

REVISION 2 CHANGES .

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Record of Changes

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ABSTRACT

The Ten-year program presented within this document was written to comply with the requirements of revisions to 10 CFR 50.55 a(g) published in the Federal Register, September 1, 1978, concerning inservice examinations, tests, evaluations, and repairs of safety related components. This Inservice Inspection Program complies with the surveillance requirements of Technical Specifications section 4.6.E.

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INSERVICE INSPECTION PROGRAM

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CODE BASIS AND ACCEPTANCE CRITERIA

- A) The nondestructive inspections listed under Sections I and II shall be performed per the requirements of the 1974 edition of ASME, Section XI, up to and including the 1975 Summer Addenda except piping examinations (Categories B-F, B-J, C-F, & C-G) shall be per the requirements of ASME Section XI, 1974 edition, 1976 Summer Addenda, Appendix III.
- B) Recording levels shall be at 50% of the reference level.
- C) The acceptance criteria for the nondestructive examinations shall be per the same Code required for the performance of the examinations as named in part A above.

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TECHNICAL SPECIFICATIONS

In compliance with 10 CFR 50.55 a(g)(5) Vermont Yankee submitted a revision to its Technical Specifications on January 30, 1979. Presently, Vermont Yankee bases the Inservice Inspection Program on its current technical specifications and the edition of ASME Section XI, described under "Code Basis and Acceptance Criteria".

Commencing January 30, 1980, the updated Technical Specifications are to be implemented. The effective edition of the code is the edition and addenda published in 10 CFR 50.55 a(b). The code applicable to the updated Technical Specifications will be ASME Section XI, 1974, Summer 1975 addenda.

In accordance with 10 CFR 50.55 a(g) and Vermont Yankee letter to NRC dated April 29, 1977, the three - three and one-third year inspection periods of the first interval for Inservice Inspection commence as follows:

Period 1	November 30, 1972
Period 2	November 30, 1977
Period 3	January 30, 1980

The Inservice Test Program (Pump and Valve Operability) commences July 30, 1979. (Refer to Relief Request G-2).

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CLASSIFICATION OF NUCLEAR SYSTEMS AND COMPONENTS

The guidelines for Safety Classification at Vermont Yankee are defined in Yankee Atomic Electric Company document; Operational Quality Assurance Manual (YOQAP-1-A), Appendix E, issued August 15, 1977.

This classification is summarized in the accompanying tables. Flow diagrams of Safety Related Systems are provided following the Safety Class tables.

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TABLE 1
SAFETY CLASS 1 COMPONENTS

- * Reactor Pressure Vessel
- * Reactor Vessel Support Skirt
- * Recirculation System Piping
- * Recirculation System Pumps and Valves
- * Main Steam Piping (to and including outermost containment isolation valve)
- * Main Steam Safety Relief Valves
- * Feedwater Piping (to and including outermost containment isolation valve)
- * Standby Liquid Control Piping Inside Containment (to and including outermost isolation valve)
- * RHR Piping and Valves Inside Containment (to and including outermost isolation valve)
- * Core Spray Piping and Valves Inside Containment (to and including outermost isolation valve)
- * Control Rod Drive Return Piping (to and including outermost isolation valve)
- * HPCI Steam Piping and Valves Inside Containment (to and including outermost isolation valve)
- * RCIC Steam Piping and Valves Inside Containment (to and including outermost isolation valve)
- * Reactor Water Cleanup Piping and Valves Inside Containment (to and including outermost isolation valve)
- * Reactor Vessel Internals
- * Reactor Vessel Stabilizers

Note: Vessel Internals and Stabilizers are addressed as S.C. - 2 in YOQAP-1-A. However, for ISI purposes VY classifies them as S.C. - 1 in accordance with ASME Section XI.

TABLE 2
SAFETY CLASS 2 COMPONENTS

- ** CRD Scram Discharge Volume
- ** Scram Piping
- ** Standby Liquid Control Pumps and Explosives Valves
- ** Standby Liquid Control Piping (outside containment)
- ** Primary Containment Piping and Valves (to and including outermost isolation valve)
- ** Reactor Building Ventilation Isolation Valves
- ** Standby Gas Treatment Filters and Fans
- ** Containment Air Dilution Pressurization System Compressors, Piping and Valves
- ** CAD Vent System Piping and Valves
- ** CAD Sampling System Piping and Valves
- ** RHR Piping, Pumps and Valves (outside containment)
- ** RHR Heat Exchangers (shell side)
- ** Core Spray Piping, Pumps and Valves (outside containment)
- ** HPCI Steam Supply and Exhaust Piping and Valves (outside containment)
- ** HPCI Pump-Turbine
- ** HPCI Injection Piping and Valves
- ** RCIC Steam Supply and Exhaust Piping and Valves (outside containment)
- ** RCIC Pump-Turbine
- ** RCIC Injection Piping and Valves

TABLE 3
SAFETY CLASS 3 COMPONENTS

- *** Main Steam Safety Relief Valve Discharge Piping
- *** Service Water Pumps
- *** Service Water Piping and Valves to Supply Water to RHR Service Water Pumps and Diesel Coolers
- *** RHR Service Water Pumps
- *** RHR Heat Exchanger (tube side)
- *** Fuel Pool Cooling Pumps, Valves, Heat Exchangers and Piping
- *** Advanced Off-Gas Charcoal Absorber Tanks and Associated Piping and Valves
- *** Diesel Generator Air Start System
- *** Fuel Oil System
- *** Diesel Coolers and Associated Piping and Valves (service water side)

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SYSTEM FLOW DIAGRAMS FOR SAFETY RELATED SYSTEMS

The following drawings are provided with the ISI program
submittal for NRC review only: (NOT included in In-house copies)

G-191159 Sht. 1	Service Water System
G-191159 Sht. 5	Service Water System
G-191160 Sht. 1	Service & Instrument Air
G-191160 Sht. 2	Service & Instrument Air
G-191162	Miscellaneous Systems
G-191167	Nuclear Boiler
G-191168	Core Spray System
G-191169 Sht. 1	HPCI System
G-191169 Sht. 2	HPCI System
G-191170	Control Rod Drive Hydraulic System
G-191171	Standby Liquid Control
G-191172	Residual Heat Removal System
G-191173	Fuel Pool Cooling and Cleanup System
G-191174 Sht. 1	RCIC System
G-191174 Sht. 2	RCIC System
G-191175	Primary Containment - Atmospheric Control
G-191176	Condensate & Demin. Water Transfer
G-191177 Sht. 1	Radwaste System
G-191178 Sht. 1	Reactor Water Cleanup System
G-191238	HVAC - Reactor Bldg.
G-191267	Nuclear Boiler Vessel Instrumentation
VY-E-75-002	Containment Air Dilution System

RELIEF REQUEST BASIS

Numbers: G-1

NUMBER: G-1

CODE PARAGRAPH: IWA-2232

BASIS: As described in the NRC Safety Evaluation associated with Ammendment No. 45, dated June 20, 1978, our present need is primarily for the identification of service induced flaws. Procedures written to the summer 1976 Code meet this objective.

ALTERNATE: ASME Section XI, 1974 edition, 1976 summer addenda, Appendix III, will be used for all piping examinations. Recording levels will be at 50% of the reference level.

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RELIEF REQUEST BASIS

Number G-2

Number: G-2 - Effective July 30, 1979 to January 29, 1980

Code Paragraphs:

IWP-3100	IWV-3200
IWP-3200	IWV-3300
IWP-3300	IWV-3400
IWP-3400	IWV-3500
IWP-3500	IWV-3600
IWP-6000	IWV-6000

Basis: For the reasons discussed in a Vermont Yankee letter (D. E. Vandenberg) to the NRC (Office of Nuclear Reactor Regulation) dated April 25, 1979, and two telephone conversations between the VY staff and the NRC staff on June 11 and 14, Vermont Yankee requests temporary relief from the ASME Section XI Paragraphs specified above.

ASME Section XI specifies many procedural, programmatic, and record-keeping requirements necessary for full compliance with the Pump and Valve Testing Program. In order to prepare our procedural framework for fulfilling all of the programmatic requirements of ASME XI, it requires a change to more than 50 station operating procedures and training of appropriate plant personnel. Our present procedures do provide sufficient administrative controls, extensive testing instructions and adequate requirements for data recording and recordkeeping as evidenced by a 7-year history of a successful surveillance and maintenance program.

The Pump and Valve Testing portion of the Inservice Inspection Program incorporates, as a minimum, all presently required Technical Specification referenced operability tests. In addition, all other valves and pumps specified are, and will continue to be, tested (with minor exceptions) in accordance with the ISI Program. Of the approximately 1200 valves specified in the Program, 27 small relief valves and 2 level control valves will not be tested in full compliance with the Program until January 30, 1980.

Alternate: Due to the extensive procedural modifications and training required to implement a quality ASME Section XI Program and due to the fact that our present program is essentially the same as the one proposed in our April 30, 1979 submittal, we will continue to perform the operability testing of pumps and valves as detailed in our present procedures until January 29, 1980. Commencing January 30, 1980, all tests performed will be in full compliance with our Inservice Inspection Program. This Relief Request will be voided at that time.

SAFETY CLASS 1 COMPONENTS

In compliance with Section XI, Sub-section IWB, safety class 1 components are to be inspected as addressed in IWB-2600. Those components meeting the exemption criteria of IWB-1220 are to be examined under the requirements of Category B-P in Table IWB-2500. These components are addressed in the "Hydro" Section of this program.

Relief Request Bases to IWB are found in back portion of this section.

Note: Drawings identified as "5920" drawings are not included in this book. They are maintained on site in the Main Print File.

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INSPECTION SUMMARY

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

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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)		
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	9	2 & 3	3	9	See Relief Request No. B-7 *
B4.2 B4.3 B4.4	B-G-1	0	--	--	--	
B4.5 B4.6 B4.7	B-J B-J B-J	483 8 16	51 & 52	40 1 1	121 2 4	Instrument lines previously excluded by ISI-121 are currently under item B4.11 See Relief Request No. B-7 *

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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	119	30 & 30	40	119	Snubbers require periodic visual examination and operability testing in accordance with Tech Spec. section 4.6.1 *
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						
B5.1	B-G-1	32	8	11	32	Bolts are examined in place. Surface examinations shall be performed if and when pump bolts are removed.
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 *

1277.225

Item No.	Category	No. in Category	Number and % Required		Subsequent Intervals	Comments
			1st Interval	Period 3		
			Periods 1 & 2 -each (Tech. Spec.)	(ASME Sum. 75)		
B5.6	B-L-1	0	0	0	0	Pump casting are cast, there aer no casting 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	

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APPLICATION OF CODE EXEMPTIONS

Safety Class 1 Components exempted from examination according to Section XI, Sub-Sub article IWB-1220 are as follows:

<u>System or Component</u>	<u>Exemption Criteria</u>
1. Reactor Instrument Lines	IWB - 1220 (b)(3)
2. Reactor Drain Line (N15)	IWB - 1220 (b)(1)
3. Cleanup Water Line CUW - 18	IWB - 1220 (b)(1)
4. Nozzle N10 Instrument	IWB - 1220 (b)(1)
5. Steam Drain Lines	IWB - 1220 (b)(1)
6. Nozzle N7 Instrument	IWB - 1220 (b)(1)
7. Recirc. Drain Lines	IWB - 1220 (b)(1)

Notes: Liquid filled lines below 2" schedule 80 and steam filled below 4" schedule 80 meet the exemption criteria of IWB - 1220 (b)(1).

All components falling under the exemption criteria of IWB-1200 are examined under the System Pressure Tests of IWB-5000. Refer to the "Hydro" Section of this program.

ITEM NO: B1.3

CATEGORY: B-C

Drawing Required
No. Methods

INTERVAL 1

INTERVAL 2

Component:

Size

Mat'l Standard

Drawing Required
No. Methods

1

2

3

1

2

3

Circumferential Welds

Head Flange BC

Vessel Flange CD

51'-10 1/2" arc length

A-533-65
GRBA-533-65
GRB

RV-1

RV-1

H-22

H-22

Vol

Vol

X

X

X

X

X

X

X

X

X

X

X

X

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ITEM NO: B1.4 CATEGORY: B-D Drawing No. 5920

Component:	Size	Mat'l	Mat'l	Standard	No.	Methods	1	2	3	1	2	3
Nozzle to Vessel Welds												
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		

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ITEM NO: B1.5 CATEGORY: B-E

Component:

CRD Penetrations

	Drawing No.	Required Methods	INTERVAL 1			INTERVAL 2		
			1	2	3	1	2	3
14-07	I-25	VIS						
14-11	"	"			X			
14-15	"	"						
14-19	"	"						
14-23	"	"	X					
14-27	"	"						
14-31	"	"			X			
14-35	"	"						
14-39	"	"		X				
18-03	"	"			X			
18-07	"	"						
18-11	"	"				X		
18-15	"	"						
18-19	"	"		X				
18-23	"	"						
18-27	"	"						X
18-31	"	"				X		
18-35	"	"						X
18-39	"	"						
18-43	I-25	VIS				X		

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ITEM NO: B1.5 CATEGORY: B-E

Component:

CRD Penetrations

	Drawing No.	Required Methods	INTERVAL 1			INTERVAL 2		
			1	2	3	1	2	3
22-03	I-25	VIS						
22-07	"	"						
22-11	"	"						
22-15	"	"					X	
22-19	"	"						
22-23	"	"	X					
22-27	"	"						
22-31	"	"			X			
22-35	"	"		X				
22-39	"	"						
22-43	"	"					X	
26-03	"	"				X		
26-07	"	"		X				
26-11	"	"						X
26-15	"	"						
26-19	"	"				X		
26-23	"	"						
26-27	I-25	VIS						X

1277.232

ITEM NO: B1.5 CATEGORY: B-E

Component:

CRD Penetrations

	Drawing No.	Required Methods	INTERVAL 1			INTERVAL 2		
			1	2	3	1	2	3
34-35	I-25	VIS		X				
34-39	"	"						X
38-11	"	"						
38-15	"	"						
38-19	"	"	X					
38-23	"	"						
38-27	"	"			X			
38-31	"	"						
38-35	"	"		X			X	
42-19	"	"						
42-23	"	"						
42-27	I-25	VIS			X			

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ITEM NO:		B1.6		CATEGORY: B-F		Nozzle		Safe-end		Nozzle		Safe-end		Drawing		Required		INTERVAL 1						INTERVAL 2						
		Nozzle		Mar'l		Cal.		Standard		Cal.		Standard		No.		Methods		1	2	3	1	2	3	1	2	3				
Component:		Size		Mar'l		Nozzle		Mar'l		Nozzle		Mar'l		No.		Methods														
Nozzle to Safe-end Welds																														
N1A-SE	28"	A-508	CLII	SA-240	TP 304			VY-35		5920-483	Vol & Sur							X												
N1B-SE	"	"	"	"	"			"		"	"							X												
N2A-SE	12"	"	"	A-336	F8			RV-4		VY-30	"																			X
N2B-SE	"	"	"	"	"			"		"	"																			X
N2C-SE	"	"	"	"	"			"		"	"																			
N2D-SE	"	"	"	"	"			"		"	"																			
N2E-SE	"	"	"	"	"			"		"	"																			X
N2F-SE	"	"	"	"	"			"		"	"																			X
N2G-SE	"	"	"	"	"			"		"	"																			X
N2H-SE	"	"	"	"	"			"		"	"																			X
N2J-SE	"	"	"	"	"			"		"	"																			X
N2K-SE	"	"	"	"	"			"		"	"																			X
N5A-SE	10"	"	"	B-168				VY-14			"																			
N5B-SE	"	"	"	"				"			"																			
N6A-SE	6"	"	"	A-336	F8			Radiograph			"																			
N6B-SE	"	"	"	"	"			Radiograph			"																			
N7 -SE	4"	"	"	"	"			Radiograph			"																			
N8A-SE	"	"	"	"							"																			
N8B-SE	"	"	"	"							"																			
N9 -SE	3"	A-508	CLII	A-336	F8						"																			

1277 235

1 -16

1277 235

ITEM NO: B1.6 CATEGORY: Nozzle B-F
 Nozzle Size Nozzle Mar'l Safe-end Cal. Safe End Cal. Drawing Required Methods
 Component: Nozzle Size Nozzle Mar'l Standard Standard

		INTERVAL 1			INTERVAL 2		
		1	2	3	1	2	3
N10-SE	2"	X				X	
		Vol & Sur					

ITEM NO: BL.8 CATEGORY: B-G-1 Stud 5920
 Stud Nut Cal. Nut 5920 Drawing Required
 Size Size Mat'l Standard Drawing No. No. Methods

Component:

Bolting > 2" Diam.

	ITEM NO:	Stud Size	Nut Size	Mat'l	Standard Drawing No.	Cal. Nut	Drawing No.	Required Methods	INTERVAL 1			INTERVAL 2		
									1	2	3	1	2	3
1	5 1/16"		dia. 8" dia.	A-540 GRB	RPB-2		485	484	Vol & Sur.	X			X	
2	"		"	"	"	"	"	"	"	X			X	
3	"		"	"	"	"	"	"	"	X		X		
4	"		"	"	"	"	"	"	"			X		
5	"		"	"	"	"	"	"	"			X		
6	"		"	"	"	"	"	"	"		X			X
7	"		"	"	"	"	"	"	"		X			X
8	"		"	"	"	"	"	"	"		X			X
9	"		"	"	"	"	"	"	"		X			X
10	"		"	"	"	"	"	"	"		X		X	
11	"		"	"	"	"	"	"	"		X		X	
12	"		"	"	"	"	"	"	"				X	
13	"		"	"	"	"	"	"	"				X	
14	"		"	"	"	"	"	"	"	X		X		
15	"		"	"	"	"	"	"	"	X		X		
16	"		"	"	"	"	"	"	"	X		X		
17	"		"	"	"	"	"	"	"	X		X		
18	"		"	"	"	"	"	"	"	X		X		
19	"		"	"	"	"	"	"	"	X		X		
20	5 1/16"		8"	A-540 GRB	RPB-2		485	484	Vol & Sur	X	X			X

1277 237

ITEM NO: B1.8

ITEM NO: _____

Bolting $\geq 2"$ Diam.

[illegible]Vessel Closure 21
Studs & Nuts

0665
p115

CATEGORY: B-G-1

ITEM NO: B1.8

INTERVAL 2

INTERVAL I

Required Methods

5920
Drawing
No.

Cal. Nut 5920
Standard Drawing No.

Stud
Mat'l

Nut Size

Stud
Size

Component:

Bolting $>2"$ Diam.

Vessel Closure Studs & Nuts	5 1/16" dia	8" dia	A-540 GRB	RPB-2	485	484	Vol & Sur	X			X
41	"	"	"	"	"	"	"	X			X
42	"	"	"	"	"	"	"	X			X
43	"	"	"	"	"	"	"		X		X
44	"	"	"	"	"	"	"		X		X
45	"	"	"	"	"	"	"		X		X
46	"	"	"	"	"	"	"		X		X
47	"	"	"	"	"	"	"			X	
48	"	"	"	"	"	"	"			X	
49	"	"	"	"	"	"	"			X	
50	"	"	"	"	"	"	"		X		X
51	"	"	"	"	"	"	"		X		X
52	"	"	"	"	"	"	"		X		X
53	"	"	"	"	"	"	"		X		
54	"	"	"	"	"	"	"	X		X	
55	"	"	"	"	"	"	"	X		X	
56	"	"	"	"	"	"	"	X		X	
57	"	"	"	"	"	"	"	X		X	
58	"	"	"	"	"	"	"		X		
59	"	"	"	"	"	"	"		X		X
60	5 1/16" dia.	8" dia.	A-540 GRB	RPB-2	485	484	Vol & Sur		X		X

1277 239

ITEM NO:	B1.8	CATEGORY:	B-G-1	Stud
Stud	Nut	Stud	Cal.	Nut 5920
Size	Size	Mat'l	Standard	Drawing No.
				No.

Component:

Bolting >2" Diam.

[illegible]

1277 240

ITEM NO: Pl.9CATEGORY: B-G-1

Component:

Ligaments between
Threaded 5 1/16"
diam. stud holes

	Mat'l	Cal.	Drawing No.	Required Methods	INTERVAL 1			INTERVAL 2		
					1	2	3	1	2	3
1	A533-65 GRB	RV-1	H-21	Vol	X				X	
2	"	"	"	"	X				X	
3	"	"	"	"	X			X		
4	"	"	"	"				X		
5	"	"	"	"				X		
6	"	"	"	"			X			X
7	"	"	"	"			X			X
8	"	"	"	"			X			X
9	"	"	"	"			X			X
10	"	"	"	"			X		X	
11	"	"	"	"			X		X	
12	"	"	"	"					X	
13	"	"	"	"		X			X	
14	"	"	"	"	X			X		
15	"	"	"	"	X			X		
16	"	"	"	"	X			X		
17	"	"	"	"	X			X		
18	"	"	"	"	X			X		
19	A-533-65 GRB	RV-1	H-21	Vol	X			X		

1277 241

ITEM NO. B1.9 CATEGORY: B-G-1

Component:

Ligaments between threaded 5 1/16" diam. stud holes (Con't)

	Mat'l	Cal. Standard	Drawing No.	Required Methods	INTERVAL 1			INTERVAL 2		
					1	2	3	1	2	3
20	A533-65 GRB	RV-1	H-21	Vol		X				X
21	"	"	"	"		X				X
22	"	"	"	"		X				X
23	"	"	"	"				X		
24	"	"	"	"				X		
25	"	"	"	"				X		
26	"	"	"	"				X		
27	"	"	"	"			X		X	
28	"	"	"	"			X		X	
29	"	"	"	"			X		X	
30	"	"	"	"			X		X	
31	"	"	"	"			X		X	
32	"	"	"	"			X			X
33	"	"	"	"			X			X
34	"	"	"	"			X			X
35	"	"	"	"			X			X
36	"	"	"	"		X				X
37	"	"	"	"		X				X
38	A533-65 GRB	RV-1	H-21	Vol		X			X	

1277 242

ITEM NO: B1.9

CATEGORY: B-G-1

Cal.

Mat'l Standard

Drawing Required
No. Methods

INTERVAL 1

1

2

3

1

2

3

Component:

Ligaments between
threaded 5 1/16" diam.
stud holes (Cor't)

39

40

41

42

43

44

45

46

47

48

49

50

51

52

53

54

55

56

57

A533-65
GRB

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A-533-65
GRB

RV-1

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RV-1

H-21

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H-21

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1277 243

Drawing No.	Required Methods
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Ligaments between threaded 5 1/16" diam. stud holes (Con't)

Drawing No.	Cal. Standard	Mat'l	Drawing No.	Cal. Standard	Mat'l	INTERVAL						Drawing Required Methods
						1	2	3	1	2	3	
58	A533-65 GRB	RV-1	H-21	Vol		X			X			
59	"	"	"	"		X						X
60	"	"	"	"		X						X
61	"	"	"	"				X				X
62	"	"	"	"				X		X		
63	"	"	"	"				X		X		
64	A533-65 GRB	RV-1	H-21	Vol				X		X		

INTERVAL 2

Mat'lStud
Size

Component:

Closure washers &
Bushings

(Vessel Head
Studs)

1277 245

ITEM NO: BL.10 CATEGORY: B-G-1

Component:

Drawing Required
No. Methods

		INTERVAL 1			INTERVAL 2		
		1	2	3	1	2	3
19	5 1/16"						
20	"						
21	"						
22	"						
23	"						
24	"						
25	"						
26	"						
27	"						
28	"						
29	"						
30	"						
31	"						
32	"						
33	"						
34	"						
35	"						
36	"						
37	5 1/16"						

Closure Washers
and Bushings (Con't)

1277 246

ITEM NO: BL 10 CATEGORY: B-G-1

Drawing Required
No. Methods

Component:

Mat'l

Stud
Size

INTERVAL 1

INTERVAL 2

Closure Washers
and Bushings (Con't)

							INTERVAL 1			INTERVAL 2		
							1	2	3	1	2	3
38	5 1/16"		A540					X			X	
39	"		"					X			X	
40	"		"				X				X	
41	"		"				X				X	
42	"		"				X				X	
43	"		"						X			X
44	"		"						X			X
45	"		"						X			X
46	"		"						X			X
47	"		"							X		
48	"		"							X		
49	"		"							X		
50	"		"					X			X	
51	"		"					X			X	
52	"		"					X			X	
53	"		"					X				
54	"		"				X					
55	"		"				X					
56	"		"				X					
57	5 1/16"		A540				X			X		

1277 247

ITEM NO: BL-10		CATEGORY: R-G-1		Drawing Required Methods		INTERVAL 1			INTERVAL 2		
Stud Size		Mat'l		No.		1 2 3			1 2 3		
Component:											
Closure Washers and Bushings (Con't)											
58	5 1/16"	A540			VIS				X		
59	"	"			"				X		X
60	"	"			"				X		X
61	"	"			"			X			X
62	"	"			"			X		X	
63	"	"			"			X		X	
64	5 1/16"	A540			VIS			X		X	
	</										

Vessel Cladding

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B-N-1

INTERVAL 1

Drawing No.	Required Methods
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1	2	3	1	2	3
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330°

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ITEM NO: B1.18		CATEGORY: B-O		Cal. Standard		Drawing No.		Required Methods		INTERVAL 1			INTERVAL 2		
Component:	Thickness	Material	Housing Material	Cal. Standard	Drawing No.	Required Methods	1	2	3	1	2	3	1	2	3
CONTROL ROD DRIVE HOUSINGS															
02-19	.564"	SS TP304			H-25 H-26	Vol									
02-23	.564	"			"	Vol									
02-27	.564	"			"	Vol									X
06-11	.564	"			"	Vol									
06-35	.564	"			"	Vol									
10-07	.564	"			"	Vol									
10-39	.564	"			"	Vol									
18-03	.564	"			"	Vol			X						
18-43	.564	"			"	Vol									
22-03	.564	"			"	Vol									
22-43	.564	"			"	Vol									
26-03	.564	"			"	Vol									
26-43	.564	"			"	Vol									
34-07	.564	"			"	Vol									
34-39	.564	"			"	Vol									X
38-11	.564	"			"	Vol									
38-35	.564	"			"	Vol									
42	.564	"			"	Vol									
42-23	.564	"			"	Vol									
42-27	.564	"			H-25 H-26	Vol									

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ITEM NO: B4.1		CATEGORY: Cal.		B-F		Drawing Required Methods			INTERVAL 1			INTERVAL 2		
Size		Thick. or Sch. No.		Mat'l Standard		Dw'g No.		Vol & Surf.		1 2 3		1 2 3		
Component:														
Safe-end to Piping Welds & Safe-end in Branch Piping Welds														
Line	Weld #													
RHR-33	8	20"	80	A351 CF8M A106 GRB	- VY-27	H-4		Vol & Surf.						
RHR-29	10	24"	80	A351 CF8M A106 GRB	- VY-28	H-5		"	X			X		
RHR-28	13	24"	80	A358 304 A106 GRB	VY-34 VY-28	H-6		"	X			X		
CS-3B	F3A	8"	80	A376TP304 A106GRB	VY-7 VY-19	H-11		"		X			X	
CS-4B	MF6A	10"	0.495" 0.500"	A403TP316L A168 INCO.	VY-14 VY-7	"		"		X			X	
CS-3A	F3A	8"	80	A376TP304 A106GRB	VY-19	H-12		"		X			X	
CS-4A	MF6A	10"	0.495" 0.500"	A403TP316L A168 INCO.	VY-14 Socket weld	"		"		X			X	
CRD-2	E	2 1/2"	80	A376TP304 A106GRB	VY-22 VY-6	H-9		Vol & Surf.	X					
RHR-18-2	F4A	4"	80	A376TP304 A106GRB		H-10			X					

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ITEM NO: B.4.5		CATEGORY: B-J		Drawing Required		INTERVAL 1						INTERVAL 2					
Component:		Thick. or		Cal.		No.		Methods		1		2		3		1	
Size	Sch. No.	Mat'l	Standard														
CIRCUMFERENTIAL WELD JOINTS																	
Nozzles																	
MAIN STEAM	N3A-SW	80	A106GRB	VY-26	H-14	Vol						X					
	N3B-SW	"	"	VY-26	H-15	"						X					
	N3C-SW	"	"	VY-26	H-16	"						X					
	N3D-SW	"	"	VY-26	H-17	"						X					
FEED WATER	N4A-SW	10"	A106GRB	VY-29	H-7	Vol					X						
	N4B-SW	"	"	VY-29	H-7	"									X		
	N4C-SW	"	"	VY-29	H-8	"										X	
	N4D-SW	"	"	VY-29	H-8	"										X	
CIRCUMFERENTIAL WELDS																	
RECIRC	C7	4"	80	A451CPF8M	VY-17/18												
LOOP "A"	C7B	4"	80	A451 CPF 8M	H-2	Vol					X						
BYPASS	C7C	"	"	"	H-2	"					X						
	C7D	"	"	"	H-2	"									X		
	C7E	"	"	"	H-2	"									X		
	C10	"	"	A451CPF8M	H-2	"									X		
	C10A	"	"	to valve	H-2	"											
	C10B	"	"	Valve to	H-2	"											
	C10C	"	"	A451CPF8M	H-2	"											
	C11	"	"	"	H-2	"											
	C60	4"	80	A451CPF8M	H-2	"											
	C60A	4"	80	A451CPF8M	H-3	Vol										X	
					H-3	Vol										X	

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ITEM NO: B.4.5		CATEGORY: B-J		Cal.		Mat'l		Standard		Drawing		Required		INTERVAL 1			INTERVAL 2		
Component:	Size	Thick or Sch. No.								No.		Methods		1	2	3	1	2	3
CIRCUMFERENTIAL WELDS (CONTINUED)																			
LOOP "B"																			
RYPASS																			
C60B	4"	80	A451CPF8M	VY-17/18	H-3	Vol											X		
C60C	"	"	A451CPF8M to valve	VY-17/18	H-3	"											X		
C60D	"	"	Valve to A451CPF8M	VY-17/18	H-3	"													
C60E	"	"	A451CPF8M to Valve	VY-17/18	H-3	"													
C62	"	"	A451CPF8M	VY-17/18	H-3	"													
C62A	"	"	A451CPF8M	VY-17/18	H-3	"													
* C62B	4"	80	A451CPF8M	VY-17/18	H-3	Vol													
* C62C	4"	80	A451CPF8M	VY-17/18	H-3	Vol													X
RECIRC. RING HEADER	28"	1.8-2.5"	358TP304	VY-36	H-1	Vol													X
AND INLETS	12"	80	"	VY-9	H-1	"													X
16	22"	1.1"	"	VY-33	H-1	"								X					
16A	22"	1.1"	"	VY-33	H-1	"								X					
16B	28"	1.8-2.5"	"	VY-36	H-1	"													
16C	12"	80	"	VY-9	H-1	"													
18	12"	"	"	VY-9	H-1	"													
18A	12"	"	"	VY-9	H-1	"													
19	12"	"	"	VY-9	H-1	"													
20	12"	"	"	VY-9	H-1	"											X		
21	12"	"	"	VY-9	H-1	"											X		
21A	12"	"	"	VY-9	H-1	"											X		
22	12"	80	358TP304	VY-9	H-1	Vol											X		

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ITEM NO: B.4.5 CATEGORY: B-J
 Thick. or Cal.
 Sch. No. Standard
 Component: Size Drawing Required Methods

INTERVAL 1

INTERVAL 2

CIRCUMFERENTIAL WELDS (CONTINUED)

	Size	Thick. or Sch. No.	Mat'l	Standard	Drawing No.	Required Methods	INTERVAL 1			INTERVAL 2		
							1	2	3	1	2	3
RECIRC. RING HEADER AND INLETS	12"	80	358TP304	VY-9	H-1	Vol						
23	22"	1.1	"	VY-33	"	"						
23B												
24	12"	80	"	VY-9	"	"						
24A	"	"	"	VY-9	"	"			X			
25	"	"	"	VY-9	"	"			X			
28	"	"	"	VY-9	"	"			X			
28A	"	"	"	VY-9	"	"			X			
29	"	"	"	VY-9	"	"					X	
30	"	"	"	VY-9	"	"					X	
30B	22"	1.1	"	VY-33	"	"						
31	12"	80	"	VY-9	"	"						
31A	"	"	"	VY-9	"	"		X				
32	"	"	"	VY-9	"	"		X				
33	"	"	"	VY-9	"	"		X				
34	"	"	"	VY-9	"	"		X				
34A	"	"	"	VY-9	"	"		X				
35	"	"	"	VY-9	"	"		X				
36	"	"	"	VY-9	"	"		X				
36A	22"	1.1	"	VY-33	"	"				X		
*36B	22"	1.1	A358TP304	VY-33	H-1	Vol				X		

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ITEM NO: B.4.5		CATEGORY: B-J		Drawing Required		INTERVAL 1						INTERVAL 2					
Thick. or		Cal.		No.													
Sch. No.		Mat'l		Standard													
Size																	
CIRCUMFERENTIAL WELDS (CONTINUED)																	
RECIRC. RING HEADER																	
AND INLETS																	
36C	28"	1.8-2.5	358TP304	VY-36	H-1	Vol											
38	"	"	"	VY-36	"	"											
40	12"	80	"	VY-9	"	"											
40A	"	"	"	VY-9	"	"											
41	"	"	"	VY-9	"	"											
42	"	"	"	VY-9	"	"											
43	"	"	"	VY-9	"	"											
43A	"	"	"	VY-9	"	"											
44	"	"	"	VY-9	"	"											
45	"	"	"	VY-9	"	"											
46	22"	1.1	358TP304 to Valve	VY-33	"	"											
47	"	"	Valve to 358TP304	VY-33	"	"											
48	"	"	358TP304 to Valve	VY-33	"	"											
49	"	"	Valve to 353TP304	VY-33	"	"											
50	12"	80	358TP304	VY-9	"	"											
51	"	"	"	VY-9	"	"											
51A	"	"	"	VY-9	"	"											
52	"	"	"	VY-9	"	"											
53	12"	80	358TP304	VY-9	H-1	Vol											

