIPING
DRWG. I-4

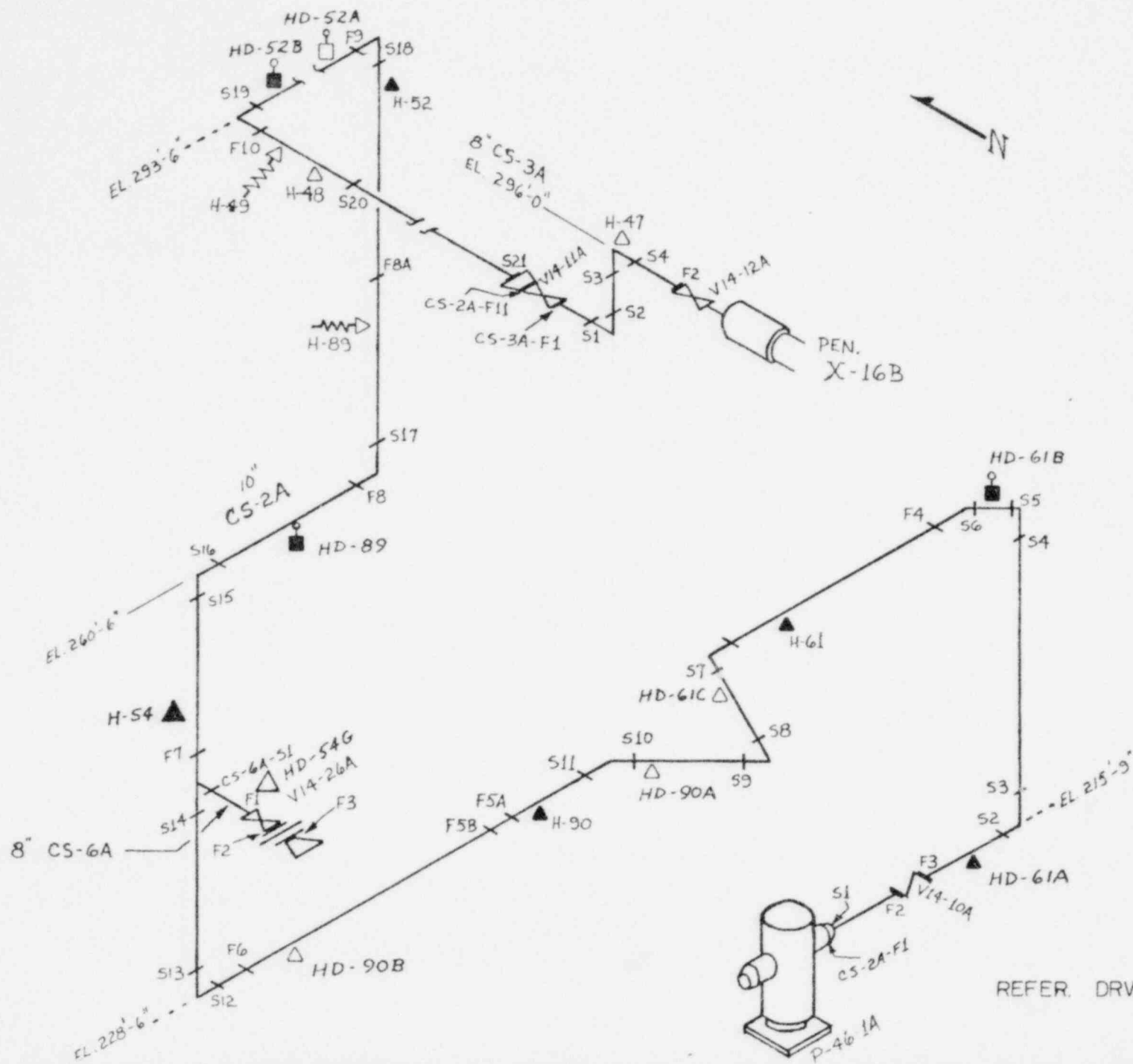
POOR ORIGINAL



HPCI PIPING
DRWG. I-5

REFER. DRWG. 5920-FS-I-56

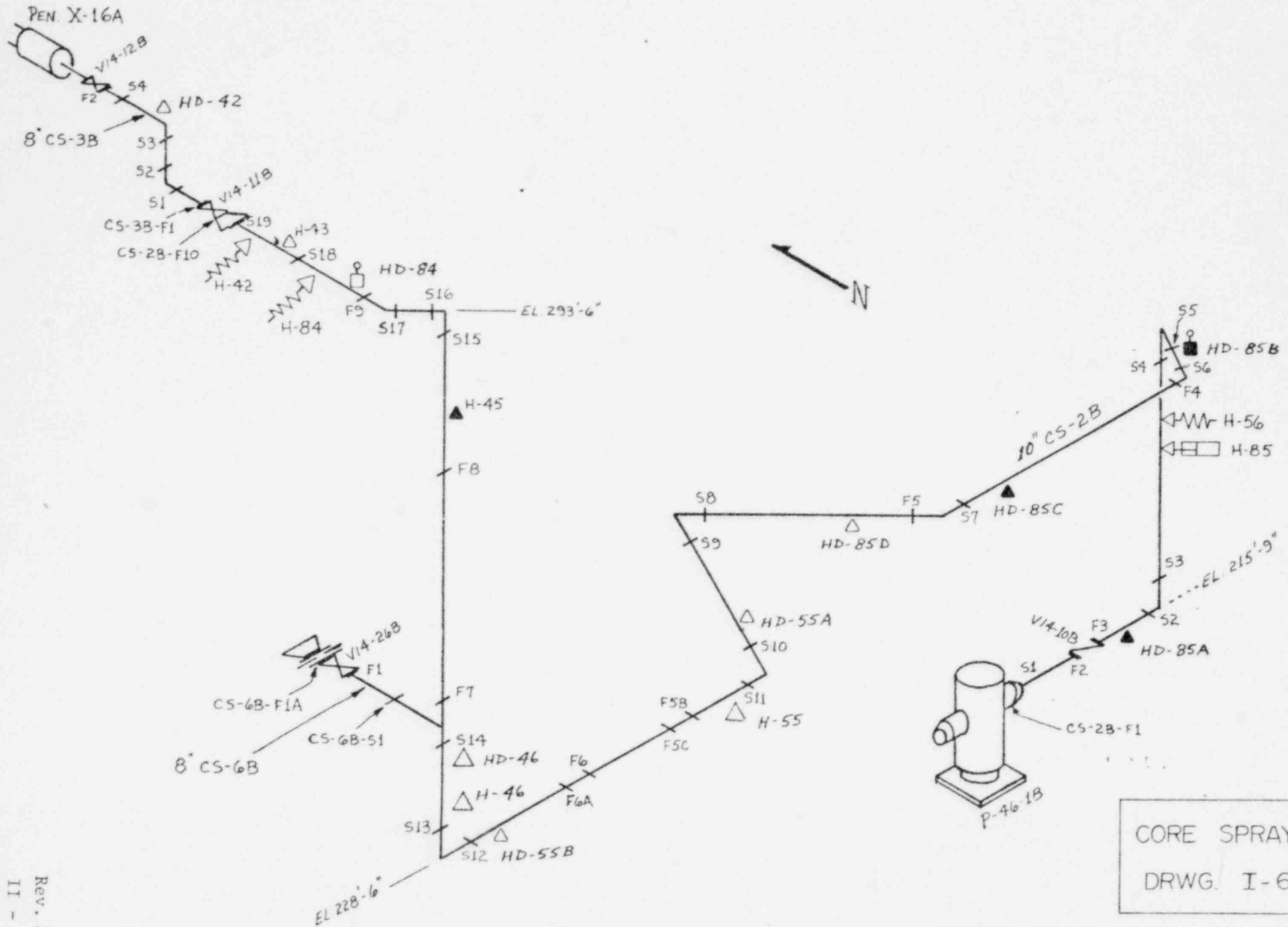
POOR ORIGINAL



CORE SPRAY "A"
DRWG. I-6A

REFER. DRWG. 5920-FS-I-49

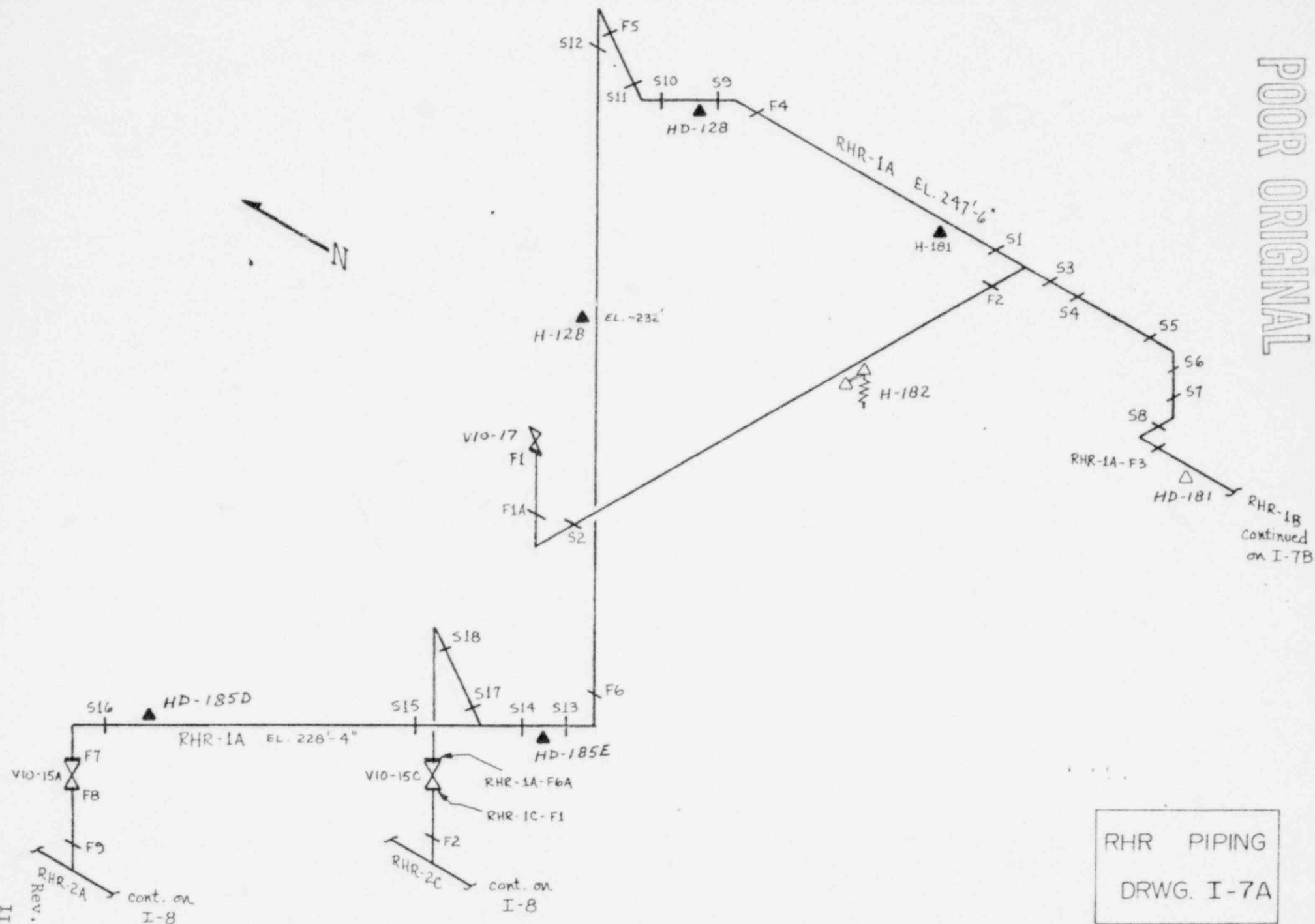
POOR ORIGINAL



CORE SPRAY "B"
DRWG. I-6B

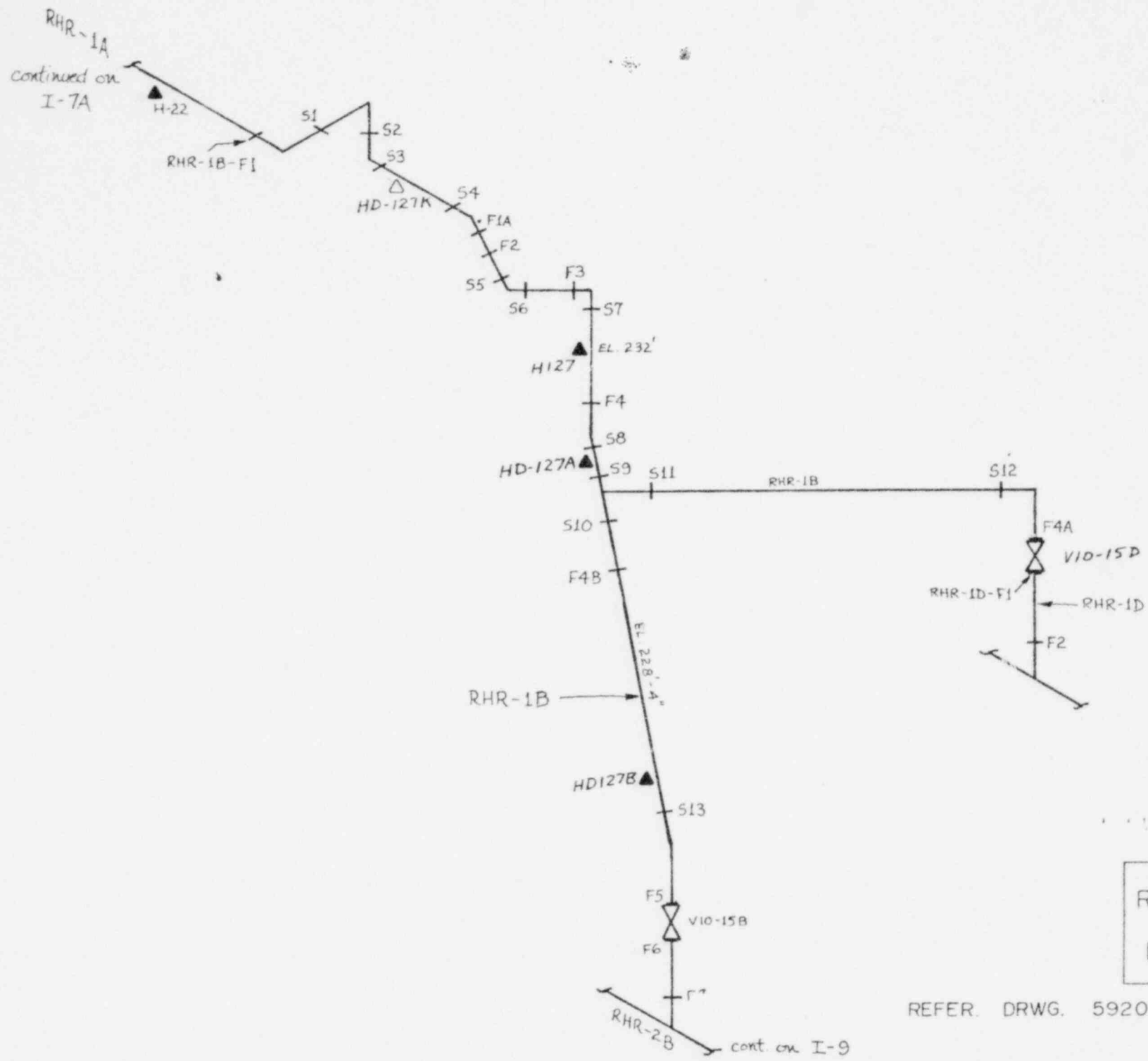
REFER. DRWG. 5920-FS-I49

POOR ORIGINAL



REFER. DRWG. 5920 - FS - I43A, 43B

POOR ORIGINAL

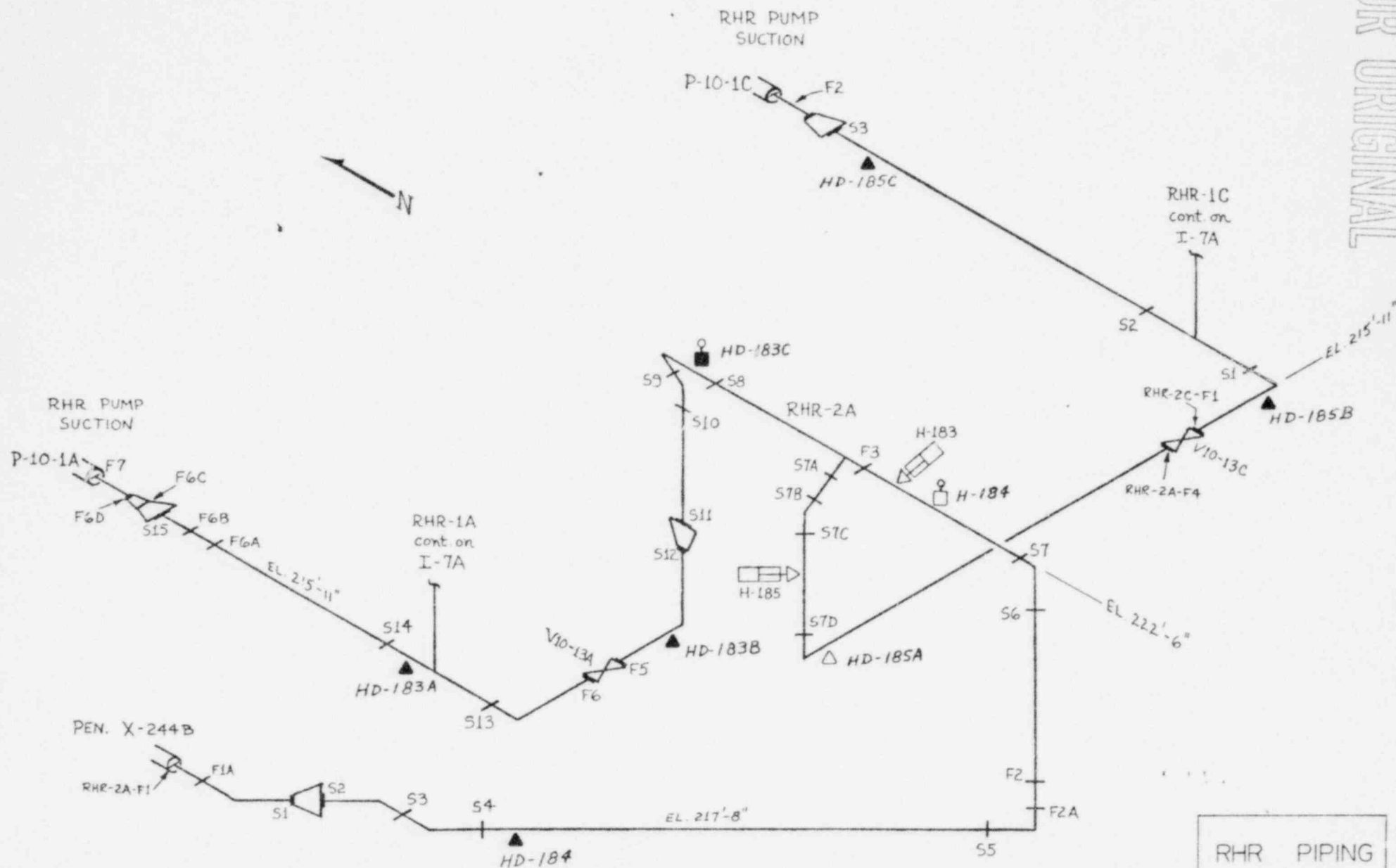


RHR PIPING
DRWG. I-7B

REFER. DRWG. 5920 - FS - I - 44A, 44B

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II - 86

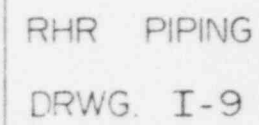
POOR ORIGINAL



RHR PIPING
DRWG. I-8

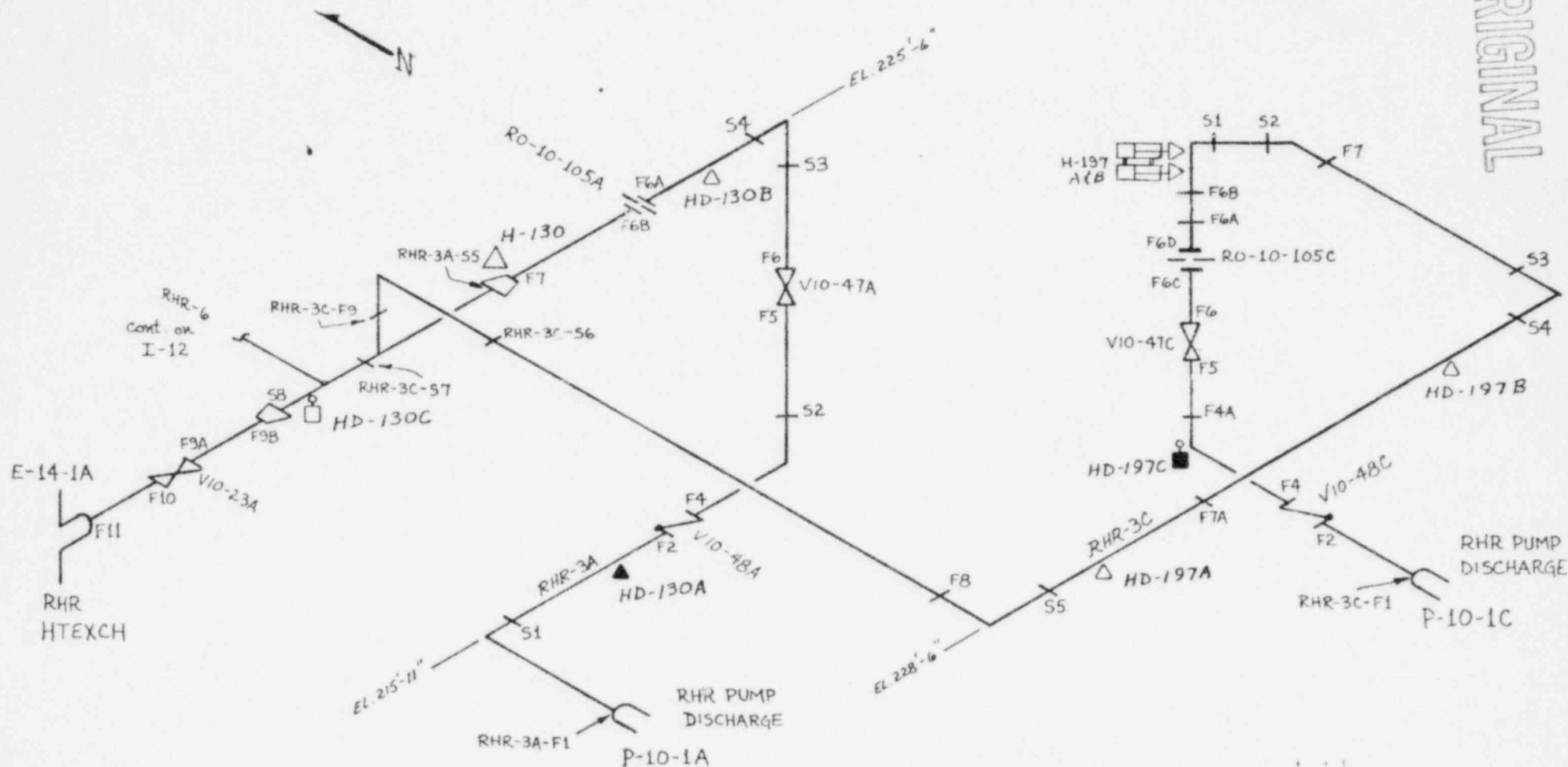
REFER. DRWG. 5920-FS-I43A

RHR PUMP
SUCTION



REFER. DRWG. 5920 - FS - I44A

POOR ORIGINAL



RHR PIPING
DRWG. I-10A

REFER. DRWG. 5920-FS-I43A

POOR ORIGINAL

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Rev. 5

RHR
HTEXCH

E-14-1B

F11

F10

F9B

V10-23B

RHR-3D

F3A

HD-129B

RHR-3D-S8

RHR-7

cont. on

I-13

RHR-3D-F9

H-129

RHR-3B-S6

F6A

Ro-10-105B

F6B

F6C

HD-129C

F6

F5

V10-47B

S4

S3

EL. 225'-6"

RHR PUMP
DISCHARGE

P-10-1B

F1

HD-129D

S1

V10-48B

F2

F4

S2

EL. 215'-11"

RHR PUMP
DISCHARGE

P-10-1D

F2

F4

V10-48D

HD-188C

S1

F5

V10-47D

F6B

Ro-10-105D

F6C

H-188

F6A

F7

S2

S3

F7A

HD-188B

S5

S4

FTB

RHR-3D

EL. 225'-8"

