LONG ISLAND LIGHTING COMPANY
SHOREHAM NUCLEAR POWER STATION
P.O. BOX 618, NORTH COUNTRY ROAD • WADING RIVER, N.Y. 11792

November 21, 1979

SNRC-450

Mr. Denwood Ross, Director
Bulletins and Orders
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Shoreham Nuclear Power Station - Unit 1
Docket No. 50-322

Dear Mr. Ross:

Enclosed herewith are six (6) sets of Shoreham-specific system information in response to those Bulletins and Orders Task Force long-term questions of July 13, 1979. These responses will be incorporated in a pending supplement to the generic data presented in NEDO-24708, "Additional Information Required for NRC Staff Generic Report on Boiling Water Reactors."

Very truly yours,

J. P. Novarro

J. P. Novarro,
Project Manager
Shoreham Nuclear Power Station

JPM/cc

Enclosures

1391 195

cc: J. N. Wilson
J. Higgins
W. Kane

G006
S
1/1

7911260 340 A

FC-8935

PLANT SHOREHAM UNIT(S) 1

A

BYPASS CAPACITY

Plant Steam Bypass Capacity, % Rated 25%

1391 196

PLANT SHOREHAM

B

SYSTEMS AND COMPONENTS SHARED BETWEEN UNITS

PAGE____ CONTINUED PAGE ____

Single-unit plant check here [✓] and do not complete

System or Component	Shared Between Units Numbers

1391 197

PLANT SHOREHAM UNIT(S) 1

C

PLANT-SPECIFIC SYSTEM INFORMATION

System	General: Safety Classification	General: Seismic Category	Water Sources: Safety Classification	Water Sources: Seismic Category	Instrumentation and Control: Safety Classif.	Instrumentation and Control: Seismic Category	Frequency of System and Component Tests
1. RCIC	2 (5)	1	2	1	IE (4)	1	(6)
2. Isolation Condenser	— (3)	— (3)	— (3)	— (3)	— (3)	— (3)	— (3)
3. HPCS	— (3)	— (3)	— (3)	— (3)	— (3)	— (3)	— (3)
4. HPCI	2 (5)	1	2	1	IE (4)	1	(6)
5. ~~L~~CS	2 (5)	1	2	1	IE (4)	1	(6)
6. LPCI	2 (5)	1	2	1	IE (4)	1	(6)
7. ADS	1	1	1	1	IE (4)	1	(6)
8. SRV	1	1	1	1	IE (4)	1	(6)
9. RHR (including shutdown cooling,	2 (5)	1	2	1	IE (4)	1	(6)
steam condensing,	2	1	2	1	IE (4)	1	(6)
suppression pool cooling,	2	1	2	1	IE (4)	1	(6)
containment spray modes)	2	1	2	1	IE (4)	1	(6)
10. ~~E~~SW	3	1	3	1	IE (4)	1	(6)
11. ~~RBCCW~~ RBCLCW	3	1	3	1	IE (4)	1	(6)
12. CRD~~X~~	2 (7)	1	2	1	NON-IE (4)	1	(6)
13. CST	NA (1)	NA (1)	NA (1)	NA (1)	IE (4)	1	(6)
14. Main Feedwater	NA (2)	NA (2)	NA (2)	NA (2)	NON-IE (4)	1	(6)
15. Recirculation Pump/Motor Cooling (8)	3	1	3	1	IE	1	(6)

Notes: See attached sheet

PLANT-SPECIFIC SYSTEM INFORMATION

NOTES

(1) CST suction piping to HPCI/RCIC is safety Class 2, seismic Category I. The bottom portion of the CST containing the volume (100,000 gallon) dedicated to HPCI/RCIC is encased in a seismic Category I outer concrete wall.

(2) All feedwater piping inside the reactor building is seismic Category I. Feedwater piping downstream of valves F032A & B is safety Class 1.

(3) System not applicable for SNPS-1.

(4) All safety systems will have some non-essential instrumentation which are used for non-safety functions (i.e. annunciators).

(5) Portions of the system which constitute reactor coolant pressure boundary as defined by 10CFR50.2 (v) are safety Class 1.

(6) Frequency of tests will be identified when the Technical Specifications are developed.

(7) Insert and withdraw lines as well as scram discharge components.

(8) Same system as item 11.

(9) Scram functions are IE.

(10) Containment isolation functions are IE.

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PLANT SHOREHAM UNIT 1

PRIMARY CONTAINMENT ISOLATION SYSTEM DATA

PAGE 1 CONTINUED ON PAGE 2

D

Isolation Valves

POOR ORIGINAL

1391 200

Prim. Cont. Penetration Number	Line Size, In.	System	Is System an Engineered Safety Function	Figure	Process Fluid	Valve Number	Isolation Signal Code(s)	Location	Type	Actuator	Primary Actuation Mode	Secondary Actuation Mode	Full Closure Time, sec.	Power Source	Position Indication in Control Rm.	Positions: Normal	Positions: Shutdown	Positions: Post Accident	Positions: Power Failure	Comments
X-1A-D	24	MAIN STEAM	N	A	S	F022	B,C,D,E,F,R,I,RM	I	GB	AO	A	RM	3-5	AC DC	D	O	C	C	C	
	24	↓	N	A	S	F028	↓	O	GB	AO	A	RM	3-5	AC DC	D	O	C	C	C	
	2		N	A	S	F067		O	GB	MO	A	RM	4	AC	D	O	C	C	AI	
↓	2½	MSIV-LCS	Y	A	S	MOV-021	RM	O	GB	MO	RM	M	6	AC	D	C	C	O	AI	
X-2A,B	18	FEEDWATER	N	A	W	—	—	I	CK	—	RF	—	N/A	—	—	O	C	C	—	
X-2A,B	18	↓	N	A	W	F074	—	O	VTC	AO	RF	—	N/A	—	I	O	C	C	—	
X-3	3	MAIN STEAM	N	A	S	F016	B,C,D,E,P,R,I,RM	I	GT	MO	A	RM	16	AC	D	O	C	C	AI	
X-3	3	↓	N	A	S	F019	↓	O	GT	MO	A	RM	16	DC	D	O	C	C	AI	
X-4	6	RWCU	N	A	W	F001	B,S,RM	I	GT	MO	A	RM	30	AC	D	O	C	C	AI	
X-4	6	↓	N	A	W	F004	B,S,W,Y,RM	O	GT	MO	A	RM	30	DC	D	O	C	C	AI	
X-5	20	RHR (SHUTDOWN COOLING)	N	A	W	F009	A,U,RM	I	GT	MO	A	RM	35	AC	D	C	O	C(1)	AI	(1) OPEN FOR SHUTDOWN COOLING
X-5	20	↓	N	A	W	F008	↓	O	GT	MO	A	RM	35	DC	D	C	O	C(1)	AI	(1) ↓
X-6A,B	24	RHR (INJECTION)	Y	A	W	F050	—	I	VTC	AO	RF	—	N/A	—	I	C	O	O	—	
X-6A,B	2	↓	Y	A	W	F050	A,U,RM	I	GT	MO	A	RM	19	AC	D	C	C	C	AI	
X-6A,B	24	↓	Y	A	W	F015	RM	O	GT	MO	RM	M	24	AC	D	C	O	O	AI	
X-7A,B	10	RHR (DRYWELL SPRAY)	Y	B	W	F021	F,G,RM	O	GT	MO	A	RM	51	AC	D	C	C	C(1)	AI	(1) OPEN FOR DRYWELL SPRAY
↓	10	↓	Y	B	W	F016		O	ANG	MO	A	RM	10	AC	D	C	C	C(1)	AI	(1) ↓
X-8A,B	6	RHR (SUPP. CH. SPRAY)	Y	B	W	F027		O	GB	MO	A	RM	71	AC	D	C	C	C(1)	AI	(1) OPEN FOR SUPP. CH. SPRAY
	16	↓	Y	B	W	F028		O	GT	MO	A	RM	71	AC	D	C	C	C(1)	AI	(1) OPEN FOR SUPP. CH. SPRAY/POOL COOLING
↓	16		Y	B	W	F024	↓	O	GB	MO	A	RM	79	AC	D	C	C	C(1)	AI	(1) ↓
X-11A-D	20	RHR (PUMP SUCT)	Y	B	W	F004	RM	O	GT	MO	RM	M	106	AC	D	O	O	O	AI	
X-12A	16	RHR (TEST TO POOL)	Y	B	W	F024	F,G,RM	O	GB	MO	A	RM	79	AC	D	C	C	C(1)	AI	(1) OPEN FOR SUPP POOL COOLING
	16	↓	Y	B	W	F026	↓	O	GT	MO	A	RM	71	AC	D	C	C	C(1)	AI	(1) OPEN FOR SUPP CH SPRAY/POOL
	6	FPC&CU (SUPP POOL CLEANUP RETURN)	N	B	W	MOV-033 A&B	B,F,RM	O	GT	MO	A	RM	31	AC	D	C	C	C	AI	
	4	RHR (STEAM COND DISCH)	N	B	W	F011	F,G,RM	O	GT	MO	A	RM	20	AC	D	C	C	C	AI	
	4	RHR (MINIMUM FLOW)	Y	B	W	F007	RM	O	GT	MO	RM	M	20	AC	D	O	O	C(1)	AI	(1) OPEN IF PUMP RUNNING WITH NO DISCHARGE PATH
	10	CORE SPRAY (TEST)	N	B	W	F015	F,G,RM	O	GB	MO	A	RM	67	AC	D	C	C	C	AI	
↓	3	CORE SPRAY (MIN FLOW)	Y	B	W	F031	RM	O	GT	MO	RM	M	16	AC	D	O	O	C(1)	AI	(1) OPEN IF PUMP RUNNING WITH NO DISCHARGE PATH