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Component:	ITEM NO:	B.4.5		CATEGORY: B-J		Drawing No.	Required Methods	INTERVAL 1			INTERVAL 2		
		Size	Thick. or Sch. No.	Mat'l	Cal. Standard			1	2	3	1	2	3
CIRCUMFERENTIAL WELDS (CONTINUED)													
RECIRC. RING HEADERS AND INLETS	54	12"	80	358TP304	VY-9	H-1	Vol						
	54A	"	"	"	VY-9	"	"						
	55	12"	80	358TP304	VY-9	H-1	Vol						
LONGITUDINAL SEAM WELDS													
RECIRC. HEADER & INLETS	*14	28"	1.138	A358TP304	VY-35	H-1	Vol						X
	16	12"	80	"	VY-9	"	"						X
	16A	22"	1.1	"	VY-33	"	"	X					
	16B	"	"	"	VY-33	"	"	X					
	18	12"	80	"	VY-9	"	"						
	18A	"	"	"	VY-9	"	"						
	19	"	"	"	VY-9	"	"						
	20	"	"	"	VY-9	"	"						
	21	"	"	"	VY-9	"	"						
	21A	"	"	"	VY-9	"	"						
	22	"	"	"	VY-9	"	"						
	23	"	"	"	VY-9	"	"						
	*23B	12"	80	A358TP304	VY-9	H-1	Vol						

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ITEM NO: B.4.5		CATEGORY: B-J		Cal.		Mat'l Standard		Drawing No.		Required Methods		INTERVAL 1			INTERVAL 2		
Component:	Size	Thick. or Sch. No.										1	2	3	1	2	3
LONGITUDINAL SEAM WELDS (CONTINUED)																	
RING HEADER AND INLETS																	
*24	12"	80	A358TP304	VY-9				H-1	Vol								
24A	"	"	"	VY-9				"	"					X			
25	"	"	"	VY-9				"	"					X			
28	"	"	"	VY-9				"	"					X			
28A	"	"	"	VY-9				"	"					X			
29	"	"	"	VY-9				"	"							X	
30	"	"	"	VY-9				"	"							X	
30B	22"	1.1	"	VY-33				"	"								
31	12"	80	"	VY-9				"	"								
31A	"	"	"	VY-9				"	"								
32	"	"	"	VY-9				"	"								
33	"	"	"	VY-9				"	"								
34	"	"	"	VY-9				"	"								
34A	"	"	"	VY-9				"	"								
35	"	"	"	VY-9				"	"								
36	"	"	"	VY-9				"	"								
36A	22"	1.1	"	VY-33				"	"							X	
36B	22"	1.1	"	VY-33				"	"							X	
*38	28"	1.138	A358TP304	VY-35				H-1	Vol								

1277.261

ITEM NO:	B.4.5	CATEGORY: B-J	Thick. or Sch. No.	Mat'l Standard	Cal.	Drawing No.	Required Methods	INTERVAL 1			INTERVAL 2		
								1	2	3	1	2	3
LONGITUDINAL SEAM WELDS (CONTINUED)													
RING HEADER AND INLETS													
* 40	12"	80	A358TP304	VY-9	H-1	Vol							
40A	"	"	"	VY-9	"	"							
41	"	"	"	VY-9	"	"							
42	"	"	"	VY-9	"	"							
43	"	"	"	VY-9	"	"							X
43A	"	"	"	VY-9	"	"							X
44	"	"	"	VY-9	"	"							X
45	"	"	"	VY-9	"	"							X
46	22"	1.1	"	VY-33	"	"							
47	"	"	"	VY-33	"	"							
48	"	"	"	VY-33	"	"				X			
49	"	"	"	VY-33	"	"							
50	12"	80	"	VY-9	"	"							
51	"	"	"	VY-9	"	"							
51A	"	"	"	VY-9	"	"							
52	"	"	"	VY-9	"	"						X	
53	"	"	"	VY-9	"	"						X	
54	"	"	"	VY-9	"	"							
* 54A	12"	80	A358TP304	VY-9	H-1	Vol							

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1277.262

ITEM NO: B.4.5		CATEGORY: B-J		Cal.		Mat'l		Standard		Drawing No.		Interval 1			Interval 2		
Component:	Size	Thick. or Sch. No.										1	2	3	1	2	3
LONGITUDINAL SEAM WELDS (CONTINUED)																	
RING HEADER AND INLETS																	
*55	12"	80	A358TP304	VY-9	H-1	Vol											
CIRC. WELDS																	
RECIRC. LOOP "A"																	
1	28"	1.138	A358TP304	VY-35	H-2	Vol											
1A	"	"	"	VY-35	"	"											
*2	"	"	"	VY-35	"	"											
3	"	"	358TP304 to Valve	VY-35	"	"											
4	"	"	Valve to 358TP304	VY-35	"	"											
5	"	"	358TP304	VY-35	"	"											
5A	"	"	"	VY-35	"	"											
*5B	"	"	"	VY-35	"	"											
6	"	"	"	VY-35	"	"											
8	"	"	358TP304 to Valve	VY-35	"	"											
9	"	"	Valve to 358TP304	VY-35	"	"											
9A	"	"	358TP304	VY-35	"	"											X
9B	"	"	"	VY-35	"	"											X
15	"	"	"	VY-35	"	"											X
15A	"	"	"	VY-35	"	"											
15B	"	"	"	VY-35	"	"											
15C	28"	1.138	358TP304	VY-35	H-2	Vol											

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ITEM NO: B.4.5		CATEGORY: B-J		INTERVAL 1			INTERVAL 2		
		Thick or	Cal.	Mat'l	Drawing	Required	1	2	3
Component:	Size	Sch. No.	Standard		No.	Methods	1	2	3
CIRC. WELDS (CONTINUED)									
RECIRC LOOP "B"									
17	28"	1.138	358TP304	VY-35	H-3	Vol			
17A	"	"	"	VY-35	"	"	X		
17B	"	"	"	VY-35	"	"	X		
26	"	"	"	VY-35	"	"			
26A	"	"	"	VY-35	"	"	X		
27	"	"	"	VY-35	"	"	X		
56	"	"	358TP304 to Valve	VY-35	"	"			
57	"	"	Valve to 358TP304	VY-35	"	"	X		
57B	"	"	358TP304	VY-35	"	"	X		
58	"	"	"	VY-35	"	"	X		
59	"	"	"	VY-35	"	"			X
61	"	"	358TP304 to Valve	VY-35	"	"			X
64	"	"	358TP304	VY-35	"	"			X
65A	"	"	358TP304 to Valve	VY-35	"	"			
66	28"	1.138	Valve to 358TP304	VY-35	H-3	Vol			
LONGITUDINAL SEAM WELDS									
28"	28"	1.138	A358TP304	VY-35	H-2	Vol	X		
RECIRC. LOOP "A" #6 (Continued)									

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ITEM NO: B4.5		CATEGORY: B-J		Drawing Required		INTERVAL 1						INTERVAL 2		
Component:	Size	Thick. or Sch. No.	Mat'l	Cal. Standard	No.	Methods	1	2	3	1	2	3		
Longitudinal seam Welds (cont'd)														
Recirc. Loop B	28"	1.138	A358TP304	VY-35	H-3	Vol.				X				
	"	"	"	VY-35	"	"				X				
	"	"	"	VY-35	"	"				X				
	"	"	"	VY-35	"	"								
	"	"	A358TP304	VY-35	"	"								
Circ. Welds (cont.) MAIN STEAM MS-7A	18"	80	A106GRB	VY-26	H-14	Vol.			X					
	"	"	"	VY-26	"	"			X					
	"	"	"	VY-26	"	"			X					
	"	"	"	VY-26	"	"					X			
	"	"	"	VY-26	"	"					X			
	"	"	"	VY-26	"	"					X			
	6"	160	A106GRB	VY-38	H-14	Vol.					X			
	"	"	"	VY-38	"	"					X			
	"	"	"	VY-38	"	"								
	"	"	"	VY-38	"	"								
	"	"	"	VY-38	"	"								
	"	"	"	VY-38	"	"								
	18"	80	A106GRB	VY-26	H-14	Vol.								
	"	"	"	VY-26	"	"								
	18"	80	A106GRB	VY-26	H-14	Vol.								
	"	"	"	VY-26	"	"								
	"	"	"	VY-26	"	"								
	"	"	"	VY-26	"	"								

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ITEM NO: B4.5		CATEGORY: B-J		Drawing Required		INTERVAL 1						INTERVAL 2		
Size	Thick. or Sch. No.	Mat'l	Cal. Standard	Drawing No.	Methods	1	2	3	1	2	3	1	2	3
Circ. Welds (cont'd)														
MS - 7A (cont'd)														
A6B	18"	80	A106GRB	VY-26	H-14									
A7	"	"	"	VY-26	"									
A7A	"	"	"	VY-26	"									
A7B	"	"	"	VY-26	"									
A7C	"	"	"	VY-26	"									
A7D	"	"	"	VY-26	"									
A8	"	"	"	VY-26	"									
A9	"	"	"	VY-26	"									
A9A	"	"	"	VY-26	"									
A10	"	"	"	VY-26	"									
A11	"	"	"	VY-26	"									
B3	18"	80	A106GRB	VY-26	H-15									
B4	18"	80	A-106-B	VY-26	H-15									
B4A	"	"	"	VY-26	"									
B4B	"	"	"	VY-26	"									
B4C	"	"	"	VY-26	"									
B5	"	"	"	VY-26	"									
B5A	"	"	"	VY-26	"									
B5C	6"	160	A-106-B	VY-38	H-15									

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Component:	ITEM NO: B4.5	CATEGORY: B-J		Drawing Required No.	Required Methods	INTERVAL 1			INTERVAL 2			
		Thick. or Sch. No.	Cal. Standard			Mat'l	1	2	3	1	2	3
Circ. L's (cont'd)												
MS - 7B (cont'd)												
B5D	6"	160	A-106-B	VY-38	H-15	Vol.						
B5F	6"	160	A-106-B	VY-38	H-15	Vol.						
B5G	6"	160	A106GRB	VY-38	H-15	Vol.						
B5H	18"	80	A106GR3	VY-26	H-15	Vol.						
B6	"	"	"	VY-26	"	"						
B6A	"	"	"	VY-26	"	"						
B6B	"	"	"	VY-26	"	"						
B6C	"	"	"	VY-26	"	"						
B6D	"	"	"	VY-26	"	"				X		
B7	"	"	"	VY-26	"	"				X		
B7A	"	"	"	VY-26	"	"				X		
B7B	"	"	"	VY-26	"	"			X			
B7C	"	"	"	VY-26	"	"			X			
B7D	"	"	"	VY-26	"	"			X			
B8	"	"	"	VY-26	"	"			X			
B9	"	"	"	VY-26	"	"						
B9A	"	"	"	VY-26	"	"						
E10	"	"	"	VY-26	"	"						
B11	18"	80	A106GRB	VY-26	H-15	Vol.						

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Component:	ITEM NO:	B4.5	CATEGORY: B-J				Drawing No.	Required Methods	INTERVAL 1			INTERVAL 2			
			Thick. or Sch. No.	Cal. Standard	Mat'l	Standard			1	2	3	1	2	3	
Circ. Welds (cont'd)															
Lines MS - 7C	C3	18"	80	A106GRB	VY-26		H-16	Vol.							X
	C4	"	"	"	VY-26		"	"							X
	C4A	"	"	"	VY-26		"	"							X
	C4C	"	"	"	VY-26		"	"							
	C5	"	"	"	VY-26		"	"			X				
	C5A	"	"	"	VY-26		"	"			X				
	C5C	6"	160	A106GRB	VY-38		H-16	Vol.							
	C5D	6"	160	A106GRB	VY-38		H-16	Vol.							
	C5F	6"	160	A106GRB	VY-38		H-16	Vol.							
	C5G	6"	160	A106GRB	VY-38		H-16	Vol.							
	C5I	6"	160	A106GRB	VY-38		H-16	Vol.							
	C5J	6"	160	A106GRB	VY-38		H-16	Vol.							
	C5K	18"	80	A106GRB	VY-26		H-16	Vol.				X			
	C6	"	"	"	VY-26		"	"				X			
	C6A	"	"	"	VY-26		"	"				X			
	C6B	"	"	"	VY-26		"	"				X			
	C6C	"	"	"	VY-26		"	"							
	C6D	"	"	"	VY-26		"	"							
	C7	"	"	"	VY-26		"	"							
	C7A	18"	80	A106GRB	VY-26		H-16	Vol.							

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ITEM NO: B4.5		CATEGORY: B-J		Drawing Required		INTERVAL 1						INTERVAL 2		
Thick. or		Cal.		No.										
Sch. No.		Standard		Methods										
Size		Mat'l		Vol.										
Component:		Standard		Methods										
Circ. Welds (cont'd)														
C7B	18"	80	A106GRB	VY-26	H-16	Vol.								
C7C	"	"	"	VY-26	"	"								
C7D	"	"	"	VY-26	"	"								
C8	"	"	"	VY-26	"	"								
C9	"	"	"	VY-26	"	"								
C9A	"	"	"	VY-26	"	"								
C10	"	"	"	VY-26	"	"								
C11	"	"	"	VY-26	"	"								
D3	18"	80	A106GRB	VY-26	H-17	Vol.						X		
D4	"	"	"	VY-26	"	"						X		
D5	"	"	"	VY-26	"	"								
D5A	"	"	"	VY-26	"	"								
D5C	6"	160	A106GRB	VY-38	H-17	Vol.						X		
D5D	"	"	"	VY-38	"	"						X		
D5F	"	"	"	VY-38	"	"								
D5G	"	"	"	VY-38	"	"								
D5I	"	"	"	VY-38	"	"								
D5J	"	"	"	VY-38	"	"								
D5K	18"	80	A106GRB	VY-26	H-17	Vol.								

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MS - 7D

MS - 7C (cont'd)

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ITEM NO:	B4.5	CATEGORY:	P-J	Thick. or Sch. No.	Size	Component:	Mat'l	Cal.	Standard	Drawing No.	Required Methods	INTERVAL 1			INTERVAL 2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
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D6		18"	80	A106GRB	VY-26					H-17	Vol.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													

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FDW - 16

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FDW - 19

ITEM NO: B4.5		CATEGORY: B-J		Drawing Required Methods		INTERVAL 1			INTERVAL 2		
Component:	Size	Thick. or Sch. No.	Mat'l	Cal. Standard	Drawing No.	1	2	3	1	2	3
Circ. Welds (cont'd)											
FDW - 19 (cont'd)											
F2A	16"	80	A106GRB	VY-24	H-7						
F2B	"	"	"	VY-24	"		X				
F2C	"	"	"	VY-24	"		X				
F2D	"	"	"	VY-24	"						
F3	16"	120 Machined to 80 on one side.	A106GRB	VY-24	H-7						
F3A	16"	120 Machined to 80 on one side.	A106GRB	VY-25	E-7		X				
F3B	16"	120 Machined to 80 on one side.	A106GRB	VY-24	H-7		X				
F3C	16"	120	A106GRB	VY-25	H-7		X				
F4	10"	120	A106GRB	VY-23	H-7		X				
F4A	10"	120	A106GRB	VY-23	H-7						
F5	"	"	"	VY-23	"						
F5A	"	"	"	VY-23	"						
F6	"	"	"	VY-23	"						
F6-SA	"	"	"	VY-23	"						
F6A-SA	"	"	"	VY-23	"				X		
F6A-SB	"	"	"	VY-23	"				X		
F6A	"	"	"	VY-23	"				X		
F7	"	"	"	VY-23	"						
F1	10"	120	A106GRB	VY-23	H-7		X				

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ITEM NO: B4.5		CATEGORY: B-J		Drawing Required		INTERVAL 1						INTERVAL 2		
Thick. or Sch. No.		Cal.		No.		Methods								
Size	Sch. No.	Mat'l	Standard	No.		Methods								
10"	120	A106GRB	VY-23	H-7	Vol.									
10"	120	A106GRB	VY-23	H-7	Vol.									
"	"	"	VY-23	"	"									X
"	"	"	VY-23	"	"									X
"	"	"	VY-23	"	"									X
"	"	"	VY-23	"	"									
"	"	"	VY-23	"	"									
16"	120	A106GRB	VY-25	H-8	Vol.									
"	"	"	VY-25	"	"									
"	"	"	VY-25	"	"									
"	"	"	VY-25	"	"									
"	"	"	VY-25	"	"									
"	"	"	VY-25	"	"									
16"	120	A106GRB	VY-25	H-8	Vol.									
16"	80	A106GRB	VY-24	H-8	Vol.									
"	"	"	VY-24	"	"									
"	"	"	VY-24	"	"									
"	"	"	VY-24	"	"									
"	"	"	VY-24	"	"									
"	"	"	VY-24	"	"									
"	"	"	VY-24	"	"									
16"	120	A106GRB	VY-25	H-8	Vol.									
16"	120	A106GRB	VY-25	H-8	Vol.									

Circ. Welds (cont.)

FDW - 21 (cont.)

F2

F2A-SB

F2A-SA

F2A

F3

F4

F4A

F5A

F6

F7

FDW - 17

F2

F2A

F2B

F2C

F2D

F2E

F3

F3A

F3B

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Component:	ITEM NO:	Size	B4.5 Thick. or Sch. No.	CATEGORY: B-J		Drawing No.	Required Methods	INTERVAL 1			INTERVAL 2		
				Mat'l	Cal. Standard			1	2	3	1	2	3
Circ. Welds (cont'd)													
FDW - 18 (cont'd)	F4	10"	120	A106GRB	VY-23	H-8	Vol.						
	F5	"	"	"	VY-23	"	"	X					
	F5-SA	"	"	"	VY-23	"	"						
	F5A	"	"	"	VY-23	"	"						X
	F5A-SA	"	"	"	VY-23	"	"						X
	F5A-SB	"	"	"	VY-23	"	"						X
FDW - 20	F6	10"	80	A106GRB	VY-29	H-8	Vol.		X				
	F1	10"	120	A106GRB	VY-23	H-8	Vol.		X				
	F1A	"	"	"	VY-23	"	"						
	F1B	"	"	"	VY-23	"	"						
	F2	"	"	"	VY-23	"	"			X			
	F2A	"	"	"	VY-23	"	"			X			
	F3	"	"	"	VY-23	"	"						
	F3-SA	"	"	"	VY-23	"	"			X			
	F3A	"	"	"	VY-23	"	"						X
	F3A-SA	"	"	"	VY-23	"	"						X
	F3A-SB	"	"	"	VY-23	"	"						X
	F4	10"	80	A106GRB	VY-29	H-8	Vol.		X				

1277.274

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FDW - 18 (cont'd)

FDW - 20

1277 274

ITEM NO: B4.5			CATEGORY: B-J			Drawing Required Methods			INTERVAL 1			INTERVAL 2		
Component:	Size	Thick. or Sch. No.	Mat'l	Cal. Standard	Drawing No.	Methods	1	2	3	1	2	3		
Circ. Welds (cont'd)														
RHR Piping 1	20"	1.095	A358TP304	VY-32	H-4	Vol.								
"A" 2	20"	1.095	A358TP304	VY-32	H-4	Vol.	X							
RHR - 32 *4	20"	1.095	A358TP304	VY-32	H-4	Vol.	X							
5	20"	1.095	A358TP304 to valve	VY-32	H-4	Vol.	X							
6	20"	1.095	Valve to A358TP304	VY-32	H-4	Vol.	X							
7	20"	1.095	A358TP304 to Valve	VY-32	H-4	Vol.	X							
RHR - 33 9	20"	80	A106GRB	VY-27	H-4	Vol.								
10	"	"	"	VY-27	"	"			X					
11	"	"	"	VY-27	"	"			X					
12	"	"	"	VY-27	"	"			X					
13	"	"	"	VY-27	"	"								
14	"	"	"	VY-27	"	"								
15	"	"	"	VY-27	"	"								
16	"	"	"	VY-27	"	"								
17	"	"	"	VY-27	"	"							X	
18	"	"	"	VY-27	"	"							X	
19	"	"	"	VY-27	"	"							X	
RHR Piping "B" 1	24"	1.312	358TP304	VY-34	H-5	Vol.								
ine RHR - 31 2	24"	1.312	358TP304	VY-34	H-5	Vol.								

1277 275

RHR Piping "B" 1
ine RHR - 31 2

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1277 275

RHR Piping "B"
Line RHR - 31

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ITEM NO: B4.5		CATEGORY: B-J		Drawing Required Methods		INTERVAL 1			INTERVAL 2		
Component:	Size	Thick. or Sch. No.	Mat'l	Cal. Standard	No.	1	2	3	1	2	3
Circ. Welds (cont'd)											
RHR - 31 (cont'd)	24"	1.312	358TP304	VY-34	H-5	X					
3	24"	1.312	358TP304	VY-34	H-5	X					
4	24"	1.312	358TP 304	VY-34	H-5	X					
5	24"	1.312	358TP 304 to valve	VY-34	H-5	X					
6	24"	1.312	358 TP304	VY-34	H-5	X					
7	24"	1.312	358TP304	VY-34	H-5	X					
8	24"	1.312	358TP304	VY-34	H-5	X					
9	24"	1.312	358TP304 to valve	VY-34	H-5	X					
RHR - 29 * 11	24"	80	A106GRB	VY-28	H-5						
12	24"	80	A106GRB	VY-28	H-5						
13	"	"	"	VY-28	"						
14	"	"	"	VY-28	"				X		
15	"	"	"	VY-28	"				X		
16	"	"	"	VY-28	"				X		
RHR Piping Line "C"	24"	1.312	A358TP304	VY-34	H-6			X			
RHR - 30	"	"	"	VY-34	"			X			
1	"	"	"	VY-34	"			X			
2	"	"	"	VY-34	"			X			
3	"	"	"	VY-34	"			X			
4	"	"	"	VY-34	"						
5	"	"	"	VY-34	"						
6	24"	1.312	A358 TP304	VY-34	H-6						

1277 276

ITEM NO: <u>B4.5</u>		CATEGORY: <u>B-J</u>		Drawing Required		INTERVAL 1						INTERVAL 2					
Thick. or Sch. No.		Mat'l Standard		No. Methods		1	2	3	1	2	3	1	2	3	1	2	3
Component:	Size	Valve to 358TP304	Valve to 358TP304	H-6	Vol.												
Circ. Welds (cont'd)																	
RHR - 30 (cont'd)	24"	1.312	Valve to 358TP304	VY-34	H-6	Vol.											
7	24"	1.312	A358TP304	VY-34	H-6	Vol.											
8	"	"	"	VY-34	"	"											
9	"	"	"	VY-34	"	"											
10	"	"	"	VY-34	"	"											
*11	"	"	A358TP304 to valve	VY-34	"	"											
12	24"	1.312	Valve to A358TP304	VY-34	H-6	Vol.											
*14	24"	80	A106GRB	VY-28	H-6	Vol.											
15	24"	80	A106GRB	VY-28	H-6	Vol.											
16	"	"	"	VY-28	"	"											
17	"	"	"	VY-28	"	"											
18	"	"	"	VY-28	"	"											
19	"	"	"	VY-28	"	"											
20	"	"	"	VY-28	"	"											
21	"	"	"	VY-28	"	"											
22	"	"	"	VY-28	"	"											
Longitudinal Seam Welds																	
RHR Piping Line "A"	20"	1.095	358TP304	VY-32	H-4	Vol.											
1	20"	1.095	"	VY-32	H-4	Vol.											
2																	
4	20"	1.095	358TP304	VY-32	H-4	Vol.											

1277 277

ITEM NO: B4.5		CATEGORY: B-J		Cal.		Mat'l		Standard		Drawing Required		INTERVAL 1			INTERVAL 2		
Thick. or	Sch. No.	Size	Component:	1.095	1.312	20"	24"	"	"	"	"	1	2	3	1	2	3
Longitudinal Seam Welds																	
RHR Piping Line "A" (cont'd)																	
*5		20"		1.095		358TP304	VY-32		H-4	Vol.		X					
6		20"		1.095		"	VY-32		H-4	Vol.		X					
*7		20"		1.095		"	VY-32		H-4	Vol.		X					
RHR Piping Line "B"																	
1		24"		1.312		"	VY-34		H-5	Vol.							
2		"		"		"	VY-34		"	"							
3		"		"		"	VY-34		"	"		X					
4		"		"		"	VY-34		"	"		X					
5		"		"		"	VY-34		"	"		X					
6		"		"		"	VY-34		"	"		X					
7		"		"		"	VY-34		"	"		X					
8		"		"		"	VY-34		"	"		X					
9		"		"		"	VY-34		"	"		X					
RHR Piping Line "C"																	
1		24"		1.312		358TP304	VY-34		H-6	Vol.				X			
2		"		"		"	VY-34		"	"				X			
3		"		"		"	VY-34		"	"				X			
4		"		"		"	VY-34		"	"							
5		"		"		"	VY-34		"	"							
6		"		"		"	VY-34		"	"							
7		"		"		"	VY-34		"	"							
8		24"		1.312		358TP304	VY-34		H-6	Vol.							

1277 278

ITEM NO:		B4.5		CATEGORY: B-J		Drawing Required		INTERVAL 1						INTERVAL 2					
Component:		Size	Thick. or Sch. No.	Mat'l	Cal. Standard	No.	Methods	1	2	3	1	2	3	1	2	3	1	2	3
Longitudinal Seam Welds																			
RHR - 30 (cont'd)																			
9		24"	1.312	358TP304	VY-34	H-6	Vol.												
10		"	"	"	VY-34	"	"												
11		"	"	"	VY-34	"	"												
RHR - 28 12		24"	1.312	358TP304	VY-34	H-6	Vol.												
Circ. Welds																			
Core Spray Piping																			
"A" Side		8"	80	A106GRB	VY-19	H-11	Vol.												
CS - 3B		8"	100	A376TP304	VY-7	H-11	Vol.												
CS - 4B		"	"	"	VY-7	"	"	X											
F1A		"	"	"	VY-7	"	"	X											
F2		"	"	"	VY-7	"	"	X											
F3		"	"	"	VY-7	"	"	X											
F3A		"	"	"	VY-7	"	"	X											
F3B		"	"	"	VY-7	"	"	X											
F4		"	"	"	VY-7	"	"	X											
MF5		8"	.594	A312-316L	VY-20	H-11	Vol.	**											
MF5A		"	"	"	VY-20	"	"	**											
MF5B		"	"	"	VY-20	"	"	**	X										
MF5C		"	"	"	VY-20	"	"	**	X										
MF5D		"	"	"	VY-20	"	"	**	X										
MF6		8"	.594	A312-316L	VY-20	H-11	Vol.	**	X										

** Original line inspected in Period 1 for credit.

1277 279

ITEM NO: B4.5		CATEGORY: B-J		Drawing Required		INTERVAL 1			INTERVAL 2			
Component:	Size	Thick. or Sch. No.	Mat'l	Cal. Standard	No.	Methods	1	2	3	1	2	3
Core Spray "B" Side												
CS - 3A F3	8"	80	Valve to A-106-B	VY-19	H-12	Vol.						
CS - 4A F1	8"	100	A376-304	VY-7	H-12	Vol.						
F1A	8"	100	A376-304	VY-7	H-12	Vol.	X					
F2	8"	100	A376-304 to valve	VY-7	H-12	Vol.	X					
F3	8"	100	Valve to A376-304	VY-7	H-12	Vol.	X					
F3A	8"	100	A376-304	VY-7	H-12	Vol.	X					
F3B	8"	100	A376-304	VY-7	H-12	Vol.	X					
F4	8"	100	A376-304 to valve	VY-7	H-12	Vol.	X					
MF5	8"	.594	Valve to A312-316L	VY-20	H-12	Vol.	**			X		
MF5A	8"	.594	A312-316L	VY-20	H-12	Vol.				X		
*MF5B	"	"	"	VY-20	"	"	**	X		X		
MF5C	"	"	"	VY-20	"	"	**	X		X		
MF5D	"	"	"	VY-20	"	"	**	X		X		
*MF6	"	"	"	VY-20	"	"	**	X		X		
CRD Return Piping 3F2A	2 1/2"	80	A312-316L		H-9	Vol.	X					
3F2B	3"	80	A312-316L		H-9	Vol.	X					
3F3A	3"	80	A312-316L		H-9	Vol.						
C	2 1/2"	80	A312-316L		H-9	Vol.						
D	2 1/2"	80	A312-316L		H-9	Vol.						

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CRD Return Piping
CRD - 3

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** Original line inspected for credit in Period 1.

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Component:		ITEM NO: B4.5		CATEGORY: B-J		Drawing Required		INTERVAL 1			INTERVAL 2		
		Size	Thick. or Sch. No.	Mat'l	Cal. Standard	No.	Methods	1	2	3	1	2	3
Circ. Welds (cont'd)													
CRD - 2	F	2 1/2"	160	A106GRB		H-9	Vol.						
	G	"	"	"		"	"						
	1	"	"	"		"	"		X				
	2	"	"	"		"	"		X				
	3	"	"	"		"	"						
	4	"	"	"		"	"						
	5	"	"	"		"	"		X				
	6	"	"	"		"	"		X				
	7	"	"	"		"	"						
	8	"	"	"		"	"						
	9	"	"	"		"	"				X		
	10	"	"	"		"	"				X		
	11	"	"	"		"	"				X		
	12	"	"	"		"	"						
	13	"	"	"		"	"						
	14	"	"	"		"	"						
	15	"	"	"		"	"						
	16	"	"	"		"	"						
FI		10"	80	A106GRB	VY-29	H-20	Vol.						
FLA		10"	80	A106GRB	VY-29	H-20	Vol.		X				

1277 281

ITEM NO: B4.5		CATEGORY: B-J		Drawing Required		INTERVAL 1						INTERVAL 2					
Component:	Size	Thick. or Sch. No.	Mat'l	Standard	No.	Methods	1	2	3	1	2	3	1	2	3		
Circ. Welds (cont'd)																	
MS - 4A (cont'd)																	
F1B	10"	80	A106GRB	VY-29	H-20	Vol.		X									
F1C	"	"	"	VY-29	"	"								X			
F2	"	"	"	VY-29	"	"								X			
F2A	"	"	"	VY-29	"	"								X			
F3	"	"	"	VY-29	"	"								X			
F3A	"	"	"	VY-29	"	"			X								
F3B	"	"	"	VY-29	"	"			X								
F3C	"	"	"	VY-29	"	"											
F3D	"	"	"	VY-29	"	"											
F4	10"	80	A106GRB to Valve	VY-29	H-20	Vol.								X			
F5	10"	80	Valve to A106GRB	VY-29	H-20	Vol.								X			
F5A	10"	80	A106GRB	VY-29	H-20	Vol.								X			
F6	"	"	"	VY-29	"	"								X			
F6A	"	"	"	VY-29	"	"				X							
F6B	"	"	"	VY-29	"	"				X							
F6C	"	"	"	VY-29	"	"				X							
F7	10"	80	A106GRB	VY-29	H-20	Vol.				X							
Rx Cleanup Demin. Piping																	
F1	4"	80	A312-304	VY-5	H-13	Vol.											
F1	4"	120	A312-304	VY-37	H-13	Vol.											

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ITEM NO: B4.5		CATEGORY: B-J		Drawing Required		INTERVAL 1						INTERVAL 2					
Thick. or		Cal.		No.													
Size	Sch. No.	Mat'l	Standard	Methods		1	2	3	1	2	3	1	2	3	1	2	3
4"	120	A312-304	VY-37	H-13	Vol.												
"	"	"	VY-37	"	"												
"	"	"	VY-37	"	"												
"	"	"	VY-37	"	"												
4"	120 machine to 80	A312-304	VY-5	H-13	Vol.			X									
4"	80	A312-304	VY-5	H-13	Vol.			X									
4"	80	A312-304	VY-5	H-13	Vol.			X									
4"	80	A312-304 to A376-304	VY-5 VY-22	H-13	Vol.									X			
4"	80	A376-304	VY-22	H-13	Vol.									X			
4"	80	A376-304	VY-22	H-13	Vol.									X			
4"	80	A312-304 to A376-304	VY-5 VY-22	H-13	Vol.									X			
4"	80	A312-304	VY-5	H-13	Vol.												
4"	80	A312-304	VY-5	H-13	Vol.												
"	"	"	VY-5	"	"												
"	"	"	VY-5	"	"												
"	"	"	VY-5	"	"												
"	"	"	VY-5	"	"												
"	"	"	VY-5	"	"												
"	"	"	VY-5	"	"												
4"	80	A312-304	VY-5	H-13	Vol.												
4"	80	A312-304	VY-5	H-13	Vol.												