HD-188A

F8

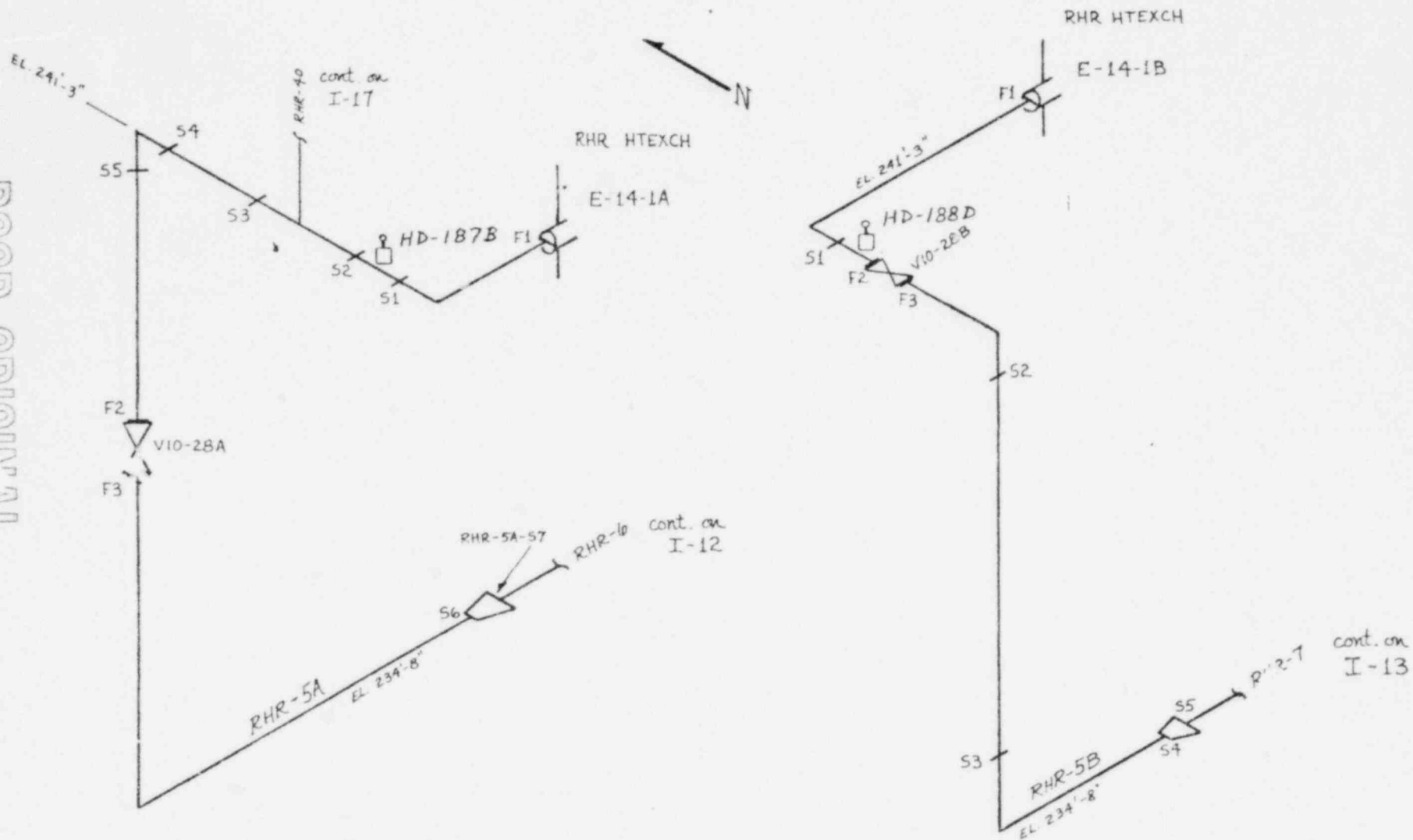
S6

N

RHR PIPING
DRWG. I-10B

REFER. DRWG. 5920-FS-I44A

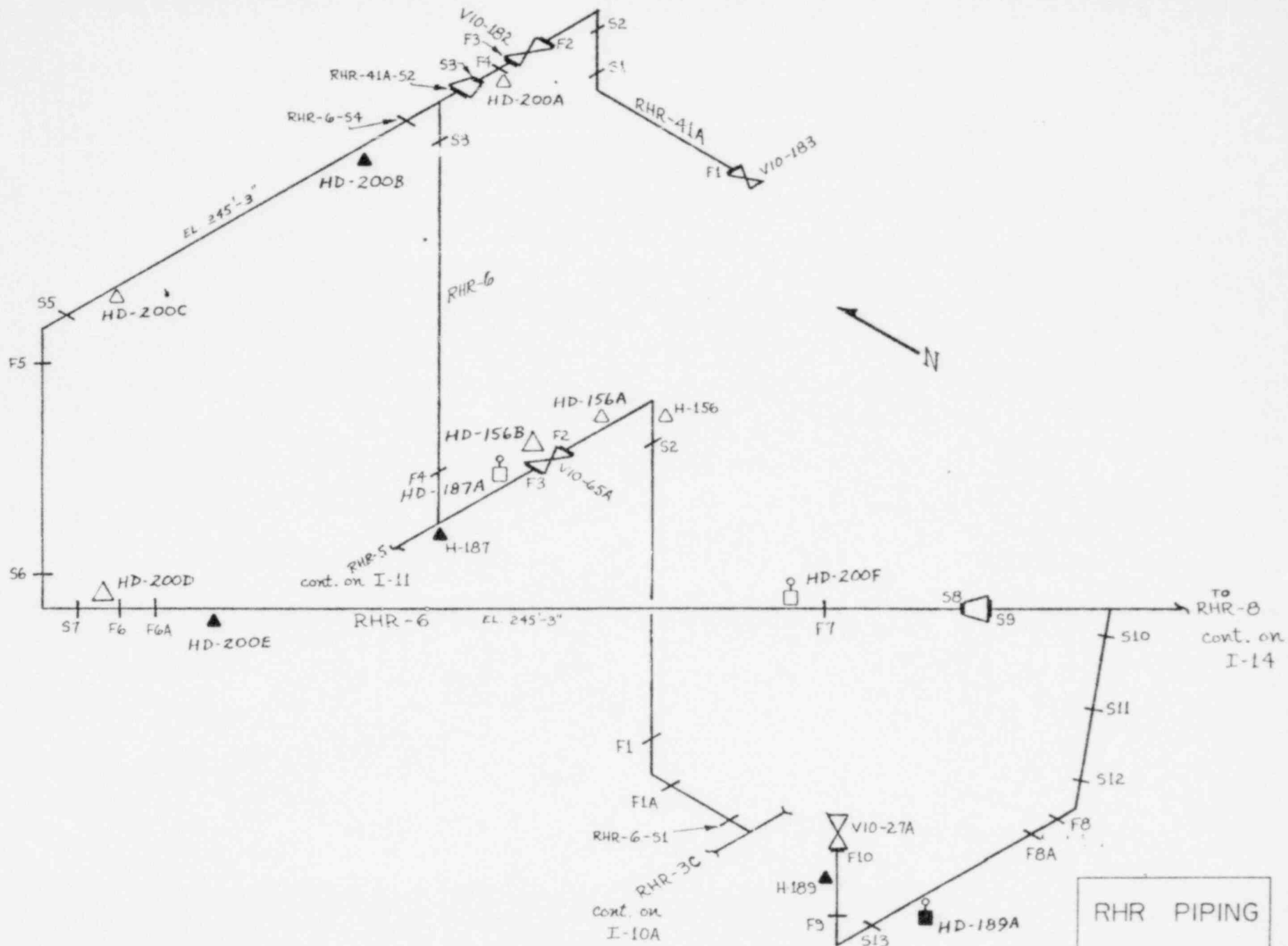
POOR ORIGINAL



RHR PIPING
DRWG. III

REFER. DRWG. 5920-FS-I43A, 44A

POOR ORIGINAL

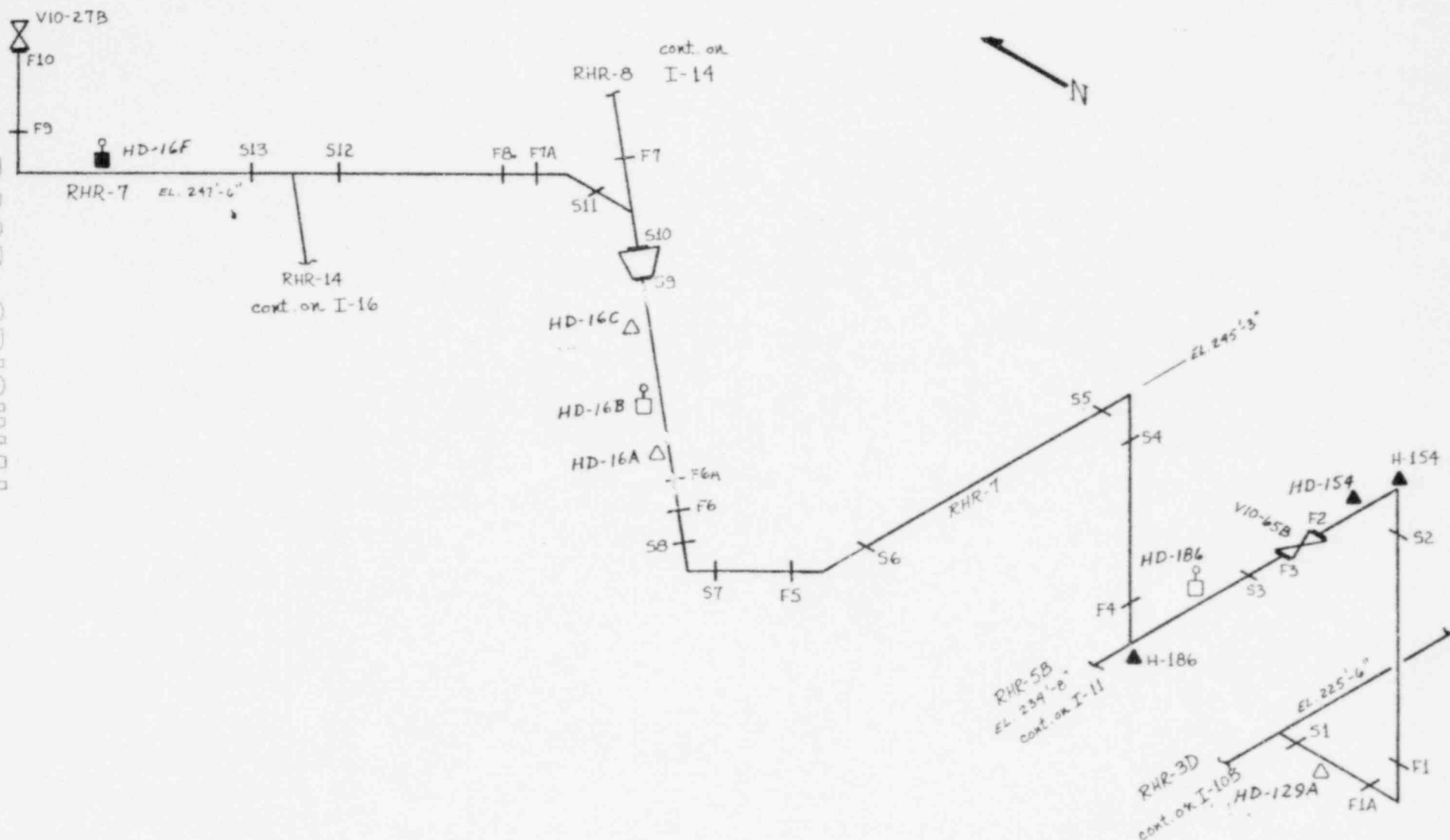


RHR PIPING
DRWG. I - 12

REFER. DRWG. 5920-FS-I43A,44B

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II - 92

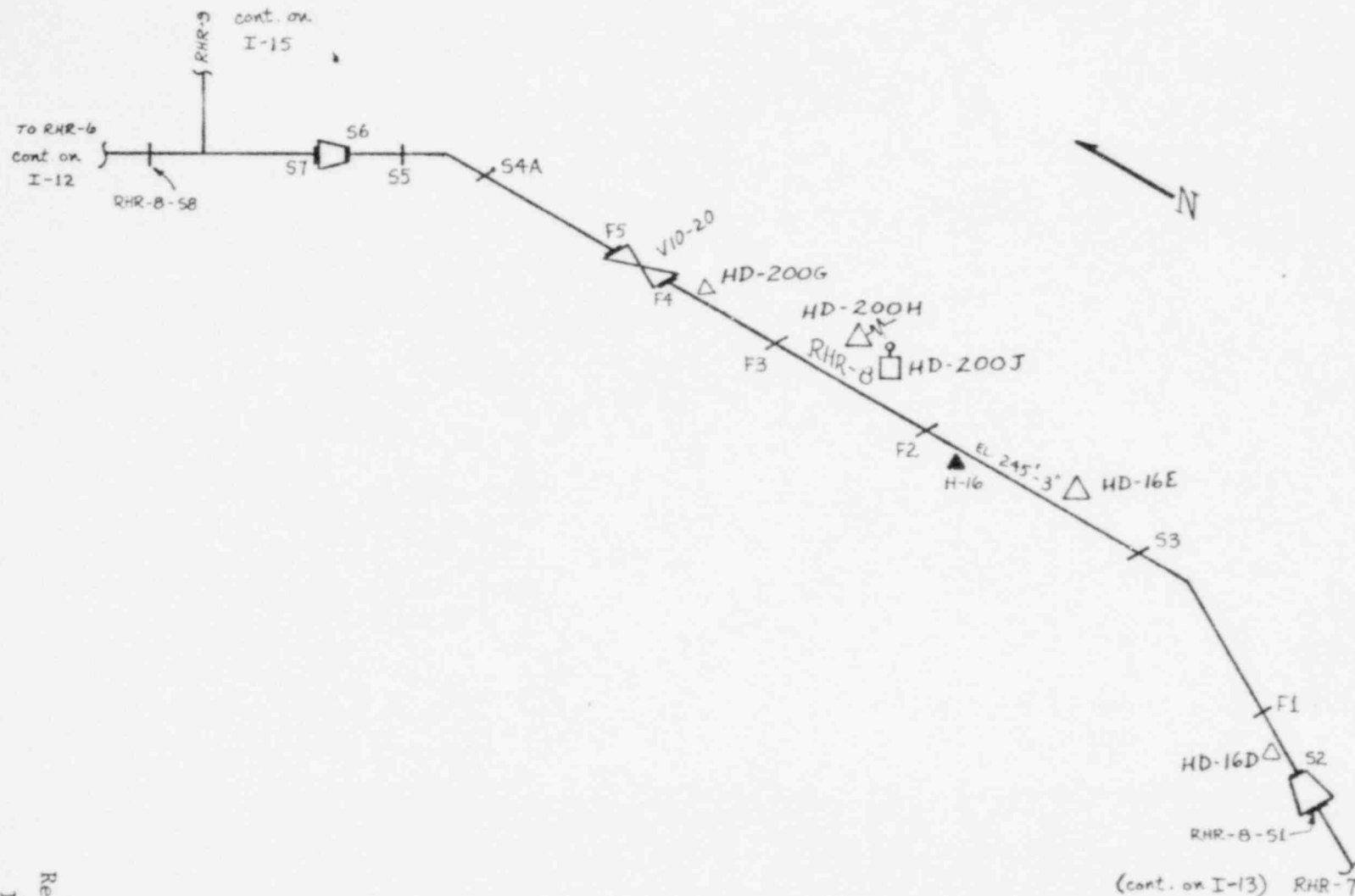
POOR ORIGINAL



RHR PIPING
DRWG. I-13

REFER. DRWG. 5920 - FS - I44A, 44B

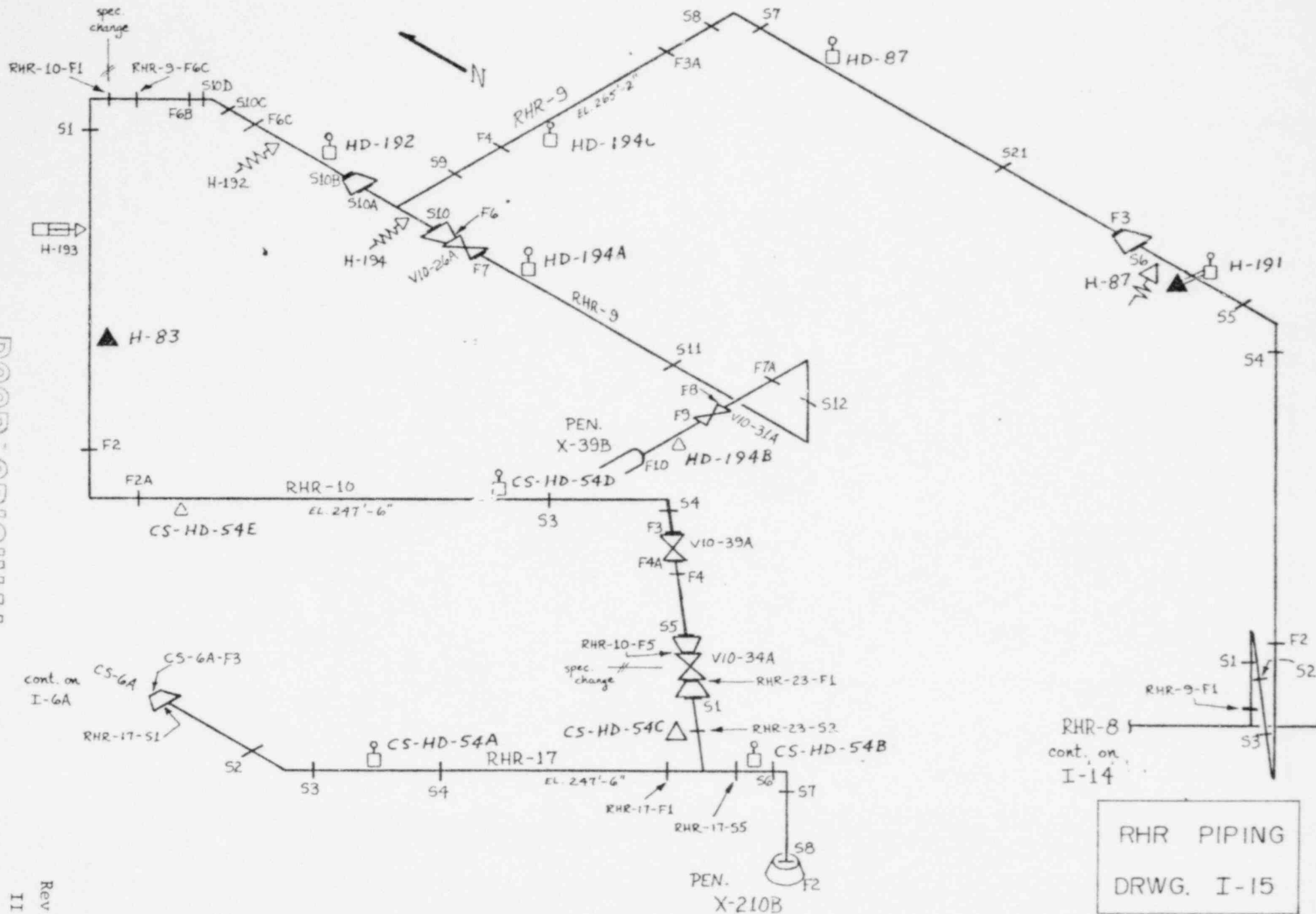
POOR ORIGINAL



RHR PIPING
DRWG. I-14

REFER. DRWG. 5920-FS-I 44B

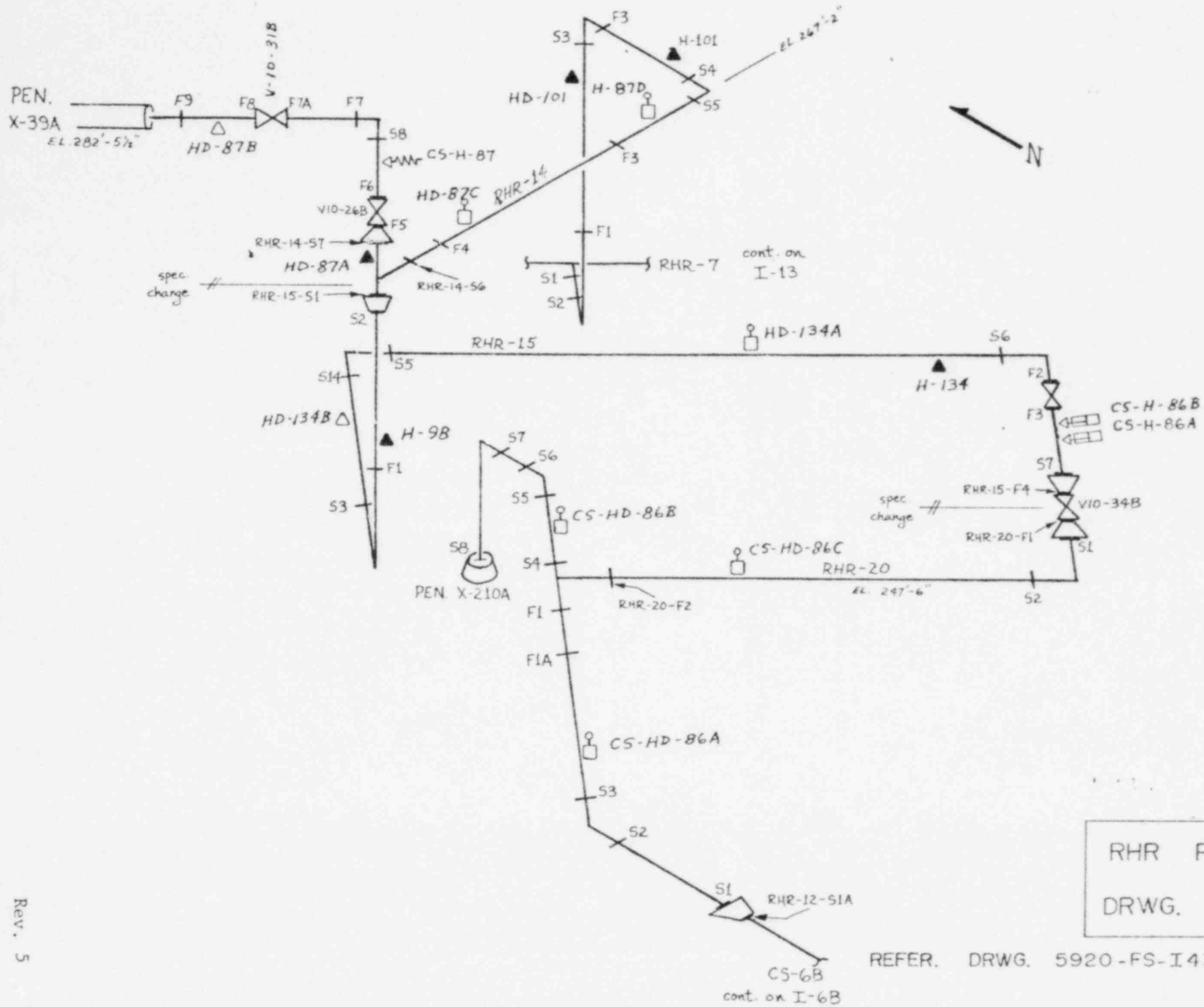
POOR ORIGINAL



Rev. 5
II - 95

REFER. DRWG. 5920 - FS - I 43B, 44B

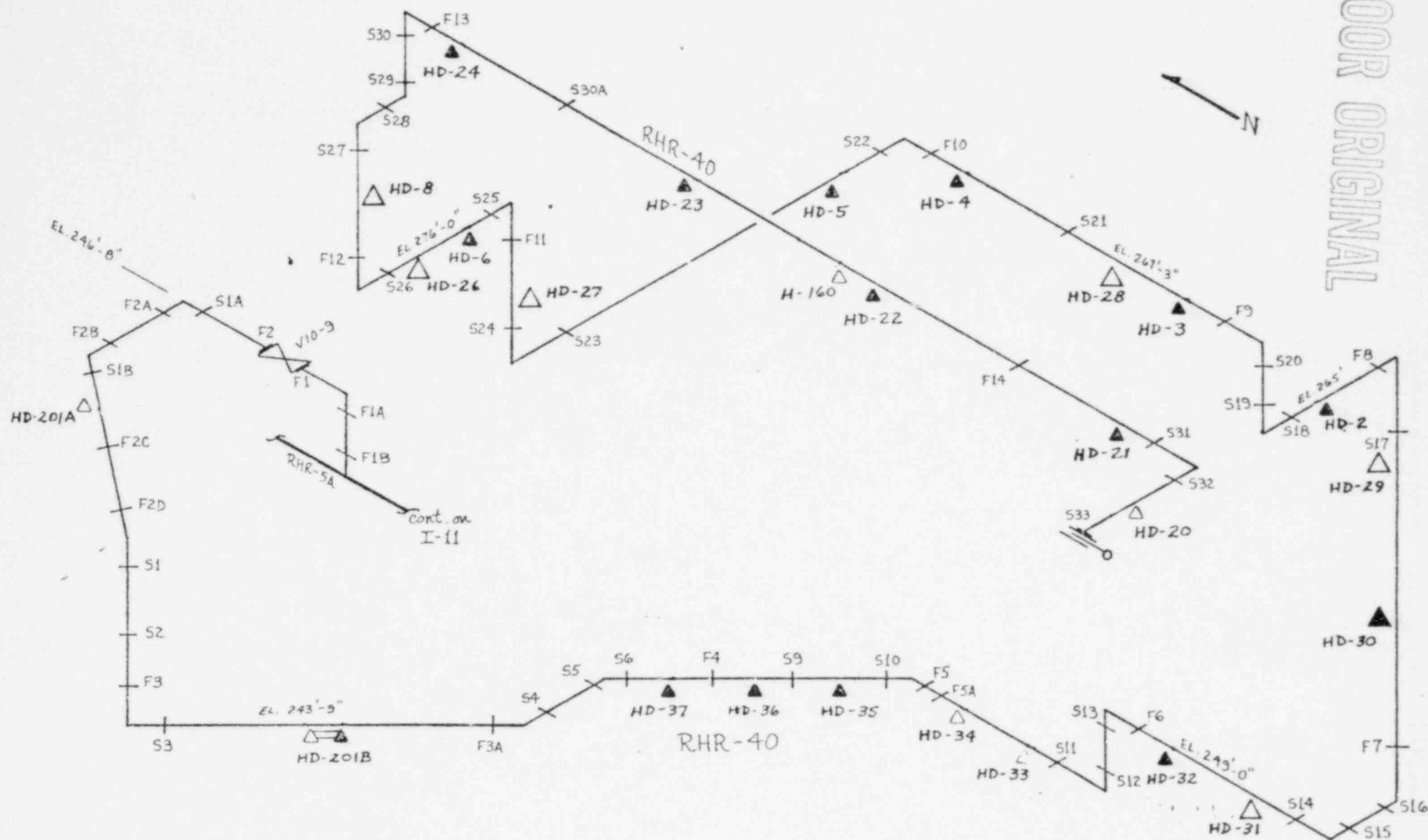
POOR ORIGINAL



RHR PIPING
DRWG. I-16

REFER. DRWG. 5920-FS-I43B,44B

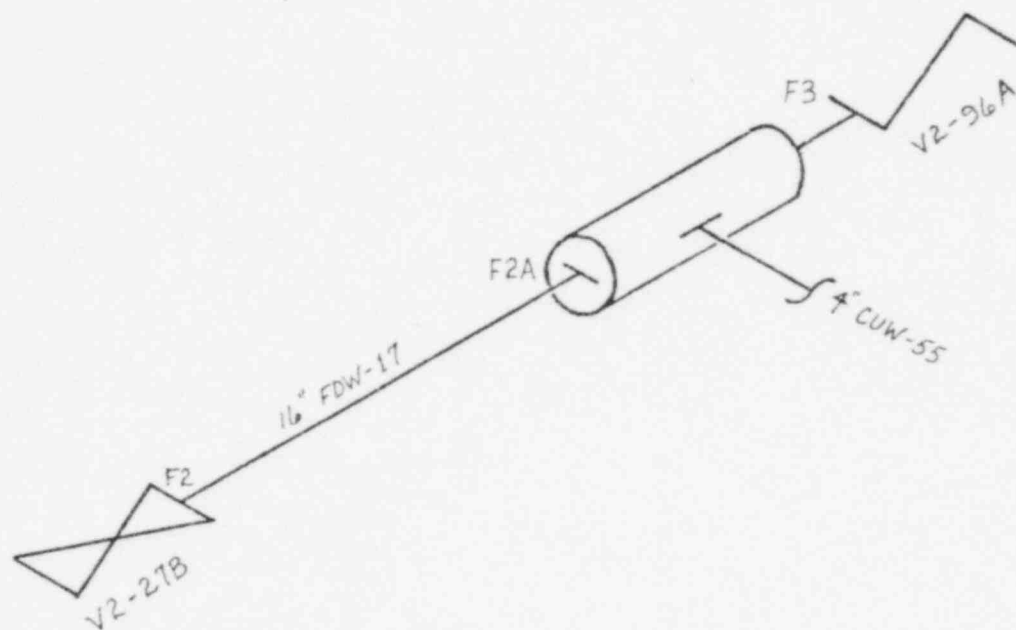
POOR ORIGINAL



RHR PIPING
DRWG. I-17

REFER. DRWG. 5920-FS-I43A,43B,44B

POOR ORIGINAL



FEEDWATER "B"

DRWG. I-19

Note: FDW-16 is on I-4

SAFETY CLASS 3 COMPONENTS

In compliance with Section XI, IWD-2600 (c), Supports and Hangers shall be visually inspected for evidence of inadequate restraint.

* | The following lists, which identify the subject components and their test frequency, address the requirements of IWD-2410 (c). In addition, each Support and Hanger shall be visually inspected in accordance with IWD-2410 (b) during performance of hydrostatic testing, as required by the System Pressure Tests section of this program, before expiration of each Inspection Interval.

* | Where both inspections are required to be performed during the same Inspection Period, only that required by IWD-2410 (b) will be performed to satisfy the examination criteria of IWD-2600 (c).