POOR ORIGINAL

PLANT SHOREHAM UNIT 1

PRIMARY CONTAINMENT ISOLATION SYSTEM DATA

PAGE 2 CONTINUED ON PAGE 3

D

Isolation Valves

1391 201

Penetration Number	Line Size, In.	System	Is System an Engineered safety function	Figure	Process Fluid	Valve Number	Isolation Signal Code(s)	Location	Type	Actuator	Primary Actuation Mode	Secondary Actuation Mode	Full Closure Time, sec.	Power Source	Position Indication in Control Rm.	Positions: Normal	Shutdown	Post Accident	Power Failure	Comments
X/0-B	16	RHR (TEST TO POOL)	Y	B	W	F024	F,G,RM	O	GB	MO	A	RM	79	AC	D	C	C	C(1)	AI	(1) OPEN FOR SUPP. POOL COOL...
↓	16	↓	Y	B	W	F028	↓	O	GT	MO	A	RM	71	AC	D	C	C	C(1)	AI	(1) OPEN FOR SUPP. CH SPRAY & POOL CO...
	2	RCIC (MIN FLOW)	Y	B	W	F019	RM	O	GB	MO	RM	M	5	DC	D	C	C	C(1)	AI	(1) OPEN WHEN PUMP RUNNING W/ NO DISCHARGE PATH
	4	HPCI (MIN FLOW)	Y	B	W	F012	↓	O	GB	MO	RM	M	10	DC	D	C	C	C(1)	AI	(1) OPEN WHEN PUMP RUNNING W/ NO DISCHARGE PATH
	4	RHR (STEAM COND DISCH)	N	B	W	F011	E,G,RM	O	GT	MO	A	RM	20	AC	D	C	C	C	AI	
	4	RHR (MIN FLOW)	Y	B	W	F007	RM	O	GT	MO	RM	M	20	AC	D	O	O	C(1)	AI	(1) OPEN WHEN PUMP RUNNING W/ NO DISCHARGE PATH
	10	CORE SPRAY (TEST)	N	B	W	F015	F,G,RM	O	GB	MO	A	RM	67	AC	D	C	C	C	AI	
	3	CORE SPRAY (MIN FLOW)	Y	B	W	F031	RM	O	GT	MO	RM	M	16	AC	D	O	O	C(1)	AI	(1) OPEN WHEN PUMP RUNNING W/ NO DISCHARGE PATH
↓	2	RHR (RCIC SUCTION RV)	N	B	W	F097	N/A	O	RV	—	OP	—	N/A	N/A	N/A	C	C	C	N/A	
X-11	4	RHR (HEAD SPRAY)	N	A	W	F022	A,U,RM	I	GT	MO	A	RM	20	AC	D	C	C	C	AI	
↓	4	↓	N	A	W	F023	↓	O	GB	MO	A	RM	13	DC	D	C	C	C(1)	AI	(1) OPEN FOR HEAD SPRAY OPERA...
X-12	10	HPCI	Y	A	S	F002	D,RM	I	GT	MO	RM	—	11	AC	D	O	C	O	AI	
	1		Y	A	S	F097		I	GB	MO	RM	—	13	AC	D	O	C	O	AI	
	10		Y	A	S	F003		O	GT	MO	RM	M	20	DC	D	C	C	O	AI	
↓	1		Y	A	S	F080	↓	O	GB	MO	RM	M	12	DC	D	O	C	O	AI	
X-13	18		Y	B	S	F021	RM	O	GT	MO	RM	M	102	DC	D	O	O	O	AI	
↓	18		Y	B	S	—	N/A	O	CK	—	RF	—	N/A	N/A	N/A	C	C	O	N/A	
↓	2	↓	Y	B	A	—	N/A	O	CK	—	RF	—	N/A	N/A	N/A	C	C	C	N/A	
X-15	16		Y	B	W	F042	K,RM	O	GT	MO	RM	M	71	DC	D	C	C	C(1)	AI	(1) OPEN ON LOW CST LEVEL
X-16	3	RCIC	Y	A	S	F007		I	GT	MO	RM	—	16	AC	D	O	C	O	AI	
	1		Y	A	S	F085		I	GB	MO	RM	—	12	AC	D	O	C	O	AI	
	3		Y	A	S	F060		O	GT	MO	RM	M	16	DC	D	C	C	O	AI	
↓	1		Y	A	S	F075	↓	O	GB	MO	RM	M	12	DC	D	O	C	O	AI	
X-17	8		Y	B	S	F00T	RM	O	GT	MO	RM	M	38	DC	D	O	O	O	AI	
	8		Y	B	S	—	—	O	CK	—	RF	—	N/A	—	—	C	C	O	—	
↓	1½		Y	B	A	—	—	O	CK	—	RF	—	N/A	—	—	C	C	C	—	
X-18	2		Y	B	A	F002	RM	O	XV	MO	RF	RM	13	DC	D	O	O	O	AI	
↓	2	↓	Y	B	A	—	—	O	CK	—	RF	—	N/A	—	—	C	C	O	—	