Circ. Welds (cont'd)
CUW - 18 (cont'd)

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ITEM NO: B4.5		CATEGORY: B-J		INTERVAL 1			INTERVAL 2		
Component:	Size	Thick. or Sch. No.	Mat'l	Standard	Drawing No.	Required Methods	1	2	3
							1	2	3
CUW - 18 (cont'd)	4"	80	A312-304	VY-5	H-13	Vol.			
Main Steam F7	3"	160	A106GRB	VY-4	H-19	Vol.			
Attachment MS-5A	3"	160	A106GRB	VY-4	H-19	Vol.			
*F1	"	"	"	VY-4	"	"			
F1A	"	"	"	VY-4	"	"			
F1B	"	"	"	VY-4	"	"			
*F1C	"	"	"	VY-4	"	"			
F1D	"	"	"	VY-4	"	"			
F1E	"	"	"	VY-4	"	"			
F2	"	"	"	VY-4	"	"			
F3	"	"	"	VY-4	"	"			
F3A	"	"	"	VY-4	"	"			
F3B	"	"	"	VY-4	"	"			
F4	"	"	"	VY-4	"	"			
F4A	"	"	"	VY-4	"	"			
F5	"	"	"	VY-4	"	"			
F5A	"	"	"	VY-4	"	"			
F5B	"	"	"	VY-4	"	"			
F5C	"	"	"	VY-4	"	"			
F6	"	"	"	VY-4	"	"			
F7	3"	160	A106GRB	VY-4	H-19	Vol.			
Head Spray Piping	4"	80	A106GRB	VY-6	H-10	Vol.			
RHR-18-1 F1	4"	80	A106GRB	VY-6	H-10	Vol.			
F1A									

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ITEM NO: B4.5		CATEGORY: B-J		Drawing Required		INTERVAL 1						INTERVAL 2							
Thick. or		Cal.		No.	Methods														
Size	Sch. No.	Mat'l	Standard			1	2	3	1	2	3	1	2	3	1	2	3		
Component: Circ. Welds (cont'd)																			
RHR-18-1 (cont'd)																			
F2	4"	80	A106GRB	VY-6	H-10														
F2A	4"	80	A106GRB	VY-6	H-10														
F2B	"	"	"	VY-6	"														
F2C	"	"	"	VY-6	"														
F3	"	"	"	VY-6	"														
F4	"	"	"	VY-6	"														
F5	4"	80	A376TP304	VY-22	H-10														
F1	4"	80	A376TP304	VY-22	H-10														
F1A	"	"	"	VY-22	"														
F1B	"	"	"	VY-22	"														
F2	"	"	"	VY-22	"														
* F2A	"	"	"	VY-22	"														
F2B	"	"	"	VY-22	"														
F3	"	"	"	VY-22	"														
F3A	"	"	"	VY-22	"														
F3B	"	"	"	VY-22	"														
F3C	"	"	"	VY-22	"														
F3D	"	"	"	VY-22	"														
F3E	"	"	"	VY-22	"														
F3F	4"	80	A376TP304	VY-22	H-10														

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ITEM NO: 4.7

CATEGORY: B-J

Component:

Size

Thick or
Sch. No.

Mat'l

Cal.
StandardDrawing
No.Required
Methods

INTERVAL 1

INTERVAL 2

1

2

3

1

2

3

Branch pipe con-
nections 6" in
diameter and
smallerReactor Recirc.
Bypass
Loop A
Weldolets

C7A

4"

80

A451CP8M

H-2

SUR

X

C12

4"

80

"

H-2

SUR

Reac. Recirc.
Bypass
Loop B
Weldolets

C60A1

4"

80

"

H-3

SUR

C65

4"

80

"

H-3

SUR

X

MS-7A

Sweepolets

A5B *

18" x 6"

80 x 160

A106GRB

H-14

SUR

A5E

18" x 6"

80 x 160

"

H-14

SUR

A5H

18" x 6"

80 x 160

"

H-14

SUR

MS-7B

Sweepolets

B5B

18" x 6"

80 x 160

"

H-15

SUR

X

B5E

18" x 6"

80 x 160

"

H-15

SUR

MS-7C

Sweepolets

C5B

18" x 6"

80 x 160

"

H-16

SUR

C5E

18" x 6"

80 x 160

"

H-16

SUR

C5H

18" x 6"

30 x 160

"

H-16

SUR

MS-7D

Sweepolets

D5B

18" x 6"

80 x 160

"

H-17

SUR

D5E

18" x 6"

80 x 160

"

H-17

SUR

X

D5H *

18" x 6"

80 x 160

A106GRB

H-17

SUR

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ITEM NO: B4.9		CATEGORY: B-K-1		INTERVAL 1			INTERVAL 2				
Component:	Hanger Type	Hot Setting	Cold Setting	Drawing No.	Required Methods	1	2	3	1	2	3
Integrally Welded Supports											
Recirc. Ring Header and Inlets											
RR-37	Spring	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	8	3	H-2	Vol.**	X					
RR-27	Rigid	N/A	N/A	H-2	Vol.**		X				
* RR-34	Snubber	2 31/32	2 9/32	H-2	Vol.**					X	
* RR-35	Snubber	2 31/32	2 9/32	H-2	Vol.**						
Recirc. Loop "B"											
* RR-62	Snubber	2 31/32	2 9/32	H-3	Vol.**						X
* RR-63	Snubber	2 31/32	2 9/32	H-3	Vol.**						
RR-70	Rigid	N/A	N/A	H-3	Vol.**				X		
* RR-73	Snubber	3	3	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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Rev 2
1 - 11

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Rev. 2
1 - 1

ITEM NO: B4.9

CATEGORY: B-K-1

Component:

Hanger
TypeHot
SettingCold
SettingDrawing
No.Required
Methods

INTERVAL 1

INTERVAL 2

1

2

3

1

2

3

Integrally Welded Supports

Feedwater Piping

Line "A"

FW-4

Spring

2,831

3,206

H-7

Vol.**

X

FW-10

Rigid

N/A

N/A

H-7

Vol.**

X

FW-11

Rigid

N/A

N/A

H-7

Vol.**

X

Feedwater Piping

Line "B"

FW-14

Spring

2,836

3,211

H-8

Vol.**

FW-21

Rigid

N/A

N/A

H-8

Vol.**

FW-22

Rigid

N/A

N/A

H-8

Vol.**

X

Core Spray "A"

CS-1

Spring

2,208

2,575

H-11

Vol.**

X

Core Spray "B"

CS-2

Spring

2,208

2,575

H-12

Vol.**

X

RHR "A"

RHR-1

Spring

16,121

17,006

H-4

Vol.**

X

RHR-2

Spring

15,021

14,356

H-4

Vol.**

RHR "B"

RHR-5

Spring

22,721

22,900

H-5

Vol.**

X

RHR-6

Spring

16,021

16,200

H-5

Vol.**

X

c

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-5

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

Hanger Type Hot Setting Cold Setting

Component:

INTERVAL 1

INTERVAL 2

Drawing Required
No. Methods

Non-Integrally
Welded Support
Components
Recirc. Ring
Header and
Inlets

								INTERVAL 1			INTERVAL 2		
								1	2	3	1	2	3
RR-36	Rigid	N/A	N/A										
RR-38	Rigid	N/A	N/A						X				
RR-39	Rigid	N/A	N/A							X			
RR-40	Rigid	N/A	N/A								X		
RR-41	Rigid	N/A	N/A					X					
RR-42	Rigid	N/A	N/A							X			
RR-43	Rigid	N/A	N/A								X		
RR-45	Rigid	N/A	N/A							X			
RR-46	Rigid	N/A	N/A								X		
RR-47	Rigid	N/A	N/A							X			
RR-50	Rigid	N/A	N/A					X					
RR-51	Rigid	N/A	N/A							X			
RR-53	Rigid	N/A	N/A								X		
RR-54	Rigid	N/A	N/A							X			
RR-55	Rigid	N/A	N/A					X					
RR-56	Rigid	N/A	N/A						X				
RR-57	Rigid	N/A	N/A							X			
RR-58	Rigid	N/A	N/A					X					

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CATEGORY: B-K-2

Hanger	Hot	Cold
Type	Setting	Setting

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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75	75
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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 1 INTERVAL 2

Non-integrally Welded Support Components

Recirc. Ring Header and Inlets

Recirc. Loop "A"

[illegible]

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ITEM NO: B4.10

CATEGORY: B-K-2

Component: Hanger Type Hot Setting Cold Setting

Drawing No. Required Methods

INTERVAL 1

INTERVAL 2

Non-integrally Welded Support Components

Recirc. Loop "A"

							1	2	3	1	2	3
RR-30	Spring	13,300	11,305			H-2		X			X	
RR-31	Sway Brace	N/A	N/A			H-2			X			X
RR-32	Sway Brace	N/A	N/A			H-2	X			X		
RR-33	Rigid	N/A	N/A			H-2			X			X

Recirc. Loop "B"

RR-64	Rigid	N/A	N/A			H-3				X		
RR-65	Spring	13,300	11,305			H-3		X			X	
RR-66	Spring	13,300	11,305			H-3			X			X
RR-67	Sway Brace	N/A	N/A			H-3	X				X	
RR-68	Sway Brace	N/A	N/A			H-3				X		
RR-69	Rigid	N/A	N/A			H-3				X		
RR-71	Spring	7.5	2.5			H-3			X			X
RR-72	Spring	7.5	2.5			H-3	X				X	
RR-74	Spring	7.5	2.5			H-3		X			X	
RR-75	Spring	7.5	2.5			H-3			X			X
RR-88	Rigid	N/A	N/A			H-3			X			X
RR-89	Spring	12,400	10,450			H-3		X			X	
RR-90	Spring	12,400	10,450			H-3				X		
RR-91	Sway Brace	N/A	N/A			H-3	X				X	

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ITEM NO: B-4.10

CATEGORY: B-K-2

Hanger
TypeHot
SettingCold
SettingDrawing
No.Required
Methods

INTERVAL 1

INTERVAL 2

Component:

Non-integrally Welded Support Components

Recirc Loop "B"

RR-92

RR-93

RR-94

Main Steam Line "A"

MS-1

MS-2

*

MS-3

MS-4

MS-5

*

MS-6

MS-7

Main Steam Line "B"

MS-12

MS-13

MS-14

*

MS-15

MS-16

Main Steam Line "C"

MS-21

										INTERVAL 1			INTERVAL 2		
										1	2	3	1	2	3
Sway Brace	N/A	N/A													
Rigid	N/A	N/A													
Rigid	N/A	N/A													
Spring	3.5	6.5								X					
Spring	3.5	6.5										X			
Snubber	3 3/16	2 1/16													
Spring	9,140	9,640													
Spring	4.0	6.0													
Snubber	3 9/16	2.5													
Rigid	N/A	N/A													
Spring	3.5	6.0													
Spring	3.5	6.0													
Spring	4.0	6.0													
Snubber	3 1/8	2 1/8													
Rigid	N/A	N/A													
Spring w/ shr. blks	3.5	6.5								X					

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

Drawing No. Required Methods

Component:

Hanger Type Hot Setting Cold Setting

INTERVAL 1

INTERVAL 2

Non-integrally Welded Support Components

Main Steam Line "C"

MS-22

MS-23

* MS-24

MS-25

Main Steam Line "D"

MS-30

MS-31

* MS-32

MS-33

MS-34

* MS-35

MS-36

Feedwater "A"

FW-1

FW-2

* FW-3

FW-5

FW-6

FW-7

Rev. 2

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* * Obscured reading

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ITEM NO: B-4.10

CATEGORY: B-K-2

Hanger

Hot

Cold

Component:

Type Setting

Setting

Drawing Required
No. Methods

INTERVAL 1

INTERVAL 2

1 2 3 1 2 3

Non-integrally Welded Support components

Reactor Clean-up

*

CU-2

Snubber

2 5/8

3 5/8

VIS

H-13

X

X

CU-4

Spring

535

612

VIS

H-13

X

CU-5

Spring

360

420

VIS

H-13

X

X

CU-6

Rigid

N/A

N/A

VIS

H-13

X

X

CU-7

Rigid

N/A

N/A

VIS

H-13

X

X

CU-8

Rigid

N/A

N/A

VIS

H-13

X

X

CU-9

Rigid

N/A

N/A

VIS

H-13

X

X

HPCI

HPCI-1

Spring

3347

2972

VIS

H-20

X

X

HPCI-2

Rigid

N/A

N/A

VIS

H-20

X

X

HPCI-3

Spring

3027

2877

VIS

H-20

X

X

HPCI-4

Rigid

N/A

N/A

VIS

H-20

X

X

RCIC

RCIC-1

Spring

230

259

VIS

H-19

X

X

RCIC-2

Spring

312

336

VIS

H-19

X

X

CRD Return Piping

CRD-1

Rigid

N/A

N/A

VIS

H-9

X

X

CRD-2

Rigid

N/A

N/A

VIS

H-9

X

X

CRD-3

Rigid

N/A

N/A

VIS

H-9

X

X

ITEM NO: R-4.10

langer Type	Hot Setting
----------------	----------------

Component:

Non-integrally Welded Support components

CRD Return Piping

CRD-4

CRD-5

Rigid

Spring

N/A

225

N/A

265

6-H

H-9

VLS

VLS

X

X

X

X

1277 300

ITEM NO: B4.12CATEGORY: R-G-2

Component:		Size	Number of Bolts	Number of Nuts	Drawing No.	Required Methods	INTERVAL 1			INTERVAL 2		
							1	2	3	1	2	3
Pressure-Retaining Bolting <2" Diam.												
Recirc. System Flange												
A		1 1/8"	8	16	H-1	VIS	X			X		
B		"	8	16	H-2	"		X			X	
Head Spray Flange												
A		1 1/4"	8	8	H-10	"	X				X	
B		"	8	8	"	"					X	
Main Steam												
Inlet Flange RV-A		1 3/8"	12	12	H-14	"			X			X
SV-A		"	"	"	"	"			X			X
Blank A		"	"	"	"	"			X			X
Inlet Flanges												
RV-B		"	"	"	H-15	"		X			X	
Blank B		"	"	"	"	"				X		
RV-C		"	"	"	H-16	"			X			X
Blank C-1		"	"	"	"	"				X		
Blank C-2		"	"	"	"	"			X			X
RV-D		"	"	"	H-17	"		X			X	
SV-D		"	"	"	"	"		X			X	
Blank D		1 3/8"	12	12	H-17	VIS				X		

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ITEM NO: B5.1

CATEGORY: B-G-1

INTERVAL 2

INTERVAL 1

Drawing Required
No. Methods

Component:

Size

Mat'l

Standard

Drawing Required
No. Methods

1

2

3

1

2

3

Pressure-Retaining
Bolts & Studs, In
Place

P1-18-1A

1

2 1/2"

A-193GR7

RPB-1
RPB-4

Vol.

X

X

X

X

X

X

2

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P-18-1B

Recirc. Loop "B"

1

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"

2

2 1/2"

A-193GR7

RPB-1
RPB-4

Vol.

X

X

X

X

X

X

1277 302

ITEM NO: B5.1		CATEGORY: B-G-I		Drawing Required		INTERVAL 1						INTERVAL 2					
Size		Cal.		Methods		Mat'l		Standard		Drawing		1		2		3	
Component:		Pressure Retaining		Bo's & Studs, in		Place											
Pl-18-1B		Recirc Loop "B"		(Con't)													
2 1/2"		A-193GR7	RPB-1 RPB-4											X			
"		"	"													X	
"		"	"											X			
"		"	"														X
"		"	"											X			
"		"	"													X	
"		"	"											X			
"		"	"														X
"		"	"											X			
"		"	"													X	
"		"	"											X			
"		"	"														X
"		"	"											X			
"		"	"														X
"		"	"														X
2 1/2"		A-193GR7	RPB-1 RPB-4											X			

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ITEM NO: B5.4		CATEGORY: B-K-1		Drawing Required Methods		INTERVAL 1			INTERVAL 2		
Component:	Hanger Type	Hot Setting	Cold Setting	No.		1	2	3	1	2	3
Integrally Welded Supports											
Recirc. Loop "A"											
P-18-1A	RR-12	Snubber	2 7/8	2 5/16	H-2	Vol.*	X				
	RR-13	Snubber	3	2 1/4	H-2	Vol.*	X				
	RR-14	Snubber			H-2	Vol.*					
	RR-15	Spring	7.7	2.4	H-2	Vol.*		X			
	RR-16	Spring	7.7	2.4	H-2	Vol.*					
	RR-17	Spring	7.7	2.4	H-2	Vol.*					
Recirc. Loop "B"											
P-18-1B	RR-80	Snubber	2 7/8	2 5/16	H-3	Vol.*				X	
	RR-81	Snubber	2 15/16	2 7/16	H-3	Vol.*					
	RR-82	Snubber	3	2 1/4	H-3	Vol.*					
	RR-83	Spring	7.5	2.5	H-3	Vol.*			X		
	RR-84	Spring	7.5	2.5	H-3	Vol.*					
	RR-85	Spring	7.5	2.5	H-3	Vol.*					X
		* See Relief Request No. B-5									

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CATEGORY: B-K-2

Hanger

Hot

Hanger Type	Hot Setting
----------------	----------------

Cold

Type Setting

Setting

tting

No.	Methods
-----	---------

1

2

3

1

7

3

19

Non-integrally Welded Support Components

[illegible]

INTERVAL I

Mat'l

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ITEM NO: B6.7CATEGORY: B-M-2

Component:

Drawing
No.Required
Methods

INTERVAL 1

INTERVAL 2

1

2

3

1

2

3

Valve Bodies

group 1 V2-43A

H-2 Vis

V2-43B

H-3 Vis

V2-53A

H-2 Vis

V2-53B

H-3 Vis

group 2 V2-65A

H-1 Vis

V2-65B

H-1 Vis

group 3 V2-27A

H-7 Vis

-

V2-28A

H-7 Vis

-

V2-28B

H-8 Vis

-

V2-96A

H-8 Vis

X

group 4 V2-29A

H-7 Vis

V2-29B

H-8 Vis

group 5 V23-15

H-20 Vis

V23-16

H-20 Vis

group 6 V14-12A

H-11 Vis

V14-12B

H-12 Vis

group 7 V14-13A

H-11 Vis

V14-13B

H-12 Vis

group 8 V14-14A

H-11 Vis

V14-14B

H-12 Vis

85

group 8

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ITEM NO: B6.7 CATEGORY: R-M-2

Component:

Valve Bodies (cont'd)

	Drawing No.	Required Methods	INTERVAL 1			INTERVAL 2		
			1	2	3	1	2	3
group 9 V2-80A	H-14	Vis						
V2-80B	H-15	Vis						
V2-80C	H-16	Vis						
V2-80D	H-17	Vis						
V2-86A	H-14	Vis						
V2-86B	H-15	Vis						
V2-86C	H-16	Vis						
V2-86D	H-17	Vis						
group 10 SV2-70A	H-14	Vis						
SV2-70B	H-15	Vis						
group 11 RV2-71A	H-14	Vis						
RV2-71B	H-15	Vis						
RV2-71C	H-16	Vis						
RV2-71D	H-17	Vis						
group 12 V10-17	H-4	Vis						
group 13 V10-18	H-4	Vis						
group 14 V10-25A	H-6	Vis						
V10-25B	H-5	Vis						
group 15 V10-46A	H-6	Vis		X				
V10-46B	H-5	Vis		-				

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CATEGORY: B-M-2

Valve Bodies (cont'd)

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ITEM NO: B6.9		CATEGORY: B-G-2						INTERVAL 1			INTERVAL 2		
Component:	No./Bolt Size	Body Type	Mat'l	Size Rating/lbs.	Drawing No.	Required Methods	1	2	3	1	2	3	
Pressure-Retaining Bolting													
Recirc. Loop "A"	V2-43A	24/<2"	Cast	SS	28"/	H-2	Vis			X		X	
	V2-53A	24/<2"	Cast	SS	28"/	H-2	Vis		X		X		
Recirc. Loop "B"	V2-54A	10/<2"	Cast	SS	4"/	H-2	Vis			X	X		
	V2-43B	24/<2"	Cast	SS	28"/	H-3	Vis		X		X		
	V2-53B	24/<2"	Cast	SS	28"/	H-3	Vis	X			X		
Recirc. Ring Header	V2-54B	10/<2"	Cast	SS	4"/	H-3	Vis			X	X		
	V2-65A	24/<2"	Cast	SS	22"/	H-1	Vis	X			X		
Feedwater Line "A"	V2-65B	24/<2"	Cast	SS	22"/	H-1	Vis		X		X		
	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		
Feedwater Line "B"	V2-29A	6/<2"	Cast	CS	16"/900	H-7	Vis			X		X	
	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	
CRD	V3-110	16/<2"	Cast	CS	2 1/2"/1500	H-9	Vis		X		X		
	V3-113	16/<2"	Cast	CS	2 1/2"/1500	H-9	Vis		X		X		
	V3-114	4/<2"	Cast	SS	2 1/2"/1500	H-9	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	

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		ITEM NO:	B6.9	CATEGORY:		B-C-2	Drawing No.	Required Methods	INTERVAL 1			INTERVAL 2		
Component:	No./Bolt Size	Body Type	Mat'l	Size Rating/lbs	1	2			3	1	2	3		
Pressure Retaining Bolting (cont'd)														
PCIC														
	V13-15	2/<2"	Cast	CS	3"/900	H-19	Vis	X				X		
	V13-16	2/<2"	Cast	CS	3"/900	H-19	Vis					X		
Rx Cleanup Demineralizer	V12-15	4/<2"	Cast	SS	4"/1500	H-13	Vis	X				X		
	V12-18	4/<2"	Cast	SS	4"/1500	H-13	Vis				X			X
	V12-46	4/<2"	Cast	SS	4"/1500	H-13	Vis	X				X		
HPCI														
	V23-15	2/<2"	Cast	CS	10"/900	H-20	Vis					X		
	V23-16	2/<2"	Cast	CS	10"/900	H-20	Vis					X		
Core Spray "A"														
	V14-12B	2/<2"	Cast	CS	8"/900	H-11	Vis					X		
	V14-13B	16/<2"	Cast	SS	8"/600	H-11	Vis	X				X		
	V14-14B	4/<2"	Cast	SS	8"/900	H-11	Vis				X			X
Core Spray "B"														
	V14-12A	2/<2"	Cast	CS	8"/900	H-12	Vis				X			X
	V14-13A	16/<2"	Cast	SS	8"/600	H-12	Vis			X			X	
	V14-14A	4/<2"	Cast	SS	8"/900	H-12	Vis			X			X	
RHR "A"														
	V10-17	4/<2"	Cast	CS	20"/900	H-4	Vis					X		
	V10-18	24/<2"	Cast	SS	20"/	H-4	Vis				X			X
	V10-88	24/<2"	Cast	SS	20"/	H-4	Vis	X				X		
RHR "B"														
	V10-25B	2/<2"	Cast	CS	24"/	H-5	Vis					X		
	V10-46B	24/<2"	Cast	SS	24"/700	H-5	Vis			X			X	
	V10-81B	24/<2"	Cast	SS	24"/	H-5	Vis				X			










1277.311
68 - I - 89

ITEM NO: E6.9			CATEGORY: B-G-2		INTERVAL 1			INTERVAL 2					
Component:		No./Bolt Size	Body Type	Mat'l	Size Rating/lbs	Drawing No.	Required Methods	1	2	3	1	2	3
Pressure Retaining Bolting (cont'd)	RHR "B"	16/<2"	Cast	CS	24"/	H-5	Vis			X			
	(cont'd)	16/<2"	Cast	CS	24"/	H-6	Vis			X			
	RHR "C"	2/<2"	Cast	CS	24"/	H-6	Vis				X		
		24/<2"	Cast	SS	24"/700	H-6	Vis	X			X		
		24/<2"	Cast	SS	24"/	H-6	Vis		X			X	
MS - "A"		18/<2"	Cast	CS	18"/	H-14	Vis	X			X		
		18/<2"	Cast	CS	18"/	H-14	Vis			X			X
		18/<2"	Cast	CS	18"/	H-15	Vis		X				X
MS - "B"		18/<2"	Cast	CS	18"/	H-15	Vis			X			X
		18/<2"	Cast	CS	18"/	H-16	Vis				X		
		18/<2"	Cast	CS	18"/	H-16	Vis			X			X
MS - "C"		18/<2"	Cast	CS	18"/	H-17	Vis	X				X	
		18/<2"	Cast	CS	18"/	H-17	Vis						X
		18/<2"	Cast	CS	18"/	H-17	Vis			X			X
MS - "D"		18/<2"	Cast	CS	18"/	H-17	Vis						X
		12/<2"	Cast	CS	6"/1500	H-14	Vis			X			X
		12/<2"	Cast	CS	6" x 10"/1500	H-14	Vis			X			X
Safety and Relief Valves		12/<2"	Cast	CS	6" x 10"/1500	H-15	Vis				X		
		12/<2"	Cast	CS	6" x 10"/1500	H-16	Vis						X
		12/<2"	Cast	CS	6" x 10"/1500	H-17	Vis				X		
		12/<2"	Cast	CS	6"/1500	H-17	Vis				X		

1190

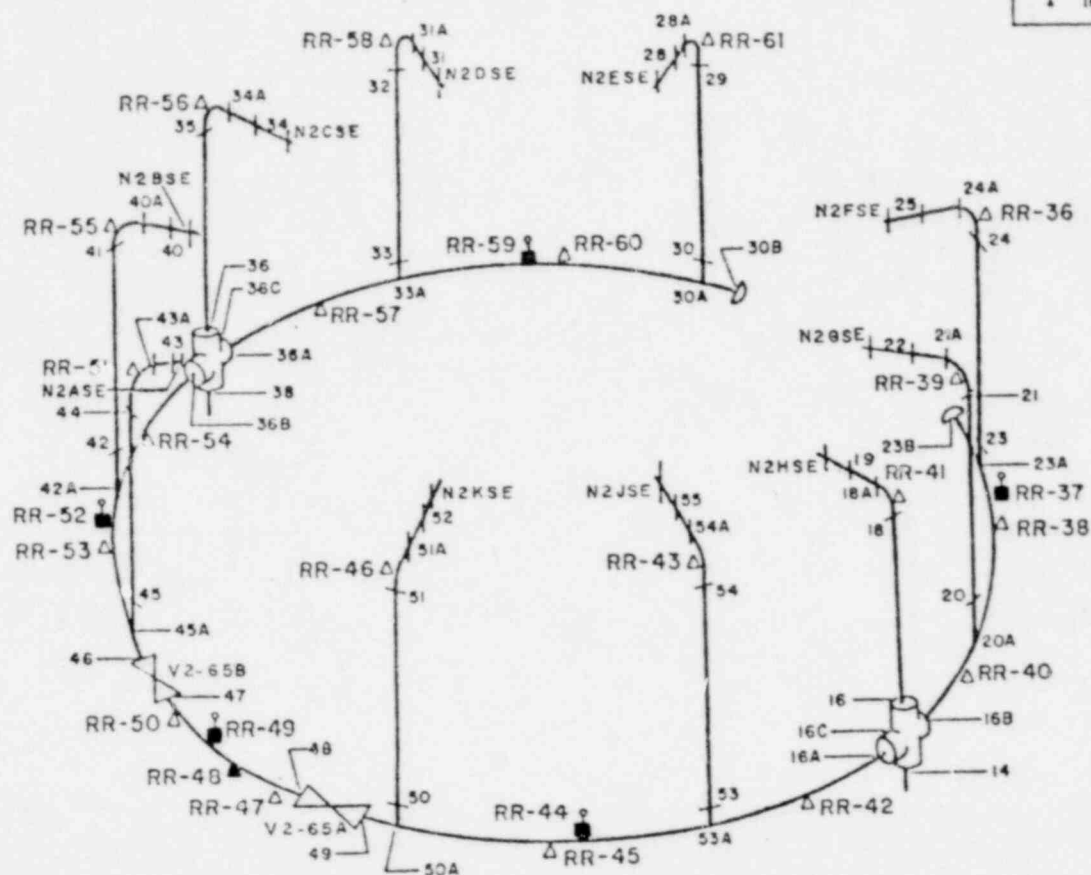
LEGEND

The symbols below are used on the following piping drawings:

	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

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



DRWG. H-1

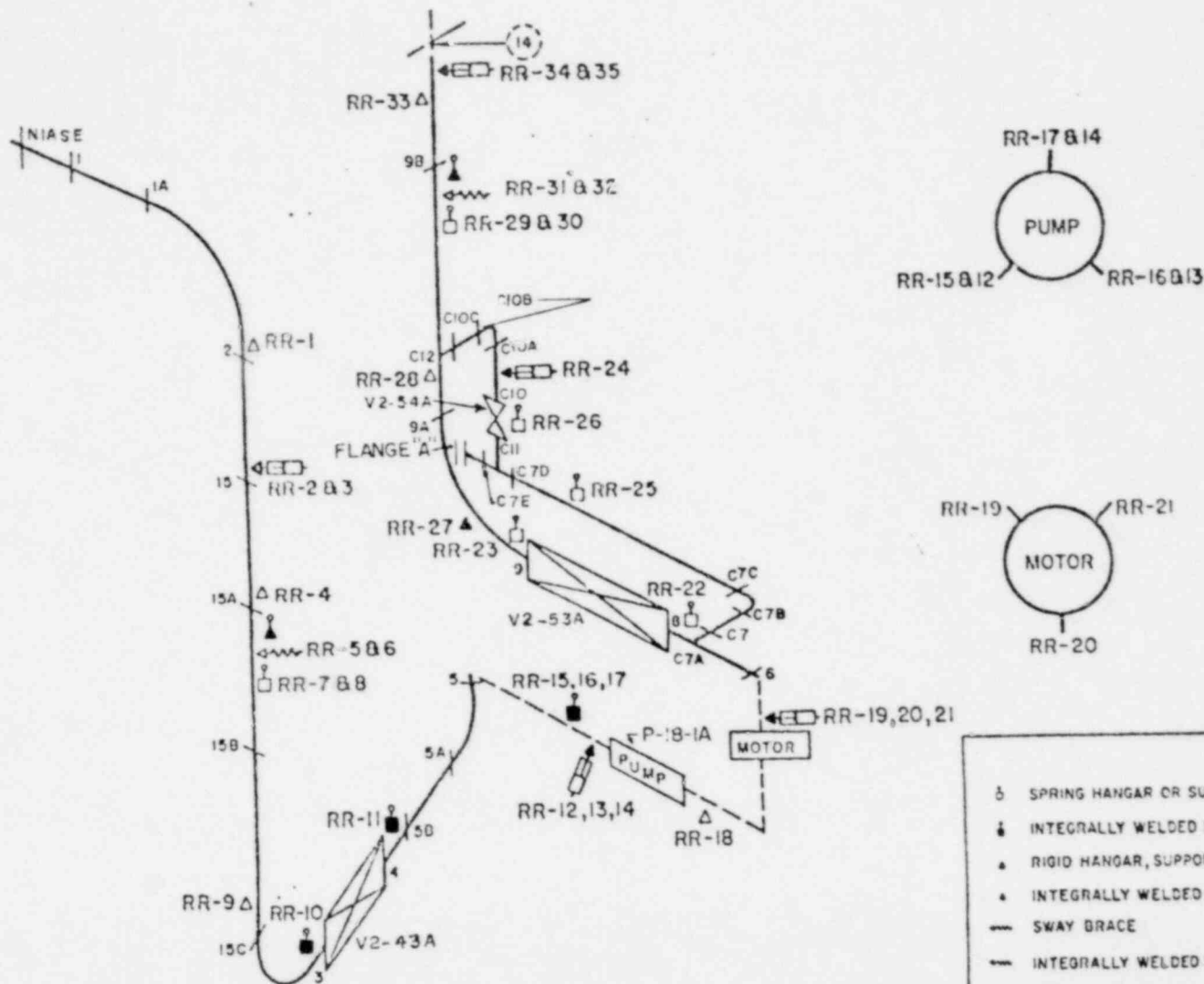
RECIRC RING HEADER & INLETS

REF EDASCO DWG. 5920-FS-133

1277.314

1277.315

I - 93



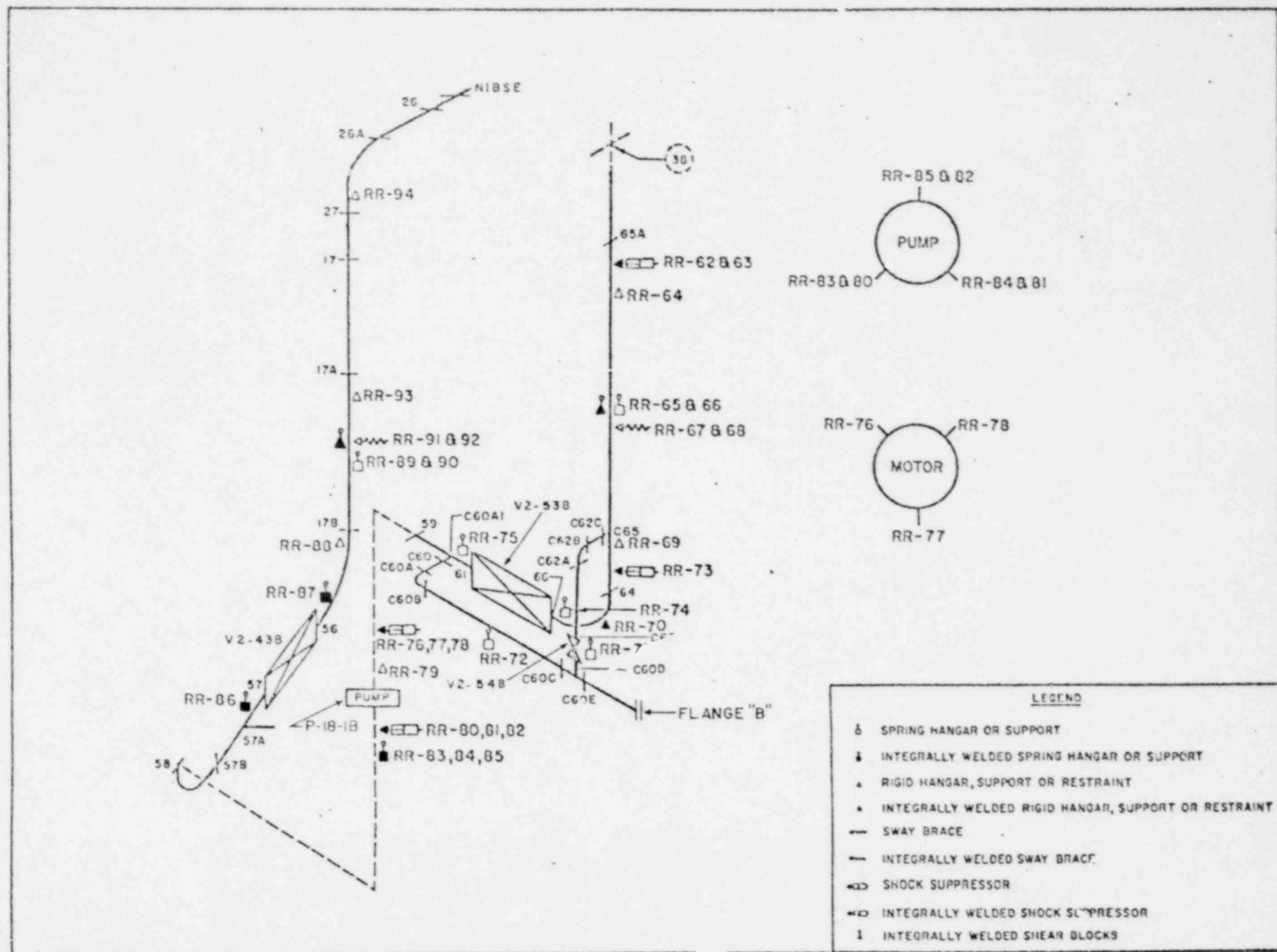
LEGEND	
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	INTEGRALLY WELDED SPRING HANGER OR SUPPORT
	RIGID HANGER, SUPPORT OR RESTRAINT
	INTEGRALLY WELDED RIGID HANGER, SUPPORT OR RESTRAINT
	SWAY BRACE
	INTEGRALLY WELDED SWAY BRACE
	SHOCK SUPPRESSOR
	INTEGRALLY WELDED SHOCK SUPPRESSOR
	INTEGRALLY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