Component:		Hanger Type			Drawing No.	Required Methods	INTERVAL 1			INTERVAL 2		
							1	2	3	1	2	3
SAFETY CLASS 3 SUPPORTS/ HANGERS												
Fuel Pool Cooling												
FPC - 1B	H-3	Rigid			D- 7	Vis			X	X	X	X
	H-4	Rigid			D- 7	Vis			X	X	X	X
	H-5	Rigid			D- 7	Vis			X	X	X	X
	H-6	Rigid			D- 7	Vis			X	X	X	X
	H-31	Rigid			D- 7	Vis			X	X	X	X
	H-32	Rigid			D- 7	Vis			X	X	X	X
	H-34	Rigid			D- 7	Vis			X	X	X	X
	H-35	Rigid			D- 7	Vis			X	X	X	X
	H-36	Rigid			D- 7	Vis			X	X	X	X
FPC - 1D	H-33	Rigid			D- 7	Vis			X	X	X	X
FPC - 2	H-2	Rigid			D- 7	Vis			X	X	X	X
FPC - 20	H-37	Rigid			D- 7	Vis			X	X	X	X
	H-38	Rigid			D- 7	Vis			X	X	X	X
FPC - 23	H-8	Rigid			D- 7	Vis			X	X	X	X
	H-9	Rigid			D- 7	Vis			X	X	X	X
Service Water												
SW - 1A	H-244	Rigid			D- 6	Vis			X	X	X	X
	HD-244C	Rigid			D- 6	Vis			X	X	X	X
	HD-246E	Welded			D- 6	Vis			X	X	X	X
	RSW - HD-88E	Welded			D- 3	Vis			X	X	X	X

INTERVAL 2

Component:

Type

SAFETY CLASS 3 SUPPORTS/ HANGERS

Component:	Hanger Type	No.	Methods	1	2	3	1	2	3
SAFETY CLASS 3 SUPPORTS/ HANGERS	RSW -HD88C	Welded							
	RSW -HD88D	Welded							
	H-246	Rigid							
	HD-246C	Rigid							
	HD-246D	Welded							
	RSW -HD230B	Welded							
	RSW -HD230C	Welded							
	RSW -HD230A	Welded							
	HD-244D	Welded							
	HD-244E	Welded							
SW - 1B	HD-244A	Rigid							
	HD-246A	Rigid							
	HD-246B	Rigid							
	HD-244B	Rigid							
	RSW -HD133	Rigid							
SW - 6A	RSW -HD221	Rigid							
	RSW -HD220	Rigid							
	RSW -HD220B	Welded							
Rev. 1	RSW-H221	Rigid							
	RSW-H133	Rigid							

Component:		Hanger Type	Drawing No.	Required Methods	INTERVAL 1			INTERVAL 2		
					1	2	3	1	2	3
SAFETY CLASS 3 SUPPORTS/ HANGERS										
SW-6A (cont'd) SW-6B	RSW-H220	Rigid								
	RSW-HD126	Rigid								
	RSW-HD233C	Rigid								
	RSW-HD233B	Rigid								
	RSW-HD233A	Welded								
	RSW-H232	Welded								
	RSW-H126	Rigid								
	RSW-H233	Welded								
SW-6C	RSW-HD220C	Welded								
SW-6D	RSW-HD232A	Welded								
SW-8	RSW-HD230D	Rigid								
	RSW-HD215A	Rigid								
SW-18 A&B	H-7	Rigid								
	H187	Rigid								
	HD-197B	Rigid								
	HD-197A	Rigid								
	HD-200B	Rigid								
	HD-200A	Rigid								
	H-55	Rigid								
	H-56	Rigid								

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Component:	Hanger Type	Drawing No.	Required Methods	INTERVAL 1			INTERVAL 2		
				1	2	3	1	2	3
SAFETY CLASS 3 SUPPORTS/ HANGERS									
SW-18 A&B									
H-57	Rigid welded & Rigid	D-1	Vis						
H-195		D-1	Vis				X	X	X
HD-23	Rigid	D-2	Vis						
H-23	Rigid	D-2	Vis				X	X	X
HD-76B	Rigid	D-2	Vis				X	X	X
HD-76A	Rigid	D-2	Vis				X	X	X
H-76	Rigid	D-2	Vis				X	X	X
H-74	Welded	D-2	Vis				X	X	X
H-81	Rigid	D-2	Vis				X	X	X
H-82	Rigid	D-2	Vis				X	X	X
H-188	Rigid	D-2	Vis				X	X	X
H-189	Rigid	D-2	Vis				X	X	X
H-191	Rigid	D-1	Vis				X	X	X
H-193	Rigid	D-1	Vis				X	X	X
H-194	Welded	D-1	Vis				X	X	X
H-197	Rigid	D-1	Vis				X	X	X
H-198	Welded	D-1	Vis				X	X	X
H-201	Welded	D-1	Vis				X	X	X

III- 5 Rev. 5

Component: Hanger Type SAFETY CLASS 3 SUPPORTS/ HANGERS

Drawing Required Methods

INTERVAL 1

INTERVAL 2

		INTERVAL 1			INTERVAL 2		
		1	2	3	1	2	3
SW-18A (Cont'd)							
H-204	Rigid						
H-205	Rigid						
H-58	Rigid						
H-59	Rigid						
RSW-H219	Welded						
RSW-HD218D	Rigid						
RSW-HD218C	Rigid						
RSW-H218	Rigid						
RSW-HD218B	Rigid						
RSW-HD218A	Rigid						
RSW-HD217D	Rigid						
RSW-H217	Rigid						
RSW-HD217C	Rigid						
RSW-HD217B	Rigid						
RSW-HD217A	Rigid						
RSW-H216	Welded						
RSW-HD216A	Rigid						
RSW-HD216B	Welded						
RSW-HD216D	Welded						

Component:

Hanger
Type

Drawing Required
No. Methods

INTERVAL 1

INTERVAL 2

SAFETY CLASS 3 SUPPORTS/ HANGERS

SW-18B

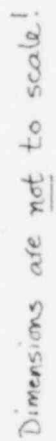
	Hanger Type	Drawing No.	Required Methods	INTERVAL 1			INTERVAL 2		
				1	2	3	1	2	3
HD-7A	Rigid	D-2	Vis						
H-80	Welded	D-2	Vis				X	X	X
H-80D	Rigid	D-2	Vis				X	X	X
H-80C	Rigid	D-2	Vis				X	X	X
H-13	Rigid	D-2	Vis				X	X	X
HD-79C	Rigid	D-2	Vis				X	X	X
H-79	Rigid	D-2	Vis				X	X	X
H-11	Rigid	D-2	Vis				X	X	X
HD-75	Rigid	D-2	Vis				X	X	X
H-75	Rigid	D-2	Vis				X	X	X
H-73	Welded	D-2	Vis				X	X	X
H-265	Rigid	D-2	Vis				X	X	X
HD-192	Rigid	D-1	Vis				X	X	X
H-192	Rigid	D-1	Vis				X	X	X
H-196	Welded	D-1	Vis				X	X	X
H-199	Welded	D-1	Vis				X	X	X
H-203	Rigid	D-1	Vis				X	X	X
RSW-H237	Welded	D-4	Vis				X	X	X
RSW-HD236C	Rigid	D-4	Vis				X	X	X

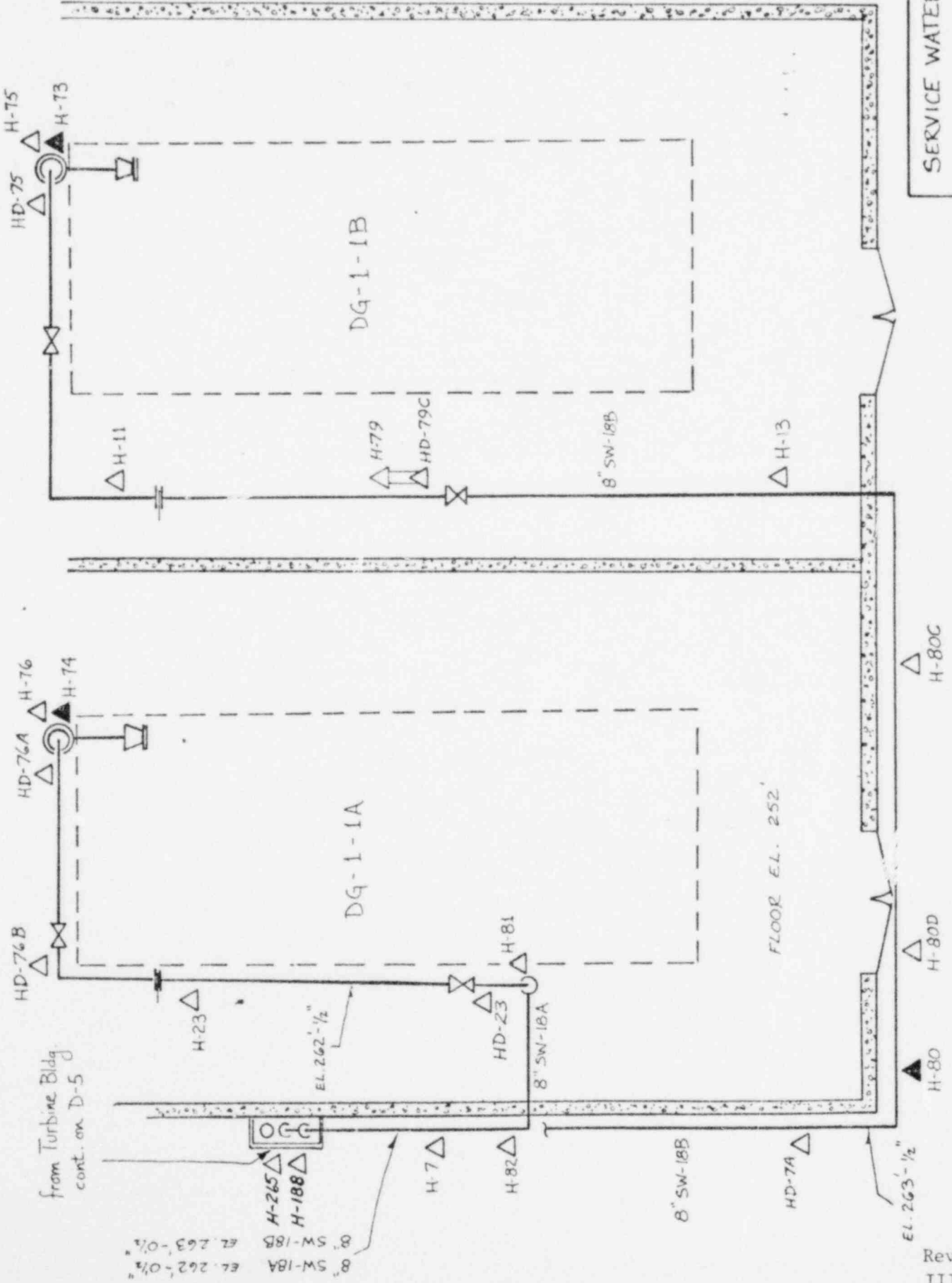
Component:	Hanger Type	Drawing No.	Required Methods	INTERVAL 1			INTERVAL 2		
				1	2	3	1	2	3
SW-18B (Cont'd)									
RSW-H103	Rigid	D-4	Vis			X	X	X	X
RSW-HD-236B	Rigid	D-4	Vis			X	X	X	X
RWS-HD-236A	Rigid	D-4	Vis			X	X	X	X
RSW-H100	Rigid	D-4	Vis			X	X	X	X
RSW-H236	Rigid	D-4	Vis			X	X	X	X
RSW-H105	Rigid	D-4	Vis			X	X	X	X
RSW-HD-235E	Rigid	D-4	Vis			X	X	X	X
RSW-HD235D	Rigid	D-4	Vis			X	X	X	X
RSW-H235	Rigid	D-4	Vis			X	X	X	X
RSW-HD235C	Rigid	D-5	Vis			X	X	X	X
RSW-HD141C	Rigid	D-5	Vis			X	X	X	X
RSW-HD231A	Rigid	D-5	Vis			X	X	X	X
RSW-HD235B	Welded	D-5	Vis			X	X	X	X
RSW-HD235A	Rigid	D-5	Vis			X	X	X	X
SW-18C									
RSW-HD216C	Welded	D-3	Vis			X	X	X	X
SW-18D									
RSW-HD233D	Welded	D-3	Vis			X	X	X	X

LEGEND

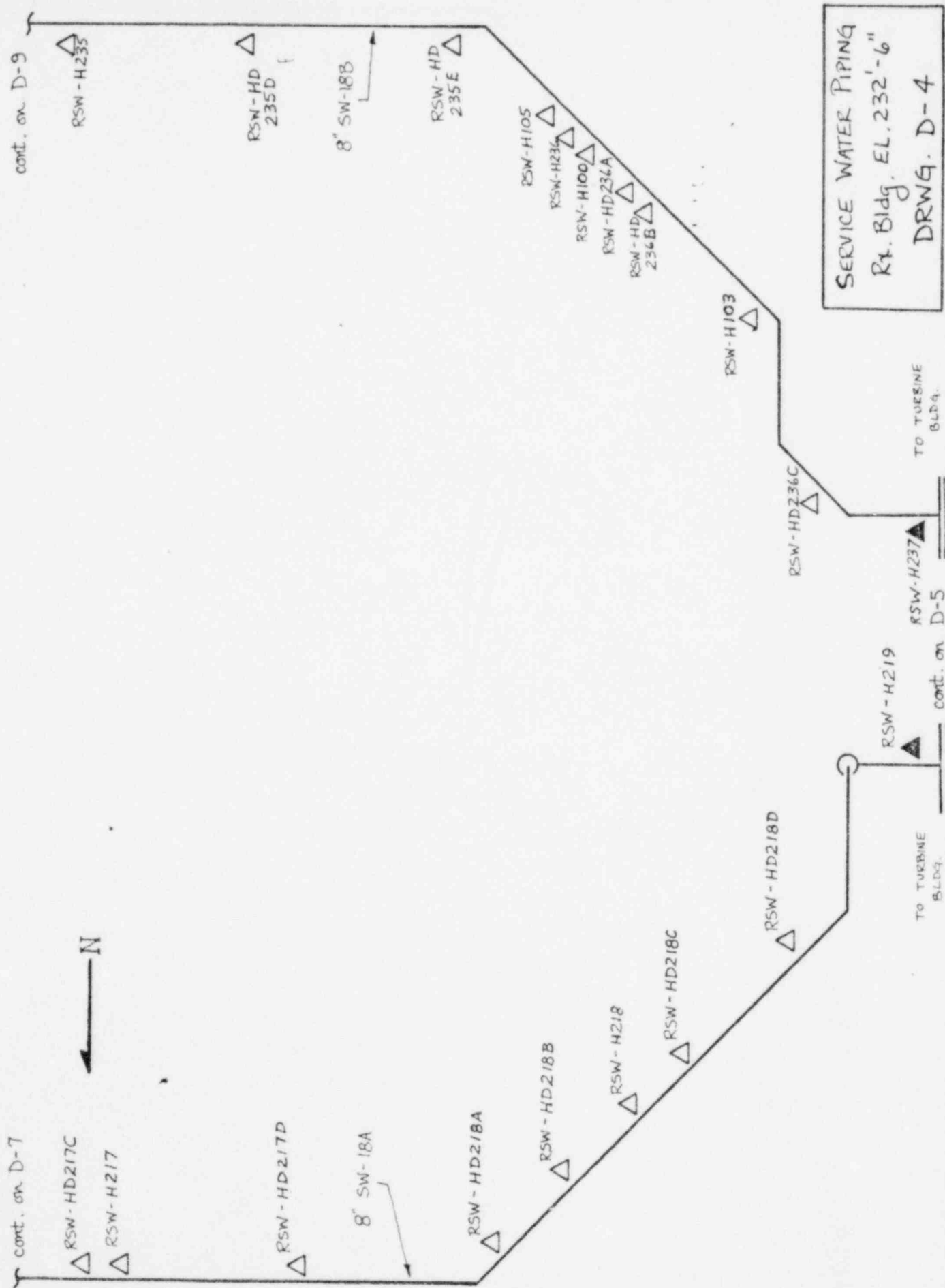
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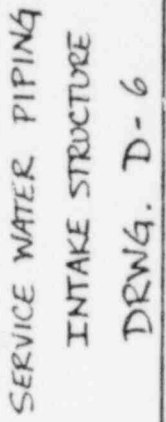
	Spring hanger or support
	Integrally welded Spring hanger or support
	Rigid hanger, support or restraint
	Integrally welded Rigid hanger, support or restraint
	Sway Brace
	Integrally welded Sway Brace
	Shock Suppressor
	Integrally welded Shock Suppressor
	Integrally welded Shear Blocks

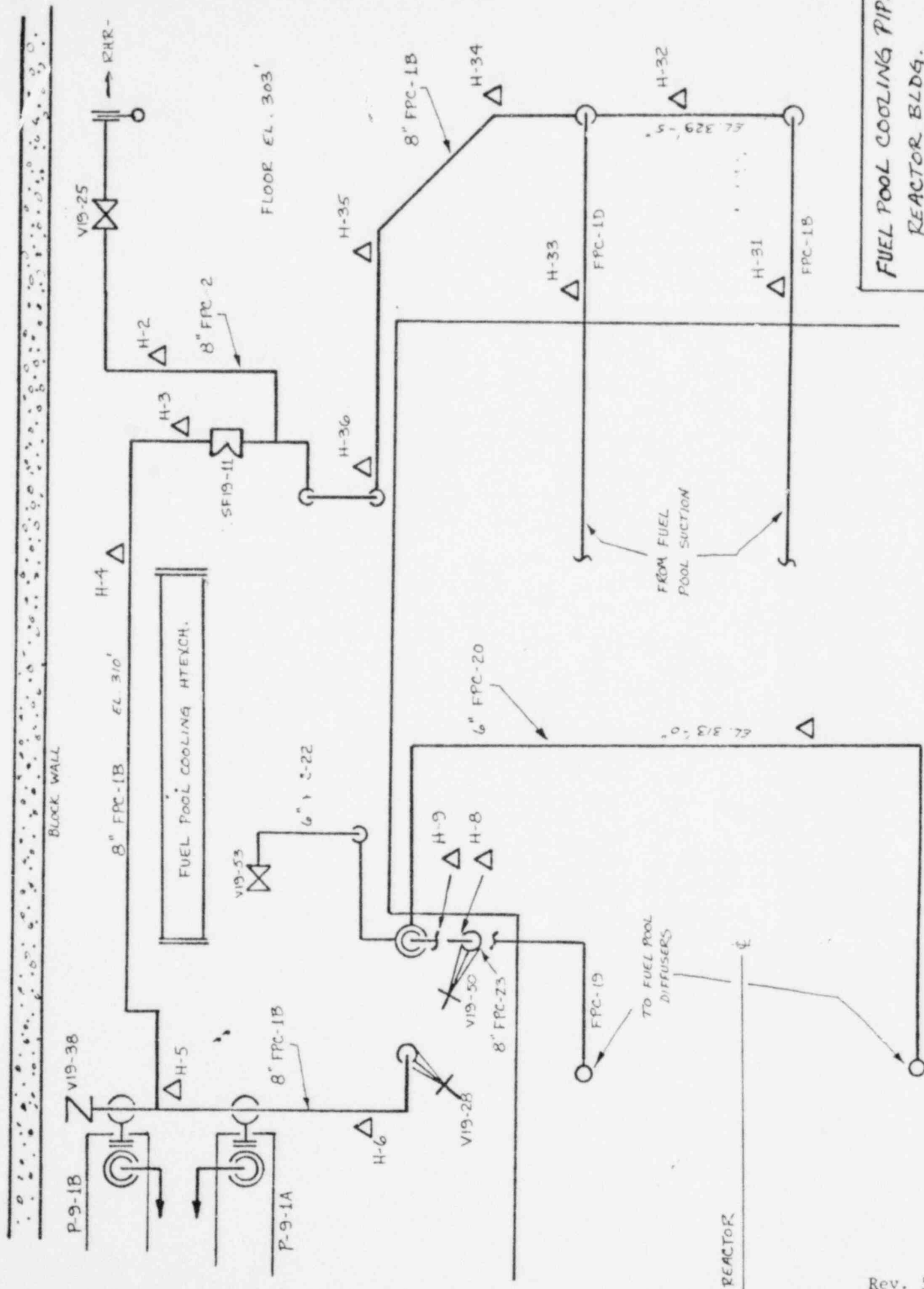




SERVICE WATER PIPING
DIESEL GENERATOR ROOMS
DRAWG. D-2







Hydrostatic Pressure Test

Table H-1

<u>System</u>	<u>Drawing No.</u>	<u>Design Press (psig)</u>	<u>Test Press (psig)</u>	<u>Remarks</u>
<u>Class 1:</u>				
Reactor Coolant	G191167	1250	1018	No pressure boundary dwg following table
Pressure Boundary	G191267			
<u>Class 2:</u> NOTE: These lines (*) tested in accordance with IWC-5220(c)				
<u>RHR</u>				
Discharge Piping	P-6	450	563	See Relief Request H-5 Excluding open-ended lines to containment cooling
Suction Piping	P-7	150	188	Excluding open-ended lines from torus which are included in the 44 psig Type "A" Leak Test
<u>Feedwater</u>	P-1&2	1900	2375	
Reactor Cleanup <u>Water Discharge</u>	P-2	1900	2375	Non-isolable portion included in FDW test. See Relief Request H-4
<u>HPCI</u>				
Immediate Pump Discharge	G191169 Sheets 1&2	1250	100 psig >Rx pressure*	Inside HPCI Room
Discharge to Reactor	P-1	1900	2375	Non-isolable portion included in FDW test
		1900	1100*	
Suction from ⁶ EST	G191169 Sheets 1&2 G191176	150	6-25*	