POOR ORIGINAL

1391 202

PLANT SHOREHAM UNIT 1

PRIMARY CONTAINMENT ISOLATION SYSTEM DATA

PAGE 3 CONTINUED ON PAGE 4

D

Isolation Valves

Penetration Number	Line Size, In.	System	Is System an Engineered Safety Function	Figure	Process Fluid	Valve Number	Isolation Signal Code(s)	Location	Type	Actuator	Primary Actuation Mode	Secondary Actuation Mode	Full Closure Time, sec.	Power Source	Position Indication in Control Rm.	Positions: Normal	Positions: Shutdown	Positions: Post Accident	Positions: Power Failure	Comments
X-19	6	RCIC	Y	B	W	F031	RM	O	GT	MO	RM	M	31	DC	D	C	C	C(1)	AI	(1) OPEN WHEN PUMPING FROM SUPP. POOL
X-20A,B	10	CORE SPRAY	Y	A	W	F006	—	I	VTC	AO	RF	—	N/A	—	I	C	C	O	—	
	2	↓	Y	A	W	F006	RM	I	GB	MO	RM	—	18	AC	D	C	C	C	AI	
↓	10	↓	Y	A	W	F005	↓	O	GT	MO	RM	M	20	AC	D	C	C	O	AI	
X-21A,B	14	↓	Y	B	W	F001	↓	O	GT	MO	RM	M	26	AC	D	O	O	O	AI	
X-22A,B	4	RBCLCW	N	C	W	MOV-033, 232	↓	O	GT	MO	RM	M	23	AC	D	O	O	O	AI	
X-23A,B	4	↓	N	C	W	MOV-032, [illegible]	↓	O	GT	MO	RM	M	23	AC	D	O	O	O	AI	
X-24A,B	3	↓	N	B	W	—	F,G,Z,RM	O	GT	MO	A	RM	16	AC	D	O	O	C	AI	
↓	3	↓	N	B	W	—	—	I	CK	—	RF	—	N/A	—	—	O	O	C	—	
X-25A,B	4	↓	N	B	W	MOV-147, 148	F,G,Z,RM	I	GT	MO	A	RM	20	AC	D	O	O	C	AI	
↓	4	↓	N	B	W	MOV-231, 232	↓	O	GT	MO	A	RM	20	AC	D	O	O	C	AI	
X-26	18	CONTAINMENT PURGE	N	B	A	AOV-038A	L,RM	I	B	AO	RM	—	5	AC	D	C	C	O	C	
↓	18	↓	N	B	A	AOV-03-B	↓	O	B	AO	RM	M	5	AC	D	C	C	O	C	
X-27	18	↓	N	B	A	AOV-037A	↓	I	B	AO	RM	—	5	AC	D	C	C	O	C	
↓	18	↓	N	B	A	AOV-037B	↓	O	B	AO	RM	M	5	AC	D	C	C	O	C	
X-28	18	↓	N	B	A	AOV-036C, 038D	↓	O	B	AO	RM	M	5	AC	D	C	C	O	C	
X-29	18	↓	N	B	A	AOV-037C, 037D	↓	O	B	AO	RM	M	5	AC	D	C	C	O	C	
X-30	3/4	REACTOR RECIRC SAMPLE	N	A	W	F019	B,C,RM	I	GB	AO	A	RM	15	AC	D	O	O	C	C	
↓	3/4	↓	N	A	W	F020	↓	O	GB	AO	A	RM	15	AC	D	O	O	C	C	
X-31	3	RADWASTE	N	B	W	MOV-242, 243	B,F,RM	O	GT	MO	A	RM	16	AC	D	O	O	C	AI	
X-32	4	↓	N	B	W	MOV-[illegible]	↓	O	GT	MO	A	RM	16	AC	D	O	O	C	AI	
X-36	1 1/2	SLC	Y	A	B	—	—	I	CK	—	RF	—	N/A	—	—	C	C	C	—	
	1 1/2	↓	Y	A	B	—	—	O	CK	—	RF	—	N/A	—	—	C	C	C	—	
↓	1 1/2	↓	Y	A	B	EV01A,B	—	O	XV	XC	—	—	—	AC	I	C	C	C	—	
X-39A	3/8	N_2/AIR PURGE FOR TIP	N	C	A	—	—	O	CK	—	RF	—	N/A	—	—	O	C	C	—	
X-31?A,B	3/8	TIP DRIVE TUBES	N	C	N/A	—	—	O	BL	—	—	—	N/A	AC	D	C	C	C	—	
↓	3/8	↓	N	C	N/A	—	RM	O	XV	XC	RM	—	0	DC	I	O	O	O	—	
X-38	3/8	↓	N	C	N/A	—	—	O	BL	—	—	—	N/A	AC	D	C	C	C	—	
[illegible]	3/8	↓	N	C	N/A	[illegible]	RM	[illegible]	XV	XC	RM	—	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	

POOR ORIGINAL

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PLANT SHOREHAM UNIT 1

PRIMARY CONTAINMENT ISOLATION SYSTEM DATA

PAGE 4 CONTINUED ON PAGE 5

D

Isolation Valves

Penetration Number	Line Size, In.	System	Is System an Engineered Safety Function	Figure	Process Fluid	Valve Number	Isolation Signal Code(s)	Location	Type	Actuator	Primary Actuation Mode	Secondary Actuation Mode	Full Closure Time, sec.	Power Source	Position Indication in Control Rm.	Positions: Normal	Positions: Shutdown	Positions: Post Accident	Positions: Power Failure	Comments
X39A,B	1	INSTRUMENT AIR TO S.C.	N	B	A	—	—	O	CK	—	RF	—	N/A	—	—	O	O	O	—	
↓	1	↓	N	B	A	MOV-[illegible]	F,G,RM	O	GB	MO	A	RM	5	AC	D	C	C	C	AI	
X-41	2	HPCI	Y	B	A	F079	F,X,RM	O	GB	MO	A	RM	13	DC	D	O	O	C	AI	
↓	18	↓	Y	B	A	—	—	O	CK	—	RF	—	N/A	—	—	C	C	O	—	
X-42	1½	RCIC	Y	B	A	F084	F,X,RM	O	GB	MO	A	RM	16	DC	D	O	O	C	AI	
↓	8	↓	Y	B	A	—	—	O	CK	—	RF	—	N/A	—	—	C	C	O	—	
X-43	1	RHR (HX VENT)	N	B	A	F103,104	RM	O	GB	MO	RM	M	10	AC	D	C	C	C	AI	
	1	RHR	N	B	W	RV-157A, -157B	—	O	RV	—	OP	—	N/A	—	—	C	C	C	—	
	1	↓	N	B	S	RV-152A, -153B	—	O	RV	—	OP	—	N/A	—	—	C	C	C	—	
↓	1	RHR (HPCI STEAM DRN)	N	B	S		—	O	CK	—	RF	—	N/A	—	—	O	C	C	—	
X-44	6	PRI. CONT. ATMOS. CONT.	Y	B	A	MOV033A	RM	O	GT	MO	RM	M	31	AC	D	C	O	C	AI	
↓	4	↓	Y	B	A	MOV039A	RM	O	GT	MO	RM	M	20	AC	D	C	O	C	AI	
↓	1½	DRYWELL FLOOR SEAL PRESSURIZATION	Y	C	A	MOV031A	RM	O	GB	MO	RM	M	6	AC	D	O	O	O	AI	
X-45	6	PRI. CONT. ATMOS. CONT.	Y	B	A	MOV033B	RM	O	GT	MO	RM	M	31	AC	D	C	O	C	AI	
↓	4	↓	Y	B	A	MOV038B	RM	O	GT	MO	RM	M	20	AC	D	C	O	C	AI	
↓	1½	DRYWELL FLOOR SEAL PRESSURIZATION	Y	C	A	MOV031B	RM	O	GB	MO	RM	M	6	AC	D	O	O	O	AI	
X-46	6	PRI. CONT. ATMOS. CONT.	Y	B	A	MOV031A	RM	I	GT	MO	RM	—	31	AC	D	C	O	C	AI	
↓	6		Y	B	A	MOV035A	RM	O	GT	MO	RM	M	16	AC	D	C	O	C	AI	
X-47	6		Y	B	A	MOV031B	RM	I	GT	MO	RM	—	31	AC	D	C	O	C	AI	
↓	6	↓	Y	B	A	MOV031A	RM	O	GT	MO	RM	M	16	AC	D	C	O	C	AI	
—	3/4	CRD	Y	C	W	—	—	O	GB	—	M	—	N/A	—	—	O	O	O	—	
—	1	↓	Y	C	W	—	—	O	GB	—	M	—	N/A	—	—	O	O	O	—	
X5-5	/	RHR	← SAME ISOLATION VALVES AS FOR X-43 ABOVE										—							
X5-6	10	SUPPRESSION POOL CLEANUP	N	B	W	—	B,F,RM	O	GT	MO	A	RM	51	AC	D	C	C	C	AI	
X5-7	6	PRI. CONT. ATMOS. CONT.	Y	B	A	MOV034B, 040B	RM	O	GT	MO	RM	M	32	AC	D				AI	
X5-8	6	↓	Y	B	A	MOV034A, 040A	RM	O	GT	MO	RM	M	32	AC	D	C	C	C	AI	
X5-11	1½	SERVICE AIR	N	B	A	—	—	I	CK	RF	—	—	N/A	—	—	C	O	C	—	
↓	1½	↓	N	B	A	—	—	O	GB	M	—	—	N/A	—	—	C	O	C	—	