RECIRC LOOP "A"
REF EGASCO DWG. 5920-FS-133

DRWG. H-2

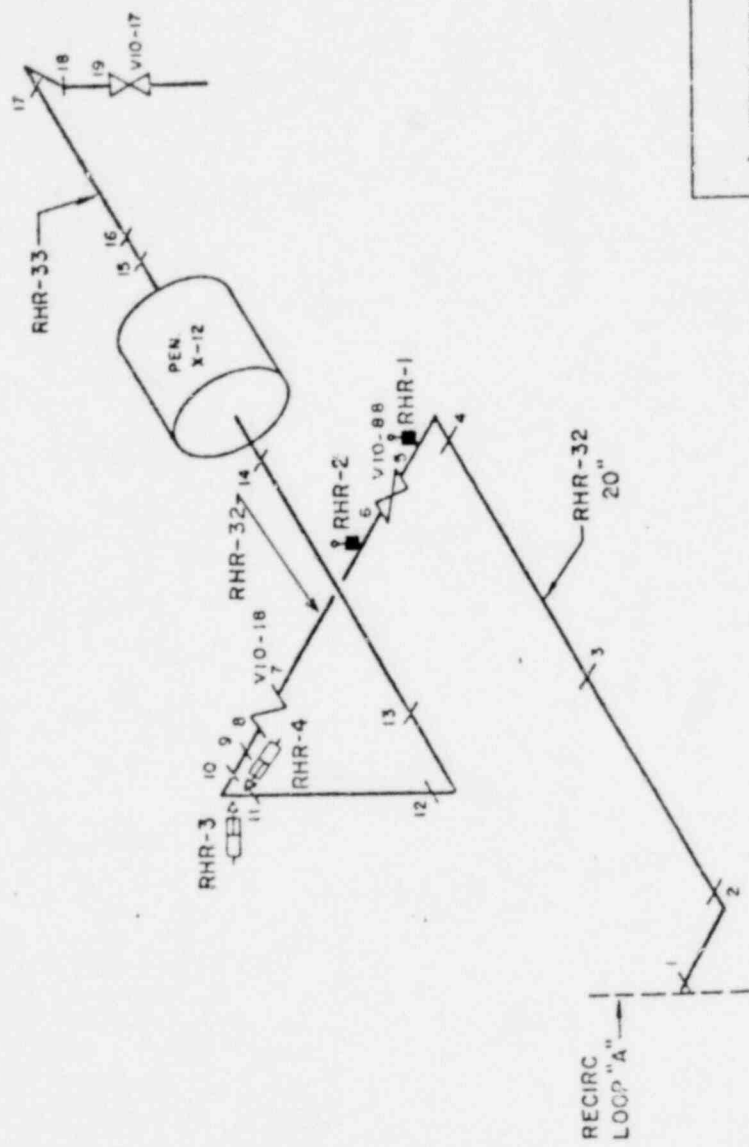
1277 316

I - 94



RECIRC LOOP '6
REF. EBASCO DWG 5920-F5-133

DRWG. H-3



LEGEND

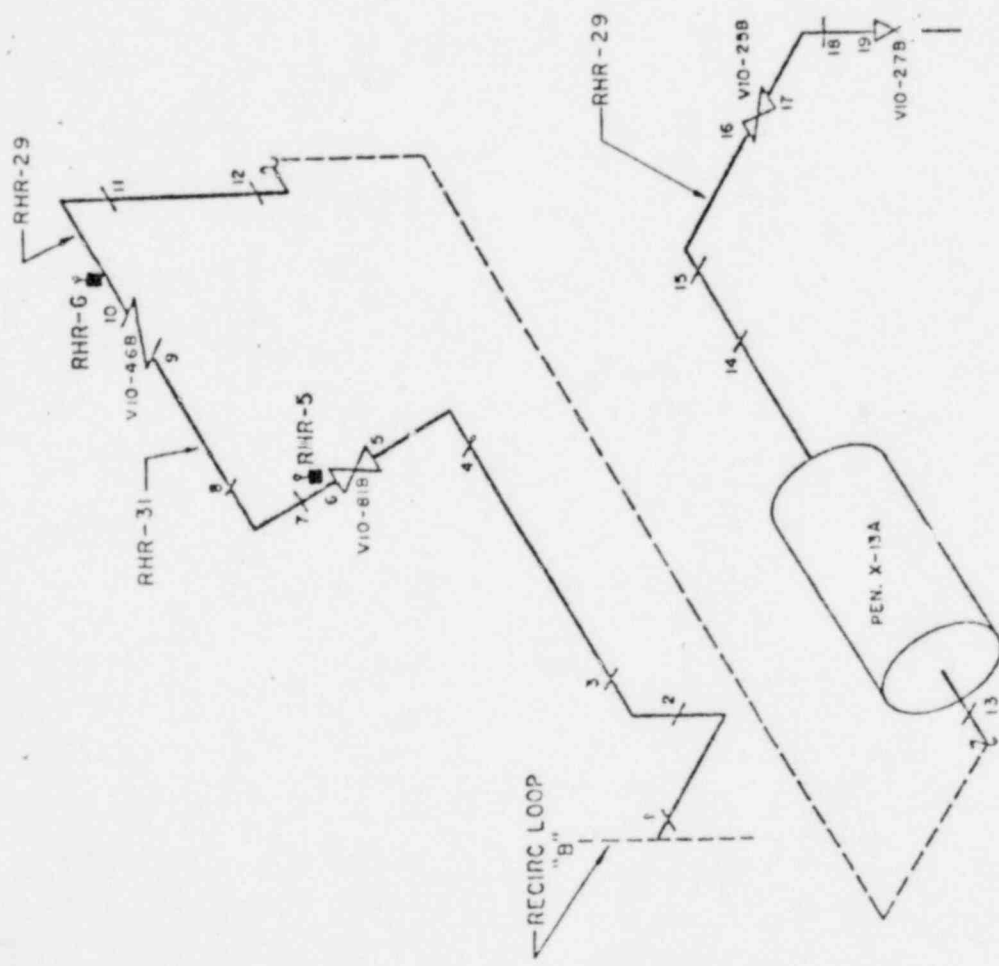
- Δ SPRING HANGAR OR SUPPORT
- INTEGRALLY WELDED SPRING HANGAR OR SUPPORT
- RIGID HANGAR, SUPPORT OR RESTRAINT
- INTEGRALLY WELDED RIGID HANGAR, SUPPORT OR RESTRAINT
- SWAY BRACE
- INTEGRALLY WELDED SWAY BRACE
- SHOCK SUPPRESSOR
- INTEGRALLY WELDED SHOCK SUPPRESSOR
- INTEGRALLY WELDED SHEAR BLOCKS

RHR PIPING LINE "A"

REF. EBASCO DWG. 5920-FS-143B

DRWG. H-4

1277 317



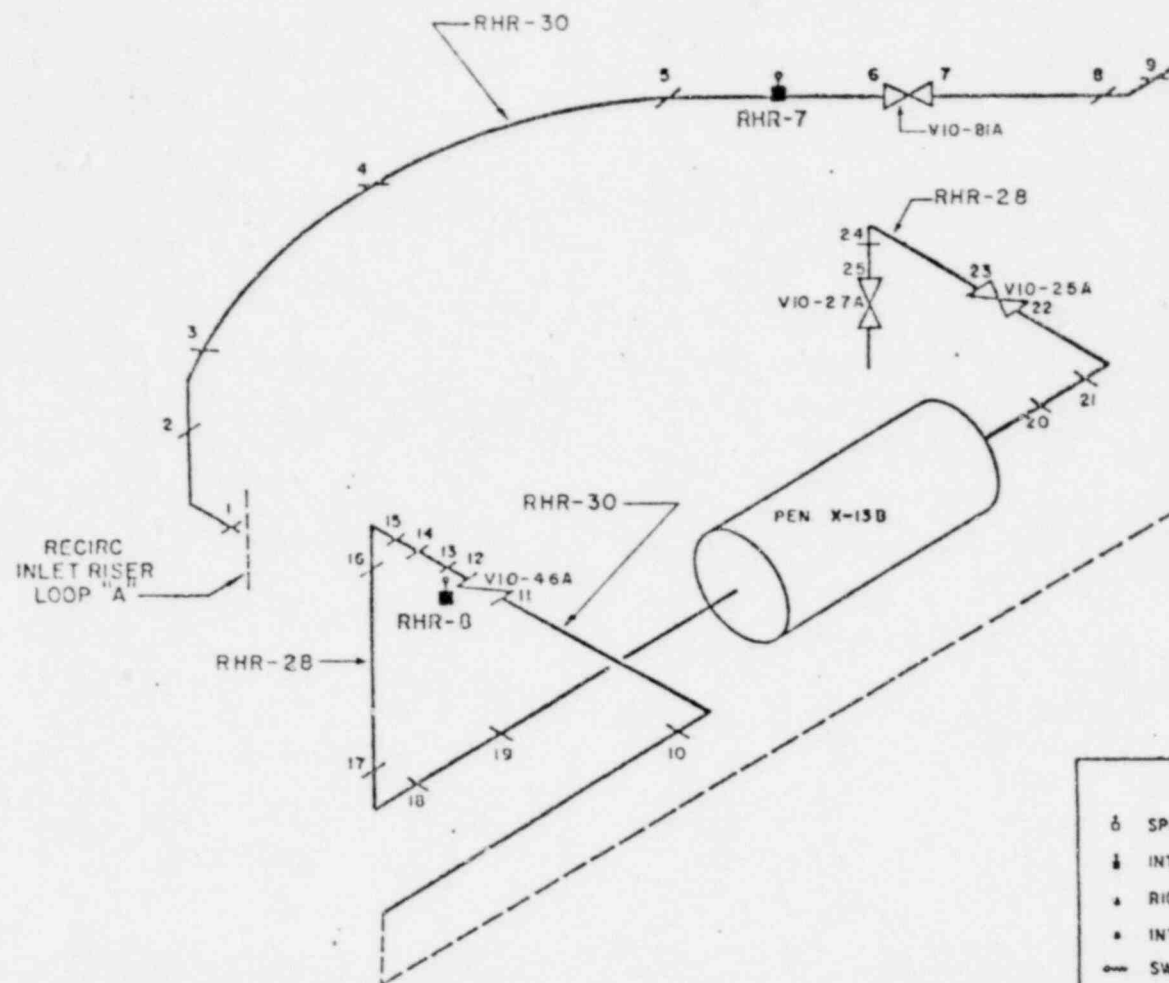
LEGEND

○	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

SEE THERMO-PAC 4000-PS-143B



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

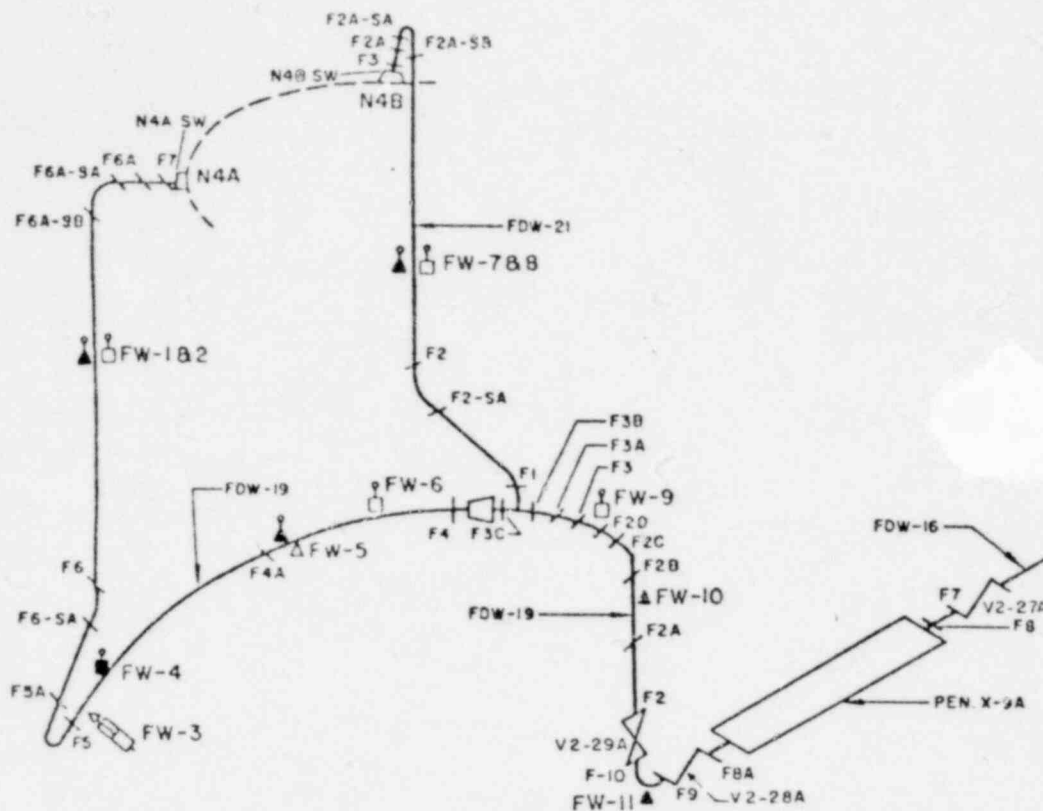
RHR PIPING LINE "C"
REF EBASCO DWG. 5920-FS-143B

DRWG. H-6

1277 319 I - 97

1277 320

I - 98



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 SHOCK SUPPRESSOR
- ⬤ INTEGRALLY WELDED SHOCK SUPPRESSOR

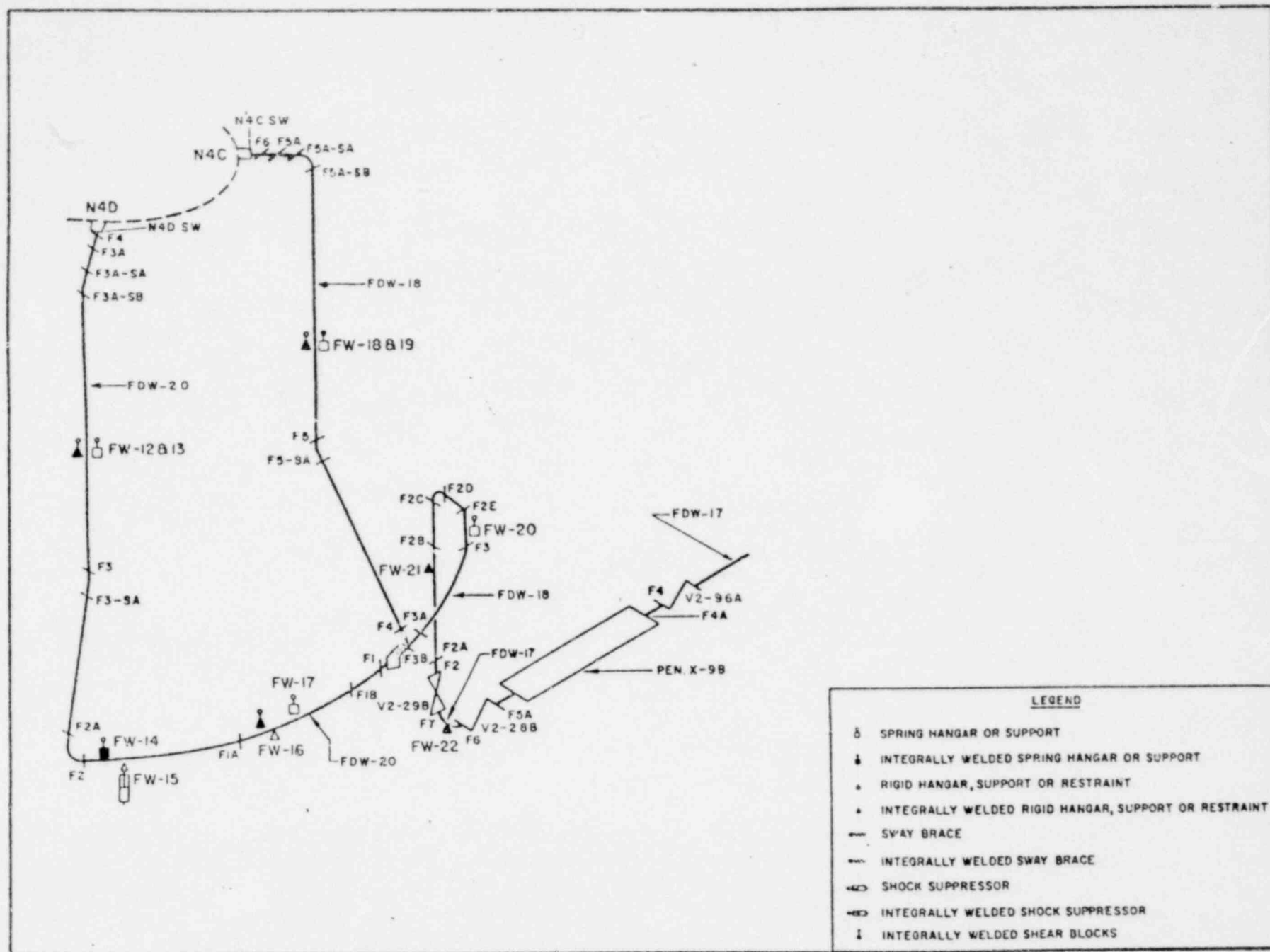
FEEDWATER PIPING LINE "A"

REF EBASCO DWG 5920-FS-I26

DRWG. H-7

1277 321

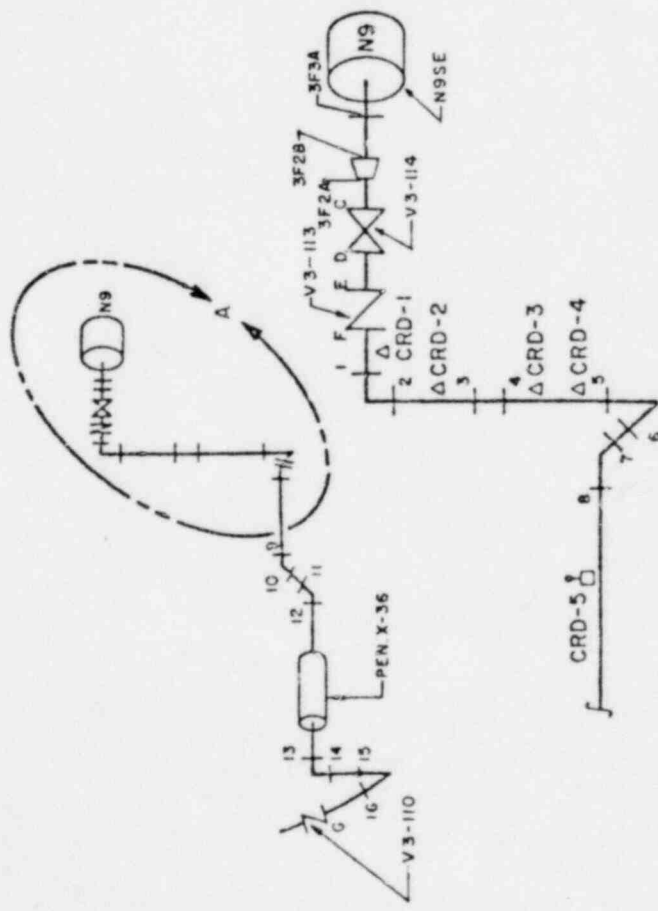
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FEEDWATER PIPING LINE "B"

REF. EBASCO DWG. 5920-FS-I26

DRWG. H-8

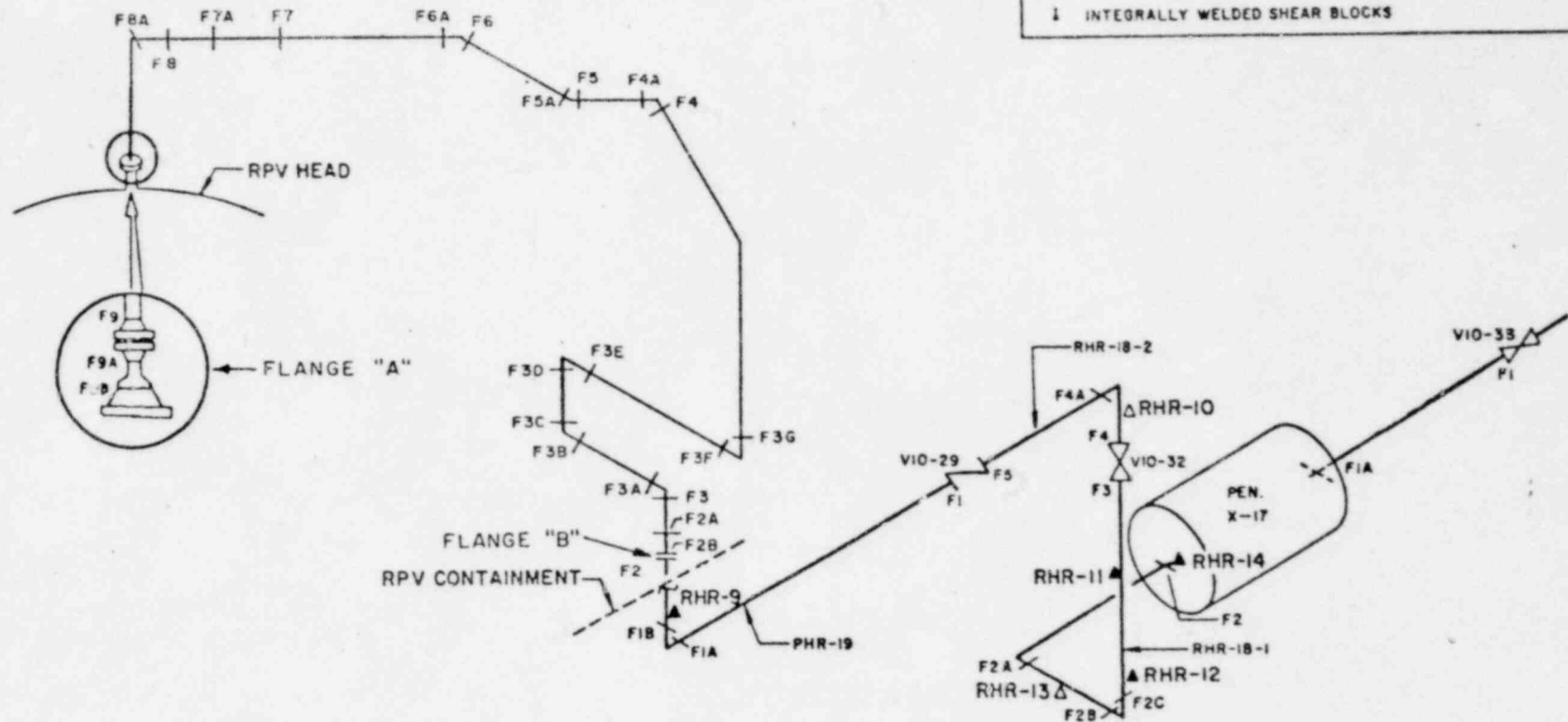


SECTION A

LEGEND	
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
4	SWAY BRACE
4	INTEGRALLY WELDED SWAY BRACE
4	SHOCK SUPPRESSOR
4	INTEGRALLY WELDED SHOCK SUPPRESSOR
4	INTEGRALLY WELDED SHEAR BLOCKS

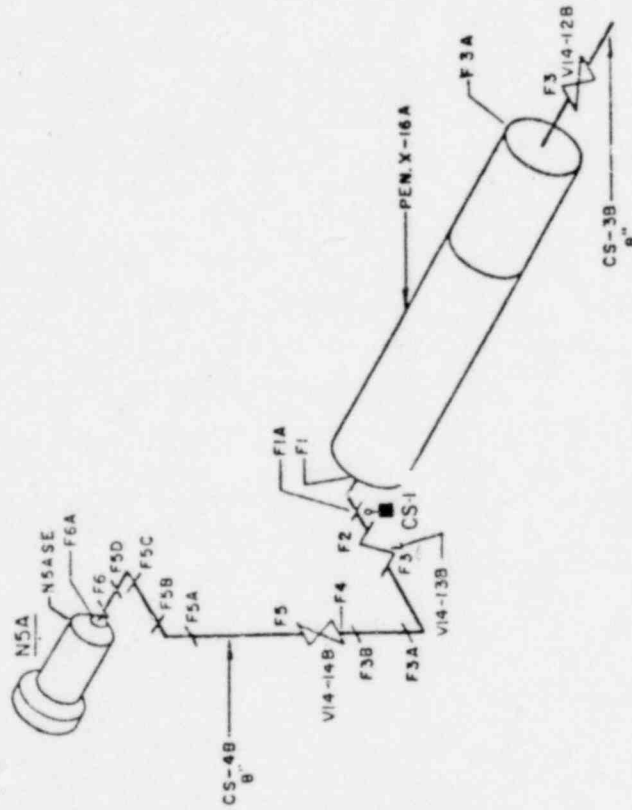
LEGEND

- Δ 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



HEAD SPRAY PIPING
REF. EBASCO DWG. 5920-FS-143B

DRWG. H-10



LEGEND

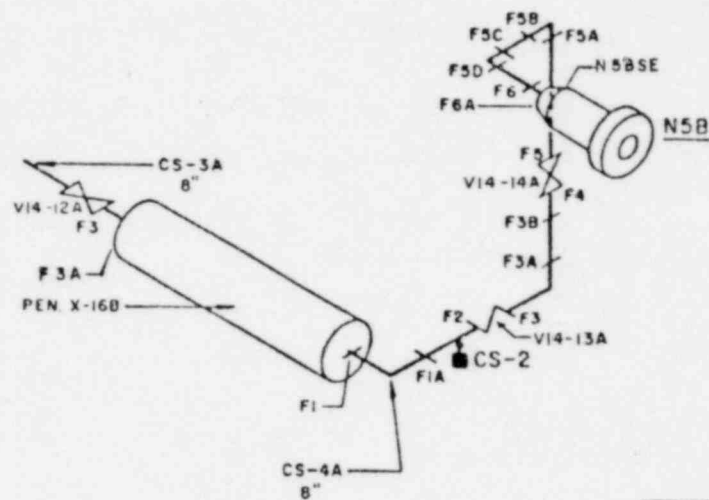
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- ↓ INTEGRALLY WELDED SPRING HANGAR OR SUPPORT
- △ RIGID HANGAR, SUPPORT OR RESTRAINT
- ★ INTEGRALLY WELDED RIGID HANGAR, SUPPORT OR RESTRAINT
- SWAY BRACE
- INTEGRALLY WELDED SWAY BRACE
- SHOCK SUPPRESSOR
- INTEGRALLY WELDED SHOCK SUPPRESSOR
- I INTEGRALLY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

CORE SPRAY "A" SIDE
REF. EBASCO DWG. 5920-FS-149

DRWG. H-11

1277 324

1277 325 I - 103

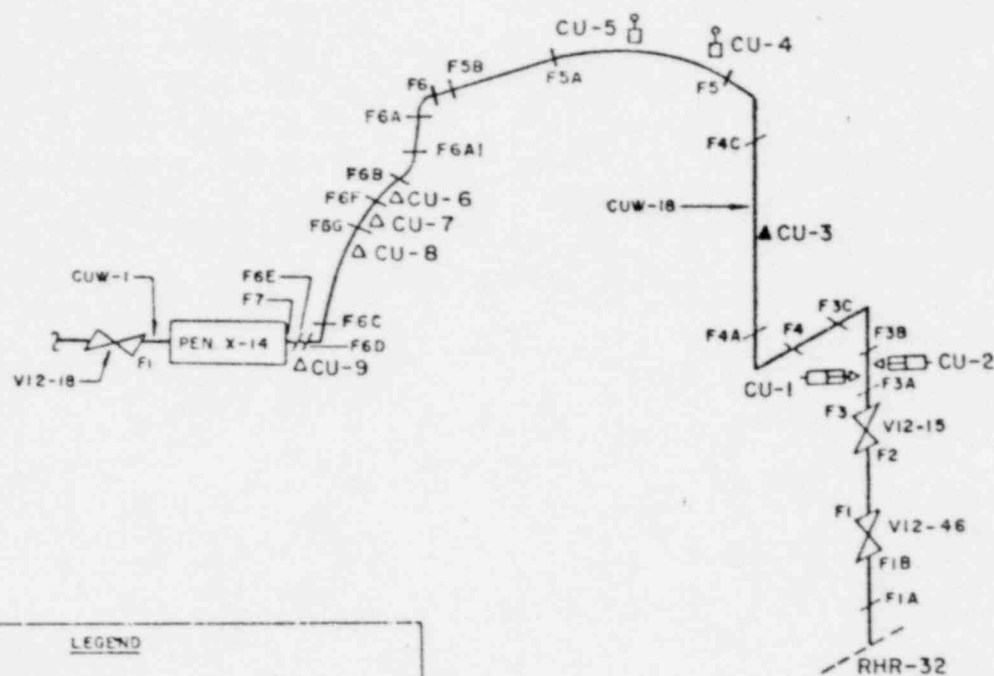


LEGEND

- △ 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

CORE SPRAY "B" SIDE
REF. EDASCO DWG. 5920-FS-I49

DRWG. H-12



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

REACTOR CLEANUP DEMINERALIZER PIPING

REF EBASCO DWG. 5920-FS-145

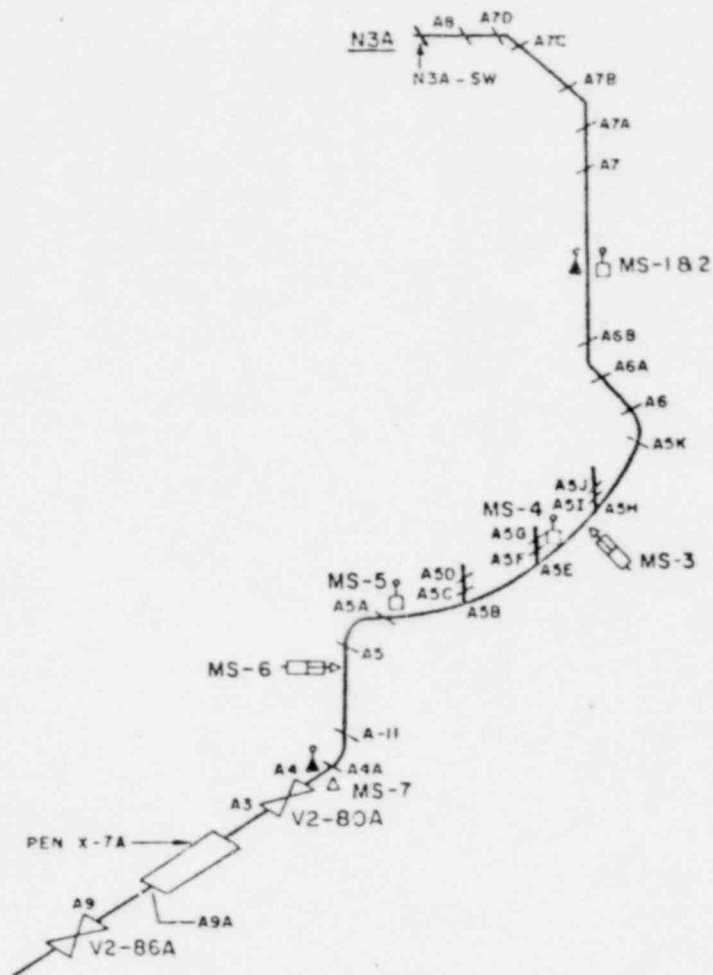
DRWG. H-13

1277-326 I - 104

1277 327

55

I - 105

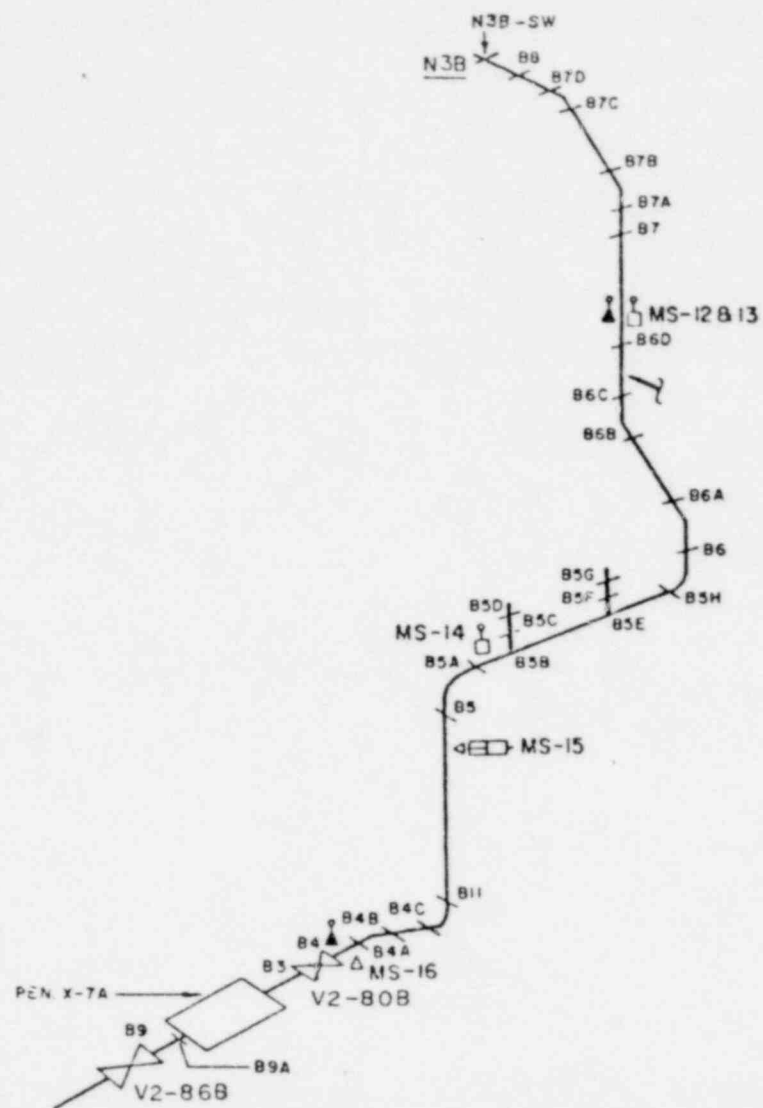


LEGEND

- △ 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 "A"
REF. EBASCO DWG. 5920-FS-13