Table H-1

<u>System</u>	<u>Drawing No.</u>	<u>Design Press (psig)</u>	<u>Test Press (psig)</u>	<u>Remarks</u>
Suction form Torus	G191169 Sheet 1	150	49-50	Included in 44 psig Type "A" leak test to outermost isolation valve (Includes static head of 5-6 psi)
Steam Supply	G191169 Sheets 1&2	1250	150-1120*	
Min. Flow Line	G191169 Sheet 1	1250	100 psig >Rx pressure*	
		150	N/A	Open-ended portion to first shut-off valve
Booster to Main Pump Interconnecting Piping	G191169 Sheet 2	500	400*	
Lube Oil Cooler, Gland Seal Condenser & Related Piping	G191169 Sheet 2	500 150	400* 40*	To pressure control valve. Downstream of PCV
Condensate Pump Discharge Piping	G191169 Sheet 2	150	>25*	Downstream of check valve
Turbine Exhaust & Drain Lines	G191169 Sheets 1&2	150	<50*	Excluding open-ended portion to torus
<u>RCIC</u>				
Immediate Pump Discharge	G191174 Sheets 1&2	1500	150-1120*	Inside RCIC Room, to FE-56
	P-2	1500	1100*	In torus area and steam tunnel.
Discharge to Reactor	P-2	1900	2375	Non-isolable portion included in FDW test.
Suction from CST	G191174 Sheets 1&2 G191176	150	6-25*	
Suction from Torus	G191174 Sheet 1	150	49-50	Included in 44 psig Type "A" leak test to outermost isolation valve. (Includes static head of 5-6 psi)

*Tested per IWC-5220(c)

Table H-1

<u>System</u>	<u>Drawing No.</u>	<u>Design Press</u> (psig)	<u>Test Press</u> (psi)	<u>Remarks</u>
Steam Supply	G191174 Sheets 1&2	1250	150-1120*	
Min. Flow Line	G191174 Sheet 1	1500 150	150-1120* N/A	Open-ended portion to first shut-off valve.
Lube Oil Cooler & Related Piping	G191174 Sheet 2	1500 150	150-1120* 40-100*	To pressure control valve. Downstream of PCV.
Turbine Exhaust	G191174 Sheets 1&2	150	25*	Excluding open-ended portion to torus
Condensate Pump Discharge Piping	G191174 Sheet 2	150	>25*	Downstream of second check valve
<u>Core Spray</u>				
Discharge Piping	G191168	1250 450	>120* ≥120*	Excluding open-ended portions of test loops to torus
Suction from Torus	G191168	150	49-50	Included in 44 psig Type "A" leak test to outermost isolation valve. (Includes static head of 5-6 psi)
Suction from CST	G191168 G191176	150	6-25*	
Min. Flow Lines	G191168	150	>120*	Excluding open-ended portions to torus
<u>Standby Liquid Control</u>				
Suction from SLC Tank	G191171	150	3-5*	Tank included in visual examination
Discharge Piping	G191171	1500	1275*	See Relief Request H-15
Radwaste Piping to RHR Sys. from Reactor Bldg Floor Drains	G191177 Sheet 1 G191172	150	N/A	Open-ended portion to torus
Drywell Sump Pump Discharge from Penetration to Second Outboard Isolation Valve	G191177 Sheet 1	150	44	See Relief Request H-13

*Tested per IWC-5220(c)

H-5
Rev. 5

Table H-1

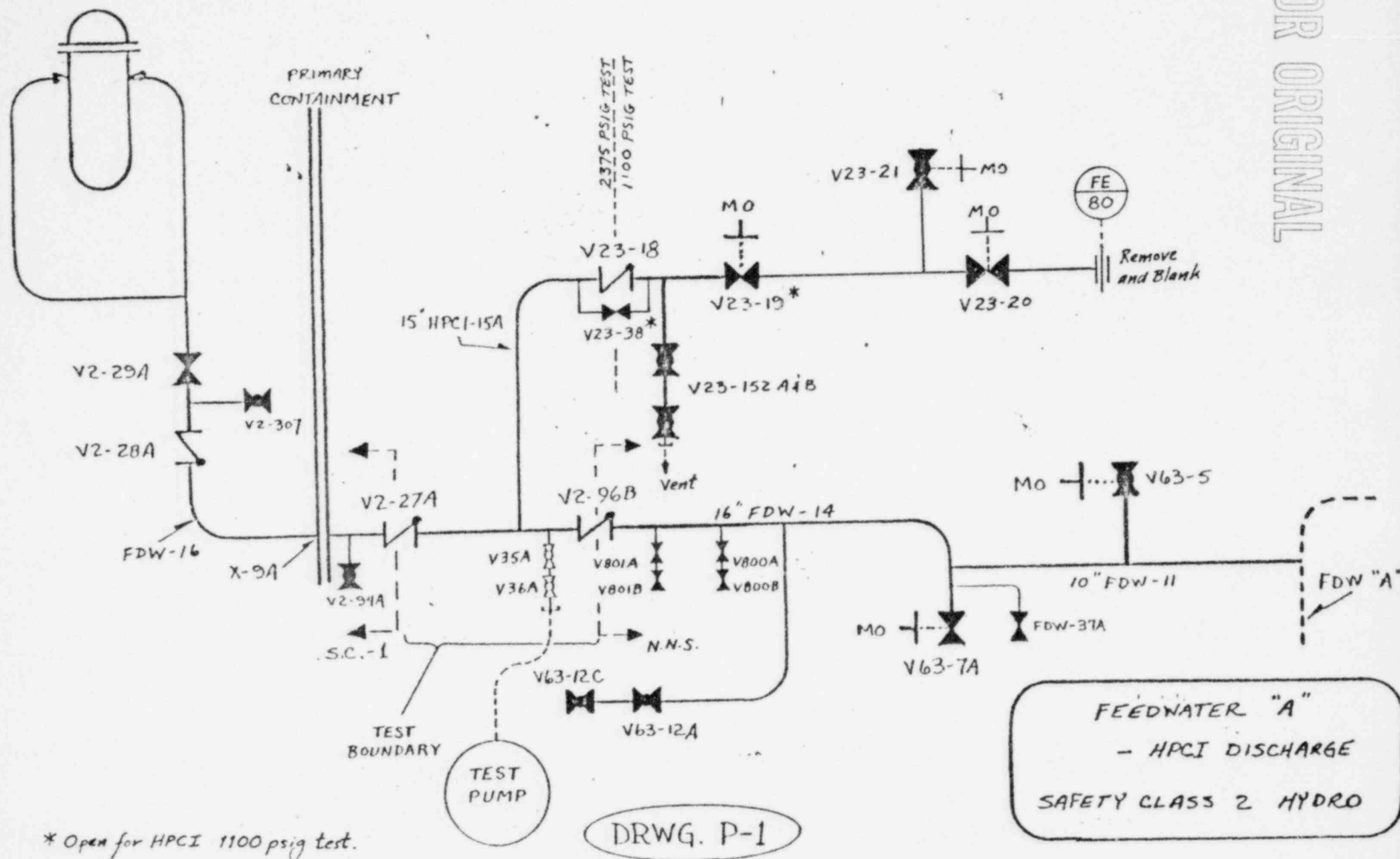
<u>System</u>	<u>Drawing No.</u>	<u>Design Press</u> (psig)	<u>Test Press</u> (psig)	<u>Remarks</u>
<u>Condensate Storage & Transfer</u>				
Condensate Storage Tank	G191176	N/A	6-25*	500,000 gallon capacity Included in system suction tests
Transfer Piping from CST	G191176	150	6-25*	Included in system suction tests
<u>Service and Instrument Air</u>	G191160	N/A	N/A	See Relief Request H-6
<u>Atmospheric Control</u>	G191176	100	44	See Relief Request H-2
<u>Sampling System</u>	G191165	56	44	See Relief Request H-7 Include in CAD test
<u>CAD System</u>	VY-E-75-002-2			
Injection Piping		150	44 37*	See Relief Request H-14
Sample Piping		56	44	See Relief Request H-14
Vent Piping		56	44	See Relief Request H-14
<u>CRD System</u>				
Scram Discharge Volume & Headers	G191170	1250	1563	
Drive Water Piping & Hydraulic Control Units	G191170	1750	1018	See Relief Request H-18
<u>Standby Gas Treatment</u>	G191238	56	44	See Relief Request H-16
<u>Class 3:</u>				
<u>Fuel Pool Cooling and Cleanup</u>	P-3	150	165	See Relief Request H-8

*Tested per IWC-5220(c)

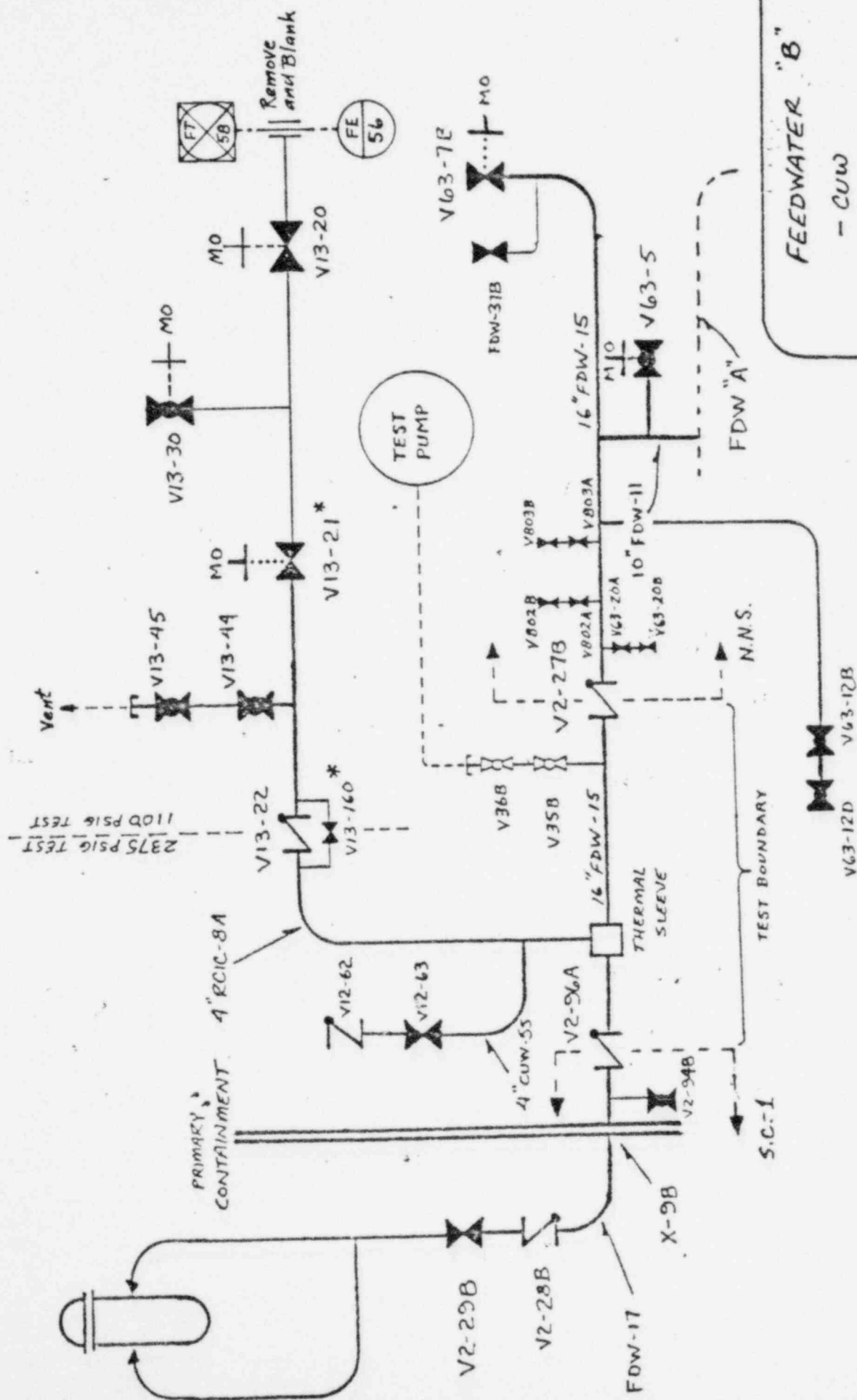
Table H-1

<u>System</u>	<u>Drawing No.</u>	<u>Design Press</u> (psig)	<u>Test Press</u> (psig)	<u>Remarks</u>
<u>Reactor Cleanup</u> <u>Discharge Piping</u>	P-5	1900 1300	2090 1430	See Relief Request H-4 for CUW-55
<u>Suction Piping</u>	P-4	1250	1375	Portions of test boundary upstream of V12-18 are S.C.I. and required <u>only</u> for test connection
<u>Service Water</u>	G191159 Sheets 1&2	150 350	165 385	See Relief Request H-9 See Relief Request H-9
<u>Diesel Air</u> <u>Start</u>	G191160	260	250	See Relief Request H-10
<u>HPCI</u>	G191169	1250	1375	See Relief Request H-11
<u>Diesel Fuel</u> <u>Oil</u>	G191162	150	165	See Relief Request H-12
<u>Advanced Off Gas</u>	VY-E-75-001	<u>≤</u> 20	- 1	See Relief Request H-17

POOR ORIGINAL



POOR ORIGINAL



FEEDWATER "B"

- CUW
- RCIC

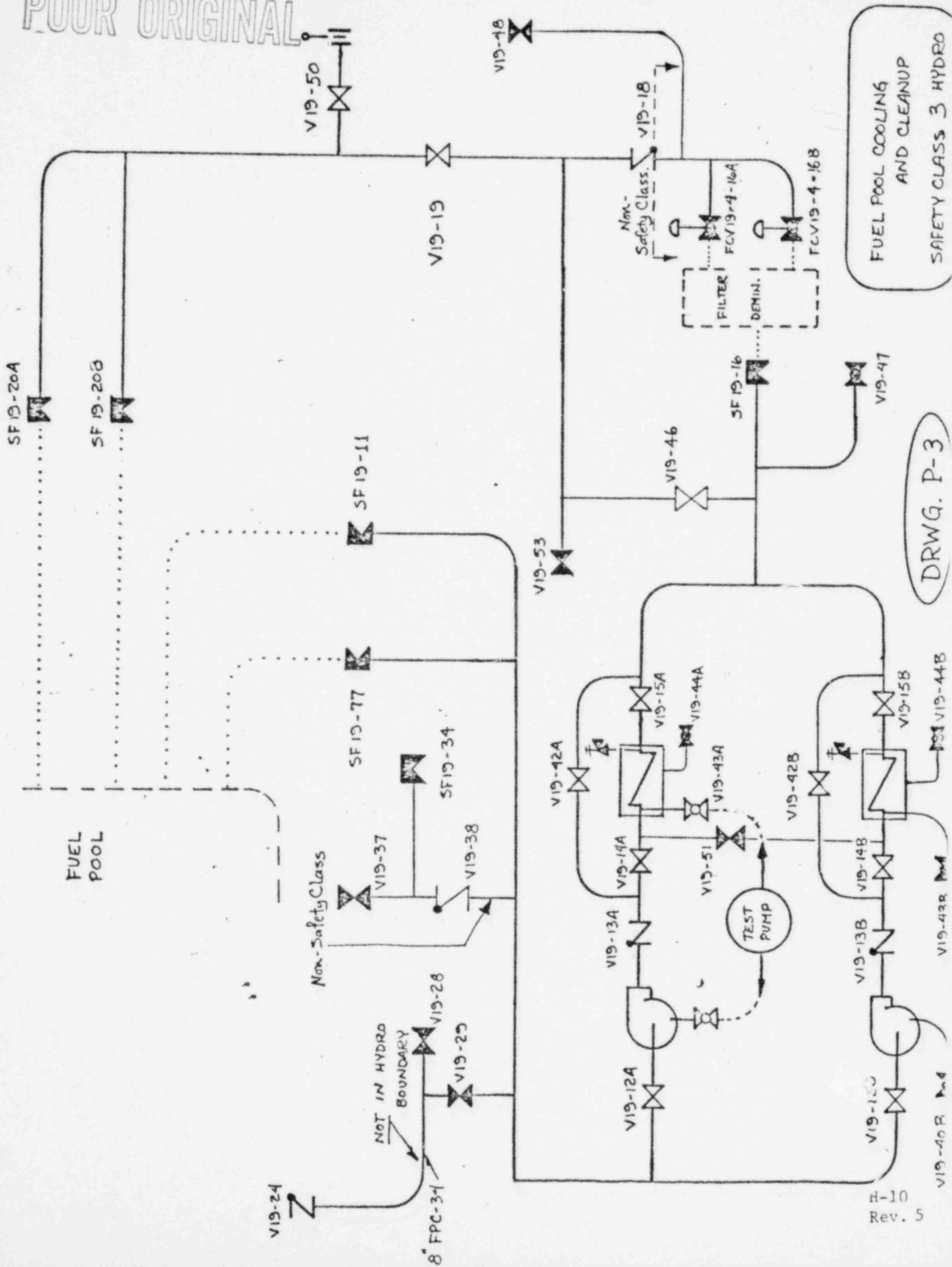
SAFETY CLASS 2 HYDRO

DRWG. P-2

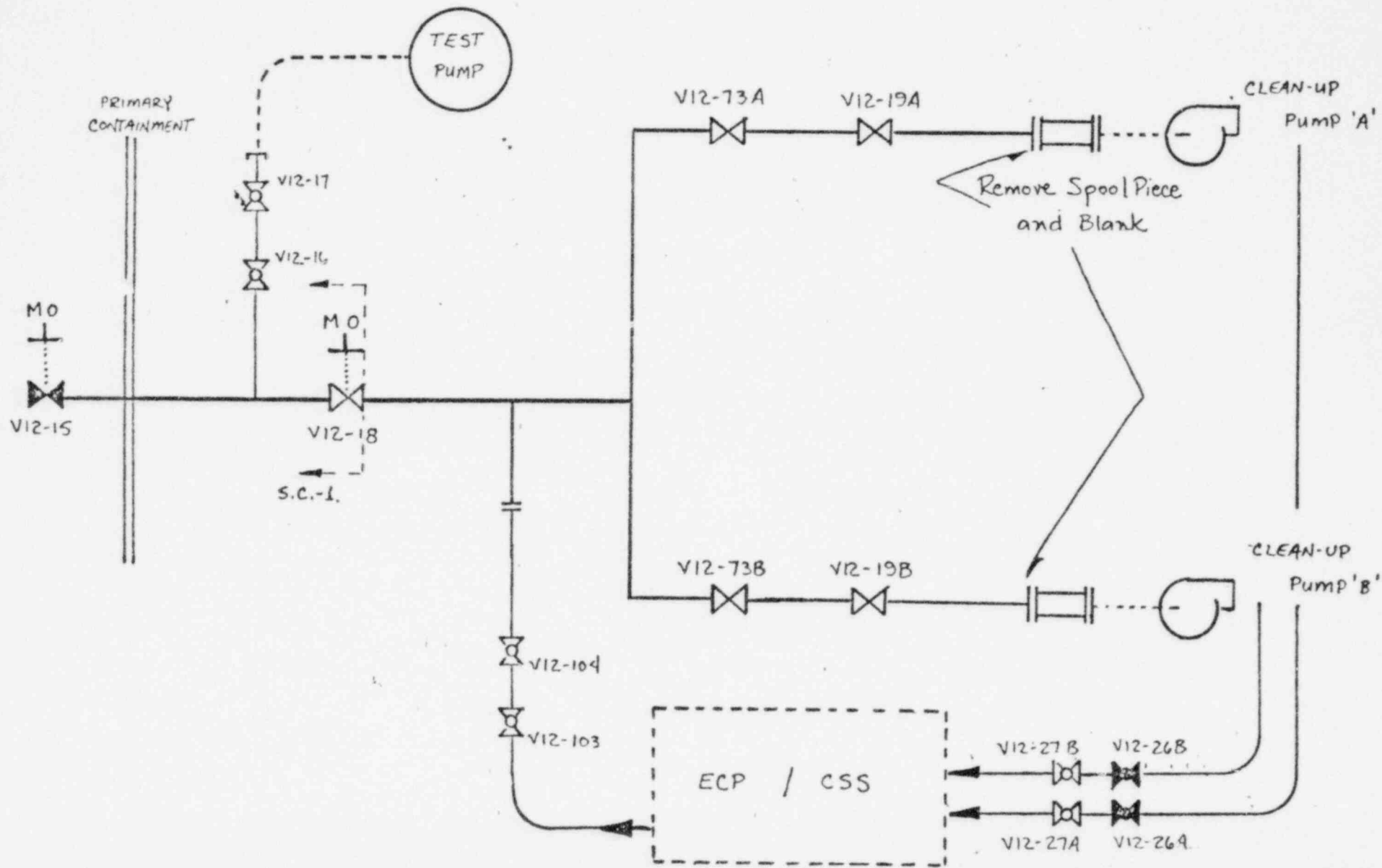
* Open during RCIC 1100 psig test.