POOR ORIGINAL

PLANT SHOREHAM UNIT 1

PRIMARY CONTAINMENT ISOLATION SYSTEM DATA

PAGE 5 CONTINUED ON PAGE 6

D

Isolation Valves

1391 204

Penetration Number	Line Size, In.	System	Is System an Engineered Safety Function	Figure	Process Fluid	Valve Number	Isolation Signal Code(s)	Location	Type	Actuator	Primary Actuation Mode	Secondary Actuation Mode	Full Closure Time, sec.	Power Source	Position Indication in Control Rm.	Positions: Normal	Shutdown	Post Accident	Power Failure	Comments
XS-12	1 1/2	RAD MONITORING	N	B	A	MOV032A	F, G, RM	I	GB	MO	A	RM	14	AC	D	O	O	C	AI	
↓	1 1/2	↓	N	B	A	MOV032B	↓	O	GB	MO	A	RM	14	AC	D	O	O	C	AI	
XS-13	1		N	B	A	MOV033A		I	GB	MO	A	RM	14	AC	D	O	O	C	AI	
↓	1	↓	N	B	A	MOV033B	↓	O	GB	MO	A	RM	14	AC	D	O	O	C	AI	
XS-20	6	CONT. ATMOS. CONT.	Y	B	A	MOV036A	RM	I	GT	MO	RM	—	32	AC	D	C	O	C	AI	
↓	6		Y	B	A	MOV037A		O	GT	MO	RM	M	32	AC	D	C	O	C	AI	
XS-21	6		Y	B	A	MOV036B		I	GT	MO	RM	—	32	AC	D	C	O	C	AI	
↓	6	↓	Y	B	A	MOV037B	↓	O	GT	MO	RM	M	32	AC	D	C	O	C	AI	
XS-22	6	CONT. VENT TO RBNVS	N	B	A	AOV0[illegible]A	L, RM	I	B	AO	RM	—	5	AC	D	C	O	C	C	
↓	6	↓	N	B	A	AOV0[illegible]B	↓	O	B	AO	RM	M	5	AC	D	C	O	C	C	
B-7	1 1/2	INST AIR TO DRYWELL	N	B	A	—	—	I	CK	—	RF	—	N/A	—	—	O	O	O	—	
↓	1 1/2		N	B	A	MOV103A	RM	O	GB	MO	RM	M	7.5	AC	D	O	O	O	AI	
D-5	1 1/2		N	B	A	—	—	I	CK	—	RF	—	N/A	—	—	O	O	O	—	
↓	1 1/2	↓	N	B	A	MOV103B	RM	O	GB	MO	RM	M	7.5	AC	D	O	O	O	AI	
F-10	3/4	RECIRC PUMP SEAL INJ	N	A	W	—	—	I	CK	—	RF	—	N/A	—	—	O	O	O	—	
↓	3/4		N	A	W	—	—	O	CK	—	RF	—	N/A	—	—	O	O	O	—	
F-11	3/4		N	A	W	—	—	I	CK	—	RF	—	N/A	—	—	O	O	O	—	
↓	3/4	↓	N	A	W	—	—	O	CK	—	RF	—	N/A	—	—	O	O	O	—	

PLANT SHOREHAM UNIT 1

PRIMARY CONTAINMENT ISOLATION SYSTEM DATA

PAGE 6 CONTINUED ON PAGE FINAL

D

ABBREVIATIONS

Engineered Safety Function

N = NO
Y = YES

Position Indication in Control Room

D = Direct
I = Indirect
N = None
Others stated in Table

Fluid

A = Air
S = Steam
W = Water
Others stated in Table
B = Borate Solution

Isolation Valve Location

I = Inside Containment
O = Outside Containment
Others stated in Table

Isolation Valve Actuation Mode

A = Automatic
OP = Overpressure
RF = Reverse Flow
RM = Remote Manual
Others stated in Table
M = Manual

Isolation Valve Positions

AI = As Is
C = Closed
O = Open
Others stated in Table

Isolation Valve Type

B = Butterfly
BCK = Ball check
BL = Ball
CK = Check
DCV = Diaphragm Control Valve
GB = Globe
GT = Gate
RV = Relief
SCV = Stop Check
SV = Solenoid
VB = Vacuum Breaker
XV = Explosive
Others stated in Table
VTC = Testable Check Valve
ANG = Angle Valve

Isolation Valve Power Source

A = Air
AC = AC
DC = DC
H = Hand
P = Process fluid
Others stated in Table

Isolation Valve Actuator

AO = Air
MO = Motor
SO = Solenoid
Others stated in Table
XC = Explosive Charge
M = MANUAL

Isolation Signal Codes (utility supply)

Code or Group	Parameter(s) Sensed for Isolation	Set Point (units)
	SEE ATTACHED SHEET	