DRWG. H-14



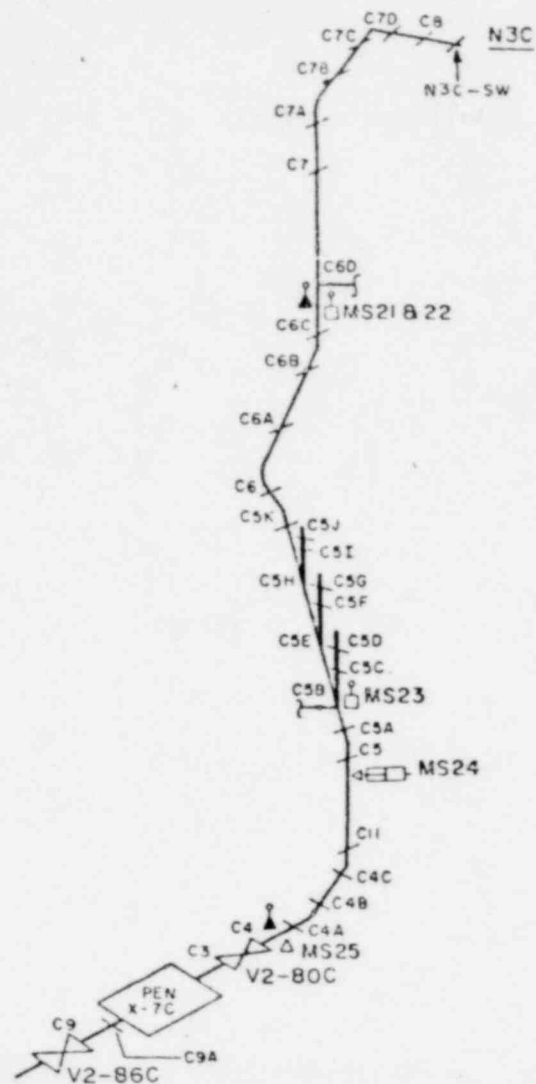
LEGEND

- Δ 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"

REF EBASCO DWG. 5920-FS-I3

DRWG. H-15

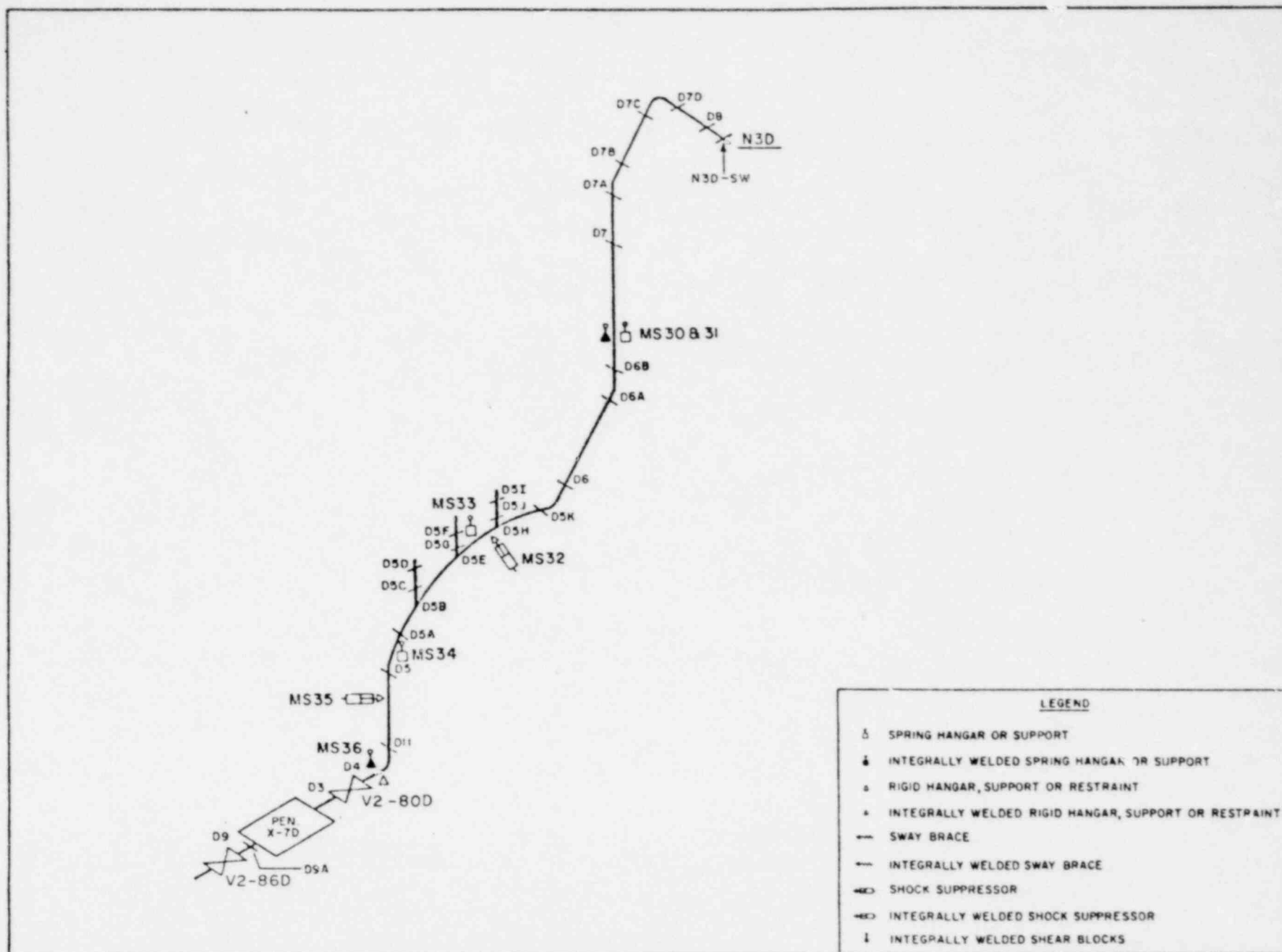


LEGEND

- Δ 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 "C"
REF EBASCO DWG. 5920-F5-13

DRWG. H-16



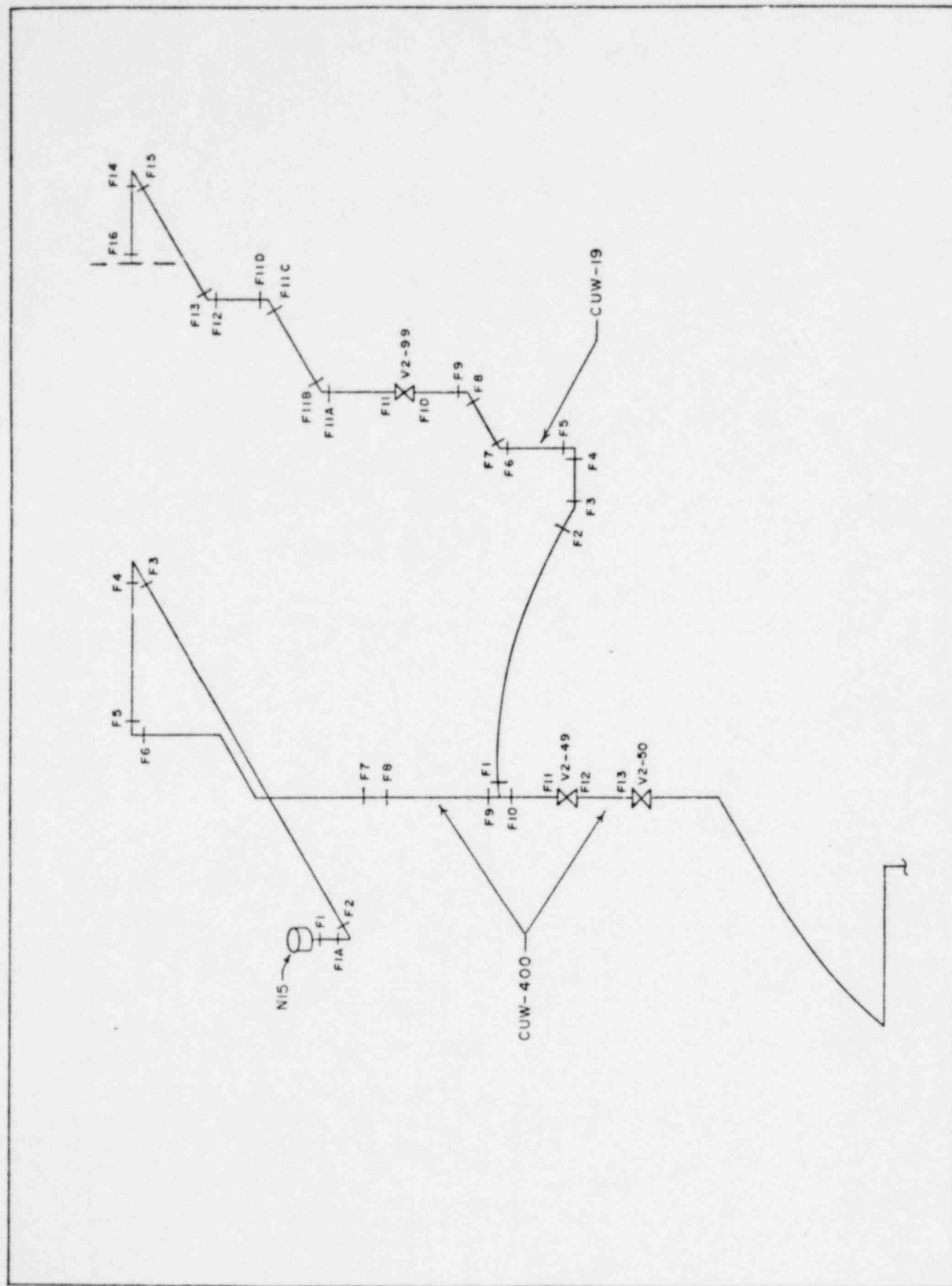
MAIN STEAM LINE "D"
REF EBASCO DWG. 5920-FS-13

DRWG. H-17

58

1277 330

I - 108

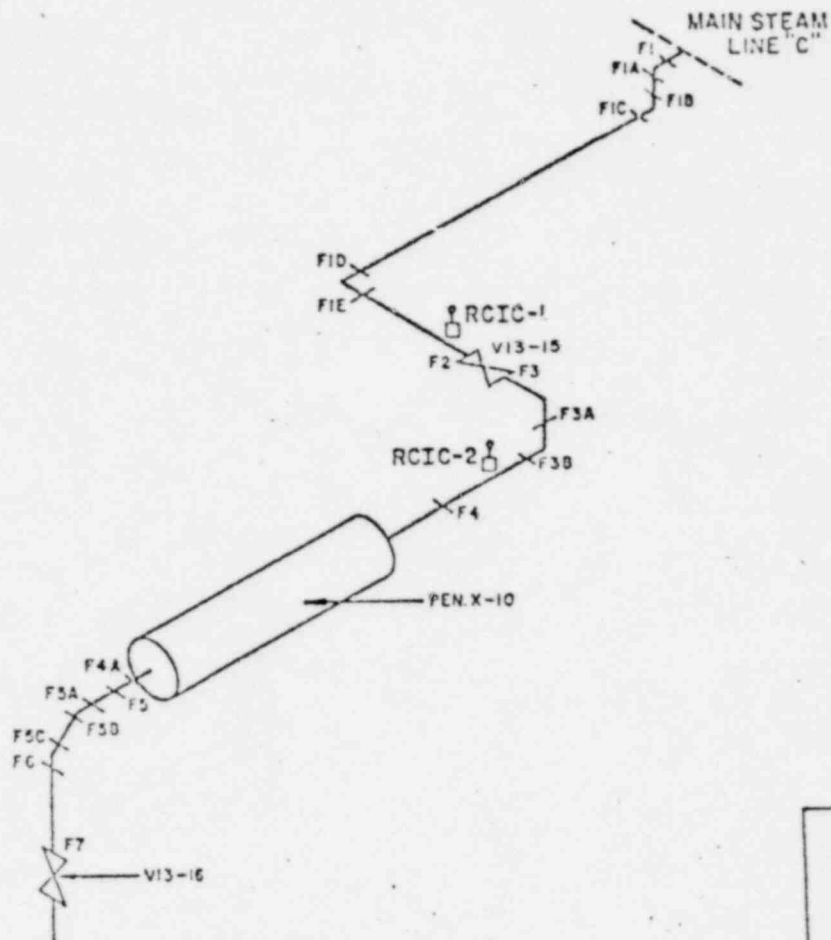


REACTOR DRAIN LINE CUW-400 & CUW-19

REF. EBASCO DWG. 5920-FS-145

DRWG. H-18

1277.331



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

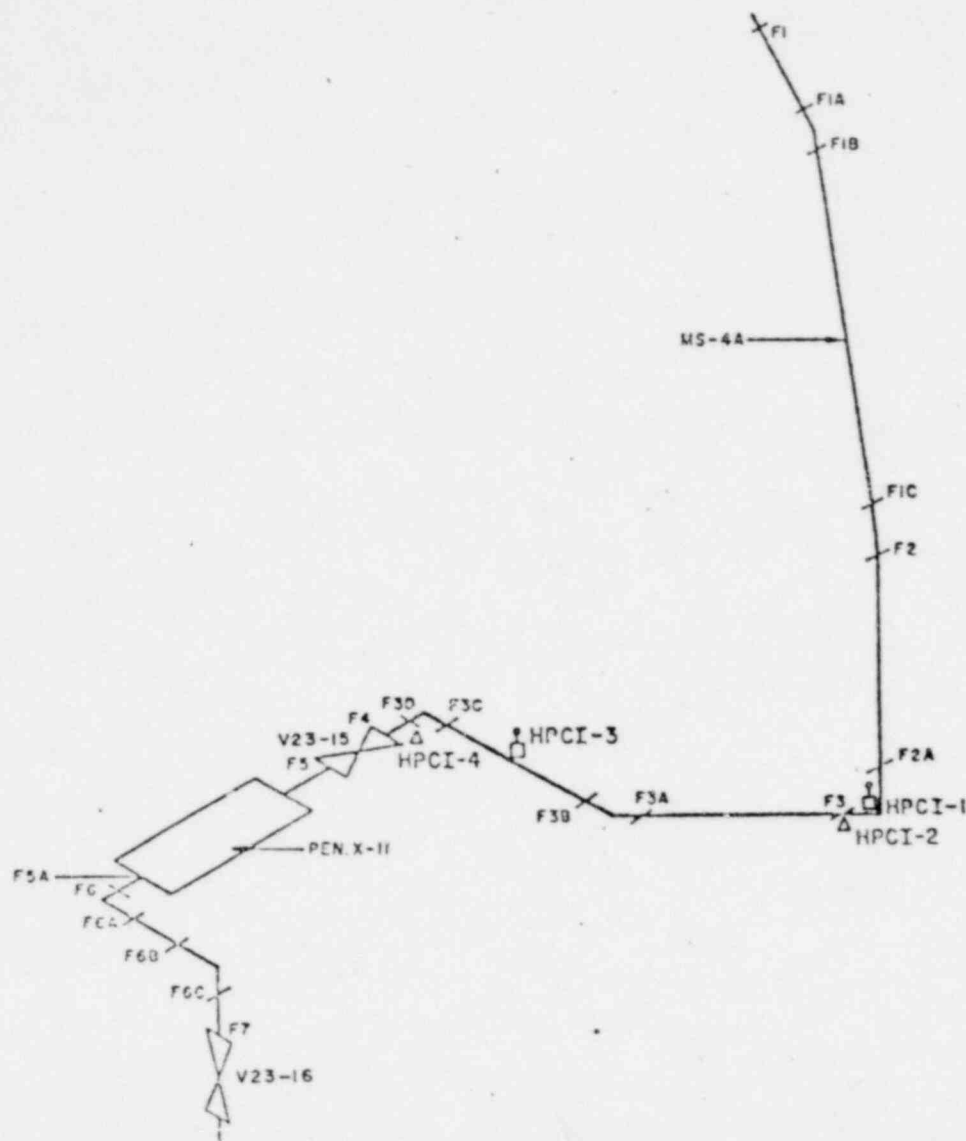
RCIC

MAIN STEAM ATTACHMENT
REF. EGASCO DWG. 5020-F5-I40

DRWG. H-19

1277 332

I - 110



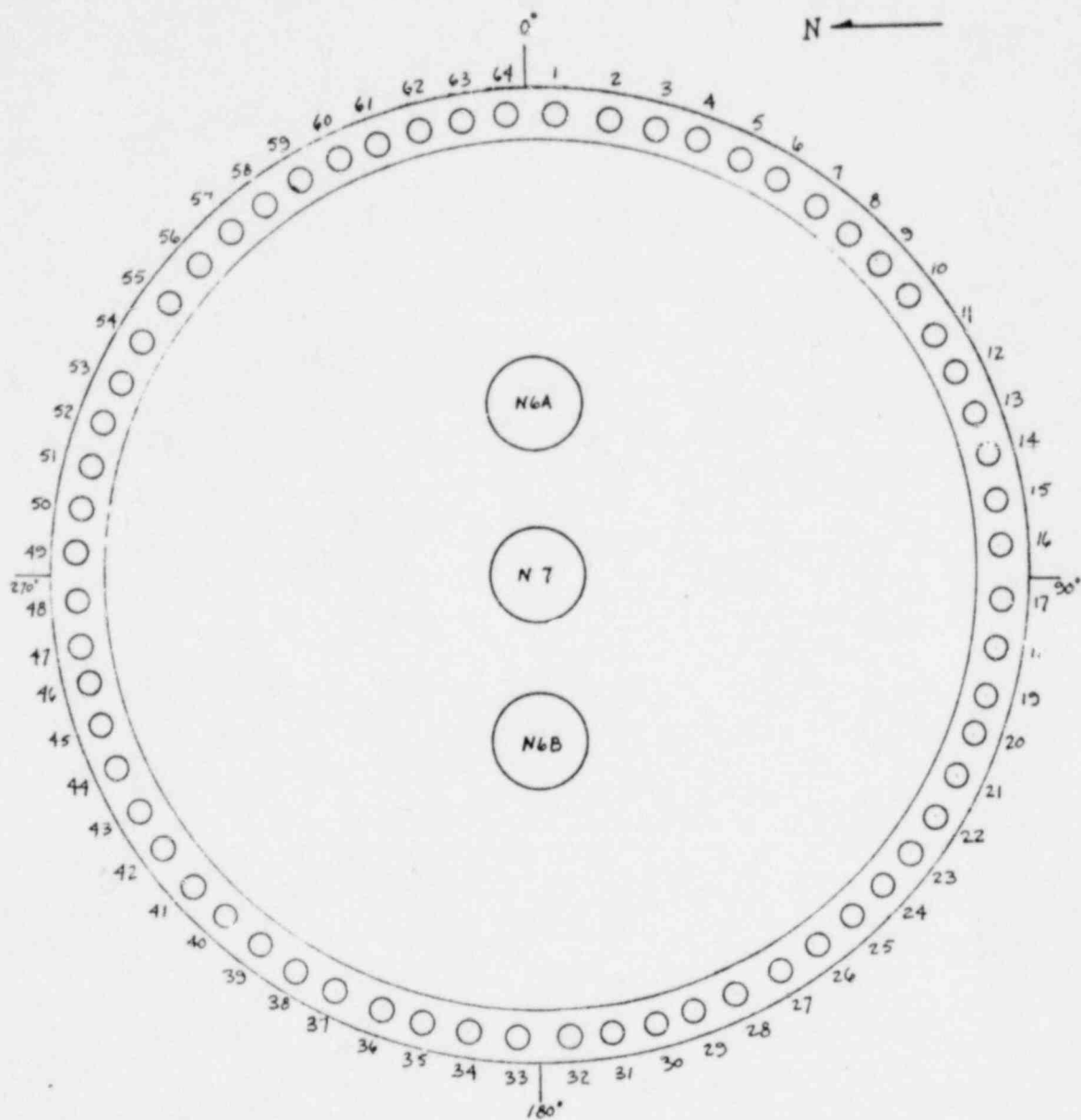
LEGEND

- △ 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

HIGH PRESSURE COOLANT INJECTION PIPING
REF EBASCO DWG. 5920-F5-157

DRWG. H-20

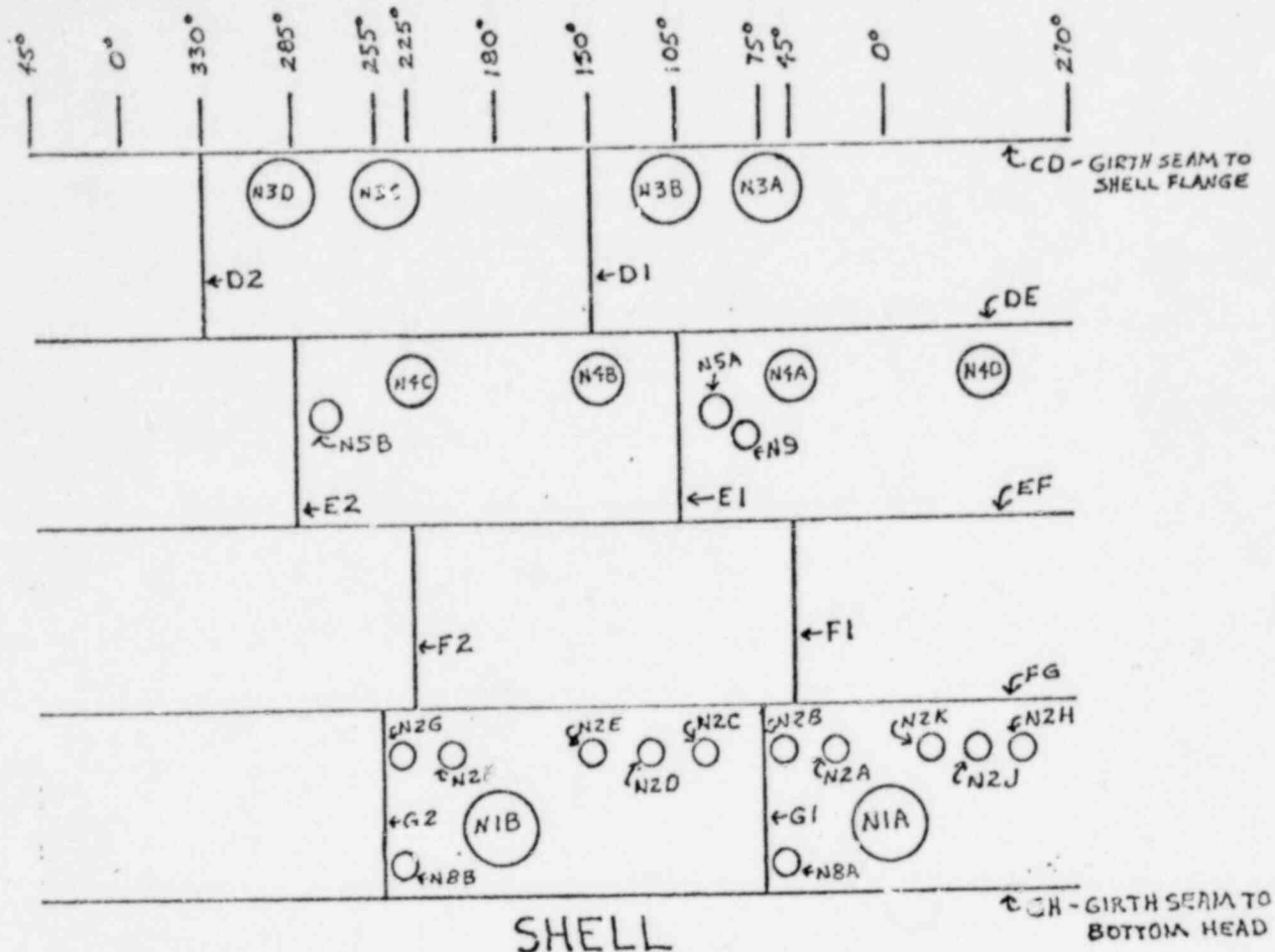
1277 333



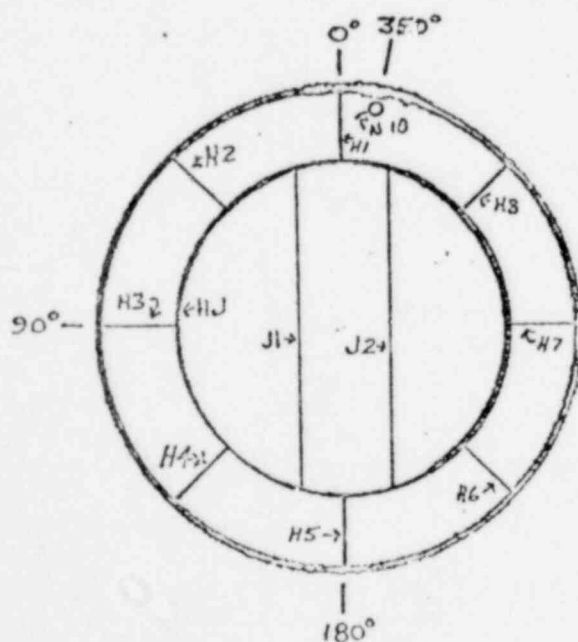
VESSEL HEAD CLOSURE
STUD LOCATIONS
DRWG. H-21