* H-9
Rev. 5

POOR ORIGINAL



POOR ORIGINAL



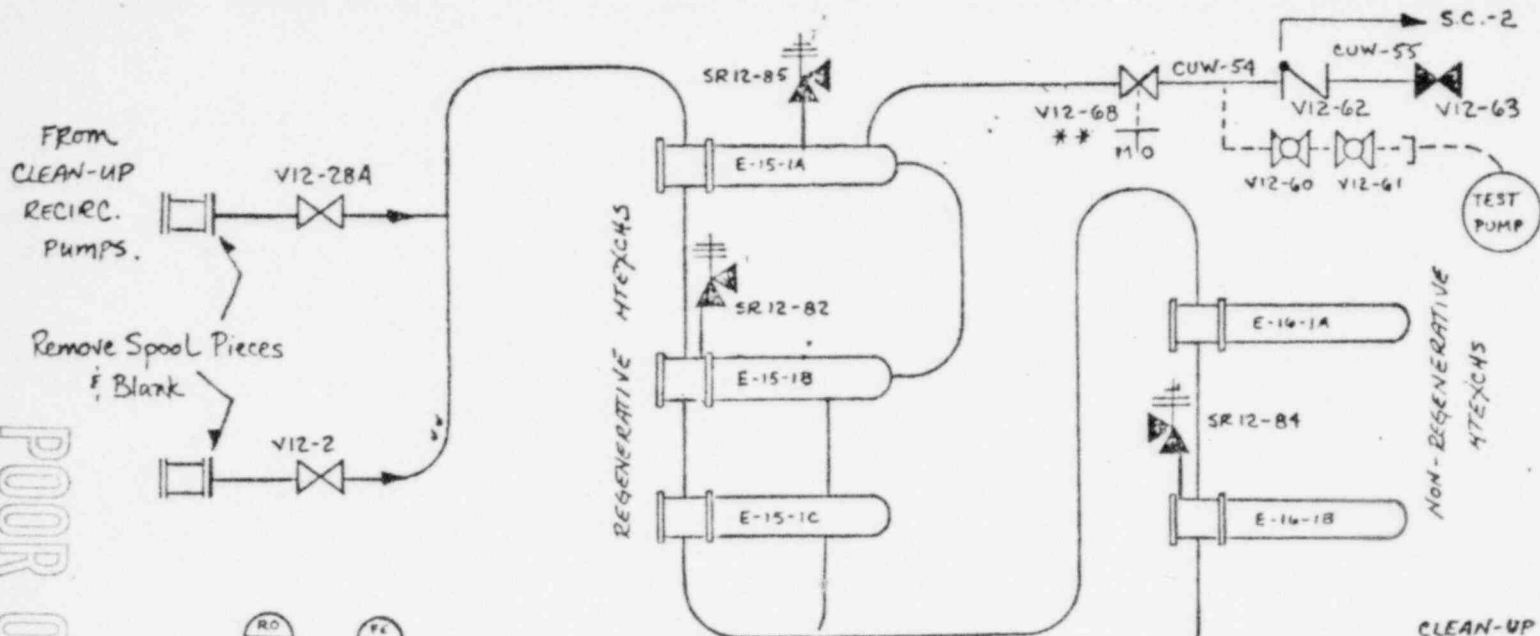
REACTOR WATER CLEAN-UP SYSTEM
- Suction
SAFETY CLASS : HYDRO

(DRWG P-4)

POOR ORIGINAL

FROM
CLEAN-UP
RECIRC.
PUMPS.

Remove Spool Pieces
& Blank

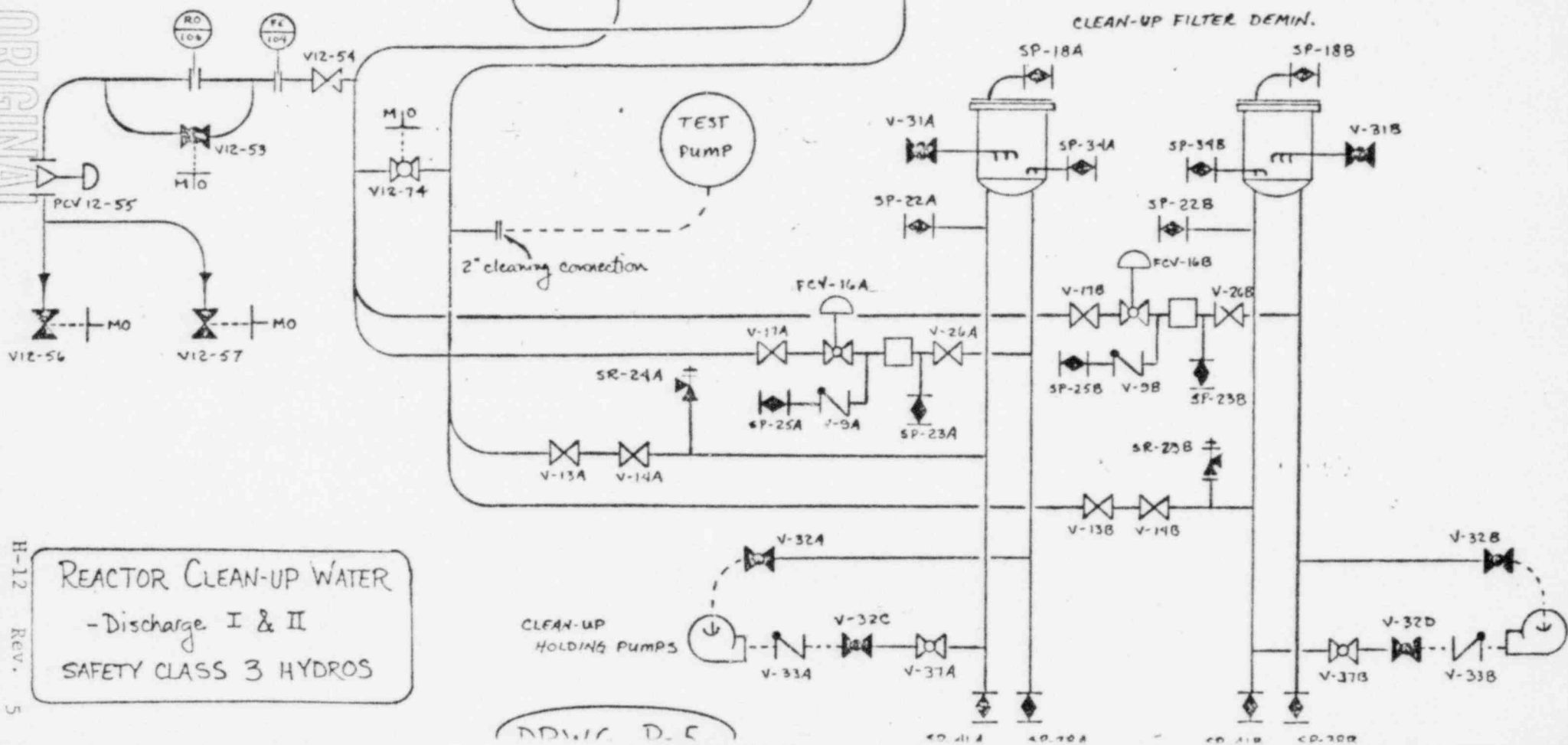


→ Unless otherwise noted all valves
are prefixed by system numbers
12-4

Example: V-16A
Actual Tagging V12-4-16A

** V12-68 is Closed for the
2090 psig test.

CLEAN-UP FILTER DEMIN.

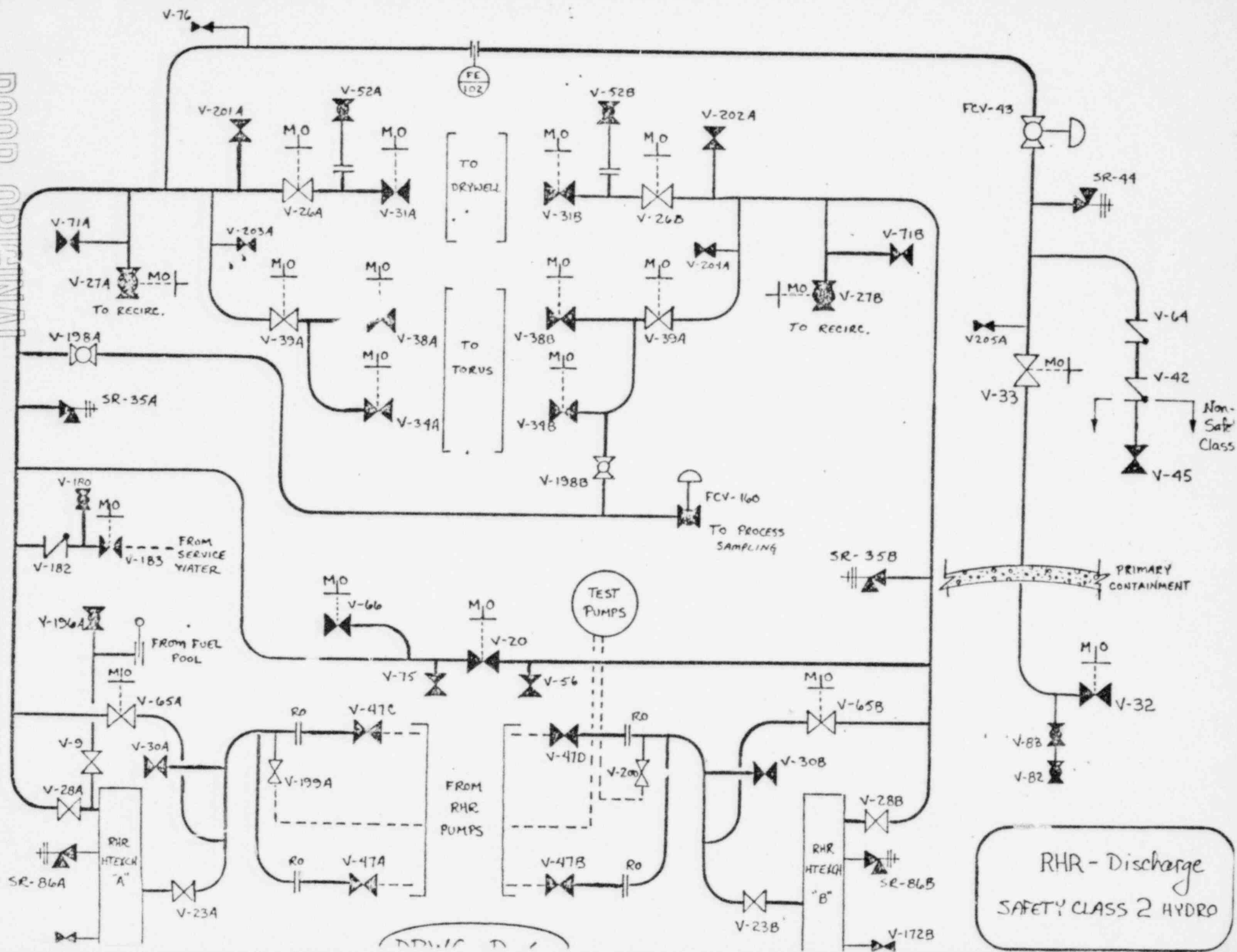


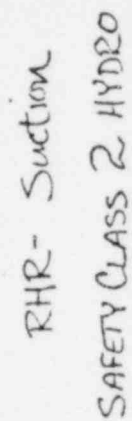
REACTOR CLEAN-UP WATER
- Discharge I & II
SAFETY CLASS 3 HYDROS

H-12 Rev. 5

DDW/C D.C

H-13 Rev. 5





DRWG. P-7

RELIEF REQUEST BASIS

Numbers: H-1
H-2

NUMBER: H-1

SYSTEM: All Safety Class 2 Systems

REQUIREMENT: Test to be conducted at a temperature of not less than 100°F.

BASIS FOR RELIEF: Unless normal system temperature is near the required test temperature, the required test temperature cannot be achieved without heating the water. Vermont Yankee has no means of heating the water through the test pumps.

ALTERNATE TESTING: Normal system water sources shall be used to fill the lines and conduct the hydrostatic test.

NUMBER: H-2

SYSTEM: Atmospheric Control

LINE(S): Full System

SAFETY CLASS: 2

FUNCTION: Maintain control of Primary Containment Air

BASIS FOR RELIEF: System is designed for Air. The only means of isolating the system for a pressure test is with single check of butterfly valves which will not hold back a 125 psig hydrostatic pressure.

ALTERNATE TESTING: Containment isolation piping and valves are tested for integrity during the 44 psi, type A leak test.

RELIEF REQUEST BASIS

Numbers: H-3

H-4

NUMBER: H-3

SYSTEM: All uninsulated Safety Class 1, 2, and 3 Systems

REQUIREMENT: Hydrostatic test pressure and temperature shall be maintained for at least four hours prior to performance of examination for leakage.

BASIS FOR RELIEF: Later editions of the ASME Boiler and Pressure Vessel Code permit "components wherein both the base metal and the weld deposit are exposed for visual examination" to be subjected to a minimum test time of 10 minutes.

ALTERNATIVE TESTING: The duration of hydrostatic test holding time prior to examination for all uninsulated Safety Class 1, 2, and 3 Systems shall be 10 minutes.

NUMBER: H-4

SYSTEM: Reactor Cleanup Water LINE(S): Discharge (CUW-55)

SAFETY CLASS: 2

FUNCTION: Return demineralized water to reactor coolant

BASIS FOR RELIEF: The portion of CUW-55 between V10-63 and V10-62 cannot be isolated from the Safety Class 3 line CUW-54. Extending the 1.25 times P_D test boundary beyond V10-63 would overpressurize CUW-54.

ALTERNATE TESTING: The portion of CUW-55 between V10-63 and V10-62 shall be included in the 1.1 times P_D test of CUW-54.

RELIEF REQUEST BASIS

Numbers: H-5
H-6

NUMBER: H-5

SYSTEM: RHR LINE(S): Immediate Pump discharges to first manual valve
and minimum flow bypass
(RHR-13 A-D)

SAFETY CLASS: 2

FUNCTION: RHR discharge (all modes) and minimum flow discharge to torus

BASIS FOR RELIEF: Inclusion of these 450 psi discharge lines in the
1.25 times P_D test boundary requires isolation on the suction side
of the pumps. This in turn includes the intervening 150 psi
suction lines in the high pressure test.

ALTERNATE TESTING: The discharge lines from the pump to V10-47A&B
and portions of minimum flow bypass lines RHR-13 A-D to V10-16 A&B
shall be tested under the lower test pressure of RHR suction.

NUMBER: H-6

SYSTEM: Service and Instrument Air LINE(S): Full system

SAFETY CLASS: 2

FUNCTION: Provide air to primary containment and air operated
instrumentation

BASIS FOR RELIEF: System is designed for air. The introduction of
water may be detrimental to system operation. Instrument air is
isolated by check valves; not designed for hydro integrity

ALTERNATE TESTING: Containment isolation piping and valves are tested
during Type A leak test every 3 1/3 years. Instrument air is subject
to normal system pressure of approximately 100 psi which is
significantly greater than the 44 psi required for containment
isolation.

RELIEF REQUEST BASIS

Numbers: H-7
H-8

NUMBER: H-7

SYSTEM: Sampling LINE(S): Containment air

FUNCTION: Sample primary containment air

SAFETY CLASS: 2 & 3

BASIS FOR RELIEF: System is designed for air. All lines are less than 1" and have no access for a test connection.

ALTERNATE TESTING: Containment isolation piping and valves are tested during the 44 psig Type A Test. Other portions are in a normally operating condition. Routine operator surveillance would detect evidence of leakage.

NUMBER: H-8

SYSTEM: Fuel Pool Cooling and Clean-up LINE(S): FPC-34

SAFETY CLASS: 3

FUNCTION: Provide water from condensate transfer system

BASIS FOR RELIEF: Isolation beyond V19-24 requires an extensive tie-up of the condensate transfer system. This system is required to provide emergency make-up to the spent fuel pool, as well as various other make-up, flushing and backwashing functions, during all modes of operation.

ALTERNATE TESTING: FPC-34 is under a constant "dead leg" pressure from the condensate system. (V19-24 is normally closed.) Routine operator surveillance would detect evidence of leakage.

RELIEF REQUEST BASIS

Numbers: H-9
H-10

NUMBER: H-9

SYSTEM: Service Water LINE(S): Full System

SAFETY CLASS: 3

FUNCTION: System provides cooling to remove plant waste heat.

BASIS FOR RELIEF: System cannot be hydrostatically tested because it is used to dissipate heat loads during all modes of operation. During power operation, service water is required to remove heat from main recirculation pumps. At shutdown, service water is used to supply cooling water to shutdown cooling equipment.

ALTERNATE TESTING: The visible portions of the service water system are observed during normal operation. The system runs approximately 100% of the time. Routine operator surveillance would detect evidence of leakage or degradation of support component capabilities.