POOR ORIGINAL

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ISOLATION SIGNAL CODES

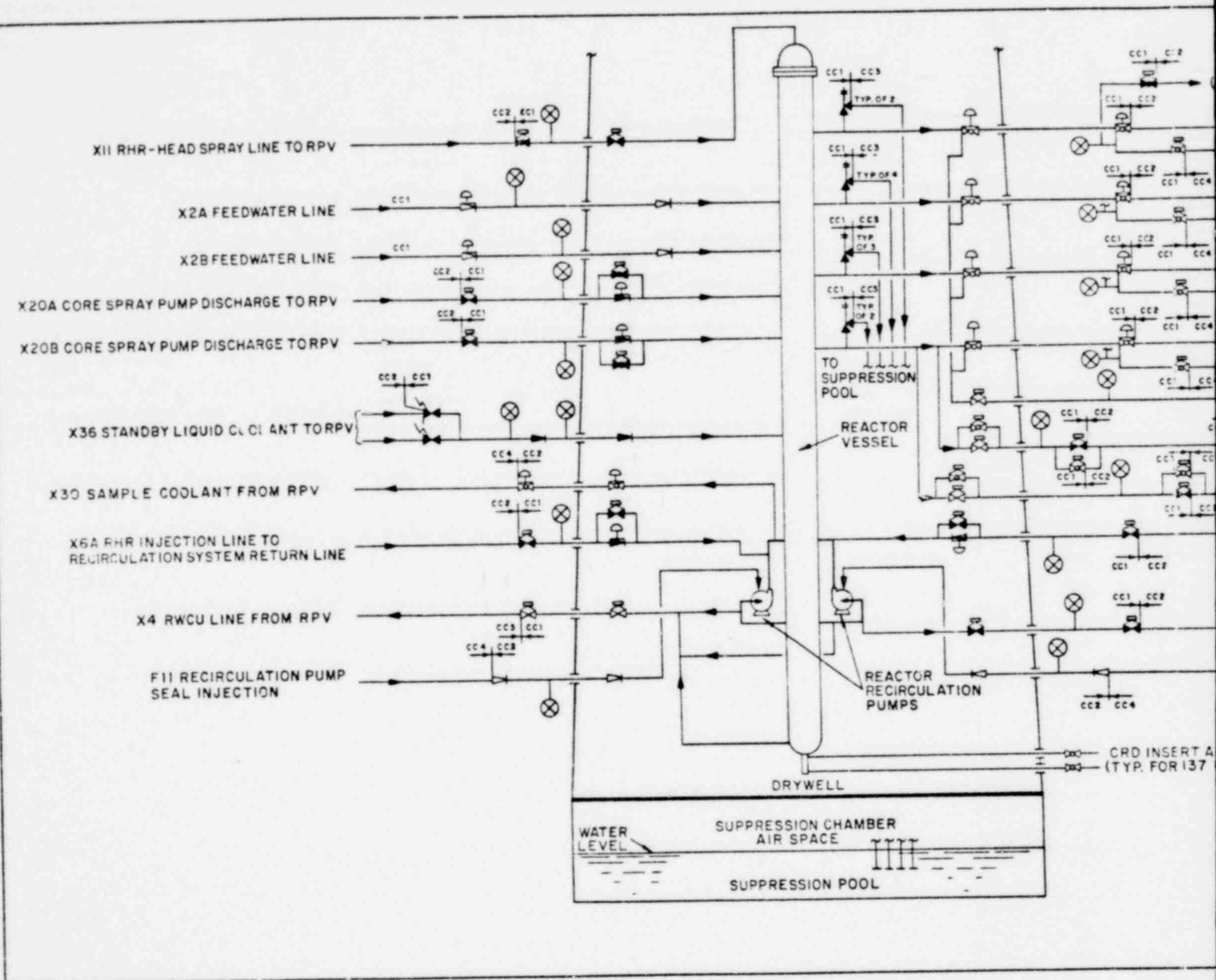
SIGNAL	DESCRIPTION	SET POINT 1/
A*	Reactor vessel low water level 3	12.5"
B*	Reactor vessel low water level 2	-38"
C*	High radiation - main steam line	3.0 x Full Power Background
D*	Line break - main steam line (high steam flow)	106 psid
E*	Line break - Main steam line (steam line tunnel high temperature)	200 F
F*	High drywell pressure	1.69 psig
G	Reactor vessel low water level 1	-132.5"
J*	Line break in reactor water cleanup system - high space temperature, high differential flow	30 F above ambient, **
K*	Line break in steam line to/from turbine (high steam line space temperature, high steam flow, low steam line pressure or high turbine exhaust diaphragm pressure)	HPCI - 30 F above ambient, ± 248 H_2O, 110 psig, 10 psig RCIC - 30 F above ambient, ± 105 H_2O, 57 psig, 10 psig
L	Reactor building standby ventilation system initiation	System initiation
P*	Low main steam line pressure at inlet to turbine (RUN mode only)	825 psig
R	Low condenser vacuum	**
T	High temperature in turbine building	50 F above ambient
U	High reactor vessel pressure	109 psig + flood level static head
W*	High temperature at outlet of cleanup system nonregenerative heat exchanger	7" Hg vac.
X	Low steam pressure, drywell high pressure	HPCI - 110 psig, 1.69 psig RCIC - 57 psig, 1.69 psig
Y	Standby liquid control system actuated	System initiation
Z	Low level in RBCLCW head tank	≤ 5'-9"
RM*	Remote manual switch from main control room	Not applicable

* These are the isolation functions of the primary containment and reactor vessel isolation control system; other functions are given for information only.

** Not yet established.

1/ Set points are preliminary. Final values will be documented by the Technical Specifications.

POOR ORIGINAL



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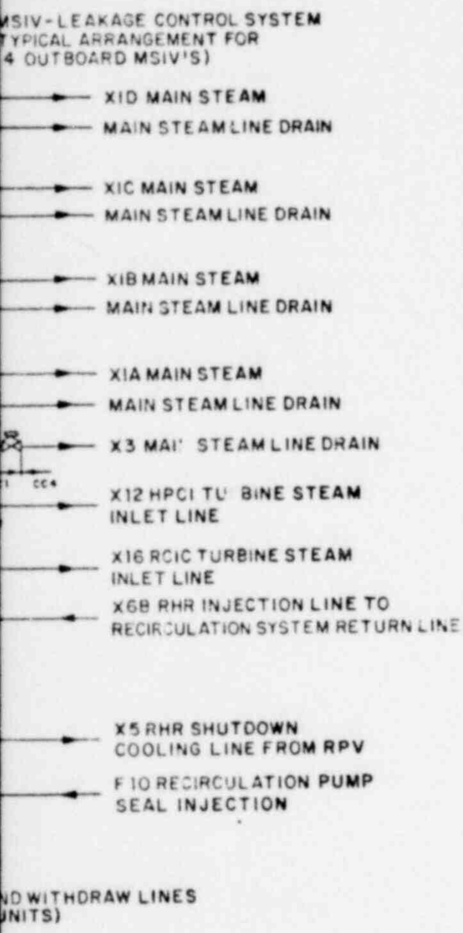

LEGEND

- GLOBE VALVE (CLOSED)
- GLOBE VALVE (OPEN)
- GATE VALVE (OPEN)
- GATE VALVE (CLOSED)
- CHECK VALVE (OPEN)
- CHECK VALVE (CLOSED)
- MOTOR OPERATOR
- AIR OPERATOR
- SAFETY / RELIEF VALVE
- PUMP
- EXPLOSIVE VALVE
- LEAK TEST CONNECTION (L.T.C.)

HPCI - HIGH PRESSURE COOLANT INJECTION
RCIC - REACTOR CORE ISOLATION COOLING
RHR - RESIDUAL HEAT REMOVAL
RPV - REACTOR PRESSURE VESSEL
CRD - CONTROL ROD DRIVE
RWCU - REACTOR WATER CLEANUP
MSIV - MAIN STEAM ISOLATION VALVE

NOTES

1. MAIN STEAM PIPING UP TO ISOLATION VALVES WAS PURCHASED TO B31.1 AND ANALYZED TO ASME III (CODE CLASS 1) (CC1).
2. ALL L.T.C. VALVES (EITHER GATE OR GLOBE) AND LINE SIZES ARE 3/4 INCH, ASME III CC2 AND HAVE AT LEAST ONE OF THE TWO VALVES IN SERIES LOCKED CLOSED.