1277 334

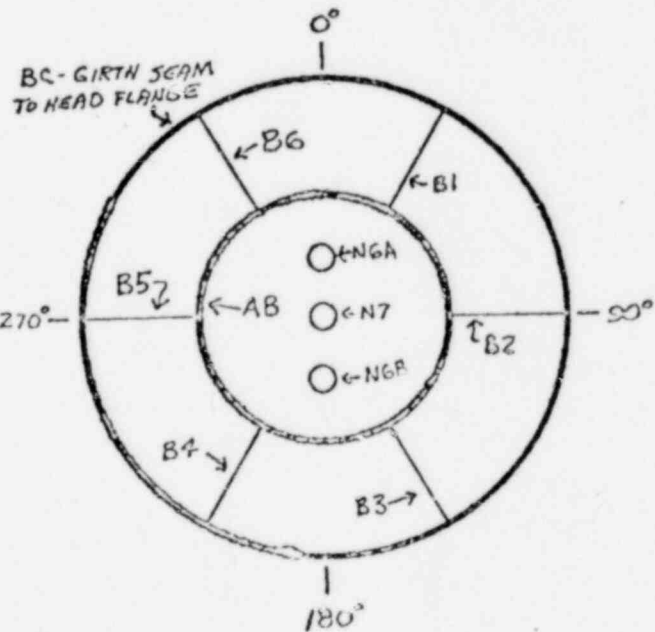
NOZZLE & SEAM LOCATIONS



SHELL



BOTTOM HEAD



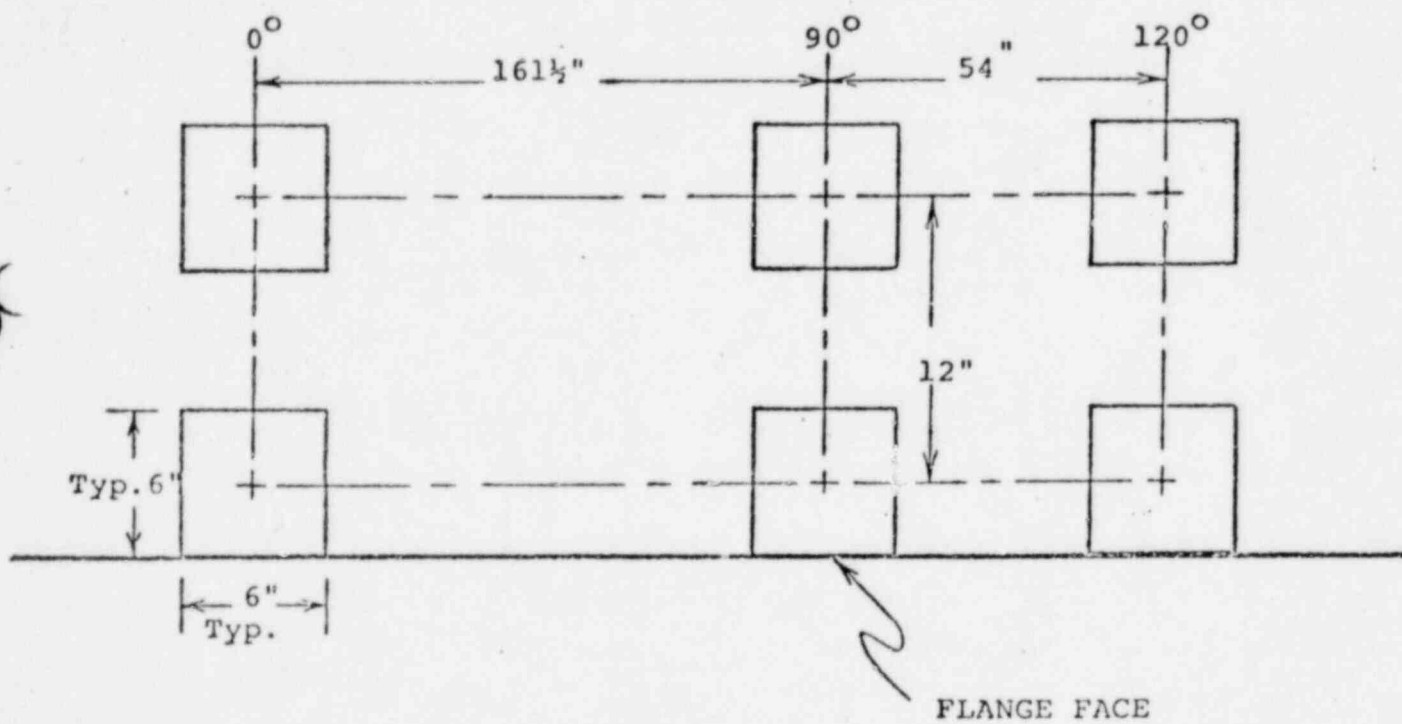
TOP HEAD

CB&I Reference Drawing No. R-1, Rev. 0

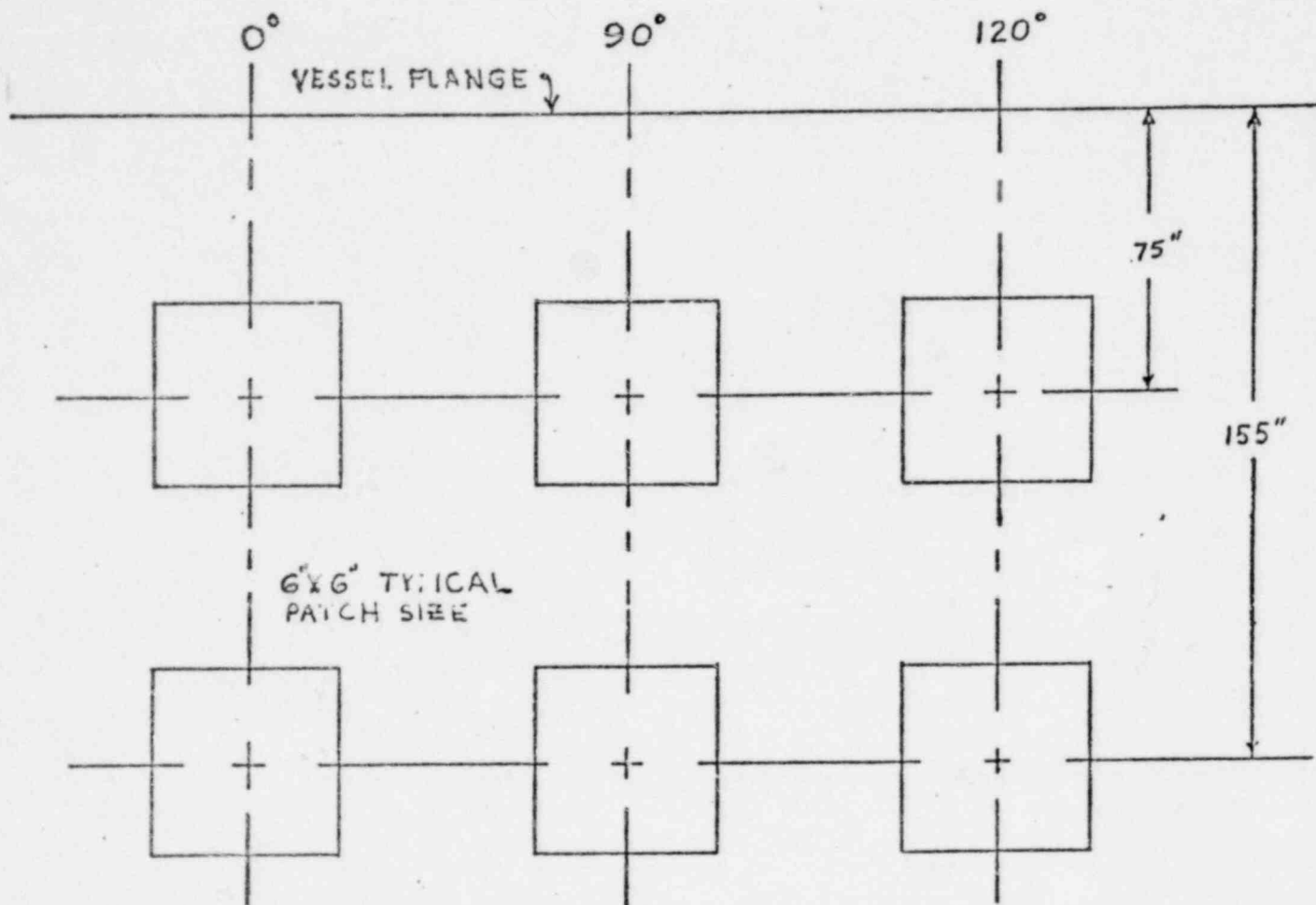
POOR ORIGINAL

DRWG. H-22
1277 335 I 113

Location of Vessel Head Cladding Patches Liquid
Penetrant Tested



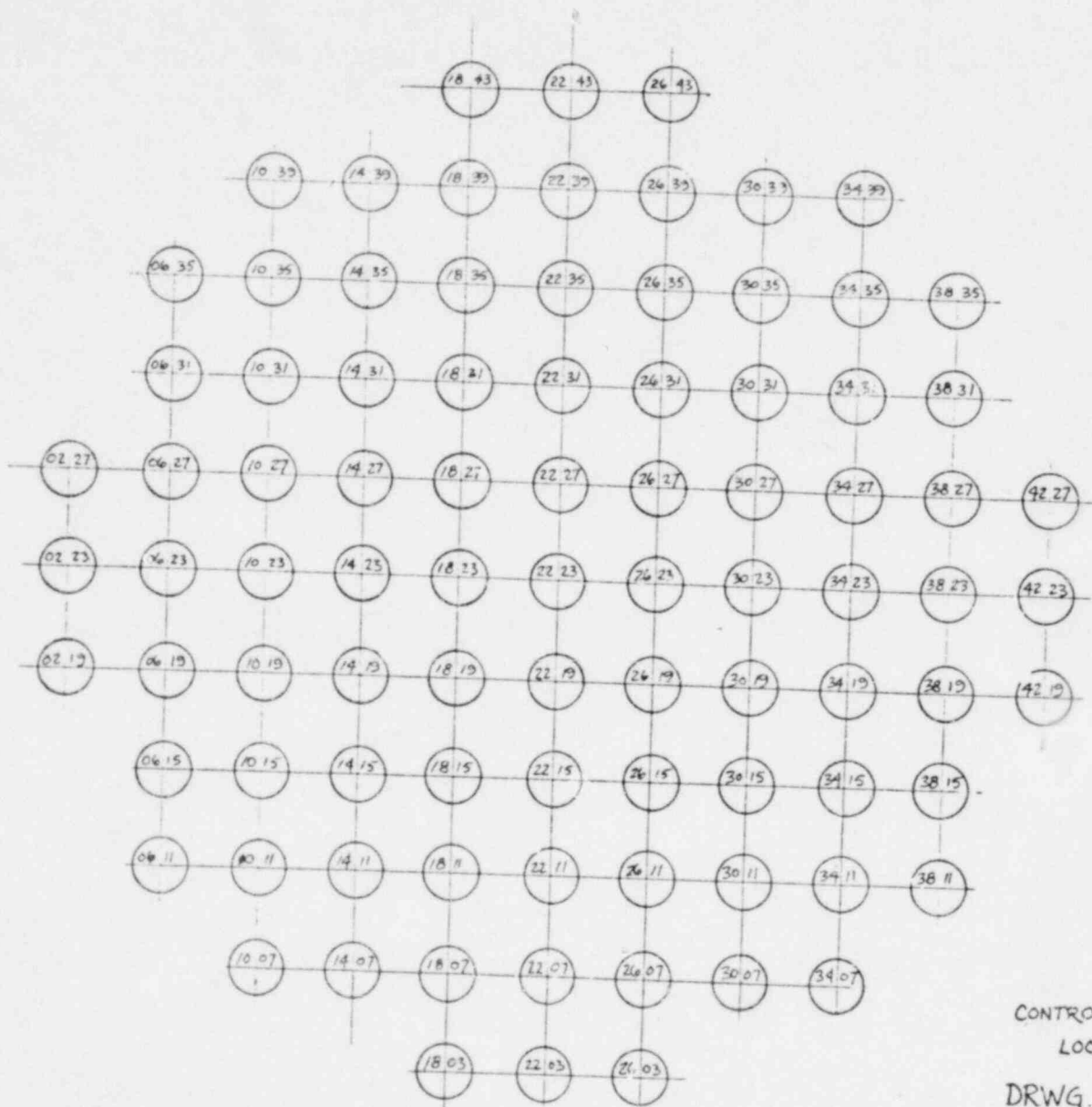
LOCATION OF CLADDING PATCHES EXAMINED ON VESSEL INNER WALL



1277 337

DRWG. H-24

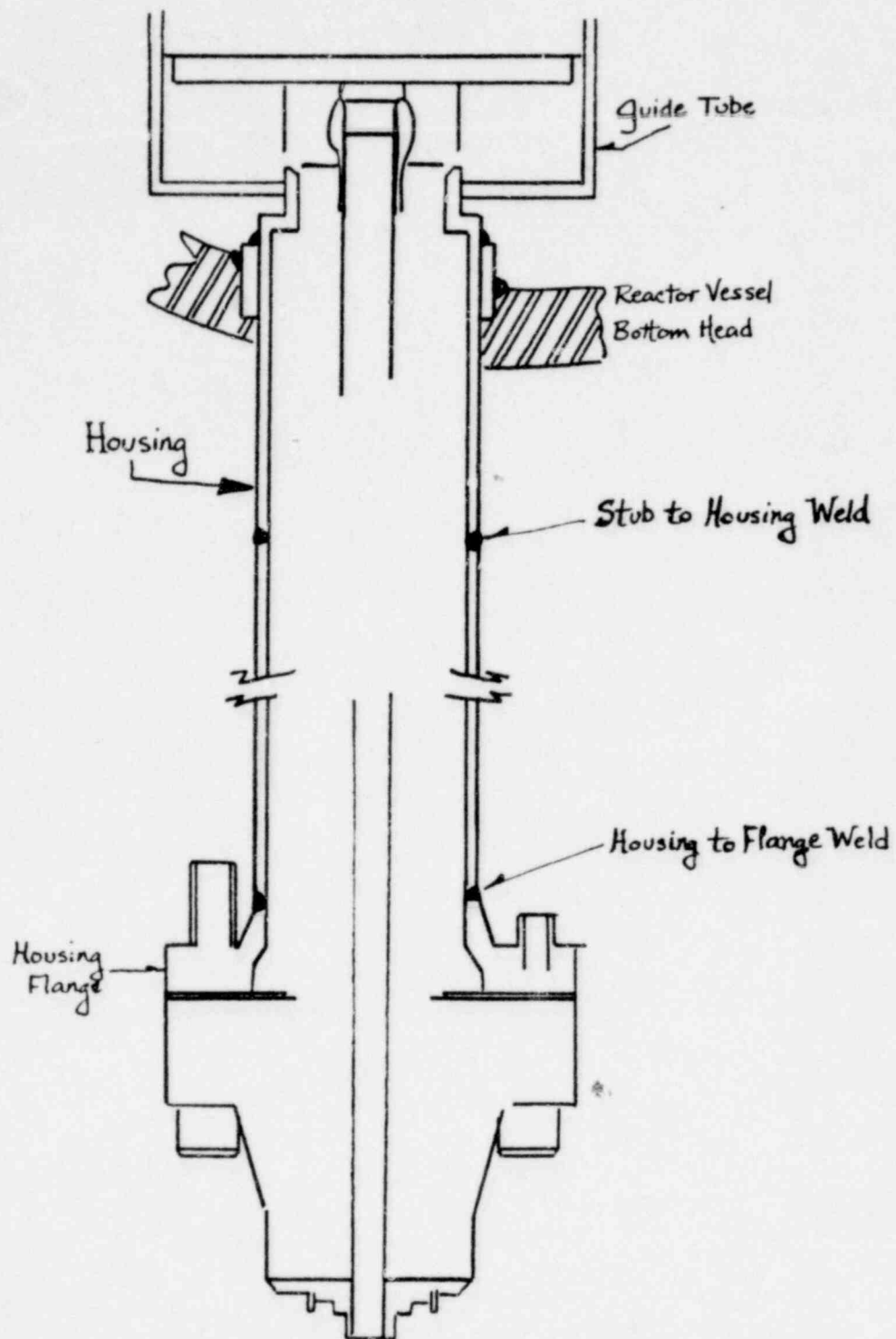
I - 115



CONTROL ROD DRIVE
LOCATIONS

DRWG. H-25

1277 338



CRD HOUSING

DRWG. H-26

1277 339

I - 117

RELIEF REQUEST BASIS

Numbers: B-1
B-2

NUMBER: B-1

COMPONENT: Longitudinal & Circumferential shell welds in Core
Beltline Region.

CATEGORY: B-A

CLASS: 1

TEST REQUIREMENT: Volumetric

BASIS FOR RELIEF: Welds are inaccessible due to vessel insulation/
bio-shield configuration. Approximately 8 1/2" from outside of
insulation to inner shield wall. Insulation is approximately 4"
thick and 1" from vessel wall. Access to insulation for removal
is through nozzle ports (away from beltline region).

ALTERNATE TESTING: Vessel hydrostatically tested before start-up
after each refueling outage.

[Refer to Mirror Insulation Print 500299002C]

NUMBER: B-2

COMPONENT: Circumferential and Meridian Seam Welds on Bottom Head

CATEGORY: B-B

CLASS: 1

TEST REQUIREMENT: Volumetric

BASIS FOR RELIEF: Bottom Head is inaccessible due to mirror insulation
configuration. Insulation rests above a steel support frame under
the bottom head. CRD penetration protruding down through framework
also limits access to head.

ALTERNATE TESTING: Vessel is hydrostatically tested before start-up
after each refueling outage.

RELIEF REQUEST BASIS

Numbers: B-3
B-4

NUMBER: B-3

COMPONENT: Primary nozzle to vessel weld. Nozzle N-15

CLASS: 1

FUNCTION: Vessel drain nozzle

TEST REQUIREMENT: Volumetric

BASIS FOR RELIEF: Nozzle N-15 is located just off the center of the bottom head. N-15 is inaccessible due to mirror insulation configuration and the nozzle's location amidst a forrest of control rod drives.

ALTERNATE TESTING: This nozzle is included as an instrument line and is visually inspected for leakage during the vessel hydro every refueling outage.

NUMBER: B-4

COMPONENT: Integrally welded supports

CATEGORY: B-K-1

CLASS: 1

TEST REQUIREMENT: Volumetric

BASIS FOR RELIEF: Supports are attached by partial penetration welds

ALTERNATE TESTING: Surface and visual exams will replace volumetric.

1277 341

RELIEF REQUEST BASIS

Numbers: B-5
B-6

NUMBER: B-5

COMPONENT: Valve Bodies

CATEGORY: B-M-2

CLASS: 1

TEST REQUIREMENT: Visual

BASIS FOR RELIEF: Disassembling a valve for the sole purpose of performing a visual inspection imposes an undue burden on the plant and may increase the probability of valve failure.

ALTERNATE TESTING: Valve bodies shall be inspected if and when valves are disassembled for maintenance or other purposes.

NUMBER: B-6

COMPONENT: P-18-1A & P-18-1B (pump casings)

CATEGORY: B-L-2

CLASS: 1

TEST REQUIREMENT: Visual

BASIS FOR RELIEF: Disassembly of the pump for the sole purpose of visual examination of the casing imposes an undue burden on the plant and may increase the probability of pump failure.

ALTERNATE TESTING: Pump casings will be inspected if and when the pumps are disassembled.

1277 342

RELIEF REQUEST BASIS

Numbers: B-7

NUMBER: B-7

COMPONENT: Piping to fitting welds

CATEGORY: B-F; B-J & C-F; C-G

CLASS: 1 & 2

FUNCTION: Circumferential weld joints between piping and valves,
elbows, reducers, etc.

TEST REQUIREMENT: Volumetric

BASIS FOR RELIEF: Ultrasonic examination can be performed from
the pipe side of the weld only. Geometries of the fittings
prohibit meaningful ultrasonic results.

ALTERNATE TESTING: Acceptable test results from the pipe side of
the weld and base metal.

1277 343

RELIEF REQUEST BASIS

Numbers: B-8

NUMBER: B-8

COMPONENT: Reactor vessel integrally welded supports

CATEGORY: B-H

CLASS: 1

TEST REQUIREMENT: Volumetric

BASIS FOR RELIEF: The reactor vessel skirt is uninspectable for two primary reasons.

1. The covering mirror insulation is structured in a manner that is not removable since there are many support members and locked, interconnecting insulation pieces. The weld is available only through a removable inspection panel that is nine feet below, with 8-1/2" of parallel wall clearance between weld and insulation.
2. Radiation levels inside the bio-shield wall, against the bottom head are 1-10 r/hr. Estimated personnel exposures would be 10-100 M/rem during the insulation removal, inspection and insulation replacement process.

The reactor vessel stabilizer brackets are attached with vee-prep fillet-type welds. An ultrasonic inspection of these welds would not be useful. The bottom side of the stabilizer weld is inaccessible due to its location at the top of the bio-shield wall.

ALTERNATE TESTING: The upper portion of each stabilizer shall be visually and surface inspected each inspection interval.

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Item	Category	No. in Category	Number and % Required			Comments
			1st Interval Periods 1 & 2 -each (Tech. Spec.)	Period 3 (ASME Sum. 75)	Subsequent Intervals	
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	Bushing, 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	114 405	0 0	10 17	29 51	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 3	0 0	0 0	0 1	Branch connections will be ultrasonically inspected from main line only. See RR B-7
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	94	0	32	94	
C2.6	C-E-2	193	0	64	193	See comment B4.10

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II - 1

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)		
C3.1	C-F C-G	0	0	0	0	
C3.2	C-D	90	0	Vis: 30 bolts NDE: 3 bolts	Vis: 90 bolts NDE: 9 bolts (at least 2 from each joint)	See comment of Item C1.4
C3.3	C-E-1	2	0	1	2	
C3.4	C-E-2	0	0	0	0	
C4.1	C-F C-G	0	0	0	0	
C4.2	C-D	194	0	Vis: 65 bolts NDE: 7 bolts	Vis: 194 bolts NDE: 20 bolts (at least 2 from each joint)	See comment of Item C1.4

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

Hot Setting Cold Setting

Drawing No. Required Methods

INTERVAL 1 INTERVAL 2

Component:

MS-1C

	Type	Hot Setting	Cold Setting	Drawing No.	Required Methods	INTERVAL 1			INTERVAL 2		
						1	2	3	1	2	3
H-10	Spring	4730	4630	I-1C	Vis					X	
H-11	Rigid	-	-	I-1C	Vis			X			X
* H-128	Snubber	3 1/4	1 9/16	I-1C	Vis				X		
H-11A	Rigid	-	-	I-1C	Vis					X	
H-12	Rigid	-	-	I-1C	Vis			X			X
H-13	Rigid	-	-	I-1C	Vis				X		
H-20	Rigid	-	-	I-1C	Vis					X	
H-107	Rigid	-	-	I-1C	Vis			X			X
H-110	Rigid	-	-	I-1C	Vis				X		
H-119	Spring	5624	6434	I-1C	Vis					X	
H-14	Spring	4156	4030	I-1D	Vis			X			X
* H-129	Snubber	3 9/16	1 9/16	I-1D	Vis				X		
H-15	Rigid	-	-	I-1D	Vis					X	
H-16	Rigid	-	-	I-1D	Vis			X			X
H-17	Rigid	-	-	I-1D	Vis				X		
H-18	Rigid	-	-	I-1D	Vis					X	
H-19	Rigid	-	-	I-1D	Vis			X			X
H-21	Rigid	-	-	I-1D	Vis				X		
H-108	Rigid	-	-	I-1D	Vis					X	
H-112	Rigid	-	-	I-1D	Vis			X			X

MS-1D

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ITEM NO: C2.6		CATEGORY: C-E-2		Drawing Required		INTERVAL 1						INTERVAL 2		
Component:	Type	Hot Setting	Cold Setting	No.	Methods	INTERVAL 1						INTERVAL 2		
						1	2	3	1	2	3	1	2	3
MS-1D (cont'd)	Spring	5462	6272	I-1D	Vis								X	
MS-2A	Spring	2744	2969	I-1A	Vis			X						X
	Rigid	-	-	I-1A	Vis				X					
MS-2B	Spring	2658	2883	I-1B	Vis								X	
	Spring	3674	3874	I-1B	Vis			X						X
	Spring	2695	2770	I-1B	Vis				X					
MS-2C	Spring	2652	2802	I-1C	Vis								X	
	Rigid	-	-	I-1C	Vis			X						X
MS-2D	Spring	4156	3956	I-1D	Vis				X					
	Spring	3789	3289	I-3	Vis								X	
HPCI-3	Rigid Sway	-	-	I-3	Vis			X						X
	Spring	3096	2796	I-3	Vis				X					
	Spring	849	811	I-3	Vis								X	
H-107	Rigid	-	-	I-3	Vis									X
H-108	Rigid Sway	-	-	I-3	Vis				X					
H-30	Rigid	-	-	I-4	Vis								X	
H-31	Rigid	-	-	I-4	Vis									X
HPCI Steam MS-4B	Rigid	-	-	I-2	Vis							X		
H-5	Spring	2161	2048	I-2	Vis								X	

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

Component:	Type	Hot		Cold Setting	Drawing No.	Required Methods	INTERVAL 1			INTERVAL 2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
		Setting	-				1	2	3	1	2	3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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ITEM NO: C2.6 CATEGORY: C-E-2

Hot Setting Cold Setting

Drawing Required
No. Methods

INTERVAL 1

INTERVAL 2

Component:

		INTERVAL 1			INTERVAL 2		
		1	2	3	1	2	3
H-18	Rigid Sway	-	-			X	
H-19	Rigid	-	-				X
H-20	Rigid Sway	-	-				X
H-27	Rigid	-	-			X	
H-28	Rigid	-	-				X
H-29	Rigid	-	-				X
H-30	Rigid Sway	-	-			X	
H-9	Rigid	-	-				X
H-10	Rigid	-	-				X
H-11	Rigid	-	-			X	
H-12	Rigid	-	-				X
H-13	Rigid Sway	-	-			X	
H-1	Rigid Sway	-	-			X	
H-2	Rigid Sway	-	-				X
H-14	Rigid	-	-				X
H-15	Rigid	-	-			X	
H-16	Rigid	-	-				X
H-17	Rigid	-	-			X	
H-31	Rigid	-	-			X	
H-32	Rigid	-	-				X

CRD - 5A

CRD - 6

CRD - 6A

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CRD - 7

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ITEM NO: C2.6

No.	Methods
1	1. Direct observation
2	2. Interview
3	3. Questionnaire
4	4. Focus group
5	5. Case study
6	6. Ethnography
7	7. Content analysis
8	8. Discourse analysis
9	9. Grounded theory
10	10. Narrative inquiry
11	11. Phenomenology
12	12. Participatory action research
13	13. Qualitative comparative analysis
14	14. Realist evaluation
15	15. Triangulation
16	16. Typology
17	17. Unstructured interview
18	18. Verbal protocol analysis
19	19. Visual methods
20	20. Other

Vis

Vis

Vis

Vis

Vis

Vis

Vis

Vis

Vis

Vie

I-7A	Vis
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I-7B	vis
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I-7B	Vis
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I-8	Vis
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I-8	Vis
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I-8	Vis
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I-8	Vis
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I-9	Vis
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I-10A	Vis
1	1
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92	92
93	93
94	94
95	95
96	96
97	97
98	98
99	99
100	100

Snubber	3-13/32
Rigid	-

Spring 10,300

Rigid	

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

Component:	Type	Hot Setting		Cold Setting		Drawing No.	Required Methods	INTERVAL 1			INTERVAL 2		
		Hot Setting		Cold Setting				1	2	3	1	2	3
RHR (Cont)													
RHR-3B H-82	Rigid	-		-		I-10B	Vis				X		
RHR-3C H-144	Spring	4566		4366		I-10A	Vis					X	
H-144A	Rigid	-		-		I-10A	Vis			X			X
H-144B	Rigid	-		-		I-10A	Vis				X		
H-197A	Snubber	3 11/32		3 3/8		I-10A	Vis					X	
H-197B	Snubber	3 5/32		3 1/8		I-10A	Vis			X			X
H-143	Sway	-		-		I-10R	Vis				X		
H-143A	Spring	4566		4366		I-10B	Vis					X	
H-143B	Rigid	-		-		I-10B	Vis			X			X
H-143C	Rigid	-		-		I-10B	Vis				X		
H-188	Snubber	3 3/32		3 1/8		I-10B	Vis					X	
H-152	Spring	4068		4368		I-11	Vis			X			X
H-151	Spring	4068		4368		I-11	Vis				X		
H-7	Rigid	-		-		I-12	Vis					X	
H-12	Spring	8520		9020		I-12	Vis			X			X
H-14	Spring	7191		6816		I-12	Vis				X		
H-156	Rigid	-		-		I-12	Vis					X	
H-156A	Rigid	-		-		I-12	Vis			X			X
H-18	Rigid	-		-		I-13	Vis				X		
H-19	Spring	7291		7854		I-13	Vis					X	

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C--2

CATEGORY: C--2

C2.6

ITEM NO:

Cold

Hot

Setting

Setting

Type

Drawing No.

Required Methods

Component:

Interval 1

Interval 2

RHR-7 (cont)

Component:	Type	Hot Setting	Cold Setting	Drawing No.	Required Methods	INTERVAL 1			INTERVAL 2		
						1	2	3	1	2	3
H-19A	Rigid	-	-	I-13	Vis			X			X
H-24	Rigid	-	-	I-13	Vis				X		
H-154B	Rigid	-	-	I-13	Vis					X	
RHR-8 H-15	Spring	12,387	12,054	I-14	Vis			X			X
H-16	Rigid	-	-	I-14	Vis				X		
H-17	Rigid	-	-	I-14	Vis					X	
H-190	Rigid Sway	-	-	I-14	Vis			X			X
RHR-9 H-84	Spring	2795	3195	I-15	Vis				X		
H-84A	Rigid	-	-	I-15	Vis					X	
H-85	Spring	2662	3112	I-15	Vis			X			X
H-86	Spring	2910	3286	I-15	Vis				X		
H-87	Rigid Sway	-	-	I-15	Vis					X	
H-88	Spring	3079	3304	I-15	Vis			X			X
H-192	Rigid Sway	-	-	I-15	Vis				X		
H-194	Rigid Sway	-	-	I-15	Vis					X	
RHR-10 H-30	Rigid	-	-	I-15	Vis			X			X
* H-193	Snubber	3 3/16	3 5/16	I-15	Vis				X		
H-193A	Spring	4614	5019	I-15	Vis					X	
RHR-12 H-38	Spring	2438	2607	I-16	Vis			X			X
H-39	Spring	2388	2275	I-16	Vis				X		

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ITEM NO: C2.6

CATEGORY: C-E-2

Component:

Type

Hot
SettingCold
SettingDrawing
No.Required
Methods

INTERVAL 1

INTERVAL 2

		INTERVAL 1			INTERVAL 2		
		1	2	3	1	2	3
RHR-14	CS-H-87	Rigid Sway	-	-			
	H-99	Spring	2879	3179	I-16	Vis	
	H-100	Spring	2073	2186	I-16	Vis	X
	H-100B	Rigid	-	-	I-16	Vis	
	H-35	Spring	3243	3843	I-16	Vis	X
	CS-H-86A	Snubber	3 17/32	3 1/4	I-16	Vis	
	CS-H-86B	Snubber	3 1/32	2 11/16	I-16	Vis	X
	H-98A	Rigid	-	-	I-16	Vis	X
	H-27	Spring	3253	3553	I-15	Vis	
	H-28	Spring	4170	4570	I-15	Vis	X
	H-36	Spring	3783	4283	I-16	Vis	X
	H-1	Rigid	-	-	I-7B	Vis	
	H-8	Rigid	-	-	I-17	Vis	X
	H-8A	Rigid	-	-	I-17	Vis	X
	H-10A	Rigid	-	-	I-17	Vis	
	H-10B	Rigid	-	-	I-17	Vis	X
	H-120	Rigid	-	-	I-17	Vis	X
	H-122A	Rigid	-	-	I-17	Vis	
	H7B	Rigid	-	-	I-12	Vis	X

* I *

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

Drawing Required
No. MethodsHot Cold
Setting Setting

Component:

Type

Setting

Setting

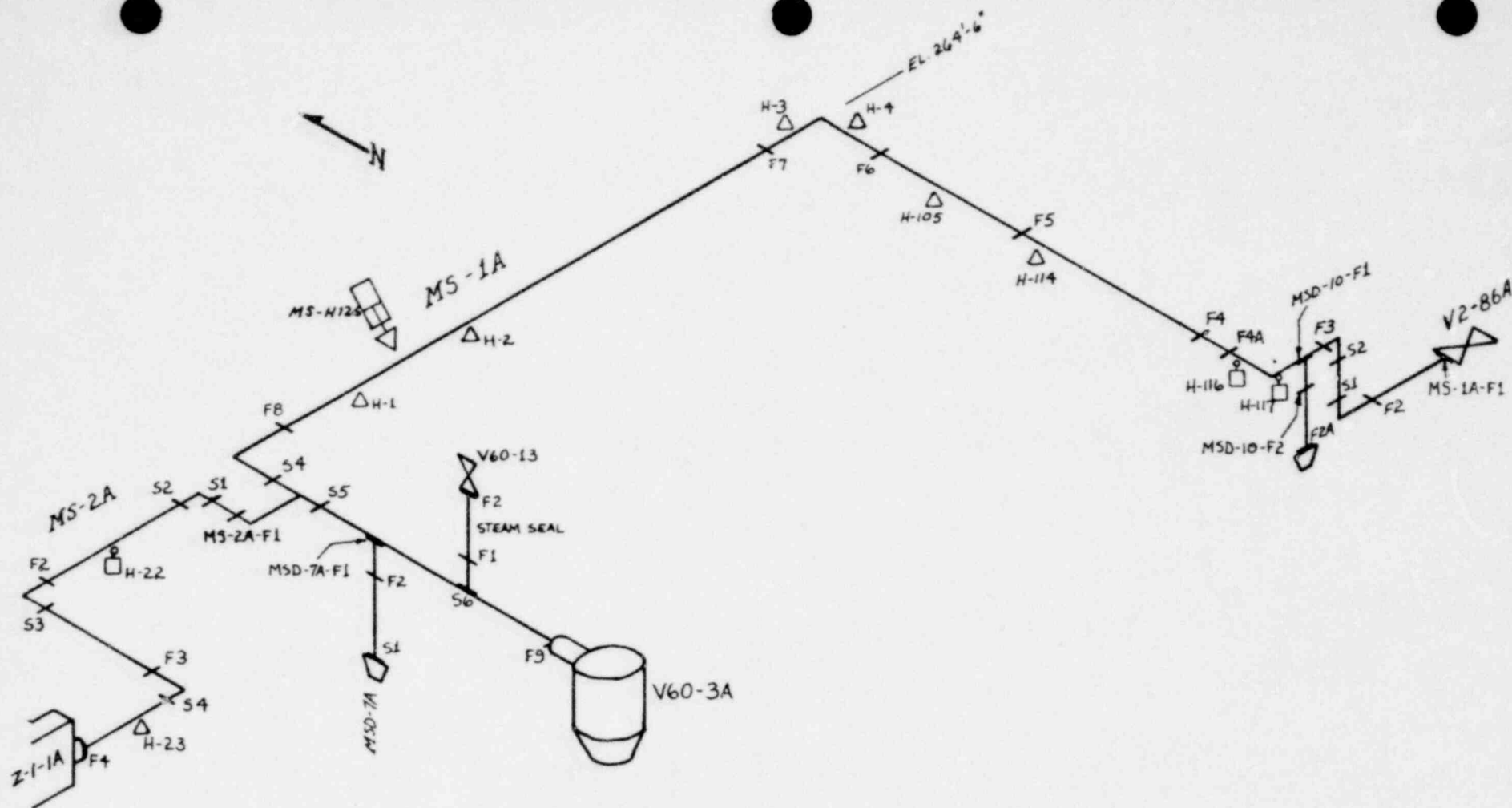
Core Spray

INTERVAL 1

INTERVAL 2

		INTERVAL 1			INTERVAL 2		
		1	2	3	1	2	3
CS-2A	H-3	Rigid	-	-	I-6A	Vis	
	H-4	Rigid	-	-	I-6A	Vis	
	H-5	Rigid	-	-	I-6A	Vis	
	H-48	Rigid	-	-	I-6A	Vis	
	H-49	Rigid Sway	-	-	I-6A	Vis	
	H-51	Spring	2038	2544	I-6A	Vis	
	H-89	Rigid Sway	-	-	I-6A	Vis	
CS-2B	H-8A	Rigid	-	-	I-6B	Vis	
	H-9	Rigid	-	-	I-6B	Vis	
	H-10	Rigid	-	-	I-6B	Vis	
	H-42	Rigid Sway	-	-	I-6B	Vis	
	H-43	Rigid	-	-	I-6B	Vis	
	H-44	Spring	4044	4444	I-6B	Vis	
	H-56	Rigid Sway	-	-	I-6B	Vis	
	H-86	Rigid Sway	-	-	I-6B	Vis	
*	H-85	Snubber	3 3/32	3 1/32	I-6B	Vis	
CS-3A	H-47	Rigid	-	-	I-6A	Vis	
CS-3B	H-41	Rigid	-	-	I-6B	Vis	