NUMBER H-10

SYSTEM: Diesel Air Start LINE(S): Full System

SAFETY CLASS: 3

FUNCTION: System provides high pressure air to diesel generators to assist crank rotation in diesel starting.

BASIS FOR RELIEF: System is designed for air. The introduction of water may be detrimental to the diesels and system operation.

ALTERNATE TESTING: The air start system is constantly under a normal "operating" pressure of 250 psi, which is checked on every operator working shift.

RELIEF REQUEST BASIS

Numbers: H-11
H-12

NUMBER: H-11

SYSTEM: HPCI LINE(S): Drain lines to exhaust steam drain pot

SAFETY CLASS: 3

FUNCTION: Provide drainage from possible steam condensation points

BASIS FOR RELIEF: These drains are not able to be isolated from
lower design pressure exhaust lines and turbine casing.

ALTERNATE TESTING: These lines can be observed during HPCI system
monthly surveillance operation.

NUMBER: H-12

SYSTEM: Diesel Fuel Oil LINE(S): Full System

SAFETY CLASS: 3

FUNCTION:

BASIS FOR RELIEF: System is filled with diesel fuel oil. The
introduction of water may be detrimental to diesels and fuel oil
system.

ALTERNATE TESTING: Diesels are run monthly. Routine operator surveillance
would detect evidence of leakage.

RELIEF REQUEST BASIS

Numbers: H-13
H-14

NUMBERS: H-13

SYSTEM: Radwaste

LINE(S): Drywell sump pump discharge lines
from penetration to second outboard
isolation valve.

SAFETY CLASS: 2

FUNCTION: Forms part of primary containment isolation system

BASIS FOR RELIEF: Safety function of piping is to contain drywell
atmosphere. Hydrostatic testing is not appropriate.

ALTERNATE TESTING: Line are subjected to a yearly 44 psig Type C leak test
and a Type A leak test approximately every 3 years.

NUMBER: H-14

SYSTEM: Containment Air Dilution

LINE(S): Portions of system from
primary containment penetration to
second outboard isolation valve.

SAFETY CLASS: 2

FUNCTION: Provide air injection to, and venting and sampling of, the
primary containment atmosphere.

BASIS FOR RELIEF: System is designed for air. Introduction of water
may be detrimental to system operation.

ALTERNATE TESTING: Containment isolation portions of the system are
subjected to a 44 psig Type A leak test every 3 1/3 years.

RELIEF REQUEST BASIS

Numbers: H-15
H-16

NUMBERS: H-15

SYSTEM: Standby Liquid Control LINE(S): Test Connection
downstream of V11-16

FUNCTION: Sodium pentaborate injection to reactor vessel.

BASIS FOR RELIEF: Inclusion of this connection in the test boundary requires pressurization of SLC-11 to V11-18. SLC-11 is a Safety Class 1, 1275 psi line. Subjecting this line to the 1,875 psig safety class 2 hydrostatic test pressure would cause over-pressurization.

ALTERNATE TESTING: The test connection is hydrostatically examined during the Safety Class 1 vessel hydro.

NUMBER: H-16

SYSTEM: Standby Gas Treatment LINE(S): Containment Purge Lines
to SBT Units

SAFETY CLASS: 2

FUNCTION: Limits airborne fission product release to environment.

BASIS FOR RELIEF: System is designed for air; not designed for hydro integrity. Introduction of water may be detrimental to system operation.

ALTERNATE TESTING: Containment isolation portions of system are tested during the 44 psig Type A leak test every 3 1/3 years. Ductwork portions of system are outside the scope of the ASME Code.

RELIEF REQUEST BASIS

Number: H-17
H-18

NUMBER: H-17

SYSTEM: Advanced Off Gas

SAFETY CLASS: 3

LINE(S): Charcoal adsorbers and inter-
connecting piping

BASIS FOR RELIEF: System is designed for air; introduction of water
would be detrimental to system operation.

ALTERNATE TESTING: System operates under vacuum (13.7 psia). Leakage would
result in increased flow which would be detected by flow elements
located downstream of the vacuum pumps.

NUMBER: H-18

SYSTEM: CRD Hydraulic

SAFETY CLASS: 2

LINE (S): Drive Water Piping and Hydraulic
Control Units

BASIS FOR RELIEF: Isolation of this piping for hydrostatic testing is
impractical due to the large number of valves to be realigned, and
could represent a potential safety hazard if any of these valves are
inadvertently left in the test position.

ALTERNATE TESTING: Substantial portions of this piping will experience a
hydrostatic test pressure of 1018 psig during the reactor vessel hydro.
The balance of the system functions at a normal operating pressure 20-40
psig > reactor pressure, and any evidence of leakage would be detected by
routine operator surveillance.

Tests:

CV - Exercise to the position required to fulfill its function every 3 months. (IWV - 3520)

SRV - Test safety and relief valves in accordance with ASME PTC 25.2-1966 approximately once every five years. (IWV - 3510)

* ST - Test safety and relief valves in accordance with ASME PTC 26.3-1976 every two years.

Category D - Valves which are actuated by an energy source capable of only one operation, such as rupture disks or explosive actuated valves. (IWV - 3600)

Tests:

DT - For explosive valves - remove, fire and replace 20% of the charges every 2 years. (IWV - 3610) For rupture disks - test in accordance with the manufacturer's instructions. (IWV - 3620)

Category E - Valves which are normally locked (or sealed) open or locked (or sealed) closed to fulfill their function. (IWV - 3700)

Tests:

ET - Operational checks, with record entries, before and after operations are required to verify valve is locked or sealed in the proper position.

Specific procedural requirements, exceptions, and acceptance criteria are described in Section XI, sub-section IWV.

Procedures and records will be developed, evaluated, and maintained in accordance with the requirements of this sub-section.

SYSTEM: Nuclear Boiler

DRAWING NO. : G-191167

Valve Number	Class	Coordinates	Valve Category					Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Relief Requests	Testing Alternative	REMARKS
			A	B	C	D	E								
SR2-14 A-D	3	M-12			X			10	CK	-	C	-	CV	CS	See RRB - V5.
V2-27A, V2-96A	1	F,H-3			X			16	CK	-	O	CV	-	-	See Note 1
V2-28A/B	1	F,H-4	X		X			16	CK	-	O	CV	LT	-	See V6 and Note 1
V2-39	1	L-4	X					3/4	GL	AO	C	MT	LT	LTJ	See RRB - V7
V2-40	1	L-3	X					3/4	GL	AO	C	MT	LT	LTJ	See RRB - V7
V2-53A/B	1	L,N-10		X				28	GA	MO	O	MT	Q	CS	See RRB - V8
V2-54A/B	1	N-10 L-9		X				4	GA	MO	O	MT	Q	CS	See RRB - V8
* SV2-70A/B	1	D,H-8			X			6x8	RV	-	C	-	SRV	ST	See RRB - V9, V9a, and Note 2
* RV2-71A-D	1	D,F,G H-8		X	X			6x10	RV	-	C	-	SRV	ST	See RRB - V9b, V9c, V9d, and Note 3
V2-74	1	D-10	X					3	GA	MO	C	-	Q,MT LT	LTJ	See RRB - V7, V10
V2-77	1	D-13	X					3	GA	MO	C	-	Q,MT LT	LTJ	See RRB - V7, V10
V2-80A-D	1	D,F,G H-10	X					18	GL	AO	O	Q MT	LT	LTJ	See RRB - V7 and Note 4
V2-86 A-D	1	D,F,G H-13	X					18	GL	AO	O	Q MT	LT	LTJ	See RRB - V7 and Note 4
V2-27B, V2-96B	2	F,H-3			X			16	CK	-	O	-	CV	RR	See RRB - V11
2-62-A-D	2	J-13	X		X			1	EFC	-	O	LT	CV	RR	See RRB - V 12
2-64-A-D	2	K-13	X					1	EFC	-	O	LT	CV	RR	See RRB - V12

Control Rod Drive Hydraulic

DRAWING NO. : G-191170

[illegible]

SYSTEM: Residual Heat Removal

DRAWING NO. : G-191172

Valve Number	Class	Coordinates	Valve Category					Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Relief Requests	Testing Alternative	REMARKS
			A	B	C	D	E								
V10-9	2	L-2					X	8	GA	M	O	ET	-	-	
* V10-17	1	G-8	X					20	GA	MO	C	MT	Q LT	CS	See RRB - V25, V25a
* V10-18	1	F-8	X					20	GA	MO	C	MT	Q LT	CS	See RRB - V25, V25a
V10-25A/B	1	E-6, 12		X				24	GA	MO	O	Q MT	-	-	
V10-26A/B	2	C-7, 11	X					12	GA	MO	C	Q MT	LT	-	See RRB - V25
V10-27A/B	1	D-6, 12		X				24	GL	MO	C	Q MT	-	-	
V10-31A/B	2	C-8, 10	X					12	GA	MO	C	Q MT	LT	-	See RRB - V25
* V10-32	1	C-8	X					4	GA	MO	C	Q MT	LT	CS	See RRB - V25, V25a
* V10-33	1	B-8	X					4	GA	MO	C	Q MT	LT	CS	See RRB - V25, V25a
V10-34A/B	2	E-4, 14	X					10	GL	MO	C	Q MT	LT	-	See RRB - V25
V10-38A/B	2	E-4, 13	X					4	GL	MO	C	Q MT	LT	-	See RRB - V25
V10-39A/B	2	D-4, 14	X					12	GA	MO	C	Q MT	LT	-	See RRB - V25
V10-46A/B	1	E-7, 11			X			24	CK	-	C	-	CV	CS	See RRB - V26
V10-48 A-D	2	L-4, 13 J-4, 13			X			16	CK	-	C	CV	-	-	
V10-57	0	H-13	X					4	GA	MO	C	Q MT	LT	LTJ	See RRB - V27
V10-65A/B	2	J-3 K-15		X				20	GL	MO	O	Q MT	-	-	
V10-66	2	H-13	X					4	GA	MO	C	Q MT	LT	LTJ	See RRB - V27

SYSTEM: Primary Containment and Atmosphere Control

DRAWING NO. : G-191175

Valve Number	Class	Coordinates	Valve Category					Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Relief Requests	Testing Alternative	REMARKS
			A	B	C	D	E								
* V16-19-5A-J	2	J-8	X		X			18"	CK	-	C	CV	LT	L	See RRB - V35, Note 8
SB16-19-6A	2	F-2	X					3	BF	AO	C	-	Q, MT LT	LTJ	See RRB - V36, V37
SB16-19-7A/B	2	E, K-2	X					18	BF	AO	C	-	Q, MT LT	LTJ	See RRB - V36, V37
* SB16-19-8	2	I-12	X					18	BF	AO	C	MT	Q LT	CS LTJ	See RRB - V36, V38, Note 7
SB16-19-9	2	I-16	X					18	BF	AO	C	-	Q, MT LT	LTJ	See RRB - V36, V37
SB16-19-10	2	J-13	X					18	BF	AO	C	-	Q, MT LT	LTJ	See RRB - V36, V37
SB16-19-11A/B	2	K, M-15	X					20	BF	AO	C	Q MT	LT	LTJ	See RRB - V36
* V16-19-12A/B	2	K, M-16	X		X			20	CK	-	C	CV	LT	LTJ	See RRB - V36, Note 9
V16-20-20	2	G-12	X					1	GA	SO	O	-	Q LT	CS LTJ	See RRB - V36, V38
V16-20-22A	2	H-12	X					1	GA	SO	C	-	Q, MT LT	LTJ	See RRB - V36, V37
* V16-19-23	2	G-16	X					6	BF	AO	O	MT	Q LT	CS LTJ	See RRB - V36, V38, Note 7
SB-16-19-6B	2	L-2	X					3	BF	AO	O	MT	Q LT	CS LTJ	See RRB - V36, V38
V16-20-22B	2	H-12	X					1	GA	SO	O	MT	Q LT	CS LTJ	See RRB - V36, V38

SYSTEM: HVAC - Reactor Building

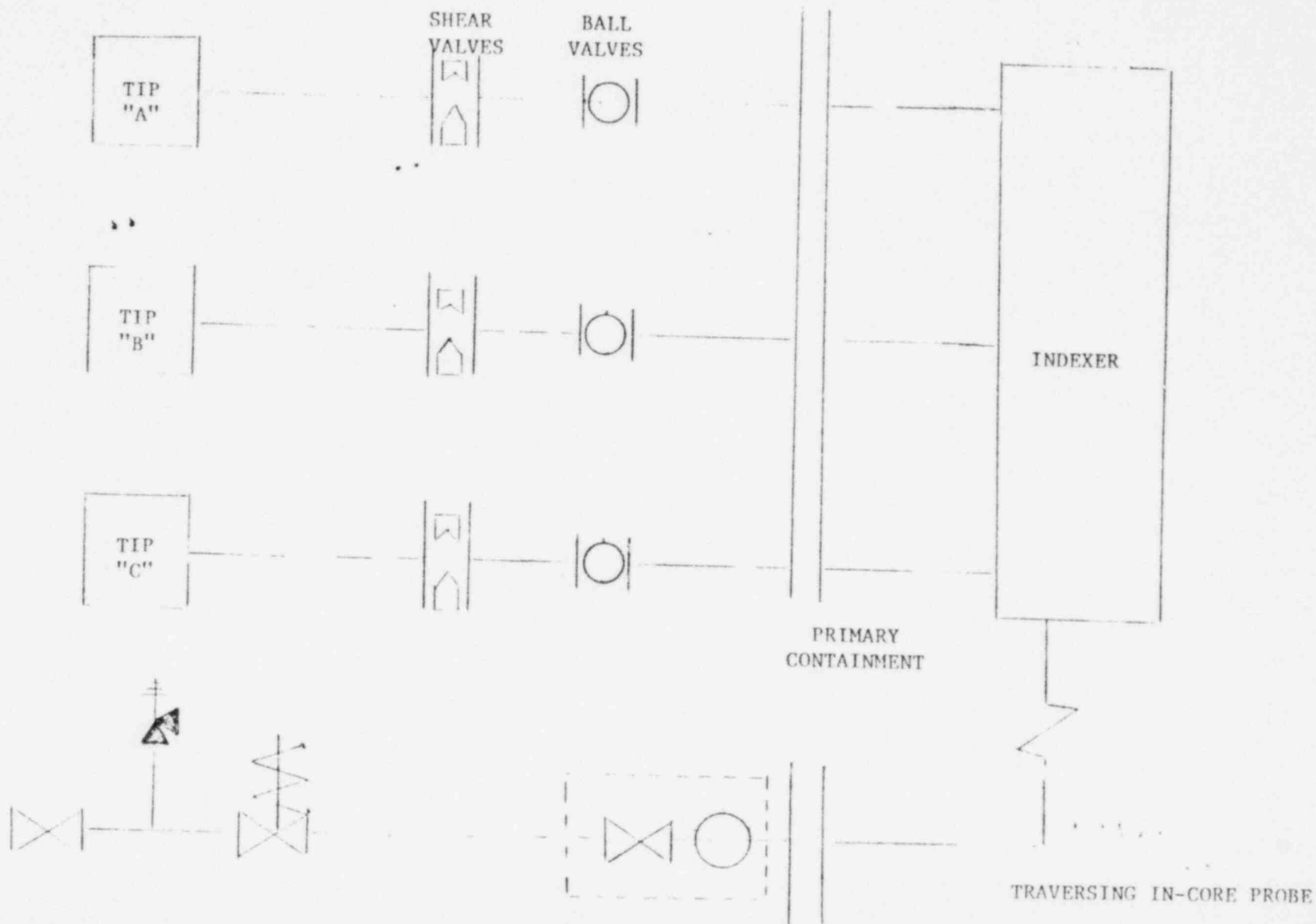
DRAWING NO. : G-191238

Valve Number	Class	Coordinates	Valve Category					Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Relief Requests	Testing Alternative	REMARKS
			A	B	C	D	E								
SGT-1A/B	2	I-9		X				12	BF	AO	C	Q MT	-	-	
SGT-2A/B	2	I-7		X				12	BF	AO	O/C	Q MT	-	-	
SGT-3A/B	2	G-7		X				12	BF	AO	O/C	Q MT	-	-	
SGT-4A/B	2	I-7		X				12	BF	AO	C	Q MT	-	-	
SGT-5	2	H-7		X				4	BF	AO	C	Q MT	-	-	
* SB-16-19-6	2	F-7	X					8	BF	AO	O	Q MT LT	CS LTJ		See RRB - V41,V42
* SB-16-19-7	2	F-7	X					18	BF	AO	C	Q,MT LT	LTJ		See RRB - V41,V43
HVAC-9	2	J-9		X				54	BF	AO	O	Q MT	-	-	
HVAC-10	2	J-9		X				54	BF	AO	O	Q MT	-	-	
HVAC-11	2	H-9		X				54	BF	AO	O	Q MT	-	-	
HVAC-12	2	H-9		X				54	BF	AO	O	Q MT	-	-	

SYSTEM: Nuclear Boiler Vessel Instrumentation

DRAWING NO. : G-191267

Valve Number	Class	Coordinates	Valve Category					Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Relief Requests	Testing Alternative	REMARKS
			A	B	C	D	E								
2-3-11	2	D-4	X		X			1	EFC	-	O	LT	CV	RR	See RRB - V44
2-3-13A/B	2	E-4, 12	X		X			1	EFC	-	O	LT	CV	RR	See RRB - V44
2-3-15A/B	2	E-4, 12	X		X			1	EFC	-	O	LT	CV	RR	See RRB - V44
2-3-17A/B	2	F-4, 12	X		X			1	EFC	-	O	LT	CV	RR	See RRB - V44
2-3-19A/B	2	G-4, 12	X		X			1	EFC	-	O	LT	CV	RR	See RRB - V44
* 2-3-21A-D	2	J-4, 12	X		X			1	EFC	-	O	LT	CV	RR	See RRB - V44
* 2-3-23A-D	2	G-4, 12	X		X			1	EFC	-	O	LT	CV	RR	See RRB - V44
2-3-25	2	I-4	X		X			1	EFC	-	O	LT	CV	RR	See RRB - V44
2-3-29A/B	2	G-4, 12	X		X			1	EFC	-	O	LT	CV	RR	See RRB - V44
2-3-31 A-H	2	G-4	X		X			1	EFC	-	O	LT	CV	RR	See RRB - V44
2-3-31 I-Q	2	H-12	X		X			1	EFC	-	O	LT	CV	RR	See RRB - V44
2-3-33	2	J-12	X		X			1	EFC	-	O	LT	CV	RR	See RRB - V44
2-3-35	2	J-4	X		X			1	EFC	-	O	LT	CV	RR	See RRB - V44
* 2-3-27	2	I-4	X		X			1	EFC	-	O	LT	CV	RR	See RRB - V44



Relief Request Basis

NUMBER: V4

SYSTEM: Service and Instrument Air

VALVES: V72-89 B/C

CATEGORY: C

FUNCTION: Primary Containment Isolation

TEST REQUIREMENT: CV

BASIS FOR RELIEF: Valve cannot be exercised during power operation
since closing the valve could cause the air operated main steam
isolation valves to close resulting in a reactor scram.

ALTERNATE TESTING: Valve is verified open during normal system
operation. Valve is verified closed during leak testing in
accordance with Appendix J.