PLANT SHOREHAM UNIT 1

FIGURE A

CRITERION 55 CONTAINMENT ISOLATION VALVES

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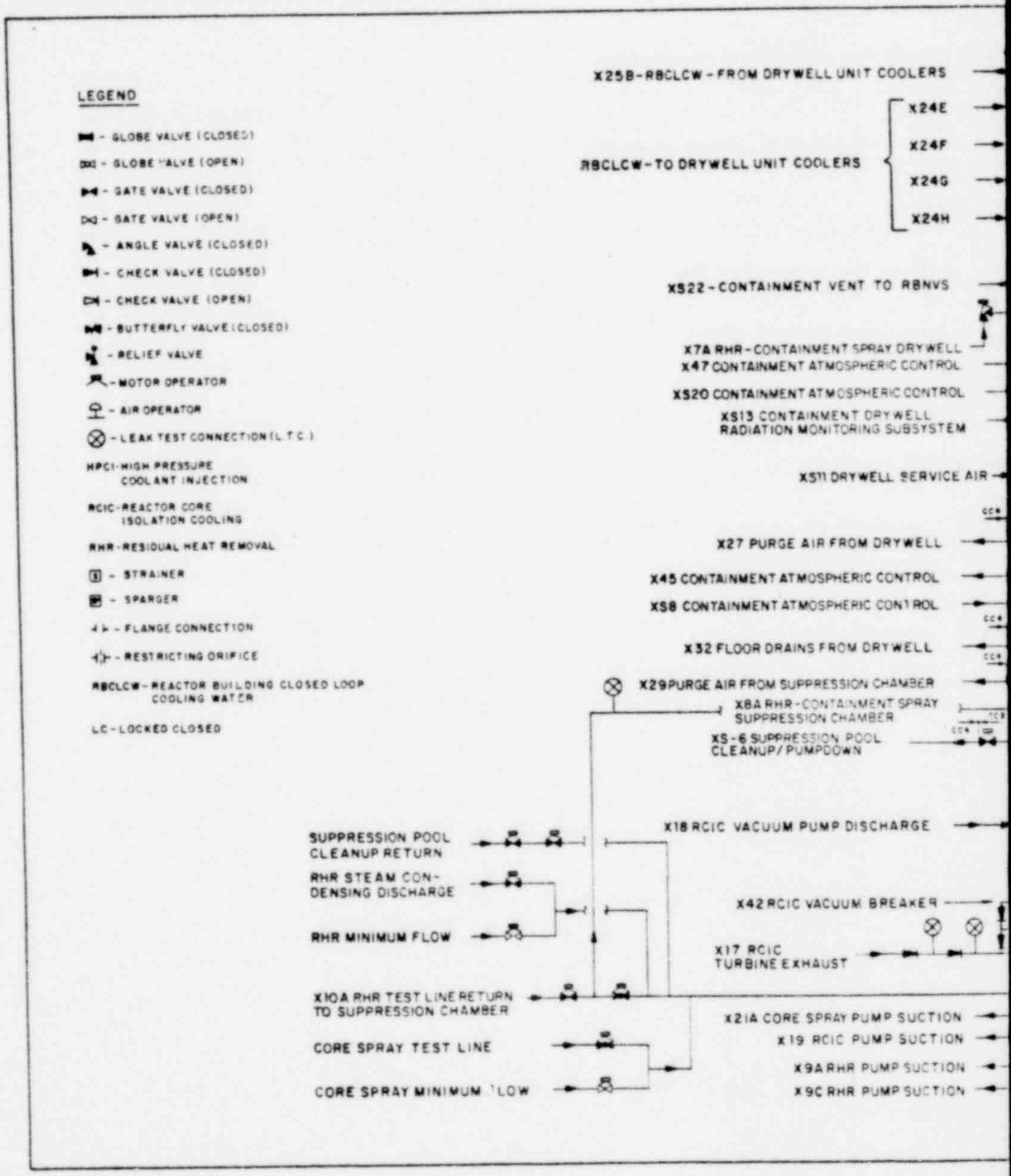
POOR ORIGINAL



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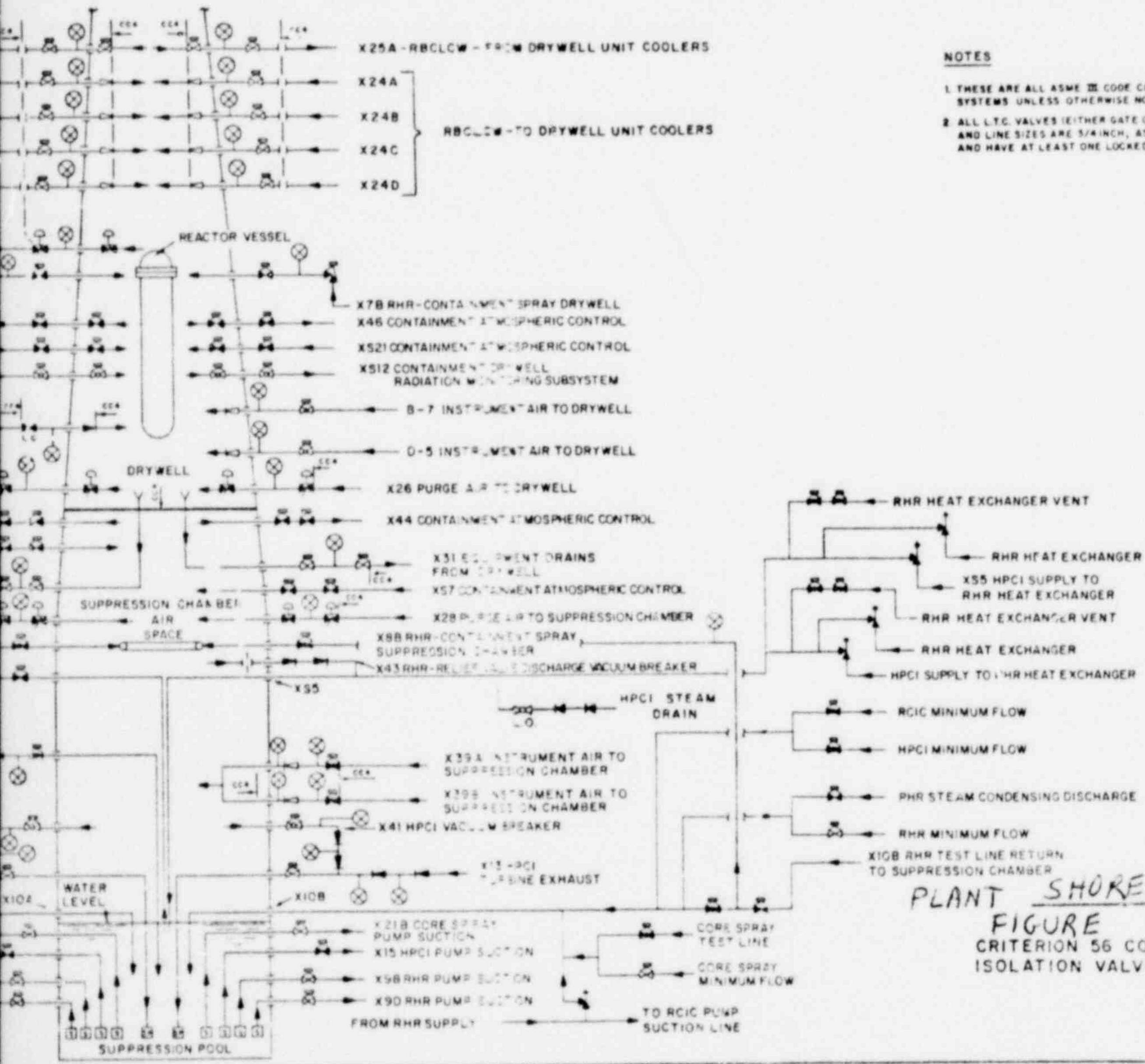
NOTES

1. THESE ARE ALL ASME III CODE CLASS 2 (CC2) SYSTEMS UNLESS OTHERWISE NOTED.
2. ALL L.T.C. VALVES (EITHER GATE OR GLOBE) AND LINE SIZES ARE 3/4 INCH, ASME III CC2 AND HAVE AT LEAST ONE LOCKED CLOSED VALVE.