1277.356



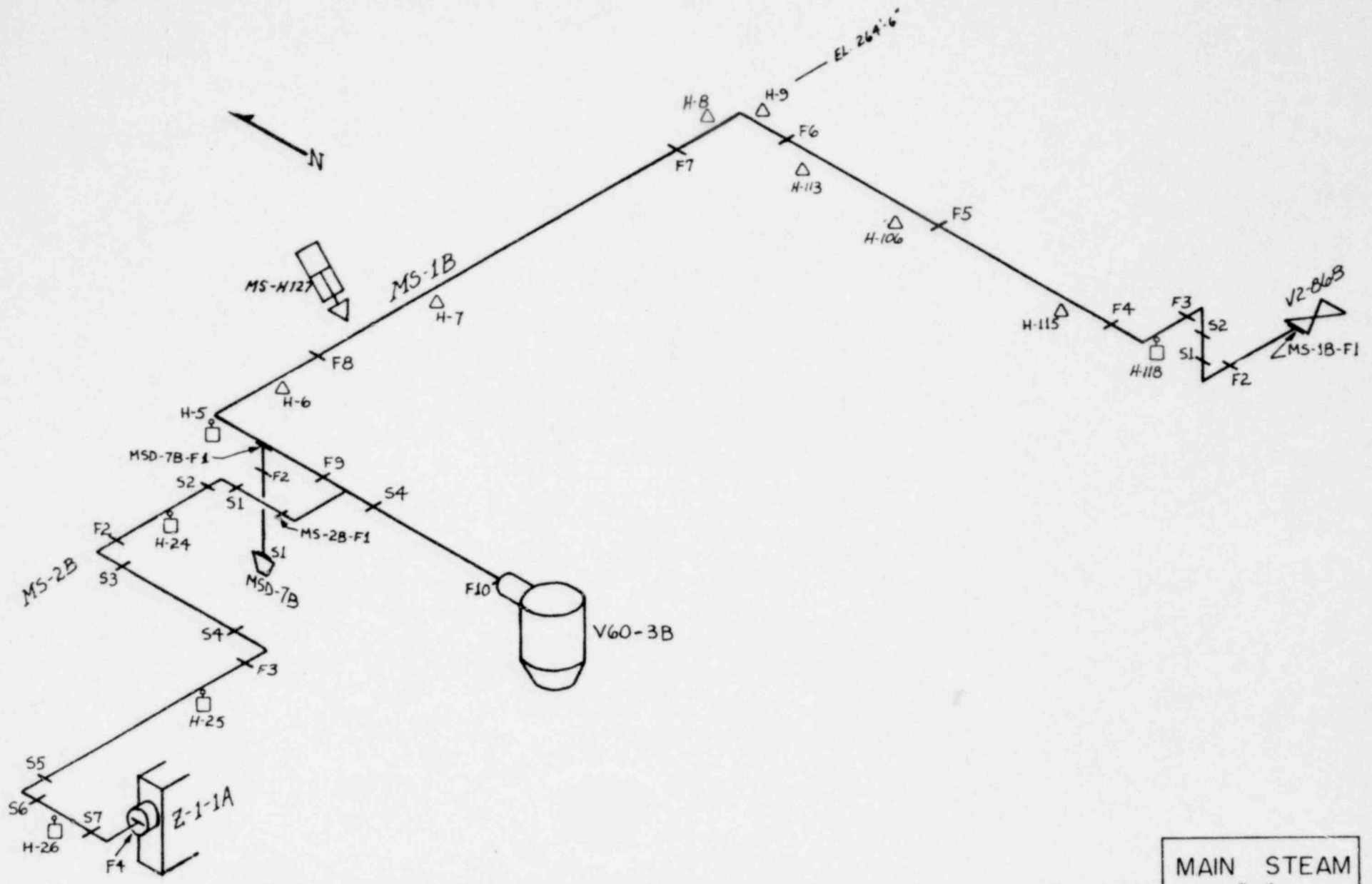
MAIN STEAM
"A"
DRWG. I-1A

REFER. DRWG. 5920-FS-I-1, 1B, 2, 3

1277.357
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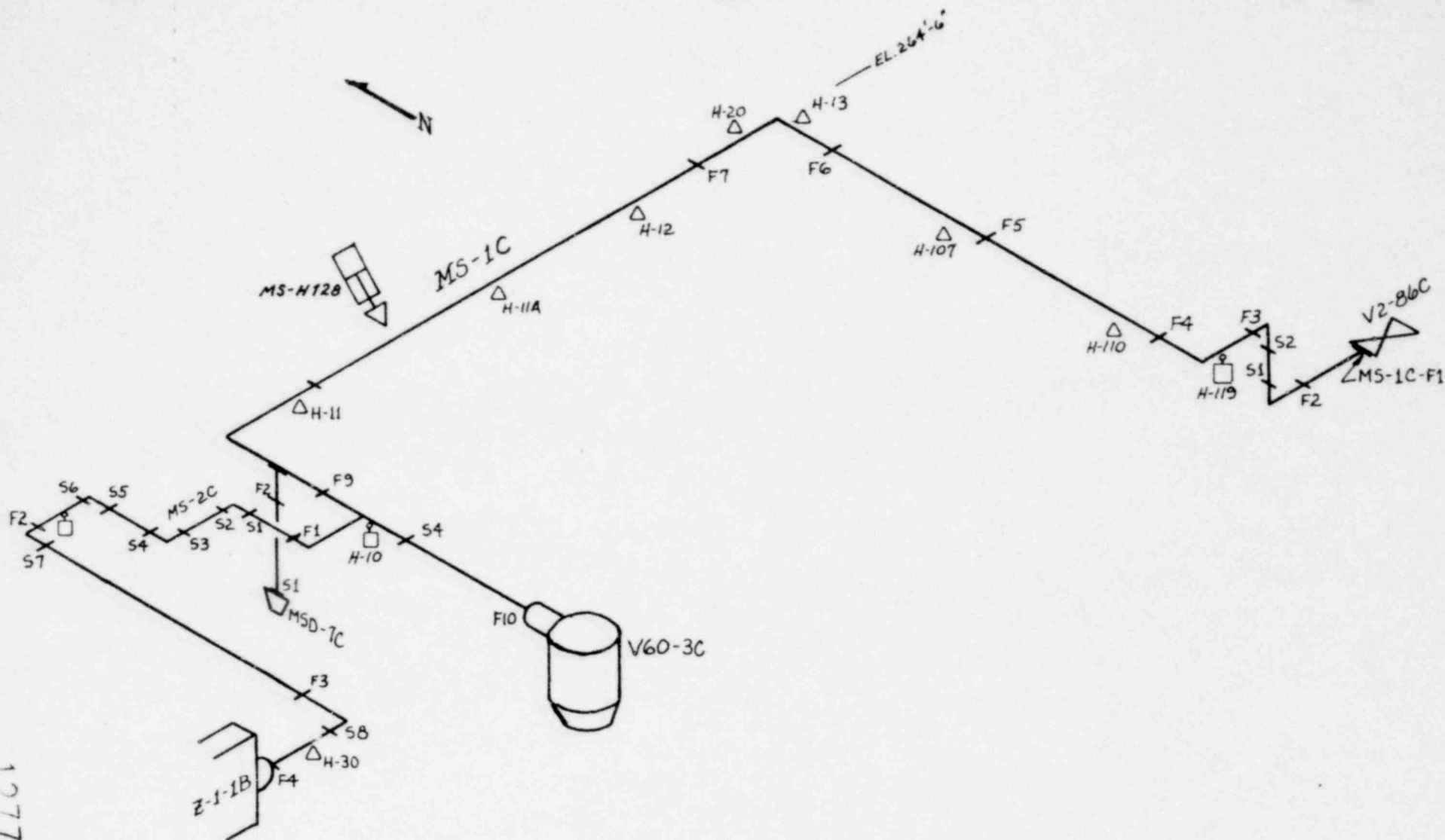
1277.358

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MAIN STEAM
"B"
DRWG. I-1B

REFER. DRWG. 5920-FS-I-1, 1B, 2, 3

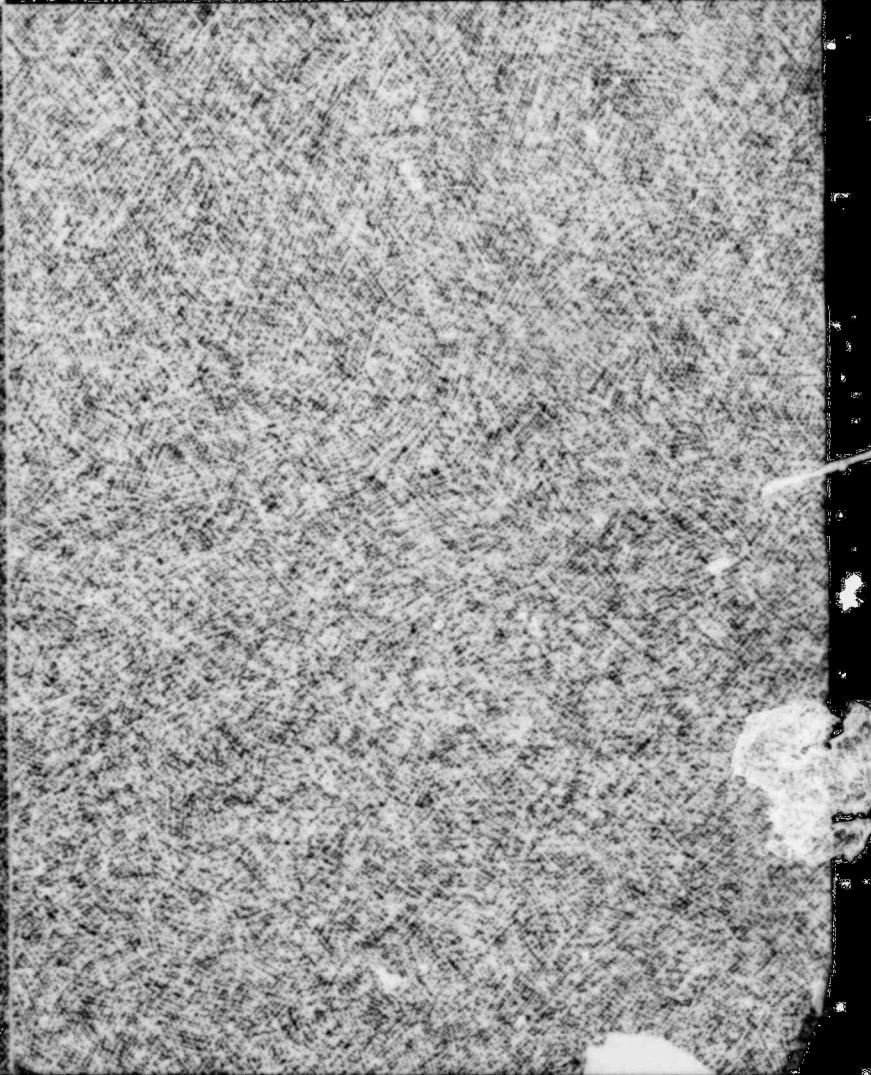
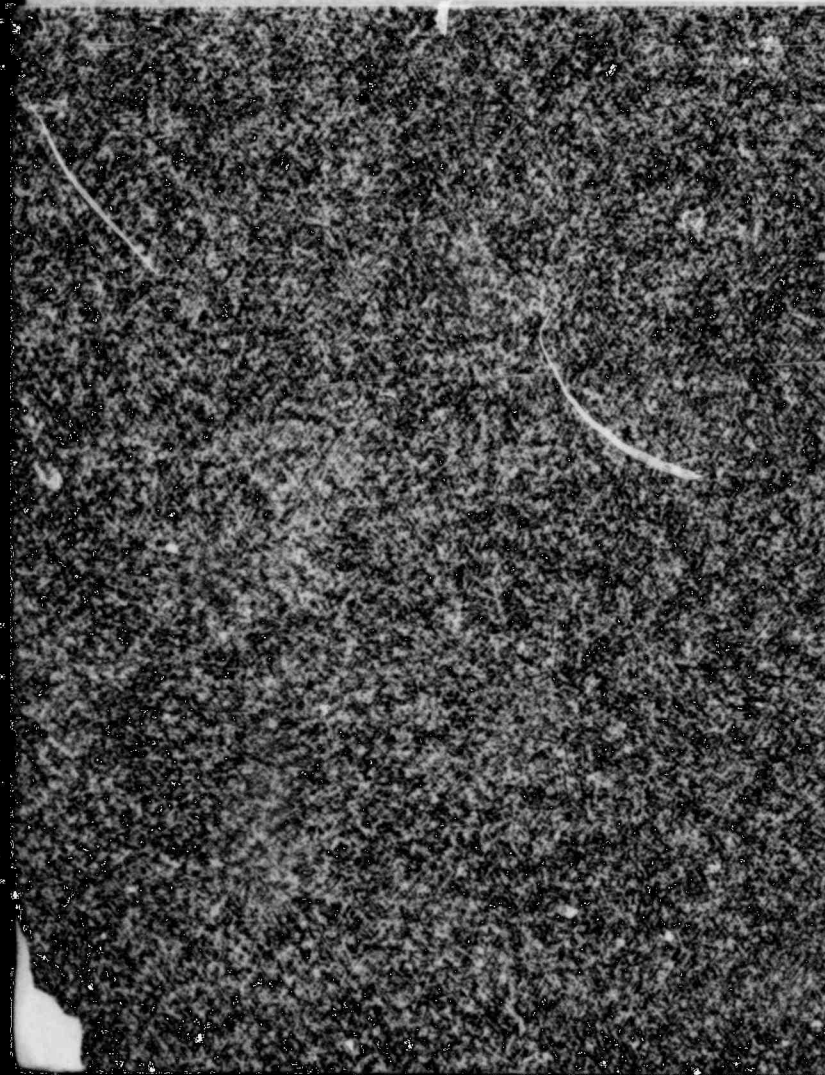
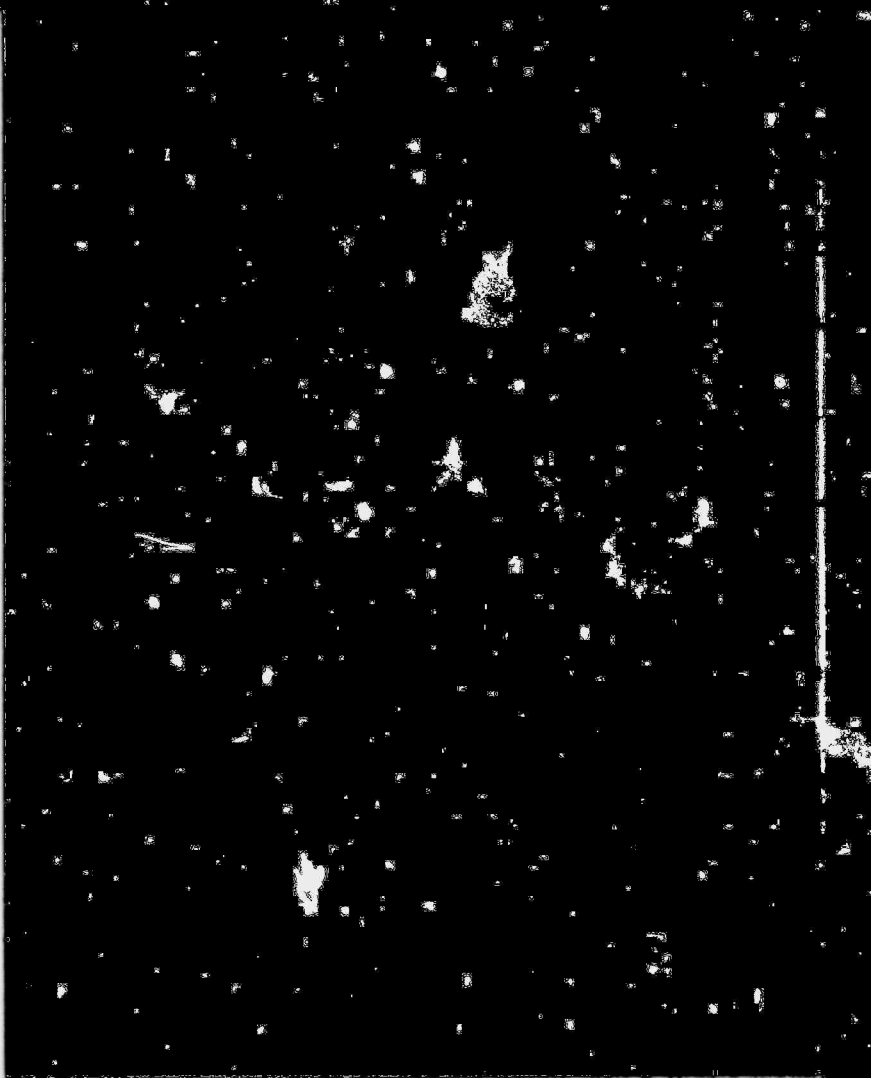
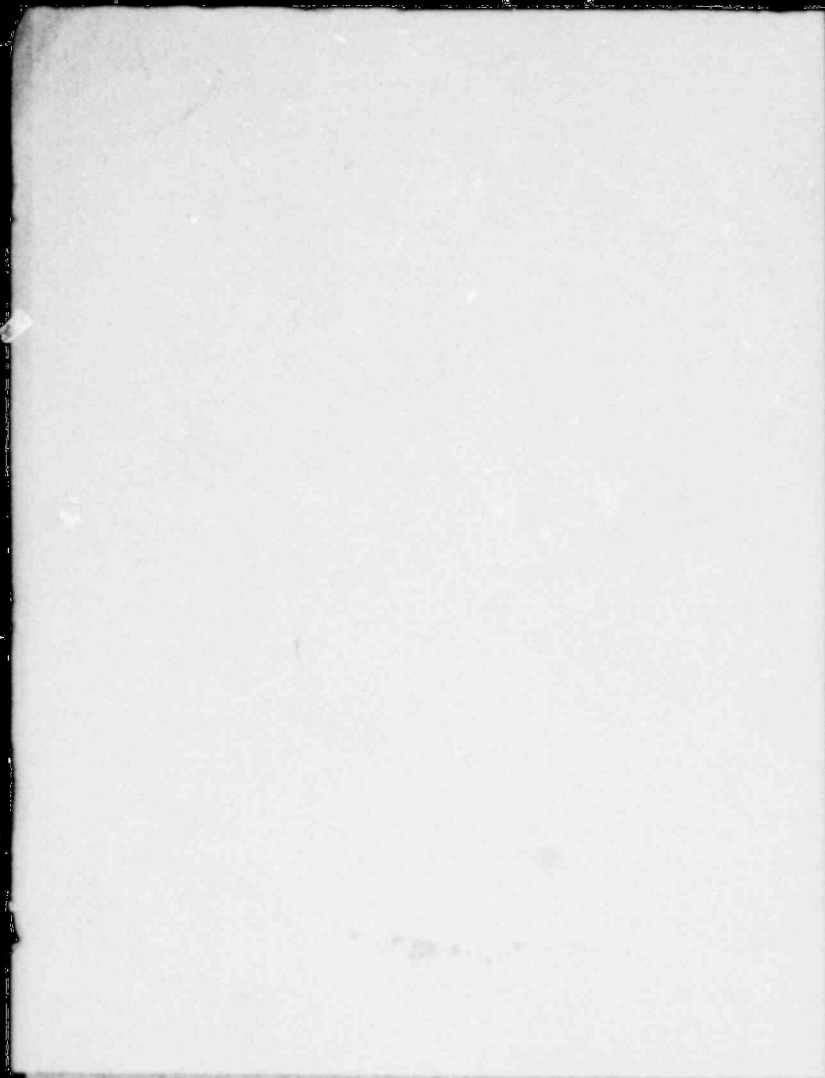


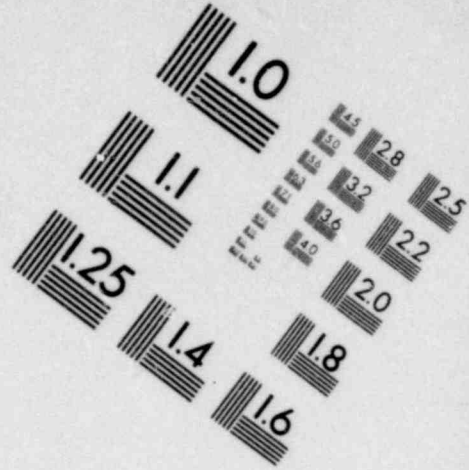
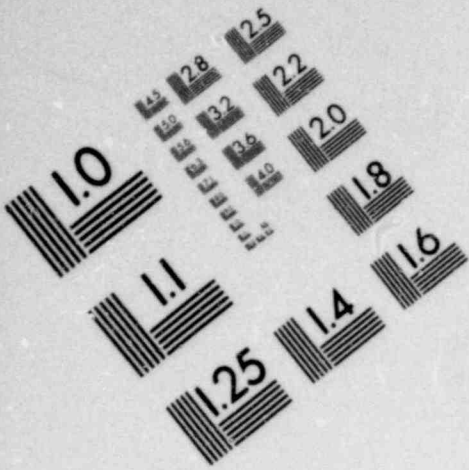
MAIN STEAM
"C"
DRWG. I-IC

REFER. DRWG. 5920-FS-I-1, IB, 2, 3

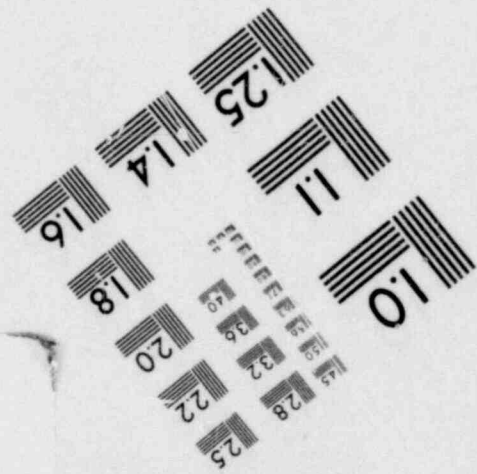
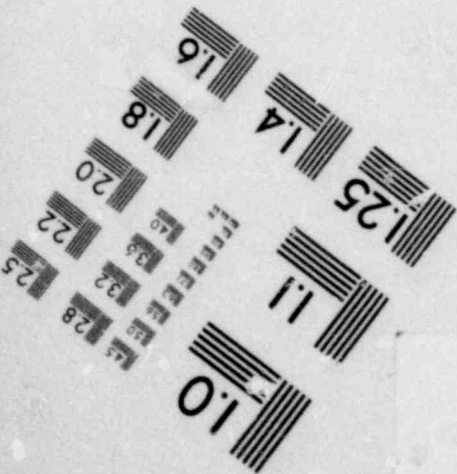
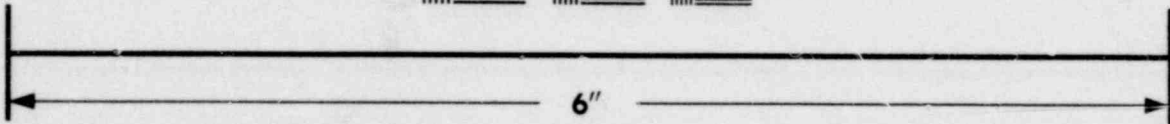
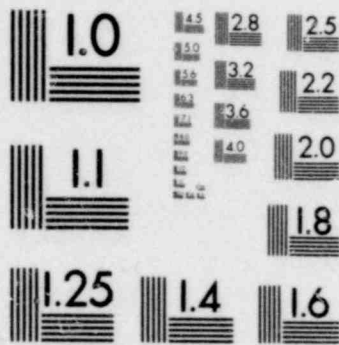
1277 359

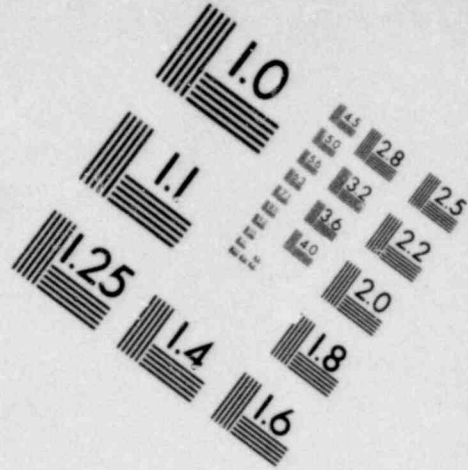
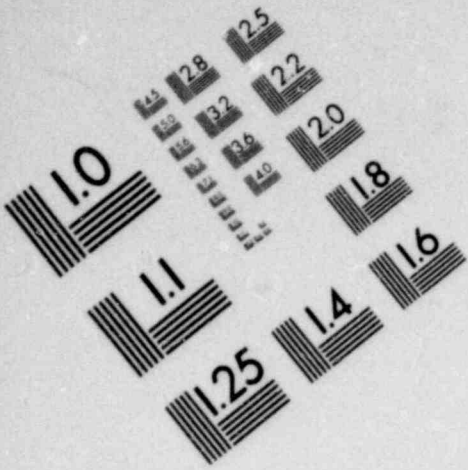
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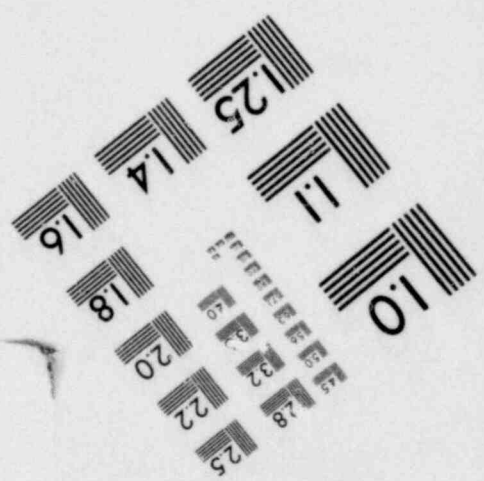
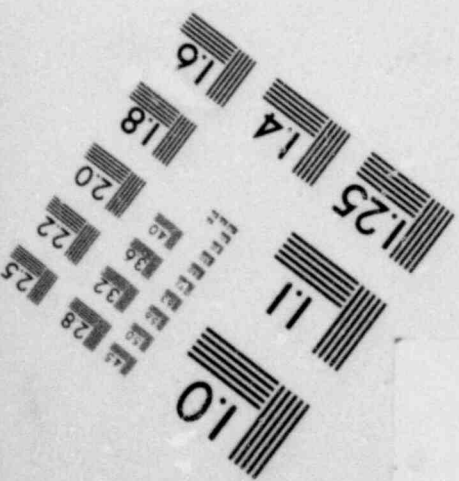
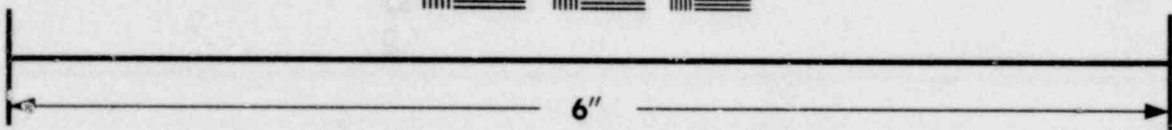
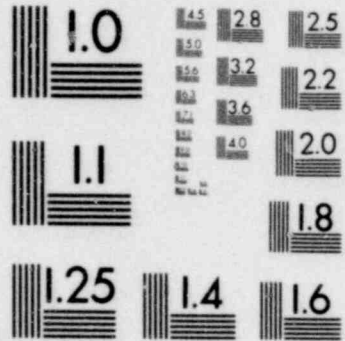


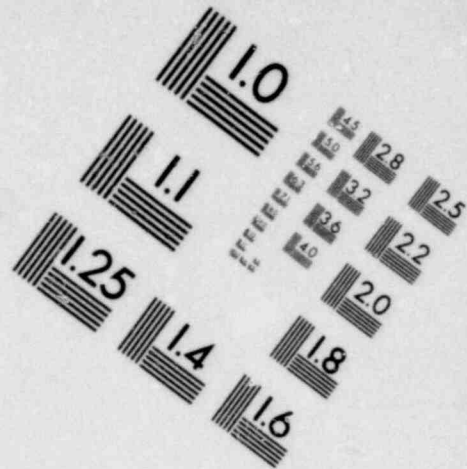
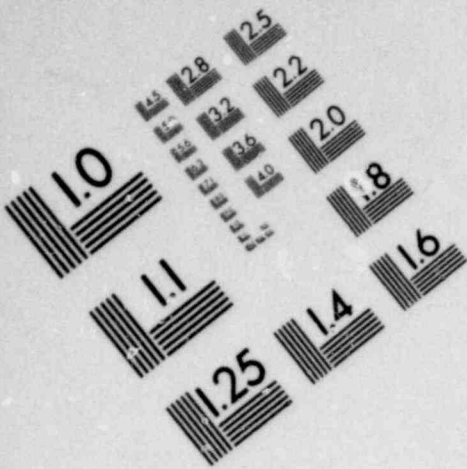
**IMAGE EVALUATION
TEST TARGET (MT-3)**



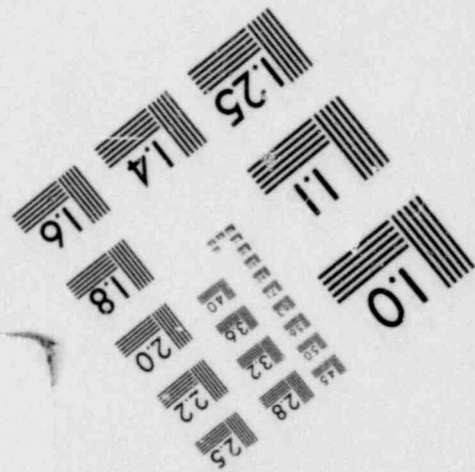
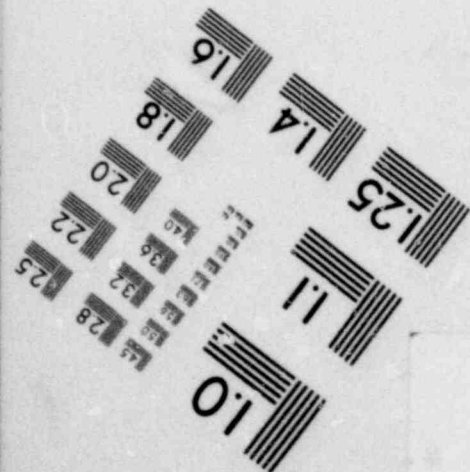
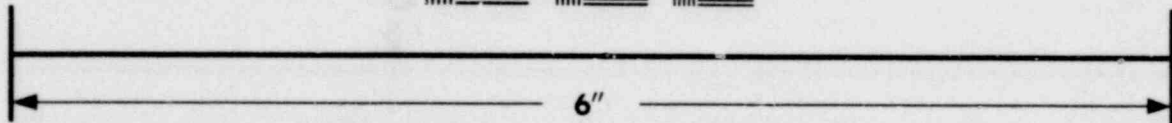


**IMAGE EVALUATION
TEST TARGET (MT-3)**



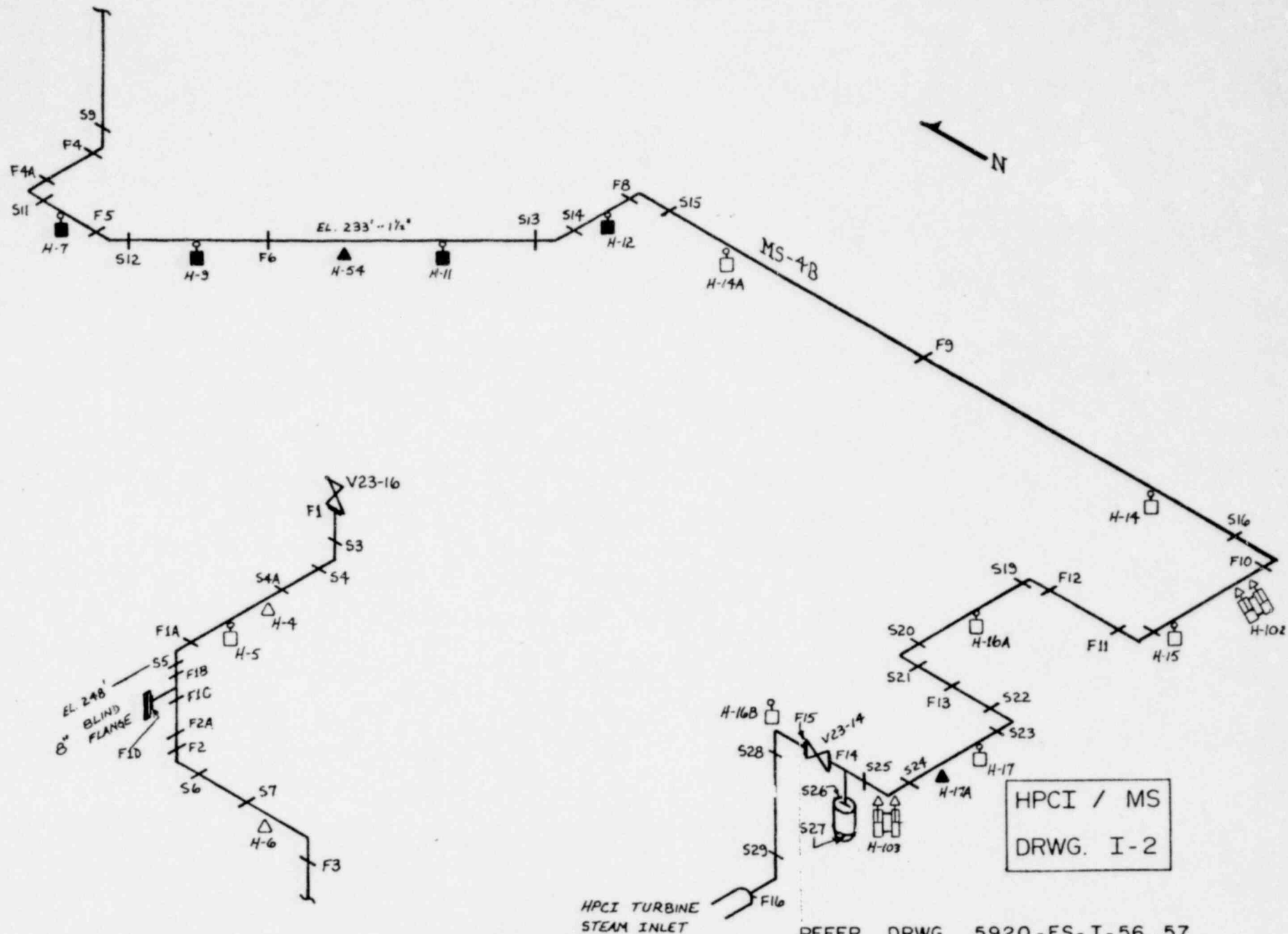


**IMAGE EVALUATION
TEST TARGET (MT-3)**



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Rev. 2



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

RELIEF REQUEST BASIS

Numbers: C-1

NUMBER: C-1

COMPONENT: RHR Heat Exchangers' Nozzle Welds

CATEGORY: C-B

CLASS: 2

TEST REQUIREMENT: Volumetric

BASIS FOR RELIEF: Nozzle design configuration prohibits useful

volumetric examination of the nozzle welds since the weld is 100% covered
by a reinforcement saddle. Refer to detail "A" of drawing I-20.

ALTERNATE TESTING: Surface and visual examinations shall be performed
on the reinforcement saddle-to-nozzle and reinforcement saddle-to-
vessel welds.

1278 002

RELIEF REQUEST BASIS

Numbers: H-9
H-10

NUMBER: H-9

SYSTEM: Sampling

LINE(S): 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 valves are tested during the 44 psig Type A test. Other portions are in a normally operating condition. Flow meters detect any integrity problems.

NUMBER: H-10

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.) Any leakage from this line would show as flow to the fuel pool cooling system.

1278 003

Rev. 2
H - 25

RELIEF REQUEST BASIS

Numbers: H-11
H-12

NUMBER: H-11

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.

NUMBER: H-12

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.

1278 004

INSERVICE OPERABILITY TESTING PROGRAM FOR VALVES

All safety related valves that are necessary to safely shutdown the plant or mitigate the consequences of an accident, will be tested in accordance with the Inservice Inspection Program. The valves have been separated into five major categories which specify the required tests as follows:

Category A - Valves for which seat leakage is limited to a specific maximum amount in the closed position for fulfillment of their function. (IWV - 2400 and IWV - 3420.)

Tests:

Q - Exercise the valve to the position required to fulfill its function every 3 months.

MT - Measure stroke time at the same frequency of the valve exercise (not more often than 3 months).

LT - Leak test the valves every refueling outage.

Category B - Valves for which seat leakage in the closed position is inconsequential for fulfillment of their function. (IWV - 3400)

Tests:

Q - Exercise the valve to the position required to fulfill its function every 3 months.