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Relief Request Basis

NUMBER: V9
SYSTEM: Nuclear Boiler
VALVE: RV2-71A-D
CATEGORY: B
CLASS: 1
FUNCTION: Automatic depressurization
TEST REQUIREMENT: Q

BASIS FOR RELIEF: Valves cannot be exercised during power operation since failure in the open position would require tripping the reactor. Also, live steam would be discharged to the suppression pool which would heat the water and pressurize the containment. Valves cannot be exercised during cold shutdowns since steam is required to stroke the main piston in the valve. Based on the following references, the testing of each relief valve at a frequency of once per operating cycle is assessed to be adequate by Vermont Yankee and the industry. In a letter from Brian K. Grimes of the NRC to All Boiling Water Reactor Licensees dated July 16, 1979 regarding relief and safety-relief valves, it states that, "we have concluded that implementation of a requirement for increased surveillance testing would not be the most effective way of assuring safety-relief valve reliability." Also referenced is a letter from Darrel G. Eisenhut of the NRC to All Operating Reactor Licensees dated May 7, 1980 regarding the Five Additional TMI-2 Related Requirements to Operating Reactors. Item II.K.3.16 entitled Reduction of Challenges and Failures of Relief Valves - Feasibility Study and System Modification states that, "Those changes which are shown to reduce relief valve challenges without compromising the performance of the relief valves or other systems should be implemented." Vermont Yankee's response to an NRC suggested Tech. Spec. change dated February 2, 1978 states that, "Both General Electric Company and Target Rock strongly recommend that these valves be manually operated only when absolutely necessary. The only times we consider to be absolutely necessary, other than if plant conditions warrant, is once a cycle."

ALTERNATE TESTING: During power ascension after a refueling outage, each relief valve will be manually opened to full stroke with the reactor at low pressure until the thermocouple downstream of the valve indicates fluid is flowing from the valve.

Relief Request Basis

NUMBER: V9a
SYSTEM: Nuclear Boiler
VALVE: RV2-71A-D, SV2-70 A/B
CATEGORY: C
CLASS: 1
FUNCTION: Automatic Depressurization/Overpressure Protection

TEST REQUIREMENT: SRV (IWV-3510 (a))

BASIS FOR RELIEF: The present program for testing main steam relief and safety valves as described in the Vermont Yankee Inservice Inspection Program is more conservative than the test frequency described in IWV-3510 (a). Per the ISI program, all the main steam relief and safety valves are tested every two refuel outages. The valves that are removed each refuel outage for testing are either tested and replaced or replaced with a previously tested spare valve. In the case where the valves are replaced with a previously tested spare, the removed valves are not tested for as-found conditions until a convenient time after the refuel outage is over. This would make the additional testing as described in IWV-3510 (c) unreasonable, since the plant would be operating before it could be determined whether the removed valve fails to function properly or not.

ALTERNATE TESTING: Continue to test the main steam relief and safety valves per the requirements of the Inservice Inspection Program.

Relief Request Basis

NUMBER: V9b

SYSTEM: Nuclear Boiler

VALVE: RV2-71A-D

CATEGORY: C

CLASS: 1

FUNCTION: Automatic Depressurization/Overpressure Protection

TEST REQUIREMENT: SRV (IWV-3510 (b))

BASIS FOR RELIEF: As described in IWV-3510(b), relief and safety valves are to be tested in accordance with ASME-PTC 25.2-1966. The purpose of testing existing relief and safety valves at an operating plant is to assure service readiness for valve set pressure and operation, not necessarily to demonstrate total valve conformance to Code and/or purchase order specifications. ASME-PTC 25.2-1966 does not address this type of testing.

ALTERNATE TESTING: Testing of relief and safety valves will be performed in accordance with ASME-PTC 25.3-1976. This code is presently the industry standard; it includes the material in ASME-PTC 25.2 1966 and also extends and supercedes that document. A new sections (4.09) included in ASME-PTC25.3-1976 specifically addresses Valve Operational-Readiness Tests.

Relief Request Basis

NUMBER: V12

SYSTEM: Nuclear Boiler

* VALVE: 2-62-A-D, 2-64-A-D, 2-73-A-H, 2-305-A/B

CATEGORY: C

CLASS: 2

FUNCTION: Excess flow check valves for instrument isolation

TEST REQUIREMENT: CV

BASIS FOR RELIEF: Valves can only be verified to shut by leak testing which is performed during the refueling outage hydrostatic test.

Valves cannot be exercised shut during power operation since shutting these would isolate instrumentation required for power operation.

ALTERNATE TESTING: Valves will be functionally tested each refueling outage.

Relief Request Basis

NUMBER: V16

SYSTEM: High Pressure Coolant Injection

* VALVE: V23-15, V23-16, V23-17, V23-19, V23-20, V23-25

CATEGORY: A or B

CLASS: 1 or 2

FUNCTION: Injection mode valves

TEST REQUIREMENT: Q

BASIS FOR RELIEF: Valves cannot be exercised during power operation
since repositioning these valves would render the HPCI system
inoperable if the valve failed in an unconservative position.

ALTERNATE TESTING: Valves will be full stroke exercised during cold
shutdowns and refueling outages.

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Relief Request Basis

NUMBER: V17

SYSTEM: High Pressure Coolant Injection

VALVE: V23-18

CATEGORY: C

CLASS: 2

FUNCTION: Injection check valve

TEST REQUIREMENT: CV

BASIS FOR RELIEF: Valve cannot be exercised during power operation

since flow through this valve must be injected into the reactor coolant system. This would thermally shock the reactor nozzles.

The cold water injection would also cause a reactivity excursion.

Manual valve operation is not possible during power operation since the valve is located in the steam tunnel which is inaccessible.

- * ALTERNATE TESTING: Valve will be manually fully stroke exercised during cold shutdowns and refueling outages.

Relief Request Basis

NUMBER: V25/
SYSTEM: Residual Heat Removal
VALVE: V10-17, V10-18, V10-32, V10-33
CATEGORY: A
CLASS: 1
FUNCTION: Primary Containment Isolation
TEST REQUIREMENT: MT

BASIS FOR RELIEF: Valves cannot be exercised during power operation
since there is a 100 psig interlock that prevents opening these
valves during power operation.

ALTERNATE TESTING: Valves will be exercised during cold shutdowns and
refuel outages.

Relief Request Basis

NUMBER: V37

SYSTEM: Primary Containment and Atmosphere Control

VAIVE: SB16-19-6A, SB16-19-7A/B, SB16-19-9, SB16-19-10,
V16-19-22A, (SB16-19-8, V16-19-23 when pumpback
is not in service during the operating cycle.)

CATEGORY: A

CLASS: 2

FUNCTION: Primary containment isolation

TEST REQUIREMENT: Q

BASIS FOR RELIEF: Valves are normally closed and remain passive
in the event of an accident. A quarterly test frequency
is not required for passive valves.

ALTERNATE TESTING: None

Relief Request Basis

NUMBER: V44

SYSTEM: Nuclear Boiler Vessel Instrumentation

* VALVE: 2-3-11, 2-3-13A/B, 2-3-15A/B, 2-3-17A/B, 2-3-19A/B, 2-3-21A-D
2-3-23A-D, 2-3-25, 2-3-27, 2-3-29A/B, 2-3-31 A-H, 2-3-31 I-Q, 2-3-33,
2-3-35

CATEGORY: C

CLASS: 2

FUNCTION: Excess flow check valves for instrument isolation

TEST REQUIREMENT: CV

BASIS FOR RELIEF: Valves can only be verified to shut by leak testing
which is performed during the refueling outage hydrostatic test.

Valves cannot be exercised shut during power operation since
shutting these would isolate instrumentation required for power
operation.

ALTERNATE TESTING: Valves will be functionally tested each refueling
outage.

Relief Request Basis

NUMBER: V48
SYSTEM: TIP
VALVE: Solenoid
CATEGORY: A
CLASS: 2
FUNCTION: Primary Containment Isolation
TEST REQUIREMENT: MT

BASIS FOR RELIEF: The solenoid valve permits the guide tubes, indexers, and drive mechanisms to be purged with dry air in order to prevent rusting of the drive cables and deterioration of the guide tube lubricant. The stroke time on the solenoid valve is so small that it cannot be measured accurately and therefore cannot be evaluated for trends.

ALTERNATE TESTING: None

Relief Request Basis

NUMBER: GV-2

- * CODE PARAGRAPHS: IWV-341C (g) and IWV-3520(c) concerning corrective action prior to startup.

BASIS FOR RELIEF: The Vermont Yankee Technical Specifications describe various limiting conditions for operation. These are more appropriately used as a basis for plant startup than are the above referenced requirements.

ALTERNATIVE: The Technical Specifications' limiting conditions for operation will be used as the basis to determine if the plant can startup.

Relief Request Basis

NUMBER: GV-4

CODE PARAGRAPHS: IWB-3410(c)(3) concerning an increase in test frequency.

BASIS FOR RELIEF: Certain power operated valves have very short stroke times. The ability to accurately measure these short stroke times with a hand-held stopwatch is difficult and not repeatable. An increase in observed stroke time of 50% or more does not necessarily indicate valve degradation.

ALTERNATIVE: All power operated valves with a reference stroke time of less than or equal to 5 seconds, shall have its test frequency increased to once each month until corrective action is taken, if its stroke time increases to 8 seconds or more. This 8 second maximum stroke time is not applicable if the maximum operating time for the valve is less than 8 seconds.

NOTES

1. Valves are continuously tested to their full open position via normal feedwater flow into the reactor vessel. These valves are required to open for HPCI/RCIC operation.
2. A minimum of 1/2 of all safety valves shall be bench-checked or replaced with a bench-checked valve each refueling outage. Both valves shall be checked or replaced every two refueling outages.
3. A minimum of 1/2 of all relief valves shall be bench-checked or replaced with a bench-checked valve each refueling outage. All four valves shall be checked or replaced every two refueling outages.
4. Prior to quarterly exercise and timing tests, decrease reactor power to less than 50 percent. At least twice a week the MSIV's shall be exercised by partial closure and subsequent reopening.
5. During each refueling outage, explode one of the three charges manufactured in the same batch to verify proper function. Then install the untested charges in the explosion valves.
6. Valves are verified to open by observing a decrease in pump discharge pressure.
7. Relief Request Number V37 applies to these valves when the pumpback system has not been operated during the cycle.
8. Each refueling outage each valve will be tested to determine the force required to open each valve from fully closed to fully open.
9. Each refueling outage each valve will be tested to determine that the force required to open the vacuum breaker does not exceed the force specified by Tech. Spec. section 3.7.A.5.a and each vacuum breaker will be inspected and verified to meet the design requirements.

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PUMP/SYSTEM	REFERENCE DRAWING	SAFETY CLASS	OPERABILITY FREQ.	INSERVICE TEST QUANTITIES							TYPE SYSTEM FIXED OR VARIABLE	REMARKS
				N SPEED	P1 INLET PRESS.	ΔP PRESS.	Q FLOW	V [V1b Amp]	L or P LUB LVL or PRESS.	Tb BEARING TEMP		
P7-1A-D SW	G-191159 Sht. 1	3	M	-	P1	-	-	V	-	NP	V	See RRB P1,Pla,& Notes 1,3,7,8
P8-1A-D RHRSW	G-191159 Sht. 1	3	M	-	P1	ΔP	Q	V	-	NP	V	See RRB P2 & Notes 3,8
P10-1A-D RHR	G-191172	2	M	-	P1	ΔP	Q	V	-	NP	V	See RRB P3, Notes 2,3,8
P44-1A HPCI	G-191169 Sht. 1 & 2	2	M	N	P1	ΔP	Q	V	L	NP	V	See RRB P4 & Note 4
P45-1A/B SLC	G-191171	2	M	-	-	-	Q	V	L	NP	F	See RRB P5,P5a, P5b, & Note 3
P46-1A/B CS	G-191168	2	M	-	P1	ΔP	Q	V	-	NP	V	See RRB P6, Notes 3,5,8
P47-1A RCIC	G-191174 Sht. 1 & 2	2	M	N	P1	ΔP	Q	-	L	NP	V	See RRB P7 & Note 6
P92-1A/B FO	G-191162	3	M	-	P1	-	-	V	-	NP	F	See RRB P8,P8a, P8b & Note 3

Relief Request Basis

NUMBER: Pla

SYSTEM: Service Water

PUMP: P7-1A-D

CLASS: 3

TEST REQUIREMENT: Monthly testing per IWP-3100

BASIS FOR REQUEST: Flow is calculated using a computer program which fits a head/capacity curve from the data inputs. Since flow can not be throttled or differential pressure can not be fixed, (dependent on river water levels and temperatures) the data received from the computer may not be a true indication of the pump's performance. Vibration levels are also subject to change since the reference parameter of differential pressure can not always be achieved.

ALTERNATE TESTING: Each refueling outage one pump will be taken out of service and overhauled for preventive maintenance. Monthly readings will continue to be taken, recorded, and analyzed for trends to the degree possible.

Relief Request Basis

NUMBER: P4

SYSTEM: High Pressure Coolant Injection

PUMP: P44-1A

CLASS: 2

TEST REQUIREMENT: Bearing temperature per IWP-3300

BASIS FOR RELIEF: Bearings are internal to the pump casing and are inaccessible for temperature measurements. Contact pyrometer would not be feasible since the casing is large and would quickly dissipate the heat.

ALTERNATIVE TESTING: None

Relief Request Basis

NUMBER: P5a

SYSTEM: Standby Liquid Control

PUMP: P45-1A/B

CLASS: 2

TEST REQUIREMENT: Reference values per IWP-3110, Table 3100-1

BASIS FOR RELIEF: SLC pumps are positive displacement which are in a fixed resistance system. In accordance with Table IWP-3100-1, flow will be measured based on the decrease/increase in volume of the test tank per time period. This parameter will be established as the reference value and trends analyzed per IWP-3110.

Differential pressure will not be measured as it is variable since suction is from a vented tank. Inlet pressure will only be measured to assure that there is liquid in the tanks, TK-20-1A and TK-21-1A, as not to damage the pumps.

ALTERNATE TESTING: Continue testing and analysis of flow and vibration results per IWP-3200.

Relief Request Basis

NUMBER: P5b

SYSTEM: Standby Liquid Control

PUMP: P45-1A/B

CLASS: 2

TEST REQUIREMENT: Duration of test per IWP-3500

BASIS FOR RELIEF: Per IWP-3500, when measurement of bearing temperature is not required, each pump shall be run for at least five minutes under conditions as stable as the system permits. During the monthly pump capacity check, one standby liquid control pump is used to circulate the borated solution from the main tank to the test tank. The other pump is then used to circulate the borated solution from the test tank back to the main tank. The flow rate at which the borated solution is pumped is 35 gpm. At this flow rate, and due to the capacity of the test tank, the pumps cannot be run for five minutes. In addition, taking vibration measurements at this time would be impractical.

ALTERNATE TESTING: Vibration measurements will be taken after each pump has been run for 5 minutes in the recirculation mode. The pump will then be aligned to the test tank for flow measurements.

NOTES

1. Q is calculated using a computer program based on the pump total discharge head and the head/capacity curve. Pi is based on the river elevation.
2. Each refueling outage, conduct a LPCI flow test that demonstrates that each LPCI pump delivers 7450 ± 150 gpm (vessel to vessel).
3. Non variable speed pump. Speed is not applicable per IWP-3110, Table IWP-3100-1. *
|
*
4. Each operating cycle, demonstrate that the HPCI system will deliver at least 4250 gpm at normal operating pressure (recirculate to the condensate storage tank.)
5. Each refueling outage, conduct a core spray flow rate test that demonstrates that each pump will deliver at least 3000 gpm against a system head of 120 psig (torus to torus).
6. Every three months, conduct a flow rate test that demonstrates that the RCIC system will deliver at least 400 gpm at normal operating pressure (recirculate to the condensate storage tank).
7. Initial suction pressure cannot be taken due to the fact that pumps are normally running. *
|
*
8. Lubricant level or pressure observation is not necessary since pump bearings are lubricated by pumpage.

Relief Request Basis

Number: GP-1

Code Paragraph: Table IWP-3100-2

Basis For Relief:

A thorough review of past operating surveillance data and continuing difficulty in obtaining consistent data indicates a need to re-evaluate the ranges specified in the code paragraph listed above. There are many causes for the difference in readings which have no relation to pump degradation. Differences in the manner by which gauges or meters are read, accuracies associated with each instrument, the affect on the instrument system due to the inaccuracies of each component all contribute to readings that are out of specification by more than the 2% allowed by the code.

The nature of the test method required by ASME XI also contributes to the inconsistent data. When establishing the fixed parameter, there can be no tolerance since errors here will compound the error in reading the variable parameter. Because of the instrument inaccuracies and the test method, the data often unjustifiably falls into the required action level of ASME XI. These test method induced discrepancies are not symptomatic of a pump failure.

Based on our experience in surveillance testing since commercial operation in 1972, the ranges proposed in the following section represent reasonable and expected deviations of the pump parameters. The proposed changes only expand the range in the more conservative direction, i.e., allowing more flow or a higher differential pressure. These ranges are consistent with our Safety Analysis in that they do not lower the minimum flow or discharge pressure required.

Alternative:

The high end of the various ranges will be adjusted upward as indicated in the following table:

<u>Parameter</u>	<u>Acceptable</u>	<u>Alert</u>	<u>Action</u>
Q	.94 - 1.08	.90 - <.94 >1.08 - 1.12	<.90 >1.12
ΔP	.93 - 1.08	.90 - <.93 >1.08 - 1.12	<.90 >1.12

Relief Request Basis

NUMBER: P8b

SYSTEM: Fuel Oil Transfer

CLASS: 3

TEST REQUIREMENTS: Differential pressure and flow measurements per
IWP-3110, Table IWP-3100-1

BASIS FOR RELIEF: Fuel oil pumps are positive displacement pumps which are in a fixed resistance system. Per Table IWP-3100-1, Note 1, it is required to measure differential pressure or flow rate. There is no method available for measuring flow. Differential pressure varies with the amount of fuel in the diesel fuel storage tank, TK-40-1A, and therefore would not be indicative of pump performance due to the positive displacement pump.

ALTERNATIVE TESTING: Measure discharge pressure in lieu of differential pressure and analyze results in accordance with IWP-3210 Table IWP-3100-2.

Relief Request Basis

NUMBER: P8a

SYSTEM: Fuel Oil Transfer

PUMP: P92-1A/B

CLASS: 3

TEST REQUIREMENT: Proper lubrication level and or pressure per IWP 3110

Table IWP-3100-1

BASIS FOR RELIEF: Pump has grease-packed bearings and therefore
cannot be checked.

ALTERNATIVE TESTING: None

Relief Request Basis

NUMBER: P7

SYSTEM: Reactor Core Isolation Cooling

PUMP: P47-1A

CLASS: 2

TEST REQUIREMENT: Bearing temperature per IWP-3300

BASIS FOR RELIEF: Bearings are internal to the pump casing and are inaccessible for temperature measurements. Contact pyrometer would not be feasible since the casing is large and would quickly dissipate the heat.

ALTERNATIVE TESTING: None