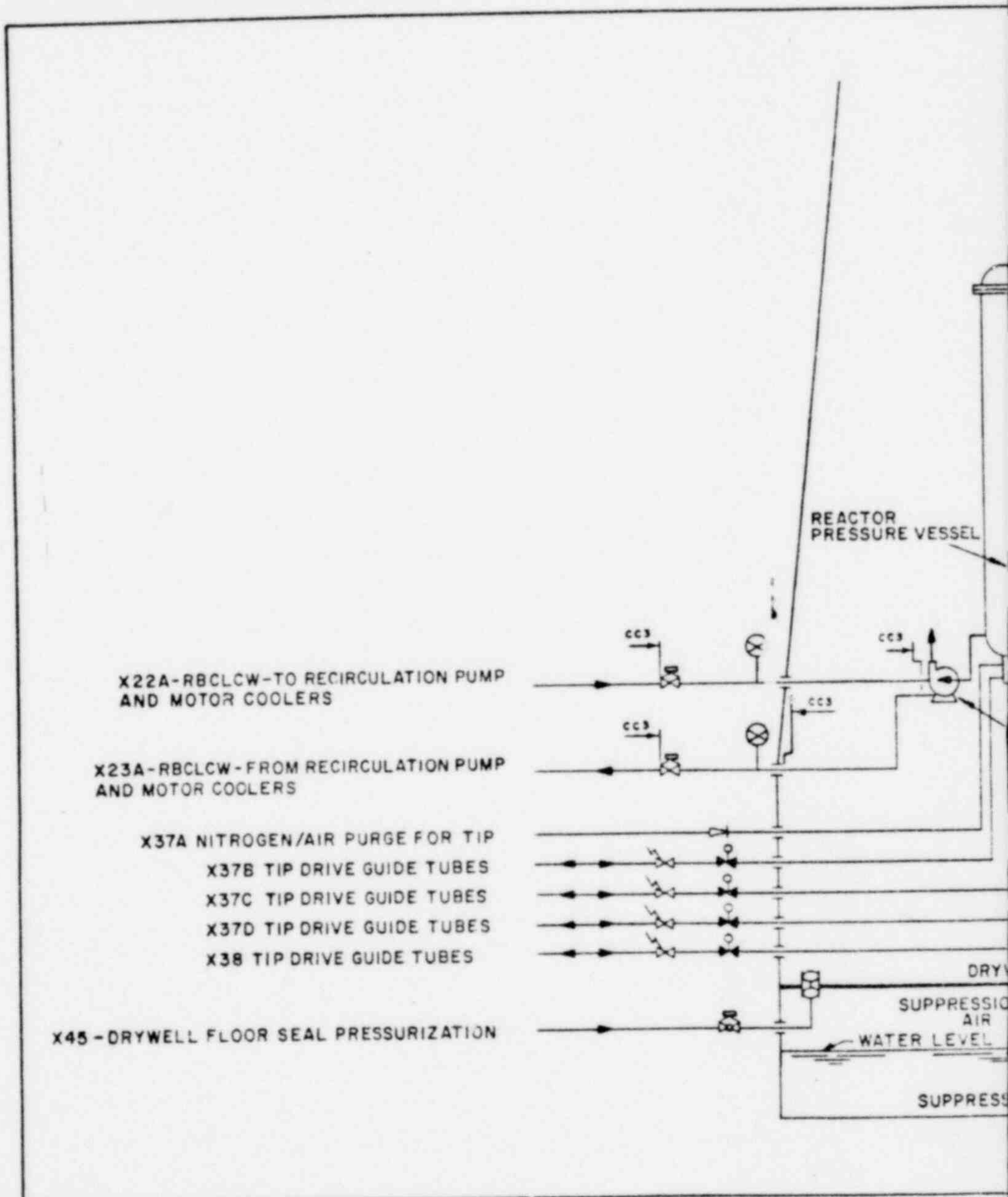
PLANT SHOREHAM UNIT 1

FIGURE B

CRITERION 56 CONTAINMENT ISOLATION VALVES

1391 210

POOR ORIGINAL



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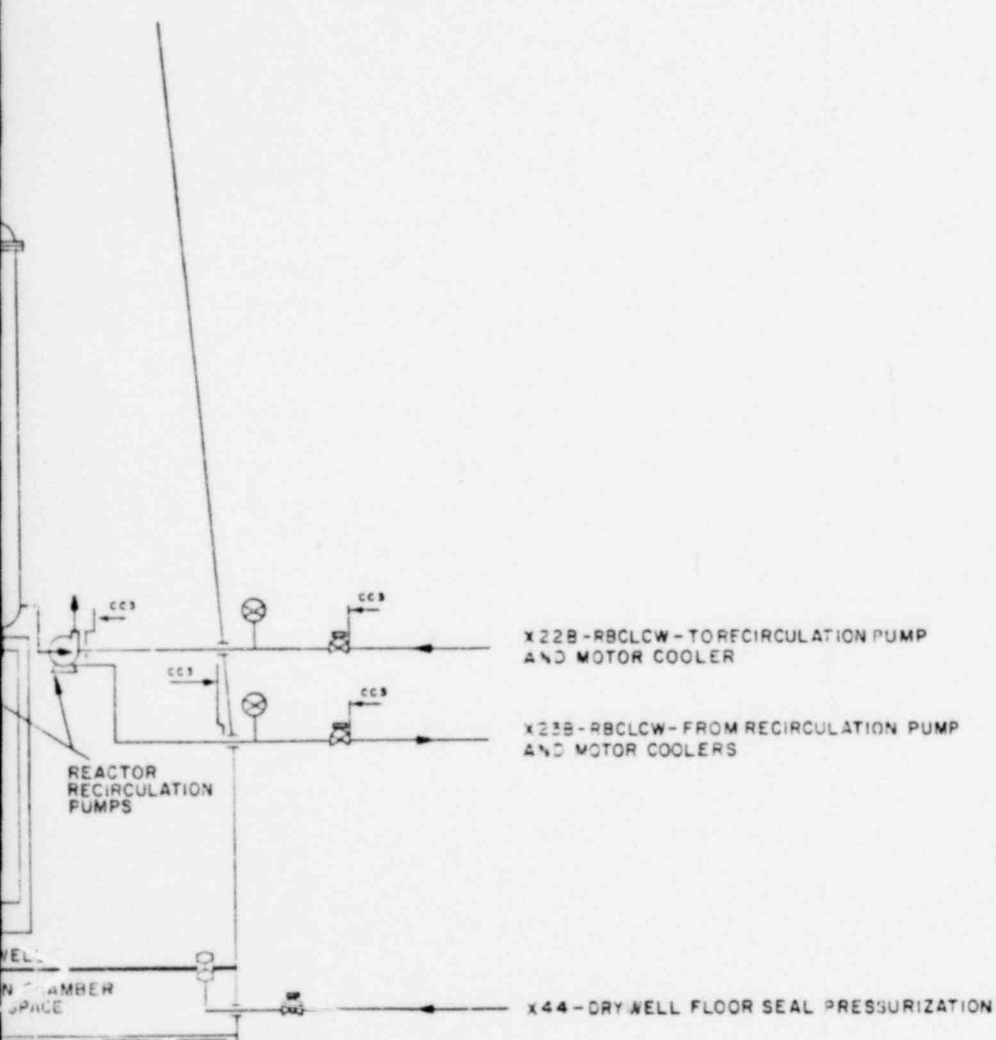
POOR ORIGINAL



LEGEND

- GLOBE VALVE (OPEN)
- GLOBE VALVE (CLOSED)
- GATE VALVE (OPEN)
- GATE VALVE (CLOSED)
- MOTOR OPERATOR
- PUMP

TIP-TRAVERSING INCORE PROBE

- BALL VALVE (CLOSED)
- EXPLOSIVE VALVE
- LEAK TEST CONNECTION (L.T.C.)