MT - Measure stroke time at the same frequency of the valve exercise (not more often than 3 months).

Category C - Valves which are self-actuating in response to some system characteristic, such as pressure (relief valves)

1278 005

or flow direction (check valves). (IWV - 3500)

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)

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.

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OTHER SYMBOLS USED IN THE FOLLOWING TABLES

Test Requirements:

- LTJ - Leak Rate Test, documentation and analysis will be completed in accordance with 10 CFR 50, Appendix J.
- RR - Exercise valve for operability every refueling outage.
- CS - Exercise valve for operability every cold shutdown.
- M - Valve will be exercised monthly.
- L - Other leak test.

Valve Types:

- GA - Gate valve
- GL - Globe valve
- CK - Check valve
- EFC - Excess flow check valve
- RV - Relief or safety valve
- RD - Rupture disk
- BF - Butterfly valve
- BL - Ball valve

Actuator Types:

- | | |
|------------------------|-------------------------|
| AO - Air operator | M - Manual |
| MO - Motor operator | EXP - Explosive |
| SO - Solenoid operator | HO - Hydraulic operator |

Relief Request Bases to section IWV are found in the back portion of this section.

NOTE: Relief Request Bases GV-1, GV-2 and GV-3 apply generally to subsection IWV.

1278 007

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-1D		X				28	GA	MO	O	MT	Q	CS	See RRB - V8
V2-54A/B	1	N-1C 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	-	-	See Note 2
RV2-71A/B	1	D,F,G H-8		X	X			6x10	RV	-	C	SRV	Q	RR	See RRB - V9 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
2-3-23	2	C-3	X		X			1	EFC	-	O	LT	CV	RR	See RRB - V12
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		X			1	EFC	-	O	LT	CV	RR	See RRB - V12

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2

SYSTEM: Core Spray System

DRAWING NO. : G-191168

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								
V14-8A/B	2	K-12 L-14					X	12	GA	M	LC	ET	-	-	
V14-10A/B	2	I-11, 14			X			8	CK	-	C	CV	-	-	
V14-11A/B	2	C,G-9		X				8	GA	MO	O	Q MT	-	-	
V14-12A/B	2	C,G-8		X				8	GA	MO	C	Q MT	-	-	
V14-13A/B	2	D,G-6			X			8	CK	-	C	-	CV	CS	See RRB - V13
V14-14A/B	2	E,F-5					X	8	GA	M	LO	ET	-	-	
V14-26A/B	2	E,F-10		X				8	GL	MO	C	Q MT	-	-	
V14-30A/B	2	E,F-7					X	1	GL	M	LC	ET	-	-	
14-31A/B	2	E,F-7	X		X			1	EFC	-	O	LT	CV	RR	See RRB - V14
V14-5A/B	2	E-12, 14		X				3	GA	MO	O	Q MT	-	-	

1278 015

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2

Rev

SYSTEM: High Pressure Coolant InjectionDRAWING NO. : G-191169 Sht. 1

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								
V23-14	2	H-16		X				10	GA	MO	C	Q MT	-	-	
V23-15	1	E-5	X					10	GA	MO	O	MT	Q LT	CS LTJ	See RRB - V15, V16
V23-16	1	E-7	X					10	GA	MO	O	MT	Q LT	CS LTJ	See RRB - V15, V16
V23-17	2	D-11		X				14	GA	MO	O	MT	Q	CS	See RRB - V16
V23-18	2	H-6			X			14	CK	-	C	-	CV	CS	See RRB - V17
V23-19	2	H-6		X				14	GA	MO	C	MT	Q	CS	See RRB - V16
V23-20	2	H-7		X				14	GA	MO	O	MT	Q	CS	See RRB - V16
V23-21	2	F-7		X				10	GL	MO	C	Q MT	-	-	
V23-57	2	G-11		X				16	GA	MO	C	Q MT	-	-	
V23-58	2	N-5		X				16	GA	MO	C	Q MT	-	-	
V23-65	2	K-4			X			20	CK	-	C	-	CV	CS	See RRB - V18
SSC-23-12	2	K-4			X			20	CK	-	C	-	CV	CS	See RRB - V18
SL23-37A-D	2	F,G-5	X		X			1	EFC	-	O	LT	CV	RR	See RRB - V19
V23-61	2	N-7			X			16	CK	-	C	-	CV	CS	See RRB - V20
V23-32	2	F-11			X			14	CK	-	C	-	CV	CS	See RRB - V18
V23-25	2	G-9		X				4	GL	MO	C	MT	-	CS	See RRB - V16

1978 016

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Rev
2

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	L								
V10-9	2	L-2					X	8	GA	M	O	ET	-	-	
V10-17	1	G-8	X					20	GA	MO	C	Q MT	LT	-	See RRB - V25
V10-18	1	F-8	X					20	GA	MO	C	Q MT	LT	-	See RRB - V25
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	O MT	LT	-	See RRB - V25
V10-32	1	C-8	X					4	GA	MO	C	Q MT	LT	-	See RRB - V25
V10-33	1	B-8	X					4	GA	MO	C	Q MT	LT	-	See RRB - V25
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

1278 020

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2

Rev

SYSTEM: Reactor Core Isolation CoolingDRAWING NO. : G-191174 Sht. 1

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								
V13-15	1	D-7	X					3	GA	MO	O	MT	Q LT	CS LTJ	See RRB - V29, V30
V13-16	1	D-9	X					3	GA	MO	O	MT	Q LT	CS LTJ	See RRB - V29, V30
V13-18	2	E-14		X				6	GA	MO	O	MT	Q	CS	See RRB - V30
V13-20	2	G-10		X				4	GA	MO	O	MT	Q	CS	See RRB - V30
V13-21	2	G-9		X				4	GA	MO	C	MT	Q	CS	See RRB - V30
V13-22	2	G-9			X			4	CK	-	C	-	CV	CS	See RRB - V31
V13 - 30	2	E-10		X				4	GL	MO	C	Q MT	-	-	
V13-39	2	F-13		X				6	GA	MO	C	Q MT	-	-	
V13-41	2	N-10		X				6	GA	MO	C	Q MT	-	-	
V13-50	2	K-7			X			8	CK	-	C	CV	-	-	
SSC13-9	2	K-7			X			8	CK	-	C	CV	-	-	
SL13-55 A-D	2	B-8	X		X			1	EFC	-	O	LT	CV	RR	See RRB - V32
V13-27	2	I-11		X				2	GL	MO	C	MT	Q	CS	See RRB - V30
V13-19	2	E-14			X			6	CK	-	C	CV	-	-	
V13-40	2	N-11			X			6	CK	-	C	-	C	CS	See RRB - V33

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Rev 2

SYSTEM: Reactor Core Isolation Cooling DRAWING NO. : G-191174 Sht. 2

DRAWING NO. : G-191174 Sht. 2

[illegible]

1278 023

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Rev
2

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 7
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
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
V36-19-12A/B	2	K,M-16	X		X			20	CK	-	C	CV	LT	LTJ	See RRB - V36, Note 8
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
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:

REMARKS

[illegible]

1278 025

DRAWING NO. : G-191177 Sht. 1

Radwaste System

SYSTEM:

[illegible]

1278 026

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Rev
2

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/B	2	J-4, 12	X		X			1	EFC	-	O	LT	CV	RR	See RRB - V44
2-3-23A/B	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

1278 029

V - 25

2

Rev

Relief Request Basis

NUMBER: V1

SYSTEM: Recirculation pump

VALVE: 2-2-7A/B, 2-2-8A/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: V2

SYSTEM: Instrument and Service Air

VALVE: V72-37A/B V72-103A/B

CATEGORY: A,C

CLASS: 2

FUNCTION: Primary Containment Isolation

TEST REQUIREMENT: CV, LT

BASIS FOR RELIEF: Valves are normally closed and passive during an accident. There is no means available to perform either test.

ALTERNATE TESTING: Valves are evaluated for leak tightness during the performance of each type "A" leak test. Further testing of these valves, if appropriate, will be implemented when the type "A" test results are evaluated.

1278 033

Relief Request Basis

NUMBER: V3

SYSTEM: Service and Instrument Air

VALVE: V72-38A/B, V72-89B/C

CATEGORY: A

CLASS: 2

FUNCTION: Primary Containment Isolation

TEST REQUIREMENT: LT

BASIS FOR RELIEF: Primary containment isolation valves are covered
by 10 CFR 30, Appendix J, via Technical Specification Section 4.7.2b
and additional administrative requirements.

ALTERNATE TESTING: Leak testing in accordance with Appendix J.

1278.034

Relief Request Basis

NUMBER: V4

SYSTEM: Service and Instrument Air

VALVE: V72-89B/C

CATEGORY: C

CLASS: 2

FUNCTION: Primary Containment Isolation

TEST REQUIREMENT: CV

BASIS FOR RELIEF: There are no means available to test the valves
in the manner prescribed by IWV-3520.

ALTERNATE TESTING: Leak testing in accordance with Appendix J.

1278 035

Relief Request Basis

NUMBER: V5

SYSTEM: Nuclear Boiler

VALVE: SR 2-14A-D

CATEGORY: C

CLASS: 3

FUNCTION: Relief Valve Discharge line vacuum breaker

TEST REQUIREMENT: CV

BASIS FOR RELIEF: Valves cannot be exercised during power operation
since valves are inside the drywell and are inaccessible when at
power.

ALTERNATE TESTING: Valves will be manually exercised during cold shut-
downs.

1278 036

Relief Request Basis

NUMBER: V6
SYSTEM: Nuclear Boiler
VALVE: V2-28A/B
CATEGORY: A
CLASS: 1
FUNCTION: Primary Containment Isolation
TEST REQUIREMENT: LT
BASIS FOR RELIEF: Valves presently exempted, per Tech. Spec. table
4.7.2 from leak testing.
ALTERNATE TESTING: None

1278.037

Relief Request Basis

NUMBER: 07

SYSTEM: Nuclear Boiler

VALVE: V2-29, V2-40, V2-74, V2-77, V2-80A-D, V2-86A-D

CATEGORY: A

CLASS: 1

FUNCTION: Primary Containment Isolation

TEST REQUIREMENT: LT

BASIS FOR RELIEF: Primary containment isolation valves are covered
by 10 CFR 50, Appendix J, via technical specification section 4.7.2.b
and additional administrative requirements.

ALTERNATE TESTING: Leak testing in accordance with Appendix J.

1278 038

Relief Request Basis

NUMBER: V8

SYSTEM: Nuclear Boiler

VALVE: V2-53A/B, V2-54A/B

CATEGORY: B

CLASS: 1

FUNCTION: Recirculation pump discharge and bypass valve - required
for LPCI operation.

TEST REQUIREMENT: Q

BASIS FOR RELIEF: Valve exercising during power operation would
require a reactor trip.

ALTERNATE TESTING: Valves will be full stroke exercised during cold
shutdowns of duration greater than 48 hours and during refueling
outages.

1278 039

Relief Request Basis

NUMBER: V9
SYSTEM: Nuclear Boiler
VALVE: RV2-71A/B
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. This causes undue structural stresses in the containment. Valves cannot be exercised during cold shutdowns since steam is required to stroke the main piston in the valve. Experience in safety and relief valve operation shows that testing 50% of the valves per refueling outage is adequate to detect failures or deterioration. Valve design prohibits full stroke exercising.

ALTERNATE TESTING: During each operation cycle, each relief valve will be manually opened with the reactor at low pressure until the thermocouple downstream of the valve indicates fluid is flowing from the valve.

1278 040

Relief Request Basis

NUMBFR: V10

SYSTEM: Nuclear Boiler

VALVE: V2-74, V2-77

CATEGORY: A

CLASS: 1

FUNCTION: Primary Containment Isolation

TEST REQUIREMENT: Q, MT

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

1278 041

Relief Request Basis

NUMBER: V11

SYSTEM: Nuclear Boiler

VALVE: V2-27B, V2-96B

CATEGORY: C

CLASS: 2

FUNCTION: Feedwater checks for HPCI/RCIC operation.

TEST REQUIREMENT: CV

BASIS FOR RELIEF: Valves are required to be open during power operation.

Shutting these valves will cause a reactor trip. Testing via the HPCI/RCIC systems would cause thermal shocking of the feedwater nozzles and could result in damage to reactor internals. Testing the valves during cold shutdown would require removing the only mechanism of vessel level control (via reactor cleanup system).

ALTERNATE TESTING: Valves will be verified shut during the refueling outages.

1278 042

Relief Request Basis

NUMBER: V12

SYSTEM: Nuclear Boiler

VALVE: 2-3-23, 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.

1278 043

Relief Request Basis

NUMBER: V13

SYSTEM: Core Spray

VALVE: V14-13A/B

CATEGORY: C

CLASS: 2

FUNCTION: Injection check valve

TEST REQUIREMENT: CV

BASIS FOR RELIEF: Valves cannot be exercised manually since valves are located inside the primary containment. Valves cannot be exercised with flow since pump discharge pressure cannot overcome reactor pressure.

ALTERNATE TESTING: These valves will be full stroke exercised during cold shutdowns when the drywell is accessible and during refueling outages.

1278 044

Relief Request Basis

NUMBER: V14

SYSTEM: Core Spray

VALVE: 14-31 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.

1278 045

Relief Request Basis

NUMBER: V15

SYSTEM: High Pressure Coolant Injection

VALVE: V23-15, V23-16

CATEGORY: A

CLASS: 1

FUNCTION: HPCI steam line isolation

TEST REQUIREMENT: LT

BASIS FOR RELIEF: Primary containment isolation valves are covered
by 10 CFR 50, Appendix J, via technical specification section 4.7.2b
and additional administrative requirements.

ALTERNATE TESTING: Leak testing in accordance with Appendix J.

Relief Request Basis

NUMBER: V16

SYSTEM: High Pressure Coolant Injection

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

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.

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 excursor.

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.

1278 048

Relief Request Basis

NUMBER: V18

SYSTEM: High Pressure Coolant Injection

VALVE: V23-65, SSC-23-12, V23-32

CATEGORY: C

CLASS: 2

FUNCTION: Injection mode valves

TEST REQUIREMENT: CV

BASIS FOR RELIEF: Valves cannot be full stroke exercised quarterly since a full flow HPCI test adds significant heat to the suppression chamber (via turbine exhaust). This could heat the suppression chamber to greater than the temperature limits. The HPCI pump cannot be run during cold shutdown since steam is not available to run the turbine. Approximately 150 psi of steam is required to run a full flow test of the HPCI pump. This steam is not always available prior to an unplanned cold shutdown.

ALTERNATE TESTING: Valves will be full stroke exercised during the shutdown of the plant when entering a refueling outage or a planned cold shutdown. Valves will be partial stroke exercised quarterly.

Relief Request Basis

NUMBER: V19

SYSTEM: High Pressure Coolant Injection

VALVE: SL 23-37 A-D

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.

1278 050

Relief Request Basis

NUMBER: V20

SYSTEM: High Pressure Coolant Injection

VALVE: V23-61

CATEGORY: C

CLASS: 2

FUNCTION: Torus suction check valve

TEST REQUIREMENT: CV

BASIS FOR RELIEF: Valve cannot be full stroke exercised during power operation since there is no full flow test loop available to recirculate the water back to the torus. There are no means to manually stroke the valve. Valve cannot be stroked via a system injection into the reactor since that would result in a reactivity excursion and potentially thermally shocking the reactor nozzles.

ALTERNATE TESTING: Valve will be verified to open freely each cold shutdown and refuel outages.

Relief Request Basis

NUMBER: V21

SYSTEM: High Pressure Coolant Injection

VALVE: PCV 23-50

CATEGORY: B

CLASS: 2

FUNCTION: Pressure control

TEST REQUIREMENT: MT

BASIS FOR RELIEF: Valve is a modulating type valve. Stroke time is not an appropriate reference parameter.

ALTERNATE TESTING: Proper valve operation is verified through normal system operation during the pump tests.

1278.052

Relief Request Basis

NUMBER: V22

SYSTEM: Control Rod Drive Hydraulic

VALVE: V3-13-114, V3-13-126, V3-13-127

CATEGORY: B or C

CLASS: 2

FUNCTION: Control rod drive scram

TEST REQUIREMENT: Q or CV

BASIS FOR RELIEF: Exercising these valves during power operation would require scrambling the plant or an undesirable reactor transient.

ALTERNATE TESTING: Since scram insertion times are representative of valve operability and stroke times, alternate testing will be performed in accordance with Tech. Spec. section 4.3.C.1 and 2. This section requires that all control rods be subjected to scram-time measurements on a refueling outage basis. Also, this section requires that 50% of the control rods be measured for scram times every 16 to 32 weeks. An evaluation is required that provides reasonable assurance that proper control rod drive performance is being maintained. These tests adequately verify valve operability and stroke times.

1278 053

Relief Request Basis

NUMBER: V22A

SYSTEM: Control Rod Drive Hydraulic

VALVE: V3-181

CATEGORY: A

CLASS: 3

FUNCTION: Primary Containment Isolation

TEST REQUIREMENT: LT

BASIS FOR RELIEF: Primary containment isolation valves are covered
by 10 CFR 50, Appendix J, via Tech. Spec. section 4.7.2b and
additional administrative requirements.

ALTERNATE TESTING: Leak testing in accordance with Appendix J.

1278 054

Relief Request Basis

NUMBER: V22B

SYSTEM Control Rod Drive Hydraulic

VA. VE: V3-181

CATEGORY: C

CLASS: 3

FUNCTION: CRD Return to RWCU System

TEST REQUIREMENT: CV

BASIS FOR RELIEF: Valve cannot be exercised during power operation since this would require isolating and venting a portion of the CRD system. This would cause hydraulic instability throughout the system. This situation is potentially unsafe until the system can be rebalanced and the rod strokes retimed. This cannot be done during power operation.

ALTERNATE TESTING: Valve will be verified to close during cold shutdowns.

1278 055

Relief Request Basis

NUMBER: V23
SYSTEM: Standby Liquid Control
VALVE: V11-16, V11-17
CATEGORY: A
CLASS: 1
FUNCTION: Primary Containment Isolation
TEST REQUIREMENT: LT
BASIS FOR RELIEF: Valves presently exempted, per Tech. Spec. table
4.7.2 from leak testing.
ALTERNATE TESTING: None

1278 056

Relief Request Basis

NUMBER: V24

SYSTEM: Standby Liquid Control

VALVE: V11-16, V11-17

CATEGORY: C

CLASS:

FUNCTION: SLC injection into reactor

TEST REQUIREMENT: CV

BASIS FOR RELIEF: Exercising these valves during power operation

would require injecting borated water into the reactor coolant system. This would create a reactivity excursion and potential for reactor trip. Injection of demineralized water would require removing the system from service to clean the borated solution from the piping and replacing the explosive actuated valves. This system is required for power operation. Performing the demin. water test during cold shutdowns is impractical since extensive flushing of the boron from the system for several days is required to reduce the boron concentration to a level compatible for injection into the reactor coolant system.

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

1278.05

Relief Request Basis

NUMBER: V25

SYSTEM: Residual Heat Removal

VALVE: V10-17, V10-18, V10-26A/B, V10-31A/B, V10-32, V10-33,
V10-34A/B, V10-38A/B, V10-39A/B

CATEGORY: A

CLASS: 1 or 2

FUNCTION: Primary containment isolation

TEST REQUIREMENT: LT

BASIS FOR RELIEF: Valves presently exempted, per Tech. Spec. table
4.7.2 from leak testing.

ALTERNATE TESTING: None

1278 058

Relief Request Basis

NUMBER: V26

SYSTEM: Residual Heat Removal

VALVE: V10-46 A/B

CATEGORY: C

CLASS: 1

FUNCTION: LPCI injection check

TEST REQUIREMENT: CV

BASIS FOR RELIEF: Valves cannot be exercised during power operation since the valves are located inside the primary containment. Exercising the valves by system flow is not possible during power operation since pump discharge is unable to overcome reactor coolant system pressure.

ALTERNATE TESTING: Valves will be full stroke exercised during cold shutdowns when the drywell is accessible and during refueling outages.

1278 059

Relief Request Basis

NUMBER: V27

SYSTEM: Residual Heat Removal

VALVE: V10-57, V10-66

CATEGORY: A

CLASS: 2

FUNCTION: Primary containment isolation

TEST REQUIREMENT: LT

BASIS FOR RELIEF: Primary containment isolation valves are covered

by 10 CFR 50, Appendix J, via Technical Specification Section 4.7.2b
and additional administrative requirements.

ALTERNATE TESTING: Leak testing in accordance with Appendix J.

1278 060

Relief Request Basis

NUMBER: V28

SYSTEM: Residual Heat Removal

VALVE: V10-89 A/B

CATEGORY: B

CLASS: 3

FUNCTION: Flow control

TEST REQUIREMENT: MT

BASIS FOR RELIEF: Valve is a modulating type valve. Stroke time is not an appropriate reference parameter.

ALTERNATE TESTING: Proper valve operation is verified through normal system operation during the pump tests.

1278 061

Relief Request Basis

NUMBER: V29

SYSTEM: Reactor Core Isolation Cooling

VALVE: V13-15, V13-16

CATEGORY: A

CLASS: 1

FUNCTION: RCIC steam line isolation

TEST REQUIREMENT: LT

BASIS FOR RELIEF: Primary containment isolation valves are covered
by 10 CFR 50, Appendix J, Tech. Spec, section 4.7.2b and additional
administrative requirements.

ALTERNATE TESTING: Leak testing in accordance with Appendix J.

1278 062

Relief Request Basis

NUMBER: V30

ITEM: Reactor Core Isolation Cooling

VALVE: V13-15, V13-16, V13-18, V13-20, V13-21, V13-27

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 RCIC system
inoperable if the valve failed in an unconservative position.

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

1278 063

Relief Request Basis

NUMBER: V31

SYSTEM: Reactor Core Isolation Cooling

VALVE: V13-22

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.

1278 064

Relief Request Basis

NUMBER: V32

SYSTEM: Reactor Core Isolation Cooling

VALVE: SL 13-55 A-D

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.

1278 065

Relief Request Basis

NUMBER: V33

SYSTEM: Reactor Core Isolation Cooling

VALVE: V13-40

CATEGORY: C

CLASS: 2

FUNCTION: Torus suction check valve

TEST REQUIREMENT: CV

BASIS FOR RELIEF: Valve cannot be full stroke exercised during power operation since there is no full flow test loop available to recirculate the water back to the torus. There are no means to manually stroke the valve. Valve cannot be stroked via a system injection into the reactor since that would result in a reactivity excursion and potentially thermally shocking the reactor nozzles.

ALTERNATE TESTING: Valve will be verified to open freely each cold shutdown and refuel outages.

1278 066

Relief Request Basis

NUMBER: V34

SYSTEM: Reactor Core Isolation Cooling

VALVE: PCV 13-23, Turb. gov.

CATEGORY: B

CLASS: 2

FUNCTION: Modulating valves

TEST REQUIREMENT: MT

BASIS FOR RELIEF: Valve is a modulating type valve. Stroke time is not an appropriate reference parameter.

ALTERNATE TESTING: Proper valve operation is verified through normal system operation during the pump tests.

1278 067

Relief Request Basis

NUMBER: V35

SYSTEM: Primary Containment and Atmosphere Control

VALVE: V16-19-5 A to J

CATEGORY: A

CLASS: 2

FUNCTION: Torus-drywell vacuum breakers

TEST REQUIREMENT: LT

BASIS FOR RELIEF: Valves cannot be leak tested individually

ALTERNATE TESTING: Leak test will be done which will demonstrate that with an initial differential pressure of not less than 1.0 psi, the differential pressure decay rate shall not exceed the equivalent of the leakage rate through a 1-inch orifice.

1278 068

Relief Request Basis

NUMBER: V36

SYSTEM: Primary Containment and Atmosphere Control

VALVE: SB 16-19-6 A/B, SB16-19-7 A/B, SB16-19-8, SB16-19-9, SB16-19-10
SB16-19-11 A/B, V16-19-12A/B, V16-20-20, V16-20-22A/B, V16-19-23

CATEGORY: A

CLASS: 2

FUNCTION: Primary containment isolation

TEST REQUIREMENT: LT

BASIS FOR RELIEF: Primary containment isolation valves are covered
by 10 CFR 50, Appendix J, via Tech. Spec. section 4.7.2b and additional
administrative requirements.

ALTERNATE TESTING: Leak testing in accordance with Appendix J.

1278 069

Relief Request Basis

NUMBER: V37

SYSTEM: Primary Containment and Atmosphere Control

VALVE: SB16-19-6A, AB16-19-7A/B, SB16-19-9, SB16-19-10, V16-20-22A

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

1278 070

Relief Request Basis

NUMBER: V38

SYSTEM: Primary Containment and Atmosphere Control

VALVE: SB16-19-8, V16-20-20, V16-19-23, SB16-19-6B, V16-20-22B

CATEGORY: A

CLASS: 2

FUNCTION: Primary containment isolation

TEST REQUIREMENT: Q

BASIS FOR RELIEF: Valves cannot be exercised during power operation since this would cause the loss of the differential pressure between the drywell and the suppression chamber. This DP is a required condition of plant operation.

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

1278 071

Relief Request Basis

NUMBER: V39

SYSTEM: Radwaste

VALVE: V20-82, V20-83, V20-94, V20-95

CATEGORY: A

CLASS: 2

FUNCTION: Primary containment isolation

TEST REQUIREMENT: LT

BASIS FOR RELIEF: Primary containment isolation valves are covered

by 10 CFR 50, Appendix J, via Tech. Spec. section 4.7.2b and additional
administrative requirements.

ALTERNATE TESTING: Leak testing in accordance with Appendix J.

1278 072

Relief Request Basis

NUMBER: V40

SYSTEM: Reactor Water Cleanup

VALVE: V12-15, V12-18, V12-68

CATEGORY: A

CLASS: 1 or 3

FUNCTION: Primary containment isolation

TEST REQUIREMENT: LT

BASIS FOR RELIEF: Primary containment isolation valves are covered

by 10 CFR 50, Appendix J, via Tech. Spec. section 4.7.2b and additional
administrative requirements.

ALTERNATE TESTING: Leak testing in accordance with Appendix J.

1278 073

Relief Request Basis

NUMBER: V41

SYSTEM: HVAC - Reactor Building

VALVE: SB-16-19-6, SB-16-19-7

CATEGORY: A

CLASS: 2

FUNCTION: Primary containment isolation

TEST REQUIREMENT: LT

BASIS FOR RELIEF: Primary containment isolation valves are covered
by 10 CFR 50, Appendix J, via Tech. Spec. section 4.7.2b and
additional administrative requirements.

ALTERNATE TESTING: Leak testing in accordance with Appendix J.

1278 074

Relief Request Basis

NUMBER: V42

SYSTEM: HVAC - Reactor Building

VALVE: SB-16-19-6

CATEGORY: A

CLASS: 2

FUNCTION: Primary containment isolation

TEST REQUIREMENT: Q

BASIS FOR RELIEF: Valves cannot be exercised during power operation since this would cause the loss of the differential pressure between the drywell and the suppression chamber. This DP is a required condition of plant operation.

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

1278.075

Relief Request Basis

NUMBER: V43

SYSTEM: HVAC - Reactor Building

VALVE: SB-16-19-7

CATEGORY: A

CLASS: 2

FUNCTION: Primary containment isolation

TEST REQUIREMENT: Q, MT

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

1278 076

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/B
2-3-23A/B, 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.

1278 077

Relief Request Basis

NUMBER: V45

SYSTEM: Containment Atmosphere Dilution

VALVE: FSO-109-75A1,2, FSO-109-75B1,2, FSO-109-75C1,2, FSO-109-75D1,2
FSO-109-76A/B

CATEGORY: A

CLASS: 2

FUNCTION: Primary containment isolation

TEST REQUIREMENT: LT

BASIS FOR RELIEF: Valves presently exempted, per Tech. Spec. table
4.7.2 from leak testing.

ALTERNATE TESTING: None

1278 078

Relief Request Basis

NUMBER: V46

SYSTEM: Containment Atmosphere Dilution

VALVE: FSO-109-75A1,2

CATEGORY: A

CLASS: 2

FUNCTION: Primary containment isolation

TEST REQUIREMENT: Q, MT

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

1278 079

Relief Request Basis

NUMBER: V47

SYSTEM: TIP

VALVE: Ball A-C, Solenoid

CATEGORY: A

CLASS: 2

FUNCTION: Primary containment isolation

TEST REQUIREMENT: LT

BASIS FOR RELIEF: Valves are normally closed and passive during
an accident. There is no means available to perform a leak test.

ALTERNATE TESTING: Valves will be evaluated for leak tightness
during the performance of each type "A" leak test. Further testing
of these valves, if appropriate, will be implemented when the
type "A" test results are evaluated.

1278 080

Relief Request Basis

NUMBER: V48

SYSTEM: TIP

VALVE: Solenoid

CATEGORY: A

CLASS: 2

FUNCTION: Primary containment isolation

TEST REQUIREMENT: MT

BASIS FOR RELIEF: Valve is a 1/2 inch solenoid valve. Timing the
stroke is not possible.

ALTERNATE TESTING: None

1278 081

Relief Request Basis

NUMBER: GV-1

CODE PARAGRAPHS: IWV-3410 (C) (3) concerning an increase in test frequency.

BASIS FOR RELIEF: As defined in the Inservice Test Program, there is sufficient justification to test certain valves on either a cold shutdown or a refueling outage basis. The test frequency of these valves cannot be increased without jeopardizing plant operations.

ALTERNATIVE: If any of the valves that are tested quarterly fail, the test frequency will be increased in accordance with the provisions of the referenced paragraph. If any of the valves that are tested on a cold shutdown basis fail, the valves will be tested each cold shutdown, not to exceed once every month until corrective action is taken.

1278 082

Relief Request Basis

NUMBER: GV-2

CODE PARAGRAPHS: IWV-3410 (g1 and LWV-3520(c) concerning corrective action prior to startup.

BASIS FOR RELIEF: The Vermont Yankee Technical Specifications describes 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.

1278 083

Relief Request Basis

NUMBER: GV-3

CODE PARAGRAPHS: IWV-3410 and IWV-3520 concerning the definition of "cold shutdown".

BASIS FOR RELIEF: Since operations personnel are faced with many activities associated with and maintaining the plant in cold shutdown conditions, the operators require some amount of flexibility in scheduling certain surveillance testing. Surveillance testing alone should not be a cause for the plant to remain in a shutdown condition.

ALTERNATIVE: "Cold Shutdown Testing" will be defined as commencing the required testing not later than 48 hours after cold shutdown is achieved. Testing must continue until complete or the plant is ready to return to power. Completion of all valve testing is not a prerequisite to return to power. Any testing not completed at one cold shutdown should be performed during subsequent cold shutdowns to meet the code specified testing frequency.

1278 084

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. Each refueling outage each valve will be tested to determine that the force required to open each valve from fully closed to fully open.
8. 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.

INSERVICE OPERABILITY TESTING PROGRAM FOR PUMPS

All safety related pumps that are provided with an emergency power source will be tested in accordance with the Inservice Inspection Program.

Specific procedural requirements, exceptions, and acceptance criteria are as described in Section XI, subsection IWP. Procedures and records will be developed, evaluated, and maintained in accordance with the requirements of this subsection.

Symbols used in the following tables:

- M - Monthly Test
- NP - Not Possible
- V - Variable Resistance System
- F - Fixed Resistance System

Relief Request Basis' are located in the back portion of this section.

1278 086

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

Relief Request Basis

NUMBER: P1

SYSTEM: Service Water

PUMP: P7-1A-D

CLASS: 3

TEST REQUIREMENT: Bearing temperature per IWP-3300

BASIS FOR RELIEF: Service water pump bearings are physically submerged under a minimum of 30 feet of river water. Contact pyrometer readings would be impractical.

ALTERNATIVE TESTING: None

1278 088

Relief Request Basis

NUMBER: P2

SYSTEM: Residual Heat Removal Service Water

PUMP: P8-1A-D

CLASS: 3

TEST REQUIREMENT: Bearing temperature per IWP-3300

BASIS FOR RELIEF: Bearings are internal to the pump casing and therefore
are completely inaccessible for temperature measurements.

ALTERNATIVE TESTING: None

1278.089

Relief Request Basis

NUMBER: P3

SYSTEM: Residual Heat Removal

PUMP: P10-1A-D

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

1278 090

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: There are no means available to measure the bearing
or a surface representative of bearing temperature.

ALTERNATIVE TESTING: None

1278 091

Relief Request Basis

NUMBER: P5

SYSTEM: Standby Liquid Control

PUMP: P45-1A/B

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

1278 092

Relief Request Basis

NUMBER: P6

SYSTEM: Core Spray

PUMP: P46 1A/B

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

1278 093

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: There are no means available to measure the bearing
or a surface representative of bearing temperature.

ALTERNATIVE TESTING: None

1278.094

Relief Request Basis

NUMBER: P8

SYSTEM: Fuel Oil Transfer

PUMP: P-4-1A/B

CLASS: 3

TEST REQUIREMENT: Bearing temperature per IWP-3300

BASIS FOR RELIEF: Per IWP-3500, bearing temperature measurements

require that each pump be run until the bearing temperatures stabilize...

A bearing temperature is considered stable when three successive readings taken at ten minute intervals do not vary by more than 3%.

The fuel oil transfer pump operability test can only be performed when the diesel is undergoing testing. When low level is sensed in the day tank, the fuel oil transfer pumps provide the make-up.

This normally takes less than 15 minutes. This is not sufficient time to record a meaningful bearing temperature.

ALTERNATIVE TESTING: None

1278 095

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. Each operating cycle, demonstrate that the HPCI system will deliver at least 4250 gpm at normal operating pressure (recirculate to the condensate storage tank).
4. Pi will be calculated based on the level in the test tank. Q will be calculated based on the decrease in volume of the test tank per time period.
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).

1278 096