RBCLCW - REACTOR BUILDING CLOSED LOOP COOLING WATER

- DRYWELL FLOOR SEAL

NOTES:

1. ALL PENETRATIONS, PIPING AND ISOLATION VALVES ARE ASME III CODE CLASS 2 (CC2)
2. ALL L.T.C. VALVES (EITHER GATE OR GLOBE) AND LINE SIZES ARE 3/4 INCH, ASME III CC2 AND HAVE AT LEAST ONE LOCKED CLOSED VALVE.

PLANT SHOREHAM UNIT 1

FIGURE C

CRITERION 57 CONTAINMENT ISOLATION VALVES

PLANT Shoreham UNIT(S) 1

E

DESIGN REQUIREMENTS FOR CONTAINMENT ISOLATION BARRIERS

Question: Discuss the extent to which the quality standards and seismic design classification of the containment isolation provisions follow the recommendations of Regulatory Guides 1.26, "Quality Group Classifications and Standards for Water-, Steam-, and Radioactive-Water-Containing Components of Nuclear Power Plants", and 1.29, "Seismic Design Classification".

Response: The quality standards and seismic design classification of the containment isolation provisions follow the recommendations of Regulatory Guides 1.26, Rev. 1 - September 1974 and 1.29, Rev. 1 - August 1973.

See also response to Question G (Codes and Standards).

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PLANT *SHOREHAM* UNIT(S) *1*

F

PROVISIONS FOR TESTING

Question: Discuss the design provisions for testing the operability of the isolation valves.

Response: In general, Reactor Coolant Pressure Boundary Containment Isolation Valves (Figure A) can be tested for operability by stroking the valves (one at a time) during normal plant operation. This testing is accomplished by remote manual operation. The following exceptions to this general rule apply:

1. X5 - RHR Shutdown Cooling Line from RPV

   Containment isolation valves in this line are normally shut, and cannot be opened with the RPV at full pressure. Operability may be demonstrated at any time, provided steam dome pressure is less than 135 psig.

2. Simple Check Valves Associated with X2A&B, X-36, F-10, and F-11

   Inboard main feed water check valves may be demonstrated to shut on reverse flow when the reactor is shut down and feedwater is secured. Standby Liquid Control check valves may be demonstrated to shut on reverse flow at any time, by means of opening upstream test connections. Recirculation Pump Seal Injection check valves may be demonstrated to shut on reverse flow when the reactor is shut down, recirculation pumps are secured, and seal injection is secured.

With the following exceptions, the balance of the containment isolation valves (Figures B & C) may be tested for operability at any time by means of remote manual stroking of the valve:

1. Figure B Containment Isolation Check Valves may be demonstrated to shut on reverse flow during integrated containment leak rate testing. Inboard RBCLCW check valves may be tested when shutdown using vent and test connections.

2. TIP Drive Guide Tube Explosive Valves (X37B, C, D, & X38) may be tested with the TIP's withdrawn. However, there is no intention to perform this test.

3. TIP Purge Check Valve (X37A) is tested for operability during containment integrated leak rate testing by exposing the valves to containment pressure via two-way equalizing valves on the TIP indexer units.

4. Figure B Relief Valves may be demonstrated to be seated for containment isolation during containment integrated leak rate testing.

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PLANT SHOREHAM UNIT(S) 1

G

CODES, STANDARDS, AND GUIDES

Question: Identify the codes, standards, and guides applied in the design of the containment isolation system and system components.

Response: The containment isolation system consists of the mechanical components which establish the isolation barriers, and the electrical and control components which are used to actuate active mechanical components. All components are designed in accordance with the applicable codes, standards, and regulatory guides established in the FSAR for engineered safety features.

Containment isolation portions of mechanical systems penetrating primary containment are designed in accordance with Regulatory Guides 1.26 (Quality Group Classification) and 1.29 (Seismic Design Classification). The principal code for the containment penetrations is ANSI B31.7 (1969) based on purchase order date. For piping and valves which constitute containment isolation components and are, in addition, part of the reactor coolant pressure boundary as defined by 10CFR50.2(v), the principal code is ASME III Class 1. The major exception to this is main steam piping and valves out to, and including, the outboard isolation valves. Based on purchase order date, the principal code for main steam is ANSI B.31.1.0. For valves and piping constituting containment isolation components, but not reactor coolant pressure boundary, the principal code is ASME III Class 2.

The following standards and guides were applied in the design of the controls portions of the containment isolation system:

IEEE 279 - 1971
IEEE 317 - 1972
IEEE 323 - 1971
IEEE 336 - 1971
IEEE 338 - 1971
IEEE 344 - 1971
IEEE 379 - 1972
R. G. 1.11 (3/71)
R. G. 1.22 (2/72)
R. G. 1.29 (8/73)
R. G. 1.30 (8/72)
R. G. 1.47 (5/73)
R. G. 1.53 (6/73)
R. G. 1.62 (10/73)
R. G. 1.63 (10/73)

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PLANT - SHOREHAM UNIT 1

H

NORMAL OPERATING MODES AND ISOLATION MODES

Question: Discuss the normal operating modes and containment isolation provision and procedures for lines that transfer potentially radioactive fluids out of the containment.

Response: Upon actuation of containment isolation signals, there are no pumps, valves, or equipment which will actuate automatically and allow an inadvertent release of radioactive gases or liquids out of the primary containment. There are also no automatic equipment operations to provide inadvertent releases upon resetting the containment isolation signals. Systems designed to discharge potentially radioactive fluids from the primary containment will automatically isolate (e.g. drywell floor drains). Systems designed to transfer potentially radioactive fluids from the containment for accident mitigation (e.g. ECCS) are closed systems terminating back inside primary containment. Operating procedures for all systems capable of transferring potentially radioactive fluids from primary containment are being reviewed to ensure there are no operator actions which could result in an inadvertent release. A brief discussion is provided below for containment effluent lines which are normally operating or which may be used to mitigate an accident. A detailed summary of all containment isolation (normal and post-accident valve position, and isolation signals) is provided in response to question D.

1. Main Steam Lines and Main Steam Drain Line (X1A-D, X3)

   These lines are automatically isolated during an accident and will not be reopened.

2. HPCI and RCIC Turbine Steam Supply Lines (X12&16)

   Steam flow is automatically initiated during an accident. Duration of steam flow depends upon accident details.

3. RHR Shutdown Cooling Line (X-5)

   Shutdown cooling may be initiated to achieve and maintain cold shutdown.

4. CRD Withdraw Lines

   Since a scram will occur prior to uncovering core, higher than normal radiation levels are not expected in these lines. Flow out the withdraw line is not expected after the scram.

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5. RWCU Line from RPV (X-4)

This line is automatically isolated during an accident and will not be brought back on line if radiation levels are excessive.

6. Sample Coolant from RPV (X-30)

This line is automatically isolated during an accident and will not be brought back on line if radiation levels are excessive. Alternative post-accident sampling provisions are being investigated.

7. Primary Containment Atmospheric Control Lines (X-46, 47, 44, 45)

These lines are utilized after an accident to provide a closed flow path from the primary containment, through the hydrogen recombiners, and back to the primary containment.

8. Containment Drywell Radiation Monitoring (XS12)

These lines are automatically isolated after an accident.

9. Equipment Drains from Drywell (X31)

These lines are isolated after an accident and will not be reopened unless radiation levels are acceptable.

10. ECCS Pump Suction Lines from Suppression Pool (X9A-D, X21A, B, X19, X15)

These lines are utilized after an accident for core cooling. The flow paths are closed loops from the primary containment, through the pumps, and back to the primary containment.

11. RBCLCW (X25A, B, X23A, B)

These lines are not expected to be radioactive, since the flow loop is closed. They will be closed manually on actuation of containment isolation in accordance with plant procedures.

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